# San Diego Bay Environmental Restoration Fund – South

450 Montbrook Lane
Knoxville, TN 37919
Phone: (865) 691-5052

August 22, 2013

Mr. Fred Hays
Special Waste Director
Republic Services
8360 Clairemont Mesa Boulevard
San Diego, California 92111

Subject: Profile Package for Dredged Sediment, South Trust Site

Dear Mr. Hays:

This letter has been prepared to provide information related to the disposal of Dredged Sediment by the San Diego Bay Environmental Restoration Fund – South ("South Trust") as it relates to the South Shipyard Site. Some brief background is provided to put this profile package in context.

Discharges of metals and other pollutant wastes to San Diego Bay over the years have resulted in the accumulation of pollutants in marine sediments along the eastern shore of central San Diego Bay in San Diego, California. This accumulation has resulted in conditions alleged by the San Diego Regional Water Quality Control Board (Water Board) as adversely impacting beneficial uses (aquatic life, aquatic-dependent wildlife, and human health). The Water Board identified the affected areas as including waters adjacent to two adjoining, active shipyard facilities in San Diego Bay—the North Shipyard (owned by BAE Systems Systems San Diego Ship Repair Facility [BAE Systems Systems]) and the South Shipyard (owned by National Steel and Shipbuilding Company Shipyard Facility [NASSCO]). Collectively, these areas are termed the San Diego Shipyard Sediment Site (Shipyard Sediment Site). Please note this letter is focused solely on the South Site.

In March 2012, the Water Board issued Cleanup and Abatement Order No. R9-2012-0024 ("CAO") for the remediation of marine sediments containing elevated chemical concentrations within the Shipyard Sediment Site. Stakeholders for the South Site include NASSCO, the US Navy, the City of San Diego, and the Port of San Diego.

The South Trust was established to administer business and regulatory affairs for the South Shipyard Site dredge project as described in the trust agreement dated December 12, 2012, as amended. The purpose of the South Trust is to effectively manage the multi-party site in the vicinity of the General Dynamics National Steel and Shipbuilding Company (NASSCO) Shipyard that extends out into public lands on and in San Diego Bay.

On behalf of the South Trust, the attached profile package for landfill acceptance of the dredged sediment waste stream is respectfully submitted.

If you have any questions regarding this profile package, please contact me at the below referenced address and telephone number.

Regards,
San Diego Bay Environmental Restoration Fund – South

Dean Charles
Authorized Agent
c/o *de maximis, inc.*
1322 Scott Street, Suite 104
San Diego, CA 92106

cc: T. Michael Chee, NASSCO
David Templeton, Anchor QEA

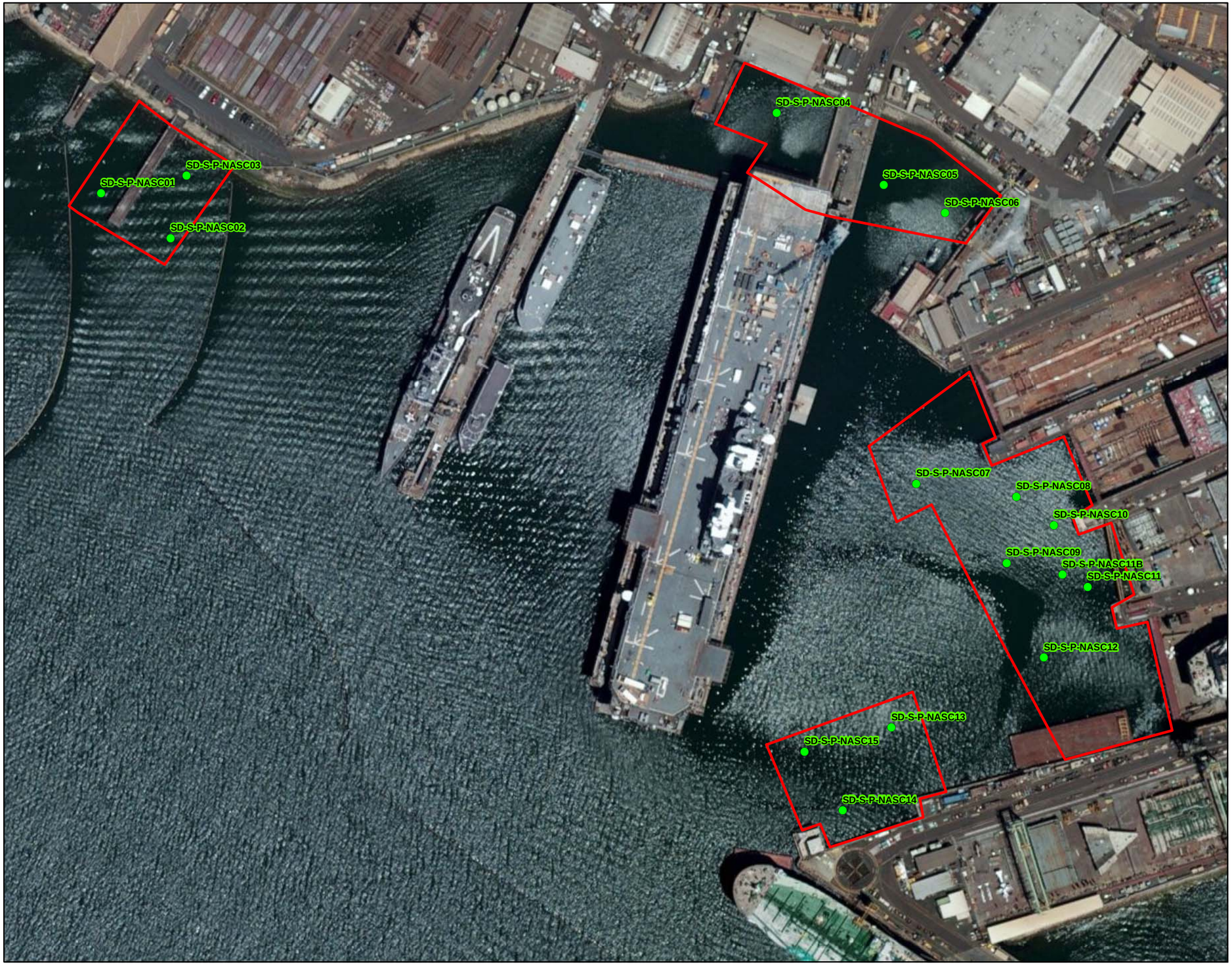
**Enclosures**

Figure 1 – South Trust Site Sediment Vibracore Sampling Locations Map (April 2013)

Attachment A – Third Party Authorization and Republic Services Special Waste Profile
Attachment B – List of Analytes to be considered for Waste Stream Profile
Attachment C – Cover letter and extension request
Attachment D – Discussion of Historical PCB Contamination in San Diego Bay
Attachment E – Statistical analysis for applicable analytical data
Attachment F – Analytical Packets

# FIGURE 1

## SOUTH TRUST SITE
## SEDIMENT VIBRACORE SAMPLING
## LOCATIONS MAP



## Legend

NASSCO Remediation Area

Map Notes:
CA State Plane 6 4060 (feet)
Imagery provided by Digital Globe 4-9-2010

N
W E
S

0 100 200 300 400 Feet

**Figure 1**
**South Trust Site Sediment**
**Vibracore Sampling Locations Map**
**(April 2013)**

Path: R:\2013\Aquatics\POSD\MXD\ReportFigures\ShipyardSediment\NASCO_Remediation_FinalSamplingPoints.mxd, aaron.johnson 8/13/2013

# ATTACHMENT A

## THIRD PARTY AUTHORIZATION
## &
## REPUBLIC SERVICES SPECIAL WASTE PROFILE

REPUBLIC SERVICES, INC.

# THIRD PARTY SIGNATURE AUTHORIZATION
## for Special Waste Disposal

Date: 08/19/2013
This Authorization is only valid for 3 years from the above date.

To Whom It May Concern:

Please be advised that the following company/individual has been appointed to work as our agent for purposes of managing waste materials that we may generate.

| | |
|---|---|
| Name of Authorized Agent<br><br>Dean Charles | Title<br><br>Project Manager |
| Name of Company<br><br>de maximis, inc. | Telephone Number<br><br>858-705-2635 |

The above broker/individual is authorized to act as our authorized agent for the following purposes:

- ☒ Complete and sign Special Waste Profile.
- ☒ Complete and sign Special Waste Profile-Recertification.
- ☒ Authorize amendments to Special Waste Profile.
- ☐ Sign contracts to dispose and/or transport material.
- ☒ Sign certifications necessary to comply with landfill requirements.
- ☒ Sign manifests to initiate shipment to disposal facilities.

Our authorized agent will notify us prior to any action stated above, and will provide us with copies of any documents bearing our name.

| | |
|---|---|
| Name of Company<br><br>San Diego Bay Environmental Restoration Fund - South | Mailing Address<br>c/o de maximis, inc<br>450 Montbrook Lane<br>Knoxville, TN 37919. |
| Generator Contact (Print Name)<br><br>R. Thomas Dorsey | Title<br><br>Trustee |
| Signature | Telephone Number<br><br>(865) 691-5052 |

# REPUBLIC SERVICES SPECIAL WASTE PROFILE

Requested Disposal Facility: 4531 Otay LF CA

| Waste Profile # |
|---|
| |
| Sales Rep #: |

Saveable fill-in form. Restricted printing until all required (yellow) fields are completed.

## I. Generator Information

| | | | |
|---|---|---|---|
| Generator Name: San Diego Bay Environmental Restoration Fund – South | | | |
| Generator Site Address: 2798 Harbor Drive | | | |
| City: San Diego | County: San Diego | State: California | Zip: 92113 |
| State ID/Reg No: N/A | State Approval/Waste Code: N/A (if applicable) | | NAICS # : N/A |
| Generator Mailing Address (if different): ☑ c/o de maximis, inc. 1322 Scott Street, Suite 104 | | | |
| City: San Diego | County: San Diego | State: California | Zip: 92106 |
| Generator Contact Name: Dean Charles | | Email: dean@demaximis.com | |
| Phone Number: (858) 705-2635 | Ext: | Fax Number: | |

## II. Billing Information

| | | | |
|---|---|---|---|
| Bill To: de maximis, inc. | | Contact Name: Mike Palmer | |
| Billing Address: 1322 Scott Street, Suite 104 | | Email: mpalmer@demaximis.com | |
| City: San Diego | State: California | Zip: 92106 | Phone: (619) 546-8377 |

## III. Waste Stream Information

| | |
|---|---|
| Name of Waste: Dredging Sediment - San Diego Bay Environmental Restoration Fund - South | |
| Process Generating Waste: Sea floor dredging for remediation in the vicinity of the NASSCO Shipyard (South Trust Site). See Attachments C and D for additional information and approval extension request. | |
| Type of Waste: | ☑ INDUSTRIAL PROCESS WASTE ☐ POLLUTION CONTROL WASTE |
| Physical State: | ☑ SOLID ☐ SEMI-SOLID ☐ POWDER ☐ LIQUID |
| Method of Shipment: | ☑ BULK ☐ DRUM ☐ BAGGED ☐ OTHER: |
| Estimated Annual Volume: | 52,600 Cubic Yards |
| Frequency: | ☑ ONE TIME ☐ ONGOING |
| Disposal Consideration: | ☑ LANDFILL ☐ SOLIDIFICATION ☐ BIOREMEDIATION |

## IV. Representative Sample Certification

☐ NO SAMPLE TAKEN

| | |
|---|---|
| Is the representative sample collected to prepare this profile and laboratory analysis, collected in accordance with U.S. EPA 40 CFR 261.20(c) guidelines or equivalent rules? | ☑ YES or ☐ NO |
| Type of Sample: ☑ COMPOSITE SAMPLE ☑ GRAB SAMPLE | |
| Sample Date: April 2013, see attachment C and D for data approval information. | |
| Sample ID Numbers: Please see Attachment B - Analyte List. | |

© Republic Services, April 2013

**REPUBLIC SERVICES** **SPECIAL WASTE PROFILE**

| Waste Profile # |
|---|
| |

## V. Physical Characteristics of Waste

| Characteristic Components | % by Weight (range) |
|---|---|
| 1. Dredging Sediment | 100 |
| 2. | |
| 3. | |
| 4. | |
| 5. | |

| Color | Odor (describe) | Does Waste Contain Free Liquids? | % Solids | pH: | Flash Point |
|---|---|---|---|---|---|
| variable | variable, mild organic | ☐ YES or ☑ NO | TBD | NT | NT °F |

***Attach Laboratory Analytical Report (and/or Material Safety Data Sheet) Including Chain of Custody and Required Parameters Provided for this Profile***

| | |
|---|---|
| Does this waste or generating process contain regulated concentrations of the following Pesticides and/or Herbicides: Chlordane, Endrin, Heptachlor (and its epoxides), Lindane, Methoxychlor, Toxaphene, 2,4-D, or 2,4,5-TP Silvex as defined in 40 CFR 261.33? | ☐ Yes or ☑ No |
| Does this waste contain reactive sulfides (greater than 500 ppm) or reactive cyanide (greater than 250 ppm)[reference 40 CFR 261.23(a)(5)]? | ☐ Yes or ☑ No |
| Does this waste contain regulated concentrations of Polychlorinated Biphenyls (PCBs) as defined in 40 CFR Part 761? | ☐ Yes or ☑ No |
| Does this waste contain concentrations of listed hazardous wastes defined in 40 CFR 261.31, 261.32, 261.33, including RCRA F-Listed Solvents? | ☐ Yes or ☑ No |
| Does this waste exhibit a Hazardous Characteristic as defined by Federal and/or State regulations? | ☐ Yes or ☑ No |
| Does this waste contain regulated concentrations of 2,3,7,8-Tetrachlorodibenzodioxin (2,3,7,8-TCCD), or any other dioxin as defined in 40 CFR 261.31? | ☐ Yes or ☑ No |
| Is this a regulated Radioactive Waste as defined by Federal and/or State regulations? | ☐ Yes or ☑ No |
| Is this a regulated Medical or Infectious Waste as defined by Federal and/or State regulations? | ☐ Yes or ☑ No |
| Is this waste a reactive or heat generating waste? | ☐ Yes or ☑ No |
| Does the waste contain sulfur or sulfur by-products? | ☐ Yes or ☑ No |
| Is this waste generated at a Federal Superfund Clean Up Site? | ☐ Yes or ☑ No |
| Is this waste from a TSD facility, TSD like facility or consolidator? | ☐ Yes or ☑ No |

## VI. Certification

I hereby certify that to the best of my knowledge and belief, the information contained herein is a true, complete and accurate description of the waste material being offered for disposal and all known or suspected hazards have been disclosed. All Analytical Results/Material Safety Data Sheets submitted are truthful and complete and are representative of the waste.

I further certify that by utilizing this profile, neither myself nor any other employee of the company will deliver for disposal or attempt to deliver for disposal any waste which is classified as toxic waste, hazardous waste or infectious waste, or any other waste material this facility is prohibited from accepting by law. I shall immediately give written notice of any change or condition pertaining to the waste not provided herein. Our company hereby agrees to fully indemnify this disposal facility against any damages resulting from this certification being inaccurate or untrue.

I further certify that the company has not altered the form or content of this profile sheet as provided by Republic Services Inc.

| Dean Charles, Project Manager | de maximis, inc. |
|---|---|
| Authorized Representative Name And Title (Type or Print) | Company Name |
| | 8/22/2013 |
| Authorized Representative Signature | Date |

© Republic Services, April 2013

# ATTACHMENT B

## LIST OF ANALYTES

| Attachment B - List of Analytes to be Considered for Waste Stream Profile | | | | |
|---|---|---|---|---|
| Analyte | Composite | Sediment Chemistry Test Results Included | Soluble Threshold Limit Concentration (STLC) Test Results Included | Toxicity Leaching Characteristic Procedure (TCLP) Test Results Included |
| COMP-C1-TOP | A | X | X | |
| COMP-C1-BOTTOM | | X | | |
| COMP-C2-TOP | | X | X | |
| COMP-C2-BOTTOM | | X | | |
| COMP-C3-TOP | | X | X | |
| COMP-C3-BOTTOM | | X | | |
| COMP-C4-TOP | B | X | X | X |
| COMP-C4-BOTTOM | | X | | |
| COMP-C5-TOP | | X | X | |
| COMP-C5-BOTTOM | | X | | |
| COMP-C6-TOP | | X | X | |
| COMP-C6-BOTTOM | | X | X | X |
| COMP-C7-TOP | C | X | X | |
| COMP-C7-BOTTOM | | X | | |
| COMP-C8-TOP | | X | X | |
| COMP-C8-BOTTOM | | X | | |
| COMP-C9-TOP | | X | X | |
| COMP-C9-BOTTOM | | X | | |
| COMP-C10-TOP | D | X | | |
| COMP-C10-BOTTOM | | X | X | |
| COMP-C11-TOP | | X | | |
| COMP-C11-BOTTOM | | X | | |
| COMP-C12-TOP | | X | X | |
| COMP-C12-BOTTOM | | X | | |
| COMP-C13-TOP | E | X | | |
| COMP-C13-BOTTOM | | X | | |
| COMP-C14-TOP | | X | | |
| COMP-C14-BOTTOM | | X | | |
| COMP-C15-TOP | | X | X | |
| COMP-C15-BOTTOM | | X | | |

# ATTACHMENT C

## COVER LETTER
## &
## EXTENSION REQUEST

# San Diego Bay Environmental Restoration Fund – South

450 Montbrook Lane
Knoxville, TN 37919
Phone: (865) 691-5052

August 6, 2013

Mr. Fred Hays
Special Waste Director
Republic Services
8360 Clairemont Mesa Boulevard
San Diego, California 92111

Subject: Summary Report for April 2013 Sediment Waste Stream Data, South Trust Site

Dear Mr. Hays:

This summary letter report is being submitted as an effort to obtain landfill acceptance for a waste stream generated by the San Diego Bay Environmental Restoration Fund – South (South Trust) in the vicinity of the General Dynamics National Steel and Shipbuilding Company (NASSCO) Shipyard (South Trust Site) with in-situ sediment chemistry data collected in April 2013. The April 2013 sediment samples were collected pursuant to the approved SAP and submitted to the chemistry lab for a limited range of analyte testing which included analyzing 30 samples for an extended range of total petroleum hydrocarbons (C4-C40 [TPH]), a full list of Title 22/CAM 17 metals, and polychlorinated biphenyls (PCB) Aroclors and five composite samples analyzed for semivolatile organic compounds (SVOCs), chlorinated pesticides, and herbicides. Although specified in special waste approval guidelines for dredged material disposal at the Otay Landfill, volatile organic compounds (VOCs) were not tested for this waste stream with approval from the landfill (B. Snyder communication with F. Hayes May 30, 2013), because they are not a constituent of concern.

The South Trust Site is included by the San Diego Regional Water Quality Control Board (RWQCB) in Cleanup and Abatement Order (CAO) R9-2012-0024. Prior landfill approval processing has been conducted for other locations in San Diego Bay included in this CAO. The contaminants of concern (COCs) listed within the CAO are based on historical data collected across the project site and several other locations in San Diego Bay with historically impacted waste streams.

The COCs in CAO R9-2012-0024 are limited to copper, mercury, six high molecular weight polycyclic aromatic hydrocarbons (PAHs) (including fluoranthene, perylene, benzo(a)anthracene, chrysene, benzo(a)pyrene, and dibenz(a,h)anthracene), polychlorinated biphenyls (PCBs), and tributyltin.

## RESULTS

Enclosed with this letter is the April 2013 vibracore data for the South Trust Site site-wide sediment quality survey. Vibracore sampling was conducted to obtain subsurface samples to adequately characterize the entire waste stream. This data represents proposed dredged material estimated at approximately 52,600 cubic yards. Sampling locations for this study are illustrated in Figure 1.

### Sediment Chemistry Analytical Results

Several Title 22 metals were detected at concentrations which exceeded Soluble Threshold Limit Concentration (STLC) trigger levels (10X the regulatory STLC value) including: chromium, copper, lead, and mercury. Statistical analysis was performed on Title 22 metals to determine the significance of the COCs that exceeded STLC trigger levels. All but one of the of the metals in the data set with STLC trigger level exceedances (including chromium, copper, lead, and mercury) met the upper 80% confidence interval requirements as identified by the landfill for waste stream disposal. Lead was the only metal which did not meet the upper 80% confidence interval requirements; therefore, an STLC test was initiated on the 13 samples with concentrations of lead above the STLC trigger level for lead (50 milligrams per kilogram [mg/kg]), and a Toxicity Characteristic Leaching Procedure (TCLP) was conducted on samples COMP-C6-BOTTOM and COMP-C4-TOP which contained lead concentrations greater than the TCLP trigger level of 100 mg/kg (discussed in Section 1.2).

No other analytes were above STLC trigger levels and none of the analytes were detected at concentrations above Total Threshold Limit Concentrations (TTLC).

Analytical results of the April 2013 collection effort indicated that there were very few detectable results for the gasoline range organics (GRO C4-C12). Higher concentrations of C8-C22 were detected, but most were J flagged values indicating that the analyte concentration is an estimated value between the method detection limit and the reporting limit. For the full range of C8-C40, values ranged from 2.9 to 570 mg/kg with an average of 90.2 mg/kg. This is far less than the TTLC for C8-C40 of 3,000 mg/kg. In addition, concentrations of PCB Aroclors in sediments collected at the South Trust Site were all well below the TTLC of 50,000 micrograms per kilogram (µg/kg) and ranged between non-detect and 5,600 µg/kg. However, because detections of PCB Aroclors in dredged sediment have historically been a concern for reviewers during the landfill approval process, a discussion of sources of PCB Aroclors in San Diego Bay is included in this submittal as Attachment D.

With regard to chlorinated pesticides and chlorinated herbicides, all tested analytes were below the method detection limit (non-detect). SVOC values also showed few concentrations above the laboratory reporting limits and most were J-flagged estimated values reported between the method detection limit and the reporting limit.

**STLC and TCLP Analytical Results**

Based on the results of statistical analysis for Title 22 metals, thirteen samples were subjected to a TCLP test for lead only (listed in Attachment B). The results of both the STLC and TCLP tests verified that concentrations of lead across the project site, are all below the STLC and TCLP threshold concentrations of 5.0 milligrams per liter (mg/L). STLC results ranged between 0.057 mg/L and 4.91 mg/L, and TCLP results ranged between 0.321 mg/L and 0.422 mg/L. In addition, lead was also detected in the method blank included in the analysis for the sample with the highest STLC result, COMP-C6-BOTTOM, at a concentration of 0.0437 mg/L.

**ADDITIONAL INFORMATION AND DATA ACCEPTANCE EXTENSION REQUEST**

To satisfy landfill waste stream requirements, the selected dredging contractor will be required to perform a paint filter test on dredged material prior to its being removed from the South Trust Site and transferred to the landfill.

Overall, the analytical testing results indicate that this waste stream is non-hazardous by both California Title 22 and federal RCRA hazardous waste criteria and is acceptable for disposal at the Republic Services landfill facility in Otay.

In addition to Republic Services consideration of the data for this waste stream, the South Trust is requesting that the landfill extend the approval of the waste stream for disposal until April 2014.

If you have any questions regarding this report, please contact me at the below referenced address and telephone number.

Regards,
San Diego Bay Environmental Restoration Fund – South

Dean Charles
Authorized Agent
c/o *de maximis, inc.*
1322 Scott Street, Suite 104
San Diego, CA 92106

cc: T. Michael Chee, NASSCO
David Templeton, Anchor QEA

**Enclosures**

Figure 1 – South Trust Site Sediment Vibracore Sampling Locations Map (April 2013)

Attachment A – Republic Services Special Waste Profile
Attachment B – List of Analytes to be considered for Waste Stream Profile
Attachment C – Cover letter and extension request
Attachment D – Discussion of Historic PCB Contamination in San Diego Bay
Attachment E – Statistical analysis for applicable analytical data
Attachment F – Analytical Packets

# ATTACHMENT D

## DISCUSSION OF HISTORICAL PCB CONTAMINATION IN SAN DIEGO BAY

# San Diego Bay Environmental Restoration Fund – South

450 Montbrook Lane
Knoxville, TN 37919
Phone: (865) 691-5052

August 22, 2013

Mr. Fred Hays
Special Waste Director
Republic Services
8360 Clairemont Mesa Boulevard
San Diego, California 92111

Subject: **Discussion of Historical PCB Contamination in San Diego Bay and at the South Trust Site**

Dear Mr. Hays:

This letter is being submitted to provide additional information on sediment polychlorinated biphenyl (PCB) concentrations in San Diego Bay and at the cleanup site being dredged by the San Diego Bay Environmental Restoration Fund – South (South Trust) in the vicinity of the General Dynamics National Steel and Shipbuilding Company (NASSCO) Shipyard (South Trust Site). This information is provided along with a Data Summary Report for evaluation of dredge material in an effort to obtain landfill acceptance for disposal.

The South Trust is planning to dredge approximately 52,600 cubic yards of sediment as part of the State-mandated San Diego Shipyard Sediment Site's remedial action. The South Trust's planned dredging, in conjunction with a similar program being planned by the San Diego Bay Environmental Restoration Fund – North (North Trust) in the vicinity of BAE Systems Shipyard, comprises activities required by Cleanup and Abatement Order (CAO) No. R9-2012-0024, issued by the San Diego Regional Water Quality Control Board.

Historical PCB contamination in San Diego Bay is well documented from industrial and municipal sources. Based on data collected for the Southern California Bight 1998 Regional Monitoring Program, San Diego Bay ranked fourth in PCB concentrations compared to other bays and harbors in California.

From the 1940s until the use of PCBs was banned in 1979, PCBs were used as plasticizers in paints, plastics and rubber products, electrical equipment like transformers and capacitors, and oil in machinery and other systems that were in use in the area in and around the NASSCO Shipyard. Although PCB concentrations in San Diego Bay are generally greater than State Water Resources Control Board sediment quality objectives, levels of PCBs detected in samples analyzed for this waste characterization study are well less than levels that would trigger action under the Toxic Substances Control Act (TSCA) or implementing regulations codified in 40 Code of Federal Regulations (CFR) Part 761, Subpart D. All dredge material testing results are less than 50 parts per million, and therefore, this material would not be regulated as PCB remediation waste. PCB contamination at the site cannot be linked to any specific spill or release and is attributable to area-wide distribution and mixing over several decades predating

the implementation of TCSA. Therefore, no regulation under 40 CFR Part 761 is appropriate or required.[1]

Best Regards,

San Diego Bay Environmental Restoration Fund – South

Dean Charles
Authorized Agent
c/o *de maximis, inc.*
1322 Scott Street, Suite 104
San Diego, CA 92106

[1] 40 CFR Part 761.3: "*PCB remediation waste* means waste containing PCBs as a result of a spill, release, or other unauthorized disposal, at the following concentrations: Materials disposed of prior to April 18, 1978, that are currently at concentrations ≥ 50 ppm PCBs, regardless of the concentration of the original spill; materials which are currently at any volume or concentration where the original source was ≥ 500 ppm PCBs beginning on April 18, 1978, or ≥ 50 ppm PCBs beginning on July 2, 1979; and materials which are currently at any concentration if the PCBs are spilled or released from a source not authorized for use under this part. PCB remediation waste means soil, rags, and other debris generated as a result of any PCB spill cleanup, including, but not limited to:

(1) Environmental media containing PCBs, such as soil and gravel; *dredged materials*, such as sediments, settled sediment fines, and aqueous decantate from sediment (Emphasis added)".

# ATTACHMENT E

## STATISTICAL ANALYSIS FOR APPLICABLE ANALYTICAL DATA

STATISTICAL ANALYSIS

| | |
|---|---|
| Generator Name | SD Bay Environmental Restoration Fund – South Trust |
| Site Address: Physical Address | 2798 Harbor Drive |
| City State | San Diego, CA |
| Estimated Volume | 51,600 |
| # of Samples submitted | 30 |

Constituent: Chromium

| | | |
|---|---|---|
| Variance | 288.2718717 | |
| std dev | 16.97857096 | |
| Number Samples | 30 | |
| Regulatory Theshhold (Enter #) | 50 | |
| Mean | 33.46 | |
| COMPUTE "t" | -5.335098978 | |
| "t" value from table | 1.311 | |
| degrees of freedom | 29 | |
| std error of mean | 3.099848769 | +/- |
| CONFIDENCE INTERVAL | 33.462 | 4.0639 |
| DELTA | 16.538 | |
| EST # SAMPLES | 1.811513922 | |
| Upper 80% Confidence Interval | 37.53 | |

| | VALUES | SAMPLE I.D. NO.S |
|---|---|---|
| 1 | 52 | COMP-C1-TOP |
| 2 | 11.7 | COMP-C1-BOTTOM |
| 3 | 55.7 | COMP-C2-TOP |
| 4 | 16.3 | COMP-C2-BOTTOM |
| 5 | 47.1 | COMP-C3-TOP |
| 6 | 21.9 | COMP-C3-BOTTOM |
| 7 | 74.5 | COMP-C4-TOP |
| 8 | 10.1 | COMP-C4-BOTTOM |
| 9 | 37 | COMP-C5-TOP |
| 10 | 14.4 | COMP-C5-BOTTOM |
| 11 | 42.1 | COMP-C6-TOP |
| 12 | 40.6 | COMP-C6-BOTTOM |
| 13 | 62.2 | COMP-C7-TOP |
| 14 | 25.3 | COMP-C7-BOTTOM |
| 15 | 51.1 | COMP-C8-TOP |
| 16 | 25.9 | COMP-C8-BOTTOM |
| 17 | 56.9 | COMP-C9-TOP |
| 18 | 23.3 | COMP-C9-BOTTOM |
| 19 | 16.2 | COMP-C10-TOP |
| 20 | 43.6 | COMP-C10-BOTTOM |
| 21 | 36 | COMP-C11-TOP |
| 22 | 24.1 | COMP-C11-BOTTOM |
| 23 | 41.6 | COMP-C12-TOP |
| 24 | 10.9 | COMP-C12-BOTTOM |
| 25 | 32.9 | COMP-C13-TOP |
| 26 | 9.26 | COMP-C13-BOTTOM |
| 27 | 33.2 | COMP-C14-TOP |
| 28 | 25.2 | COMP-C14-BOTTOM |
| 29 | 36.7 | COMP-C15-TOP |
| 30 | 26.1 | COMP-C15-BOTTOM |
| 31 | | |
| 32 | | |
| 33 | | |
| 34 | | |
| 35 | | |
| 36 | | |
| 37 | | |
| 38 | | |

| TABULATED | |
|---|---|
| 1 | 3.078 |
| 2 | 1.886 |
| 3 | 1.638 |
| 4 | 1.533 |
| 5 | 1.476 |
| 6 | 1.44 |
| 7 | 1.415 |
| 8 | 1.397 |
| 9 | 1.393 |
| 10 | 1.372 |
| 11 | 1.363 |
| 12 | 1.356 |
| 13 | 1.35 |
| 14 | 1.345 |
| 15 | 1.341 |
| 16 | 1.337 |
| 17 | 1.333 |
| 18 | 1.33 |
| 19 | 1.328 |
| 20 | 1.325 |
| 21 | 1.323 |
| 22 | 1.321 |
| 23 | 1.319 |
| 24 | 1.318 |
| 25 | 1.316 |
| 26 | 1.315 |
| 27 | 1.314 |
| 28 | 1.313 |
| 29 | 1.311 |
| 30 | 1.31 |
| 40 | 1.303 |
| 60 | 1.296 |
| 120 | 1.289 |

Generator Signature:

Preparer's Name: Kimbrie Gobbi
Title of Preparer: Aquatic Scientist
Company: AMEC Environment & Infrastructure
Date: July 12, 2013

STATISTICAL ANALYSIS

| | |
|---|---|
| Generator Name | SD Bay Environmental Restoration Fund – South Trust |
| Constituent: | Copper |
| Site Address: Physical Address | 2798 Harbor Drive |
| City State | San Diego, CA |
| Estimated Volume | 51,600 |
| # of Samples submitted | 30 |

| | | |
|---|---|---|
| Variance | 11545.73214 | |
| std dev | 107.4510686 | |
| Number Samples | 30 | |
| Regulatory Theshhold (Enter #) | 250 | |
| Mean | 115.36 | |
| COMPUTE "t" | -6.86315791 | |
| "t" value from table | 1.311 | |
| degrees of freedom | 29 | |
| std error of mean | 19.61779137 | +/- |
| CONFIDENCE INTERVAL | 115.36 | 25.7189 |
| DELTA | 134.64 | |
| EST # SAMPLES | 1.094658504 | |
| Upper 80% Confidence Interval | 141.08 | |

Generator Signature:

Preparer's Name: Kimbrie Gobbi
Title of Preparer: Aquatic Scientist
Company: AMEC Environment & Infrastructure
Date: July 12, 2013

| | VALUES | SAMPLE I.D. NO.S |
|---|---|---|
| 1 | 119 | COMP-C1-TOP |
| 2 | 9.81 | COMP-C1-BOTTOM |
| 3 | 122 | COMP-C2-TOP |
| 4 | 14.6 | COMP-C2-BOTTOM |
| 5 | 147 | COMP-C3-TOP |
| 6 | 32.8 | COMP-C3-BOTTOM |
| 7 | 548 | COMP-C4-TOP |
| 8 | 11.4 | COMP-C4-BOTTOM |
| 9 | 203 | COMP-C5-TOP |
| 10 | 51.5 | COMP-C5-BOTTOM |
| 11 | 225 | COMP-C6-TOP |
| 12 | 248 | COMP-C6-BOTTOM |
| 13 | 153 | COMP-C7-TOP |
| 14 | 31.2 | COMP-C7-BOTTOM |
| 15 | 128 | COMP-C8-TOP |
| 16 | 33 | COMP-C8-BOTTOM |
| 17 | 130 | COMP-C9-TOP |
| 18 | 29.1 | COMP-C9-BOTTOM |
| 19 | 85.1 | COMP-C10-TOP |
| 20 | 113 | COMP-C10-BOTTOM |
| 21 | 138 | COMP-C11-TOP |
| 22 | 38.5 | COMP-C11-BOTTOM |
| 23 | 131 | COMP-C12-TOP |
| 24 | 11.2 | COMP-C12-BOTTOM |
| 25 | 79.8 | COMP-C13-TOP |
| 26 | 7.79 | COMP-C13-BOTTOM |
| 27 | 166 | COMP-C14-TOP |
| 28 | 113 | COMP-C14-BOTTOM |
| 29 | 211 | COMP-C15-TOP |
| 30 | 130 | COMP-C15-BOTTOM |
| 31 | | |
| 32 | | |
| 33 | | |
| 34 | | |
| 35 | | |
| 36 | | |
| 37 | | |
| 38 | | |

| TABULATED | |
|---|---|
| 1 | 3.078 |
| 2 | 1.886 |
| 3 | 1.638 |
| 4 | 1.533 |
| 5 | 1.476 |
| 6 | 1.44 |
| 7 | 1.415 |
| 8 | 1.397 |
| 9 | 1.393 |
| 10 | 1.372 |
| 11 | 1.363 |
| 12 | 1.356 |
| 13 | 1.35 |
| 14 | 1.345 |
| 15 | 1.341 |
| 16 | 1.337 |
| 17 | 1.333 |
| 18 | 1.33 |
| 19 | 1.328 |
| 20 | 1.325 |
| 21 | 1.323 |
| 22 | 1.321 |
| 23 | 1.319 |
| 24 | 1.318 |
| 25 | 1.316 |
| 26 | 1.315 |
| 27 | 1.314 |
| 28 | 1.313 |
| 29 | 1.311 |
| 30 | 1.31 |
| 40 | 1.303 |
| 60 | 1.296 |
| 120 | 1.289 |

**STATISTICAL ANALYSIS**

| | |
|---|---|
| Generator Name | SD Bay Environmental Restoration Fund – South Trust |
| Constituent: | Lead |
| Site Address: Physical Address | 2798 Harbor Drive |
| City State | San Diego, CA |
| Estimated Volume | 51,600 |
| # of Samples submitted | 30 |

| | | |
|---|---|---|
| Variance | 1157.903287 | |
| std dev | 34.027978 | |
| Number Samples | 30 | |
| Regulatory Theshhold (Enter #) | 50 | |
| Mean | 46.33 | |
| COMPUTE "t" | -0.591375919 | |
| "t" value from table | 1.311 | |
| degrees of freedom | 29 | |
| std error of mean | 6.212630379 | +/- |
| CONFIDENCE INTERVAL | 46.326 | 8.14476 |
| DELTA | 3.674 | |
| EST # SAMPLES | 147.4345831 | |
| Upper 80% Confidence Interval | 54.47 | |

Generator Signature: _____

Preparer's Name: Kimbrie Gobbi
Title of Preparer: Aquatic Scientist
Company: AMEC Environment & Infrastructure
Date: July 12, 2013

| | VALUES | SAMPLE I.D. NO.S |
|---|---|---|
| 1 | 57.9 | COMP-C1-TOP |
| 2 | 7.38 | COMP-C1-BOTTOM |
| 3 | 57.8 | COMP-C2-TOP |
| 4 | 10.3 | COMP-C2-BOTTOM |
| 5 | 66.5 | COMP-C3-TOP |
| 6 | 21.3 | COMP-C3-BOTTOM |
| 7 | 132 | COMP-C4-TOP |
| 8 | 6.34 | COMP-C4-BOTTOM |
| 9 | 52.7 | COMP-C5-TOP |
| 10 | 21.8 | COMP-C5-BOTTOM |
| 11 | 94.2 | COMP-C6-TOP |
| 12 | 141 | COMP-C6-BOTTOM |
| 13 | 64.7 | COMP-C7-TOP |
| 14 | 19.8 | COMP-C7-BOTTOM |
| 15 | 77.4 | COMP-C8-TOP |
| 16 | 21.1 | COMP-C8-BOTTOM |
| 17 | 64 | COMP-C9-TOP |
| 18 | 22.9 | COMP-C9-BOTTOM |
| 19 | 23.9 | COMP-C10-TOP |
| 20 | 69 | COMP-C10-BOTTOM |
| 21 | 49.8 | COMP-C11-TOP |
| 22 | 21 | COMP-C11-BOTTOM |
| 23 | 61.3 | COMP-C12-TOP |
| 24 | 6.06 | COMP-C12-BOTTOM |
| 25 | 34.4 | COMP-C13-TOP |
| 26 | 10.6 | COMP-C13-BOTTOM |
| 27 | 46 | COMP-C14-TOP |
| 28 | 36.1 | COMP-C14-BOTTOM |
| 29 | 52.8 | COMP-C15-TOP |
| 30 | 39.7 | COMP-C15-BOTTOM |
| 31 | | |
| 32 | | |
| 33 | | |
| 34 | | |
| 35 | | |
| 36 | | |
| 37 | | |
| 38 | | |

| TABULATED | |
|---|---|
| 1 | 3.078 |
| 2 | 1.886 |
| 3 | 1.638 |
| 4 | 1.533 |
| 5 | 1.476 |
| 6 | 1.44 |
| 7 | 1.415 |
| 8 | 1.397 |
| 9 | 1.393 |
| 10 | 1.372 |
| 11 | 1.363 |
| 12 | 1.356 |
| 13 | 1.35 |
| 14 | 1.345 |
| 15 | 1.341 |
| 16 | 1.337 |
| 17 | 1.333 |
| 18 | 1.33 |
| 19 | 1.328 |
| 20 | 1.325 |
| 21 | 1.323 |
| 22 | 1.321 |
| 23 | 1.319 |
| 24 | 1.318 |
| 25 | 1.316 |
| 26 | 1.315 |
| 27 | 1.314 |
| 28 | 1.313 |
| 29 | 1.311 |
| 30 | 1.31 |
| 40 | 1.303 |
| 60 | 1.296 |
| 120 | 1.289 |

STATISTICAL ANALYSIS

| | |
|---|---|
| Generator Name | SD Bay Environmental Restoration Fund – South Trust |
| Site Address: Physical Address | 2798 Harbor Drive |
| City State | San Diego, CA |
| Estimated Volume | 51,600 |
| # of Samples submitted | 30 |

Constituent: Mercury

| | | |
|---|---|---|
| Variance | 0.640722547 | |
| std dev | 0.800451465 | |
| Number Samples | 30 | |
| Regulatory Theshhold (Enter #) | 2 | |
| Mean | 0.88 | |
| COMPUTE "t" | -7.656492044 | |
| "t" value from table | 1.311 | |
| degrees of freedom | 29 | |
| std error of mean | 0.146141774 | +/- |
| CONFIDENCE INTERVAL | 0.881066667 | 0.19159 |
| DELTA | 1.118933333 | |
| EST # SAMPLES | 0.87956303 | |
| Upper 80% Confidence Interval | 1.07 | |

| | VALUES | SAMPLE I.D. NO.S |
|---|---|---|
| 1 | 1.19 | COMP-C1-TOP |
| 2 | 0.176 | COMP-C1-BOTTOM |
| 3 | 1.22 | COMP-C2-TOP |
| 4 | 0.26 | COMP-C2-BOTTOM |
| 5 | 1.09 | COMP-C3-TOP |
| 6 | 0.345 | COMP-C3-BOTTOM |
| 7 | 3.61 | COMP-C4-TOP |
| 8 | 0.109 | COMP-C4-BOTTOM |
| 9 | 0.522 | COMP-C5-TOP |
| 10 | 0.516 | COMP-C5-BOTTOM |
| 11 | 1.09 | COMP-C6-TOP |
| 12 | 2.68 | COMP-C6-BOTTOM |
| 13 | 1.27 | COMP-C7-TOP |
| 14 | 0.499 | COMP-C7-BOTTOM |
| 15 | 1.59 | COMP-C8-TOP |
| 16 | 0.573 | COMP-C8-BOTTOM |
| 17 | 2.19 | COMP-C9-TOP |
| 18 | 0.864 | COMP-C9-BOTTOM |
| 19 | 0.153 | COMP-C10-TOP |
| 20 | 1.27 | COMP-C10-BOTTOM |
| 21 | 0.866 | COMP-C11-TOP |
| 22 | 0.776 | COMP-C11-BOTTOM |
| 23 | 1.15 | COMP-C12-TOP |
| 24 | 0.203 | COMP-C12-BOTTOM |
| 25 | 0.544 | COMP-C13-TOP |
| 26 | 0.119 | COMP-C13-BOTTOM |
| 27 | 0.322 | COMP-C14-TOP |
| 28 | 0.201 | COMP-C14-BOTTOM |
| 29 | 0.562 | COMP-C15-TOP |
| 30 | 0.472 | COMP-C15-BOTTOM |
| 31 | | |
| 32 | | |
| 33 | | |
| 34 | | |
| 35 | | |
| 36 | | |
| 37 | | |
| 38 | | |

| TABULATED | |
|---|---|
| 1 | 3.078 |
| 2 | 1.886 |
| 3 | 1.638 |
| 4 | 1.533 |
| 5 | 1.476 |
| 6 | 1.44 |
| 7 | 1.415 |
| 8 | 1.397 |
| 9 | 1.393 |
| 10 | 1.372 |
| 11 | 1.363 |
| 12 | 1.356 |
| 13 | 1.35 |
| 14 | 1.345 |
| 15 | 1.341 |
| 16 | 1.337 |
| 17 | 1.333 |
| 18 | 1.33 |
| 19 | 1.328 |
| 20 | 1.325 |
| 21 | 1.323 |
| 22 | 1.321 |
| 23 | 1.319 |
| 24 | 1.318 |
| 25 | 1.316 |
| 26 | 1.315 |
| 27 | 1.314 |
| 28 | 1.313 |
| 29 | 1.311 |
| 30 | 1.31 |
| 40 | 1.303 |
| 60 | 1.296 |
| 120 | 1.289 |

Generator Signature: _____

Preparer's Name: Kimbrie Gobbi
Title of Preparer: Aquatic Scientist
Company: AMEC Environment & Infrastructure
Date: July 12, 2013

Calscience Environmental Laboratories, Inc.

# CALSCIENCE

## WORK ORDER NUMBER: 13-04-1004

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard Sediment Study

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 06/20/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

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Work Order Number: 13-04-1004


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Calscience Environmental Laboratories, Inc.

# CASE NARRATIVE

## Calscience Work Order No.: 13-04-1004
## Project ID: NASSCO Shipyard Sediment Study

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

Ten sediment samples were received for this project on April 12, 2013. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 1.6°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in freezers pending chemistry testing.

On June 12, 2013 samples were composited into two samples as per client instructions.

COC discrepancies were noted in the Sample Anomaly Form.

***Tests Performed***

The two composite samples were analyzed for the following analyses:

C8-C40 by EPA 8015B (M)
C4-C12 by EPA 8015B (M)
Title 22 Metals by EPA 6010B
Mercury by EPA 7471A
PCB Aroclors by EPA 8082

***Data Summary***

<u>Holding times</u>

All samples were analyzed past the EPA recommended holding times for TPH C4-12, TPH-C8-40, PCB Aroclors and Mercury. However, all samples were frozen (-20 °C) upon receipt at the laboratory and remained in that condition until sample preparation/analysis. Per the Puget Sound Protocol (and other references), which states the holding time for sediments may be extended up to one year if kept frozen after collection, the samples were analyzed within the allowable one year holding time. In addition, PCBs are known to be very stable compounds, and SW-846 Ch.4, Table 4-1 (Rev. 4) lists “None” as the recommended holding time for PCBs. However, because the samples were analyzed outside of normal EPA hold times, the data is flagged as such.

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Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

Concentrations of target analytes in the method blank were found to be below reporting limits for all analyses.

Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the MDL, and where applicable, "J" flags were reported.

Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test. All parameters were within established control limits.

Matrix Spikes

Matrix spikes and matrix spike duplicates were performed for each applicable analysis on project samples. All parameters were within the acceptable control limits unless otherwise noted.

For C8-C40 by EPA 8015B (M) matrix spike and matrix spike duplicate RPD was outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

For Title 22 Metals by EPA 6010B matrix spike and/or matrix spike duplicate recoveries were outside the established control limits for antimony and barium. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action. The concentrations of copper and zinc in the sample were over four times the spike amount, therefore the recoveries could not be calculated.

For PCB Aroclors by EPA 8082 matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

Surrogates

Surrogate recoveries for all applicable tests and samples were within acceptable control limits. With the following exceptions:

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For PCB Aroclors by EPA 8082 the decachlorobiphenyl in sample 11 was out of acceptance limits.

Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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Calscience Environmental Laboratories, Inc.

# Work Order Narrative

Work Order: 13-04-1004



**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/12/13. They were assigned to Work Order 13-04-1004.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with an immediate holding time (HT </= 15 minutes --40CFR-136.3 Table II footnote 4), is considered a "field" test and reported samples results are not flagged unless the analysis is performed beyond 24 hours of the time of collection.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Calscience Environmental Laboratories, Inc.

# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC<br>27201 Puerta Real, Suite 350<br>Mission Viejo, CA 92691-8306 | Work Order: | 13-04-1004 |
| | | Project Name: | NASSCO South Shipyard Sediment Study |
| | | PO Number: | |
| | | Date Received: | 04/12/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| SD-S-P-NASC01-0001 | 13-04-1004-1 | 04/11/13 13:35 | 3 | Sediment |
| SD-S-P-NASC01-0102 | 13-04-1004-2 | 04/11/13 13:35 | 3 | Sediment |
| SD-S-P-NASC01-0203 | 13-04-1004-3 | 04/11/13 13:35 | 3 | Sediment |
| SD-S-P-NASC01-0304 | 13-04-1004-4 | 04/11/13 13:35 | 3 | Sediment |
| SD-S-P-NASC01-0405 | 13-04-1004-5 | 04/11/13 13:35 | 3 | Sediment |
| SD-S-P-NASC01-0506 | 13-04-1004-6 | 04/11/13 13:35 | 3 | Sediment |
| SD-S-P-NASC01-0607 | 13-04-1004-7 | 04/11/13 13:35 | 3 | Sediment |
| SD-S-P-NASC01-0708 | 13-04-1004-8 | 04/11/13 13:35 | 3 | Sediment |
| SD-S-P-NASC01-0809 Plug | 13-04-1004-9 | 04/11/13 13:35 | 1 | Sediment |
| SD-S-P-NASC01-Comp | 13-04-1004-10 | 04/11/13 13:35 | 1 | Sediment |
| COMP-C1-TOP | 13-04-1004-11 | 04/11/13 13:35 | 1 | Sediment |
| COMP-C1-BOTTOM | 13-04-1004-12 | 04/11/13 13:35 | 1 | Sediment |

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1004 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C1-TOP** | **13-04-1004-11-A** | **04/11/13 13:35** | **Sediment** | **GC 50** | **06/12/13** | **06/15/13 02:50** | **130612B13** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | 3.5 | 5.0 | 2.4 | 1 | J |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | 2.8 | 5.0 | 1.8 | 1 | J |
| C15-C16 | 5.1 | 5.0 | 1.8 | 1 | |
| C17-C18 | 7.4 | 5.0 | 1.8 | 1 | |
| C19-C20 | 5.5 | 5.0 | 1.8 | 1 | |
| C21-C22 | 5.6 | 5.0 | 1.8 | 1 | |
| C23-C24 | 3.6 | 5.0 | 1.7 | 1 | J |
| C25-C28 | 7.8 | 5.0 | 2.4 | 1 | |
| C29-C32 | 10 | 5.0 | 2.4 | 1 | |
| C33-C36 | 6.3 | 5.0 | 2.6 | 1 | |
| C37-C40 | 3.6 | 5.0 | 1.6 | 1 | J |
| C8-C40 Total | 62 | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 98 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1004 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C1-BOTTOM** | **13-04-1004-12-A** | **04/11/13 13:35** | **Sediment** | **GC 50** | **06/12/13** | **06/15/13 03:09** | **130612B13** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | ND | 5.0 | 1.8 | 1 | |
| C19-C20 | ND | 5.0 | 1.8 | 1 | |
| C21-C22 | ND | 5.0 | 1.8 | 1 | |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | ND | 5.0 | 2.4 | 1 | |
| C29-C32 | ND | 5.0 | 2.4 | 1 | |
| C33-C36 | ND | 5.0 | 2.6 | 1 | |
| C37-C40 | ND | 5.0 | 1.6 | 1 | |
| C8-C40 Total | ND | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 97 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1004 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-15-500-16** | **N/A** | **Soil** | **GC 50** | **06/12/13** | **06/14/13 22:59** | **130612B13** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | ND | 5.0 | 1.8 | 1 | |
| C19-C20 | ND | 5.0 | 1.8 | 1 | |
| C21-C22 | ND | 5.0 | 1.8 | 1 | |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | ND | 5.0 | 2.4 | 1 | |
| C29-C32 | ND | 5.0 | 2.4 | 1 | |
| C33-C36 | ND | 5.0 | 2.6 | 1 | |
| C37-C40 | ND | 5.0 | 1.6 | 1 | |
| C8-C40 Total | ND | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 98 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1004 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C1-TOP** | **13-04-1004-11-A** | **04/11/13 13:35** | **Sediment** | **GC 4** | **06/13/13** | **06/14/13 03:29** | **130613B02** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | 0.35 | 0.50 | 0.15 | 1 | J |
| C11-C12 | 1.0 | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | 1.4 | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 87 | 42-126 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C1-BOTTOM** | **13-04-1004-12-A** | **04/11/13 13:35** | **Sediment** | **GC 4** | **06/13/13** | **06/14/13 08:58** | **130613B02** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 86 | 42-126 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1004 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-13-045-161** | **N/A** | **Soil** | **GC 4** | **06/13/13** | **06/14/13 00:44** | **130613B02** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 85 | 42-126 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1004 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C1-TOP** | **13-04-1004-11-A** | **04/11/13 13:35** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:31** | **130612L07** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 6.38 | 0.750 | 0.259 | 1 | |
| Barium | 77.7 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.305 | 0.250 | 0.137 | 1 | |
| Cadmium | 2.29 | 0.500 | 0.135 | 1 | |
| Chromium | 52.0 | 0.250 | 0.142 | 1 | |
| Cobalt | 5.28 | 0.250 | 0.148 | 1 | |
| Copper | 119 | 0.500 | 0.135 | 1 | |
| Lead | 57.9 | 0.500 | 0.132 | 1 | |
| Molybdenum | 2.00 | 0.250 | 0.132 | 1 | |
| Nickel | 12.1 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | 2.13 | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 39.6 | 0.250 | 0.141 | 1 | |
| Zinc | 212 | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1004 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C1-BOTTOM** | **13-04-1004-12-A** | **04/11/13 13:35** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:40** | **130612L07** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 6.82 | 0.750 | 0.259 | 1 | |
| Barium | 39.2 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.208 | 0.250 | 0.137 | 1 | J |
| Cadmium | 0.322 | 0.500 | 0.135 | 1 | J |
| Chromium | 11.7 | 0.250 | 0.142 | 1 | |
| Cobalt | 4.43 | 0.250 | 0.148 | 1 | |
| Copper | 9.81 | 0.500 | 0.135 | 1 | |
| Lead | 7.38 | 0.500 | 0.132 | 1 | |
| Molybdenum | ND | 0.250 | 0.132 | 1 | |
| Nickel | 3.96 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | 0.117 | 0.250 | 0.0857 | 1 | J |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 31.2 | 0.250 | 0.141 | 1 | |
| Zinc | 31.3 | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1004 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-01-002-16918** | **N/A** | **Soil** | **ICP 7300** | **06/12/13** | **06/13/13 23:15** | **130612L07** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | ND | 0.750 | 0.259 | 1 | |
| Barium | ND | 0.500 | 0.154 | 1 | |
| Beryllium | ND | 0.250 | 0.137 | 1 | |
| Cadmium | ND | 0.500 | 0.135 | 1 | |
| Chromium | ND | 0.250 | 0.142 | 1 | |
| Cobalt | ND | 0.250 | 0.148 | 1 | |
| Copper | ND | 0.500 | 0.135 | 1 | |
| Lead | ND | 0.500 | 0.132 | 1 | |
| Molybdenum | ND | 0.250 | 0.132 | 1 | |
| Nickel | ND | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | ND | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | ND | 0.250 | 0.141 | 1 | |
| Zinc | ND | 1.00 | 0.178 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1004 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C1-TOP** | **13-04-1004-11-A** | **04/11/13 13:35** | **Sediment** | **Mercury** | **06/13/13** | **06/13/13 11:45** | **130613L01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 1.19 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C1-BOTTOM** | **13-04-1004-12-A** | **04/11/13 13:35** | **Sediment** | **Mercury** | **06/13/13** | **06/13/13 11:52** | **130613L01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.176 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-04-007-9360** | **N/A** | **Soil** | **Mercury** | **06/13/13** | **06/13/13 10:44** | **130613L01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | ND | 0.0835 | 0.00588 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1004 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C1-TOP** | **13-04-1004-11-A** | **04/11/13 13:35** | **Sediment** | **GC 31** | **06/13/13** | **06/18/13 14:30** | **130613L14** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 50 | 14 | 5 | |
| Aroclor-1221 | ND | 50 | 13 | 5 | |
| Aroclor-1232 | ND | 50 | 11 | 5 | |
| Aroclor-1242 | ND | 50 | 12 | 5 | |
| Aroclor-1248 | 96 | 50 | 14 | 5 | |
| Aroclor-1254 | 230 | 50 | 12 | 5 | |
| Aroclor-1260 | 120 | 50 | 12 | 5 | |
| Aroclor-1262 | ND | 50 | 12 | 5 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 61 | 50-130 | |
| Decachlorobiphenyl | 147 | 50-130 | 1,2,7 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C1-BOTTOM** | **13-04-1004-12-A** | **04/11/13 13:35** | **Sediment** | **GC 31** | **06/13/13** | **06/18/13 14:49** | **130613L14** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | ND | 10 | 2.9 | 1 | |
| Aroclor-1254 | ND | 10 | 2.4 | 1 | |
| Aroclor-1260 | ND | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 68 | 50-130 | |
| Decachlorobiphenyl | 96 | 50-130 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1004 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-12-565-340** | **N/A** | **Soil** | **GC 31** | **06/13/13** | **06/18/13 10:40** | **130613L14** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | ND | 10 | 2.9 | 1 | |
| Aroclor-1254 | ND | 10 | 2.4 | 1 | |
| Aroclor-1260 | ND | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 80 | 50-130 | |
| Decachlorobiphenyl | 86 | 50-130 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1004 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **GC 50** | **06/12/13** | **06/14/13 23:37** | **130612S13** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| TPH as Diesel | 102.5 | 400.0 | 431.9 | 82 | 362.1 | 65 | 64-130 | 18 | 0-15 | 4 |

RPD: Relative Percent Difference. CL: Control Limits



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# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1004 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **COMP-C1-TOP** | **Sediment** | **GC 4** | **06/13/13** | **06/14/13 04:02** | **130613S03** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| GRO (C4-C12) Total | 1.375 | 10.00 | 6.343 | 50 | 6.357 | 50 | 48-114 | 0 | 0-25 | |

RPD: Relative Percent Difference. CL: Control Limits



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# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1004 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **COMP-C1-TOP** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:35** | **130612S07** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 5.156 | 21 | 4.888 | 20 | 50-115 | 5 | 0-20 | 3 |
| Arsenic | 6.382 | 25.00 | 30.80 | 98 | 31.62 | 101 | 75-125 | 3 | 0-20 | |
| Barium | 77.69 | 25.00 | 94.87 | 69 | 96.62 | 76 | 75-125 | 2 | 0-20 | 3 |
| Beryllium | 0.3050 | 25.00 | 26.76 | 106 | 26.91 | 106 | 75-125 | 1 | 0-20 | |
| Cadmium | 2.288 | 25.00 | 27.48 | 101 | 27.65 | 101 | 75-125 | 1 | 0-20 | |
| Chromium | 52.02 | 25.00 | 74.33 | 89 | 75.67 | 95 | 75-125 | 2 | 0-20 | |
| Cobalt | 5.278 | 25.00 | 31.48 | 105 | 31.77 | 106 | 75-125 | 1 | 0-20 | |
| Copper | 119.0 | 25.00 | 135.0 | 4X | 139.8 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 57.88 | 25.00 | 83.51 | 103 | 77.28 | 78 | 75-125 | 8 | 0-20 | |
| Molybdenum | 2.003 | 25.00 | 22.60 | 82 | 22.75 | 83 | 75-125 | 1 | 0-20 | |
| Nickel | 12.13 | 25.00 | 37.27 | 101 | 37.84 | 103 | 75-125 | 2 | 0-20 | |
| Selenium | ND | 25.00 | 22.86 | 91 | 23.59 | 94 | 75-125 | 3 | 0-20 | |
| Silver | 2.133 | 12.50 | 14.64 | 100 | 14.64 | 100 | 75-125 | 0 | 0-20 | |
| Thallium | ND | 25.00 | 18.96 | 76 | 20.36 | 81 | 75-125 | 7 | 0-20 | |
| Vanadium | 39.62 | 25.00 | 62.66 | 92 | 64.14 | 98 | 75-125 | 2 | 0-20 | |
| Zinc | 212.5 | 25.00 | 224.3 | 4X | 232.0 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1004 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **COMP-C1-TOP** | **Sediment** | **Mercury** | **06/13/13** | **06/13/13 12:04** | **130613S01** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 1.188 | 0.8350 | 2.244 | 126 | 2.199 | 121 | 71-137 | 2 | 0-14 | |

RPD: Relative Percent Difference. CL: Control Limits



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# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1004 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **COMP-C1-TOP** | **Sediment** | **GC 31** | **06/13/13** | **06/18/13 16:24** | **130613S14** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | ND | 20.00 | 40.46 | 202 | 37.69 | 188 | 50-135 | 7 | 0-25 | 3 |
| Aroclor-1260 | 123.4 | 20.00 | 90.85 | 0 | 90.65 | 0 | 50-135 | 0 | 0-25 | 3 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - PDS/PDSD

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1004 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | PDS/PDSD Batch Number |
|---|---|---|---|---|---|
| **COMP-C1-TOP** | **Sediment** | **ICP 7300** | **06/12/13 00:00** | **06/14/13 11:38** | **130612S07** |

| Parameter | Sample Conc. | Spike Added | PDS Conc. | PDS %Rec. | PDSD Conc. | PDSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 24.28 | 97 | 24.90 | 100 | 75-125 | 3 | 0-20 | |
| Arsenic | 6.382 | 25.00 | 31.90 | 102 | 31.54 | 101 | 75-125 | 1 | 0-20 | |
| Barium | 77.69 | 25.00 | 103.9 | 105 | 103.8 | 104 | 75-125 | 0 | 0-20 | |
| Beryllium | 0.3050 | 25.00 | 26.15 | 103 | 26.17 | 103 | 75-125 | 0 | 0-20 | |
| Cadmium | 2.288 | 25.00 | 27.00 | 99 | 26.98 | 99 | 75-125 | 0 | 0-20 | |
| Chromium | 52.02 | 25.00 | 76.25 | 97 | 76.16 | 97 | 75-125 | 0 | 0-20 | |
| Cobalt | 5.278 | 25.00 | 31.07 | 103 | 31.32 | 104 | 75-125 | 1 | 0-20 | |
| Copper | 119.0 | 25.00 | 144.2 | 4X | 143.8 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 57.88 | 25.00 | 81.45 | 94 | 82.11 | 97 | 75-125 | 1 | 0-20 | |
| Molybdenum | 2.003 | 25.00 | 26.24 | 97 | 26.48 | 98 | 75-125 | 1 | 0-20 | |
| Nickel | 12.13 | 25.00 | 37.35 | 101 | 37.74 | 102 | 75-125 | 1 | 0-20 | |
| Selenium | ND | 25.00 | 23.15 | 93 | 23.94 | 96 | 75-125 | 3 | 0-20 | |
| Silver | 2.133 | 12.50 | 15.06 | 103 | 15.05 | 103 | 75-125 | 0 | 0-20 | |
| Thallium | ND | 25.00 | 22.31 | 89 | 23.20 | 93 | 75-125 | 4 | 0-20 | |
| Vanadium | 39.62 | 25.00 | 63.75 | 97 | 63.75 | 97 | 75-125 | 0 | 0-20 | |
| Zinc | 212.5 | 25.00 | 236.1 | 4X | 236.6 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1004 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-15-500-16** | **Soil** | **GC 50** | **06/14/13 23:19** | **130612B13** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| TPH as Diesel | 400.0 | 346.7 | 87 | 75-123 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1004 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-13-045-161** | **Soil** | **GC 4** | **06/14/13 01:17** | **130613B02** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| GRO (C4-C12) Total | 10.00 | 9.893 | 99 | 70-124 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1004 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **097-01-002-16918** | **Soil** | **ICP 7300** | **06/13/13 23:23** | **130612L07** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | ME CL | Qualifiers |
|---|---|---|---|---|---|---|
| Antimony | 25.00 | 25.66 | 103 | 80-120 | 73-127 | |
| Arsenic | 25.00 | 25.77 | 103 | 80-120 | 73-127 | |
| Barium | 25.00 | 27.89 | 112 | 80-120 | 73-127 | |
| Beryllium | 25.00 | 25.57 | 102 | 80-120 | 73-127 | |
| Cadmium | 25.00 | 26.51 | 106 | 80-120 | 73-127 | |
| Chromium | 25.00 | 26.27 | 105 | 80-120 | 73-127 | |
| Cobalt | 25.00 | 27.42 | 110 | 80-120 | 73-127 | |
| Copper | 25.00 | 25.16 | 101 | 80-120 | 73-127 | |
| Lead | 25.00 | 26.54 | 106 | 80-120 | 73-127 | |
| Molybdenum | 25.00 | 26.03 | 104 | 80-120 | 73-127 | |
| Nickel | 25.00 | 28.35 | 113 | 80-120 | 73-127 | |
| Selenium | 25.00 | 24.44 | 98 | 80-120 | 73-127 | |
| Silver | 12.50 | 13.34 | 107 | 80-120 | 73-127 | |
| Thallium | 25.00 | 26.22 | 105 | 80-120 | 73-127 | |
| Vanadium | 25.00 | 25.55 | 102 | 80-120 | 73-127 | |
| Zinc | 25.00 | 27.93 | 112 | 80-120 | 73-127 | |

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1004 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-04-007-9360** | **Soil** | **Mercury** | **06/13/13 10:49** | **130613L01** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.8350 | 0.7904 | 95 | 85-121 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1004 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-12-565-340** | **Soil** | **GC 31** | **06/18/13 10:59** | **130613L14** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | 20.00 | 18.98 | 95 | 50-135 | |
| Aroclor-1260 | 20.00 | 15.42 | 77 | 50-135 | |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order: 13-04-1004



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| 4 | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range. |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

For any analysis identified as a "field" test with a holding time (HT) </= 15 minutes where the sample is received outside of HT, Calscience will adhere to its internal HT of 24 hours. In cases where sample analysis does not meet Calscience's internal HT, results will be appropriately qualified.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/11/2013

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure
ADDRESS: 9210 Sky Park Ct. Ste 200
CITY: San Diego, California 92123
TEL: 858-300-4300 FAX: 858-300-4301 E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study
P.O. NO.: 1315100800
PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder
QUOTE NO.:
SAMPLER(S): (SIGNATURE)
LAB USE ONLY: 13-04-1004

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS
Please HOLD samples. 1x 16 oz per sample
DO NOT FREEZE COMPOSITE SAMPLES. HOLD FOR GEOTECHNICAL.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | HOLD |
|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASCØ1-0001 | | 4/11/2013 | 1335 | sed | 3 | | X |
| 2 | SD-S-P-NASCØ1-0102 | | 4/11/2013 | | sed | 3 | | X |
| 3 | SD-S-P-NASCØ1-0203 | | 4/11/2013 | | sed | 3 | | X |
| 4 | SD-S-P-NASCØ1-0304 | | 4/11/2013 | | sed | 3 | | X |
| 5 | SD-S-P-NASCØ1-0405 | | 4/11/2013 | | sed | 3 | | X |
| 6 | SD-S-P-NASCØ1-0506 | | 4/11/2013 | | sed | 3 | | X |
| 7 | SD-S-P-NASCØ1-0607 | | 4/11/2013 | | sed | 3 | | X |
| 8 | SD-S-P-NASCØ1-0708 | | 4/11/2013 | | sed | 3 | | X |
| 9 | SD-S-P-NASCØ1-0809 plug | | 4/11/2013 | | sed | 3 | | X |
| 10 | SD-S-P-NASCØ1-Comp | | 4/11/2013 | | sed | 3 | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | | 04/12/13 | 1545 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| | | 04/12/13 | 1900 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|
| NAS-C1 | | | | |
| SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| SD-S-P-NASC1-0102 | | | | |
| SD-S-P-NASC1-0203 | | | | |
| SD-S-P-NASC1-0304 | | | | |
| SD-S-P-NASC1-0405 | | | | |
| SD-S-P-NASC1-0506 | | | | BOTTOM |
| SD-S-P-NASC1-0607 | | | | |
| SD-S-P-NASC1-0708 | | | | |
| SD-S-P-NASC1-0809 | | | | |
| NAS-C2 | | | | |
| SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| SD-S-P-NASC2-0102 | | | | |
| SD-S-P-NASC2-0203 | | | | |
| SD-S-P-NASC2-0304 | | | | |
| SD-S-P-NASC2-0405 | | | | |
| SD-S-P-NASC2-0506 | | | | BOTTOM |
| SD-S-P-NASC2-0607 | | | | |
| SD-S-P-NASC2-0708 | | | | |
| SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | |
| SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| SD-S-P-NASC3-0102 | | | | |
| SD-S-P-NASC3-0203 | | | | |
| SD-S-P-NASC3-0304 | | | | |
| SD-S-P-NASC3-0405 | | | | |
| SD-S-P-NASC3-0506 | | | | BOTTOM |
| SD-S-P-NASC3-0607 | | | | |
| SD-S-P-NASC3-0708 | | | | |
| SD-S-P-NASC3-0809 | | | | |
| SD-S-P-NASC3-0910 | | | | |
| SD-S-P-NASC3-0910-PLUG | | | | not included[c] |
| NAS-C4 | | | | |
| SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| SD-S-P-NASC4-0102 | | | | |
| SD-S-P-NASC4-0203 | | | | |
| SD-S-P-NASC4-0304 | | | | |
| SD-S-P-NASC4-0405 | | | | |
| SD-S-P-NASC4-0506 | | | | BOTTOM |
| SD-S-P-NASC4-0607 | | | | |
| SD-S-P-NASC4-0708 | | | | |
| SD-S-P-NASC4-0809 | | | | |
| SD-S-P-NASC4-0910 | | | | |
| SD-S-P-NASC4-0910-PLUG | | | | not included[c] |
| NAS-C5 | | | | |
| SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| SD-S-P-NASC5-0102 | | | | |
| SD-S-P-NASC5-0203 | | | | |
| SD-S-P-NASC5-0304 | | | | BOTTOM |
| SD-S-P-NASC5-0405 | | | | |
| SD-S-P-NASC5-0506-PLUG | | | | not included[c] |
| NAS-C6 | | | | |
| SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| SD-S-P-NASC6-0102 | | | | |
| SD-S-P-NASC6-0203 | | | | BOTTOM |
| SD-S-P-NASC6-0304-PLUG | | | | not included[c] |
| NAS-C7 | | | | |
| SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| SD-S-P-NASC7-0102 | | | | |
| SD-S-P-NASC7-0203 | | | | |
| SD-S-P-NASC7-0304 | | | | |
| SD-S-P-NASC7-0405 | | | | BOTTOM |
| SD-S-P-NASC7-0506 | | | | |
| SD-S-P-NASC7-0607 | | | | |
| SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | |
| SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| SD-S-P-NASC8-0102 | | | | |
| SD-S-P-NASC8-0203 | | | | |
| SD-S-P-NASC8-0304 | | | | |
| SD-S-P-NASC8-0405 | | | | |
| SD-S-P-NASC8-0506 | | | | BOTTOM |
| SD-S-P-NASC8-0607 | | | | |
| SD-S-P-NASC8-0708 | | | | |
| SD-S-P-NASC8-0809 | | | | |
| SD-S-P-NASC8-0910 | | | | |
| SD-S-P-NASC8-0910-PLUG | | | | not included[c] |
| NAS-C9 | | | | |
| SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| SD-S-P-NASC9-0102 | | | | |
| SD-S-P-NASC9-0203 | | | | |
| SD-S-P-NASC9-0304 | | | | |
| SD-S-P-NASC9-0405 | | | | BOTTOM |
| SD-S-P-NASC9-0506 | | | | |
| SD-S-P-NASC9-0607 | | | | |
| NAS-C10 | | | | |
| SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| SD-S-P-NASC10-0102 | | | | |
| SD-S-P-NASC10-0203 | | | | |
| SD-S-P-NASC10-0304 | | | | BOTTOM |
| SD-S-P-NASC10-0405 | | | | |
| SD-S-P-NASC10-0506 | | | | |
| SD-S-P-NASC10-0607 | | | | |
| SD-S-P-NASC10-0708 | | | | |
| NAS-C11 | | | | |
| SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| SD-S-P-NASC11-0102 | | | | |
| SD-S-P-NASC11-0203 | | | | |
| SD-S-P-NASC11-0304 | | | | |
| SD-S-P-NASC11-0405 | | | | BOTTOM |
| SD-S-P-NASC11-0506 | | | | |
| SD-S-P-NASC11-0607 | | | | |
| SD-S-P-NASC11-0708 | | | | |
| SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | |
| SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| SD-S-P-NASC12-0102 | | | | |
| SD-S-P-NASC12-0203 | | | | |
| SD-S-P-NASC12-0304 | | | | |
| SD-S-P-NASC12-0405 | | | | BOTTOM |
| SD-S-P-NASC12-0506 | | | | |
| SD-S-P-NASC12-0607 | | | | |
| SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | |
| SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| SD-S-P-NASC13-0102 | | | | |
| SD-S-P-NASC13-0203 | | | | |
| SD-S-P-NASC13-0304 | | | | BOTTOM |
| SD-S-P-NASC13-0405 | | | | |
| SD-S-P-NASC13-0506 | | | | |
| SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | |
| SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| SD-S-P-NASC14-0102 | | | | |
| SD-S-P-NASC14-0203 | | | | BOTTOM |
| SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | |
| SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| SD-S-P-NASC15-0102 | | | | |
| SD-S-P-NASC15-0203 | | | | |
| SD-S-P-NASC15-0304 | | | | BOTTOM |
| SD-S-P-NASC15-0405 | | | | |
| SD-S-P-NASC15-0506 | | | | |

Notes:
0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on
a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.
b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.
A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)
c - sample not included due to low volume available and because it represents native material which will not be dredged



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| ~~13-04-1000-1~~ | ~~SD-S-P-NASC1-0001~~ | COMP-A | 4/11/2013 | 1335 | TOP |
| ~~13-04-1000-2~~ | ~~SD-S-P-NASC1-0102~~ | | | | |
| ~~13-04-1000-3~~ | ~~SD-S-P-NASC1-0203~~ | | | | |
| ~~13-04-1000-4~~ | ~~SD-S-P-NASC1-0304~~ | | | | |
| ~~13-04-1000-5~~ | ~~SD-S-P-NASC1-0405~~ | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| ~~13-04-1111-1~~ | ~~SD-S-P-NASC2-0001~~ | COMP-A | 4/12/2013 | 1021 | TOP |
| ~~13-04-1111-2~~ | ~~SD-S-P-NASC2-0102~~ | | | | |
| ~~13-04-1111-3~~ | ~~SD-S-P-NASC2-0203~~ | | | | |
| ~~13-04-1111-4~~ | ~~SD-S-P-NASC2-0304~~ | | | | |
| ~~13-04-1111-5~~ | ~~SD-S-P-NASC2-0405~~ | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| ~~13-04-1113-1~~ | ~~SD-S-P-NASC3-0001~~ | COMP-A | 4/12/2013 | 751 | TOP |
| ~~13-04-1113-2~~ | ~~SD-S-P-NASC3-0102~~ | | | | |
| ~~13-04-1113-3~~ | ~~SD-S-P-NASC3-0203~~ | | | | |
| ~~13-04-1113-4~~ | ~~SD-S-P-NASC3-0304~~ | | | | |
| ~~13-04-1113-5~~ | ~~SD-S-P-NASC3-0405~~ | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| ~~13-04-1002-1~~ | ~~SD-S-P-NASC4-0001~~ | COMP-A | 4/11/2013 | 930 | TOP |
| ~~13-04-1002-2~~ | ~~SD-S-P-NASC4-0102~~ | | | | |
| ~~13-04-1002-3~~ | ~~SD-S-P-NASC4-0203~~ | | | | |
| ~~13-04-1002-4~~ | ~~SD-S-P-NASC4-0304~~ | | | | |
| ~~13-04-1002-5~~ | ~~SD-S-P-NASC4-0405~~ | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| ~~13-04-1003-1~~ | ~~SD-S-P-NASC5-0001~~ | COMP-A | 4/11/2013 | 755 | TOP |
| ~~13-04-1003-2~~ | ~~SD-S-P-NASC5-0102~~ | | | | |
| ~~13-04-1003-3~~ | ~~SD-S-P-NASC5-0203~~ | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| ~~13-04-1001-1~~ | ~~SD-S-P-NASC6-0001~~ | COMP-B | 4/11/2013 | 1200 | TOP |
| ~~13-04-1001-2~~ | ~~SD-S-P-NASC6-0102~~ | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| ~~13-04-0902-1~~ | ~~SD-S-P-NASC7-0001~~ | COMP-B | 4/10/2013 | 1430 | TOP |
| ~~13-04-0902-2~~ | ~~SD-S-P-NASC7-0102~~ | | | | |
| ~~13-04-0902-3~~ | ~~SD-S-P-NASC7-0203~~ | | | | |
| ~~13-04-0902-4~~ | ~~SD-S-P-NASC7-0304~~ | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| ~~13-04-0903-1~~ | ~~SD-S-P-NASC8-0001~~ | COMP-B | 4/10/2013 | 830 | TOP |
| ~~13-04-0903-2~~ | ~~SD-S-P-NASC8-0102~~ | | | | |
| ~~13-04-0903-3~~ | ~~SD-S-P-NASC8-0203~~ | | | | |
| ~~13-04-0903-4~~ | ~~SD-S-P-NASC8-0304~~ | | | | |
| ~~13-04-0903-5~~ | ~~SD-S-P-NASC8-0405~~ | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| ~~13-04-0901-1~~ | ~~SD-S-P-NASC9-0001~~ | COMP-B | 4/10/2013 | 1315 | TOP |
| ~~13-04-0901-2~~ | ~~SD-S-P-NASC9-0102~~ | | | | |
| ~~13-04-0901-3~~ | ~~SD-S-P-NASC9-0203~~ | | | | |
| ~~13-04-0901-4~~ | ~~SD-S-P-NASC9-0304~~ | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607-PLUG~~ | | | | |
| NAS-C10 | | | | | |
| ~~13-04-0904-1~~ | ~~SD-S-P-NASC10-0001~~ | COMP-D | 4/10/2013 | 1010 | TOP |
| ~~13-04-0904-2~~ | ~~SD-S-P-NASC10-0102~~ | | | | |
| ~~13-04-0904-3~~ | ~~SD-S-P-NASC10-0203~~ | | | | |
| ~~13-04-0904-4~~ | ~~SD-S-P-NASC10-0304~~ | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-8 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| ~~13-04-0778-1~~ | ~~SD-S-P-NASC11-0001~~ | COMP-D | 4/9/2013 | 1525 | TOP |
| ~~13-04-0778-2~~ | ~~SD-S-P-NASC11-0102~~ | | | | |
| ~~13-04-0778-3~~ | ~~SD-S-P-NASC11-0203~~ | | | | |
| ~~13-04-0778-4~~ | ~~SD-S-P-NASC11-0304~~ | | | | |
| ~~13-04-0778-5~~ | ~~SD-S-P-NASC11-0405~~ | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| ~~13-04-0780-1~~ | ~~SD-S-P-NASC12-0001~~ | COMP-D | 4/9/2013 | 1410 | TOP |
| ~~13-04-0780-2~~ | ~~SD-S-P-NASC12-0102~~ | | | | |
| ~~13-04-0780-3~~ | ~~SD-S-P-NASC12-0203~~ | | | | |
| ~~13-04-0780-4~~ | ~~SD-S-P-NASC12-0304~~ | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| ~~13-04-0781-1~~ | ~~SD-S-P-NASC13-0001~~ | COMP-E | 4/9/2013 | 1055 | TOP |
| ~~13-04-0781-2~~ | ~~SD-S-P-NASC13-0102~~ | | | | |
| ~~13-04-0781-3~~ | ~~SD-S-P-NASC13-0203~~ | | | | |
| ~~13-04-0781-4~~ | ~~SD-S-P-NASC13-0304~~ | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| ~~13-04-0782-1~~ | ~~SD-S-P-NASC14-0001~~ | COMP-E | 4/9/2013 | 815 | TOP |
| ~~13-04-0782-2~~ | ~~SD-S-P-NASC14-0102~~ | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| ~~13-04-0779-1~~ | ~~SD-S-P-NASC15-0001~~ | COMP-E | 4/9/2013 | 940 | TOP |
| ~~13-04-0779-2~~ | ~~SD-S-P-NASC15-0102~~ | | | | |
| ~~13-04-0779-3~~ | ~~SD-S-P-NASC15-0203~~ | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-1004

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/12/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

**Temperature** 1.8 °C - 0.2 °C (CF) = 1.6 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter **Initial:** BD

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A **Initial:** BD

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present **Initial:** TN

| **SAMPLE CONDITION:** | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑Z

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** TN

**Container: C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WJC

**Preservative: h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WS



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| 13-04-1004-1 | SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| 13-04-1004-2 | SD-S-P-NASC1-0102 | | | | |
| 13-04-1004-3 | SD-S-P-NASC1-0203 | | | | |
| 13-04-1004-4 | SD-S-P-NASC1-0304 | | | | |
| 13-04-1004-5 | SD-S-P-NASC1-0405 | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| 13-04-1111-1 | SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| 13-04-1111-2 | SD-S-P-NASC2-0102 | | | | |
| 13-04-1111-3 | SD-S-P-NASC2-0203 | | | | |
| 13-04-1111-4 | SD-S-P-NASC2-0304 | | | | |
| 13-04-1111-5 | SD-S-P-NASC2-0405 | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| 13-04-1113-1 | SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| 13-04-1113-2 | SD-S-P-NASC3-0102 | | | | |
| 13-04-1113-3 | SD-S-P-NASC3-0203 | | | | |
| 13-04-1113-4 | SD-S-P-NASC3-0304 | | | | |
| 13-04-1113-5 | SD-S-P-NASC3-0405 | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| 13-04-1002-1 | SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| 13-04-1002-2 | SD-S-P-NASC4-0102 | | | | |
| 13-04-1002-3 | SD-S-P-NASC4-0203 | | | | |
| 13-04-1002-4 | SD-S-P-NASC4-0304 | | | | |
| 13-04-1002-5 | SD-S-P-NASC4-0405 | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| 13-04-1003-1 | SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| 13-04-1003-2 | SD-S-P-NASC5-0102 | | | | |
| 13-04-1003-3 | SD-S-P-NASC5-0203 | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| 13-04-1001-1 | SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| 13-04-1001-2 | SD-S-P-NASC6-0102 | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| 13-04-0902-1 | SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| 13-04-0902-2 | SD-S-P-NASC7-0102 | | | | |
| 13-04-0902-3 | SD-S-P-NASC7-0203 | | | | |
| 13-04-0902-4 | SD-S-P-NASC7-0304 | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| 13-04-0903-1 | SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| 13-04-0903-2 | SD-S-P-NASC8-0102 | | | | |
| 13-04-0903-3 | SD-S-P-NASC8-0203 | | | | |
| 13-04-0903-4 | SD-S-P-NASC8-0304 | | | | |
| 13-04-0903-5 | SD-S-P-NASC8-0405 | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| 13-04-0901-1 | SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| 13-04-0901-2 | SD-S-P-NASC9-0102 | | | | |
| 13-04-0901-3 | SD-S-P-NASC9-0203 | | | | |
| 13-04-0901-4 | SD-S-P-NASC9-0304 | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607 PLUG~~ | | | | |
| NAS-C10 | | | | | |
| 13-04-0904-1 | SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| 13-04-0904-2 | SD-S-P-NASC10-0102 | | | | |
| 13-04-0904-3 | SD-S-P-NASC10-0203 | | | | |
| 13-04-0904-4 | SD-S-P-NASC10-0304 | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-9 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| 13-04-0778-1 | SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| 13-04-0778-2 | SD-S-P-NASC11-0102 | | | | |
| 13-04-0778-3 | SD-S-P-NASC11-0203 | | | | |
| 13-04-0778-4 | SD-S-P-NASC11-0304 | | | | |
| 13-04-0778-5 | SD-S-P-NASC11-0405 | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| 13-04-0780-1 | SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| 13-04-0780-2 | SD-S-P-NASC12-0102 | | | | |
| 13-04-0780-3 | SD-S-P-NASC12-0203 | | | | |
| 13-04-0780-4 | SD-S-P-NASC12-0304 | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| 13-04-0781-1 | SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| 13-04-0781-2 | SD-S-P-NASC13-0102 | | | | |
| 13-04-0781-3 | SD-S-P-NASC13-0203 | | | | |
| 13-04-0781-4 | SD-S-P-NASC13-0304 | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| 13-04-0782-1 | SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| 13-04-0782-2 | SD-S-P-NASC14-0102 | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| 13-04-0779-1 | SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| 13-04-0779-2 | SD-S-P-NASC15-0102 | | | | |
| 13-04-0779-3 | SD-S-P-NASC15-0203 | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged

Calscience Environmental Laboratories, Inc.

# CALSCIENCE

## WORK ORDER NUMBER: 13-04-1111

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard Sediment Study

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 06/20/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

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Work Order Number: 13-04-1111


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Calscience Environmental Laboratories, Inc.

# CASE NARRATIVE

## Calscience Work Order No.: 13-04-1111
## Project ID: NASSCO Shipyard Sediment Study

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

Ten sediment samples were received for this project on April 12, 2013. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 1.6°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in freezers pending chemistry testing.

On June 12, 2013 samples were composited into two samples as per client instructions.

COC discrepancies were noted in the Sample Anomaly Form.

***Tests Performed***

The two composite samples were analyzed for the following analyses:

C8-C40 by EPA 8015B (M)
C4-C12 by EPA 8015B (M)
Title 22 Metals by EPA 6010B
Mercury by EPA 7471A
PCB Aroclors by EPA 8082

***Data Summary***

<u>Holding times</u>

All samples were analyzed past the EPA recommended holding times for TPH C4-12, TPH-C8-40, PCB Aroclors and Mercury. However, all samples were frozen (-20 °C) upon receipt at the laboratory and remained in that condition until sample preparation/analysis. Per the Puget Sound Protocol (and other references), which states the holding time for sediments may be extended up to one year if kept frozen after collection, the samples were analyzed within the allowable one year holding time. In addition, PCBs are known to be very stable compounds, and SW-846 Ch.4, Table 4-1 (Rev. 4) lists “None” as the recommended holding time for PCBs. However, because the samples were analyzed outside of normal EPA hold times, the data is flagged as such.

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Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

Concentrations of target analytes in the method blank were found to be below reporting limits for all analyses.

Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the MDL, and where applicable, "J" flags were reported.

Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test. All parameters were within established control limits.

Matrix Spikes

Matrix spikes and matrix spike duplicates were performed for each applicable analysis on project samples. All parameters were within the acceptable control limits unless otherwise noted.

For C8-C40 by EPA 8015B (M) matrix spike and matrix spike duplicate RPD was outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

For Title 22 Metals by EPA 6010B matrix spike and/or matrix spike duplicate recoveries were outside the established control limits for antimony, lead, molybdenum and thallium. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action. The concentrations of copper and zinc in the sample were over four times the spike amount, therefore the recoveries could not be calculated.

For PCB Aroclors by EPA 8082 matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

Surrogates

Surrogate recoveries for all applicable tests and samples were within acceptable control limits. With the following exceptions:

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For PCB Aroclors by EPA 8082 the decachlorobiphenyl in sample 11 was out of acceptance limits.

Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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Calscience Environmental Laboratories, Inc.

# Work Order Narrative

Work Order: 13-04-1111



**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/15/13. They were assigned to Work Order 13-04-1111.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with an immediate holding time (HT </= 15 minutes --40CFR-136.3 Table II footnote 4), is considered a "field" test and reported samples results are not flagged unless the analysis is performed beyond 24 hours of the time of collection.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Calscience Environmental Laboratories, Inc.

# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC<br>27201 Puerta Real, Suite 350<br>Mission Viejo, CA 92691-8306 | Work Order: | 13-04-1111 |
| | | Project Name: | NASSCO South Shipyard Sediment Study |
| | | PO Number: | |
| | | Date Received: | 04/15/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| SD-S-P-NASC02-0001 | 13-04-1111-1 | 04/12/13 10:21 | 3 | Sediment |
| SD-S-P-NASC02-0102 | 13-04-1111-2 | 04/12/13 10:21 | 3 | Sediment |
| SD-S-P-NASC02-0203 | 13-04-1111-3 | 04/12/13 10:21 | 3 | Sediment |
| SD-S-P-NASC02-0304 | 13-04-1111-4 | 04/12/13 10:21 | 3 | Sediment |
| SD-S-P-NASC02-0405 | 13-04-1111-5 | 04/12/13 10:21 | 3 | Sediment |
| SD-S-P-NASC02-0506 | 13-04-1111-6 | 04/12/13 10:21 | 3 | Sediment |
| SD-S-P-NASC02-0607 | 13-04-1111-7 | 04/12/13 10:21 | 3 | Sediment |
| SD-S-P-NASC02-0708 | 13-04-1111-8 | 04/12/13 10:21 | 3 | Sediment |
| SD-S-P-NASC02-0809 | 13-04-1111-9 | 04/12/13 10:21 | 2 | Sediment |
| SD-S-P-NASC02-COMP | 13-04-1111-10 | 04/12/13 10:21 | 1 | Sediment |
| COMP-C2-TOP | 13-04-1111-11 | 04/12/13 10:21 | 1 | Sediment |
| COMP-C2-BOTTOM | 13-04-1111-12 | 04/12/13 10:21 | 1 | Sediment |

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1111 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C2-TOP** | **13-04-1111-11-A** | **04/12/13 10:21** | **Sediment** | **GC 50** | **06/12/13** | **06/15/13 03:48** | **130612B13** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | 44 | 50 | 24 | 10 | J |
| C9-C10 | ND | 50 | 31 | 10 | |
| C11-C12 | ND | 50 | 17 | 10 | |
| C13-C14 | ND | 50 | 18 | 10 | |
| C15-C16 | ND | 50 | 18 | 10 | |
| C17-C18 | ND | 50 | 18 | 10 | |
| C19-C20 | ND | 50 | 18 | 10 | |
| C21-C22 | 19 | 50 | 18 | 10 | J |
| C23-C24 | 23 | 50 | 17 | 10 | J |
| C25-C28 | 60 | 50 | 24 | 10 | |
| C29-C32 | 130 | 50 | 24 | 10 | |
| C33-C36 | 160 | 50 | 26 | 10 | |
| C37-C40 | 130 | 50 | 16 | 10 | |
| C8-C40 Total | 570 | 50 | 16 | 10 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 113 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1111 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C2-BOTTOM** | **13-04-1111-12-A** | **04/12/13 10:21** | **Sediment** | **GC 50** | **06/12/13** | **06/15/13 04:07** | **130612B13** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | 2.7 | 5.0 | 2.4 | 1 | J |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | ND | 5.0 | 1.8 | 1 | |
| C19-C20 | ND | 5.0 | 1.8 | 1 | |
| C21-C22 | ND | 5.0 | 1.8 | 1 | |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | ND | 5.0 | 2.4 | 1 | |
| C29-C32 | ND | 5.0 | 2.4 | 1 | |
| C33-C36 | ND | 5.0 | 2.6 | 1 | |
| C37-C40 | 1.6 | 5.0 | 1.6 | 1 | J |
| C8-C40 Total | 4.4 | 5.0 | 1.6 | 1 | J |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 94 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1111 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-15-500-16** | **N/A** | **Soil** | **GC 50** | **06/12/13** | **06/14/13 22:59** | **130612B13** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | ND | 5.0 | 1.8 | 1 | |
| C19-C20 | ND | 5.0 | 1.8 | 1 | |
| C21-C22 | ND | 5.0 | 1.8 | 1 | |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | ND | 5.0 | 2.4 | 1 | |
| C29-C32 | ND | 5.0 | 2.4 | 1 | |
| C33-C36 | ND | 5.0 | 2.6 | 1 | |
| C37-C40 | ND | 5.0 | 1.6 | 1 | |
| C8-C40 Total | ND | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 98 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1111 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C2-TOP** | **13-04-1111-11-A** | **04/12/13 10:21** | **Sediment** | **GC 4** | **06/13/13** | **06/14/13 10:37** | **130613B02** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | 0.34 | 0.50 | 0.15 | 1 | J |
| C11-C12 | 0.77 | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | 1.1 | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 88 | 42-126 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C2-BOTTOM** | **13-04-1111-12-A** | **04/12/13 10:21** | **Sediment** | **GC 4** | **06/13/13** | **06/14/13 11:10** | **130613B02** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 87 | 42-126 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1111 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-13-045-161** | **N/A** | **Soil** | **GC 4** | **06/13/13** | **06/14/13 00:44** | **130613B02** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 85 | 42-126 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1111 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C2-TOP** | **13-04-1111-11-A** | **04/12/13 10:21** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 12:08** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 6.92 | 0.750 | 0.259 | 1 | |
| Barium | 67.1 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.329 | 0.250 | 0.137 | 1 | |
| Cadmium | 2.37 | 0.500 | 0.135 | 1 | |
| Chromium | 55.7 | 0.250 | 0.142 | 1 | |
| Cobalt | 6.36 | 0.250 | 0.148 | 1 | |
| Copper | 122 | 0.500 | 0.135 | 1 | |
| Lead | 57.8 | 0.500 | 0.132 | 1 | |
| Molybdenum | 2.27 | 0.250 | 0.132 | 1 | |
| Nickel | 13.3 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | 2.27 | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 40.9 | 0.250 | 0.141 | 1 | |
| Zinc | 223 | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1111 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C2-BOTTOM** | **13-04-1111-12-A** | **04/12/13 10:21** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 12:09** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 4.15 | 0.750 | 0.259 | 1 | |
| Barium | 55.3 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.285 | 0.250 | 0.137 | 1 | |
| Cadmium | 0.377 | 0.500 | 0.135 | 1 | J |
| Chromium | 16.3 | 0.250 | 0.142 | 1 | |
| Cobalt | 5.92 | 0.250 | 0.148 | 1 | |
| Copper | 14.6 | 0.500 | 0.135 | 1 | |
| Lead | 10.3 | 0.500 | 0.132 | 1 | |
| Molybdenum | ND | 0.250 | 0.132 | 1 | |
| Nickel | 5.82 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | ND | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 38.5 | 0.250 | 0.141 | 1 | |
| Zinc | 48.6 | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1111 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-01-002-16915** | **N/A** | **Soil** | **ICP 7300** | **06/12/13** | **06/13/13 23:17** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | ND | 0.750 | 0.259 | 1 | |
| Barium | ND | 0.500 | 0.154 | 1 | |
| Beryllium | ND | 0.250 | 0.137 | 1 | |
| Cadmium | ND | 0.500 | 0.135 | 1 | |
| Chromium | ND | 0.250 | 0.142 | 1 | |
| Cobalt | ND | 0.250 | 0.148 | 1 | |
| Copper | ND | 0.500 | 0.135 | 1 | |
| Lead | ND | 0.500 | 0.132 | 1 | |
| Molybdenum | ND | 0.250 | 0.132 | 1 | |
| Nickel | ND | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | ND | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | ND | 0.250 | 0.141 | 1 | |
| Zinc | ND | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1111 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C2-TOP** | **13-04-1111-11-A** | **04/12/13 10:21** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 20:19** | **130612L05** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 1.22 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C2-BOTTOM** | **13-04-1111-12-A** | **04/12/13 10:21** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 20:21** | **130612L05** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.260 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-04-007-9353** | **N/A** | **Soil** | **Mercury** | **06/12/13** | **06/12/13 13:13** | **130612L05** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | ND | 0.0835 | 0.00588 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1111 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C2-TOP** | **13-04-1111-11-A** | **04/12/13 10:21** | **Sediment** | **GC 31** | **06/13/13** | **06/18/13 15:08** | **130613L14** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | 54 | 10 | 2.9 | 1 | |
| Aroclor-1254 | 140 | 10 | 2.4 | 1 | |
| Aroclor-1260 | 69 | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 67 | 50-130 | |
| Decachlorobiphenyl | 137 | 50-130 | 2,7 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C2-BOTTOM** | **13-04-1111-12-A** | **04/12/13 10:21** | **Sediment** | **GC 31** | **06/13/13** | **06/19/13 10:55** | **130613L14** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | 8.3 | 10 | 2.9 | 1 | J |
| Aroclor-1254 | 4.3 | 10 | 2.4 | 1 | J |
| Aroclor-1260 | 3.6 | 10 | 2.3 | 1 | J |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 77 | 50-130 | |
| Decachlorobiphenyl | 104 | 50-130 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1111 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-12-565-340** | **N/A** | **Soil** | **GC 31** | **06/13/13** | **06/18/13 10:40** | **130613L14** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | ND | 10 | 2.9 | 1 | |
| Aroclor-1254 | ND | 10 | 2.4 | 1 | |
| Aroclor-1260 | ND | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 80 | 50-130 | |
| Decachlorobiphenyl | 86 | 50-130 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1111 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **GC 50** | **06/12/13** | **06/14/13 23:37** | **130612S13** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| TPH as Diesel | 102.5 | 400.0 | 431.9 | 82 | 362.1 | 65 | 64-130 | 18 | 0-15 | 4 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1111 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-1004-11** | **Sediment** | **GC 4** | **06/13/13** | **06/14/13 04:02** | **130613S03** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| GRO (C4-C12) Total | 1.375 | 10.00 | 6.343 | 50 | 6.357 | 50 | 48-114 | 0 | 0-25 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1111 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:26** | **130612S08** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 3.137 | 13 | 4.170 | 17 | 50-115 | 28 | 0-20 | 3,4 |
| Arsenic | 7.019 | 25.00 | 31.38 | 97 | 33.08 | 104 | 75-125 | 5 | 0-20 | |
| Barium | 77.89 | 25.00 | 104.4 | 106 | 104.6 | 107 | 75-125 | 0 | 0-20 | |
| Beryllium | 0.3681 | 25.00 | 24.97 | 98 | 26.62 | 105 | 75-125 | 6 | 0-20 | |
| Cadmium | 2.118 | 25.00 | 25.41 | 93 | 27.20 | 100 | 75-125 | 7 | 0-20 | |
| Chromium | 56.89 | 25.00 | 79.48 | 90 | 83.39 | 106 | 75-125 | 5 | 0-20 | |
| Cobalt | 6.268 | 25.00 | 31.06 | 99 | 33.09 | 107 | 75-125 | 6 | 0-20 | |
| Copper | 130.4 | 25.00 | 155.7 | 4X | 154.6 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 64.02 | 25.00 | 79.41 | 62 | 104.9 | 163 | 75-125 | 28 | 0-20 | 3,4 |
| Molybdenum | 1.256 | 25.00 | 19.88 | 74 | 21.44 | 81 | 75-125 | 8 | 0-20 | 3 |
| Nickel | 11.79 | 25.00 | 36.12 | 97 | 38.66 | 108 | 75-125 | 7 | 0-20 | |
| Selenium | ND | 25.00 | 20.85 | 83 | 22.54 | 90 | 75-125 | 8 | 0-20 | |
| Silver | 1.853 | 12.50 | 13.80 | 96 | 14.56 | 102 | 75-125 | 5 | 0-20 | |
| Thallium | ND | 25.00 | 12.84 | 51 | 17.83 | 71 | 75-125 | 33 | 0-20 | 3,4 |
| Vanadium | 41.15 | 25.00 | 65.57 | 98 | 67.38 | 105 | 75-125 | 3 | 0-20 | |
| Zinc | 223.5 | 25.00 | 243.1 | 4X | 248.6 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1111 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0781-10** | **Sediment** | **Mercury** | **06/12/13** | **06/17/13 15:48** | **130612S05B** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.1193 | 0.8350 | 1.016 | 107 | 1.032 | 109 | 71-137 | 2 | 0-14 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1111 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-1004-11** | **Sediment** | **GC 31** | **06/13/13** | **06/18/13 16:24** | **130613S14** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | ND | 20.00 | 40.46 | 202 | 37.69 | 188 | 50-135 | 7 | 0-25 | 3 |
| Aroclor-1260 | 123.4 | 20.00 | 90.85 | 0 | 90.65 | 0 | 50-135 | 0 | 0-25 | 3 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - PDS/PDSD

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1111 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | PDS/PDSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **ICP 7300** | **06/12/13 00:00** | **06/14/13 11:28** | **130612S08** |

| Parameter | Sample Conc. | Spike Added | PDS Conc. | PDS %Rec. | PDSD Conc. | PDSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 24.06 | 96 | 24.33 | 97 | 75-125 | 1 | 0-20 | |
| Arsenic | 7.019 | 25.00 | 32.16 | 101 | 31.68 | 99 | 75-125 | 2 | 0-20 | |
| Barium | 77.89 | 25.00 | 104.1 | 105 | 104.8 | 108 | 75-125 | 1 | 0-20 | |
| Beryllium | 0.3681 | 25.00 | 25.81 | 102 | 25.83 | 102 | 75-125 | 0 | 0-20 | |
| Cadmium | 2.118 | 25.00 | 26.46 | 97 | 26.55 | 98 | 75-125 | 0 | 0-20 | |
| Chromium | 56.89 | 25.00 | 81.26 | 98 | 81.29 | 98 | 75-125 | 0 | 0-20 | |
| Cobalt | 6.268 | 25.00 | 31.90 | 103 | 31.74 | 102 | 75-125 | 1 | 0-20 | |
| Copper | 130.4 | 25.00 | 155.3 | 4X | 155.9 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 64.02 | 25.00 | 88.41 | 98 | 88.29 | 97 | 75-125 | 0 | 0-20 | |
| Molybdenum | 1.256 | 25.00 | 25.70 | 98 | 25.51 | 97 | 75-125 | 1 | 0-20 | |
| Nickel | 11.79 | 25.00 | 37.17 | 102 | 36.89 | 100 | 75-125 | 1 | 0-20 | |
| Selenium | ND | 25.00 | 23.17 | 93 | 22.53 | 90 | 75-125 | 3 | 0-20 | |
| Silver | 1.853 | 12.50 | 14.78 | 103 | 14.96 | 105 | 75-125 | 1 | 0-20 | |
| Thallium | ND | 25.00 | 21.46 | 86 | 21.26 | 85 | 75-125 | 1 | 0-20 | |
| Vanadium | 41.15 | 25.00 | 65.69 | 98 | 65.57 | 98 | 75-125 | 0 | 0-20 | |
| Zinc | 223.5 | 25.00 | 247.6 | 4X | 247.8 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1111 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-15-500-16** | **Soil** | **GC 50** | **06/14/13 23:19** | **130612B13** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| TPH as Diesel | 400.0 | 346.7 | 87 | 75-123 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1111 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-13-045-161** | **Soil** | **GC 4** | **06/14/13 01:17** | **130613B02** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| GRO (C4-C12) Total | 10.00 | 9.893 | 99 | 70-124 | |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1111 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **097-01-002-16915** | **Soil** | **ICP 7300** | **06/13/13 23:19** | **130612L08** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | ME CL | Qualifiers |
|---|---|---|---|---|---|---|
| Antimony | 25.00 | 25.43 | 102 | 80-120 | 73-127 | |
| Arsenic | 25.00 | 25.43 | 102 | 80-120 | 73-127 | |
| Barium | 25.00 | 27.85 | 111 | 80-120 | 73-127 | |
| Beryllium | 25.00 | 25.37 | 101 | 80-120 | 73-127 | |
| Cadmium | 25.00 | 26.29 | 105 | 80-120 | 73-127 | |
| Chromium | 25.00 | 26.05 | 104 | 80-120 | 73-127 | |
| Cobalt | 25.00 | 27.11 | 108 | 80-120 | 73-127 | |
| Copper | 25.00 | 25.14 | 101 | 80-120 | 73-127 | |
| Lead | 25.00 | 26.26 | 105 | 80-120 | 73-127 | |
| Molybdenum | 25.00 | 25.63 | 103 | 80-120 | 73-127 | |
| Nickel | 25.00 | 28.06 | 112 | 80-120 | 73-127 | |
| Selenium | 25.00 | 23.91 | 96 | 80-120 | 73-127 | |
| Silver | 12.50 | 13.23 | 106 | 80-120 | 73-127 | |
| Thallium | 25.00 | 25.94 | 104 | 80-120 | 73-127 | |
| Vanadium | 25.00 | 25.32 | 101 | 80-120 | 73-127 | |
| Zinc | 25.00 | 27.69 | 111 | 80-120 | 73-127 | |

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1111 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-04-007-9353** | **Soil** | **Mercury** | **06/12/13 13:15** | **130612L05** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.8350 | 0.8128 | 97 | 85-121 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1111 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-12-565-340** | **Soil** | **GC 31** | **06/18/13 10:59** | **130613L14** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | 20.00 | 18.98 | 95 | 50-135 | |
| Aroclor-1260 | 20.00 | 15.42 | 77 | 50-135 | |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order: 13-04-1111



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| 4 | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range. |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

For any analysis identified as a "field" test with a holding time (HT) </= 15 minutes where the sample is received outside of HT, Calscience will adhere to its internal HT of 24 hours. In cases where sample analysis does not meet Calscience's internal HT, results will be appropriately qualified.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/12/13

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

P.O. NO.: 1315100800

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

QUOTE NO.:

SAMPLER(S): (SIGNATURE)

LAB USE ONLY: 13-04-1111

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS

Please HOLD samples. 1x 16 oz, 1x 8oz, and 1x ziplock baggie (for grain size) per sample
DO NOT FREEZE COMPOSITE GRAIN SIZE SAMPLES.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASCØ2 | -0001 | 4/12/2013 | 1021 | sed | 3 | | | | X |
| 2 | SD-S-P-NASCØ2 | -0102 | 4/12/2013 | | sed | 3 | | | | X |
| 3 | SD-S-P-NASCØ2 | -0203 | 4/12/2013 | | sed | 3 | | | | X |
| 4 | SD-S-P-NASCØ2 | -0304 | 4/12/2013 | | sed | 3 | | | | X |
| 5 | SD-S-P-NASCØ2 | -0405 | 4/12/2013 | | sed | 3 | | | | X |
| 6 | SD-S-P-NASCØ2 | -0506 | 4/12/2013 | | sed | 3 | | | | X |
| 7 | SD-S-P-NASCØ2 | -0607 | 4/12/2013 | | sed | 3 | | | | X |
| 8 | SD-S-P-NASCØ2 | -0708 | 4/12/2013 | | sed | 3 | | | | X |
| 9 | SD-S-P-NASCØ2 | -0809 | 4/12/2013 | | sed | 2 | | | | X |
| 10 | SD-S-P-NASCØ2 | -Comp | 4/12/2013 | | sed | 1 | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | CGL | 04/15/13 | 1555 |
| | Dannyle CGL | 4/15/13 | 19:10 |
| | | | |



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|
| NAS-C1 | | | | |
| SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| SD-S-P-NASC1-0102 | | | | |
| SD-S-P-NASC1-0203 | | | | |
| SD-S-P-NASC1-0304 | | | | |
| SD-S-P-NASC1-0405 | | | | |
| SD-S-P-NASC1-0506 | | | | BOTTOM |
| SD-S-P-NASC1-0607 | | | | |
| SD-S-P-NASC1-0708 | | | | |
| SD-S-P-NASC1-0809 | | | | |
| NAS-C2 | | | | |
| SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| SD-S-P-NASC2-0102 | | | | |
| SD-S-P-NASC2-0203 | | | | |
| SD-S-P-NASC2-0304 | | | | |
| SD-S-P-NASC2-0405 | | | | |
| SD-S-P-NASC2-0506 | | | | BOTTOM |
| SD-S-P-NASC2-0607 | | | | |
| SD-S-P-NASC2-0708 | | | | |
| SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | |
| SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| SD-S-P-NASC3-0102 | | | | |
| SD-S-P-NASC3-0203 | | | | |
| SD-S-P-NASC3-0304 | | | | |
| SD-S-P-NASC3-0405 | | | | |
| SD-S-P-NASC3-0506 | | | | BOTTOM |
| SD-S-P-NASC3-0607 | | | | |
| SD-S-P-NASC3-0708 | | | | |
| SD-S-P-NASC3-0809 | | | | |
| SD-S-P-NASC3-0910 | | | | |
| SD-S-P-NASC3-0910-PLUG | | | | not included[c] |
| NAS-C4 | | | | |
| SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| SD-S-P-NASC4-0102 | | | | |
| SD-S-P-NASC4-0203 | | | | |
| SD-S-P-NASC4-0304 | | | | |
| SD-S-P-NASC4-0405 | | | | |
| SD-S-P-NASC4-0506 | | | | BOTTOM |
| SD-S-P-NASC4-0607 | | | | |
| SD-S-P-NASC4-0708 | | | | |
| SD-S-P-NASC4-0809 | | | | |
| SD-S-P-NASC4-0910 | | | | |
| SD-S-P-NASC4-0910-PLUG | | | | not included[c] |
| NAS-C5 | | | | |
| SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| SD-S-P-NASC5-0102 | | | | |
| SD-S-P-NASC5-0203 | | | | |
| SD-S-P-NASC5-0304 | | | | BOTTOM |
| SD-S-P-NASC5-0405 | | | | |
| SD-S-P-NASC5-0506-PLUG | | | | not included[c] |
| NAS-C6 | | | | |
| SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| SD-S-P-NASC6-0102 | | | | |
| SD-S-P-NASC6-0203 | | | | BOTTOM |
| SD-S-P-NASC6-0304-PLUG | | | | not included[c] |
| NAS-C7 | | | | |
| SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| SD-S-P-NASC7-0102 | | | | |
| SD-S-P-NASC7-0203 | | | | |
| SD-S-P-NASC7-0304 | | | | |
| SD-S-P-NASC7-0405 | | | | BOTTOM |
| SD-S-P-NASC7-0506 | | | | |
| SD-S-P-NASC7-0607 | | | | |
| SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | |
| SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| SD-S-P-NASC8-0102 | | | | |
| SD-S-P-NASC8-0203 | | | | |
| SD-S-P-NASC8-0304 | | | | |
| SD-S-P-NASC8-0405 | | | | |
| SD-S-P-NASC8-0506 | | | | BOTTOM |
| SD-S-P-NASC8-0607 | | | | |
| SD-S-P-NASC8-0708 | | | | |
| SD-S-P-NASC8-0809 | | | | |
| SD-S-P-NASC8-0910 | | | | |
| SD-S-P-NASC8-0910-PLUG | | | | not included[c] |
| NAS-C9 | | | | |
| SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| SD-S-P-NASC9-0102 | | | | |
| SD-S-P-NASC9-0203 | | | | |
| SD-S-P-NASC9-0304 | | | | |
| SD-S-P-NASC9-0405 | | | | BOTTOM |
| SD-S-P-NASC9-0506 | | | | |
| SD-S-P-NASC9-0607 | | | | |
| NAS-C10 | | | | |
| SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| SD-S-P-NASC10-0102 | | | | |
| SD-S-P-NASC10-0203 | | | | |
| SD-S-P-NASC10-0304 | | | | BOTTOM |
| SD-S-P-NASC10-0405 | | | | |
| SD-S-P-NASC10-0506 | | | | |
| SD-S-P-NASC10-0607 | | | | |
| SD-S-P-NASC10-0708 | | | | |
| NAS-C11 | | | | |
| SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| SD-S-P-NASC11-0102 | | | | |
| SD-S-P-NASC11-0203 | | | | |
| SD-S-P-NASC11-0304 | | | | |
| SD-S-P-NASC11-0405 | | | | BOTTOM |
| SD-S-P-NASC11-0506 | | | | |
| SD-S-P-NASC11-0607 | | | | |
| SD-S-P-NASC11-0708 | | | | |
| SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | |
| SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| SD-S-P-NASC12-0102 | | | | |
| SD-S-P-NASC12-0203 | | | | |
| SD-S-P-NASC12-0304 | | | | |
| SD-S-P-NASC12-0405 | | | | BOTTOM |
| SD-S-P-NASC12-0506 | | | | |
| SD-S-P-NASC12-0607 | | | | |
| SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | |
| SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| SD-S-P-NASC13-0102 | | | | |
| SD-S-P-NASC13-0203 | | | | |
| SD-S-P-NASC13-0304 | | | | BOTTOM |
| SD-S-P-NASC13-0405 | | | | |
| SD-S-P-NASC13-0506 | | | | |
| SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | |
| SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| SD-S-P-NASC14-0102 | | | | |
| SD-S-P-NASC14-0203 | | | | BOTTOM |
| SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | |
| SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| SD-S-P-NASC15-0102 | | | | |
| SD-S-P-NASC15-0203 | | | | |
| SD-S-P-NASC15-0304 | | | | BOTTOM |
| SD-S-P-NASC15-0405 | | | | |
| SD-S-P-NASC15-0506 | | | | |

Notes:
0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on
a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.
b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.
A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)
c - sample not included due to low volume available and because it represents native material which will not be dredged



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| ~~13-04-1000-1~~ | ~~SD-S-P-NASC1-0001~~ | COMP-A | 4/11/2013 | 1335 | TOP |
| ~~13-04-1000-2~~ | ~~SD-S-P-NASC1-0102~~ | | | | |
| ~~13-04-1000-3~~ | ~~SD-S-P-NASC1-0203~~ | | | | |
| ~~13-04-1000-4~~ | ~~SD-S-P-NASC1-0304~~ | | | | |
| ~~13-04-1000-5~~ | ~~SD-S-P-NASC1-0405~~ | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| ~~13-04-1111-1~~ | ~~SD-S-P-NASC2-0001~~ | COMP-A | 4/12/2013 | 1021 | TOP |
| ~~13-04-1111-2~~ | ~~SD-S-P-NASC2-0102~~ | | | | |
| ~~13-04-1111-3~~ | ~~SD-S-P-NASC2-0203~~ | | | | |
| ~~13-04-1111-4~~ | ~~SD-S-P-NASC2-0304~~ | | | | |
| ~~13-04-1111-5~~ | ~~SD-S-P-NASC2-0405~~ | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| ~~13-04-1113-1~~ | ~~SD-S-P-NASC3-0001~~ | COMP-A | 4/12/2013 | 751 | TOP |
| ~~13-04-1113-2~~ | ~~SD-S-P-NASC3-0102~~ | | | | |
| ~~13-04-1113-3~~ | ~~SD-S-P-NASC3-0203~~ | | | | |
| ~~13-04-1113-4~~ | ~~SD-S-P-NASC3-0304~~ | | | | |
| ~~13-04-1113-5~~ | ~~SD-S-P-NASC3-0405~~ | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| ~~13-04-1002-1~~ | ~~SD-S-P-NASC4-0001~~ | COMP-A | 4/11/2013 | 930 | TOP |
| ~~13-04-1002-2~~ | ~~SD-S-P-NASC4-0102~~ | | | | |
| ~~13-04-1002-3~~ | ~~SD-S-P-NASC4-0203~~ | | | | |
| ~~13-04-1002-4~~ | ~~SD-S-P-NASC4-0304~~ | | | | |
| ~~13-04-1002-5~~ | ~~SD-S-P-NASC4-0405~~ | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| ~~13-04-1003-1~~ | ~~SD-S-P-NASC5-0001~~ | COMP-A | 4/11/2013 | 755 | TOP |
| ~~13-04-1003-2~~ | ~~SD-S-P-NASC5-0102~~ | | | | |
| ~~13-04-1003-3~~ | ~~SD-S-P-NASC5-0203~~ | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| ~~13-04-1001-1~~ | ~~SD-S-P-NASC6-0001~~ | COMP-B | 4/11/2013 | 1200 | TOP |
| ~~13-04-1001-2~~ | ~~SD-S-P-NASC6-0102~~ | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| ~~13-04-0902-1~~ | ~~SD-S-P-NASC7-0001~~ | COMP-B | 4/10/2013 | 1430 | TOP |
| ~~13-04-0902-2~~ | ~~SD-S-P-NASC7-0102~~ | | | | |
| ~~13-04-0902-3~~ | ~~SD-S-P-NASC7-0203~~ | | | | |
| ~~13-04-0902-4~~ | ~~SD-S-P-NASC7-0304~~ | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| ~~13-04-0903-1~~ | ~~SD-S-P-NASC8-0001~~ | COMP-B | 4/10/2013 | 830 | TOP |
| ~~13-04-0903-2~~ | ~~SD-S-P-NASC8-0102~~ | | | | |
| ~~13-04-0903-3~~ | ~~SD-S-P-NASC8-0203~~ | | | | |
| ~~13-04-0903-4~~ | ~~SD-S-P-NASC8-0304~~ | | | | |
| ~~13-04-0903-5~~ | ~~SD-S-P-NASC8-0405~~ | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| ~~13-04-0901-1~~ | ~~SD-S-P-NASC9-0001~~ | COMP-B | 4/10/2013 | 1315 | TOP |
| ~~13-04-0901-2~~ | ~~SD-S-P-NASC9-0102~~ | | | | |
| ~~13-04-0901-3~~ | ~~SD-S-P-NASC9-0203~~ | | | | |
| ~~13-04-0901-4~~ | ~~SD-S-P-NASC9-0304~~ | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607-PLUG~~ | | | | |
| NAS-C10 | | | | | |
| ~~13-04-0904-1~~ | ~~SD-S-P-NASC10-0001~~ | COMP-D | 4/10/2013 | 1010 | TOP |
| ~~13-04-0904-2~~ | ~~SD-S-P-NASC10-0102~~ | | | | |
| ~~13-04-0904-3~~ | ~~SD-S-P-NASC10-0203~~ | | | | |
| ~~13-04-0904-4~~ | ~~SD-S-P-NASC10-0304~~ | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-8 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| ~~13-04-0778-1~~ | ~~SD-S-P-NASC11-0001~~ | COMP-D | 4/9/2013 | 1525 | TOP |
| ~~13-04-0778-2~~ | ~~SD-S-P-NASC11-0102~~ | | | | |
| ~~13-04-0778-3~~ | ~~SD-S-P-NASC11-0203~~ | | | | |
| ~~13-04-0778-4~~ | ~~SD-S-P-NASC11-0304~~ | | | | |
| ~~13-04-0778-5~~ | ~~SD-S-P-NASC11-0405~~ | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| ~~13-04-0780-1~~ | ~~SD-S-P-NASC12-0001~~ | COMP-D | 4/9/2013 | 1410 | TOP |
| ~~13-04-0780-2~~ | ~~SD-S-P-NASC12-0102~~ | | | | |
| ~~13-04-0780-3~~ | ~~SD-S-P-NASC12-0203~~ | | | | |
| ~~13-04-0780-4~~ | ~~SD-S-P-NASC12-0304~~ | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| ~~13-04-0781-1~~ | ~~SD-S-P-NASC13-0001~~ | COMP-E | 4/9/2013 | 1055 | TOP |
| ~~13-04-0781-2~~ | ~~SD-S-P-NASC13-0102~~ | | | | |
| ~~13-04-0781-3~~ | ~~SD-S-P-NASC13-0203~~ | | | | |
| ~~13-04-0781-4~~ | ~~SD-S-P-NASC13-0304~~ | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| ~~13-04-0782-1~~ | ~~SD-S-P-NASC14-0001~~ | COMP-E | 4/9/2013 | 815 | TOP |
| ~~13-04-0782-2~~ | ~~SD-S-P-NASC14-0102~~ | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| ~~13-04-0779-1~~ | ~~SD-S-P-NASC15-0001~~ | COMP-E | 4/9/2013 | 940 | TOP |
| ~~13-04-0779-2~~ | ~~SD-S-P-NASC15-0102~~ | | | | |
| ~~13-04-0779-3~~ | ~~SD-S-P-NASC15-0203~~ | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-1111

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/15/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.8 °C - 0.2 °C (CF) = 1.6 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: VG

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: VG

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: HH

| **SAMPLE CONDITION:** | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ Z

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** HH

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** JJ

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** RS



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| 13-04-1004-1 | SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| 13-04-1004-2 | SD-S-P-NASC1-0102 | | | | |
| 13-04-1004-3 | SD-S-P-NASC1-0203 | | | | |
| 13-04-1004-4 | SD-S-P-NASC1-0304 | | | | |
| 13-04-1004-5 | SD-S-P-NASC1-0405 | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| 13-04-1111-1 | SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| 13-04-1111-2 | SD-S-P-NASC2-0102 | | | | |
| 13-04-1111-3 | SD-S-P-NASC2-0203 | | | | |
| 13-04-1111-4 | SD-S-P-NASC2-0304 | | | | |
| 13-04-1111-5 | SD-S-P-NASC2-0405 | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| 13-04-1113-1 | SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| 13-04-1113-2 | SD-S-P-NASC3-0102 | | | | |
| 13-04-1113-3 | SD-S-P-NASC3-0203 | | | | |
| 13-04-1113-4 | SD-S-P-NASC3-0304 | | | | |
| 13-04-1113-5 | SD-S-P-NASC3-0405 | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| 13-04-1002-1 | SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| 13-04-1002-2 | SD-S-P-NASC4-0102 | | | | |
| 13-04-1002-3 | SD-S-P-NASC4-0203 | | | | |
| 13-04-1002-4 | SD-S-P-NASC4-0304 | | | | |
| 13-04-1002-5 | SD-S-P-NASC4-0405 | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| 13-04-1003-1 | SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| 13-04-1003-2 | SD-S-P-NASC5-0102 | | | | |
| 13-04-1003-3 | SD-S-P-NASC5-0203 | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| 13-04-1001-1 | SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| 13-04-1001-2 | SD-S-P-NASC6-0102 | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| 13-04-0902-1 | SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| 13-04-0902-2 | SD-S-P-NASC7-0102 | | | | |
| 13-04-0902-3 | SD-S-P-NASC7-0203 | | | | |
| 13-04-0902-4 | SD-S-P-NASC7-0304 | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| 13-04-0903-1 | SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| 13-04-0903-2 | SD-S-P-NASC8-0102 | | | | |
| 13-04-0903-3 | SD-S-P-NASC8-0203 | | | | |
| 13-04-0903-4 | SD-S-P-NASC8-0304 | | | | |
| 13-04-0903-5 | SD-S-P-NASC8-0405 | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| 13-04-0901-1 | SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| 13-04-0901-2 | SD-S-P-NASC9-0102 | | | | |
| 13-04-0901-3 | SD-S-P-NASC9-0203 | | | | |
| 13-04-0901-4 | SD-S-P-NASC9-0304 | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607 PLUG~~ | | | | |
| NAS-C10 | | | | | |
| 13-04-0904-1 | SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| 13-04-0904-2 | SD-S-P-NASC10-0102 | | | | |
| 13-04-0904-3 | SD-S-P-NASC10-0203 | | | | |
| 13-04-0904-4 | SD-S-P-NASC10-0304 | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-9 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| 13-04-0778-1 | SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| 13-04-0778-2 | SD-S-P-NASC11-0102 | | | | |
| 13-04-0778-3 | SD-S-P-NASC11-0203 | | | | |
| 13-04-0778-4 | SD-S-P-NASC11-0304 | | | | |
| 13-04-0778-5 | SD-S-P-NASC11-0405 | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| 13-04-0780-1 | SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| 13-04-0780-2 | SD-S-P-NASC12-0102 | | | | |
| 13-04-0780-3 | SD-S-P-NASC12-0203 | | | | |
| 13-04-0780-4 | SD-S-P-NASC12-0304 | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| 13-04-0781-1 | SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| 13-04-0781-2 | SD-S-P-NASC13-0102 | | | | |
| 13-04-0781-3 | SD-S-P-NASC13-0203 | | | | |
| 13-04-0781-4 | SD-S-P-NASC13-0304 | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| 13-04-0782-1 | SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| 13-04-0782-2 | SD-S-P-NASC14-0102 | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| 13-04-0779-1 | SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| 13-04-0779-2 | SD-S-P-NASC15-0102 | | | | |
| 13-04-0779-3 | SD-S-P-NASC15-0203 | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged

Calscience Environmental Laboratories, Inc.

# CALSCIENCE

## WORK ORDER NUMBER: 13-04-1113

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard Sediment Study

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 06/20/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

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Client Project Name: NASSCO South Shipyard Sediment Study
Work Order Number: 13-04-1113


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Calscience Environmental Laboratories, Inc.

# CASE NARRATIVE

## Calscience Work Order No.: 13-04-1113
## Project ID: NASSCO Shipyard Sediment Study

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

Twelve sediment samples were received for this project on April 12, 2013. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 1.6°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in freezers pending chemistry testing.

On June 12, 2013 samples were composited into two samples as per client instructions.

COC discrepancies were noted in the Sample Anomaly Form.

***Tests Performed***

The two composite samples were analyzed for the following analyses:

C8-C40 by EPA 8015B (M)
C4-C12 by EPA 8015B (M)
Title 22 Metals by EPA 6010B
Mercury by EPA 7471A
PCB Aroclors by EPA 8082

***Data Summary***

<u>Holding times</u>

All samples were analyzed past the EPA recommended holding times for TPH C4-12, TPH-C8-40, PCB Aroclors and Mercury. However, all samples were frozen (-20 °C) upon receipt at the laboratory and remained in that condition until sample preparation/analysis. Per the Puget Sound Protocol (and other references), which states the holding time for sediments may be extended up to one year if kept frozen after collection, the samples were analyzed within the allowable one year holding time. In addition, PCBs are known to be very stable compounds, and SW-846 Ch.4, Table 4-1 (Rev. 4) lists “None” as the recommended holding time for PCBs. However, because the samples were analyzed outside of normal EPA hold times, the data is flagged as such.

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Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

Concentrations of target analytes in the method blank were found to be below reporting limits for all analyses.

Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the MDL, and where applicable, "J" flags were reported.

Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test. All parameters were within established control limits.

Matrix Spikes

Matrix spikes and matrix spike duplicates were performed for each applicable analysis on project samples. All parameters were within the acceptable control limits unless otherwise noted.

For C8-C40 by EPA 8015B (M) matrix spike and matrix spike duplicate RPD was outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

For Title 22 Metals by EPA 6010B matrix spike and/or matrix spike duplicate recoveries were outside the established control limits for antimony, lead, molybdenum and thallium. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action. The concentrations of copper and zinc in the sample were over four times the spike amount, therefore the recoveries could not be calculated.

For PCB Aroclors by EPA 8082 matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

Surrogates

Surrogate recoveries for all applicable tests and samples were within acceptable control limits. With the following exceptions:

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For PCB Aroclors by EPA 8082 the surrogates in sample 13 were out of acceptance limits.

Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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Calscience Environmental Laboratories, Inc.

# Work Order Narrative

Work Order: 13-04-1113



**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/15/13. They were assigned to Work Order 13-04-1113.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with an immediate holding time (HT </= 15 minutes --40CFR-136.3 Table II footnote 4), is considered a "field" test and reported samples results are not flagged unless the analysis is performed beyond 24 hours of the time of collection.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Calscience Environmental Laboratories, Inc.

# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC<br>27201 Puerta Real, Suite 350<br>Mission Viejo, CA 92691-8306 | Work Order: | 13-04-1113 |
| | | Project Name: | NASSCO South Shipyard Sediment Study |
| | | PO Number: | |
| | | Date Received: | 04/15/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| SD-S-P-NASC03-0001 | 13-04-1113-1 | 04/12/13 07:51 | 3 | Sediment |
| SD-S-P-NASC03-0102 | 13-04-1113-2 | 04/12/13 07:51 | 3 | Sediment |
| SD-S-P-NASC03-0203 | 13-04-1113-3 | 04/12/13 07:51 | 3 | Sediment |
| SD-S-P-NASC03-0304 | 13-04-1113-4 | 04/12/13 07:51 | 3 | Sediment |
| SD-S-P-NASC03-0405 | 13-04-1113-5 | 04/12/13 07:51 | 3 | Sediment |
| SD-S-P-NASC03-0506 | 13-04-1113-6 | 04/12/13 07:51 | 3 | Sediment |
| SD-S-P-NASC03-0607 | 13-04-1113-7 | 04/12/13 07:51 | 3 | Sediment |
| SD-S-P-NASC03-0708 | 13-04-1113-8 | 04/12/13 07:51 | 3 | Sediment |
| SD-S-P-NASC03-0809 | 13-04-1113-9 | 04/12/13 07:51 | 3 | Sediment |
| SD-S-P-NASC03-0910 | 13-04-1113-10 | 04/12/13 07:51 | 3 | Sediment |
| SD-S-P-NASC03-0910 PLUG | 13-04-1113-11 | 04/12/13 07:51 | 3 | Sediment |
| SD-S-P-NASC03-COMP | 13-04-1113-12 | 04/12/13 07:51 | 1 | Sediment |
| COMP-C3-TOP | 13-04-1113-13 | 04/12/13 07:51 | 1 | Sediment |
| COMP-C3-BOTTOM | 13-04-1113-14 | 04/12/13 09:30 | 1 | Sediment |

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1113 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C3-TOP** | **13-04-1113-13-A** | **04/12/13 07:51** | **Sediment** | **GC 50** | **06/12/13** | **06/15/13 04:27** | **130612B13** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | 3.8 | 5.0 | 2.4 | 1 | J |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | 3.9 | 5.0 | 1.7 | 1 | J |
| C13-C14 | 13 | 5.0 | 1.8 | 1 | |
| C15-C16 | 19 | 5.0 | 1.8 | 1 | |
| C17-C18 | 39 | 5.0 | 1.8 | 1 | |
| C19-C20 | 20 | 5.0 | 1.8 | 1 | |
| C21-C22 | 22 | 5.0 | 1.8 | 1 | |
| C23-C24 | 13 | 5.0 | 1.7 | 1 | |
| C25-C28 | 27 | 5.0 | 2.4 | 1 | |
| C29-C32 | 33 | 5.0 | 2.4 | 1 | |
| C33-C36 | 21 | 5.0 | 2.6 | 1 | |
| C37-C40 | 11 | 5.0 | 1.6 | 1 | |
| C8-C40 Total | 230 | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 100 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1113 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C3-BOTTOM** | **13-04-1113-14-A** | **04/12/13 09:30** | **Sediment** | **GC 50** | **06/12/13** | **06/15/13 04:45** | **130612B13** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | 2.5 | 5.0 | 1.8 | 1 | J |
| C15-C16 | 3.6 | 5.0 | 1.8 | 1 | J |
| C17-C18 | 5.5 | 5.0 | 1.8 | 1 | |
| C19-C20 | 3.9 | 5.0 | 1.8 | 1 | J |
| C21-C22 | 4.0 | 5.0 | 1.8 | 1 | J |
| C23-C24 | 2.9 | 5.0 | 1.7 | 1 | J |
| C25-C28 | 6.9 | 5.0 | 2.4 | 1 | |
| C29-C32 | 9.8 | 5.0 | 2.4 | 1 | |
| C33-C36 | 7.2 | 5.0 | 2.6 | 1 | |
| C37-C40 | 4.8 | 5.0 | 1.6 | 1 | J |
| C8-C40 Total | 51 | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 96 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1113 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-15-500-16** | **N/A** | **Soil** | **GC 50** | **06/12/13** | **06/14/13 22:59** | **130612B13** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | ND | 5.0 | 1.8 | 1 | |
| C19-C20 | ND | 5.0 | 1.8 | 1 | |
| C21-C22 | ND | 5.0 | 1.8 | 1 | |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | ND | 5.0 | 2.4 | 1 | |
| C29-C32 | ND | 5.0 | 2.4 | 1 | |
| C33-C36 | ND | 5.0 | 2.6 | 1 | |
| C37-C40 | ND | 5.0 | 1.6 | 1 | |
| C8-C40 Total | ND | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 98 | 61-145 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1113 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C3-TOP** | **13-04-1113-13-A** | **04/12/13 07:51** | **Sediment** | **GC 4** | **06/13/13** | **06/14/13 11:43** | **130613B02** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | 1.3 | 0.50 | 0.15 | 1 | |
| C11-C12 | 2.7 | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | 4.0 | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 95 | 42-126 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C3-BOTTOM** | **13-04-1113-14-A** | **04/12/13 09:30** | **Sediment** | **GC 4** | **06/13/13** | **06/14/13 12:16** | **130613B02** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | 0.37 | 0.50 | 0.15 | 1 | J |
| C11-C12 | 0.49 | 0.50 | 0.23 | 1 | J |
| GRO (C4-C12) Total | 0.85 | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 91 | 42-126 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1113 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-13-045-161** | **N/A** | **Soil** | **GC 4** | **06/13/13** | **06/14/13 00:44** | **130613B02** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 85 | 42-126 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1113 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C3-TOP** | **13-04-1113-13-A** | **04/12/13 07:51** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 12:10** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 7.80 | 0.750 | 0.259 | 1 | |
| Barium | 52.8 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.256 | 0.250 | 0.137 | 1 | |
| Cadmium | 2.17 | 0.500 | 0.135 | 1 | |
| Chromium | 47.1 | 0.250 | 0.142 | 1 | |
| Cobalt | 5.14 | 0.250 | 0.148 | 1 | |
| Copper | 147 | 0.500 | 0.135 | 1 | |
| Lead | 66.5 | 0.500 | 0.132 | 1 | |
| Molybdenum | 3.31 | 0.250 | 0.132 | 1 | |
| Nickel | 11.9 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | 1.91 | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 32.1 | 0.250 | 0.141 | 1 | |
| Zinc | 316 | 1.00 | 0.178 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1113 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C3-BOTTOM** | **13-04-1113-14-A** | **04/12/13 09:30** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 12:11** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 3.97 | 0.750 | 0.259 | 1 | |
| Barium | 47.6 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.231 | 0.250 | 0.137 | 1 | J |
| Cadmium | 0.800 | 0.500 | 0.135 | 1 | |
| Chromium | 21.9 | 0.250 | 0.142 | 1 | |
| Cobalt | 4.34 | 0.250 | 0.148 | 1 | |
| Copper | 32.8 | 0.500 | 0.135 | 1 | |
| Lead | 21.3 | 0.500 | 0.132 | 1 | |
| Molybdenum | 0.685 | 0.250 | 0.132 | 1 | |
| Nickel | 5.62 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | 0.471 | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 28.7 | 0.250 | 0.141 | 1 | |
| Zinc | 84.9 | 1.00 | 0.178 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1113 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-01-002-16915** | **N/A** | **Soil** | **ICP 7300** | **06/12/13** | **06/13/13 23:17** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | ND | 0.750 | 0.259 | 1 | |
| Barium | ND | 0.500 | 0.154 | 1 | |
| Beryllium | ND | 0.250 | 0.137 | 1 | |
| Cadmium | ND | 0.500 | 0.135 | 1 | |
| Chromium | ND | 0.250 | 0.142 | 1 | |
| Cobalt | ND | 0.250 | 0.148 | 1 | |
| Copper | ND | 0.500 | 0.135 | 1 | |
| Lead | ND | 0.500 | 0.132 | 1 | |
| Molybdenum | ND | 0.250 | 0.132 | 1 | |
| Nickel | ND | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | ND | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | ND | 0.250 | 0.141 | 1 | |
| Zinc | ND | 1.00 | 0.178 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1113 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C3-TOP** | **13-04-1113-13-A** | **04/12/13 07:51** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 20:31** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 1.09 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C3-BOTTOM** | **13-04-1113-14-A** | **04/12/13 09:30** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 20:34** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.345 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-04-007-9356** | **N/A** | **Soil** | **Mercury** | **06/12/13** | **06/12/13 19:51** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | ND | 0.0835 | 0.00588 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1113 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C3-TOP** | **13-04-1113-13-A** | **04/12/13 07:51** | **Sediment** | **GC 31** | **06/13/13** | **06/19/13 12:49** | **130613L14** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | 200 | 10 | 2.9 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 108 | 50-130 | |
| Decachlorobiphenyl | 933 | 50-130 | 2,7 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C3-TOP** | **13-04-1113-13-A** | **04/12/13 07:51** | **Sediment** | **GC 31** | **06/13/13** | **06/19/13 12:30** | **130613L14** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1254 | 560 | 100 | 24 | 10 | |
| Aroclor-1260 | 360 | 100 | 23 | 10 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 150 | 50-130 | 1,2,7 |
| Decachlorobiphenyl | 697 | 50-130 | 1,2,7 |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1113 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C3-BOTTOM** | **13-04-1113-14-A** | **04/12/13 09:30** | **Sediment** | **GC 31** | **06/13/13** | **06/19/13 11:14** | **130613L14** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | ND | 10 | 2.9 | 1 | |
| Aroclor-1254 | ND | 10 | 2.4 | 1 | |
| Aroclor-1260 | 18 | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 60 | 50-130 | |
| Decachlorobiphenyl | 109 | 50-130 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-12-565-340** | **N/A** | **Soil** | **GC 31** | **06/13/13** | **06/18/13 10:40** | **130613L14** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | ND | 10 | 2.9 | 1 | |
| Aroclor-1254 | ND | 10 | 2.4 | 1 | |
| Aroclor-1260 | ND | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 80 | 50-130 | |
| Decachlorobiphenyl | 86 | 50-130 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1113 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **GC 50** | **06/12/13** | **06/14/13 23:37** | **130612S13** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| TPH as Diesel | 102.5 | 400.0 | 431.9 | 82 | 362.1 | 65 | 64-130 | 18 | 0-15 | 4 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1113 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-1004-11** | **Sediment** | **GC 4** | **06/13/13** | **06/14/13 04:02** | **130613S03** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| GRO (C4-C12) Total | 1.375 | 10.00 | 6.343 | 50 | 6.357 | 50 | 48-114 | 0 | 0-25 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1113 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:26** | **130612S08** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 3.137 | 13 | 4.170 | 17 | 50-115 | 28 | 0-20 | 3,4 |
| Arsenic | 7.019 | 25.00 | 31.38 | 97 | 33.08 | 104 | 75-125 | 5 | 0-20 | |
| Barium | 77.89 | 25.00 | 104.4 | 106 | 104.6 | 107 | 75-125 | 0 | 0-20 | |
| Beryllium | 0.3681 | 25.00 | 24.97 | 98 | 26.62 | 105 | 75-125 | 6 | 0-20 | |
| Cadmium | 2.118 | 25.00 | 25.41 | 93 | 27.20 | 100 | 75-125 | 7 | 0-20 | |
| Chromium | 56.89 | 25.00 | 79.48 | 90 | 83.39 | 106 | 75-125 | 5 | 0-20 | |
| Cobalt | 6.268 | 25.00 | 31.06 | 99 | 33.09 | 107 | 75-125 | 6 | 0-20 | |
| Copper | 130.4 | 25.00 | 155.7 | 4X | 154.6 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 64.02 | 25.00 | 79.41 | 62 | 104.9 | 163 | 75-125 | 28 | 0-20 | 3,4 |
| Molybdenum | 1.256 | 25.00 | 19.88 | 74 | 21.44 | 81 | 75-125 | 8 | 0-20 | 3 |
| Nickel | 11.79 | 25.00 | 36.12 | 97 | 38.66 | 108 | 75-125 | 7 | 0-20 | |
| Selenium | ND | 25.00 | 20.85 | 83 | 22.54 | 90 | 75-125 | 8 | 0-20 | |
| Silver | 1.853 | 12.50 | 13.80 | 96 | 14.56 | 102 | 75-125 | 5 | 0-20 | |
| Thallium | ND | 25.00 | 12.84 | 51 | 17.83 | 71 | 75-125 | 33 | 0-20 | 3,4 |
| Vanadium | 41.15 | 25.00 | 65.57 | 98 | 67.38 | 105 | 75-125 | 3 | 0-20 | |
| Zinc | 223.5 | 25.00 | 243.1 | 4X | 248.6 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1113 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 19:58** | **130612S08** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.8662 | 0.8350 | 1.685 | 98 | 1.721 | 102 | 71-137 | 2 | 0-14 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1113 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-1004-11** | **Sediment** | **GC 31** | **06/13/13** | **06/18/13 16:24** | **130613S14** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | ND | 20.00 | 40.46 | 202 | 37.69 | 188 | 50-135 | 7 | 0-25 | 3 |
| Aroclor-1260 | 123.4 | 20.00 | 90.85 | 0 | 90.65 | 0 | 50-135 | 0 | 0-25 | 3 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - PDS/PDSD

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1113 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | PDS/PDSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **ICP 7300** | **06/12/13 00:00** | **06/14/13 11:28** | **130612S08** |

| Parameter | Sample Conc. | Spike Added | PDS Conc. | PDS %Rec. | PDSD Conc. | PDSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 24.06 | 96 | 24.33 | 97 | 75-125 | 1 | 0-20 | |
| Arsenic | 7.019 | 25.00 | 32.16 | 101 | 31.68 | 99 | 75-125 | 2 | 0-20 | |
| Barium | 77.89 | 25.00 | 104.1 | 105 | 104.8 | 108 | 75-125 | 1 | 0-20 | |
| Beryllium | 0.3681 | 25.00 | 25.81 | 102 | 25.83 | 102 | 75-125 | 0 | 0-20 | |
| Cadmium | 2.118 | 25.00 | 26.46 | 97 | 26.55 | 98 | 75-125 | 0 | 0-20 | |
| Chromium | 56.89 | 25.00 | 81.26 | 98 | 81.29 | 98 | 75-125 | 0 | 0-20 | |
| Cobalt | 6.268 | 25.00 | 31.90 | 103 | 31.74 | 102 | 75-125 | 1 | 0-20 | |
| Copper | 130.4 | 25.00 | 155.3 | 4X | 155.9 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 64.02 | 25.00 | 88.41 | 98 | 88.29 | 97 | 75-125 | 0 | 0-20 | |
| Molybdenum | 1.256 | 25.00 | 25.70 | 98 | 25.51 | 97 | 75-125 | 1 | 0-20 | |
| Nickel | 11.79 | 25.00 | 37.17 | 102 | 36.89 | 100 | 75-125 | 1 | 0-20 | |
| Selenium | ND | 25.00 | 23.17 | 93 | 22.53 | 90 | 75-125 | 3 | 0-20 | |
| Silver | 1.853 | 12.50 | 14.78 | 103 | 14.96 | 105 | 75-125 | 1 | 0-20 | |
| Thallium | ND | 25.00 | 21.46 | 86 | 21.26 | 85 | 75-125 | 1 | 0-20 | |
| Vanadium | 41.15 | 25.00 | 65.69 | 98 | 65.57 | 98 | 75-125 | 0 | 0-20 | |
| Zinc | 223.5 | 25.00 | 247.6 | 4X | 247.8 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1113 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-15-500-16** | **Soil** | **GC 50** | **06/14/13 23:19** | **130612B13** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| TPH as Diesel | 400.0 | 346.7 | 87 | 75-123 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1113 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-13-045-161** | **Soil** | **GC 4** | **06/14/13 01:17** | **130613B02** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| GRO (C4-C12) Total | 10.00 | 9.893 | 99 | 70-124 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1113 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **097-01-002-16915** | **Soil** | **ICP 7300** | **06/13/13 23:19** | **130612L08** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | ME CL | Qualifiers |
|---|---|---|---|---|---|---|
| Antimony | 25.00 | 25.43 | 102 | 80-120 | 73-127 | |
| Arsenic | 25.00 | 25.43 | 102 | 80-120 | 73-127 | |
| Barium | 25.00 | 27.85 | 111 | 80-120 | 73-127 | |
| Beryllium | 25.00 | 25.37 | 101 | 80-120 | 73-127 | |
| Cadmium | 25.00 | 26.29 | 105 | 80-120 | 73-127 | |
| Chromium | 25.00 | 26.05 | 104 | 80-120 | 73-127 | |
| Cobalt | 25.00 | 27.11 | 108 | 80-120 | 73-127 | |
| Copper | 25.00 | 25.14 | 101 | 80-120 | 73-127 | |
| Lead | 25.00 | 26.26 | 105 | 80-120 | 73-127 | |
| Molybdenum | 25.00 | 25.63 | 103 | 80-120 | 73-127 | |
| Nickel | 25.00 | 28.06 | 112 | 80-120 | 73-127 | |
| Selenium | 25.00 | 23.91 | 96 | 80-120 | 73-127 | |
| Silver | 12.50 | 13.23 | 106 | 80-120 | 73-127 | |
| Thallium | 25.00 | 25.94 | 104 | 80-120 | 73-127 | |
| Vanadium | 25.00 | 25.32 | 101 | 80-120 | 73-127 | |
| Zinc | 25.00 | 27.69 | 111 | 80-120 | 73-127 | |

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1113 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-04-007-9356** | **Soil** | **Mercury** | **06/12/13 19:54** | **130612L08** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.8350 | 0.8143 | 98 | 85-121 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1113 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-12-565-340** | **Soil** | **GC 31** | **06/18/13 10:59** | **130613L14** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | 20.00 | 18.98 | 95 | 50-135 | |
| Aroclor-1260 | 20.00 | 15.42 | 77 | 50-135 | |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order: 13-04-1113



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| 4 | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range. |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

For any analysis identified as a "field" test with a holding time (HT) </= 15 minutes where the sample is received outside of HT, Calscience will adhere to its internal HT of 24 hours. In cases where sample analysis does not meet Calscience's internal HT, results will be appropriately qualified.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/12/13

PAGE: 1 OF 2

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

SAMPLER(S): (SIGNATURE)

P.O. NO.: 1315100800

QUOTE NO.:

LAB USE ONLY: 13-04-1113

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS

Please HOLD samples. 1x 16 oz, 1x 8oz, and 1x ziplock baggie (for grain size) per sample
DO NOT FREEZE COMPOSITE GRAIN SIZE SAMPLES.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASCØ3 - | 0001 | 4/12/2013 | 0751 | sed | 3 | | | | X |
| 2 | SD-S-P-NASCØ3 - | 0102 | 4/12/2013 | | sed | 3 | | | | X |
| 3 | SD-S-P-NASCØ3 - | 0203 | 4/12/2013 | | sed | 3 | | | | X |
| 4 | SD-S-P-NASCØ3 - | 0304 | 4/12/2013 | | sed | 3 | | | | X |
| 5 | SD-S-P-NASCØ3 - | 0405 | 4/12/2013 | | sed | 3 | | | | X |
| 6 | SD-S-P-NASCØ3 - | 0506 | 4/12/2013 | | sed | 3 | | | | X |
| 7 | SD-S-P-NASCØ3 - | 0607 | 4/12/2013 | | sed | 3 | | | | X |
| 8 | SD-S-P-NASCØ3 - | 0708 | 4/12/2013 | | sed | 3 | | | | X |
| 9 | SD-S-P-NASCØ3 - | 0809 | 4/12/2013 | | sed | 3 | | | | X |
| 10 | SD-S-P-NASCØ3 - | 0910 | 4/12/2013 | | sed | 3 | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | CCL | 04/15/13 | 1555 |
| | Danielle CCL | 4/15/13 | 19:10 |
| | | | |



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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/12/13
PAGE: 2 OF 2

LABORATORY CLIENT: AMEC Environment & Infrastructure
ADDRESS: 9210 Sky Park Ct. Ste 200
CITY: San Diego, California 92123
TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study
PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder
SAMPLER(S): (SIGNATURE)
P.O. NO.: 1315100800
QUOTE NO.:
LAB USE ONLY: 0 4 - 1 1 1 3

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS
Please HOLD samples. 1x 16 oz, 1x 8oz, and 1x ziplock baggie (for grain size) per sample
DO NOT FREEZE COMPOSITE GRAIN SIZE SAMPLES.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | SD-S-P-NASCØ3 - | 0910 PLUG | 4/12/2013 | 0751 | sed | 3 | | | | X |
| 12 | SD-S-P-NASCØ3 - | Comp | 4/12/2013 | ↓ | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | CRL | 04/15/13 | 1555 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| | Bannyle CRL | 4/15/13 | 19:10 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| | | | |



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|
| NAS-C1 | | | | |
| SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| SD-S-P-NASC1-0102 | | | | |
| SD-S-P-NASC1-0203 | | | | |
| SD-S-P-NASC1-0304 | | | | |
| SD-S-P-NASC1-0405 | | | | |
| SD-S-P-NASC1-0506 | | | | BOTTOM |
| SD-S-P-NASC1-0607 | | | | |
| SD-S-P-NASC1-0708 | | | | |
| SD-S-P-NASC1-0809 | | | | |
| NAS-C2 | | | | |
| SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| SD-S-P-NASC2-0102 | | | | |
| SD-S-P-NASC2-0203 | | | | |
| SD-S-P-NASC2-0304 | | | | |
| SD-S-P-NASC2-0405 | | | | |
| SD-S-P-NASC2-0506 | | | | BOTTOM |
| SD-S-P-NASC2-0607 | | | | |
| SD-S-P-NASC2-0708 | | | | |
| SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | |
| SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| SD-S-P-NASC3-0102 | | | | |
| SD-S-P-NASC3-0203 | | | | |
| SD-S-P-NASC3-0304 | | | | |
| SD-S-P-NASC3-0405 | | | | |
| SD-S-P-NASC3-0506 | | | | BOTTOM |
| SD-S-P-NASC3-0607 | | | | |
| SD-S-P-NASC3-0708 | | | | |
| SD-S-P-NASC3-0809 | | | | |
| SD-S-P-NASC3-0910 | | | | |
| SD-S-P-NASC3-0910-PLUG | | | | not included[c] |
| NAS-C4 | | | | |
| SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| SD-S-P-NASC4-0102 | | | | |
| SD-S-P-NASC4-0203 | | | | |
| SD-S-P-NASC4-0304 | | | | |
| SD-S-P-NASC4-0405 | | | | |
| SD-S-P-NASC4-0506 | | | | BOTTOM |
| SD-S-P-NASC4-0607 | | | | |
| SD-S-P-NASC4-0708 | | | | |
| SD-S-P-NASC4-0809 | | | | |
| SD-S-P-NASC4-0910 | | | | |
| SD-S-P-NASC4-0910-PLUG | | | | not included[c] |
| NAS-C5 | | | | |
| SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| SD-S-P-NASC5-0102 | | | | |
| SD-S-P-NASC5-0203 | | | | |
| SD-S-P-NASC5-0304 | | | | BOTTOM |
| SD-S-P-NASC5-0405 | | | | |
| SD-S-P-NASC5-0506-PLUG | | | | not included[c] |
| NAS-C6 | | | | |
| SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| SD-S-P-NASC6-0102 | | | | |
| SD-S-P-NASC6-0203 | | | | BOTTOM |
| SD-S-P-NASC6-0304-PLUG | | | | not included[c] |
| NAS-C7 | | | | |
| SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| SD-S-P-NASC7-0102 | | | | |
| SD-S-P-NASC7-0203 | | | | |
| SD-S-P-NASC7-0304 | | | | |
| SD-S-P-NASC7-0405 | | | | BOTTOM |
| SD-S-P-NASC7-0506 | | | | |
| SD-S-P-NASC7-0607 | | | | |
| SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | |
| SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| SD-S-P-NASC8-0102 | | | | |
| SD-S-P-NASC8-0203 | | | | |
| SD-S-P-NASC8-0304 | | | | |
| SD-S-P-NASC8-0405 | | | | |
| SD-S-P-NASC8-0506 | | | | BOTTOM |
| SD-S-P-NASC8-0607 | | | | |
| SD-S-P-NASC8-0708 | | | | |
| SD-S-P-NASC8-0809 | | | | |
| SD-S-P-NASC8-0910 | | | | |
| SD-S-P-NASC8-0910-PLUG | | | | not included[c] |
| NAS-C9 | | | | |
| SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| SD-S-P-NASC9-0102 | | | | |
| SD-S-P-NASC9-0203 | | | | |
| SD-S-P-NASC9-0304 | | | | |
| SD-S-P-NASC9-0405 | | | | BOTTOM |
| SD-S-P-NASC9-0506 | | | | |
| SD-S-P-NASC9-0607 | | | | |
| NAS-C10 | | | | |
| SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| SD-S-P-NASC10-0102 | | | | |
| SD-S-P-NASC10-0203 | | | | |
| SD-S-P-NASC10-0304 | | | | |
| SD-S-P-NASC10-0405 | | | | BOTTOM |
| SD-S-P-NASC10-0506 | | | | |
| SD-S-P-NASC10-0607 | | | | |
| SD-S-P-NASC10-0708 | | | | |
| NAS-C11 | | | | |
| SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| SD-S-P-NASC11-0102 | | | | |
| SD-S-P-NASC11-0203 | | | | |
| SD-S-P-NASC11-0304 | | | | |
| SD-S-P-NASC11-0405 | | | | BOTTOM |
| SD-S-P-NASC11-0506 | | | | |
| SD-S-P-NASC11-0607 | | | | |
| SD-S-P-NASC11-0708 | | | | |
| SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | |
| SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| SD-S-P-NASC12-0102 | | | | |
| SD-S-P-NASC12-0203 | | | | |
| SD-S-P-NASC12-0304 | | | | |
| SD-S-P-NASC12-0405 | | | | BOTTOM |
| SD-S-P-NASC12-0506 | | | | |
| SD-S-P-NASC12-0607 | | | | |
| SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | |
| SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| SD-S-P-NASC13-0102 | | | | |
| SD-S-P-NASC13-0203 | | | | |
| SD-S-P-NASC13-0304 | | | | BOTTOM |
| SD-S-P-NASC13-0405 | | | | |
| SD-S-P-NASC13-0506 | | | | |
| SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | |
| SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| SD-S-P-NASC14-0102 | | | | |
| SD-S-P-NASC14-0203 | | | | BOTTOM |
| SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | |
| SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| SD-S-P-NASC15-0102 | | | | |
| SD-S-P-NASC15-0203 | | | | |
| SD-S-P-NASC15-0304 | | | | BOTTOM |
| SD-S-P-NASC15-0405 | | | | |
| SD-S-P-NASC15-0506 | | | | |

Notes:
0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on
a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.
b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.
A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)
c - sample not included due to low volume available and because it represents native material which will not be dredged



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| ~~13-04-1000-1~~ | ~~SD-S-P-NASC1-0001~~ | COMP-A | 4/11/2013 | 1335 | TOP |
| ~~13-04-1000-2~~ | ~~SD-S-P-NASC1-0102~~ | | | | |
| ~~13-04-1000-3~~ | ~~SD-S-P-NASC1-0203~~ | | | | |
| ~~13-04-1000-4~~ | ~~SD-S-P-NASC1-0304~~ | | | | |
| ~~13-04-1000-5~~ | ~~SD-S-P-NASC1-0405~~ | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| ~~13-04-1111-1~~ | ~~SD-S-P-NASC2-0001~~ | COMP-A | 4/12/2013 | 1021 | TOP |
| ~~13-04-1111-2~~ | ~~SD-S-P-NASC2-0102~~ | | | | |
| ~~13-04-1111-3~~ | ~~SD-S-P-NASC2-0203~~ | | | | |
| ~~13-04-1111-4~~ | ~~SD-S-P-NASC2-0304~~ | | | | |
| ~~13-04-1111-5~~ | ~~SD-S-P-NASC2-0405~~ | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| ~~13-04-1113-1~~ | ~~SD-S-P-NASC3-0001~~ | COMP-A | 4/12/2013 | 751 | TOP |
| ~~13-04-1113-2~~ | ~~SD-S-P-NASC3-0102~~ | | | | |
| ~~13-04-1113-3~~ | ~~SD-S-P-NASC3-0203~~ | | | | |
| ~~13-04-1113-4~~ | ~~SD-S-P-NASC3-0304~~ | | | | |
| ~~13-04-1113-5~~ | ~~SD-S-P-NASC3-0405~~ | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| ~~13-04-1002-1~~ | ~~SD-S-P-NASC4-0001~~ | | 4/11/2013 | 930 | TOP |
| ~~13-04-1002-2~~ | ~~SD-S-P-NASC4-0102~~ | | | | |
| ~~13-04-1002-3~~ | ~~SD-S-P-NASC4-0203~~ | | | | |
| ~~13-04-1002-4~~ | ~~SD-S-P-NASC4-0304~~ | | | | |
| ~~13-04-1002-5~~ | ~~SD-S-P-NASC4-0405~~ | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| ~~13-04-1003-1~~ | ~~SD-S-P-NASC5-0001~~ | | 4/11/2013 | 755 | TOP |
| ~~13-04-1003-2~~ | ~~SD-S-P-NASC5-0102~~ | | | | |
| ~~13-04-1003-3~~ | ~~SD-S-P-NASC5-0203~~ | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| ~~13-04-1001-1~~ | ~~SD-S-P-NASC6-0001~~ | COMP-A | 4/11/2013 | 1200 | TOP |
| ~~13-04-1001-2~~ | ~~SD-S-P-NASC6-0102~~ | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| ~~13-04-0902-1~~ | ~~SD-S-P-NASC7-0001~~ | COMP-A | 4/10/2013 | 1430 | TOP |
| ~~13-04-0902-2~~ | ~~SD-S-P-NASC7-0102~~ | | | | |
| ~~13-04-0902-3~~ | ~~SD-S-P-NASC7-0203~~ | | | | |
| ~~13-04-0902-4~~ | ~~SD-S-P-NASC7-0304~~ | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| ~~13-04-0903-1~~ | ~~SD-S-P-NASC8-0001~~ | COMP-A | 4/10/2013 | 830 | TOP |
| ~~13-04-0903-2~~ | ~~SD-S-P-NASC8-0102~~ | | | | |
| ~~13-04-0903-3~~ | ~~SD-S-P-NASC8-0203~~ | | | | |
| ~~13-04-0903-4~~ | ~~SD-S-P-NASC8-0304~~ | | | | |
| ~~13-04-0903-5~~ | ~~SD-S-P-NASC8-0405~~ | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| ~~13-04-0901-1~~ | ~~SD-S-P-NASC9-0001~~ | COMP-A | 4/10/2013 | 1315 | TOP |
| ~~13-04-0901-2~~ | ~~SD-S-P-NASC9-0102~~ | | | | |
| ~~13-04-0901-3~~ | ~~SD-S-P-NASC9-0203~~ | | | | |
| ~~13-04-0901-4~~ | ~~SD-S-P-NASC9-0304~~ | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607-PLUG~~ | | | | |
| NAS-C10 | | | | | |
| ~~13-04-0904-1~~ | ~~SD-S-P-NASC10-0001~~ | COMP-D | 4/10/2013 | 1010 | TOP |
| ~~13-04-0904-2~~ | ~~SD-S-P-NASC10-0102~~ | | | | |
| ~~13-04-0904-3~~ | ~~SD-S-P-NASC10-0203~~ | | | | |
| ~~13-04-0904-4~~ | ~~SD-S-P-NASC10-0304~~ | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-8 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| ~~13-04-0778-1~~ | ~~SD-S-P-NASC11-0001~~ | COMP-D | 4/9/2013 | 1525 | TOP |
| ~~13-04-0778-2~~ | ~~SD-S-P-NASC11-0102~~ | | | | |
| ~~13-04-0778-3~~ | ~~SD-S-P-NASC11-0203~~ | | | | |
| ~~13-04-0778-4~~ | ~~SD-S-P-NASC11-0304~~ | | | | |
| ~~13-04-0778-5~~ | ~~SD-S-P-NASC11-0405~~ | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| ~~13-04-0780-1~~ | ~~SD-S-P-NASC12-0001~~ | COMP-D | 4/9/2013 | 1410 | TOP |
| ~~13-04-0780-2~~ | ~~SD-S-P-NASC12-0102~~ | | | | |
| ~~13-04-0780-3~~ | ~~SD-S-P-NASC12-0203~~ | | | | |
| ~~13-04-0780-4~~ | ~~SD-S-P-NASC12-0304~~ | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| ~~13-04-0781-1~~ | ~~SD-S-P-NASC13-0001~~ | COMP-E | 4/9/2013 | 1055 | TOP |
| ~~13-04-0781-2~~ | ~~SD-S-P-NASC13-0102~~ | | | | |
| ~~13-04-0781-3~~ | ~~SD-S-P-NASC13-0203~~ | | | | |
| ~~13-04-0781-4~~ | ~~SD-S-P-NASC13-0304~~ | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| ~~13-04-0782-1~~ | ~~SD-S-P-NASC14-0001~~ | COMP-E | 4/9/2013 | 815 | TOP |
| ~~13-04-0782-2~~ | ~~SD-S-P-NASC14-0102~~ | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| ~~13-04-0779-1~~ | ~~SD-S-P-NASC15-0001~~ | COMP-E | 4/9/2013 | 940 | TOP |
| ~~13-04-0779-2~~ | ~~SD-S-P-NASC15-0102~~ | | | | |
| ~~13-04-0779-3~~ | ~~SD-S-P-NASC15-0203~~ | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-1113

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/15/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.6 °C - 0.2 °C (CF) = 1.4 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: VB

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: VB

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: HH

| SAMPLE CONDITION: | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ 2

**Water:** ☐VOA ☐VOA**h** ☐VOA**$na_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**$na_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**$na_2$** ☐_____ ☐ _____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** HH

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** JS

**Preservative:** **h:** HCL **n:** $HNO_3$ **$na_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** JS



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| 13-04-1004-1 | SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| 13-04-1004-2 | SD-S-P-NASC1-0102 | | | | |
| 13-04-1004-3 | SD-S-P-NASC1-0203 | | | | |
| 13-04-1004-4 | SD-S-P-NASC1-0304 | | | | |
| 13-04-1004-5 | SD-S-P-NASC1-0405 | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| 13-04-1111-1 | SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| 13-04-1111-2 | SD-S-P-NASC2-0102 | | | | |
| 13-04-1111-3 | SD-S-P-NASC2-0203 | | | | |
| 13-04-1111-4 | SD-S-P-NASC2-0304 | | | | |
| 13-04-1111-5 | SD-S-P-NASC2-0405 | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| 13-04-1113-1 | SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| 13-04-1113-2 | SD-S-P-NASC3-0102 | | | | |
| 13-04-1113-3 | SD-S-P-NASC3-0203 | | | | |
| 13-04-1113-4 | SD-S-P-NASC3-0304 | | | | |
| 13-04-1113-5 | SD-S-P-NASC3-0405 | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| 13-04-1002-1 | SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| 13-04-1002-2 | SD-S-P-NASC4-0102 | | | | |
| 13-04-1002-3 | SD-S-P-NASC4-0203 | | | | |
| 13-04-1002-4 | SD-S-P-NASC4-0304 | | | | |
| 13-04-1002-5 | SD-S-P-NASC4-0405 | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| 13-04-1003-1 | SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| 13-04-1003-2 | SD-S-P-NASC5-0102 | | | | |
| 13-04-1003-3 | SD-S-P-NASC5-0203 | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| 13-04-1001-1 | SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| 13-04-1001-2 | SD-S-P-NASC6-0102 | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| 13-04-0902-1 | SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| 13-04-0902-2 | SD-S-P-NASC7-0102 | | | | |
| 13-04-0902-3 | SD-S-P-NASC7-0203 | | | | |
| 13-04-0902-4 | SD-S-P-NASC7-0304 | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| 13-04-0903-1 | SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| 13-04-0903-2 | SD-S-P-NASC8-0102 | | | | |
| 13-04-0903-3 | SD-S-P-NASC8-0203 | | | | |
| 13-04-0903-4 | SD-S-P-NASC8-0304 | | | | |
| 13-04-0903-5 | SD-S-P-NASC8-0405 | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| 13-04-0901-1 | SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| 13-04-0901-2 | SD-S-P-NASC9-0102 | | | | |
| 13-04-0901-3 | SD-S-P-NASC9-0203 | | | | |
| 13-04-0901-4 | SD-S-P-NASC9-0304 | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607 PLUG~~ | | | | |
| NAS-C10 | | | | | |
| 13-04-0904-1 | SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| 13-04-0904-2 | SD-S-P-NASC10-0102 | | | | |
| 13-04-0904-3 | SD-S-P-NASC10-0203 | | | | |
| 13-04-0904-4 | SD-S-P-NASC10-0304 | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-9 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| 13-04-0778-1 | SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| 13-04-0778-2 | SD-S-P-NASC11-0102 | | | | |
| 13-04-0778-3 | SD-S-P-NASC11-0203 | | | | |
| 13-04-0778-4 | SD-S-P-NASC11-0304 | | | | |
| 13-04-0778-5 | SD-S-P-NASC11-0405 | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| 13-04-0780-1 | SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| 13-04-0780-2 | SD-S-P-NASC12-0102 | | | | |
| 13-04-0780-3 | SD-S-P-NASC12-0203 | | | | |
| 13-04-0780-4 | SD-S-P-NASC12-0304 | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| 13-04-0781-1 | SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| 13-04-0781-2 | SD-S-P-NASC13-0102 | | | | |
| 13-04-0781-3 | SD-S-P-NASC13-0203 | | | | |
| 13-04-0781-4 | SD-S-P-NASC13-0304 | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| 13-04-0782-1 | SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| 13-04-0782-2 | SD-S-P-NASC14-0102 | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| 13-04-0779-1 | SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| 13-04-0779-2 | SD-S-P-NASC15-0102 | | | | |
| 13-04-0779-3 | SD-S-P-NASC15-0203 | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged

Calscience Environmental Laboratories, Inc.

# CALSCIENCE

## WORK ORDER NUMBER: 13-04-1002

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard Sediment Study

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 06/20/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Accredited in accordance with nelac

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Calscience Environmental Laboratories, Inc.

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Work Order Number: 13-04-1002


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Calscience Environmental Laboratories, Inc.

# CASE NARRATIVE

## Calscience Work Order No.: 13-04-1002
## Project ID: NASSCO Shipyard Sediment Study

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

Twelve sediment samples were received for this project on April 12, 2013. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 1.7°C and 1.5°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in freezers pending chemistry testing.

On June 12, 2013 samples were composited into two samples as per client instructions.

COC discrepancies were noted in the Sample Anomaly Form.

***Tests Performed***

The two composite samples were analyzed for the following analyses:

C8-C40 by EPA 8015B (M)
C4-C12 by EPA 8015B (M)
Title 22 Metals by EPA 6010B
Mercury by EPA 7471A
PCB Aroclors by EPA 8082

***Data Summary***

<u>Holding times</u>

All samples were analyzed past the EPA recommended holding times for TPH C4-12, TPH-C8-40, PCB Aroclors and Mercury. However, all samples were frozen (-20 °C) upon receipt at the laboratory and remained in that condition until sample preparation/analysis. Per the Puget Sound Protocol (and other references), which states the holding time for sediments may be extended up to one year if kept frozen after collection, the samples were analyzed within the allowable one year holding time. In addition, PCBs are known to be very stable compounds, and SW-846 Ch.4, Table 4-1 (Rev. 4) lists “None” as the recommended holding time for PCBs. However, because the samples were analyzed outside of normal EPA hold times, the data is flagged as such.

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Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

Concentrations of target analytes in the method blank were found to be below reporting limits for all analyses.

Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the MDL, and where applicable, "J" flags were reported.

Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test. All parameters were within established control limits.

Matrix Spikes

Matrix spikes and matrix spike duplicates were performed for each applicable analysis on project samples. All parameters were within the acceptable control limits unless otherwise noted.

For C8-C40 by EPA 8015B (M) matrix spike and matrix spike duplicate RPD was outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

For C4-C12 by EPA 8015B (M) one of the matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

For Title 22 Metals by EPA 6010B matrix spike and/or matrix spike duplicate recoveries were outside the established control limits for antimony and barium. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action. The concentrations of copper and zinc in the sample were over four times the spike amount, therefore the recoveries could not be calculated.

For PCB Aroclors by EPA 8082 matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

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Surrogates

Surrogate recoveries for all applicable tests and samples were within acceptable control limits.

Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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Calscience Environmental Laboratories, Inc.

# Work Order Narrative

Work Order: 13-04-1002



**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/12/13. They were assigned to Work Order 13-04-1002.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with an immediate holding time (HT </= 15 minutes --40CFR-136.3 Table II footnote 4), is considered a "field" test and reported samples results are not flagged unless the analysis is performed beyond 24 hours of the time of collection.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Calscience Environmental Laboratories, Inc.

# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC<br>27201 Puerta Real, Suite 350<br>Mission Viejo, CA 92691-8306 | Work Order: | 13-04-1002 |
| | | Project Name: | NASSCO South Shipyard Sediment Study |
| | | PO Number: | |
| | | Date Received: | 04/12/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| SD-S-P-NASC04-0001 | 13-04-1002-1 | 04/11/13 09:30 | 3 | Sediment |
| SD-S-P-NASC04-0102 | 13-04-1002-2 | 04/11/13 09:30 | 3 | Sediment |
| SD-S-P-NASC04-0203 | 13-04-1002-3 | 04/11/13 09:30 | 3 | Sediment |
| SD-S-P-NASC04-0304 | 13-04-1002-4 | 04/11/13 09:30 | 3 | Sediment |
| SD-S-P-NASC04-0405 | 13-04-1002-5 | 04/11/13 09:30 | 3 | Sediment |
| SD-S-P-NASC04-0506 | 13-04-1002-6 | 04/11/13 09:30 | 3 | Sediment |
| SD-S-P-NASC04-0607 | 13-04-1002-7 | 04/11/13 09:30 | 3 | Sediment |
| SD-S-P-NASC04-0708 | 13-04-1002-8 | 04/11/13 09:30 | 3 | Sediment |
| SD-S-P-NASC04-0809 | 13-04-1002-9 | 04/11/13 09:30 | 3 | Sediment |
| SD-S-P-NASC04-0910 | 13-04-1002-10 | 04/11/13 09:30 | 3 | Sediment |
| SD-S-P-NASC04-0910 PLUG | 13-04-1002-11 | 04/11/13 09:30 | 3 | Sediment |
| SD-S-P-NASC04-COMP | 13-04-1002-12 | 04/11/13 09:30 | 1 | Sediment |
| COMP-C4-TOP | 13-04-1002-13 | 04/11/13 09:30 | 1 | Sediment |
| COMP-C4-BOTTOM | 13-04-1002-14 | 04/11/13 09:30 | 1 | Sediment |

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C4-TOP** | **13-04-1002-13-A** | **04/11/13 09:30** | **Sediment** | **GC 50** | **06/12/13** | **06/15/13 01:33** | **130612B13** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | 3.5 | 5.0 | 1.7 | 1 | J |
| C13-C14 | 9.9 | 5.0 | 1.8 | 1 | |
| C15-C16 | 12 | 5.0 | 1.8 | 1 | |
| C17-C18 | 24 | 5.0 | 1.8 | 1 | |
| C19-C20 | 14 | 5.0 | 1.8 | 1 | |
| C21-C22 | 11 | 5.0 | 1.8 | 1 | |
| C23-C24 | 6.9 | 5.0 | 1.7 | 1 | |
| C25-C28 | 15 | 5.0 | 2.4 | 1 | |
| C29-C32 | 20 | 5.0 | 2.4 | 1 | |
| C33-C36 | 13 | 5.0 | 2.6 | 1 | |
| C37-C40 | 7.5 | 5.0 | 1.6 | 1 | |
| C8-C40 Total | 140 | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 96 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C4-BOTTOM** | **13-04-1002-14-A** | **04/11/13 09:30** | **Sediment** | **GC 50** | **06/12/13** | **06/15/13 01:52** | **130612B13** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | ND | 5.0 | 1.8 | 1 | |
| C19-C20 | ND | 5.0 | 1.8 | 1 | |
| C21-C22 | ND | 5.0 | 1.8 | 1 | |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | ND | 5.0 | 2.4 | 1 | |
| C29-C32 | ND | 5.0 | 2.4 | 1 | |
| C33-C36 | ND | 5.0 | 2.6 | 1 | |
| C37-C40 | ND | 5.0 | 1.6 | 1 | |
| C8-C40 Total | ND | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 95 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-15-500-16** | **N/A** | **Soil** | **GC 50** | **06/12/13** | **06/14/13 22:59** | **130612B13** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | ND | 5.0 | 1.8 | 1 | |
| C19-C20 | ND | 5.0 | 1.8 | 1 | |
| C21-C22 | ND | 5.0 | 1.8 | 1 | |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | ND | 5.0 | 2.4 | 1 | |
| C29-C32 | ND | 5.0 | 2.4 | 1 | |
| C33-C36 | ND | 5.0 | 2.6 | 1 | |
| C37-C40 | ND | 5.0 | 1.6 | 1 | |
| C8-C40 Total | ND | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 98 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C4-TOP** | **13-04-1002-13-B** | **04/11/13 09:30** | **Sediment** | **GC 57** | **06/12/13** | **06/13/13 06:19** | **130612B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | 0.31 | 0.50 | 0.15 | 1 | J |
| C9-C10 | 2.0 | 0.50 | 0.15 | 1 | |
| C11-C12 | 4.5 | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | 6.9 | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 116 | 42-126 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C4-BOTTOM** | **13-04-1002-14-B** | **04/11/13 09:30** | **Sediment** | **GC 57** | **06/12/13** | **06/13/13 06:51** | **130612B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 114 | 42-126 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-13-045-160** | **N/A** | **Soil** | **GC 57** | **06/12/13** | **06/12/13 12:39** | **130612B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 67 | 42-126 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C4-TOP** | **13-04-1002-13-A** | **04/11/13 09:30** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 12:15** | **130612L07** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 8.79 | 0.750 | 0.259 | 1 | |
| Barium | 90.8 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.298 | 0.250 | 0.137 | 1 | |
| Cadmium | 1.81 | 0.500 | 0.135 | 1 | |
| Chromium | 74.5 | 0.250 | 0.142 | 1 | |
| Cobalt | 5.60 | 0.250 | 0.148 | 1 | |
| Copper | 548 | 0.500 | 0.135 | 1 | |
| Lead | 132 | 0.500 | 0.132 | 1 | |
| Molybdenum | 1.79 | 0.250 | 0.132 | 1 | |
| Nickel | 14.1 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | 1.87 | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 35.7 | 0.250 | 0.141 | 1 | |
| Zinc | 395 | 1.00 | 0.178 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C4-BOTTOM** | **13-04-1002-14-A** | **04/11/13 09:30** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 12:16** | **130612L07** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 2.73 | 0.750 | 0.259 | 1 | |
| Barium | 53.1 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.202 | 0.250 | 0.137 | 1 | J |
| Cadmium | 0.198 | 0.500 | 0.135 | 1 | J |
| Chromium | 10.1 | 0.250 | 0.142 | 1 | |
| Cobalt | 5.45 | 0.250 | 0.148 | 1 | |
| Copper | 11.4 | 0.500 | 0.135 | 1 | |
| Lead | 6.34 | 0.500 | 0.132 | 1 | |
| Molybdenum | ND | 0.250 | 0.132 | 1 | |
| Nickel | 4.56 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | ND | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 31.1 | 0.250 | 0.141 | 1 | |
| Zinc | 30.4 | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-01-002-16918** | **N/A** | **Soil** | **ICP 7300** | **06/12/13** | **06/13/13 23:15** | **130612L07** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | ND | 0.750 | 0.259 | 1 | |
| Barium | ND | 0.500 | 0.154 | 1 | |
| Beryllium | ND | 0.250 | 0.137 | 1 | |
| Cadmium | ND | 0.500 | 0.135 | 1 | |
| Chromium | ND | 0.250 | 0.142 | 1 | |
| Cobalt | ND | 0.250 | 0.148 | 1 | |
| Copper | ND | 0.500 | 0.135 | 1 | |
| Lead | ND | 0.500 | 0.132 | 1 | |
| Molybdenum | ND | 0.250 | 0.132 | 1 | |
| Nickel | ND | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | ND | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | ND | 0.250 | 0.141 | 1 | |
| Zinc | ND | 1.00 | 0.178 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C4-TOP** | **13-04-1002-13-A** | **04/11/13 09:30** | **Sediment** | **Mercury** | **06/12/13** | **06/13/13 12:42** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 3.61 | 0.834 | 0.0587 | 9.98 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C4-BOTTOM** | **13-04-1002-14-A** | **04/11/13 09:30** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 20:11** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.109 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-04-007-9356** | **N/A** | **Soil** | **Mercury** | **06/12/13** | **06/12/13 19:51** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | ND | 0.0835 | 0.00588 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C4-TOP** | **13-04-1002-13-A** | **04/11/13 09:30** | **Sediment** | **GC 31** | **06/13/13** | **06/18/13 13:13** | **130613L14** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 100 | 29 | 10 | |
| Aroclor-1221 | ND | 100 | 26 | 10 | |
| Aroclor-1232 | ND | 100 | 21 | 10 | |
| Aroclor-1242 | ND | 100 | 25 | 10 | |
| Aroclor-1248 | 490 | 100 | 29 | 10 | |
| Aroclor-1254 | 920 | 100 | 24 | 10 | |
| Aroclor-1260 | 300 | 100 | 23 | 10 | |
| Aroclor-1262 | ND | 100 | 25 | 10 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 64 | 50-130 | |
| Decachlorobiphenyl | 113 | 50-130 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C4-BOTTOM** | **13-04-1002-14-A** | **04/11/13 09:30** | **Sediment** | **GC 31** | **06/13/13** | **06/19/13 10:35** | **130613L14** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | 7.1 | 10 | 2.9 | 1 | J |
| Aroclor-1254 | 9.3 | 10 | 2.4 | 1 | J |
| Aroclor-1260 | ND | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 78 | 50-130 | |
| Decachlorobiphenyl | 79 | 50-130 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-12-565-340** | **N/A** | **Soil** | **GC 31** | **06/13/13** | **06/18/13 10:40** | **130613L14** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | ND | 10 | 2.9 | 1 | |
| Aroclor-1254 | ND | 10 | 2.4 | 1 | |
| Aroclor-1260 | ND | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 80 | 50-130 | |
| Decachlorobiphenyl | 86 | 50-130 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **GC 50** | **06/12/13** | **06/14/13 23:37** | **130612S13** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| TPH as Diesel | 102.5 | 400.0 | 431.9 | 82 | 362.1 | 65 | 64-130 | 18 | 0-15 | 4 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **GC 57** | **06/12/13** | **06/12/13 19:44** | **130612S01** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| GRO (C4-C12) Total | 1.771 | 10.00 | 3.056 | 13 | 3.441 | 17 | 48-114 | 12 | 0-25 | 3 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-1004-11** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:35** | **130612S07** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 5.156 | 21 | 4.888 | 20 | 50-115 | 5 | 0-20 | 3 |
| Arsenic | 6.382 | 25.00 | 30.80 | 98 | 31.62 | 101 | 75-125 | 3 | 0-20 | |
| Barium | 77.69 | 25.00 | 94.87 | 69 | 96.62 | 76 | 75-125 | 2 | 0-20 | 3 |
| Beryllium | 0.3050 | 25.00 | 26.76 | 106 | 26.91 | 106 | 75-125 | 1 | 0-20 | |
| Cadmium | 2.288 | 25.00 | 27.48 | 101 | 27.65 | 101 | 75-125 | 1 | 0-20 | |
| Chromium | 52.02 | 25.00 | 74.33 | 89 | 75.67 | 95 | 75-125 | 2 | 0-20 | |
| Cobalt | 5.278 | 25.00 | 31.48 | 105 | 31.77 | 106 | 75-125 | 1 | 0-20 | |
| Copper | 119.0 | 25.00 | 135.0 | 4X | 139.8 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 57.88 | 25.00 | 83.51 | 103 | 77.28 | 78 | 75-125 | 8 | 0-20 | |
| Molybdenum | 2.003 | 25.00 | 22.60 | 82 | 22.75 | 83 | 75-125 | 1 | 0-20 | |
| Nickel | 12.13 | 25.00 | 37.27 | 101 | 37.84 | 103 | 75-125 | 2 | 0-20 | |
| Selenium | ND | 25.00 | 22.86 | 91 | 23.59 | 94 | 75-125 | 3 | 0-20 | |
| Silver | 2.133 | 12.50 | 14.64 | 100 | 14.64 | 100 | 75-125 | 0 | 0-20 | |
| Thallium | ND | 25.00 | 18.96 | 76 | 20.36 | 81 | 75-125 | 7 | 0-20 | |
| Vanadium | 39.62 | 25.00 | 62.66 | 92 | 64.14 | 98 | 75-125 | 2 | 0-20 | |
| Zinc | 212.5 | 25.00 | 224.3 | 4X | 232.0 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 19:58** | **130612S08** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.8662 | 0.8350 | 1.685 | 98 | 1.721 | 102 | 71-137 | 2 | 0-14 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-1004-11** | **Sediment** | **GC 31** | **06/13/13** | **06/18/13 16:24** | **130613S14** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | ND | 20.00 | 40.46 | 202 | 37.69 | 188 | 50-135 | 7 | 0-25 | 3 |
| Aroclor-1260 | 123.4 | 20.00 | 90.85 | 0 | 90.65 | 0 | 50-135 | 0 | 0-25 | 3 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - PDS/PDSD

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | PDS/PDSD Batch Number |
|---|---|---|---|---|---|
| **13-04-1004-11** | **Sediment** | **ICP 7300** | **06/12/13 00:00** | **06/14/13 11:38** | **130612S07** |

| Parameter | Sample Conc. | Spike Added | PDS Conc. | PDS %Rec. | PDSD Conc. | PDSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 24.28 | 97 | 24.90 | 100 | 75-125 | 3 | 0-20 | |
| Arsenic | 6.382 | 25.00 | 31.90 | 102 | 31.54 | 101 | 75-125 | 1 | 0-20 | |
| Barium | 77.69 | 25.00 | 103.9 | 105 | 103.8 | 104 | 75-125 | 0 | 0-20 | |
| Beryllium | 0.3050 | 25.00 | 26.15 | 103 | 26.17 | 103 | 75-125 | 0 | 0-20 | |
| Cadmium | 2.288 | 25.00 | 27.00 | 99 | 26.98 | 99 | 75-125 | 0 | 0-20 | |
| Chromium | 52.02 | 25.00 | 76.25 | 97 | 76.16 | 97 | 75-125 | 0 | 0-20 | |
| Cobalt | 5.278 | 25.00 | 31.07 | 103 | 31.32 | 104 | 75-125 | 1 | 0-20 | |
| Copper | 119.0 | 25.00 | 144.2 | 4X | 143.8 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 57.88 | 25.00 | 81.45 | 94 | 82.11 | 97 | 75-125 | 1 | 0-20 | |
| Molybdenum | 2.003 | 25.00 | 26.24 | 97 | 26.48 | 98 | 75-125 | 1 | 0-20 | |
| Nickel | 12.13 | 25.00 | 37.35 | 101 | 37.74 | 102 | 75-125 | 1 | 0-20 | |
| Selenium | ND | 25.00 | 23.15 | 93 | 23.94 | 96 | 75-125 | 3 | 0-20 | |
| Silver | 2.133 | 12.50 | 15.06 | 103 | 15.05 | 103 | 75-125 | 0 | 0-20 | |
| Thallium | ND | 25.00 | 22.31 | 89 | 23.20 | 93 | 75-125 | 4 | 0-20 | |
| Vanadium | 39.62 | 25.00 | 63.75 | 97 | 63.75 | 97 | 75-125 | 0 | 0-20 | |
| Zinc | 212.5 | 25.00 | 236.1 | 4X | 236.6 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-15-500-16** | **Soil** | **GC 50** | **06/14/13 23:19** | **130612B13** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| TPH as Diesel | 400.0 | 346.7 | 87 | 75-123 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-13-045-160** | **Soil** | **GC 57** | **06/12/13 13:11** | **130612B01** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| GRO (C4-C12) Total | 10.00 | 8.906 | 89 | 70-124 | |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **097-01-002-16918** | **Soil** | **ICP 7300** | **06/13/13 23:23** | **130612L07** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | ME CL | Qualifiers |
|---|---|---|---|---|---|---|
| Antimony | 25.00 | 25.66 | 103 | 80-120 | 73-127 | |
| Arsenic | 25.00 | 25.77 | 103 | 80-120 | 73-127 | |
| Barium | 25.00 | 27.89 | 112 | 80-120 | 73-127 | |
| Beryllium | 25.00 | 25.57 | 102 | 80-120 | 73-127 | |
| Cadmium | 25.00 | 26.51 | 106 | 80-120 | 73-127 | |
| Chromium | 25.00 | 26.27 | 105 | 80-120 | 73-127 | |
| Cobalt | 25.00 | 27.42 | 110 | 80-120 | 73-127 | |
| Copper | 25.00 | 25.16 | 101 | 80-120 | 73-127 | |
| Lead | 25.00 | 26.54 | 106 | 80-120 | 73-127 | |
| Molybdenum | 25.00 | 26.03 | 104 | 80-120 | 73-127 | |
| Nickel | 25.00 | 28.35 | 113 | 80-120 | 73-127 | |
| Selenium | 25.00 | 24.44 | 98 | 80-120 | 73-127 | |
| Silver | 12.50 | 13.34 | 107 | 80-120 | 73-127 | |
| Thallium | 25.00 | 26.22 | 105 | 80-120 | 73-127 | |
| Vanadium | 25.00 | 25.55 | 102 | 80-120 | 73-127 | |
| Zinc | 25.00 | 27.93 | 112 | 80-120 | 73-127 | |

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-04-007-9356** | **Soil** | **Mercury** | **06/12/13 19:54** | **130612L08** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.8350 | 0.8143 | 98 | 85-121 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-12-565-340** | **Soil** | **GC 31** | **06/18/13 10:59** | **130613L14** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | 20.00 | 18.98 | 95 | 50-135 | |
| Aroclor-1260 | 20.00 | 15.42 | 77 | 50-135 | |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order: 13-04-1002



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| 4 | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range. |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

For any analysis identified as a "field" test with a holding time (HT) </= 15 minutes where the sample is received outside of HT, Calscience will adhere to its internal HT of 24 hours. In cases where sample analysis does not meet Calscience's internal HT, results will be appropriately qualified.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/11/2013

PAGE: 1 OF 2

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

P.O. NO.: 1315100800

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

QUOTE NO.:

SAMPLER(S): (SIGNATURE)

LAB USE ONLY: 13-04-1002

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS:
Please HOLD samples. 1x 16 oz per sample
DO NOT FREEZE COMPOSITE SAMPLES. HOLD FOR GEOTECHNICAL.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC 04 - | 0001 | 4/11/2013 | 0930 | sed | 3 | | | | X |
| 2 | SD-S-P-NASC 04 - | 0102 | 4/11/2013 | | sed | 3 | | | | X |
| 3 | SD-S-P-NASC 04 - | 0203 | 4/11/2013 | | sed | 3 | | | | X |
| 4 | SD-S-P-NASC 04 - | 0304 | 4/11/2013 | | sed | 3 | | | | X |
| 5 | SD-S-P-NASC 04 - | 0405 | 4/11/2013 | | sed | 3 | | | | X |
| 6 | SD-S-P-NASC 04 - | 0506 | 4/11/2013 | | sed | 3 | | | | X |
| 7 | SD-S-P-NASC 04 - | 0607 | 4/11/2013 | | sed | 3 | | | | X |
| 8 | SD-S-P-NASC 04 - | 0708 | 4/11/2013 | | sed | 3 | | | | X |
| 9 | SD-S-P-NASC 04 - | 0809 | 4/11/2013 | | sed | 3 | | | | X |
| 10 | SD-S-P-NASC 04 - | 0910 | 4/11/2013 | | sed | 3 | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | CCL | 04/12/13 | 1545 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| | CCL | 04/12/13 | 1900 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |



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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE:
PAGE: 3 of 3

LABORATORY CLIENT: AMEC Environment & Infrastructure
ADDRESS: 9210 Sky Park Ct. Ste 200
CITY: San Diego, California 92123
TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study
PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder
SAMPLER(S): (SIGNATURE)

P.O. NO.: 1315100800
QUOTE NO.:
LAB USE ONLY: 04-1002

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS
Please HOLD samples. 1x 16 oz, 1x 8oz, and 1x ziplock baggie (for grain size) per sample
DO NOT FREEZE COMPOSITE GRAIN SIZE SAMPLES.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | SD-S-P-NASC04 | -0910 Plug | 4/11/2013 | 0930 | sed | 3 | | | | X |
| 12 | SD-S-P-NASC04 - | Comp | 4/11/2013 | 0930 | sed | 1 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | CA | 04/12/13 | 1545 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| | CA | 04/12/13 | 1900 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|
| NAS-C1 | | | | |
| SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| SD-S-P-NASC1-0102 | | | | |
| SD-S-P-NASC1-0203 | | | | |
| SD-S-P-NASC1-0304 | | | | |
| SD-S-P-NASC1-0405 | | | | |
| SD-S-P-NASC1-0506 | | | | BOTTOM |
| SD-S-P-NASC1-0607 | | | | |
| SD-S-P-NASC1-0708 | | | | |
| SD-S-P-NASC1-0809 | | | | |
| NAS-C2 | | | | |
| SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| SD-S-P-NASC2-0102 | | | | |
| SD-S-P-NASC2-0203 | | | | |
| SD-S-P-NASC2-0304 | | | | |
| SD-S-P-NASC2-0405 | | | | |
| SD-S-P-NASC2-0506 | | | | BOTTOM |
| SD-S-P-NASC2-0607 | | | | |
| SD-S-P-NASC2-0708 | | | | |
| SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | |
| SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| SD-S-P-NASC3-0102 | | | | |
| SD-S-P-NASC3-0203 | | | | |
| SD-S-P-NASC3-0304 | | | | |
| SD-S-P-NASC3-0405 | | | | |
| SD-S-P-NASC3-0506 | | | | BOTTOM |
| SD-S-P-NASC3-0607 | | | | |
| SD-S-P-NASC3-0708 | | | | |
| SD-S-P-NASC3-0809 | | | | |
| SD-S-P-NASC3-0910 | | | | |
| SD-S-P-NASC3-0910-PLUG | | | | not included[c] |
| NAS-C4 | | | | |
| SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| SD-S-P-NASC4-0102 | | | | |
| SD-S-P-NASC4-0203 | | | | |
| SD-S-P-NASC4-0304 | | | | |
| SD-S-P-NASC4-0405 | | | | |
| SD-S-P-NASC4-0506 | | | | BOTTOM |
| SD-S-P-NASC4-0607 | | | | |
| SD-S-P-NASC4-0708 | | | | |
| SD-S-P-NASC4-0809 | | | | |
| SD-S-P-NASC4-0910 | | | | |
| SD-S-P-NASC4-0910-PLUG | | | | not included[c] |
| NAS-C5 | | | | |
| SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| SD-S-P-NASC5-0102 | | | | |
| SD-S-P-NASC5-0203 | | | | |
| SD-S-P-NASC5-0304 | | | | BOTTOM |
| SD-S-P-NASC5-0405 | | | | |
| SD-S-P-NASC5-0506-PLUG | | | | not included[c] |
| NAS-C6 | | | | |
| SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| SD-S-P-NASC6-0102 | | | | |
| SD-S-P-NASC6-0203 | | | | BOTTOM |
| SD-S-P-NASC6-0304-PLUG | | | | not included[c] |
| NAS-C7 | | | | |
| SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| SD-S-P-NASC7-0102 | | | | |
| SD-S-P-NASC7-0203 | | | | |
| SD-S-P-NASC7-0304 | | | | |
| SD-S-P-NASC7-0405 | | | | BOTTOM |
| SD-S-P-NASC7-0506 | | | | |
| SD-S-P-NASC7-0607 | | | | |
| SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | |
| SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| SD-S-P-NASC8-0102 | | | | |
| SD-S-P-NASC8-0203 | | | | |
| SD-S-P-NASC8-0304 | | | | |
| SD-S-P-NASC8-0405 | | | | |
| SD-S-P-NASC8-0506 | | | | BOTTOM |
| SD-S-P-NASC8-0607 | | | | |
| SD-S-P-NASC8-0708 | | | | |
| SD-S-P-NASC8-0809 | | | | |
| SD-S-P-NASC8-0910 | | | | |
| SD-S-P-NASC8-0910-PLUG | | | | not included[c] |
| NAS-C9 | | | | |
| SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| SD-S-P-NASC9-0102 | | | | |
| SD-S-P-NASC9-0203 | | | | |
| SD-S-P-NASC9-0304 | | | | |
| SD-S-P-NASC9-0405 | | | | BOTTOM |
| SD-S-P-NASC9-0506 | | | | |
| SD-S-P-NASC9-0607 | | | | |
| NAS-C10 | | | | |
| SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| SD-S-P-NASC10-0102 | | | | |
| SD-S-P-NASC10-0203 | | | | |
| SD-S-P-NASC10-0304 | | | | |
| SD-S-P-NASC10-0405 | | | | BOTTOM |
| SD-S-P-NASC10-0506 | | | | |
| SD-S-P-NASC10-0607 | | | | |
| SD-S-P-NASC10-0708 | | | | |
| NAS-C11 | | | | |
| SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| SD-S-P-NASC11-0102 | | | | |
| SD-S-P-NASC11-0203 | | | | |
| SD-S-P-NASC11-0304 | | | | |
| SD-S-P-NASC11-0405 | | | | BOTTOM |
| SD-S-P-NASC11-0506 | | | | |
| SD-S-P-NASC11-0607 | | | | |
| SD-S-P-NASC11-0708 | | | | |
| SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | |
| SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| SD-S-P-NASC12-0102 | | | | |
| SD-S-P-NASC12-0203 | | | | |
| SD-S-P-NASC12-0304 | | | | |
| SD-S-P-NASC12-0405 | | | | BOTTOM |
| SD-S-P-NASC12-0506 | | | | |
| SD-S-P-NASC12-0607 | | | | |
| SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | |
| SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| SD-S-P-NASC13-0102 | | | | |
| SD-S-P-NASC13-0203 | | | | |
| SD-S-P-NASC13-0304 | | | | BOTTOM |
| SD-S-P-NASC13-0405 | | | | |
| SD-S-P-NASC13-0506 | | | | |
| SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | |
| SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| SD-S-P-NASC14-0102 | | | | |
| SD-S-P-NASC14-0203 | | | | BOTTOM |
| SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | |
| SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| SD-S-P-NASC15-0102 | | | | |
| SD-S-P-NASC15-0203 | | | | |
| SD-S-P-NASC15-0304 | | | | BOTTOM |
| SD-S-P-NASC15-0405 | | | | |
| SD-S-P-NASC15-0506 | | | | |

Notes:
0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on
a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.
b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.
A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)
c - sample not included due to low volume available and because it represents native material which will not be dredged



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| ~~13-04-1000-1~~ | ~~SD-S-P-NASC1-0001~~ | COMP-A | 4/11/2013 | 1335 | TOP |
| ~~13-04-1000-2~~ | ~~SD-S-P-NASC1-0102~~ | | | | |
| ~~13-04-1000-3~~ | ~~SD-S-P-NASC1-0203~~ | | | | |
| ~~13-04-1000-4~~ | ~~SD-S-P-NASC1-0304~~ | | | | |
| ~~13-04-1000-5~~ | ~~SD-S-P-NASC1-0405~~ | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| ~~13-04-1111-1~~ | ~~SD-S-P-NASC2-0001~~ | COMP-A | 4/12/2013 | 1021 | TOP |
| ~~13-04-1111-2~~ | ~~SD-S-P-NASC2-0102~~ | | | | |
| ~~13-04-1111-3~~ | ~~SD-S-P-NASC2-0203~~ | | | | |
| ~~13-04-1111-4~~ | ~~SD-S-P-NASC2-0304~~ | | | | |
| ~~13-04-1111-5~~ | ~~SD-S-P-NASC2-0405~~ | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| ~~13-04-1113-1~~ | ~~SD-S-P-NASC3-0001~~ | COMP-A | 4/12/2013 | 751 | TOP |
| ~~13-04-1113-2~~ | ~~SD-S-P-NASC3-0102~~ | | | | |
| ~~13-04-1113-3~~ | ~~SD-S-P-NASC3-0203~~ | | | | |
| ~~13-04-1113-4~~ | ~~SD-S-P-NASC3-0304~~ | | | | |
| ~~13-04-1113-5~~ | ~~SD-S-P-NASC3-0405~~ | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| ~~13-04-1002-1~~ | ~~SD-S-P-NASC4-0001~~ | COMP-A | 4/11/2013 | 930 | TOP |
| ~~13-04-1002-2~~ | ~~SD-S-P-NASC4-0102~~ | | | | |
| ~~13-04-1002-3~~ | ~~SD-S-P-NASC4-0203~~ | | | | |
| ~~13-04-1002-4~~ | ~~SD-S-P-NASC4-0304~~ | | | | |
| ~~13-04-1002-5~~ | ~~SD-S-P-NASC4-0405~~ | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| ~~13-04-1003-1~~ | ~~SD-S-P-NASC5-0001~~ | COMP-A | 4/11/2013 | 755 | TOP |
| ~~13-04-1003-2~~ | ~~SD-S-P-NASC5-0102~~ | | | | |
| ~~13-04-1003-3~~ | ~~SD-S-P-NASC5-0203~~ | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| ~~13-04-1001-1~~ | ~~SD-S-P-NASC6-0001~~ | COMP-A | 4/11/2013 | 1200 | TOP |
| ~~13-04-1001-2~~ | ~~SD-S-P-NASC6-0102~~ | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| ~~13-04-0902-1~~ | ~~SD-S-P-NASC7-0001~~ | COMP-A | 4/10/2013 | 1430 | TOP |
| ~~13-04-0902-2~~ | ~~SD-S-P-NASC7-0102~~ | | | | |
| ~~13-04-0902-3~~ | ~~SD-S-P-NASC7-0203~~ | | | | |
| ~~13-04-0902-4~~ | ~~SD-S-P-NASC7-0304~~ | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| ~~13-04-0903-1~~ | ~~SD-S-P-NASC8-0001~~ | COMP-A | 4/10/2013 | 830 | TOP |
| ~~13-04-0903-2~~ | ~~SD-S-P-NASC8-0102~~ | | | | |
| ~~13-04-0903-3~~ | ~~SD-S-P-NASC8-0203~~ | | | | |
| ~~13-04-0903-4~~ | ~~SD-S-P-NASC8-0304~~ | | | | |
| ~~13-04-0903-5~~ | ~~SD-S-P-NASC8-0405~~ | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| ~~13-04-0901-1~~ | ~~SD-S-P-NASC9-0001~~ | COMP-A | 4/10/2013 | 1315 | TOP |
| ~~13-04-0901-2~~ | ~~SD-S-P-NASC9-0102~~ | | | | |
| ~~13-04-0901-3~~ | ~~SD-S-P-NASC9-0203~~ | | | | |
| ~~13-04-0901-4~~ | ~~SD-S-P-NASC9-0304~~ | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607-PLUG~~ | | | | |
| NAS-C10 | | | | | |
| ~~13-04-0904-1~~ | ~~SD-S-P-NASC10-0001~~ | COMP-D | 4/10/2013 | 1010 | TOP |
| ~~13-04-0904-2~~ | ~~SD-S-P-NASC10-0102~~ | | | | |
| ~~13-04-0904-3~~ | ~~SD-S-P-NASC10-0203~~ | | | | |
| ~~13-04-0904-4~~ | ~~SD-S-P-NASC10-0304~~ | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-8 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| ~~13-04-0778-1~~ | ~~SD-S-P-NASC11-0001~~ | COMP-D | 4/9/2013 | 1525 | TOP |
| ~~13-04-0778-2~~ | ~~SD-S-P-NASC11-0102~~ | | | | |
| ~~13-04-0778-3~~ | ~~SD-S-P-NASC11-0203~~ | | | | |
| ~~13-04-0778-4~~ | ~~SD-S-P-NASC11-0304~~ | | | | |
| ~~13-04-0778-5~~ | ~~SD-S-P-NASC11-0405~~ | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| ~~13-04-0780-1~~ | ~~SD-S-P-NASC12-0001~~ | COMP-D | 4/9/2013 | 1410 | TOP |
| ~~13-04-0780-2~~ | ~~SD-S-P-NASC12-0102~~ | | | | |
| ~~13-04-0780-3~~ | ~~SD-S-P-NASC12-0203~~ | | | | |
| ~~13-04-0780-4~~ | ~~SD-S-P-NASC12-0304~~ | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| ~~13-04-0781-1~~ | ~~SD-S-P-NASC13-0001~~ | COMP-E | 4/9/2013 | 1055 | TOP |
| ~~13-04-0781-2~~ | ~~SD-S-P-NASC13-0102~~ | | | | |
| ~~13-04-0781-3~~ | ~~SD-S-P-NASC13-0203~~ | | | | |
| ~~13-04-0781-4~~ | ~~SD-S-P-NASC13-0304~~ | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| ~~13-04-0782-1~~ | ~~SD-S-P-NASC14-0001~~ | COMP-E | 4/9/2013 | 815 | TOP |
| ~~13-04-0782-2~~ | ~~SD-S-P-NASC14-0102~~ | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| ~~13-04-0779-1~~ | ~~SD-S-P-NASC15-0001~~ | COMP-E | 4/9/2013 | 940 | TOP |
| ~~13-04-0779-2~~ | ~~SD-S-P-NASC15-0102~~ | | | | |
| ~~13-04-0779-3~~ | ~~SD-S-P-NASC15-0203~~ | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-1002

# SAMPLE RECEIPT FORM

Cooler 1 of 2

CLIENT: AMEC

DATE: 04/12/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.9 °C - 0.2 °C (CF) = 1.7 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: KB

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: KB

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: TN

| SAMPLE CONDITION: | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ Z

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** TN

**Container: C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WK

**Preservative: h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WK



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-1002

# SAMPLE RECEIPT FORM

Cooler 2 of 2

CLIENT: AMEC

DATE: 04/12/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.7 °C - 0.2 °C (CF) = 1.5 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: [illegible]

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: [illegible]

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: TN

| **SAMPLE CONDITION:** | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑Z

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** TN

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** [illegible]

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** [illegible]



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| 13-04-1004-1 | SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| 13-04-1004-2 | SD-S-P-NASC1-0102 | | | | |
| 13-04-1004-3 | SD-S-P-NASC1-0203 | | | | |
| 13-04-1004-4 | SD-S-P-NASC1-0304 | | | | |
| 13-04-1004-5 | SD-S-P-NASC1-0405 | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| 13-04-1111-1 | SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| 13-04-1111-2 | SD-S-P-NASC2-0102 | | | | |
| 13-04-1111-3 | SD-S-P-NASC2-0203 | | | | |
| 13-04-1111-4 | SD-S-P-NASC2-0304 | | | | |
| 13-04-1111-5 | SD-S-P-NASC2-0405 | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| 13-04-1113-1 | SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| 13-04-1113-2 | SD-S-P-NASC3-0102 | | | | |
| 13-04-1113-3 | SD-S-P-NASC3-0203 | | | | |
| 13-04-1113-4 | SD-S-P-NASC3-0304 | | | | |
| 13-04-1113-5 | SD-S-P-NASC3-0405 | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| 13-04-1002-1 | SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| 13-04-1002-2 | SD-S-P-NASC4-0102 | | | | |
| 13-04-1002-3 | SD-S-P-NASC4-0203 | | | | |
| 13-04-1002-4 | SD-S-P-NASC4-0304 | | | | |
| 13-04-1002-5 | SD-S-P-NASC4-0405 | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| 13-04-1003-1 | SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| 13-04-1003-2 | SD-S-P-NASC5-0102 | | | | |
| 13-04-1003-3 | SD-S-P-NASC5-0203 | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| 13-04-1001-1 | SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| 13-04-1001-2 | SD-S-P-NASC6-0102 | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| 13-04-0902-1 | SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| 13-04-0902-2 | SD-S-P-NASC7-0102 | | | | |
| 13-04-0902-3 | SD-S-P-NASC7-0203 | | | | |
| 13-04-0902-4 | SD-S-P-NASC7-0304 | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| 13-04-0903-1 | SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| 13-04-0903-2 | SD-S-P-NASC8-0102 | | | | |
| 13-04-0903-3 | SD-S-P-NASC8-0203 | | | | |
| 13-04-0903-4 | SD-S-P-NASC8-0304 | | | | |
| 13-04-0903-5 | SD-S-P-NASC8-0405 | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| 13-04-0901-1 | SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| 13-04-0901-2 | SD-S-P-NASC9-0102 | | | | |
| 13-04-0901-3 | SD-S-P-NASC9-0203 | | | | |
| 13-04-0901-4 | SD-S-P-NASC9-0304 | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607 PLUG~~ | | | | |
| NAS-C10 | | | | | |
| 13-04-0904-1 | SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| 13-04-0904-2 | SD-S-P-NASC10-0102 | | | | |
| 13-04-0904-3 | SD-S-P-NASC10-0203 | | | | |
| 13-04-0904-4 | SD-S-P-NASC10-0304 | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-9 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| 13-04-0778-1 | SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| 13-04-0778-2 | SD-S-P-NASC11-0102 | | | | |
| 13-04-0778-3 | SD-S-P-NASC11-0203 | | | | |
| 13-04-0778-4 | SD-S-P-NASC11-0304 | | | | |
| 13-04-0778-5 | SD-S-P-NASC11-0405 | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| 13-04-0780-1 | SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| 13-04-0780-2 | SD-S-P-NASC12-0102 | | | | |
| 13-04-0780-3 | SD-S-P-NASC12-0203 | | | | |
| 13-04-0780-4 | SD-S-P-NASC12-0304 | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| 13-04-0781-1 | SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| 13-04-0781-2 | SD-S-P-NASC13-0102 | | | | |
| 13-04-0781-3 | SD-S-P-NASC13-0203 | | | | |
| 13-04-0781-4 | SD-S-P-NASC13-0304 | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| 13-04-0782-1 | SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| 13-04-0782-2 | SD-S-P-NASC14-0102 | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| 13-04-0779-1 | SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| 13-04-0779-2 | SD-S-P-NASC15-0102 | | | | |
| 13-04-0779-3 | SD-S-P-NASC15-0203 | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged

Calscience Environmental Laboratories, Inc.

# CALSCIENCE

## WORK ORDER NUMBER: 13-04-1003

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard Sediment Study

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 06/20/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

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Client Project Name: NASSCO South Shipyard Sediment Study
Work Order Number: 13-04-1003


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Calscience Environmental Laboratories, Inc.

# CASE NARRATIVE

## Calscience Work Order No.: 13-04-1003
## Project ID: NASSCO Shipyard Sediment Study

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

Eight sediment samples were received for this project on April 12, 2013. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 1.5°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in freezers pending chemistry testing.

On June 12, 2013 samples were composited into two samples as per client instructions.

COC discrepancies were noted in the Sample Anomaly Form.

***Tests Performed***

The two composite samples were analyzed for the following analyses:

C8-C40 by EPA 8015B (M)
C4-C12 by EPA 8015B (M)
Title 22 Metals by EPA 6010B
Mercury by EPA 7471A
PCB Aroclors by EPA 8082

***Data Summary***

<u>Holding times</u>

All samples were analyzed past the EPA recommended holding times for TPH C4-12, TPH-C8-40, PCB Aroclors and Mercury. However, all samples were frozen (-20 °C) upon receipt at the laboratory and remained in that condition until sample preparation/analysis. Per the Puget Sound Protocol (and other references), which states the holding time for sediments may be extended up to one year if kept frozen after collection, the samples were analyzed within the allowable one year holding time. In addition, PCBs are known to be very stable compounds, and SW-846 Ch.4, Table 4-1 (Rev. 4) lists “None” as the recommended holding time for PCBs. However, because the samples were analyzed outside of normal EPA hold times, the data is flagged as such.

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Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

Concentrations of target analytes in the method blank were found to be below reporting limits for all analyses.

Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the MDL, and where applicable, “J” flags were reported.

Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test. All parameters were within established control limits.

Matrix Spikes

Matrix spikes and matrix spike duplicates were performed for each applicable analysis on project samples. All parameters were within the acceptable control limits unless otherwise noted.

For C8-C40 by EPA 8015B (M) matrix spike and matrix spike duplicate RPD was outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

For Title 22 Metals by EPA 6010B matrix spike and/or matrix spike duplicate recoveries were outside the established control limits for antimony and barium. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action. The concentrations of copper and zinc in the sample were over four times the spike amount, therefore the recoveries could not be calculated.

For PCB Aroclors by EPA 8082 matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

Surrogates

Surrogate recoveries for all applicable tests and samples were within acceptable control limits.

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Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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Calscience Environmental Laboratories, Inc.

# Work Order Narrative

Work Order: 13-04-1003



**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/12/13. They were assigned to Work Order 13-04-1003.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with an immediate holding time (HT </= 15 minutes --40CFR-136.3 Table II footnote 4), is considered a "field" test and reported samples results are not flagged unless the analysis is performed beyond 24 hours of the time of collection.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Calscience Environmental Laboratories, Inc.

# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC<br>27201 Puerta Real, Suite 350<br>Mission Viejo, CA 92691-8306 | Work Order: | 13-04-1003 |
| | | Project Name: | NASSCO South Shipyard Sediment Study |
| | | PO Number: | |
| | | Date Received: | 04/12/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| SD-S-P-NASC05-0001 | 13-04-1003-1 | 04/11/13 07:55 | 3 | Sediment |
| SD-S-P-NASC05-0102 | 13-04-1003-2 | 04/11/13 07:55 | 3 | Sediment |
| SD-S-P-NASC05-0203 | 13-04-1003-3 | 04/11/13 07:55 | 3 | Sediment |
| SD-S-P-NASC05-0304 | 13-04-1003-4 | 04/11/13 07:55 | 3 | Sediment |
| SD-S-P-NASC05-0405 | 13-04-1003-5 | 04/11/13 07:55 | 3 | Sediment |
| SD-S-P-NASC05-0506 Plug | 13-04-1003-6 | 04/11/13 07:55 | 3 | Sediment |
| SD-S-P-NASC05-Comp | 13-04-1003-7 | 04/11/13 07:55 | 1 | Sediment |
| SD-S-P-NASC05-0304 Sub | 13-04-1003-8 | 04/11/13 07:55 | 1 | Sediment |
| COMP-C5-TOP | 13-04-1003-9 | 04/11/13 07:55 | 1 | Sediment |
| COMP-C5-BOTTOM | 13-04-1003-10 | 04/11/13 07:55 | 1 | Sediment |

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1003 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C5-TOP** | **13-04-1003-9-A** | **04/11/13 07:55** | **Sediment** | **GC 50** | **06/12/13** | **06/15/13 02:12** | **130612B13** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | ND | 5.0 | 1.8 | 1 | |
| C19-C20 | ND | 5.0 | 1.8 | 1 | |
| C21-C22 | ND | 5.0 | 1.8 | 1 | |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | ND | 5.0 | 2.4 | 1 | |
| C29-C32 | ND | 5.0 | 2.4 | 1 | |
| C33-C36 | ND | 5.0 | 2.6 | 1 | |
| C37-C40 | ND | 5.0 | 1.6 | 1 | |
| C8-C40 Total | ND | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 95 | 61-145 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1003 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C5-BOTTOM** | **13-04-1003-10-A** | **04/11/13 07:55** | **Sediment** | **GC 50** | **06/12/13** | **06/15/13 02:30** | **130612B13** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | 3.0 | 5.0 | 2.4 | 1 | J |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | 2.8 | 5.0 | 1.8 | 1 | J |
| C17-C18 | 3.7 | 5.0 | 1.8 | 1 | J |
| C19-C20 | 3.9 | 5.0 | 1.8 | 1 | J |
| C21-C22 | 3.3 | 5.0 | 1.8 | 1 | J |
| C23-C24 | 2.3 | 5.0 | 1.7 | 1 | J |
| C25-C28 | 5.3 | 5.0 | 2.4 | 1 | |
| C29-C32 | 7.4 | 5.0 | 2.4 | 1 | |
| C33-C36 | 5.0 | 5.0 | 2.6 | 1 | |
| C37-C40 | 2.5 | 5.0 | 1.6 | 1 | J |
| C8-C40 Total | 39 | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 98 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1003 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-15-500-16** | **N/A** | **Soil** | **GC 50** | **06/12/13** | **06/14/13 22:59** | **130612B13** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | ND | 5.0 | 1.8 | 1 | |
| C19-C20 | ND | 5.0 | 1.8 | 1 | |
| C21-C22 | ND | 5.0 | 1.8 | 1 | |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | ND | 5.0 | 2.4 | 1 | |
| C29-C32 | ND | 5.0 | 2.4 | 1 | |
| C33-C36 | ND | 5.0 | 2.6 | 1 | |
| C37-C40 | ND | 5.0 | 1.6 | 1 | |
| C8-C40 Total | ND | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 98 | 61-145 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1003 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C5-TOP** | **13-04-1003-9-A** | **04/11/13 07:55** | **Sediment** | **GC 4** | **06/13/13** | **06/14/13 07:53** | **130613B02** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 86 | 42-126 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C5-BOTTOM** | **13-04-1003-10-A** | **04/11/13 07:55** | **Sediment** | **GC 4** | **06/13/13** | **06/14/13 08:26** | **130613B02** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | 0.36 | 0.50 | 0.23 | 1 | J |
| GRO (C4-C12) Total | 0.36 | 0.50 | 0.23 | 1 | J |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 87 | 42-126 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1003 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-13-045-161** | **N/A** | **Soil** | **GC 4** | **06/13/13** | **06/14/13 00:44** | **130613B02** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 85 | 42-126 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1003 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C5-TOP** | **13-04-1003-9-A** | **04/11/13 07:55** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 12:22** | **130612L07** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 7.93 | 0.750 | 0.259 | 1 | |
| Barium | 65.8 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.353 | 0.250 | 0.137 | 1 | |
| Cadmium | 0.386 | 0.500 | 0.135 | 1 | J |
| Chromium | 37.0 | 0.250 | 0.142 | 1 | |
| Cobalt | 6.51 | 0.250 | 0.148 | 1 | |
| Copper | 203 | 0.500 | 0.135 | 1 | |
| Lead | 52.7 | 0.500 | 0.132 | 1 | |
| Molybdenum | 1.08 | 0.250 | 0.132 | 1 | |
| Nickel | 9.00 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | 0.614 | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 40.5 | 0.250 | 0.141 | 1 | |
| Zinc | 206 | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1003 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C5-BOTTOM** | **13-04-1003-10-A** | **04/11/13 07:55** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 12:29** | **130612L07** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 3.32 | 0.750 | 0.259 | 1 | |
| Barium | 50.5 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.146 | 0.250 | 0.137 | 1 | J |
| Cadmium | 0.436 | 0.500 | 0.135 | 1 | J |
| Chromium | 14.4 | 0.250 | 0.142 | 1 | |
| Cobalt | 3.96 | 0.250 | 0.148 | 1 | |
| Copper | 51.5 | 0.500 | 0.135 | 1 | |
| Lead | 21.8 | 0.500 | 0.132 | 1 | |
| Molybdenum | 0.894 | 0.250 | 0.132 | 1 | |
| Nickel | 4.32 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | 0.223 | 0.250 | 0.0857 | 1 | J |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 24.8 | 0.250 | 0.141 | 1 | |
| Zinc | 96.5 | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1003 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-01-002-16918** | **N/A** | **Soil** | **ICP 7300** | **06/12/13** | **06/13/13 23:15** | **130612L07** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | ND | 0.750 | 0.259 | 1 | |
| Barium | ND | 0.500 | 0.154 | 1 | |
| Beryllium | ND | 0.250 | 0.137 | 1 | |
| Cadmium | ND | 0.500 | 0.135 | 1 | |
| Chromium | ND | 0.250 | 0.142 | 1 | |
| Cobalt | ND | 0.250 | 0.148 | 1 | |
| Copper | ND | 0.500 | 0.135 | 1 | |
| Lead | ND | 0.500 | 0.132 | 1 | |
| Molybdenum | ND | 0.250 | 0.132 | 1 | |
| Nickel | ND | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | ND | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | ND | 0.250 | 0.141 | 1 | |
| Zinc | ND | 1.00 | 0.178 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1003 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C5-TOP** | **13-04-1003-9-A** | **04/11/13 07:55** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 20:27** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.522 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C5-BOTTOM** | **13-04-1003-10-A** | **04/11/13 07:55** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 20:29** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.516 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-04-007-9356** | **N/A** | **Soil** | **Mercury** | **06/12/13** | **06/12/13 19:51** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | ND | 0.0835 | 0.00588 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1003 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C5-TOP** | **13-04-1003-9-A** | **04/11/13 07:55** | **Sediment** | **GC 31** | **06/13/13** | **06/18/13 13:52** | **130613L14** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | 23 | 10 | 2.9 | 1 | |
| Aroclor-1254 | 43 | 10 | 2.4 | 1 | |
| Aroclor-1260 | 31 | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 74 | 50-130 | |
| Decachlorobiphenyl | 94 | 50-130 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C5-BOTTOM** | **13-04-1003-10-A** | **04/11/13 07:55** | **Sediment** | **GC 31** | **06/13/13** | **06/18/13 14:11** | **130613L14** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 50 | 14 | 5 | |
| Aroclor-1221 | ND | 50 | 13 | 5 | |
| Aroclor-1232 | ND | 50 | 11 | 5 | |
| Aroclor-1242 | ND | 50 | 12 | 5 | |
| Aroclor-1248 | 110 | 50 | 14 | 5 | |
| Aroclor-1254 | 260 | 50 | 12 | 5 | |
| Aroclor-1260 | 93 | 50 | 12 | 5 | |
| Aroclor-1262 | ND | 50 | 12 | 5 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 62 | 50-130 | |
| Decachlorobiphenyl | 122 | 50-130 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1003 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-12-565-340** | **N/A** | **Soil** | **GC 31** | **06/13/13** | **06/18/13 10:40** | **130613L14** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | ND | 10 | 2.9 | 1 | |
| Aroclor-1254 | ND | 10 | 2.4 | 1 | |
| Aroclor-1260 | ND | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 80 | 50-130 | |
| Decachlorobiphenyl | 86 | 50-130 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1003 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **GC 50** | **06/12/13** | **06/14/13 23:37** | **130612S13** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| TPH as Diesel | 102.5 | 400.0 | 431.9 | 82 | 362.1 | 65 | 64-130 | 18 | 0-15 | 4 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1003 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **GC 4** | **06/13/13** | **06/14/13 02:23** | **130613S02** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| GRO (C4-C12) Total | ND | 10.00 | 6.210 | 62 | 6.548 | 65 | 48-114 | 5 | 0-25 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1003 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-1004-11** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:35** | **130612S07** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 5.156 | 21 | 4.888 | 20 | 50-115 | 5 | 0-20 | 3 |
| Arsenic | 6.382 | 25.00 | 30.80 | 98 | 31.62 | 101 | 75-125 | 3 | 0-20 | |
| Barium | 77.69 | 25.00 | 94.87 | 69 | 96.62 | 76 | 75-125 | 2 | 0-20 | 3 |
| Beryllium | 0.3050 | 25.00 | 26.76 | 106 | 26.91 | 106 | 75-125 | 1 | 0-20 | |
| Cadmium | 2.288 | 25.00 | 27.48 | 101 | 27.65 | 101 | 75-125 | 1 | 0-20 | |
| Chromium | 52.02 | 25.00 | 74.33 | 89 | 75.67 | 95 | 75-125 | 2 | 0-20 | |
| Cobalt | 5.278 | 25.00 | 31.48 | 105 | 31.77 | 106 | 75-125 | 1 | 0-20 | |
| Copper | 119.0 | 25.00 | 135.0 | 4X | 139.8 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 57.88 | 25.00 | 83.51 | 103 | 77.28 | 78 | 75-125 | 8 | 0-20 | |
| Molybdenum | 2.003 | 25.00 | 22.60 | 82 | 22.75 | 83 | 75-125 | 1 | 0-20 | |
| Nickel | 12.13 | 25.00 | 37.27 | 101 | 37.84 | 103 | 75-125 | 2 | 0-20 | |
| Selenium | ND | 25.00 | 22.86 | 91 | 23.59 | 94 | 75-125 | 3 | 0-20 | |
| Silver | 2.133 | 12.50 | 14.64 | 100 | 14.64 | 100 | 75-125 | 0 | 0-20 | |
| Thallium | ND | 25.00 | 18.96 | 76 | 20.36 | 81 | 75-125 | 7 | 0-20 | |
| Vanadium | 39.62 | 25.00 | 62.66 | 92 | 64.14 | 98 | 75-125 | 2 | 0-20 | |
| Zinc | 212.5 | 25.00 | 224.3 | 4X | 232.0 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1003 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 19:58** | **130612S08** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.8662 | 0.8350 | 1.685 | 98 | 1.721 | 102 | 71-137 | 2 | 0-14 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1003 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-1004-11** | **Sediment** | **GC 31** | **06/13/13** | **06/18/13 16:24** | **130613S14** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | ND | 20.00 | 40.46 | 202 | 37.69 | 188 | 50-135 | 7 | 0-25 | 3 |
| Aroclor-1260 | 123.4 | 20.00 | 90.85 | 0 | 90.65 | 0 | 50-135 | 0 | 0-25 | 3 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - PDS/PDSD

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1003 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | PDS/PDSD Batch Number |
|---|---|---|---|---|---|
| **13-04-1004-11** | **Sediment** | **ICP 7300** | **06/12/13 00:00** | **06/14/13 11:38** | **130612S07** |

| Parameter | Sample Conc. | Spike Added | PDS Conc. | PDS %Rec. | PDSD Conc. | PDSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 24.28 | 97 | 24.90 | 100 | 75-125 | 3 | 0-20 | |
| Arsenic | 6.382 | 25.00 | 31.90 | 102 | 31.54 | 101 | 75-125 | 1 | 0-20 | |
| Barium | 77.69 | 25.00 | 103.9 | 105 | 103.8 | 104 | 75-125 | 0 | 0-20 | |
| Beryllium | 0.3050 | 25.00 | 26.15 | 103 | 26.17 | 103 | 75-125 | 0 | 0-20 | |
| Cadmium | 2.288 | 25.00 | 27.00 | 99 | 26.98 | 99 | 75-125 | 0 | 0-20 | |
| Chromium | 52.02 | 25.00 | 76.25 | 97 | 76.16 | 97 | 75-125 | 0 | 0-20 | |
| Cobalt | 5.278 | 25.00 | 31.07 | 103 | 31.32 | 104 | 75-125 | 1 | 0-20 | |
| Copper | 119.0 | 25.00 | 144.2 | 4X | 143.8 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 57.88 | 25.00 | 81.45 | 94 | 82.11 | 97 | 75-125 | 1 | 0-20 | |
| Molybdenum | 2.003 | 25.00 | 26.24 | 97 | 26.48 | 98 | 75-125 | 1 | 0-20 | |
| Nickel | 12.13 | 25.00 | 37.35 | 101 | 37.74 | 102 | 75-125 | 1 | 0-20 | |
| Selenium | ND | 25.00 | 23.15 | 93 | 23.94 | 96 | 75-125 | 3 | 0-20 | |
| Silver | 2.133 | 12.50 | 15.06 | 103 | 15.05 | 103 | 75-125 | 0 | 0-20 | |
| Thallium | ND | 25.00 | 22.31 | 89 | 23.20 | 93 | 75-125 | 4 | 0-20 | |
| Vanadium | 39.62 | 25.00 | 63.75 | 97 | 63.75 | 97 | 75-125 | 0 | 0-20 | |
| Zinc | 212.5 | 25.00 | 236.1 | 4X | 236.6 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1003 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-15-500-16** | **Soil** | **GC 50** | **06/14/13 23:19** | **130612B13** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| TPH as Diesel | 400.0 | 346.7 | 87 | 75-123 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1003 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-13-045-161** | **Soil** | **GC 4** | **06/14/13 01:17** | **130613B02** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| GRO (C4-C12) Total | 10.00 | 9.893 | 99 | 70-124 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1003 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **097-01-002-16918** | **Soil** | **ICP 7300** | **06/13/13 23:23** | **130612L07** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | ME CL | Qualifiers |
|---|---|---|---|---|---|---|
| Antimony | 25.00 | 25.66 | 103 | 80-120 | 73-127 | |
| Arsenic | 25.00 | 25.77 | 103 | 80-120 | 73-127 | |
| Barium | 25.00 | 27.89 | 112 | 80-120 | 73-127 | |
| Beryllium | 25.00 | 25.57 | 102 | 80-120 | 73-127 | |
| Cadmium | 25.00 | 26.51 | 106 | 80-120 | 73-127 | |
| Chromium | 25.00 | 26.27 | 105 | 80-120 | 73-127 | |
| Cobalt | 25.00 | 27.42 | 110 | 80-120 | 73-127 | |
| Copper | 25.00 | 25.16 | 101 | 80-120 | 73-127 | |
| Lead | 25.00 | 26.54 | 106 | 80-120 | 73-127 | |
| Molybdenum | 25.00 | 26.03 | 104 | 80-120 | 73-127 | |
| Nickel | 25.00 | 28.35 | 113 | 80-120 | 73-127 | |
| Selenium | 25.00 | 24.44 | 98 | 80-120 | 73-127 | |
| Silver | 12.50 | 13.34 | 107 | 80-120 | 73-127 | |
| Thallium | 25.00 | 26.22 | 105 | 80-120 | 73-127 | |
| Vanadium | 25.00 | 25.55 | 102 | 80-120 | 73-127 | |
| Zinc | 25.00 | 27.93 | 112 | 80-120 | 73-127 | |

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1003 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-04-007-9356** | **Soil** | **Mercury** | **06/12/13 19:54** | **130612L08** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.8350 | 0.8143 | 98 | 85-121 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1003 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-12-565-340** | **Soil** | **GC 31** | **06/18/13 10:59** | **130613L14** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | 20.00 | 18.98 | 95 | 50-135 | |
| Aroclor-1260 | 20.00 | 15.42 | 77 | 50-135 | |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order: 13-04-1003



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| 4 | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range. |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

For any analysis identified as a "field" test with a holding time (HT) </= 15 minutes where the sample is received outside of HT, Calscience will adhere to its internal HT of 24 hours. In cases where sample analysis does not meet Calscience's internal HT, results will be appropriately qualified.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/11/2013

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure
ADDRESS: 9210 Sky Park Ct. Ste 200
CITY: San Diego, California 92123
TEL: 858-300-4300 FAX: 858-300-4301 E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study
P.O. NO.: 1315100800
PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder
QUOTE NO.:
SAMPLER(S): (SIGNATURE)
LAB USE ONLY: 13-04-1003

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___/___/___

SPECIAL INSTRUCTIONS
Please HOLD samples. 1x 16 oz per sample
DO NOT FREEZE COMPOSITE SAMPLES. HOLD FOR GEOTECHNICAL.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

## REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | HOLD |
|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC05-0001 | | 4/11/2013 | 0755 | sed | 3 | | X |
| 2 | SD-S-P-NASC05-0102 | | 4/11/2013 | | sed | 3 | | X |
| 3 | SD-S-P-NASC05-0203 | | 4/11/2013 | | sed | 3 | | X |
| 4 | SD-S-P-NASC05-0304 | | 4/11/2013 | | sed | 3 | | X |
| 5 | SD-S-P-NASC05-0405 | | 4/11/2013 | | sed | 3 | | X |
| 6 | SD-S-P-NASC05-0506 Plug | | 4/11/2013 | | sed | 3 | | X |
| 7 | SD-S-P-NASC05-Comp | | 4/11/2013 | | sed | ~~3~~ 1 | | X |
| 8 | SD-S-P-NASC05-0304 Sub | | 4/11/2013 | | sed | ~~3~~ 1 | | X |
| ~~–~~ | ~~SD-S-P-NASC~~ | | ~~4/__/2013~~ | | ~~sed~~ | ~~3~~ | | ~~X~~ |
| ~~–~~ | ~~SD-S-P-NASC~~ | | ~~4/__/2013~~ | | ~~sed~~ | ~~3~~ | | ~~X~~ |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| [signature] Tyler Hudt | [signature] CCL | 04/12/13 | 1545 |
| [signature] | [signature] CCL | 04/12/13 | ~~1800~~ 1900 |
| | | | 4/12/13 |



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|
| NAS-C1 | | | | |
| SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| SD-S-P-NASC1-0102 | | | | |
| SD-S-P-NASC1-0203 | | | | |
| SD-S-P-NASC1-0304 | | | | |
| SD-S-P-NASC1-0405 | | | | |
| SD-S-P-NASC1-0506 | | | | BOTTOM |
| SD-S-P-NASC1-0607 | | | | |
| SD-S-P-NASC1-0708 | | | | |
| SD-S-P-NASC1-0809 | | | | |
| NAS-C2 | | | | |
| SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| SD-S-P-NASC2-0102 | | | | |
| SD-S-P-NASC2-0203 | | | | |
| SD-S-P-NASC2-0304 | | | | |
| SD-S-P-NASC2-0405 | | | | |
| SD-S-P-NASC2-0506 | | | | BOTTOM |
| SD-S-P-NASC2-0607 | | | | |
| SD-S-P-NASC2-0708 | | | | |
| SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | |
| SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| SD-S-P-NASC3-0102 | | | | |
| SD-S-P-NASC3-0203 | | | | |
| SD-S-P-NASC3-0304 | | | | |
| SD-S-P-NASC3-0405 | | | | |
| SD-S-P-NASC3-0506 | | | | BOTTOM |
| SD-S-P-NASC3-0607 | | | | |
| SD-S-P-NASC3-0708 | | | | |
| SD-S-P-NASC3-0809 | | | | |
| SD-S-P-NASC3-0910 | | | | |
| SD-S-P-NASC3-0910-PLUG | | | | not included[c] |
| NAS-C4 | | | | |
| SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| SD-S-P-NASC4-0102 | | | | |
| SD-S-P-NASC4-0203 | | | | |
| SD-S-P-NASC4-0304 | | | | |
| SD-S-P-NASC4-0405 | | | | |
| SD-S-P-NASC4-0506 | | | | BOTTOM |
| SD-S-P-NASC4-0607 | | | | |
| SD-S-P-NASC4-0708 | | | | |
| SD-S-P-NASC4-0809 | | | | |
| SD-S-P-NASC4-0910 | | | | |
| SD-S-P-NASC4-0910-PLUG | | | | not included[c] |
| NAS-C5 | | | | |
| SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| SD-S-P-NASC5-0102 | | | | |
| SD-S-P-NASC5-0203 | | | | |
| SD-S-P-NASC5-0304 | | | | BOTTOM |
| SD-S-P-NASC5-0405 | | | | |
| SD-S-P-NASC5-0506-PLUG | | | | not included[c] |
| NAS-C6 | | | | |
| SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| SD-S-P-NASC6-0102 | | | | |
| SD-S-P-NASC6-0203 | | | | BOTTOM |
| SD-S-P-NASC6-0304-PLUG | | | | not included[c] |
| NAS-C7 | | | | |
| SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| SD-S-P-NASC7-0102 | | | | |
| SD-S-P-NASC7-0203 | | | | |
| SD-S-P-NASC7-0304 | | | | |
| SD-S-P-NASC7-0405 | | | | BOTTOM |
| SD-S-P-NASC7-0506 | | | | |
| SD-S-P-NASC7-0607 | | | | |
| SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | |
| SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| SD-S-P-NASC8-0102 | | | | |
| SD-S-P-NASC8-0203 | | | | |
| SD-S-P-NASC8-0304 | | | | |
| SD-S-P-NASC8-0405 | | | | |
| SD-S-P-NASC8-0506 | | | | BOTTOM |
| SD-S-P-NASC8-0607 | | | | |
| SD-S-P-NASC8-0708 | | | | |
| SD-S-P-NASC8-0809 | | | | |
| SD-S-P-NASC8-0910 | | | | |
| SD-S-P-NASC8-0910-PLUG | | | | not included[c] |
| NAS-C9 | | | | |
| SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| SD-S-P-NASC9-0102 | | | | |
| SD-S-P-NASC9-0203 | | | | |
| SD-S-P-NASC9-0304 | | | | |
| SD-S-P-NASC9-0405 | | | | BOTTOM |
| SD-S-P-NASC9-0506 | | | | |
| SD-S-P-NASC9-0607 | | | | |
| NAS-C10 | | | | |
| SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| SD-S-P-NASC10-0102 | | | | |
| SD-S-P-NASC10-0203 | | | | |
| SD-S-P-NASC10-0304 | | | | BOTTOM |
| SD-S-P-NASC10-0405 | | | | |
| SD-S-P-NASC10-0506 | | | | |
| SD-S-P-NASC10-0607 | | | | |
| SD-S-P-NASC10-0708 | | | | |
| NAS-C11 | | | | |
| SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| SD-S-P-NASC11-0102 | | | | |
| SD-S-P-NASC11-0203 | | | | |
| SD-S-P-NASC11-0304 | | | | |
| SD-S-P-NASC11-0405 | | | | BOTTOM |
| SD-S-P-NASC11-0506 | | | | |
| SD-S-P-NASC11-0607 | | | | |
| SD-S-P-NASC11-0708 | | | | |
| SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | |
| SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| SD-S-P-NASC12-0102 | | | | |
| SD-S-P-NASC12-0203 | | | | |
| SD-S-P-NASC12-0304 | | | | |
| SD-S-P-NASC12-0405 | | | | BOTTOM |
| SD-S-P-NASC12-0506 | | | | |
| SD-S-P-NASC12-0607 | | | | |
| SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | |
| SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| SD-S-P-NASC13-0102 | | | | |
| SD-S-P-NASC13-0203 | | | | |
| SD-S-P-NASC13-0304 | | | | BOTTOM |
| SD-S-P-NASC13-0405 | | | | |
| SD-S-P-NASC13-0506 | | | | |
| SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | |
| SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| SD-S-P-NASC14-0102 | | | | |
| SD-S-P-NASC14-0203 | | | | BOTTOM |
| SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | |
| SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| SD-S-P-NASC15-0102 | | | | |
| SD-S-P-NASC15-0203 | | | | |
| SD-S-P-NASC15-0304 | | | | BOTTOM |
| SD-S-P-NASC15-0405 | | | | |
| SD-S-P-NASC15-0506 | | | | |

Notes:
0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on
a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.
b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.
A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)
c - sample not included due to low volume available and because it represents native material which will not be dredged



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| ~~13-04-1000-1~~ | ~~SD-S-P-NASC1-0001~~ | COMP-A | 4/11/2013 | 1335 | TOP |
| ~~13-04-1000-2~~ | ~~SD-S-P-NASC1-0102~~ | | | | |
| ~~13-04-1000-3~~ | ~~SD-S-P-NASC1-0203~~ | | | | |
| ~~13-04-1000-4~~ | ~~SD-S-P-NASC1-0304~~ | | | | |
| ~~13-04-1000-5~~ | ~~SD-S-P-NASC1-0405~~ | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| ~~13-04-1111-1~~ | ~~SD-S-P-NASC2-0001~~ | COMP-A | 4/12/2013 | 1021 | TOP |
| ~~13-04-1111-2~~ | ~~SD-S-P-NASC2-0102~~ | | | | |
| ~~13-04-1111-3~~ | ~~SD-S-P-NASC2-0203~~ | | | | |
| ~~13-04-1111-4~~ | ~~SD-S-P-NASC2-0304~~ | | | | |
| ~~13-04-1111-5~~ | ~~SD-S-P-NASC2-0405~~ | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| ~~13-04-1113-1~~ | ~~SD-S-P-NASC3-0001~~ | COMP-A | 4/12/2013 | 751 | TOP |
| ~~13-04-1113-2~~ | ~~SD-S-P-NASC3-0102~~ | | | | |
| ~~13-04-1113-3~~ | ~~SD-S-P-NASC3-0203~~ | | | | |
| ~~13-04-1113-4~~ | ~~SD-S-P-NASC3-0304~~ | | | | |
| ~~13-04-1113-5~~ | ~~SD-S-P-NASC3-0405~~ | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| ~~13-04-1002-1~~ | ~~SD-S-P-NASC4-0001~~ | COMP-A | 4/11/2013 | 930 | TOP |
| ~~13-04-1002-2~~ | ~~SD-S-P-NASC4-0102~~ | | | | |
| ~~13-04-1002-3~~ | ~~SD-S-P-NASC4-0203~~ | | | | |
| ~~13-04-1002-4~~ | ~~SD-S-P-NASC4-0304~~ | | | | |
| ~~13-04-1002-5~~ | ~~SD-S-P-NASC4-0405~~ | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| ~~13-04-1003-1~~ | ~~SD-S-P-NASC5-0001~~ | COMP-A | 4/11/2013 | 755 | TOP |
| ~~13-04-1003-2~~ | ~~SD-S-P-NASC5-0102~~ | | | | |
| ~~13-04-1003-3~~ | ~~SD-S-P-NASC5-0203~~ | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| ~~13-04-1001-1~~ | ~~SD-S-P-NASC6-0001~~ | COMP-B | 4/11/2013 | 1200 | TOP |
| ~~13-04-1001-2~~ | ~~SD-S-P-NASC6-0102~~ | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| ~~13-04-0902-1~~ | ~~SD-S-P-NASC7-0001~~ | COMP-B | 4/10/2013 | 1430 | TOP |
| ~~13-04-0902-2~~ | ~~SD-S-P-NASC7-0102~~ | | | | |
| ~~13-04-0902-3~~ | ~~SD-S-P-NASC7-0203~~ | | | | |
| ~~13-04-0902-4~~ | ~~SD-S-P-NASC7-0304~~ | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| ~~13-04-0903-1~~ | ~~SD-S-P-NASC8-0001~~ | COMP-B | 4/10/2013 | 830 | TOP |
| ~~13-04-0903-2~~ | ~~SD-S-P-NASC8-0102~~ | | | | |
| ~~13-04-0903-3~~ | ~~SD-S-P-NASC8-0203~~ | | | | |
| ~~13-04-0903-4~~ | ~~SD-S-P-NASC8-0304~~ | | | | |
| ~~13-04-0903-5~~ | ~~SD-S-P-NASC8-0405~~ | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| ~~13-04-0901-1~~ | ~~SD-S-P-NASC9-0001~~ | COMP-B | 4/10/2013 | 1315 | TOP |
| ~~13-04-0901-2~~ | ~~SD-S-P-NASC9-0102~~ | | | | |
| ~~13-04-0901-3~~ | ~~SD-S-P-NASC9-0203~~ | | | | |
| ~~13-04-0901-4~~ | ~~SD-S-P-NASC9-0304~~ | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607-PLUG~~ | | | | |
| NAS-C10 | | | | | |
| ~~13-04-0904-1~~ | ~~SD-S-P-NASC10-0001~~ | COMP-D | 4/10/2013 | 1010 | TOP |
| ~~13-04-0904-2~~ | ~~SD-S-P-NASC10-0102~~ | | | | |
| ~~13-04-0904-3~~ | ~~SD-S-P-NASC10-0203~~ | | | | |
| ~~13-04-0904-4~~ | ~~SD-S-P-NASC10-0304~~ | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-8 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| ~~13-04-0778-1~~ | ~~SD-S-P-NASC11-0001~~ | COMP-D | 4/9/2013 | 1525 | TOP |
| ~~13-04-0778-2~~ | ~~SD-S-P-NASC11-0102~~ | | | | |
| ~~13-04-0778-3~~ | ~~SD-S-P-NASC11-0203~~ | | | | |
| ~~13-04-0778-4~~ | ~~SD-S-P-NASC11-0304~~ | | | | |
| ~~13-04-0778-5~~ | ~~SD-S-P-NASC11-0405~~ | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| ~~13-04-0780-1~~ | ~~SD-S-P-NASC12-0001~~ | COMP-D | 4/9/2013 | 1410 | TOP |
| ~~13-04-0780-2~~ | ~~SD-S-P-NASC12-0102~~ | | | | |
| ~~13-04-0780-3~~ | ~~SD-S-P-NASC12-0203~~ | | | | |
| ~~13-04-0780-4~~ | ~~SD-S-P-NASC12-0304~~ | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| ~~13-04-0781-1~~ | ~~SD-S-P-NASC13-0001~~ | COMP-E | 4/9/2013 | 1055 | TOP |
| ~~13-04-0781-2~~ | ~~SD-S-P-NASC13-0102~~ | | | | |
| ~~13-04-0781-3~~ | ~~SD-S-P-NASC13-0203~~ | | | | |
| ~~13-04-0781-4~~ | ~~SD-S-P-NASC13-0304~~ | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| ~~13-04-0782-1~~ | ~~SD-S-P-NASC14-0001~~ | COMP-E | 4/9/2013 | 815 | TOP |
| ~~13-04-0782-2~~ | ~~SD-S-P-NASC14-0102~~ | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| ~~13-04-0779-1~~ | ~~SD-S-P-NASC15-0001~~ | COMP-E | 4/9/2013 | 940 | TOP |
| ~~13-04-0779-2~~ | ~~SD-S-P-NASC15-0102~~ | | | | |
| ~~13-04-0779-3~~ | ~~SD-S-P-NASC15-0203~~ | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-1003

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/12/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.7 °C - 0.2 °C (CF) = 1.5 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: [illegible]

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: [illegible]

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: TN

| **SAMPLE CONDITION:** | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ Z

**Water:** ☐VOA ☐VOA**h** ☐VOA**$na_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**$na_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**$na_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** TN

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WIC

**Preservative:** **h:** HCL **n:** $HNO_3$ **$na_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WIC



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| 13-04-1004-1 | SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| 13-04-1004-2 | SD-S-P-NASC1-0102 | | | | |
| 13-04-1004-3 | SD-S-P-NASC1-0203 | | | | |
| 13-04-1004-4 | SD-S-P-NASC1-0304 | | | | |
| 13-04-1004-5 | SD-S-P-NASC1-0405 | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| 13-04-1111-1 | SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| 13-04-1111-2 | SD-S-P-NASC2-0102 | | | | |
| 13-04-1111-3 | SD-S-P-NASC2-0203 | | | | |
| 13-04-1111-4 | SD-S-P-NASC2-0304 | | | | |
| 13-04-1111-5 | SD-S-P-NASC2-0405 | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| 13-04-1113-1 | SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| 13-04-1113-2 | SD-S-P-NASC3-0102 | | | | |
| 13-04-1113-3 | SD-S-P-NASC3-0203 | | | | |
| 13-04-1113-4 | SD-S-P-NASC3-0304 | | | | |
| 13-04-1113-5 | SD-S-P-NASC3-0405 | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| 13-04-1002-1 | SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| 13-04-1002-2 | SD-S-P-NASC4-0102 | | | | |
| 13-04-1002-3 | SD-S-P-NASC4-0203 | | | | |
| 13-04-1002-4 | SD-S-P-NASC4-0304 | | | | |
| 13-04-1002-5 | SD-S-P-NASC4-0405 | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| 13-04-1003-1 | SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| 13-04-1003-2 | SD-S-P-NASC5-0102 | | | | |
| 13-04-1003-3 | SD-S-P-NASC5-0203 | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| 13-04-1001-1 | SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| 13-04-1001-2 | SD-S-P-NASC6-0102 | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| 13-04-0902-1 | SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| 13-04-0902-2 | SD-S-P-NASC7-0102 | | | | |
| 13-04-0902-3 | SD-S-P-NASC7-0203 | | | | |
| 13-04-0902-4 | SD-S-P-NASC7-0304 | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| 13-04-0903-1 | SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| 13-04-0903-2 | SD-S-P-NASC8-0102 | | | | |
| 13-04-0903-3 | SD-S-P-NASC8-0203 | | | | |
| 13-04-0903-4 | SD-S-P-NASC8-0304 | | | | |
| 13-04-0903-5 | SD-S-P-NASC8-0405 | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| 13-04-0901-1 | SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| 13-04-0901-2 | SD-S-P-NASC9-0102 | | | | |
| 13-04-0901-3 | SD-S-P-NASC9-0203 | | | | |
| 13-04-0901-4 | SD-S-P-NASC9-0304 | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607 PLUG~~ | | | | |
| NAS-C10 | | | | | |
| 13-04-0904-1 | SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| 13-04-0904-2 | SD-S-P-NASC10-0102 | | | | |
| 13-04-0904-3 | SD-S-P-NASC10-0203 | | | | |
| 13-04-0904-4 | SD-S-P-NASC10-0304 | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-9 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| 13-04-0778-1 | SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| 13-04-0778-2 | SD-S-P-NASC11-0102 | | | | |
| 13-04-0778-3 | SD-S-P-NASC11-0203 | | | | |
| 13-04-0778-4 | SD-S-P-NASC11-0304 | | | | |
| 13-04-0778-5 | SD-S-P-NASC11-0405 | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| 13-04-0780-1 | SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| 13-04-0780-2 | SD-S-P-NASC12-0102 | | | | |
| 13-04-0780-3 | SD-S-P-NASC12-0203 | | | | |
| 13-04-0780-4 | SD-S-P-NASC12-0304 | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| 13-04-0781-1 | SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| 13-04-0781-2 | SD-S-P-NASC13-0102 | | | | |
| 13-04-0781-3 | SD-S-P-NASC13-0203 | | | | |
| 13-04-0781-4 | SD-S-P-NASC13-0304 | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| 13-04-0782-1 | SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| 13-04-0782-2 | SD-S-P-NASC14-0102 | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| 13-04-0779-1 | SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| 13-04-0779-2 | SD-S-P-NASC15-0102 | | | | |
| 13-04-0779-3 | SD-S-P-NASC15-0203 | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged

Calscience Environmental Laboratories, Inc.

# CALSCIENCE

## WORK ORDER NUMBER: 13-04-1001

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard Sediment Study

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 06/20/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Accredited in accordance with nelac

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

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Work Order Number: 13-04-1001


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Calscience Environmental Laboratories, Inc.

# CASE NARRATIVE

## Calscience Work Order No.: 13-04-1001
## Project ID: NASSCO Shipyard Sediment Study

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

Six sediment samples were received for this project on April 12, 2013. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 1.6°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in freezers pending chemistry testing.

On June 12, 2013 samples were composited into two samples as per client instructions.

COC discrepancies were noted in the Sample Anomaly Form.

***Tests Performed***

The two composite samples were analyzed for the following analyses:

C8-C40 by EPA 8015B (M)
C4-C12 by EPA 8015B (M)
Title 22 Metals by EPA 6010B
Mercury by EPA 7471A
PCB Aroclors by EPA 8082

***Data Summary***

<u>Holding times</u>

All samples were analyzed past the EPA recommended holding times for TPH C4-12, TPH-C8-40, PCB Aroclors and Mercury. However, all samples were frozen (-20 °C) upon receipt at the laboratory and remained in that condition until sample preparation/analysis. Per the Puget Sound Protocol (and other references), which states the holding time for sediments may be extended up to one year if kept frozen after collection, the samples were analyzed within the allowable one year holding time. In addition, PCBs are known to be very stable compounds, and SW-846 Ch.4, Table 4-1 (Rev. 4) lists “None” as the recommended holding time for PCBs. However, because the samples were analyzed outside of normal EPA hold times, the data is flagged as such.

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Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

Concentrations of target analytes in the method blank were found to be below reporting limits for all analyses.

Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the MDL, and where applicable, "J" flags were reported.

Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test. All parameters were within established control limits.

Matrix Spikes

Matrix spikes and matrix spike duplicates were performed for each applicable analysis on project samples. All parameters were within the acceptable control limits unless otherwise noted.

For C8-C40 by EPA 8015B (M) matrix spike and matrix spike duplicate RPD was outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

For C4-C12 by EPA 8015B (M) one of the matrix spike and matrix spike duplicate recoveries were outside the established control limits. The other MS/MSD was acceptable. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

For Title 22 Metals by EPA 6010B matrix spike and/or matrix spike duplicate recoveries were outside the established control limits for antimony, lead, molybdenum and thallium. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action. The concentrations of copper and zinc in the sample were over four times the spike amount, therefore the recoveries could not be calculated.

For PCB Aroclors by EPA 8082 matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

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Surrogates

Surrogate recoveries for all applicable tests and samples were within acceptable control limits with the following exceptions:

For PCB Aroclors by EPA 8082 the decachlorobiphenyl recovery was high in sample 8.

Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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Calscience Environmental Laboratories, Inc.

# Work Order Narrative

Work Order: 13-04-1001



**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/12/13. They were assigned to Work Order 13-04-1001.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with an immediate holding time (HT </= 15 minutes --40CFR-136.3 Table II footnote 4), is considered a "field" test and reported samples results are not flagged unless the analysis is performed beyond 24 hours of the time of collection.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Calscience Environmental Laboratories, Inc.

# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC<br>27201 Puerta Real, Suite 350<br>Mission Viejo, CA 92691-8306 | Work Order: | 13-04-1001 |
| | | Project Name: | NASSCO South Shipyard Sediment Study |
| | | PO Number: | |
| | | Date Received: | 04/12/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| SD-S-P-NASC06-0001 | 13-04-1001-1 | 04/11/13 12:00 | 3 | Sediment |
| SD-S-P-NASC06-0102 | 13-04-1001-2 | 04/11/13 12:00 | 3 | Sediment |
| SD-S-P-NASC06-0203 | 13-04-1001-3 | 04/11/13 12:00 | 3 | Sediment |
| SD-S-P-NASC06-0304 Plug | 13-04-1001-4 | 04/11/13 12:00 | 3 | Sediment |
| SD-S-P-NASC06-Comp | 13-04-1001-5 | 04/11/13 12:00 | 1 | Sediment |
| SD-S-P-NASC06-0225 | 13-04-1001-6 | 04/11/13 12:00 | 1 | Sediment |
| COMP-C6-TOP | 13-04-1001-7 | 04/11/13 12:00 | 1 | Sediment |
| COMP-C6-BOTTOM | 13-04-1001-8 | 04/11/13 12:00 | 1 | Sediment |

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C6-TOP** | **13-04-1001-7-A** | **04/11/13 12:00** | **Sediment** | **GC 50** | **06/12/13** | **06/15/13 00:54** | **130612B13** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | 2.1 | 5.0 | 1.8 | 1 | J |
| C17-C18 | 2.1 | 5.0 | 1.8 | 1 | J |
| C19-C20 | 2.3 | 5.0 | 1.8 | 1 | J |
| C21-C22 | 2.1 | 5.0 | 1.8 | 1 | J |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | 3.7 | 5.0 | 2.4 | 1 | J |
| C29-C32 | 5.2 | 5.0 | 2.4 | 1 | |
| C33-C36 | 3.9 | 5.0 | 2.6 | 1 | J |
| C37-C40 | 1.7 | 5.0 | 1.6 | 1 | J |
| C8-C40 Total | 23 | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 78 | 61-145 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C6-BOTTOM** | **13-04-1001-8-A** | **04/11/13 12:00** | **Sediment** | **GC 50** | **06/12/13** | **06/15/13 01:14** | **130612B13** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | 4.8 | 5.0 | 2.4 | 1 | J |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | 5.4 | 5.0 | 1.8 | 1 | |
| C15-C16 | 12 | 5.0 | 1.8 | 1 | |
| C17-C18 | 15 | 5.0 | 1.8 | 1 | |
| C19-C20 | 19 | 5.0 | 1.8 | 1 | |
| C21-C22 | 8.3 | 5.0 | 1.8 | 1 | |
| C23-C24 | 7.9 | 5.0 | 1.7 | 1 | |
| C25-C28 | 17 | 5.0 | 2.4 | 1 | |
| C29-C32 | 23 | 5.0 | 2.4 | 1 | |
| C33-C36 | 16 | 5.0 | 2.6 | 1 | |
| C37-C40 | 4.8 | 5.0 | 1.6 | 1 | J |
| C8-C40 Total | 130 | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 103 | 61-145 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-15-500-16** | **N/A** | **Soil** | **GC 50** | **06/12/13** | **06/14/13 22:59** | **130612B13** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | ND | 5.0 | 1.8 | 1 | |
| C19-C20 | ND | 5.0 | 1.8 | 1 | |
| C21-C22 | ND | 5.0 | 1.8 | 1 | |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | ND | 5.0 | 2.4 | 1 | |
| C29-C32 | ND | 5.0 | 2.4 | 1 | |
| C33-C36 | ND | 5.0 | 2.6 | 1 | |
| C37-C40 | ND | 5.0 | 1.6 | 1 | |
| C8-C40 Total | ND | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 98 | 61-145 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C6-TOP** | **13-04-1001-7-B** | **04/11/13 12:00** | **Sediment** | **GC 4** | **06/13/13** | **06/14/13 07:20** | **130613B02** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | 0.25 | 0.50 | 0.23 | 1 | J |
| GRO (C4-C12) Total | 0.25 | 0.50 | 0.23 | 1 | J |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 87 | 42-126 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C6-BOTTOM** | **13-04-1001-8-B** | **04/11/13 12:00** | **Sediment** | **GC 57** | **06/12/13** | **06/13/13 05:47** | **130612B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | 0.20 | 0.50 | 0.15 | 1 | J |
| C11-C12 | 1.0 | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | 1.2 | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 104 | 42-126 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-13-045-160** | **N/A** | **Soil** | **GC 57** | **06/12/13** | **06/12/13 12:39** | **130612B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 67 | 42-126 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-13-045-161** | **N/A** | **Soil** | **GC 4** | **06/13/13** | **06/14/13 00:44** | **130613B02** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 85 | 42-126 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |

Project: NASSCO South Shipyard Sediment Study



| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C6-TOP** | **13-04-1001-7-A** | **04/11/13 12:00** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:46** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 8.92 | 0.750 | 0.259 | 1 | |
| Barium | 82.3 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.348 | 0.250 | 0.137 | 1 | |
| Cadmium | 0.874 | 0.500 | 0.135 | 1 | |
| Chromium | 42.1 | 0.250 | 0.142 | 1 | |
| Cobalt | 6.00 | 0.250 | 0.148 | 1 | |
| Copper | 225 | 0.500 | 0.135 | 1 | |
| Lead | 94.2 | 0.500 | 0.132 | 1 | |
| Molybdenum | 1.50 | 0.250 | 0.132 | 1 | |
| Nickel | 9.26 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | 0.750 | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 39.6 | 0.250 | 0.141 | 1 | |
| Zinc | 269 | 1.00 | 0.178 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |

Project: NASSCO South Shipyard Sediment Study



| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C6-BOTTOM** | **13-04-1001-8-A** | **04/11/13 12:00** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:50** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | 1.46 | 0.750 | 0.149 | 1 | |
| Arsenic | 6.11 | 0.750 | 0.259 | 1 | |
| Barium | 65.2 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.217 | 0.250 | 0.137 | 1 | J |
| Cadmium | 1.11 | 0.500 | 0.135 | 1 | |
| Chromium | 40.6 | 0.250 | 0.142 | 1 | |
| Cobalt | 4.99 | 0.250 | 0.148 | 1 | |
| Copper | 248 | 0.500 | 0.135 | 1 | |
| Lead | 141 | 0.500 | 0.132 | 1 | |
| Molybdenum | 2.59 | 0.250 | 0.132 | 1 | |
| Nickel | 8.55 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | 0.948 | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 30.1 | 0.250 | 0.141 | 1 | |
| Zinc | 370 | 1.00 | 0.178 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-01-002-16915** | **N/A** | **Soil** | **ICP 7300** | **06/12/13** | **06/13/13 23:17** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | ND | 0.750 | 0.259 | 1 | |
| Barium | ND | 0.500 | 0.154 | 1 | |
| Beryllium | ND | 0.250 | 0.137 | 1 | |
| Cadmium | ND | 0.500 | 0.135 | 1 | |
| Chromium | ND | 0.250 | 0.142 | 1 | |
| Cobalt | ND | 0.250 | 0.148 | 1 | |
| Copper | ND | 0.500 | 0.135 | 1 | |
| Lead | ND | 0.500 | 0.132 | 1 | |
| Molybdenum | ND | 0.250 | 0.132 | 1 | |
| Nickel | ND | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | ND | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | ND | 0.250 | 0.141 | 1 | |
| Zinc | ND | 1.00 | 0.178 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C6-TOP** | **13-04-1001-7-A** | **04/11/13 12:00** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 20:05** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 1.09 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C6-BOTTOM** | **13-04-1001-8-A** | **04/11/13 12:00** | **Sediment** | **Mercury** | **06/12/13** | **06/13/13 12:40** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 2.68 | 0.834 | 0.0587 | 9.98 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-04-007-9356** | **N/A** | **Soil** | **Mercury** | **06/12/13** | **06/12/13 19:51** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | ND | 0.0835 | 0.00588 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C6-TOP** | **13-04-1001-7-A** | **04/11/13 12:00** | **Sediment** | **GC 31** | **06/13/13** | **06/18/13 12:35** | **130613L14** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 50 | 14 | 5 | |
| Aroclor-1221 | ND | 50 | 13 | 5 | |
| Aroclor-1232 | ND | 50 | 11 | 5 | |
| Aroclor-1242 | ND | 50 | 12 | 5 | |
| Aroclor-1248 | 170 | 50 | 14 | 5 | |
| Aroclor-1254 | 220 | 50 | 12 | 5 | |
| Aroclor-1260 | 98 | 50 | 12 | 5 | |
| Aroclor-1262 | ND | 50 | 12 | 5 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 53 | 50-130 | |
| Decachlorobiphenyl | 99 | 50-130 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C6-BOTTOM** | **13-04-1001-8-A** | **04/11/13 12:00** | **Sediment** | **GC 31** | **06/13/13** | **06/18/13 12:54** | **130613L14** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 500 | 140 | 50 | |
| Aroclor-1221 | ND | 500 | 130 | 50 | |
| Aroclor-1232 | ND | 500 | 110 | 50 | |
| Aroclor-1242 | ND | 500 | 120 | 50 | |
| Aroclor-1248 | 1300 | 500 | 140 | 50 | |
| Aroclor-1254 | 3200 | 500 | 120 | 50 | |
| Aroclor-1260 | 1100 | 500 | 120 | 50 | |
| Aroclor-1262 | ND | 500 | 120 | 50 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 76 | 50-130 | |
| Decachlorobiphenyl | 738 | 50-130 | 1,2,7 |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-12-565-340** | **N/A** | **Soil** | **GC 31** | **06/13/13** | **06/18/13 10:40** | **130613L14** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | ND | 10 | 2.9 | 1 | |
| Aroclor-1254 | ND | 10 | 2.4 | 1 | |
| Aroclor-1260 | ND | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 80 | 50-130 | |
| Decachlorobiphenyl | 86 | 50-130 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **GC 50** | **06/12/13** | **06/14/13 23:37** | **130612S13** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| TPH as Diesel | 102.5 | 400.0 | 431.9 | 82 | 362.1 | 65 | 64-130 | 18 | 0-15 | 4 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **GC 57** | **06/12/13** | **06/12/13 19:44** | **130612S01** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| GRO (C4-C12) Total | 1.771 | 10.00 | 3.056 | 13 | 3.441 | 17 | 48-114 | 12 | 0-25 | 3 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **GC 4** | **06/13/13** | **06/14/13 02:23** | **130613S02** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| GRO (C4-C12) Total | ND | 10.00 | 6.210 | 62 | 6.548 | 65 | 48-114 | 5 | 0-25 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:26** | **130612S08** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 3.137 | 13 | 4.170 | 17 | 50-115 | 28 | 0-20 | 3,4 |
| Arsenic | 7.019 | 25.00 | 31.38 | 97 | 33.08 | 104 | 75-125 | 5 | 0-20 | |
| Barium | 77.89 | 25.00 | 104.4 | 106 | 104.6 | 107 | 75-125 | 0 | 0-20 | |
| Beryllium | 0.3681 | 25.00 | 24.97 | 98 | 26.62 | 105 | 75-125 | 6 | 0-20 | |
| Cadmium | 2.118 | 25.00 | 25.41 | 93 | 27.20 | 100 | 75-125 | 7 | 0-20 | |
| Chromium | 56.89 | 25.00 | 79.48 | 90 | 83.39 | 106 | 75-125 | 5 | 0-20 | |
| Cobalt | 6.268 | 25.00 | 31.06 | 99 | 33.09 | 107 | 75-125 | 6 | 0-20 | |
| Copper | 130.4 | 25.00 | 155.7 | 4X | 154.6 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 64.02 | 25.00 | 79.41 | 62 | 104.9 | 163 | 75-125 | 28 | 0-20 | 3,4 |
| Molybdenum | 1.256 | 25.00 | 19.88 | 74 | 21.44 | 81 | 75-125 | 8 | 0-20 | 3 |
| Nickel | 11.79 | 25.00 | 36.12 | 97 | 38.66 | 108 | 75-125 | 7 | 0-20 | |
| Selenium | ND | 25.00 | 20.85 | 83 | 22.54 | 90 | 75-125 | 8 | 0-20 | |
| Silver | 1.853 | 12.50 | 13.80 | 96 | 14.56 | 102 | 75-125 | 5 | 0-20 | |
| Thallium | ND | 25.00 | 12.84 | 51 | 17.83 | 71 | 75-125 | 33 | 0-20 | 3,4 |
| Vanadium | 41.15 | 25.00 | 65.57 | 98 | 67.38 | 105 | 75-125 | 3 | 0-20 | |
| Zinc | 223.5 | 25.00 | 243.1 | 4X | 248.6 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 19:58** | **130612S08** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.8662 | 0.8350 | 1.685 | 98 | 1.721 | 102 | 71-137 | 2 | 0-14 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 6 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-1004-11** | **Sediment** | **GC 31** | **06/13/13** | **06/18/13 16:24** | **130613S14** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | ND | 20.00 | 40.46 | 202 | 37.69 | 188 | 50-135 | 7 | 0-25 | 3 |
| Aroclor-1260 | 123.4 | 20.00 | 90.85 | 0 | 90.65 | 0 | 50-135 | 0 | 0-25 | 3 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - PDS/PDSD

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | PDS/PDSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **ICP 7300** | **06/12/13 00:00** | **06/14/13 11:28** | **130612S08** |

| Parameter | Sample Conc. | Spike Added | PDS Conc. | PDS %Rec. | PDSD Conc. | PDSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 24.06 | 96 | 24.33 | 97 | 75-125 | 1 | 0-20 | |
| Arsenic | 7.019 | 25.00 | 32.16 | 101 | 31.68 | 99 | 75-125 | 2 | 0-20 | |
| Barium | 77.89 | 25.00 | 104.1 | 105 | 104.8 | 108 | 75-125 | 1 | 0-20 | |
| Beryllium | 0.3681 | 25.00 | 25.81 | 102 | 25.83 | 102 | 75-125 | 0 | 0-20 | |
| Cadmium | 2.118 | 25.00 | 26.46 | 97 | 26.55 | 98 | 75-125 | 0 | 0-20 | |
| Chromium | 56.89 | 25.00 | 81.26 | 98 | 81.29 | 98 | 75-125 | 0 | 0-20 | |
| Cobalt | 6.268 | 25.00 | 31.90 | 103 | 31.74 | 102 | 75-125 | 1 | 0-20 | |
| Copper | 130.4 | 25.00 | 155.3 | 4X | 155.9 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 64.02 | 25.00 | 88.41 | 98 | 88.29 | 97 | 75-125 | 0 | 0-20 | |
| Molybdenum | 1.256 | 25.00 | 25.70 | 98 | 25.51 | 97 | 75-125 | 1 | 0-20 | |
| Nickel | 11.79 | 25.00 | 37.17 | 102 | 36.89 | 100 | 75-125 | 1 | 0-20 | |
| Selenium | ND | 25.00 | 23.17 | 93 | 22.53 | 90 | 75-125 | 3 | 0-20 | |
| Silver | 1.853 | 12.50 | 14.78 | 103 | 14.96 | 105 | 75-125 | 1 | 0-20 | |
| Thallium | ND | 25.00 | 21.46 | 86 | 21.26 | 85 | 75-125 | 1 | 0-20 | |
| Vanadium | 41.15 | 25.00 | 65.69 | 98 | 65.57 | 98 | 75-125 | 0 | 0-20 | |
| Zinc | 223.5 | 25.00 | 247.6 | 4X | 247.8 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-15-500-16** | **Soil** | **GC 50** | **06/14/13 23:19** | **130612B13** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| TPH as Diesel | 400.0 | 346.7 | 87 | 75-123 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-13-045-160** | **Soil** | **GC 57** | **06/12/13 13:11** | **130612B01** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| GRO (C4-C12) Total | 10.00 | 8.906 | 89 | 70-124 | |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-13-045-161** | **Soil** | **GC 4** | **06/14/13 01:17** | **130613B02** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| GRO (C4-C12) Total | 10.00 | 9.893 | 99 | 70-124 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **097-01-002-16915** | **Soil** | **ICP 7300** | **06/13/13 23:19** | **130612L08** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | ME CL | Qualifiers |
|---|---|---|---|---|---|---|
| Antimony | 25.00 | 25.43 | 102 | 80-120 | 73-127 | |
| Arsenic | 25.00 | 25.43 | 102 | 80-120 | 73-127 | |
| Barium | 25.00 | 27.85 | 111 | 80-120 | 73-127 | |
| Beryllium | 25.00 | 25.37 | 101 | 80-120 | 73-127 | |
| Cadmium | 25.00 | 26.29 | 105 | 80-120 | 73-127 | |
| Chromium | 25.00 | 26.05 | 104 | 80-120 | 73-127 | |
| Cobalt | 25.00 | 27.11 | 108 | 80-120 | 73-127 | |
| Copper | 25.00 | 25.14 | 101 | 80-120 | 73-127 | |
| Lead | 25.00 | 26.26 | 105 | 80-120 | 73-127 | |
| Molybdenum | 25.00 | 25.63 | 103 | 80-120 | 73-127 | |
| Nickel | 25.00 | 28.06 | 112 | 80-120 | 73-127 | |
| Selenium | 25.00 | 23.91 | 96 | 80-120 | 73-127 | |
| Silver | 12.50 | 13.23 | 106 | 80-120 | 73-127 | |
| Thallium | 25.00 | 25.94 | 104 | 80-120 | 73-127 | |
| Vanadium | 25.00 | 25.32 | 101 | 80-120 | 73-127 | |
| Zinc | 25.00 | 27.69 | 111 | 80-120 | 73-127 | |

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-04-007-9356** | **Soil** | **Mercury** | **06/12/13 19:54** | **130612L08** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.8350 | 0.8143 | 98 | 85-121 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 6 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-12-565-340** | **Soil** | **GC 31** | **06/18/13 10:59** | **130613L14** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | 20.00 | 18.98 | 95 | 50-135 | |
| Aroclor-1260 | 20.00 | 15.42 | 77 | 50-135 | |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order: 13-04-1001



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| 4 | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range. |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

For any analysis identified as a "field" test with a holding time (HT) </= 15 minutes where the sample is received outside of HT, Calscience will adhere to its internal HT of 24 hours. In cases where sample analysis does not meet Calscience's internal HT, results will be appropriately qualified.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Calscience Environmental Laboratories, Inc.

7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/11/2013

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure
ADDRESS: 9210 Sky Park Ct. Ste 200
CITY: San Diego, California 92123
TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study
PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder
SAMPLER(S): (SIGNATURE)

P.O. NO.: 1315100800
QUOTE NO.:
LAB USE ONLY: 13-04-1001

TURNAROUND TIME
☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___/___/___

SPECIAL INSTRUCTIONS
Please HOLD samples. 1x 16 oz per sample
DO NOT FREEZE COMPOSITE SAMPLES. HOLD FOR GEOTECHNICAL.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

## REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC06-0001 | | 4/11/2013 | 1200 | sed | 3 | | | | X |
| 2 | SD-S-P-NASC06-0102 | | 4/11/2013 | | sed | 3 | | | | X |
| 3 | SD-S-P-NASC06-0203 | | 4/11/2013 | | sed | 3 | | | | X |
| 4 | SD-S-P-NASC06-0304 Plug | | 4/11/2013 | | sed | 3 | | | | X |
| 5 | SD-S-P-NASC06-Comp | | 4/11/2013 | | sed | 3 | | | | X |
| 6 | SD-S-P-NASC06-0225 | | 4/11/2013 | | sed | 3 | | | | X |
| – | ~~SD-S-P-NASC~~ | | ~~4/__/2013~~ | | ~~sed~~ | ~~3~~ | | | | ~~X~~ |
| – | ~~SD-S-P-NASC~~ | | ~~4/__/2013~~ | | ~~sed~~ | ~~3~~ | | | | ~~X~~ |
| – | ~~SD-S-P-NASC~~ | | ~~4/__/2013~~ | | ~~sed~~ | ~~3~~ | | | | ~~X~~ |
| – | ~~SD-S-P-NASC~~ | | ~~4/__/2013~~ | | ~~sed~~ | ~~3~~ | | | | ~~X~~ |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | | 04/12/13 | 1545 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| | | 04/12/13 | 1800 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| | | | |



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|
| NAS-C1 | | | | |
| SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| SD-S-P-NASC1-0102 | | | | |
| SD-S-P-NASC1-0203 | | | | |
| SD-S-P-NASC1-0304 | | | | |
| SD-S-P-NASC1-0405 | | | | |
| SD-S-P-NASC1-0506 | | | | BOTTOM |
| SD-S-P-NASC1-0607 | | | | |
| SD-S-P-NASC1-0708 | | | | |
| SD-S-P-NASC1-0809 | | | | |
| NAS-C2 | | | | |
| SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| SD-S-P-NASC2-0102 | | | | |
| SD-S-P-NASC2-0203 | | | | |
| SD-S-P-NASC2-0304 | | | | |
| SD-S-P-NASC2-0405 | | | | |
| SD-S-P-NASC2-0506 | | | | BOTTOM |
| SD-S-P-NASC2-0607 | | | | |
| SD-S-P-NASC2-0708 | | | | |
| SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | |
| SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| SD-S-P-NASC3-0102 | | | | |
| SD-S-P-NASC3-0203 | | | | |
| SD-S-P-NASC3-0304 | | | | |
| SD-S-P-NASC3-0405 | | | | |
| SD-S-P-NASC3-0506 | | | | BOTTOM |
| SD-S-P-NASC3-0607 | | | | |
| SD-S-P-NASC3-0708 | | | | |
| SD-S-P-NASC3-0809 | | | | |
| SD-S-P-NASC3-0910 | | | | |
| SD-S-P-NASC3-0910-PLUG | | | | not included[c] |
| NAS-C4 | | | | |
| SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| SD-S-P-NASC4-0102 | | | | |
| SD-S-P-NASC4-0203 | | | | |
| SD-S-P-NASC4-0304 | | | | |
| SD-S-P-NASC4-0405 | | | | |
| SD-S-P-NASC4-0506 | | | | BOTTOM |
| SD-S-P-NASC4-0607 | | | | |
| SD-S-P-NASC4-0708 | | | | |
| SD-S-P-NASC4-0809 | | | | |
| SD-S-P-NASC4-0910 | | | | |
| SD-S-P-NASC4-0910-PLUG | | | | not included[c] |
| NAS-C5 | | | | |
| SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| SD-S-P-NASC5-0102 | | | | |
| SD-S-P-NASC5-0203 | | | | |
| SD-S-P-NASC5-0304 | | | | BOTTOM |
| SD-S-P-NASC5-0405 | | | | |
| SD-S-P-NASC5-0506-PLUG | | | | not included[c] |
| NAS-C6 | | | | |
| SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| SD-S-P-NASC6-0102 | | | | |
| SD-S-P-NASC6-0203 | | | | BOTTOM |
| SD-S-P-NASC6-0304-PLUG | | | | not included[c] |
| NAS-C7 | | | | |
| SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| SD-S-P-NASC7-0102 | | | | |
| SD-S-P-NASC7-0203 | | | | |
| SD-S-P-NASC7-0304 | | | | |
| SD-S-P-NASC7-0405 | | | | BOTTOM |
| SD-S-P-NASC7-0506 | | | | |
| SD-S-P-NASC7-0607 | | | | |
| SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | |
| SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| SD-S-P-NASC8-0102 | | | | |
| SD-S-P-NASC8-0203 | | | | |
| SD-S-P-NASC8-0304 | | | | |
| SD-S-P-NASC8-0405 | | | | |
| SD-S-P-NASC8-0506 | | | | BOTTOM |
| SD-S-P-NASC8-0607 | | | | |
| SD-S-P-NASC8-0708 | | | | |
| SD-S-P-NASC8-0809 | | | | |
| SD-S-P-NASC8-0910 | | | | |
| SD-S-P-NASC8-0910-PLUG | | | | not included[c] |
| NAS-C9 | | | | |
| SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| SD-S-P-NASC9-0102 | | | | |
| SD-S-P-NASC9-0203 | | | | |
| SD-S-P-NASC9-0304 | | | | |
| SD-S-P-NASC9-0405 | | | | BOTTOM |
| SD-S-P-NASC9-0506 | | | | |
| SD-S-P-NASC9-0607 | | | | |
| NAS-C10 | | | | |
| SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| SD-S-P-NASC10-0102 | | | | |
| SD-S-P-NASC10-0203 | | | | |
| SD-S-P-NASC10-0304 | | | | BOTTOM |
| SD-S-P-NASC10-0405 | | | | |
| SD-S-P-NASC10-0506 | | | | |
| SD-S-P-NASC10-0607 | | | | |
| SD-S-P-NASC10-0708 | | | | |
| NAS-C11 | | | | |
| SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| SD-S-P-NASC11-0102 | | | | |
| SD-S-P-NASC11-0203 | | | | |
| SD-S-P-NASC11-0304 | | | | |
| SD-S-P-NASC11-0405 | | | | BOTTOM |
| SD-S-P-NASC11-0506 | | | | |
| SD-S-P-NASC11-0607 | | | | |
| SD-S-P-NASC11-0708 | | | | |
| SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | |
| SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| SD-S-P-NASC12-0102 | | | | |
| SD-S-P-NASC12-0203 | | | | |
| SD-S-P-NASC12-0304 | | | | |
| SD-S-P-NASC12-0405 | | | | BOTTOM |
| SD-S-P-NASC12-0506 | | | | |
| SD-S-P-NASC12-0607 | | | | |
| SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | |
| SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| SD-S-P-NASC13-0102 | | | | |
| SD-S-P-NASC13-0203 | | | | |
| SD-S-P-NASC13-0304 | | | | BOTTOM |
| SD-S-P-NASC13-0405 | | | | |
| SD-S-P-NASC13-0506 | | | | |
| SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | |
| SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| SD-S-P-NASC14-0102 | | | | |
| SD-S-P-NASC14-0203 | | | | BOTTOM |
| SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | |
| SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| SD-S-P-NASC15-0102 | | | | |
| SD-S-P-NASC15-0203 | | | | |
| SD-S-P-NASC15-0304 | | | | BOTTOM |
| SD-S-P-NASC15-0405 | | | | |
| SD-S-P-NASC15-0506 | | | | |

Notes:
0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on
a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.
b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.
A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)
c - sample not included due to low volume available and because it represents native material which will not be dredged



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April 9 - 12, 2013
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| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| ~~13-04-1000-1~~ | ~~SD-S-P-NASC1-0001~~ | COMP-A | 4/11/2013 | 1335 | TOP |
| ~~13-04-1000-2~~ | ~~SD-S-P-NASC1-0102~~ | | | | |
| ~~13-04-1000-3~~ | ~~SD-S-P-NASC1-0203~~ | | | | |
| ~~13-04-1000-4~~ | ~~SD-S-P-NASC1-0304~~ | | | | |
| ~~13-04-1000-5~~ | ~~SD-S-P-NASC1-0405~~ | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| ~~13-04-1111-1~~ | ~~SD-S-P-NASC2-0001~~ | COMP-A | 4/12/2013 | 1021 | TOP |
| ~~13-04-1111-2~~ | ~~SD-S-P-NASC2-0102~~ | | | | |
| ~~13-04-1111-3~~ | ~~SD-S-P-NASC2-0203~~ | | | | |
| ~~13-04-1111-4~~ | ~~SD-S-P-NASC2-0304~~ | | | | |
| ~~13-04-1111-5~~ | ~~SD-S-P-NASC2-0405~~ | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| ~~13-04-1113-1~~ | ~~SD-S-P-NASC3-0001~~ | COMP-A | 4/12/2013 | 751 | TOP |
| ~~13-04-1113-2~~ | ~~SD-S-P-NASC3-0102~~ | | | | |
| ~~13-04-1113-3~~ | ~~SD-S-P-NASC3-0203~~ | | | | |
| ~~13-04-1113-4~~ | ~~SD-S-P-NASC3-0304~~ | | | | |
| ~~13-04-1113-5~~ | ~~SD-S-P-NASC3-0405~~ | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| ~~13-04-1002-1~~ | ~~SD-S-P-NASC4-0001~~ | COMP-A | 4/11/2013 | 930 | TOP |
| ~~13-04-1002-2~~ | ~~SD-S-P-NASC4-0102~~ | | | | |
| ~~13-04-1002-3~~ | ~~SD-S-P-NASC4-0203~~ | | | | |
| ~~13-04-1002-4~~ | ~~SD-S-P-NASC4-0304~~ | | | | |
| ~~13-04-1002-5~~ | ~~SD-S-P-NASC4-0405~~ | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| ~~13-04-1003-1~~ | ~~SD-S-P-NASC5-0001~~ | COMP-A | 4/11/2013 | 755 | TOP |
| ~~13-04-1003-2~~ | ~~SD-S-P-NASC5-0102~~ | | | | |
| ~~13-04-1003-3~~ | ~~SD-S-P-NASC5-0203~~ | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| ~~13-04-1001-1~~ | ~~SD-S-P-NASC6-0001~~ | COMP-B | 4/11/2013 | 1200 | TOP |
| ~~13-04-1001-2~~ | ~~SD-S-P-NASC6-0102~~ | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| ~~13-04-0902-1~~ | ~~SD-S-P-NASC7-0001~~ | COMP-B | 4/10/2013 | 1430 | TOP |
| ~~13-04-0902-2~~ | ~~SD-S-P-NASC7-0102~~ | | | | |
| ~~13-04-0902-3~~ | ~~SD-S-P-NASC7-0203~~ | | | | |
| ~~13-04-0902-4~~ | ~~SD-S-P-NASC7-0304~~ | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| ~~13-04-0903-1~~ | ~~SD-S-P-NASC8-0001~~ | COMP-B | 4/10/2013 | 830 | TOP |
| ~~13-04-0903-2~~ | ~~SD-S-P-NASC8-0102~~ | | | | |
| ~~13-04-0903-3~~ | ~~SD-S-P-NASC8-0203~~ | | | | |
| ~~13-04-0903-4~~ | ~~SD-S-P-NASC8-0304~~ | | | | |
| ~~13-04-0903-5~~ | ~~SD-S-P-NASC8-0405~~ | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| ~~13-04-0901-1~~ | ~~SD-S-P-NASC9-0001~~ | COMP-B | 4/10/2013 | 1315 | TOP |
| ~~13-04-0901-2~~ | ~~SD-S-P-NASC9-0102~~ | | | | |
| ~~13-04-0901-3~~ | ~~SD-S-P-NASC9-0203~~ | | | | |
| ~~13-04-0901-4~~ | ~~SD-S-P-NASC9-0304~~ | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607-PLUG~~ | | | | |
| NAS-C10 | | | | | |
| ~~13-04-0904-1~~ | ~~SD-S-P-NASC10-0001~~ | COMP-D | 4/10/2013 | 1010 | TOP |
| ~~13-04-0904-2~~ | ~~SD-S-P-NASC10-0102~~ | | | | |
| ~~13-04-0904-3~~ | ~~SD-S-P-NASC10-0203~~ | | | | |
| ~~13-04-0904-4~~ | ~~SD-S-P-NASC10-0304~~ | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-8 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| ~~13-04-0778-1~~ | ~~SD-S-P-NASC11-0001~~ | COMP-D | 4/9/2013 | 1525 | TOP |
| ~~13-04-0778-2~~ | ~~SD-S-P-NASC11-0102~~ | | | | |
| ~~13-04-0778-3~~ | ~~SD-S-P-NASC11-0203~~ | | | | |
| ~~13-04-0778-4~~ | ~~SD-S-P-NASC11-0304~~ | | | | |
| ~~13-04-0778-5~~ | ~~SD-S-P-NASC11-0405~~ | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| ~~13-04-0780-1~~ | ~~SD-S-P-NASC12-0001~~ | COMP-D | 4/9/2013 | 1410 | TOP |
| ~~13-04-0780-2~~ | ~~SD-S-P-NASC12-0102~~ | | | | |
| ~~13-04-0780-3~~ | ~~SD-S-P-NASC12-0203~~ | | | | |
| ~~13-04-0780-4~~ | ~~SD-S-P-NASC12-0304~~ | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| ~~13-04-0781-1~~ | ~~SD-S-P-NASC13-0001~~ | COMP-E | 4/9/2013 | 1055 | TOP |
| ~~13-04-0781-2~~ | ~~SD-S-P-NASC13-0102~~ | | | | |
| ~~13-04-0781-3~~ | ~~SD-S-P-NASC13-0203~~ | | | | |
| ~~13-04-0781-4~~ | ~~SD-S-P-NASC13-0304~~ | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| ~~13-04-0782-1~~ | ~~SD-S-P-NASC14-0001~~ | COMP-E | 4/9/2013 | 815 | TOP |
| ~~13-04-0782-2~~ | ~~SD-S-P-NASC14-0102~~ | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| ~~13-04-0779-1~~ | ~~SD-S-P-NASC15-0001~~ | COMP-E | 4/9/2013 | 940 | TOP |
| ~~13-04-0779-2~~ | ~~SD-S-P-NASC15-0102~~ | | | | |
| ~~13-04-0779-3~~ | ~~SD-S-P-NASC15-0203~~ | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-1001

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/12/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.8 °C - 0.2 °C (CF) = 1.6 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: BD

**CUSTODY SEALS INTACT:**

| | | | | | |
|---|---|---|---|---|---|
| ☐ Cooler | ☐_____ | ☐ No (Not Intact) | ☑ Not Present | ☐ N/A | Initial: BD |
| ☐ Sample | ☐_____ | ☐ No (Not Intact) | ☑ Not Present | | Initial: TN |

**SAMPLE CONDITION:**

| | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ Z

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** TN

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WL

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WL



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| 13-04-1004-1 | SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| 13-04-1004-2 | SD-S-P-NASC1-0102 | | | | |
| 13-04-1004-3 | SD-S-P-NASC1-0203 | | | | |
| 13-04-1004-4 | SD-S-P-NASC1-0304 | | | | |
| 13-04-1004-5 | SD-S-P-NASC1-0405 | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| 13-04-1111-1 | SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| 13-04-1111-2 | SD-S-P-NASC2-0102 | | | | |
| 13-04-1111-3 | SD-S-P-NASC2-0203 | | | | |
| 13-04-1111-4 | SD-S-P-NASC2-0304 | | | | |
| 13-04-1111-5 | SD-S-P-NASC2-0405 | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| 13-04-1113-1 | SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| 13-04-1113-2 | SD-S-P-NASC3-0102 | | | | |
| 13-04-1113-3 | SD-S-P-NASC3-0203 | | | | |
| 13-04-1113-4 | SD-S-P-NASC3-0304 | | | | |
| 13-04-1113-5 | SD-S-P-NASC3-0405 | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| 13-04-1002-1 | SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| 13-04-1002-2 | SD-S-P-NASC4-0102 | | | | |
| 13-04-1002-3 | SD-S-P-NASC4-0203 | | | | |
| 13-04-1002-4 | SD-S-P-NASC4-0304 | | | | |
| 13-04-1002-5 | SD-S-P-NASC4-0405 | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| 13-04-1003-1 | SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| 13-04-1003-2 | SD-S-P-NASC5-0102 | | | | |
| 13-04-1003-3 | SD-S-P-NASC5-0203 | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| 13-04-1001-1 | SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| 13-04-1001-2 | SD-S-P-NASC6-0102 | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| 13-04-0902-1 | SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| 13-04-0902-2 | SD-S-P-NASC7-0102 | | | | |
| 13-04-0902-3 | SD-S-P-NASC7-0203 | | | | |
| 13-04-0902-4 | SD-S-P-NASC7-0304 | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| 13-04-0903-1 | SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| 13-04-0903-2 | SD-S-P-NASC8-0102 | | | | |
| 13-04-0903-3 | SD-S-P-NASC8-0203 | | | | |
| 13-04-0903-4 | SD-S-P-NASC8-0304 | | | | |
| 13-04-0903-5 | SD-S-P-NASC8-0405 | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| 13-04-0901-1 | SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| 13-04-0901-2 | SD-S-P-NASC9-0102 | | | | |
| 13-04-0901-3 | SD-S-P-NASC9-0203 | | | | |
| 13-04-0901-4 | SD-S-P-NASC9-0304 | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607 PLUG~~ | | | | |
| NAS-C10 | | | | | |
| 13-04-0904-1 | SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| 13-04-0904-2 | SD-S-P-NASC10-0102 | | | | |
| 13-04-0904-3 | SD-S-P-NASC10-0203 | | | | |
| 13-04-0904-4 | SD-S-P-NASC10-0304 | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-9 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| 13-04-0778-1 | SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| 13-04-0778-2 | SD-S-P-NASC11-0102 | | | | |
| 13-04-0778-3 | SD-S-P-NASC11-0203 | | | | |
| 13-04-0778-4 | SD-S-P-NASC11-0304 | | | | |
| 13-04-0778-5 | SD-S-P-NASC11-0405 | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| 13-04-0780-1 | SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| 13-04-0780-2 | SD-S-P-NASC12-0102 | | | | |
| 13-04-0780-3 | SD-S-P-NASC12-0203 | | | | |
| 13-04-0780-4 | SD-S-P-NASC12-0304 | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| 13-04-0781-1 | SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| 13-04-0781-2 | SD-S-P-NASC13-0102 | | | | |
| 13-04-0781-3 | SD-S-P-NASC13-0203 | | | | |
| 13-04-0781-4 | SD-S-P-NASC13-0304 | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| 13-04-0782-1 | SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| 13-04-0782-2 | SD-S-P-NASC14-0102 | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| 13-04-0779-1 | SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| 13-04-0779-2 | SD-S-P-NASC15-0102 | | | | |
| 13-04-0779-3 | SD-S-P-NASC15-0203 | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged

Calscience Environmental Laboratories, Inc.

# CALSCIENCE

## WORK ORDER NUMBER: 13-04-0902

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard Sediment Study

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 06/20/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Accredited in accordance with nelac

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

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Work Order Number: 13-04-0902


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Calscience Environmental Laboratories, Inc.

# CASE NARRATIVE

## Calscience Work Order No.: 13-04-0902
## Project ID: NASSCO Shipyard Sediment Study

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

Ten sediment samples were received for this project on April 11, 2013. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 1.4°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in freezers pending chemistry testing.

On June 12, 2013 samples were composited into two samples as per client instructions.

COC discrepancies were noted in the Sample Anomaly Form.

***Tests Performed***

The two composite samples were analyzed for the following analyses:

C8-C40 by EPA 8015B (M)
C4-C12 by EPA 8015B (M)
Title 22 Metals by EPA 6010B
Mercury by EPA 7471A
PCB Aroclors by EPA 8082

***Data Summary***

<u>Holding times</u>

All samples were analyzed past the EPA recommended holding times for TPH C4-12, TPH-C8-40, PCB Aroclors and Mercury. However, all samples were frozen (-20 °C) upon receipt at the laboratory and remained in that condition until sample preparation/analysis. Per the Puget Sound Protocol (and other references), which states the holding time for sediments may be extended up to one year if kept frozen after collection, the samples were analyzed within the allowable one year holding time. In addition, PCBs are known to be very stable compounds, and SW-846 Ch.4, Table 4-1 (Rev. 4) lists “None” as the recommended holding time for PCBs. However, because the samples were analyzed outside of normal EPA hold times, the data is flagged as such.

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Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

Concentrations of target analytes in the method blank were found to be below reporting limits for all analyses.

Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the MDL, and where applicable, "J" flags were reported.

Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test. All parameters were within established control limits.

Matrix Spikes

Matrix spikes and matrix spike duplicates were performed for each applicable analysis on project samples. All parameters were within the acceptable control limits unless otherwise noted.

For C8-C40 by EPA 8015B (M) matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

For C4-C12 by EPA 8015B (M) one of the matrix spike and matrix spike duplicate recoveries were outside the established control limits. The other MS/MSD was acceptable. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

For Title 22 Metals by EPA 6010B matrix spike and matrix spike duplicate recoveries were outside the established control limits for antimony and barium. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action. The concentrations of copper and zinc in the sample were over four times the spike amount, therefore the recoveries could not be calculated.

For PCB Aroclors by EPA 8082 matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

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Surrogates

Surrogate recoveries for all applicable tests and samples were within acceptable control limits.

Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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Calscience Environmental Laboratories, Inc.

# Work Order Narrative

Work Order: 13-04-0902 Page 1 of 1

**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/11/13. They were assigned to Work Order 13-04-0902.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with an immediate holding time (HT </= 15 minutes --40CFR-136.3 Table II footnote 4), is considered a "field" test and reported samples results are not flagged unless the analysis is performed beyond 24 hours of the time of collection.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Calscience Environmental Laboratories, Inc.

# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC<br>27201 Puerta Real, Suite 350<br>Mission Viejo, CA 92691-8306 | Work Order: | 13-04-0902 |
| | | Project Name: | NASSCO South Shipyard Sediment Study |
| | | PO Number: | |
| | | Date Received: | 04/11/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| SD-S-P-NASC07-0001 | 13-04-0902-1 | 04/10/13 14:30 | 3 | Sediment |
| SD-S-P-NASC07-0102 | 13-04-0902-2 | 04/10/13 14:30 | 3 | Sediment |
| SD-S-P-NASC07-0203 | 13-04-0902-3 | 04/10/13 14:30 | 3 | Sediment |
| SD-S-P-NASC07-0304 | 13-04-0902-4 | 04/10/13 14:30 | 3 | Sediment |
| SD-S-P-NASC07-0405 | 13-04-0902-5 | 04/10/13 14:30 | 3 | Sediment |
| SD-S-P-NASC07-0506 | 13-04-0902-6 | 04/10/13 14:30 | 3 | Sediment |
| SD-S-P-NASC07-0607 | 13-04-0902-7 | 04/10/13 14:30 | 3 | Sediment |
| SD-S-P-NASC07-0708 | 13-04-0902-8 | 04/10/13 14:30 | 3 | Sediment |
| SD-S-P-NASC07-0708 Plug | 13-04-0902-9 | 04/10/13 14:30 | 3 | Sediment |
| SD-S-P-NASC07-Comp | 13-04-0902-10 | 04/10/13 14:30 | 3 | Sediment |
| COMP-C7-TOP | 13-04-0902-11 | 04/10/13 14:30 | 1 | Sediment |
| COMP-C7-BOTTOM | 13-04-0902-12 | 04/10/13 14:30 | 1 | Sediment |

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0902 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C7-TOP** | **13-04-0902-11-A** | **04/10/13 14:30** | **Sediment** | **GC 46** | **06/12/13** | **06/13/13 22:02** | **130612B12** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | 3.7 | 5.0 | 1.8 | 1 | J |
| C15-C16 | 7.6 | 5.0 | 1.8 | 1 | |
| C17-C18 | 10 | 5.0 | 1.8 | 1 | |
| C19-C20 | 9.0 | 5.0 | 1.8 | 1 | |
| C21-C22 | 7.1 | 5.0 | 1.8 | 1 | |
| C23-C24 | 6.7 | 5.0 | 1.7 | 1 | |
| C25-C28 | 14 | 5.0 | 2.4 | 1 | |
| C29-C32 | 15 | 5.0 | 2.4 | 1 | |
| C33-C36 | 11 | 5.0 | 2.6 | 1 | |
| C37-C40 | 7.9 | 5.0 | 1.6 | 1 | |
| C8-C40 Total | 93 | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 97 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0902 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C7-BOTTOM** | **13-04-0902-12-A** | **04/10/13 14:30** | **Sediment** | **GC 46** | **06/12/13** | **06/13/13 22:18** | **130612B12** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | ND | 5.0 | 1.8 | 1 | |
| C19-C20 | ND | 5.0 | 1.8 | 1 | |
| C21-C22 | ND | 5.0 | 1.8 | 1 | |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | ND | 5.0 | 2.4 | 1 | |
| C29-C32 | ND | 5.0 | 2.4 | 1 | |
| C33-C36 | ND | 5.0 | 2.6 | 1 | |
| C37-C40 | ND | 5.0 | 1.6 | 1 | |
| C8-C40 Total | ND | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 83 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0902 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-15-500-15** | **N/A** | **Soil** | **GC 46** | **06/12/13** | **06/13/13 17:39** | **130612B12** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | ND | 5.0 | 1.8 | 1 | |
| C19-C20 | ND | 5.0 | 1.8 | 1 | |
| C21-C22 | ND | 5.0 | 1.8 | 1 | |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | ND | 5.0 | 2.4 | 1 | |
| C29-C32 | ND | 5.0 | 2.4 | 1 | |
| C33-C36 | ND | 5.0 | 2.6 | 1 | |
| C37-C40 | ND | 5.0 | 1.6 | 1 | |
| C8-C40 Total | ND | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 108 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0902 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C7-TOP** | **13-04-0902-11-B** | **04/10/13 14:30** | **Sediment** | **GC 57** | **06/12/13** | **06/13/13 02:05** | **130612B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | 0.22 | 0.50 | 0.15 | 1 | J |
| C11-C12 | 1.1 | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | 1.3 | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 85 | 42-126 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C7-BOTTOM** | **13-04-0902-12-B** | **04/10/13 14:30** | **Sediment** | **GC 57** | **06/12/13** | **06/13/13 02:37** | **130612B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 94 | 42-126 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0902 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-13-045-160** | **N/A** | **Soil** | **GC 57** | **06/12/13** | **06/12/13 12:39** | **130612B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 67 | 42-126 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0902 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C7-TOP** | **13-04-0902-11-A** | **04/10/13 14:30** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 12:20** | **130612L07** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 6.96 | 0.750 | 0.259 | 1 | |
| Barium | 83.1 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.372 | 0.250 | 0.137 | 1 | |
| Cadmium | 2.13 | 0.500 | 0.135 | 1 | |
| Chromium | 62.2 | 0.250 | 0.142 | 1 | |
| Cobalt | 6.18 | 0.250 | 0.148 | 1 | |
| Copper | 153 | 0.500 | 0.135 | 1 | |
| Lead | 64.7 | 0.500 | 0.132 | 1 | |
| Molybdenum | 1.47 | 0.250 | 0.132 | 1 | |
| Nickel | 11.8 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | 2.00 | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 40.8 | 0.250 | 0.141 | 1 | |
| Zinc | 239 | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0902 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C7-BOTTOM** | **13-04-0902-12-A** | **04/10/13 14:30** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 12:21** | **130612L07** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 4.55 | 0.750 | 0.259 | 1 | |
| Barium | 89.8 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.456 | 0.250 | 0.137 | 1 | |
| Cadmium | 0.689 | 0.500 | 0.135 | 1 | |
| Chromium | 25.3 | 0.250 | 0.142 | 1 | |
| Cobalt | 9.11 | 0.250 | 0.148 | 1 | |
| Copper | 31.2 | 0.500 | 0.135 | 1 | |
| Lead | 19.8 | 0.500 | 0.132 | 1 | |
| Molybdenum | ND | 0.250 | 0.132 | 1 | |
| Nickel | 9.28 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | ND | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 50.5 | 0.250 | 0.141 | 1 | |
| Zinc | 80.9 | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0902 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-01-002-16918** | **N/A** | **Soil** | **ICP 7300** | **06/12/13** | **06/13/13 23:15** | **130612L07** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | ND | 0.750 | 0.259 | 1 | |
| Barium | ND | 0.500 | 0.154 | 1 | |
| Beryllium | ND | 0.250 | 0.137 | 1 | |
| Cadmium | ND | 0.500 | 0.135 | 1 | |
| Chromium | ND | 0.250 | 0.142 | 1 | |
| Cobalt | ND | 0.250 | 0.148 | 1 | |
| Copper | ND | 0.500 | 0.135 | 1 | |
| Lead | ND | 0.500 | 0.132 | 1 | |
| Molybdenum | ND | 0.250 | 0.132 | 1 | |
| Nickel | ND | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | ND | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | ND | 0.250 | 0.141 | 1 | |
| Zinc | ND | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0902 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C7-TOP** | **13-04-0902-11-A** | **04/10/13 14:30** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 20:15** | **130612L05** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 1.27 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C7-BOTTOM** | **13-04-0902-12-A** | **04/10/13 14:30** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 20:17** | **130612L05** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.499 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-04-007-9353** | **N/A** | **Soil** | **Mercury** | **06/12/13** | **06/12/13 13:13** | **130612L05** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | ND | 0.0835 | 0.00588 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0902 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C7-TOP** | **13-04-0902-11-A** | **04/10/13 14:30** | **Sediment** | **GC 58** | **06/13/13** | **06/18/13 15:04** | **130613L09** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 100 | 29 | 10 | |
| Aroclor-1221 | ND | 100 | 26 | 10 | |
| Aroclor-1232 | ND | 100 | 21 | 10 | |
| Aroclor-1242 | ND | 100 | 25 | 10 | |
| Aroclor-1248 | ND | 100 | 29 | 10 | |
| Aroclor-1254 | 510 | 100 | 24 | 10 | |
| Aroclor-1260 | ND | 100 | 23 | 10 | |
| Aroclor-1262 | ND | 100 | 25 | 10 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 70 | 50-130 | |
| Decachlorobiphenyl | 127 | 50-130 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C7-BOTTOM** | **13-04-0902-12-A** | **04/10/13 14:30** | **Sediment** | **GC 58** | **06/13/13** | **06/18/13 15:22** | **130613L09** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | ND | 10 | 2.9 | 1 | |
| Aroclor-1254 | 3.3 | 10 | 2.4 | 1 | J |
| Aroclor-1260 | ND | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 78 | 50-130 | |
| Decachlorobiphenyl | 105 | 50-130 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0902 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-12-565-339** | **N/A** | **Soil** | **GC 58** | **06/13/13** | **06/18/13 09:58** | **130613L09** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | ND | 10 | 2.9 | 1 | |
| Aroclor-1254 | ND | 10 | 2.4 | 1 | |
| Aroclor-1260 | ND | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 79 | 50-130 | |
| Decachlorobiphenyl | 88 | 50-130 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0902 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **GC 46** | **06/12/13** | **06/13/13 18:12** | **130612S12** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| TPH as Diesel | 78.67 | 400.0 | 506.3 | 107 | 599.0 | 130 | 64-130 | 17 | 0-15 | 4 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0902 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **GC 57** | **06/12/13** | **06/12/13 19:44** | **130612S01** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| GRO (C4-C12) Total | 1.771 | 10.00 | 3.056 | 13 | 3.441 | 17 | 48-114 | 12 | 0-25 | 3 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0902 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-1004-11** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:35** | **130612S07** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 5.156 | 21 | 4.888 | 20 | 50-115 | 5 | 0-20 | 3 |
| Arsenic | 6.382 | 25.00 | 30.80 | 98 | 31.62 | 101 | 75-125 | 3 | 0-20 | |
| Barium | 77.69 | 25.00 | 94.87 | 69 | 96.62 | 76 | 75-125 | 2 | 0-20 | 3 |
| Beryllium | 0.3050 | 25.00 | 26.76 | 106 | 26.91 | 106 | 75-125 | 1 | 0-20 | |
| Cadmium | 2.288 | 25.00 | 27.48 | 101 | 27.65 | 101 | 75-125 | 1 | 0-20 | |
| Chromium | 52.02 | 25.00 | 74.33 | 89 | 75.67 | 95 | 75-125 | 2 | 0-20 | |
| Cobalt | 5.278 | 25.00 | 31.48 | 105 | 31.77 | 106 | 75-125 | 1 | 0-20 | |
| Copper | 119.0 | 25.00 | 135.0 | 4X | 139.8 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 57.88 | 25.00 | 83.51 | 103 | 77.28 | 78 | 75-125 | 8 | 0-20 | |
| Molybdenum | 2.003 | 25.00 | 22.60 | 82 | 22.75 | 83 | 75-125 | 1 | 0-20 | |
| Nickel | 12.13 | 25.00 | 37.27 | 101 | 37.84 | 103 | 75-125 | 2 | 0-20 | |
| Selenium | ND | 25.00 | 22.86 | 91 | 23.59 | 94 | 75-125 | 3 | 0-20 | |
| Silver | 2.133 | 12.50 | 14.64 | 100 | 14.64 | 100 | 75-125 | 0 | 0-20 | |
| Thallium | ND | 25.00 | 18.96 | 76 | 20.36 | 81 | 75-125 | 7 | 0-20 | |
| Vanadium | 39.62 | 25.00 | 62.66 | 92 | 64.14 | 98 | 75-125 | 2 | 0-20 | |
| Zinc | 212.5 | 25.00 | 224.3 | 4X | 232.0 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0902 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0781-10** | **Sediment** | **Mercury** | **06/12/13** | **06/17/13 15:48** | **130612S05B** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.1193 | 0.8350 | 1.016 | 107 | 1.032 | 109 | 71-137 | 2 | 0-14 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0902 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **GC 58** | **06/13/13** | **06/18/13 17:03** | **130613S09** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | ND | 20.00 | 125.3 | 627 | 100.0 | 500 | 50-135 | 22 | 0-25 | 3 |
| Aroclor-1260 | 77.40 | 20.00 | 123.1 | 228 | 114.7 | 187 | 50-135 | 7 | 0-25 | 3 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - PDS/PDSD

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0902 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | PDS/PDSD Batch Number |
|---|---|---|---|---|---|
| **13-04-1004-11** | **Sediment** | **ICP 7300** | **06/12/13 00:00** | **06/14/13 11:38** | **130612S07** |

| Parameter | Sample Conc. | Spike Added | PDS Conc. | PDS %Rec. | PDSD Conc. | PDSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 24.28 | 97 | 24.90 | 100 | 75-125 | 3 | 0-20 | |
| Arsenic | 6.382 | 25.00 | 31.90 | 102 | 31.54 | 101 | 75-125 | 1 | 0-20 | |
| Barium | 77.69 | 25.00 | 103.9 | 105 | 103.8 | 104 | 75-125 | 0 | 0-20 | |
| Beryllium | 0.3050 | 25.00 | 26.15 | 103 | 26.17 | 103 | 75-125 | 0 | 0-20 | |
| Cadmium | 2.288 | 25.00 | 27.00 | 99 | 26.98 | 99 | 75-125 | 0 | 0-20 | |
| Chromium | 52.02 | 25.00 | 76.25 | 97 | 76.16 | 97 | 75-125 | 0 | 0-20 | |
| Cobalt | 5.278 | 25.00 | 31.07 | 103 | 31.32 | 104 | 75-125 | 1 | 0-20 | |
| Copper | 119.0 | 25.00 | 144.2 | 4X | 143.8 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 57.88 | 25.00 | 81.45 | 94 | 82.11 | 97 | 75-125 | 1 | 0-20 | |
| Molybdenum | 2.003 | 25.00 | 26.24 | 97 | 26.48 | 98 | 75-125 | 1 | 0-20 | |
| Nickel | 12.13 | 25.00 | 37.35 | 101 | 37.74 | 102 | 75-125 | 1 | 0-20 | |
| Selenium | ND | 25.00 | 23.15 | 93 | 23.94 | 96 | 75-125 | 3 | 0-20 | |
| Silver | 2.133 | 12.50 | 15.06 | 103 | 15.05 | 103 | 75-125 | 0 | 0-20 | |
| Thallium | ND | 25.00 | 22.31 | 89 | 23.20 | 93 | 75-125 | 4 | 0-20 | |
| Vanadium | 39.62 | 25.00 | 63.75 | 97 | 63.75 | 97 | 75-125 | 0 | 0-20 | |
| Zinc | 212.5 | 25.00 | 236.1 | 4X | 236.6 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0902 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-15-500-15** | **Soil** | **GC 46** | **06/13/13 17:55** | **130612B12** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| TPH as Diesel | 400.0 | 479.6 | 120 | 75-123 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0902 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-13-045-160** | **Soil** | **GC 57** | **06/12/13 13:11** | **130612B01** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| GRO (C4-C12) Total | 10.00 | 8.906 | 89 | 70-124 | |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0902 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **097-01-002-16918** | **Soil** | **ICP 7300** | **06/13/13 23:23** | **130612L07** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | ME CL | Qualifiers |
|---|---|---|---|---|---|---|
| Antimony | 25.00 | 25.66 | 103 | 80-120 | 73-127 | |
| Arsenic | 25.00 | 25.77 | 103 | 80-120 | 73-127 | |
| Barium | 25.00 | 27.89 | 112 | 80-120 | 73-127 | |
| Beryllium | 25.00 | 25.57 | 102 | 80-120 | 73-127 | |
| Cadmium | 25.00 | 26.51 | 106 | 80-120 | 73-127 | |
| Chromium | 25.00 | 26.27 | 105 | 80-120 | 73-127 | |
| Cobalt | 25.00 | 27.42 | 110 | 80-120 | 73-127 | |
| Copper | 25.00 | 25.16 | 101 | 80-120 | 73-127 | |
| Lead | 25.00 | 26.54 | 106 | 80-120 | 73-127 | |
| Molybdenum | 25.00 | 26.03 | 104 | 80-120 | 73-127 | |
| Nickel | 25.00 | 28.35 | 113 | 80-120 | 73-127 | |
| Selenium | 25.00 | 24.44 | 98 | 80-120 | 73-127 | |
| Silver | 12.50 | 13.34 | 107 | 80-120 | 73-127 | |
| Thallium | 25.00 | 26.22 | 105 | 80-120 | 73-127 | |
| Vanadium | 25.00 | 25.55 | 102 | 80-120 | 73-127 | |
| Zinc | 25.00 | 27.93 | 112 | 80-120 | 73-127 | |

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0902 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-04-007-9353** | **Soil** | **Mercury** | **06/12/13 13:15** | **130612L05** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.8350 | 0.8128 | 97 | 85-121 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0902 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-12-565-339** | **Soil** | **GC 58** | **06/18/13 10:16** | **130613L09** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | 20.00 | 18.49 | 92 | 50-135 | |
| Aroclor-1260 | 20.00 | 16.45 | 82 | 50-135 | |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order: 13-04-0902



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| 4 | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range. |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

For any analysis identified as a "field" test with a holding time (HT) </= 15 minutes where the sample is received outside of HT, Calscience will adhere to its internal HT of 24 hours. In cases where sample analysis does not meet Calscience's internal HT, results will be appropriately qualified.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/10/13

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

P.O. NO.: 1315100800

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

QUOTE NO.:

SAMPLER(S): (SIGNATURE)

LAB USE ONLY: 13-04-0902

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS

Please HOLD samples.
Analysis will be determined at a later date.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM. DO NOT FREEZE COMPOSITE OR GRAIN SIZE

3 containers = 1 x 16 oz, 1 x 8 oz, 1 x gallon size bag

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC07-0001 | | 4/10/13 | 1430 | Sed | 3 | | | | X |
| 2 | SD-S-P-NASC07-0002 | | | | | | | | | X |
| 3 | SD-S-P-NASC07-0203 | | | | | | | | | X |
| 4 | SD-S-P-NASC07-0304 | | | | | | | | | X |
| 5 | SD-S-P-NASC07-0405 | | | | | | | | | X |
| 6 | SD-S-P-NASC07-0606 | | | | | | | | | X |
| 7 | SD-S-P-NASC07-0607 | | | | | | | | | X |
| 8 | SD-S-P-NASC07-0708 | | | | | | | | | X |
| 9 | SD-S-P-NASC07-0708 Plug | | | | | | | | | X |
| 10 | SD-S-P-NASC07-Comp | | | | | | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | | 04/11/13 | 1445 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| | | 04/11/13 | 1910 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|
| NAS-C1 | | | | |
| SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| SD-S-P-NASC1-0102 | | | | |
| SD-S-P-NASC1-0203 | | | | |
| SD-S-P-NASC1-0304 | | | | |
| SD-S-P-NASC1-0405 | | | | |
| SD-S-P-NASC1-0506 | | | | BOTTOM |
| SD-S-P-NASC1-0607 | | | | |
| SD-S-P-NASC1-0708 | | | | |
| SD-S-P-NASC1-0809 | | | | |
| NAS-C2 | | | | |
| SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| SD-S-P-NASC2-0102 | | | | |
| SD-S-P-NASC2-0203 | | | | |
| SD-S-P-NASC2-0304 | | | | |
| SD-S-P-NASC2-0405 | | | | |
| SD-S-P-NASC2-0506 | | | | BOTTOM |
| SD-S-P-NASC2-0607 | | | | |
| SD-S-P-NASC2-0708 | | | | |
| SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | |
| SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| SD-S-P-NASC3-0102 | | | | |
| SD-S-P-NASC3-0203 | | | | |
| SD-S-P-NASC3-0304 | | | | |
| SD-S-P-NASC3-0405 | | | | |
| SD-S-P-NASC3-0506 | | | | BOTTOM |
| SD-S-P-NASC3-0607 | | | | |
| SD-S-P-NASC3-0708 | | | | |
| SD-S-P-NASC3-0809 | | | | |
| SD-S-P-NASC3-0910 | | | | |
| SD-S-P-NASC3-0910-PLUG | | | | not included[c] |
| NAS-C4 | | | | |
| SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| SD-S-P-NASC4-0102 | | | | |
| SD-S-P-NASC4-0203 | | | | |
| SD-S-P-NASC4-0304 | | | | |
| SD-S-P-NASC4-0405 | | | | |
| SD-S-P-NASC4-0506 | | | | BOTTOM |
| SD-S-P-NASC4-0607 | | | | |
| SD-S-P-NASC4-0708 | | | | |
| SD-S-P-NASC4-0809 | | | | |
| SD-S-P-NASC4-0910 | | | | |
| SD-S-P-NASC4-0910-PLUG | | | | not included[c] |
| NAS-C5 | | | | |
| SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| SD-S-P-NASC5-0102 | | | | |
| SD-S-P-NASC5-0203 | | | | |
| SD-S-P-NASC5-0304 | | | | BOTTOM |
| SD-S-P-NASC5-0405 | | | | |
| SD-S-P-NASC5-0506-PLUG | | | | not included[c] |
| NAS-C6 | | | | |
| SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| SD-S-P-NASC6-0102 | | | | |
| SD-S-P-NASC6-0203 | | | | BOTTOM |
| SD-S-P-NASC6-0304-PLUG | | | | not included[c] |
| NAS-C7 | | | | |
| SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| SD-S-P-NASC7-0102 | | | | |
| SD-S-P-NASC7-0203 | | | | |
| SD-S-P-NASC7-0304 | | | | |
| SD-S-P-NASC7-0405 | | | | BOTTOM |
| SD-S-P-NASC7-0506 | | | | |
| SD-S-P-NASC7-0607 | | | | |
| SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | |
| SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| SD-S-P-NASC8-0102 | | | | |
| SD-S-P-NASC8-0203 | | | | |
| SD-S-P-NASC8-0304 | | | | |
| SD-S-P-NASC8-0405 | | | | |
| SD-S-P-NASC8-0506 | | | | BOTTOM |
| SD-S-P-NASC8-0607 | | | | |
| SD-S-P-NASC8-0708 | | | | |
| SD-S-P-NASC8-0809 | | | | |
| SD-S-P-NASC8-0910 | | | | |
| SD-S-P-NASC8-0910-PLUG | | | | not included[c] |
| NAS-C9 | | | | |
| SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| SD-S-P-NASC9-0102 | | | | |
| SD-S-P-NASC9-0203 | | | | |
| SD-S-P-NASC9-0304 | | | | |
| SD-S-P-NASC9-0405 | | | | BOTTOM |
| SD-S-P-NASC9-0506 | | | | |
| SD-S-P-NASC9-0607 | | | | |
| NAS-C10 | | | | |
| SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| SD-S-P-NASC10-0102 | | | | |
| SD-S-P-NASC10-0203 | | | | |
| SD-S-P-NASC10-0304 | | | | BOTTOM |
| SD-S-P-NASC10-0405 | | | | |
| SD-S-P-NASC10-0506 | | | | |
| SD-S-P-NASC10-0607 | | | | |
| SD-S-P-NASC10-0708 | | | | |
| NAS-C11 | | | | |
| SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| SD-S-P-NASC11-0102 | | | | |
| SD-S-P-NASC11-0203 | | | | |
| SD-S-P-NASC11-0304 | | | | |
| SD-S-P-NASC11-0405 | | | | BOTTOM |
| SD-S-P-NASC11-0506 | | | | |
| SD-S-P-NASC11-0607 | | | | |
| SD-S-P-NASC11-0708 | | | | |
| SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | |
| SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| SD-S-P-NASC12-0102 | | | | |
| SD-S-P-NASC12-0203 | | | | |
| SD-S-P-NASC12-0304 | | | | |
| SD-S-P-NASC12-0405 | | | | BOTTOM |
| SD-S-P-NASC12-0506 | | | | |
| SD-S-P-NASC12-0607 | | | | |
| SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | |
| SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| SD-S-P-NASC13-0102 | | | | |
| SD-S-P-NASC13-0203 | | | | |
| SD-S-P-NASC13-0304 | | | | BOTTOM |
| SD-S-P-NASC13-0405 | | | | |
| SD-S-P-NASC13-0506 | | | | |
| SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | |
| SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| SD-S-P-NASC14-0102 | | | | |
| SD-S-P-NASC14-0203 | | | | BOTTOM |
| SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | |
| SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| SD-S-P-NASC15-0102 | | | | |
| SD-S-P-NASC15-0203 | | | | |
| SD-S-P-NASC15-0304 | | | | BOTTOM |
| SD-S-P-NASC15-0405 | | | | |
| SD-S-P-NASC15-0506 | | | | |

Notes:
0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on
a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.
b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.
A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)
c - sample not included due to low volume available and because it represents native material which will not be dredged



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0902

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/11/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.6 °C - 0.2 °C (CF) = 1.4 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter Initial: [illegible]

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: [illegible]

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: [illegible]

| SAMPLE CONDITION: | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑2

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** [illegible]

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** [illegible]

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** [illegible]



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| 13-04-1004-1 | SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| 13-04-1004-2 | SD-S-P-NASC1-0102 | | | | |
| 13-04-1004-3 | SD-S-P-NASC1-0203 | | | | |
| 13-04-1004-4 | SD-S-P-NASC1-0304 | | | | |
| 13-04-1004-5 | SD-S-P-NASC1-0405 | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| 13-04-1111-1 | SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| 13-04-1111-2 | SD-S-P-NASC2-0102 | | | | |
| 13-04-1111-3 | SD-S-P-NASC2-0203 | | | | |
| 13-04-1111-4 | SD-S-P-NASC2-0304 | | | | |
| 13-04-1111-5 | SD-S-P-NASC2-0405 | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| 13-04-1113-1 | SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| 13-04-1113-2 | SD-S-P-NASC3-0102 | | | | |
| 13-04-1113-3 | SD-S-P-NASC3-0203 | | | | |
| 13-04-1113-4 | SD-S-P-NASC3-0304 | | | | |
| 13-04-1113-5 | SD-S-P-NASC3-0405 | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| 13-04-1002-1 | SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| 13-04-1002-2 | SD-S-P-NASC4-0102 | | | | |
| 13-04-1002-3 | SD-S-P-NASC4-0203 | | | | |
| 13-04-1002-4 | SD-S-P-NASC4-0304 | | | | |
| 13-04-1002-5 | SD-S-P-NASC4-0405 | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| 13-04-1003-1 | SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| 13-04-1003-2 | SD-S-P-NASC5-0102 | | | | |
| 13-04-1003-3 | SD-S-P-NASC5-0203 | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| 13-04-1001-1 | SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| 13-04-1001-2 | SD-S-P-NASC6-0102 | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| 13-04-0902-1 | SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| 13-04-0902-2 | SD-S-P-NASC7-0102 | | | | |
| 13-04-0902-3 | SD-S-P-NASC7-0203 | | | | |
| 13-04-0902-4 | SD-S-P-NASC7-0304 | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| 13-04-0903-1 | SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| 13-04-0903-2 | SD-S-P-NASC8-0102 | | | | |
| 13-04-0903-3 | SD-S-P-NASC8-0203 | | | | |
| 13-04-0903-4 | SD-S-P-NASC8-0304 | | | | |
| 13-04-0903-5 | SD-S-P-NASC8-0405 | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| 13-04-0901-1 | SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| 13-04-0901-2 | SD-S-P-NASC9-0102 | | | | |
| 13-04-0901-3 | SD-S-P-NASC9-0203 | | | | |
| 13-04-0901-4 | SD-S-P-NASC9-0304 | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607 PLUG~~ | | | | |
| NAS-C10 | | | | | |
| 13-04-0904-1 | SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| 13-04-0904-2 | SD-S-P-NASC10-0102 | | | | |
| 13-04-0904-3 | SD-S-P-NASC10-0203 | | | | |
| 13-04-0904-4 | SD-S-P-NASC10-0304 | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-9 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| 13-04-0778-1 | SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| 13-04-0778-2 | SD-S-P-NASC11-0102 | | | | |
| 13-04-0778-3 | SD-S-P-NASC11-0203 | | | | |
| 13-04-0778-4 | SD-S-P-NASC11-0304 | | | | |
| 13-04-0778-5 | SD-S-P-NASC11-0405 | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| 13-04-0780-1 | SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| 13-04-0780-2 | SD-S-P-NASC12-0102 | | | | |
| 13-04-0780-3 | SD-S-P-NASC12-0203 | | | | |
| 13-04-0780-4 | SD-S-P-NASC12-0304 | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| 13-04-0781-1 | SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| 13-04-0781-2 | SD-S-P-NASC13-0102 | | | | |
| 13-04-0781-3 | SD-S-P-NASC13-0203 | | | | |
| 13-04-0781-4 | SD-S-P-NASC13-0304 | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| 13-04-0782-1 | SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| 13-04-0782-2 | SD-S-P-NASC14-0102 | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| 13-04-0779-1 | SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| 13-04-0779-2 | SD-S-P-NASC15-0102 | | | | |
| 13-04-0779-3 | SD-S-P-NASC15-0203 | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged

Calscience Environmental Laboratories, Inc.

# CALSCIENCE

## WORK ORDER NUMBER: 13-04-0903

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard Sediment Study

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 06/20/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Accredited in accordance with nelac

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

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Work Order Number: 13-04-0903


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Calscience Environmental Laboratories, Inc.

# CASE NARRATIVE

## Calscience Work Order No.: 13-04-0902
## Project ID: NASSCO Shipyard Sediment Study

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

Ten sediment samples were received for this project on April 11, 2013. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 1.4°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in freezers pending chemistry testing.

On June 12, 2013 samples were composited into two samples as per client instructions.

COC discrepancies were noted in the Sample Anomaly Form.

***Tests Performed***

The two composite samples were analyzed for the following analyses:

C8-C40 by EPA 8015B (M)
C4-C12 by EPA 8015B (M)
Title 22 Metals by EPA 6010B
Mercury by EPA 7471A
PCB Aroclors by EPA 8082

***Data Summary***

<u>Holding times</u>

All samples were analyzed past the EPA recommended holding times for TPH C4-12, TPH-C8-40, PCB Aroclors and Mercury. However, all samples were frozen (-20 °C) upon receipt at the laboratory and remained in that condition until sample preparation/analysis. Per the Puget Sound Protocol (and other references), which states the holding time for sediments may be extended up to one year if kept frozen after collection, the samples were analyzed within the allowable one year holding time. In addition, PCBs are known to be very stable compounds, and SW-846 Ch.4, Table 4-1 (Rev. 4) lists “None” as the recommended holding time for PCBs. However, because the samples were analyzed outside of normal EPA hold times, the data is flagged as such.

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Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

Concentrations of target analytes in the method blank were found to be below reporting limits for all analyses.

Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the MDL, and where applicable, "J" flags were reported.

Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test. All parameters were within established control limits.

Matrix Spikes

Matrix spikes and matrix spike duplicates were performed for each applicable analysis on project samples. All parameters were within the acceptable control limits unless otherwise noted.

For C8-C40 by EPA 8015B (M) matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

For C4-C12 by EPA 8015B (M) one of the matrix spike and matrix spike duplicate recoveries were outside the established control limits. The other MS/MSD was acceptable. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

For Title 22 Metals by EPA 6010B matrix spike and matrix spike duplicate recoveries were outside the established control limits for antimony and barium. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action. The concentrations of copper and zinc in the sample were over four times the spike amount, therefore the recoveries could not be calculated.

For PCB Aroclors by EPA 8082 matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

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Surrogates

Surrogate recoveries for all applicable tests and samples were within acceptable control limits.

Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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Calscience Environmental Laboratories, Inc.

# Work Order Narrative

Work Order: 13-04-0903



**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/11/13. They were assigned to Work Order 13-04-0903.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with an immediate holding time (HT </= 15 minutes --40CFR-136.3 Table II footnote 4), is considered a "field" test and reported samples results are not flagged unless the analysis is performed beyond 24 hours of the time of collection.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Calscience Environmental Laboratories, Inc.

# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC<br>27201 Puerta Real, Suite 350<br>Mission Viejo, CA 92691-8306 | Work Order: | 13-04-0903 |
| | | Project Name: | NASSCO South Shipyard Sediment Study |
| | | PO Number: | |
| | | Date Received: | 04/11/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| SD-S-P-NASC08-0001 | 13-04-0903-1 | 04/10/13 08:30 | 3 | Sediment |
| SD-S-P-NASC08-0102 | 13-04-0903-2 | 04/10/13 08:30 | 3 | Sediment |
| SD-S-P-NASC08-0203 | 13-04-0903-3 | 04/10/13 08:30 | 3 | Sediment |
| SD-S-P-NASC08-0304 | 13-04-0903-4 | 04/10/13 08:30 | 3 | Sediment |
| SD-S-P-NASC08-0405 | 13-04-0903-5 | 04/10/13 08:30 | 3 | Sediment |
| SD-S-P-NASC08-0506 | 13-04-0903-6 | 04/10/13 08:30 | 3 | Sediment |
| SD-S-P-NASC08-0607 | 13-04-0903-7 | 04/10/13 08:30 | 3 | Sediment |
| SD-S-P-NASC08-0708 | 13-04-0903-8 | 04/10/13 08:30 | 3 | Sediment |
| SD-S-P-NASC08-0809 | 13-04-0903-9 | 04/10/13 08:30 | 3 | Sediment |
| SD-S-P-NASC08-0910 | 13-04-0903-10 | 04/10/13 08:30 | 3 | Sediment |
| SD-S-P-NASC10 Plug/Rocks | 13-04-0903-11 | 04/07/13 08:00 | 1 | Soil |
| COMP-C8-TOP | 13-04-0903-12 | 04/10/13 08:30 | 1 | Soil |
| COMP-C8-BOTTOM | 13-04-0903-13 | 04/10/13 08:30 | 1 | Soil |

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0903 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C8-TOP** | **13-04-0903-12-A** | **04/10/13 08:30** | **Soil** | **GC 46** | **06/12/13** | **06/13/13 22:35** | **130612B12** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | 6.0 | 5.0 | 1.8 | 1 | |
| C15-C16 | 10 | 5.0 | 1.8 | 1 | |
| C17-C18 | 13 | 5.0 | 1.8 | 1 | |
| C19-C20 | 11 | 5.0 | 1.8 | 1 | |
| C21-C22 | 8.2 | 5.0 | 1.8 | 1 | |
| C23-C24 | 7.0 | 5.0 | 1.7 | 1 | |
| C25-C28 | 13 | 5.0 | 2.4 | 1 | |
| C29-C32 | 14 | 5.0 | 2.4 | 1 | |
| C33-C36 | 9.3 | 5.0 | 2.6 | 1 | |
| C37-C40 | 6.3 | 5.0 | 1.6 | 1 | |
| C8-C40 Total | 99 | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 98 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0903 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C8-BOTTOM** | **13-04-0903-13-A** | **04/10/13 08:30** | **Soil** | **GC 46** | **06/12/13** | **06/13/13 22:50** | **130612B12** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | ND | 5.0 | 1.8 | 1 | |
| C19-C20 | ND | 5.0 | 1.8 | 1 | |
| C21-C22 | ND | 5.0 | 1.8 | 1 | |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | ND | 5.0 | 2.4 | 1 | |
| C29-C32 | 2.9 | 5.0 | 2.4 | 1 | J |
| C33-C36 | ND | 5.0 | 2.6 | 1 | |
| C37-C40 | ND | 5.0 | 1.6 | 1 | |
| C8-C40 Total | 2.9 | 5.0 | 1.6 | 1 | J |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 95 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0903 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-15-500-15** | **N/A** | **Soil** | **GC 46** | **06/12/13** | **06/13/13 17:39** | **130612B12** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | ND | 5.0 | 1.8 | 1 | |
| C19-C20 | ND | 5.0 | 1.8 | 1 | |
| C21-C22 | ND | 5.0 | 1.8 | 1 | |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | ND | 5.0 | 2.4 | 1 | |
| C29-C32 | ND | 5.0 | 2.4 | 1 | |
| C33-C36 | ND | 5.0 | 2.6 | 1 | |
| C37-C40 | ND | 5.0 | 1.6 | 1 | |
| C8-C40 Total | ND | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 108 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0903 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C8-TOP** | **13-04-0903-12-B** | **04/10/13 08:30** | **Soil** | **GC 57** | **06/12/13** | **06/13/13 03:09** | **130612B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | 0.37 | 0.50 | 0.15 | 1 | J |
| C11-C12 | 1.8 | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | 2.2 | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 104 | 42-126 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C8-BOTTOM** | **13-04-0903-13-B** | **04/10/13 08:30** | **Soil** | **GC 4** | **06/13/13** | **06/14/13 06:47** | **130613B02** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | 0.31 | 0.50 | 0.23 | 1 | J |
| GRO (C4-C12) Total | 0.31 | 0.50 | 0.23 | 1 | J |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 89 | 42-126 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0903 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-13-045-160** | **N/A** | **Soil** | **GC 57** | **06/12/13** | **06/12/13 12:39** | **130612B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 67 | 42-126 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-13-045-161** | **N/A** | **Soil** | **GC 4** | **06/13/13** | **06/14/13 00:44** | **130613B02** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 85 | 42-126 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0903 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C8-TOP** | **13-04-0903-12-A** | **04/10/13 08:30** | **Soil** | **ICP 7300** | **06/12/13** | **06/14/13 12:13** | **130612L07** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 8.67 | 0.750 | 0.259 | 1 | |
| Barium | 77.3 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.368 | 0.250 | 0.137 | 1 | |
| Cadmium | 1.94 | 0.500 | 0.135 | 1 | |
| Chromium | 51.1 | 0.250 | 0.142 | 1 | |
| Cobalt | 6.49 | 0.250 | 0.148 | 1 | |
| Copper | 128 | 0.500 | 0.135 | 1 | |
| Lead | 77.4 | 0.500 | 0.132 | 1 | |
| Molybdenum | 1.38 | 0.250 | 0.132 | 1 | |
| Nickel | 10.9 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | 1.56 | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 43.7 | 0.250 | 0.141 | 1 | |
| Zinc | 221 | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0903 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C8-BOTTOM** | **13-04-0903-13-A** | **04/10/13 08:30** | **Soil** | **ICP 7300** | **06/12/13** | **06/14/13 12:14** | **130612L07** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 5.17 | 0.750 | 0.259 | 1 | |
| Barium | 85.4 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.413 | 0.250 | 0.137 | 1 | |
| Cadmium | 0.781 | 0.500 | 0.135 | 1 | |
| Chromium | 25.9 | 0.250 | 0.142 | 1 | |
| Cobalt | 8.03 | 0.250 | 0.148 | 1 | |
| Copper | 33.0 | 0.500 | 0.135 | 1 | |
| Lead | 21.1 | 0.500 | 0.132 | 1 | |
| Molybdenum | ND | 0.250 | 0.132 | 1 | |
| Nickel | 8.74 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | 0.0884 | 0.250 | 0.0857 | 1 | J |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 51.8 | 0.250 | 0.141 | 1 | |
| Zinc | 88.7 | 1.00 | 0.178 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0903 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-01-002-16918** | **N/A** | **Soil** | **ICP 7300** | **06/12/13** | **06/13/13 23:15** | **130612L07** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | ND | 0.750 | 0.259 | 1 | |
| Barium | ND | 0.500 | 0.154 | 1 | |
| Beryllium | ND | 0.250 | 0.137 | 1 | |
| Cadmium | ND | 0.500 | 0.135 | 1 | |
| Chromium | ND | 0.250 | 0.142 | 1 | |
| Cobalt | ND | 0.250 | 0.148 | 1 | |
| Copper | ND | 0.500 | 0.135 | 1 | |
| Lead | ND | 0.500 | 0.132 | 1 | |
| Molybdenum | ND | 0.250 | 0.132 | 1 | |
| Nickel | ND | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | ND | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | ND | 0.250 | 0.141 | 1 | |
| Zinc | ND | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0903 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C8-TOP** | **13-04-0903-12-A** | **04/10/13 08:30** | **Soil** | **Mercury** | **06/12/13** | **06/12/13 20:11** | **130612L05** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 1.59 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C8-BOTTOM** | **13-04-0903-13-A** | **04/10/13 08:30** | **Soil** | **Mercury** | **06/12/13** | **06/12/13 20:13** | **130612L05** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.573 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-04-007-9353** | **N/A** | **Soil** | **Mercury** | **06/12/13** | **06/12/13 13:13** | **130612L05** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | ND | 0.0835 | 0.00588 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0903 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C8-TOP** | **13-04-0903-12-A** | **04/10/13 08:30** | **Soil** | **GC 31** | **06/13/13** | **06/18/13 11:19** | **130613L14** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 50 | 14 | 5 | |
| Aroclor-1221 | ND | 50 | 13 | 5 | |
| Aroclor-1232 | ND | 50 | 11 | 5 | |
| Aroclor-1242 | ND | 50 | 12 | 5 | |
| Aroclor-1248 | 110 | 50 | 14 | 5 | |
| Aroclor-1254 | 190 | 50 | 12 | 5 | |
| Aroclor-1260 | 55 | 50 | 12 | 5 | |
| Aroclor-1262 | ND | 50 | 12 | 5 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 57 | 50-130 | |
| Decachlorobiphenyl | 92 | 50-130 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C8-BOTTOM** | **13-04-0903-13-A** | **04/10/13 08:30** | **Soil** | **GC 31** | **06/13/13** | **06/18/13 11:38** | **130613L14** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | 16 | 10 | 2.9 | 1 | |
| Aroclor-1254 | 40 | 10 | 2.4 | 1 | |
| Aroclor-1260 | 15 | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 65 | 50-130 | |
| Decachlorobiphenyl | 85 | 50-130 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0903 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-12-565-340** | **N/A** | **Soil** | **GC 31** | **06/13/13** | **06/18/13 10:40** | **130613L14** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | ND | 10 | 2.9 | 1 | |
| Aroclor-1254 | ND | 10 | 2.4 | 1 | |
| Aroclor-1260 | ND | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 80 | 50-130 | |
| Decachlorobiphenyl | 86 | 50-130 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0903 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **GC 46** | **06/12/13** | **06/13/13 18:12** | **130612S12** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| TPH as Diesel | 78.67 | 400.0 | 506.3 | 107 | 599.0 | 130 | 64-130 | 17 | 0-15 | 4 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0903 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **GC 57** | **06/12/13** | **06/12/13 19:44** | **130612S01** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| GRO (C4-C12) Total | 1.771 | 10.00 | 3.056 | 13 | 3.441 | 17 | 48-114 | 12 | 0-25 | 3 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0903 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **GC 4** | **06/13/13** | **06/14/13 02:23** | **130613S02** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| GRO (C4-C12) Total | ND | 10.00 | 6.210 | 62 | 6.548 | 65 | 48-114 | 5 | 0-25 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0903 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-1004-11** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:35** | **130612S07** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 5.156 | 21 | 4.888 | 20 | 50-115 | 5 | 0-20 | 3 |
| Arsenic | 6.382 | 25.00 | 30.80 | 98 | 31.62 | 101 | 75-125 | 3 | 0-20 | |
| Barium | 77.69 | 25.00 | 94.87 | 69 | 96.62 | 76 | 75-125 | 2 | 0-20 | 3 |
| Beryllium | 0.3050 | 25.00 | 26.76 | 106 | 26.91 | 106 | 75-125 | 1 | 0-20 | |
| Cadmium | 2.288 | 25.00 | 27.48 | 101 | 27.65 | 101 | 75-125 | 1 | 0-20 | |
| Chromium | 52.02 | 25.00 | 74.33 | 89 | 75.67 | 95 | 75-125 | 2 | 0-20 | |
| Cobalt | 5.278 | 25.00 | 31.48 | 105 | 31.77 | 106 | 75-125 | 1 | 0-20 | |
| Copper | 119.0 | 25.00 | 135.0 | 4X | 139.8 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 57.88 | 25.00 | 83.51 | 103 | 77.28 | 78 | 75-125 | 8 | 0-20 | |
| Molybdenum | 2.003 | 25.00 | 22.60 | 82 | 22.75 | 83 | 75-125 | 1 | 0-20 | |
| Nickel | 12.13 | 25.00 | 37.27 | 101 | 37.84 | 103 | 75-125 | 2 | 0-20 | |
| Selenium | ND | 25.00 | 22.86 | 91 | 23.59 | 94 | 75-125 | 3 | 0-20 | |
| Silver | 2.133 | 12.50 | 14.64 | 100 | 14.64 | 100 | 75-125 | 0 | 0-20 | |
| Thallium | ND | 25.00 | 18.96 | 76 | 20.36 | 81 | 75-125 | 7 | 0-20 | |
| Vanadium | 39.62 | 25.00 | 62.66 | 92 | 64.14 | 98 | 75-125 | 2 | 0-20 | |
| Zinc | 212.5 | 25.00 | 224.3 | 4X | 232.0 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0903 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0781-10** | **Sediment** | **Mercury** | **06/12/13** | **06/17/13 15:48** | **130612S05B** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.1193 | 0.8350 | 1.016 | 107 | 1.032 | 109 | 71-137 | 2 | 0-14 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0903 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 6 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-1004-11** | **Sediment** | **GC 31** | **06/13/13** | **06/18/13 16:24** | **130613S14** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | ND | 20.00 | 40.46 | 202 | 37.69 | 188 | 50-135 | 7 | 0-25 | 3 |
| Aroclor-1260 | 123.4 | 20.00 | 90.85 | 0 | 90.65 | 0 | 50-135 | 0 | 0-25 | 3 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - PDS/PDSD

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0903 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | PDS/PDSD Batch Number |
|---|---|---|---|---|---|
| **13-04-1004-11** | **Sediment** | **ICP 7300** | **06/12/13 00:00** | **06/14/13 11:38** | **130612S07** |

| Parameter | Sample Conc. | Spike Added | PDS Conc. | PDS %Rec. | PDSD Conc. | PDSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 24.28 | 97 | 24.90 | 100 | 75-125 | 3 | 0-20 | |
| Arsenic | 6.382 | 25.00 | 31.90 | 102 | 31.54 | 101 | 75-125 | 1 | 0-20 | |
| Barium | 77.69 | 25.00 | 103.9 | 105 | 103.8 | 104 | 75-125 | 0 | 0-20 | |
| Beryllium | 0.3050 | 25.00 | 26.15 | 103 | 26.17 | 103 | 75-125 | 0 | 0-20 | |
| Cadmium | 2.288 | 25.00 | 27.00 | 99 | 26.98 | 99 | 75-125 | 0 | 0-20 | |
| Chromium | 52.02 | 25.00 | 76.25 | 97 | 76.16 | 97 | 75-125 | 0 | 0-20 | |
| Cobalt | 5.278 | 25.00 | 31.07 | 103 | 31.32 | 104 | 75-125 | 1 | 0-20 | |
| Copper | 119.0 | 25.00 | 144.2 | 4X | 143.8 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 57.88 | 25.00 | 81.45 | 94 | 82.11 | 97 | 75-125 | 1 | 0-20 | |
| Molybdenum | 2.003 | 25.00 | 26.24 | 97 | 26.48 | 98 | 75-125 | 1 | 0-20 | |
| Nickel | 12.13 | 25.00 | 37.35 | 101 | 37.74 | 102 | 75-125 | 1 | 0-20 | |
| Selenium | ND | 25.00 | 23.15 | 93 | 23.94 | 96 | 75-125 | 3 | 0-20 | |
| Silver | 2.133 | 12.50 | 15.06 | 103 | 15.05 | 103 | 75-125 | 0 | 0-20 | |
| Thallium | ND | 25.00 | 22.31 | 89 | 23.20 | 93 | 75-125 | 4 | 0-20 | |
| Vanadium | 39.62 | 25.00 | 63.75 | 97 | 63.75 | 97 | 75-125 | 0 | 0-20 | |
| Zinc | 212.5 | 25.00 | 236.1 | 4X | 236.6 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0903 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-15-500-15** | **Soil** | **GC 46** | **06/13/13 17:55** | **130612B12** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| TPH as Diesel | 400.0 | 479.6 | 120 | 75-123 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0903 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-13-045-160** | **Soil** | **GC 57** | **06/12/13 13:11** | **130612B01** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| GRO (C4-C12) Total | 10.00 | 8.906 | 89 | 70-124 | |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0903 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-13-045-161** | **Soil** | **GC 4** | **06/14/13 01:17** | **130613B02** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| GRO (C4-C12) Total | 10.00 | 9.893 | 99 | 70-124 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0903 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **097-01-002-16918** | **Soil** | **ICP 7300** | **06/13/13 23:23** | **130612L07** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | ME CL | Qualifiers |
|---|---|---|---|---|---|---|
| Antimony | 25.00 | 25.66 | 103 | 80-120 | 73-127 | |
| Arsenic | 25.00 | 25.77 | 103 | 80-120 | 73-127 | |
| Barium | 25.00 | 27.89 | 112 | 80-120 | 73-127 | |
| Beryllium | 25.00 | 25.57 | 102 | 80-120 | 73-127 | |
| Cadmium | 25.00 | 26.51 | 106 | 80-120 | 73-127 | |
| Chromium | 25.00 | 26.27 | 105 | 80-120 | 73-127 | |
| Cobalt | 25.00 | 27.42 | 110 | 80-120 | 73-127 | |
| Copper | 25.00 | 25.16 | 101 | 80-120 | 73-127 | |
| Lead | 25.00 | 26.54 | 106 | 80-120 | 73-127 | |
| Molybdenum | 25.00 | 26.03 | 104 | 80-120 | 73-127 | |
| Nickel | 25.00 | 28.35 | 113 | 80-120 | 73-127 | |
| Selenium | 25.00 | 24.44 | 98 | 80-120 | 73-127 | |
| Silver | 12.50 | 13.34 | 107 | 80-120 | 73-127 | |
| Thallium | 25.00 | 26.22 | 105 | 80-120 | 73-127 | |
| Vanadium | 25.00 | 25.55 | 102 | 80-120 | 73-127 | |
| Zinc | 25.00 | 27.93 | 112 | 80-120 | 73-127 | |

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0903 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-04-007-9353** | **Soil** | **Mercury** | **06/12/13 13:15** | **130612L05** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.8350 | 0.8128 | 97 | 85-121 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0903 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 6 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-12-565-340** | **Soil** | **GC 31** | **06/18/13 10:59** | **130613L14** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | 20.00 | 18.98 | 95 | 50-135 | |
| Aroclor-1260 | 20.00 | 15.42 | 77 | 50-135 | |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order: 13-04-0903



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| 4 | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range. |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

For any analysis identified as a "field" test with a holding time (HT) </= 15 minutes where the sample is received outside of HT, Calscience will adhere to its internal HT of 24 hours. In cases where sample analysis does not meet Calscience's internal HT, results will be appropriately qualified.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/10/13

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

P.O. NO.: 1315100800

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

QUOTE NO.:

SAMPLER(S): (SIGNATURE)

LAB USE ONLY: 13-04-0903

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___/___/___

SPECIAL INSTRUCTIONS

Please HOLD samples. 3 cont. = 1 x 16oz Jar
Analysis will be determined at a later date. 1x 8oz Jar
New COC will be submitted with analysis when confirmed. 1x grain size
Danielle Gonsman is PM. DO NOT FREEZE COMPOSITE OR GRAIN SIZE

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC08-0001 | | 4/10/13 | 0830 | Sed | 3 | | | | X |
| 2 | SD-S-P-NASC08-0102 | | | | | | | | | X |
| 3 | SD-S-P-NASC08-0203 | | | | | | | | | X |
| 4 | SD-S-P-NASC08-0304 | | | | | | | | | X |
| 5 | SD-S-P-NASC08-0405 | | | | | | | | | X |
| 6 | SD-S-P-NASC08-0506 | | | | | | | | | X |
| 7 | SD-S-P-NASC08-0607 | | | | | | | | | X |
| 8 | SD-S-P-NASC08-0708 | | | | | | | | | X |
| 9 | SD-S-P-NASC08-0809 | | | | | | | | | X |
| 10 | SD-S-P-NASC08-0910 | | | | | | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | CDL | 04/11/13 | 1445 |
| | CDL | 04/11/13 | 1910 |
| | | | |



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| ~~13-04-1000-1~~ | ~~SD-S-P-NASC1-0001~~ | COMP-A | 4/11/2013 | 1335 | TOP |
| ~~13-04-1000-2~~ | ~~SD-S-P-NASC1-0102~~ | | | | |
| ~~13-04-1000-3~~ | ~~SD-S-P-NASC1-0203~~ | | | | |
| ~~13-04-1000-4~~ | ~~SD-S-P-NASC1-0304~~ | | | | |
| ~~13-04-1000-5~~ | ~~SD-S-P-NASC1-0405~~ | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| ~~13-04-1111-1~~ | ~~SD-S-P-NASC2-0001~~ | COMP-A | 4/12/2013 | 1021 | TOP |
| ~~13-04-1111-2~~ | ~~SD-S-P-NASC2-0102~~ | | | | |
| ~~13-04-1111-3~~ | ~~SD-S-P-NASC2-0203~~ | | | | |
| ~~13-04-1111-4~~ | ~~SD-S-P-NASC2-0304~~ | | | | |
| ~~13-04-1111-5~~ | ~~SD-S-P-NASC2-0405~~ | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| ~~13-04-1113-1~~ | ~~SD-S-P-NASC3-0001~~ | COMP-A | 4/12/2013 | 751 | TOP |
| ~~13-04-1113-2~~ | ~~SD-S-P-NASC3-0102~~ | | | | |
| ~~13-04-1113-3~~ | ~~SD-S-P-NASC3-0203~~ | | | | |
| ~~13-04-1113-4~~ | ~~SD-S-P-NASC3-0304~~ | | | | |
| ~~13-04-1113-5~~ | ~~SD-S-P-NASC3-0405~~ | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| ~~13-04-1002-1~~ | ~~SD-S-P-NASC4-0001~~ | COMP-A | 4/11/2013 | 930 | TOP |
| ~~13-04-1002-2~~ | ~~SD-S-P-NASC4-0102~~ | | | | |
| ~~13-04-1002-3~~ | ~~SD-S-P-NASC4-0203~~ | | | | |
| ~~13-04-1002-4~~ | ~~SD-S-P-NASC4-0304~~ | | | | |
| ~~13-04-1002-5~~ | ~~SD-S-P-NASC4-0405~~ | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| ~~13-04-1003-1~~ | ~~SD-S-P-NASC5-0001~~ | COMP-A | 4/11/2013 | 755 | TOP |
| ~~13-04-1003-2~~ | ~~SD-S-P-NASC5-0102~~ | | | | |
| ~~13-04-1003-3~~ | ~~SD-S-P-NASC5-0203~~ | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| ~~13-04-1001-1~~ | ~~SD-S-P-NASC6-0001~~ | COMP-A | 4/11/2013 | 1200 | TOP |
| ~~13-04-1001-2~~ | ~~SD-S-P-NASC6-0102~~ | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| ~~13-04-0902-1~~ | ~~SD-S-P-NASC7-0001~~ | COMP-A | 4/10/2013 | 1430 | TOP |
| ~~13-04-0902-2~~ | ~~SD-S-P-NASC7-0102~~ | | | | |
| ~~13-04-0902-3~~ | ~~SD-S-P-NASC7-0203~~ | | | | |
| ~~13-04-0902-4~~ | ~~SD-S-P-NASC7-0304~~ | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| ~~13-04-0903-1~~ | ~~SD-S-P-NASC8-0001~~ | COMP-A | 4/10/2013 | 830 | TOP |
| ~~13-04-0903-2~~ | ~~SD-S-P-NASC8-0102~~ | | | | |
| ~~13-04-0903-3~~ | ~~SD-S-P-NASC8-0203~~ | | | | |
| ~~13-04-0903-4~~ | ~~SD-S-P-NASC8-0304~~ | | | | |
| ~~13-04-0903-5~~ | ~~SD-S-P-NASC8-0405~~ | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| ~~13-04-0901-1~~ | ~~SD-S-P-NASC9-0001~~ | COMP-A | 4/10/2013 | 1315 | TOP |
| ~~13-04-0901-2~~ | ~~SD-S-P-NASC9-0102~~ | | | | |
| ~~13-04-0901-3~~ | ~~SD-S-P-NASC9-0203~~ | | | | |
| ~~13-04-0901-4~~ | ~~SD-S-P-NASC9-0304~~ | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607-PLUG~~ | | | | |
| NAS-C10 | | | | | |
| ~~13-04-0904-1~~ | ~~SD-S-P-NASC10-0001~~ | COMP-D | 4/10/2013 | 1010 | TOP |
| ~~13-04-0904-2~~ | ~~SD-S-P-NASC10-0102~~ | | | | |
| ~~13-04-0904-3~~ | ~~SD-S-P-NASC10-0203~~ | | | | |
| ~~13-04-0904-4~~ | ~~SD-S-P-NASC10-0304~~ | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-8 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| ~~13-04-0778-1~~ | ~~SD-S-P-NASC11-0001~~ | COMP-D | 4/9/2013 | 1525 | TOP |
| ~~13-04-0778-2~~ | ~~SD-S-P-NASC11-0102~~ | | | | |
| ~~13-04-0778-3~~ | ~~SD-S-P-NASC11-0203~~ | | | | |
| ~~13-04-0778-4~~ | ~~SD-S-P-NASC11-0304~~ | | | | |
| ~~13-04-0778-5~~ | ~~SD-S-P-NASC11-0405~~ | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| ~~13-04-0780-1~~ | ~~SD-S-P-NASC12-0001~~ | COMP-D | 4/9/2013 | 1410 | TOP |
| ~~13-04-0780-2~~ | ~~SD-S-P-NASC12-0102~~ | | | | |
| ~~13-04-0780-3~~ | ~~SD-S-P-NASC12-0203~~ | | | | |
| ~~13-04-0780-4~~ | ~~SD-S-P-NASC12-0304~~ | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| ~~13-04-0781-1~~ | ~~SD-S-P-NASC13-0001~~ | COMP-E | 4/9/2013 | 1055 | TOP |
| ~~13-04-0781-2~~ | ~~SD-S-P-NASC13-0102~~ | | | | |
| ~~13-04-0781-3~~ | ~~SD-S-P-NASC13-0203~~ | | | | |
| ~~13-04-0781-4~~ | ~~SD-S-P-NASC13-0304~~ | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| ~~13-04-0782-1~~ | ~~SD-S-P-NASC14-0001~~ | COMP-E | 4/9/2013 | 815 | TOP |
| ~~13-04-0782-2~~ | ~~SD-S-P-NASC14-0102~~ | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| ~~13-04-0779-1~~ | ~~SD-S-P-NASC15-0001~~ | COMP-E | 4/9/2013 | 940 | TOP |
| ~~13-04-0779-2~~ | ~~SD-S-P-NASC15-0102~~ | | | | |
| ~~13-04-0779-3~~ | ~~SD-S-P-NASC15-0203~~ | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0903

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/11/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.8 °C - 0.2 °C (CF) = 1.6 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: [illegible]

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: [illegible]

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: HH

| **SAMPLE CONDITION:** | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☐ | ☑ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ 2

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** HH

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** TN

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** TN



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0903

# SAMPLE ANOMALY FORM

## SAMPLES - CONTAINERS & LABELS:

- ☐ Sample(s) NOT RECEIVED but listed on COC
- ☑ Sample(s) received but NOT LISTED on COC
- ☐ Holding time expired – list sample ID(s) and test
- ☐ Insufficient quantities for analysis – list test
- ☐ Improper container(s) used – list test
- ☐ Improper preservative used – list test
- ☐ No preservative noted on COC or label – list test & notify lab
- ☐ Sample labels illegible – note test/container type
- ☑ Sample label(s) do not match COC – Note in comments
  - ☑ Sample ID
  - ☐ Date and/or Time Collected
  - ☐ Project Information
  - ☐ # of Container(s)
  - ☐ Analysis
- ☐ Sample container(s) compromised – Note in comments
  - ☐ Water present in sample container
  - ☐ Broken
- ☐ Sample container(s) not labeled
- ☐ Air sample container(s) compromised – Note in comments
  - ☐ Flat
  - ☐ Very low in volume
  - ☐ Leaking (Not transferred - duplicate bag submitted)
  - ☐ Leaking (transferred into Calscience Tedlar® Bag*)
  - ☐ Leaking (transferred into Client's Tedlar® Bag*)
- ☐ Other: _____

**Comments:**

(-11) Received 1 Ziploc bag labeled as SD-S-P-NASC-10 (Plug/Rock) 4/7/13 @ 8:00 not on COC.

(-1) Received 1 Ziploc bag (Grain Size per Label) labeled as SD-S-P-NASC10-0001 4/10/13 @ 08:00

## HEADSPACE – Containers with Bubble > 6mm or ¼ inch:

| Sample # | Container ID(s) | # of Vials Received | Sample # | Container ID(s) | # of Vials Received | Sample # | Container ID(s) | # of Cont. received | Analysis |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Comments: _____

*Transferred at Client's request.

Initial / Date: D.L 04 / 11 / 13



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| 13-04-1004-1 | SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| 13-04-1004-2 | SD-S-P-NASC1-0102 | | | | |
| 13-04-1004-3 | SD-S-P-NASC1-0203 | | | | |
| 13-04-1004-4 | SD-S-P-NASC1-0304 | | | | |
| 13-04-1004-5 | SD-S-P-NASC1-0405 | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| 13-04-1111-1 | SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| 13-04-1111-2 | SD-S-P-NASC2-0102 | | | | |
| 13-04-1111-3 | SD-S-P-NASC2-0203 | | | | |
| 13-04-1111-4 | SD-S-P-NASC2-0304 | | | | |
| 13-04-1111-5 | SD-S-P-NASC2-0405 | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| 13-04-1113-1 | SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| 13-04-1113-2 | SD-S-P-NASC3-0102 | | | | |
| 13-04-1113-3 | SD-S-P-NASC3-0203 | | | | |
| 13-04-1113-4 | SD-S-P-NASC3-0304 | | | | |
| 13-04-1113-5 | SD-S-P-NASC3-0405 | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| 13-04-1002-1 | SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| 13-04-1002-2 | SD-S-P-NASC4-0102 | | | | |
| 13-04-1002-3 | SD-S-P-NASC4-0203 | | | | |
| 13-04-1002-4 | SD-S-P-NASC4-0304 | | | | |
| 13-04-1002-5 | SD-S-P-NASC4-0405 | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| 13-04-1003-1 | SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| 13-04-1003-2 | SD-S-P-NASC5-0102 | | | | |
| 13-04-1003-3 | SD-S-P-NASC5-0203 | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| 13-04-1001-1 | SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| 13-04-1001-2 | SD-S-P-NASC6-0102 | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| 13-04-0902-1 | SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| 13-04-0902-2 | SD-S-P-NASC7-0102 | | | | |
| 13-04-0902-3 | SD-S-P-NASC7-0203 | | | | |
| 13-04-0902-4 | SD-S-P-NASC7-0304 | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| 13-04-0903-1 | SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| 13-04-0903-2 | SD-S-P-NASC8-0102 | | | | |
| 13-04-0903-3 | SD-S-P-NASC8-0203 | | | | |
| 13-04-0903-4 | SD-S-P-NASC8-0304 | | | | |
| 13-04-0903-5 | SD-S-P-NASC8-0405 | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| 13-04-0901-1 | SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| 13-04-0901-2 | SD-S-P-NASC9-0102 | | | | |
| 13-04-0901-3 | SD-S-P-NASC9-0203 | | | | |
| 13-04-0901-4 | SD-S-P-NASC9-0304 | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607 PLUG~~ | | | | |
| NAS-C10 | | | | | |
| 13-04-0904-1 | SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| 13-04-0904-2 | SD-S-P-NASC10-0102 | | | | |
| 13-04-0904-3 | SD-S-P-NASC10-0203 | | | | |
| 13-04-0904-4 | SD-S-P-NASC10-0304 | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-9 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| 13-04-0778-1 | SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| 13-04-0778-2 | SD-S-P-NASC11-0102 | | | | |
| 13-04-0778-3 | SD-S-P-NASC11-0203 | | | | |
| 13-04-0778-4 | SD-S-P-NASC11-0304 | | | | |
| 13-04-0778-5 | SD-S-P-NASC11-0405 | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| 13-04-0780-1 | SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| 13-04-0780-2 | SD-S-P-NASC12-0102 | | | | |
| 13-04-0780-3 | SD-S-P-NASC12-0203 | | | | |
| 13-04-0780-4 | SD-S-P-NASC12-0304 | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| 13-04-0781-1 | SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| 13-04-0781-2 | SD-S-P-NASC13-0102 | | | | |
| 13-04-0781-3 | SD-S-P-NASC13-0203 | | | | |
| 13-04-0781-4 | SD-S-P-NASC13-0304 | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| 13-04-0782-1 | SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| 13-04-0782-2 | SD-S-P-NASC14-0102 | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| 13-04-0779-1 | SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| 13-04-0779-2 | SD-S-P-NASC15-0102 | | | | |
| 13-04-0779-3 | SD-S-P-NASC15-0203 | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged

Calscience Environmental Laboratories, Inc.

# CALSCIENCE

## WORK ORDER NUMBER: 13-04-0901

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard Sediment Study

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 06/20/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Accredited in accordance with nelac

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

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Work Order Number: 13-04-0901


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Calscience Environmental Laboratories, Inc.

# CASE NARRATIVE

## Calscience Work Order No.: 13-04-0901
## Project ID: NASSCO Shipyard Sediment Study

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

Ten sediment samples were received for this project on April 11, 2013. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 1.7°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in freezers pending chemistry testing.

On June 12, 2013 samples were composited into two samples as per client instructions.

COC discrepancies were noted in the Sample Anomaly Form.

***Tests Performed***

The two composite samples were analyzed for the following analyses:

C8-C40 by EPA 8015B (M)
C4-C12 by EPA 8015B (M)
Title 22 Metals by EPA 6010B
Mercury by EPA 7471A
PCB Aroclors by EPA 8082

***Data Summary***

<u>Holding times</u>

All samples were analyzed past the EPA recommended holding times for TPH C4-12, TPH-C8-40, PCB Aroclors and Mercury. However, all samples were frozen (-20 °C) upon receipt at the laboratory and remained in that condition until sample preparation/analysis. Per the Puget Sound Protocol (and other references), which states the holding time for sediments may be extended up to one year if kept frozen after collection, the samples were analyzed within the allowable one year holding time. In addition, PCBs are known to be very stable compounds, and SW-846 Ch.4, Table 4-1 (Rev. 4) lists “None” as the recommended holding time for PCBs. However, because the samples were analyzed outside of normal EPA hold times, the data is flagged as such.

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Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

Concentrations of target analytes in the method blank were found to be below reporting limits for all analyses.

Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the MDL, and where applicable, "J" flags were reported.

Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test. All parameters were within established control limits.

Matrix Spikes

Matrix spikes and matrix spike duplicates were performed for each applicable analysis on project samples. All parameters were within the acceptable control limits unless otherwise noted.

For C8-C40 by EPA 8015B (M) RPD was outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

For Title 22 Metals by EPA 6010B matrix spike and/or matrix spike duplicate recoveries were outside the established control limits for antimony, lead, molybdenum and thallium. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action. The concentrations of copper and zinc in the sample were over four times the spike amount, therefore the recoveries could not be calculated.

For Mercury by EPA 7471A matrix spike duplicate recovery was outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

For PCB Aroclors by EPA 8082 matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

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Surrogates

Surrogate recoveries for all applicable tests and samples were within acceptable control limits.

Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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Calscience Environmental Laboratories, Inc.

# Work Order Narrative



**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/11/13. They were assigned to Work Order 13-04-0901.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with an immediate holding time (HT </= 15 minutes --40CFR-136.3 Table II footnote 4), is considered a "field" test and reported samples results are not flagged unless the analysis is performed beyond 24 hours of the time of collection.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Calscience Environmental Laboratories, Inc.

# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC<br>27201 Puerta Real, Suite 350<br>Mission Viejo, CA 92691-8306 | Work Order: | 13-04-0901 |
| | | Project Name: | NASSCO South Shipyard Sediment Study |
| | | PO Number: | |
| | | Date Received: | 04/11/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| SD-S-P-NASC09-0001 | 13-04-0901-1 | 04/10/13 13:15 | 3 | Sediment |
| SD-S-P-NASC09-0102 | 13-04-0901-2 | 04/10/13 13:15 | 3 | Sediment |
| SD-S-P-NASC09-0203 | 13-04-0901-3 | 04/10/13 13:15 | 3 | Sediment |
| SD-S-P-NASC09-0304 | 13-04-0901-4 | 04/10/13 13:15 | 3 | Sediment |
| SD-S-P-NASC09-0405 | 13-04-0901-5 | 04/10/13 13:15 | 3 | Sediment |
| SD-S-P-NASC09-0506 | 13-04-0901-6 | 04/10/13 13:15 | 3 | Sediment |
| SD-S-P-NASC09-0607 Plug | 13-04-0901-7 | 04/10/13 13:15 | 3 | Sediment |
| SD-S-P-NASC08-Comp | 13-04-0901-8 | 04/10/13 08:30 | 1 | Sediment |
| SD-S-P-NASC08-0910 Plug | 13-04-0901-9 | 04/10/13 08:30 | 3 | Sediment |
| SD-S-P-NASC09-Comp | 13-04-0901-10 | 04/10/13 13:15 | 1 | Sediment |
| COMP-C9-TOP | 13-04-0901-11 | 04/10/13 13:15 | 1 | Sediment |
| COMP-C9-BOTTOM | 13-04-0901-12 | 04/10/13 13:15 | 1 | Sediment |

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0901 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C9-TOP** | **13-04-0901-11-A** | **04/10/13 13:15** | **Sediment** | **GC 50** | **06/12/13** | **06/15/13 00:15** | **130612B13** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | 4.5 | 5.0 | 1.8 | 1 | J |
| C15-C16 | 9.6 | 5.0 | 1.8 | 1 | |
| C17-C18 | 13 | 5.0 | 1.8 | 1 | |
| C19-C20 | 11 | 5.0 | 1.8 | 1 | |
| C21-C22 | 8.3 | 5.0 | 1.8 | 1 | |
| C23-C24 | 5.8 | 5.0 | 1.7 | 1 | |
| C25-C28 | 14 | 5.0 | 2.4 | 1 | |
| C29-C32 | 18 | 5.0 | 2.4 | 1 | |
| C33-C36 | 11 | 5.0 | 2.6 | 1 | |
| C37-C40 | 4.7 | 5.0 | 1.6 | 1 | J |
| C8-C40 Total | 100 | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 99 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0901 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C9-BOTTOM** | **13-04-0901-12-A** | **04/10/13 13:15** | **Sediment** | **GC 50** | **06/12/13** | **06/15/13 00:36** | **130612B13** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | ND | 5.0 | 1.8 | 1 | |
| C19-C20 | ND | 5.0 | 1.8 | 1 | |
| C21-C22 | ND | 5.0 | 1.8 | 1 | |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | 2.7 | 5.0 | 2.4 | 1 | J |
| C29-C32 | 3.6 | 5.0 | 2.4 | 1 | J |
| C33-C36 | ND | 5.0 | 2.6 | 1 | |
| C37-C40 | ND | 5.0 | 1.6 | 1 | |
| C8-C40 Total | 6.3 | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 96 | 61-145 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0901 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-15-500-16** | **N/A** | **Soil** | **GC 50** | **06/12/13** | **06/14/13 22:59** | **130612B13** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | ND | 5.0 | 1.8 | 1 | |
| C19-C20 | ND | 5.0 | 1.8 | 1 | |
| C21-C22 | ND | 5.0 | 1.8 | 1 | |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | ND | 5.0 | 2.4 | 1 | |
| C29-C32 | ND | 5.0 | 2.4 | 1 | |
| C33-C36 | ND | 5.0 | 2.6 | 1 | |
| C37-C40 | ND | 5.0 | 1.6 | 1 | |
| C8-C40 Total | ND | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 98 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0901 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C9-TOP** | **13-04-0901-11-A** | **04/10/13 13:15** | **Sediment** | **GC 4** | **06/13/13** | **06/14/13 01:50** | **130613B02** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | 0.34 | 0.50 | 0.23 | 1 | J |
| GRO (C4-C12) Total | 0.34 | 0.50 | 0.23 | 1 | J |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 87 | 42-126 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C9-BOTTOM** | **13-04-0901-12-A** | **04/10/13 13:15** | **Sediment** | **GC 4** | **06/13/13** | **06/14/13 06:14** | **130613B02** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 89 | 42-126 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0901 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-13-045-161** | **N/A** | **Soil** | **GC 4** | **06/13/13** | **06/14/13 00:44** | **130613B02** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 85 | 42-126 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0901 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C9-TOP** | **13-04-0901-11-A** | **04/10/13 13:15** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:25** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 7.02 | 0.750 | 0.259 | 1 | |
| Barium | 77.9 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.368 | 0.250 | 0.137 | 1 | |
| Cadmium | 2.12 | 0.500 | 0.135 | 1 | |
| Chromium | 56.9 | 0.250 | 0.142 | 1 | |
| Cobalt | 6.27 | 0.250 | 0.148 | 1 | |
| Copper | 130 | 0.500 | 0.135 | 1 | |
| Lead | 64.0 | 0.500 | 0.132 | 1 | |
| Molybdenum | 1.26 | 0.250 | 0.132 | 1 | |
| Nickel | 11.8 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | 1.85 | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 41.1 | 0.250 | 0.141 | 1 | |
| Zinc | 223 | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0901 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C9-BOTTOM** | **13-04-0901-12-A** | **04/10/13 13:15** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:30** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 6.28 | 0.750 | 0.259 | 1 | |
| Barium | 68.4 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.536 | 0.250 | 0.137 | 1 | |
| Cadmium | 0.854 | 0.500 | 0.135 | 1 | |
| Chromium | 23.3 | 0.250 | 0.142 | 1 | |
| Cobalt | 7.27 | 0.250 | 0.148 | 1 | |
| Copper | 29.1 | 0.500 | 0.135 | 1 | |
| Lead | 22.9 | 0.500 | 0.132 | 1 | |
| Molybdenum | 0.181 | 0.250 | 0.132 | 1 | J |
| Nickel | 8.17 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | 0.141 | 0.250 | 0.0857 | 1 | J |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 43.9 | 0.250 | 0.141 | 1 | |
| Zinc | 83.4 | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0901 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-01-002-16915** | **N/A** | **Soil** | **ICP 7300** | **06/12/13** | **06/13/13 23:17** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | ND | 0.750 | 0.259 | 1 | |
| Barium | ND | 0.500 | 0.154 | 1 | |
| Beryllium | ND | 0.250 | 0.137 | 1 | |
| Cadmium | ND | 0.500 | 0.135 | 1 | |
| Chromium | ND | 0.250 | 0.142 | 1 | |
| Cobalt | ND | 0.250 | 0.148 | 1 | |
| Copper | ND | 0.500 | 0.135 | 1 | |
| Lead | ND | 0.500 | 0.132 | 1 | |
| Molybdenum | ND | 0.250 | 0.132 | 1 | |
| Nickel | ND | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | ND | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | ND | 0.250 | 0.141 | 1 | |
| Zinc | ND | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0901 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C9-TOP** | **13-04-0901-11-A** | **04/10/13 13:15** | **Sediment** | **Mercury** | **06/13/13** | **06/13/13 12:09** | **130613L01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 2.19 | 0.834 | 0.0587 | 9.98 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C9-BOTTOM** | **13-04-0901-12-A** | **04/10/13 13:15** | **Sediment** | **Mercury** | **06/13/13** | **06/13/13 12:15** | **130613L01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.864 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-04-007-9360** | **N/A** | **Soil** | **Mercury** | **06/13/13** | **06/13/13 10:44** | **130613L01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | ND | 0.0835 | 0.00588 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0901 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C9-TOP** | **13-04-0901-11-A** | **04/10/13 13:15** | **Sediment** | **GC 58** | **06/13/13** | **06/18/13 14:28** | **130613L09** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | 69 | 10 | 2.9 | 1 | |
| Aroclor-1254 | 150 | 10 | 2.4 | 1 | |
| Aroclor-1260 | 61 | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 74 | 50-130 | |
| Decachlorobiphenyl | 120 | 50-130 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C9-BOTTOM** | **13-04-0901-12-A** | **04/10/13 13:15** | **Sediment** | **GC 58** | **06/13/13** | **06/18/13 14:46** | **130613L09** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | ND | 10 | 2.9 | 1 | |
| Aroclor-1254 | ND | 10 | 2.4 | 1 | |
| Aroclor-1260 | ND | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 72 | 50-130 | |
| Decachlorobiphenyl | 100 | 50-130 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0901 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-12-565-339** | **N/A** | **Soil** | **GC 58** | **06/13/13** | **06/18/13 09:58** | **130613L09** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | ND | 10 | 2.9 | 1 | |
| Aroclor-1254 | ND | 10 | 2.4 | 1 | |
| Aroclor-1260 | ND | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 79 | 50-130 | |
| Decachlorobiphenyl | 88 | 50-130 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0901 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **COMP-C9-TOP** | **Sediment** | **GC 50** | **06/12/13** | **06/14/13 23:37** | **130612S13** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| TPH as Diesel | 102.5 | 400.0 | 431.9 | 82 | 362.1 | 65 | 64-130 | 18 | 0-15 | 4 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0901 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **COMP-C9-TOP** | **Sediment** | **GC 4** | **06/13/13** | **06/14/13 02:23** | **130613S02** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| GRO (C4-C12) Total | ND | 10.00 | 6.210 | 62 | 6.548 | 65 | 48-114 | 5 | 0-25 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0901 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **COMP-C9-TOP** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:26** | **130612S08** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 3.137 | 13 | 4.170 | 17 | 50-115 | 28 | 0-20 | 3,4 |
| Arsenic | 7.019 | 25.00 | 31.38 | 97 | 33.08 | 104 | 75-125 | 5 | 0-20 | |
| Barium | 77.89 | 25.00 | 104.4 | 106 | 104.6 | 107 | 75-125 | 0 | 0-20 | |
| Beryllium | 0.3681 | 25.00 | 24.97 | 98 | 26.62 | 105 | 75-125 | 6 | 0-20 | |
| Cadmium | 2.118 | 25.00 | 25.41 | 93 | 27.20 | 100 | 75-125 | 7 | 0-20 | |
| Chromium | 56.89 | 25.00 | 79.48 | 90 | 83.39 | 106 | 75-125 | 5 | 0-20 | |
| Cobalt | 6.268 | 25.00 | 31.06 | 99 | 33.09 | 107 | 75-125 | 6 | 0-20 | |
| Copper | 130.4 | 25.00 | 155.7 | 4X | 154.6 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 64.02 | 25.00 | 79.41 | 62 | 104.9 | 163 | 75-125 | 28 | 0-20 | 3,4 |
| Molybdenum | 1.256 | 25.00 | 19.88 | 74 | 21.44 | 81 | 75-125 | 8 | 0-20 | 3 |
| Nickel | 11.79 | 25.00 | 36.12 | 97 | 38.66 | 108 | 75-125 | 7 | 0-20 | |
| Selenium | ND | 25.00 | 20.85 | 83 | 22.54 | 90 | 75-125 | 8 | 0-20 | |
| Silver | 1.853 | 12.50 | 13.80 | 96 | 14.56 | 102 | 75-125 | 5 | 0-20 | |
| Thallium | ND | 25.00 | 12.84 | 51 | 17.83 | 71 | 75-125 | 33 | 0-20 | 3,4 |
| Vanadium | 41.15 | 25.00 | 65.57 | 98 | 67.38 | 105 | 75-125 | 3 | 0-20 | |
| Zinc | 223.5 | 25.00 | 243.1 | 4X | 248.6 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0901 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **COMP-C9-TOP** | **Sediment** | **Mercury** | **06/13/13** | **06/13/13 12:11** | **130613S01A** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 2.189 | 0.8350 | 2.946 | 91 | 2.568 | 45 | 71-137 | 14 | 0-14 | 3 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0901 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **COMP-C9-TOP** | **Sediment** | **GC 58** | **06/13/13** | **06/18/13 10:34** | **130613S09A** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | ND | 20.00 | 39.07 | 195 | 50.22 | 251 | 50-135 | 25 | 0-25 | 3 |
| Aroclor-1260 | 60.85 | 20.00 | 66.60 | 29 | 105.9 | 225 | 50-135 | 46 | 0-25 | 3,4 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - PDS/PDSD

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0901 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | PDS/PDSD Batch Number |
|---|---|---|---|---|---|
| **COMP-C9-TOP** | **Sediment** | **ICP 7300** | **06/12/13 00:00** | **06/14/13 11:28** | **130612S08** |

| Parameter | Sample Conc. | Spike Added | PDS Conc. | PDS %Rec. | PDSD Conc. | PDSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 24.06 | 96 | 24.33 | 97 | 75-125 | 1 | 0-20 | |
| Arsenic | 7.019 | 25.00 | 32.16 | 101 | 31.68 | 99 | 75-125 | 2 | 0-20 | |
| Barium | 77.89 | 25.00 | 104.1 | 105 | 104.8 | 108 | 75-125 | 1 | 0-20 | |
| Beryllium | 0.3681 | 25.00 | 25.81 | 102 | 25.83 | 102 | 75-125 | 0 | 0-20 | |
| Cadmium | 2.118 | 25.00 | 26.46 | 97 | 26.55 | 98 | 75-125 | 0 | 0-20 | |
| Chromium | 56.89 | 25.00 | 81.26 | 98 | 81.29 | 98 | 75-125 | 0 | 0-20 | |
| Cobalt | 6.268 | 25.00 | 31.90 | 103 | 31.74 | 102 | 75-125 | 1 | 0-20 | |
| Copper | 130.4 | 25.00 | 155.3 | 4X | 155.9 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 64.02 | 25.00 | 88.41 | 98 | 88.29 | 97 | 75-125 | 0 | 0-20 | |
| Molybdenum | 1.256 | 25.00 | 25.70 | 98 | 25.51 | 97 | 75-125 | 1 | 0-20 | |
| Nickel | 11.79 | 25.00 | 37.17 | 102 | 36.89 | 100 | 75-125 | 1 | 0-20 | |
| Selenium | ND | 25.00 | 23.17 | 93 | 22.53 | 90 | 75-125 | 3 | 0-20 | |
| Silver | 1.853 | 12.50 | 14.78 | 103 | 14.96 | 105 | 75-125 | 1 | 0-20 | |
| Thallium | ND | 25.00 | 21.46 | 86 | 21.26 | 85 | 75-125 | 1 | 0-20 | |
| Vanadium | 41.15 | 25.00 | 65.69 | 98 | 65.57 | 98 | 75-125 | 0 | 0-20 | |
| Zinc | 223.5 | 25.00 | 247.6 | 4X | 247.8 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0901 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-15-500-16** | **Soil** | **GC 50** | **06/14/13 23:19** | **130612B13** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| TPH as Diesel | 400.0 | 346.7 | 87 | 75-123 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0901 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-13-045-161** | **Soil** | **GC 4** | **06/14/13 01:17** | **130613B02** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| GRO (C4-C12) Total | 10.00 | 9.893 | 99 | 70-124 | |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0901 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **097-01-002-16915** | **Soil** | **ICP 7300** | **06/13/13 23:19** | **130612L08** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | ME CL | Qualifiers |
|---|---|---|---|---|---|---|
| Antimony | 25.00 | 25.43 | 102 | 80-120 | 73-127 | |
| Arsenic | 25.00 | 25.43 | 102 | 80-120 | 73-127 | |
| Barium | 25.00 | 27.85 | 111 | 80-120 | 73-127 | |
| Beryllium | 25.00 | 25.37 | 101 | 80-120 | 73-127 | |
| Cadmium | 25.00 | 26.29 | 105 | 80-120 | 73-127 | |
| Chromium | 25.00 | 26.05 | 104 | 80-120 | 73-127 | |
| Cobalt | 25.00 | 27.11 | 108 | 80-120 | 73-127 | |
| Copper | 25.00 | 25.14 | 101 | 80-120 | 73-127 | |
| Lead | 25.00 | 26.26 | 105 | 80-120 | 73-127 | |
| Molybdenum | 25.00 | 25.63 | 103 | 80-120 | 73-127 | |
| Nickel | 25.00 | 28.06 | 112 | 80-120 | 73-127 | |
| Selenium | 25.00 | 23.91 | 96 | 80-120 | 73-127 | |
| Silver | 12.50 | 13.23 | 106 | 80-120 | 73-127 | |
| Thallium | 25.00 | 25.94 | 104 | 80-120 | 73-127 | |
| Vanadium | 25.00 | 25.32 | 101 | 80-120 | 73-127 | |
| Zinc | 25.00 | 27.69 | 111 | 80-120 | 73-127 | |

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0901 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-04-007-9360** | **Soil** | **Mercury** | **06/13/13 10:49** | **130613L01** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.8350 | 0.7904 | 95 | 85-121 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0901 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-12-565-339** | **Soil** | **GC 58** | **06/18/13 10:16** | **130613L09** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | 20.00 | 18.49 | 92 | 50-135 | |
| Aroclor-1260 | 20.00 | 16.45 | 82 | 50-135 | |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order: 13-04-0901



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| 4 | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range. |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

For any analysis identified as a "field" test with a holding time (HT) </= 15 minutes where the sample is received outside of HT, Calscience will adhere to its internal HT of 24 hours. In cases where sample analysis does not meet Calscience's internal HT, results will be appropriately qualified.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/10/13

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

P.O. NO.: 1315100800

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

QUOTE NO.:

SAMPLER(S): (SIGNATURE)

LAB USE ONLY: 13-04-0901

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___/___/___

SPECIAL INSTRUCTIONS
Please HOLD samples. 3 cont.= 1x16oz DO NOT Freeze
Analysis will be determined at a later date. 1x 8oz 1x grainsize composite or grainsize
New COC will be submitted with analysis when confirmed. bag
Danielle Gonsman is PM.

## REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC09-0001 | | 04/10/13 | 1315 | Sed | 3 | | | | X |
| 2 | SD-S-P-NASC09-0102 | | | | | | | | | X |
| 3 | SD-S-P-NASC09-0203 | | | | | | | | | X |
| 4 | SD-S-P-NASC09-0304 | | | | | | | | | X |
| 5 | SD-S-P-NASC09-0405 | | | | | | | | | X |
| 6 | SD-S-P-NASC09-0506 | | | | | | | | | X |
| 7 | SD-S-P-NASC09-0607 Plug | | | | | | | | | X |
| 8 | SD-S-P-NASC08-comp | | 4/10/13 | 0830 | | 1 | | | | X |
| 9 | SD-S-P-NASC08-0910 Plug | | | 0830 | | 3 | | | | X |
| 10 | SD-S-P-NASC09-comp | | | 1315 | | 1 | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | | 04/11/13 | 1445 |
| | | 04/11/13 | 1910 |
| | | | |



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|
| NAS-C1 | | | | |
| SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| SD-S-P-NASC1-0102 | | | | |
| SD-S-P-NASC1-0203 | | | | |
| SD-S-P-NASC1-0304 | | | | |
| SD-S-P-NASC1-0405 | | | | |
| SD-S-P-NASC1-0506 | | | | BOTTOM |
| SD-S-P-NASC1-0607 | | | | |
| SD-S-P-NASC1-0708 | | | | |
| SD-S-P-NASC1-0809 | | | | |
| NAS-C2 | | | | |
| SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| SD-S-P-NASC2-0102 | | | | |
| SD-S-P-NASC2-0203 | | | | |
| SD-S-P-NASC2-0304 | | | | |
| SD-S-P-NASC2-0405 | | | | |
| SD-S-P-NASC2-0506 | | | | BOTTOM |
| SD-S-P-NASC2-0607 | | | | |
| SD-S-P-NASC2-0708 | | | | |
| SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | |
| SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| SD-S-P-NASC3-0102 | | | | |
| SD-S-P-NASC3-0203 | | | | |
| SD-S-P-NASC3-0304 | | | | |
| SD-S-P-NASC3-0405 | | | | |
| SD-S-P-NASC3-0506 | | | | BOTTOM |
| SD-S-P-NASC3-0607 | | | | |
| SD-S-P-NASC3-0708 | | | | |
| SD-S-P-NASC3-0809 | | | | |
| SD-S-P-NASC3-0910 | | | | |
| SD-S-P-NASC3-0910-PLUG | | | | not included[c] |
| NAS-C4 | | | | |
| SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| SD-S-P-NASC4-0102 | | | | |
| SD-S-P-NASC4-0203 | | | | |
| SD-S-P-NASC4-0304 | | | | |
| SD-S-P-NASC4-0405 | | | | |
| SD-S-P-NASC4-0506 | | | | BOTTOM |
| SD-S-P-NASC4-0607 | | | | |
| SD-S-P-NASC4-0708 | | | | |
| SD-S-P-NASC4-0809 | | | | |
| SD-S-P-NASC4-0910 | | | | |
| SD-S-P-NASC4-0910-PLUG | | | | not included[c] |
| NAS-C5 | | | | |
| SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| SD-S-P-NASC5-0102 | | | | |
| SD-S-P-NASC5-0203 | | | | |
| SD-S-P-NASC5-0304 | | | | BOTTOM |
| SD-S-P-NASC5-0405 | | | | |
| SD-S-P-NASC5-0506-PLUG | | | | not included[c] |
| NAS-C6 | | | | |
| SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| SD-S-P-NASC6-0102 | | | | |
| SD-S-P-NASC6-0203 | | | | BOTTOM |
| SD-S-P-NASC6-0304-PLUG | | | | not included[c] |
| NAS-C7 | | | | |
| SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| SD-S-P-NASC7-0102 | | | | |
| SD-S-P-NASC7-0203 | | | | |
| SD-S-P-NASC7-0304 | | | | |
| SD-S-P-NASC7-0405 | | | | BOTTOM |
| SD-S-P-NASC7-0506 | | | | |
| SD-S-P-NASC7-0607 | | | | |
| SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | |
| SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| SD-S-P-NASC8-0102 | | | | |
| SD-S-P-NASC8-0203 | | | | |
| SD-S-P-NASC8-0304 | | | | |
| SD-S-P-NASC8-0405 | | | | |
| SD-S-P-NASC8-0506 | | | | BOTTOM |
| SD-S-P-NASC8-0607 | | | | |
| SD-S-P-NASC8-0708 | | | | |
| SD-S-P-NASC8-0809 | | | | |
| SD-S-P-NASC8-0910 | | | | |
| SD-S-P-NASC8-0910-PLUG | | | | not included[c] |
| NAS-C9 | | | | |
| SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| SD-S-P-NASC9-0102 | | | | |
| SD-S-P-NASC9-0203 | | | | |
| SD-S-P-NASC9-0304 | | | | |
| SD-S-P-NASC9-0405 | | | | BOTTOM |
| SD-S-P-NASC9-0506 | | | | |
| SD-S-P-NASC9-0607 | | | | |
| NAS-C10 | | | | |
| SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| SD-S-P-NASC10-0102 | | | | |
| SD-S-P-NASC10-0203 | | | | |
| SD-S-P-NASC10-0304 | | | | BOTTOM |
| SD-S-P-NASC10-0405 | | | | |
| SD-S-P-NASC10-0506 | | | | |
| SD-S-P-NASC10-0607 | | | | |
| SD-S-P-NASC10-0708 | | | | |
| NAS-C11 | | | | |
| SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| SD-S-P-NASC11-0102 | | | | |
| SD-S-P-NASC11-0203 | | | | |
| SD-S-P-NASC11-0304 | | | | |
| SD-S-P-NASC11-0405 | | | | BOTTOM |
| SD-S-P-NASC11-0506 | | | | |
| SD-S-P-NASC11-0607 | | | | |
| SD-S-P-NASC11-0708 | | | | |
| SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | |
| SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| SD-S-P-NASC12-0102 | | | | |
| SD-S-P-NASC12-0203 | | | | |
| SD-S-P-NASC12-0304 | | | | |
| SD-S-P-NASC12-0405 | | | | BOTTOM |
| SD-S-P-NASC12-0506 | | | | |
| SD-S-P-NASC12-0607 | | | | |
| SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | |
| SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| SD-S-P-NASC13-0102 | | | | |
| SD-S-P-NASC13-0203 | | | | |
| SD-S-P-NASC13-0304 | | | | BOTTOM |
| SD-S-P-NASC13-0405 | | | | |
| SD-S-P-NASC13-0506 | | | | |
| SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | |
| SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| SD-S-P-NASC14-0102 | | | | |
| SD-S-P-NASC14-0203 | | | | BOTTOM |
| SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | |
| SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| SD-S-P-NASC15-0102 | | | | |
| SD-S-P-NASC15-0203 | | | | |
| SD-S-P-NASC15-0304 | | | | BOTTOM |
| SD-S-P-NASC15-0405 | | | | |
| SD-S-P-NASC15-0506 | | | | |

Notes:
0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on
a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.
b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.
A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)
c - sample not included due to low volume available and because it represents native material which will not be dredged



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0901

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/11/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.9 °C - 0.2 °C (CF) = 1.7 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: B

**CUSTODY SEALS INTACT:**

| | | | | | |
|---|---|---|---|---|---|
| ☐ Cooler | ☐_____ | ☐ No (Not Intact) | ☑ Not Present | ☐ N/A | Initial: B |
| ☐ Sample | ☐_____ | ☐ No (Not Intact) | ☑ Not Present | | Initial: HH |

| SAMPLE CONDITION: | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ 2

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** HH

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** TN

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** TN



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| 13-04-1004-1 | SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| 13-04-1004-2 | SD-S-P-NASC1-0102 | | | | |
| 13-04-1004-3 | SD-S-P-NASC1-0203 | | | | |
| 13-04-1004-4 | SD-S-P-NASC1-0304 | | | | |
| 13-04-1004-5 | SD-S-P-NASC1-0405 | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| 13-04-1111-1 | SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| 13-04-1111-2 | SD-S-P-NASC2-0102 | | | | |
| 13-04-1111-3 | SD-S-P-NASC2-0203 | | | | |
| 13-04-1111-4 | SD-S-P-NASC2-0304 | | | | |
| 13-04-1111-5 | SD-S-P-NASC2-0405 | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| 13-04-1113-1 | SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| 13-04-1113-2 | SD-S-P-NASC3-0102 | | | | |
| 13-04-1113-3 | SD-S-P-NASC3-0203 | | | | |
| 13-04-1113-4 | SD-S-P-NASC3-0304 | | | | |
| 13-04-1113-5 | SD-S-P-NASC3-0405 | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| 13-04-1002-1 | SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| 13-04-1002-2 | SD-S-P-NASC4-0102 | | | | |
| 13-04-1002-3 | SD-S-P-NASC4-0203 | | | | |
| 13-04-1002-4 | SD-S-P-NASC4-0304 | | | | |
| 13-04-1002-5 | SD-S-P-NASC4-0405 | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| 13-04-1003-1 | SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| 13-04-1003-2 | SD-S-P-NASC5-0102 | | | | |
| 13-04-1003-3 | SD-S-P-NASC5-0203 | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| 13-04-1001-1 | SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| 13-04-1001-2 | SD-S-P-NASC6-0102 | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| 13-04-0902-1 | SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| 13-04-0902-2 | SD-S-P-NASC7-0102 | | | | |
| 13-04-0902-3 | SD-S-P-NASC7-0203 | | | | |
| 13-04-0902-4 | SD-S-P-NASC7-0304 | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| 13-04-0903-1 | SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| 13-04-0903-2 | SD-S-P-NASC8-0102 | | | | |
| 13-04-0903-3 | SD-S-P-NASC8-0203 | | | | |
| 13-04-0903-4 | SD-S-P-NASC8-0304 | | | | |
| 13-04-0903-5 | SD-S-P-NASC8-0405 | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| 13-04-0901-1 | SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| 13-04-0901-2 | SD-S-P-NASC9-0102 | | | | |
| 13-04-0901-3 | SD-S-P-NASC9-0203 | | | | |
| 13-04-0901-4 | SD-S-P-NASC9-0304 | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607 PLUG~~ | | | | |
| NAS-C10 | | | | | |
| 13-04-0904-1 | SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| 13-04-0904-2 | SD-S-P-NASC10-0102 | | | | |
| 13-04-0904-3 | SD-S-P-NASC10-0203 | | | | |
| 13-04-0904-4 | SD-S-P-NASC10-0304 | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-9 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| 13-04-0778-1 | SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| 13-04-0778-2 | SD-S-P-NASC11-0102 | | | | |
| 13-04-0778-3 | SD-S-P-NASC11-0203 | | | | |
| 13-04-0778-4 | SD-S-P-NASC11-0304 | | | | |
| 13-04-0778-5 | SD-S-P-NASC11-0405 | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| 13-04-0780-1 | SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| 13-04-0780-2 | SD-S-P-NASC12-0102 | | | | |
| 13-04-0780-3 | SD-S-P-NASC12-0203 | | | | |
| 13-04-0780-4 | SD-S-P-NASC12-0304 | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| 13-04-0781-1 | SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| 13-04-0781-2 | SD-S-P-NASC13-0102 | | | | |
| 13-04-0781-3 | SD-S-P-NASC13-0203 | | | | |
| 13-04-0781-4 | SD-S-P-NASC13-0304 | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| 13-04-0782-1 | SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| 13-04-0782-2 | SD-S-P-NASC14-0102 | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| 13-04-0779-1 | SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| 13-04-0779-2 | SD-S-P-NASC15-0102 | | | | |
| 13-04-0779-3 | SD-S-P-NASC15-0203 | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged

Calscience Environmental Laboratories, Inc.

# CALSCIENCE

## WORK ORDER NUMBER: 13-04-0904

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard Sediment Study

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 06/25/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Accredited in accordance with nelac

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

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Work Order Number: 13-04-0904


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Calscience Environmental Laboratories, Inc.

# CASE NARRATIVE

## Calscience Work Order No.: 13-04-0904
## Project ID: NASSCO Shipyard Sediment Study

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

Six sediment samples were received for this project on April 11, 2013. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 1.6°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in freezers pending chemistry testing.

On June 12, 2013 samples were composited into two samples as per client instructions.

COC discrepancies were noted in the Sample Anomaly Form.

***Tests Performed***

The two composite samples were analyzed for the following analyses:

C8-C40 by EPA 8015B (M)
C4-C12 by EPA 8015B (M)
Title 22 Metals by EPA 6010B
Mercury by EPA 7471A
PCB Aroclors by EPA 8082

***Data Summary***

<u>Holding times</u>

All samples were analyzed past the EPA recommended holding times for TPH C4-12, TPH-C8-40, PCB Aroclors and Mercury. However, all samples were frozen (-20 °C) upon receipt at the laboratory and remained in that condition until sample preparation/analysis. Per the Puget Sound Protocol (and other references), which states the holding time for sediments may be extended up to one year if kept frozen after collection, the samples were analyzed within the allowable one year holding time. In addition, PCBs are known to be very stable compounds, and SW-846 Ch.4, Table 4-1 (Rev. 4) lists “None” as the recommended holding time for PCBs. However, because the samples were analyzed outside of normal EPA hold times, the data is flagged as such.

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Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

Concentrations of target analytes in the method blank were found to be below reporting limits for all analyses.

Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the MDL, and where applicable, "J" flags were reported.

Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test. All parameters were within established control limits.

Matrix Spikes

Matrix spikes and matrix spike duplicates were performed for each applicable analysis on project samples. All parameters were within the acceptable control limits unless otherwise noted.

For C8-C40 by EPA 8015B (M) matrix spike and matrix spike duplicate RPD was outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

For C4-C12 by EPA 8015B (M) matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

For Title 22 Metals by EPA 6010B matrix spike and/or matrix spike duplicate recoveries were outside the established control limits for antimony, lead, molybdenum and thallium. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action. The concentrations of copper and zinc in the sample were over four times the spike amount, therefore the recoveries could not be calculated.

For PCB Aroclors by EPA 8082 matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

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Surrogates

Surrogate recoveries for all applicable tests and samples were within acceptable control limits with the following exceptions:

For PCB Aroclors by EPA 8082 the decachlorobiphenyl recovery was high in sample 11.

Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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Calscience Environmental Laboratories, Inc.

# Work Order Narrative

Work Order: 13-04-0904 Page 1 of 1

**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/11/13. They were assigned to Work Order 13-04-0904.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with an immediate holding time (HT </= 15 minutes --40CFR-136.3 Table II footnote 4), is considered a "field" test and reported samples results are not flagged unless the analysis is performed beyond 24 hours of the time of collection.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Calscience Environmental Laboratories, Inc.

# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC<br>27201 Puerta Real, Suite 350<br>Mission Viejo, CA 92691-8306 | Work Order: | 13-04-0904 |
| | | Project Name: | NASSCO South Shipyard Sediment Study |
| | | PO Number: | |
| | | Date Received: | 04/11/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| SD-S-P-NASC10-0001 | 13-04-0904-1 | 04/10/13 10:10 | 3 | Sediment |
| SD-S-P-NASC10-0102 | 13-04-0904-2 | 04/10/13 10:10 | 3 | Sediment |
| SD-S-P-NASC10-0203 | 13-04-0904-3 | 04/10/13 10:10 | 3 | Sediment |
| SD-S-P-NASC10-0304 | 13-04-0904-4 | 04/10/13 10:10 | 3 | Sediment |
| SD-S-P-NASC10-0405 | 13-04-0904-5 | 04/10/13 10:10 | 3 | Sediment |
| SD-S-P-NASC10-0506 | 13-04-0904-6 | 04/10/13 10:10 | 3 | Sediment |
| SD-S-P-NASC10-0607 | 13-04-0904-7 | 04/10/13 10:10 | 3 | Sediment |
| SD-S-P-NASC10-Comp | 13-04-0904-8 | 04/10/13 10:10 | 1 | Sediment |
| SD-S-P-NASC10-0708 Plug | 13-04-0904-9 | 04/10/13 10:10 | 2 | Sediment |
| COMP-C10-TOP | 13-04-0904-10 | 04/10/13 10:10 | 1 | Sediment |
| COMP-C10-BOTTOM | 13-04-0904-11 | 04/10/13 10:10 | 1 | Sediment |

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0904 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C10-TOP** | **13-04-0904-10-A** | **04/10/13 10:10** | **Sediment** | **GC 46** | **06/12/13** | **06/13/13 23:07** | **130612B12** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | ND | 5.0 | 1.8 | 1 | |
| C19-C20 | ND | 5.0 | 1.8 | 1 | |
| C21-C22 | ND | 5.0 | 1.8 | 1 | |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | ND | 5.0 | 2.4 | 1 | |
| C29-C32 | ND | 5.0 | 2.4 | 1 | |
| C33-C36 | ND | 5.0 | 2.6 | 1 | |
| C37-C40 | ND | 5.0 | 1.6 | 1 | |
| C8-C40 Total | ND | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 92 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0904 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C10-BOTTOM** | **13-04-0904-11-A** | **04/10/13 10:10** | **Sediment** | **GC 46** | **06/12/13** | **06/13/13 23:22** | **130612B12** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | 5.3 | 5.0 | 1.8 | 1 | |
| C15-C16 | 11 | 5.0 | 1.8 | 1 | |
| C17-C18 | 14 | 5.0 | 1.8 | 1 | |
| C19-C20 | 11 | 5.0 | 1.8 | 1 | |
| C21-C22 | 8.0 | 5.0 | 1.8 | 1 | |
| C23-C24 | 6.4 | 5.0 | 1.7 | 1 | |
| C25-C28 | 12 | 5.0 | 2.4 | 1 | |
| C29-C32 | 13 | 5.0 | 2.4 | 1 | |
| C33-C36 | 8.6 | 5.0 | 2.6 | 1 | |
| C37-C40 | 4.6 | 5.0 | 1.6 | 1 | J |
| C8-C40 Total | 93 | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 101 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0904 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-15-500-15** | **N/A** | **Soil** | **GC 46** | **06/12/13** | **06/13/13 17:39** | **130612B12** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | ND | 5.0 | 1.8 | 1 | |
| C19-C20 | ND | 5.0 | 1.8 | 1 | |
| C21-C22 | ND | 5.0 | 1.8 | 1 | |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | ND | 5.0 | 2.4 | 1 | |
| C29-C32 | ND | 5.0 | 2.4 | 1 | |
| C33-C36 | ND | 5.0 | 2.6 | 1 | |
| C37-C40 | ND | 5.0 | 1.6 | 1 | |
| C8-C40 Total | ND | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 108 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0904 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C10-TOP** | **13-04-0904-10-B** | **04/10/13 10:10** | **Sediment** | **GC 57** | **06/12/13** | **06/13/13 04:12** | **130612B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 115 | 42-126 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C10-BOTTOM** | **13-04-0904-11-B** | **04/10/13 10:10** | **Sediment** | **GC 57** | **06/12/13** | **06/13/13 04:44** | **130612B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | 0.34 | 0.50 | 0.15 | 1 | J |
| C11-C12 | 1.4 | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | 1.7 | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 103 | 42-126 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0904 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-13-045-160** | **N/A** | **Soil** | **GC 57** | **06/12/13** | **06/12/13 12:39** | **130612B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 67 | 42-126 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0904 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |

Project: NASSCO South Shipyard Sediment Study



| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C10-TOP** | **13-04-0904-10-A** | **04/10/13 10:10** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 12:00** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 3.93 | 0.750 | 0.259 | 1 | |
| Barium | 80.6 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.204 | 0.250 | 0.137 | 1 | J |
| Cadmium | 0.296 | 0.500 | 0.135 | 1 | J |
| Chromium | 16.2 | 0.250 | 0.142 | 1 | |
| Cobalt | 5.29 | 0.250 | 0.148 | 1 | |
| Copper | 85.1 | 0.500 | 0.135 | 1 | |
| Lead | 23.9 | 0.500 | 0.132 | 1 | |
| Molybdenum | 0.355 | 0.250 | 0.132 | 1 | |
| Nickel | 5.11 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | 0.111 | 0.250 | 0.0857 | 1 | J |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 26.1 | 0.250 | 0.141 | 1 | |
| Zinc | 101 | 1.00 | 0.178 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0904 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C10-BOTTOM** | **13-04-0904-11-A** | **04/10/13 10:10** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 12:01** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 9.22 | 0.750 | 0.259 | 1 | |
| Barium | 115 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.482 | 0.250 | 0.137 | 1 | |
| Cadmium | 1.74 | 0.500 | 0.135 | 1 | |
| Chromium | 43.6 | 0.250 | 0.142 | 1 | |
| Cobalt | 6.68 | 0.250 | 0.148 | 1 | |
| Copper | 113 | 0.500 | 0.135 | 1 | |
| Lead | 69.0 | 0.500 | 0.132 | 1 | |
| Molybdenum | 0.779 | 0.250 | 0.132 | 1 | |
| Nickel | 10.4 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | 1.28 | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 40.7 | 0.250 | 0.141 | 1 | |
| Zinc | 224 | 1.00 | 0.178 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0904 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-01-002-16915** | **N/A** | **Soil** | **ICP 7300** | **06/12/13** | **06/13/13 23:17** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | ND | 0.750 | 0.259 | 1 | |
| Barium | ND | 0.500 | 0.154 | 1 | |
| Beryllium | ND | 0.250 | 0.137 | 1 | |
| Cadmium | ND | 0.500 | 0.135 | 1 | |
| Chromium | ND | 0.250 | 0.142 | 1 | |
| Cobalt | ND | 0.250 | 0.148 | 1 | |
| Copper | ND | 0.500 | 0.135 | 1 | |
| Lead | ND | 0.500 | 0.132 | 1 | |
| Molybdenum | ND | 0.250 | 0.132 | 1 | |
| Nickel | ND | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | ND | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | ND | 0.250 | 0.141 | 1 | |
| Zinc | ND | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0904 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C10-TOP** | **13-04-0904-10-A** | **04/10/13 10:10** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 20:22** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.153 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C10-BOTTOM** | **13-04-0904-11-A** | **04/10/13 10:10** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 20:25** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 1.27 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-04-007-9356** | **N/A** | **Soil** | **Mercury** | **06/12/13** | **06/12/13 19:51** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | ND | 0.0835 | 0.00588 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0904 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C10-TOP** | **13-04-0904-10-A** | **04/10/13 10:10** | **Sediment** | **GC 31** | **06/13/13** | **06/18/13 11:57** | **130613L14** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | 24 | 10 | 2.9 | 1 | |
| Aroclor-1254 | 62 | 10 | 2.4 | 1 | |
| Aroclor-1260 | 31 | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 81 | 50-130 | |
| Decachlorobiphenyl | 90 | 50-130 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C10-BOTTOM** | **13-04-0904-11-A** | **04/10/13 10:10** | **Sediment** | **GC 31** | **06/13/13** | **06/18/13 12:16** | **130613L14** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 50 | 14 | 5 | |
| Aroclor-1221 | ND | 50 | 13 | 5 | |
| Aroclor-1232 | ND | 50 | 11 | 5 | |
| Aroclor-1242 | ND | 50 | 12 | 5 | |
| Aroclor-1248 | 170 | 50 | 14 | 5 | |
| Aroclor-1254 | 250 | 50 | 12 | 5 | |
| Aroclor-1260 | 88 | 50 | 12 | 5 | |
| Aroclor-1262 | ND | 50 | 12 | 5 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 63 | 50-130 | |
| Decachlorobiphenyl | 197 | 50-130 | 1,2,7 |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0904 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-12-565-340** | **N/A** | **Soil** | **GC 31** | **06/13/13** | **06/18/13 10:40** | **130613L14** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | ND | 10 | 2.9 | 1 | |
| Aroclor-1254 | ND | 10 | 2.4 | 1 | |
| Aroclor-1260 | ND | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 80 | 50-130 | |
| Decachlorobiphenyl | 86 | 50-130 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0904 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **GC 46** | **06/12/13** | **06/13/13 18:12** | **130612S12** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| TPH as Diesel | 78.67 | 400.0 | 506.3 | 107 | 599.0 | 130 | 64-130 | 17 | 0-15 | 4 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0904 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **GC 57** | **06/12/13** | **06/12/13 19:44** | **130612S01** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| GRO (C4-C12) Total | 1.771 | 10.00 | 3.056 | 13 | 3.441 | 17 | 48-114 | 12 | 0-25 | 3 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0904 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:26** | **130612S08** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 3.137 | 13 | 4.170 | 17 | 50-115 | 28 | 0-20 | 3,4 |
| Arsenic | 7.019 | 25.00 | 31.38 | 97 | 33.08 | 104 | 75-125 | 5 | 0-20 | |
| Barium | 77.89 | 25.00 | 104.4 | 106 | 104.6 | 107 | 75-125 | 0 | 0-20 | |
| Beryllium | 0.3681 | 25.00 | 24.97 | 98 | 26.62 | 105 | 75-125 | 6 | 0-20 | |
| Cadmium | 2.118 | 25.00 | 25.41 | 93 | 27.20 | 100 | 75-125 | 7 | 0-20 | |
| Chromium | 56.89 | 25.00 | 79.48 | 90 | 83.39 | 106 | 75-125 | 5 | 0-20 | |
| Cobalt | 6.268 | 25.00 | 31.06 | 99 | 33.09 | 107 | 75-125 | 6 | 0-20 | |
| Copper | 130.4 | 25.00 | 155.7 | 4X | 154.6 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 64.02 | 25.00 | 79.41 | 62 | 104.9 | 163 | 75-125 | 28 | 0-20 | 3,4 |
| Molybdenum | 1.256 | 25.00 | 19.88 | 74 | 21.44 | 81 | 75-125 | 8 | 0-20 | 3 |
| Nickel | 11.79 | 25.00 | 36.12 | 97 | 38.66 | 108 | 75-125 | 7 | 0-20 | |
| Selenium | ND | 25.00 | 20.85 | 83 | 22.54 | 90 | 75-125 | 8 | 0-20 | |
| Silver | 1.853 | 12.50 | 13.80 | 96 | 14.56 | 102 | 75-125 | 5 | 0-20 | |
| Thallium | ND | 25.00 | 12.84 | 51 | 17.83 | 71 | 75-125 | 33 | 0-20 | 3,4 |
| Vanadium | 41.15 | 25.00 | 65.57 | 98 | 67.38 | 105 | 75-125 | 3 | 0-20 | |
| Zinc | 223.5 | 25.00 | 243.1 | 4X | 248.6 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0904 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 19:58** | **130612S08** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.8662 | 0.8350 | 1.685 | 98 | 1.721 | 102 | 71-137 | 2 | 0-14 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0904 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-1004-11** | **Sediment** | **GC 31** | **06/13/13** | **06/18/13 16:24** | **130613S14** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | ND | 20.00 | 40.46 | 202 | 37.69 | 188 | 50-135 | 7 | 0-25 | 3 |
| Aroclor-1260 | 123.4 | 20.00 | 90.85 | 0 | 90.65 | 0 | 50-135 | 0 | 0-25 | 3 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - PDS/PDSD

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0904 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | PDS/PDSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **ICP 7300** | **06/12/13 00:00** | **06/14/13 11:28** | **130612S08** |

| Parameter | Sample Conc. | Spike Added | PDS Conc. | PDS %Rec. | PDSD Conc. | PDSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 24.06 | 96 | 24.33 | 97 | 75-125 | 1 | 0-20 | |
| Arsenic | 7.019 | 25.00 | 32.16 | 101 | 31.68 | 99 | 75-125 | 2 | 0-20 | |
| Barium | 77.89 | 25.00 | 104.1 | 105 | 104.8 | 108 | 75-125 | 1 | 0-20 | |
| Beryllium | 0.3681 | 25.00 | 25.81 | 102 | 25.83 | 102 | 75-125 | 0 | 0-20 | |
| Cadmium | 2.118 | 25.00 | 26.46 | 97 | 26.55 | 98 | 75-125 | 0 | 0-20 | |
| Chromium | 56.89 | 25.00 | 81.26 | 98 | 81.29 | 98 | 75-125 | 0 | 0-20 | |
| Cobalt | 6.268 | 25.00 | 31.90 | 103 | 31.74 | 102 | 75-125 | 1 | 0-20 | |
| Copper | 130.4 | 25.00 | 155.3 | 4X | 155.9 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 64.02 | 25.00 | 88.41 | 98 | 88.29 | 97 | 75-125 | 0 | 0-20 | |
| Molybdenum | 1.256 | 25.00 | 25.70 | 98 | 25.51 | 97 | 75-125 | 1 | 0-20 | |
| Nickel | 11.79 | 25.00 | 37.17 | 102 | 36.89 | 100 | 75-125 | 1 | 0-20 | |
| Selenium | ND | 25.00 | 23.17 | 93 | 22.53 | 90 | 75-125 | 3 | 0-20 | |
| Silver | 1.853 | 12.50 | 14.78 | 103 | 14.96 | 105 | 75-125 | 1 | 0-20 | |
| Thallium | ND | 25.00 | 21.46 | 86 | 21.26 | 85 | 75-125 | 1 | 0-20 | |
| Vanadium | 41.15 | 25.00 | 65.69 | 98 | 65.57 | 98 | 75-125 | 0 | 0-20 | |
| Zinc | 223.5 | 25.00 | 247.6 | 4X | 247.8 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0904 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-15-500-15** | **Soil** | **GC 46** | **06/13/13 17:55** | **130612B12** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| TPH as Diesel | 400.0 | 479.6 | 120 | 75-123 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0904 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-13-045-160** | **Soil** | **GC 57** | **06/12/13 13:11** | **130612B01** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| GRO (C4-C12) Total | 10.00 | 8.906 | 89 | 70-124 | |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0904 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **097-01-002-16915** | **Soil** | **ICP 7300** | **06/13/13 23:19** | **130612L08** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | ME CL | Qualifiers |
|---|---|---|---|---|---|---|
| Antimony | 25.00 | 25.43 | 102 | 80-120 | 73-127 | |
| Arsenic | 25.00 | 25.43 | 102 | 80-120 | 73-127 | |
| Barium | 25.00 | 27.85 | 111 | 80-120 | 73-127 | |
| Beryllium | 25.00 | 25.37 | 101 | 80-120 | 73-127 | |
| Cadmium | 25.00 | 26.29 | 105 | 80-120 | 73-127 | |
| Chromium | 25.00 | 26.05 | 104 | 80-120 | 73-127 | |
| Cobalt | 25.00 | 27.11 | 108 | 80-120 | 73-127 | |
| Copper | 25.00 | 25.14 | 101 | 80-120 | 73-127 | |
| Lead | 25.00 | 26.26 | 105 | 80-120 | 73-127 | |
| Molybdenum | 25.00 | 25.63 | 103 | 80-120 | 73-127 | |
| Nickel | 25.00 | 28.06 | 112 | 80-120 | 73-127 | |
| Selenium | 25.00 | 23.91 | 96 | 80-120 | 73-127 | |
| Silver | 12.50 | 13.23 | 106 | 80-120 | 73-127 | |
| Thallium | 25.00 | 25.94 | 104 | 80-120 | 73-127 | |
| Vanadium | 25.00 | 25.32 | 101 | 80-120 | 73-127 | |
| Zinc | 25.00 | 27.69 | 111 | 80-120 | 73-127 | |

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0904 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-04-007-9356** | **Soil** | **Mercury** | **06/12/13 19:54** | **130612L08** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.8350 | 0.8143 | 98 | 85-121 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0904 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-12-565-340** | **Soil** | **GC 31** | **06/18/13 10:59** | **130613L14** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | 20.00 | 18.98 | 95 | 50-135 | |
| Aroclor-1260 | 20.00 | 15.42 | 77 | 50-135 | |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order: 13-04-0904



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| 4 | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range. |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

For any analysis identified as a "field" test with a holding time (HT) </= 15 minutes where the sample is received outside of HT, Calscience will adhere to its internal HT of 24 hours. In cases where sample analysis does not meet Calscience's internal HT, results will be appropriately qualified.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/10/13

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

SAMPLER(S): (SIGNATURE)

P.O. NO.: 1315100800

QUOTE NO.:

LAB USE ONLY: 13-04-0904

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS

Please HOLD samples.
Analysis will be determined at a later date.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM. DO NOT FREEZE COMPOSITE OR GRAIN SIZE SAMPLE

3 Containers = 1x 16oz
1x 8oz
1x grain size bag

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC10-0001 | | 4/10/13 | 1010 | Sed | 3 | | | | X |
| 2 | SD-S-P-NASC10-0102 | | | | | | | | | X |
| 3 | SD-S-P-NASC10-0203 | | | | | | | | | X |
| 4 | SD-S-P-NASC10-0304 | | | | | | | | | X |
| 5 | SD-S-P-NASC10-0405 | | | | | | | | | X |
| 6 | SD-S-P-NASC10-0506 | | | | | | | | | X |
| 7 | SD-S-P-NASC10-0607 | | | | | | | | | X |
| | ~~SD-S-P-NASC10-0708~~ | | | | | 2 | | | | X |
| 8 | SD-S-P-NASC10-Comp | | | | | 1 | | | | X |
| 9 | SD-S-P-NASC10-0708 Plug | | | | | 2 | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | | 04/11/13 | 1445 |
| Relinquished by: (Signature) | Received by: (Signature) | 04/11/13 | 1910 |
| Relinquished by: (Signature) | Received by: (Signature) | | |



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|
| NAS-C1 | | | | |
| SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| SD-S-P-NASC1-0102 | | | | |
| SD-S-P-NASC1-0203 | | | | |
| SD-S-P-NASC1-0304 | | | | |
| SD-S-P-NASC1-0405 | | | | |
| SD-S-P-NASC1-0506 | | | | BOTTOM |
| SD-S-P-NASC1-0607 | | | | |
| SD-S-P-NASC1-0708 | | | | |
| SD-S-P-NASC1-0809 | | | | |
| NAS-C2 | | | | |
| SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| SD-S-P-NASC2-0102 | | | | |
| SD-S-P-NASC2-0203 | | | | |
| SD-S-P-NASC2-0304 | | | | |
| SD-S-P-NASC2-0405 | | | | |
| SD-S-P-NASC2-0506 | | | | BOTTOM |
| SD-S-P-NASC2-0607 | | | | |
| SD-S-P-NASC2-0708 | | | | |
| SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | |
| SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| SD-S-P-NASC3-0102 | | | | |
| SD-S-P-NASC3-0203 | | | | |
| SD-S-P-NASC3-0304 | | | | |
| SD-S-P-NASC3-0405 | | | | |
| SD-S-P-NASC3-0506 | | | | BOTTOM |
| SD-S-P-NASC3-0607 | | | | |
| SD-S-P-NASC3-0708 | | | | |
| SD-S-P-NASC3-0809 | | | | |
| SD-S-P-NASC3-0910 | | | | |
| SD-S-P-NASC3-0910-PLUG | | | | not included[c] |
| NAS-C4 | | | | |
| SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| SD-S-P-NASC4-0102 | | | | |
| SD-S-P-NASC4-0203 | | | | |
| SD-S-P-NASC4-0304 | | | | |
| SD-S-P-NASC4-0405 | | | | |
| SD-S-P-NASC4-0506 | | | | BOTTOM |
| SD-S-P-NASC4-0607 | | | | |
| SD-S-P-NASC4-0708 | | | | |
| SD-S-P-NASC4-0809 | | | | |
| SD-S-P-NASC4-0910 | | | | |
| SD-S-P-NASC4-0910-PLUG | | | | not included[c] |
| NAS-C5 | | | | |
| SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| SD-S-P-NASC5-0102 | | | | |
| SD-S-P-NASC5-0203 | | | | |
| SD-S-P-NASC5-0304 | | | | BOTTOM |
| SD-S-P-NASC5-0405 | | | | |
| SD-S-P-NASC5-0506-PLUG | | | | not included[c] |
| NAS-C6 | | | | |
| SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| SD-S-P-NASC6-0102 | | | | |
| SD-S-P-NASC6-0203 | | | | BOTTOM |
| SD-S-P-NASC6-0304-PLUG | | | | not included[c] |
| NAS-C7 | | | | |
| SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| SD-S-P-NASC7-0102 | | | | |
| SD-S-P-NASC7-0203 | | | | |
| SD-S-P-NASC7-0304 | | | | |
| SD-S-P-NASC7-0405 | | | | BOTTOM |
| SD-S-P-NASC7-0506 | | | | |
| SD-S-P-NASC7-0607 | | | | |
| SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | |
| SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| SD-S-P-NASC8-0102 | | | | |
| SD-S-P-NASC8-0203 | | | | |
| SD-S-P-NASC8-0304 | | | | |
| SD-S-P-NASC8-0405 | | | | |
| SD-S-P-NASC8-0506 | | | | BOTTOM |
| SD-S-P-NASC8-0607 | | | | |
| SD-S-P-NASC8-0708 | | | | |
| SD-S-P-NASC8-0809 | | | | |
| SD-S-P-NASC8-0910 | | | | |
| SD-S-P-NASC8-0910-PLUG | | | | not included[c] |
| NAS-C9 | | | | |
| SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| SD-S-P-NASC9-0102 | | | | |
| SD-S-P-NASC9-0203 | | | | |
| SD-S-P-NASC9-0304 | | | | |
| SD-S-P-NASC9-0405 | | | | BOTTOM |
| SD-S-P-NASC9-0506 | | | | |
| SD-S-P-NASC9-0607 | | | | |
| NAS-C10 | | | | |
| SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| SD-S-P-NASC10-0102 | | | | |
| SD-S-P-NASC10-0203 | | | | |
| SD-S-P-NASC10-0304 | | | | BOTTOM |
| SD-S-P-NASC10-0405 | | | | |
| SD-S-P-NASC10-0506 | | | | |
| SD-S-P-NASC10-0607 | | | | |
| SD-S-P-NASC10-0708 | | | | |
| NAS-C11 | | | | |
| SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| SD-S-P-NASC11-0102 | | | | |
| SD-S-P-NASC11-0203 | | | | |
| SD-S-P-NASC11-0304 | | | | |
| SD-S-P-NASC11-0405 | | | | BOTTOM |
| SD-S-P-NASC11-0506 | | | | |
| SD-S-P-NASC11-0607 | | | | |
| SD-S-P-NASC11-0708 | | | | |
| SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | |
| SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| SD-S-P-NASC12-0102 | | | | |
| SD-S-P-NASC12-0203 | | | | |
| SD-S-P-NASC12-0304 | | | | |
| SD-S-P-NASC12-0405 | | | | BOTTOM |
| SD-S-P-NASC12-0506 | | | | |
| SD-S-P-NASC12-0607 | | | | |
| SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | |
| SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| SD-S-P-NASC13-0102 | | | | |
| SD-S-P-NASC13-0203 | | | | |
| SD-S-P-NASC13-0304 | | | | BOTTOM |
| SD-S-P-NASC13-0405 | | | | |
| SD-S-P-NASC13-0506 | | | | |
| SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | |
| SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| SD-S-P-NASC14-0102 | | | | |
| SD-S-P-NASC14-0203 | | | | BOTTOM |
| SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | |
| SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| SD-S-P-NASC15-0102 | | | | |
| SD-S-P-NASC15-0203 | | | | |
| SD-S-P-NASC15-0304 | | | | BOTTOM |
| SD-S-P-NASC15-0405 | | | | |
| SD-S-P-NASC15-0506 | | | | |

Notes:
0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on
a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.
b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.
A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)
c - sample not included due to low volume available and because it represents native material which will not be dredged



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| ~~13-04-1000-1~~ | ~~SD-S-P-NASC1-0001~~ | COMP-A | 4/11/2013 | 1335 | TOP |
| ~~13-04-1000-2~~ | ~~SD-S-P-NASC1-0102~~ | | | | |
| ~~13-04-1000-3~~ | ~~SD-S-P-NASC1-0203~~ | | | | |
| ~~13-04-1000-4~~ | ~~SD-S-P-NASC1-0304~~ | | | | |
| ~~13-04-1000-5~~ | ~~SD-S-P-NASC1-0405~~ | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| ~~13-04-1111-1~~ | ~~SD-S-P-NASC2-0001~~ | COMP-A | 4/12/2013 | 1021 | TOP |
| ~~13-04-1111-2~~ | ~~SD-S-P-NASC2-0102~~ | | | | |
| ~~13-04-1111-3~~ | ~~SD-S-P-NASC2-0203~~ | | | | |
| ~~13-04-1111-4~~ | ~~SD-S-P-NASC2-0304~~ | | | | |
| ~~13-04-1111-5~~ | ~~SD-S-P-NASC2-0405~~ | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| ~~13-04-1113-1~~ | ~~SD-S-P-NASC3-0001~~ | COMP-A | 4/12/2013 | 751 | TOP |
| ~~13-04-1113-2~~ | ~~SD-S-P-NASC3-0102~~ | | | | |
| ~~13-04-1113-3~~ | ~~SD-S-P-NASC3-0203~~ | | | | |
| ~~13-04-1113-4~~ | ~~SD-S-P-NASC3-0304~~ | | | | |
| ~~13-04-1113-5~~ | ~~SD-S-P-NASC3-0405~~ | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| ~~13-04-1002-1~~ | ~~SD-S-P-NASC4-0001~~ | COMP-A | 4/11/2013 | 930 | TOP |
| ~~13-04-1002-2~~ | ~~SD-S-P-NASC4-0102~~ | | | | |
| ~~13-04-1002-3~~ | ~~SD-S-P-NASC4-0203~~ | | | | |
| ~~13-04-1002-4~~ | ~~SD-S-P-NASC4-0304~~ | | | | |
| ~~13-04-1002-5~~ | ~~SD-S-P-NASC4-0405~~ | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| ~~13-04-1003-1~~ | ~~SD-S-P-NASC5-0001~~ | COMP-A | 4/11/2013 | 755 | TOP |
| ~~13-04-1003-2~~ | ~~SD-S-P-NASC5-0102~~ | | | | |
| ~~13-04-1003-3~~ | ~~SD-S-P-NASC5-0203~~ | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| ~~13-04-1001-1~~ | ~~SD-S-P-NASC6-0001~~ | COMP-B | 4/11/2013 | 1200 | TOP |
| ~~13-04-1001-2~~ | ~~SD-S-P-NASC6-0102~~ | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| ~~13-04-0902-1~~ | ~~SD-S-P-NASC7-0001~~ | COMP-B | 4/10/2013 | 1430 | TOP |
| ~~13-04-0902-2~~ | ~~SD-S-P-NASC7-0102~~ | | | | |
| ~~13-04-0902-3~~ | ~~SD-S-P-NASC7-0203~~ | | | | |
| ~~13-04-0902-4~~ | ~~SD-S-P-NASC7-0304~~ | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| ~~13-04-0903-1~~ | ~~SD-S-P-NASC8-0001~~ | COMP-B | 4/10/2013 | 830 | TOP |
| ~~13-04-0903-2~~ | ~~SD-S-P-NASC8-0102~~ | | | | |
| ~~13-04-0903-3~~ | ~~SD-S-P-NASC8-0203~~ | | | | |
| ~~13-04-0903-4~~ | ~~SD-S-P-NASC8-0304~~ | | | | |
| ~~13-04-0903-5~~ | ~~SD-S-P-NASC8-0405~~ | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| ~~13-04-0901-1~~ | ~~SD-S-P-NASC9-0001~~ | COMP-B | 4/10/2013 | 1315 | TOP |
| ~~13-04-0901-2~~ | ~~SD-S-P-NASC9-0102~~ | | | | |
| ~~13-04-0901-3~~ | ~~SD-S-P-NASC9-0203~~ | | | | |
| ~~13-04-0901-4~~ | ~~SD-S-P-NASC9-0304~~ | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607-PLUG~~ | | | | |
| NAS-C10 | | | | | |
| ~~13-04-0904-1~~ | ~~SD-S-P-NASC10-0001~~ | COMP-D | 4/10/2013 | 1010 | TOP |
| ~~13-04-0904-2~~ | ~~SD-S-P-NASC10-0102~~ | | | | |
| ~~13-04-0904-3~~ | ~~SD-S-P-NASC10-0203~~ | | | | |
| ~~13-04-0904-4~~ | ~~SD-S-P-NASC10-0304~~ | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-8 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| ~~13-04-0778-1~~ | ~~SD-S-P-NASC11-0001~~ | COMP-D | 4/9/2013 | 1525 | TOP |
| ~~13-04-0778-2~~ | ~~SD-S-P-NASC11-0102~~ | | | | |
| ~~13-04-0778-3~~ | ~~SD-S-P-NASC11-0203~~ | | | | |
| ~~13-04-0778-4~~ | ~~SD-S-P-NASC11-0304~~ | | | | |
| ~~13-04-0778-5~~ | ~~SD-S-P-NASC11-0405~~ | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| ~~13-04-0780-1~~ | ~~SD-S-P-NASC12-0001~~ | COMP-D | 4/9/2013 | 1410 | TOP |
| ~~13-04-0780-2~~ | ~~SD-S-P-NASC12-0102~~ | | | | |
| ~~13-04-0780-3~~ | ~~SD-S-P-NASC12-0203~~ | | | | |
| ~~13-04-0780-4~~ | ~~SD-S-P-NASC12-0304~~ | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| ~~13-04-0781-1~~ | ~~SD-S-P-NASC13-0001~~ | COMP-E | 4/9/2013 | 1055 | TOP |
| ~~13-04-0781-2~~ | ~~SD-S-P-NASC13-0102~~ | | | | |
| ~~13-04-0781-3~~ | ~~SD-S-P-NASC13-0203~~ | | | | |
| ~~13-04-0781-4~~ | ~~SD-S-P-NASC13-0304~~ | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| ~~13-04-0782-1~~ | ~~SD-S-P-NASC14-0001~~ | COMP-E | 4/9/2013 | 815 | TOP |
| ~~13-04-0782-2~~ | ~~SD-S-P-NASC14-0102~~ | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| ~~13-04-0779-1~~ | ~~SD-S-P-NASC15-0001~~ | COMP-E | 4/9/2013 | 940 | TOP |
| ~~13-04-0779-2~~ | ~~SD-S-P-NASC15-0102~~ | | | | |
| ~~13-04-0779-3~~ | ~~SD-S-P-NASC15-0203~~ | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0904

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/11/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.8 °C - 0.2 °C (CF) = 1.6 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: NB

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: NB

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: HH

| SAMPLE CONDITION: | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ 2

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** HH

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** TN

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** TN



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Calscience Environmental Laboratories, Inc.

# CALSCIENCE

## WORK ORDER NUMBER: 13-04-0778

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard Sediment Study

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 06/20/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Accredited in accordance with nelac

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

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Work Order Number: 13-04-0778


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Calscience Environmental Laboratories, Inc.

# CASE NARRATIVE

**Calscience Work Order No.: 13-04-0778**
**Project ID: NASSCO Shipyard Sediment Study**

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

Ten sediment samples were received for this project on April 10, 2013. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 1.5°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in freezers pending chemistry testing.

On June 12, 2013 samples were composited into two samples as per client instructions.

COC discrepancies were noted in the Sample Anomaly Form.

***Tests Performed***

The two composite samples were analyzed for the following analyses:

C8-C40 by EPA 8015B (M)
C4-C12 by EPA 8015B (M)
Title 22 Metals by EPA 6010B
Mercury by EPA 7471A
PCB Aroclors by EPA 8082

***Data Summary***

Holding times

All samples were analyzed past the EPA recommended holding times for TPH C4-12, TPH-C8-40, PCB Aroclors and Mercury. However, all samples were frozen (-20 °C) upon receipt at the laboratory and remained in that condition until sample preparation/analysis. Per the Puget Sound Protocol (and other references), which states the holding time for sediments may be extended up to one year if kept frozen after collection, the samples were analyzed within the allowable one year holding time. In addition, PCBs are known to be very stable compounds, and SW-846 Ch.4, Table 4-1 (Rev. 4) lists “None” as the recommended holding time for PCBs. However, because the samples were analyzed outside of normal EPA hold times, the data is flagged as such.

Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

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Blanks

Concentrations of target analytes in the method blank were found to be below reporting limits for all analyses.

Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the MDL, and where applicable, "J" flags were reported.

Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test. All parameters were within established control limits.

Matrix Spikes

Matrix spikes and matrix spike duplicates were performed for each applicable analysis on project samples. All parameters were within the acceptable control limits unless otherwise noted.

For C8-C40 by EPA 8015B (M) matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

For C4-C12 by EPA 8015B (M) matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

For Title 22 Metals by EPA 6010B matrix spike and matrix spike duplicate recoveries were outside the established control limits for antimony and barium. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action. The concentrations of copper and zinc in the sample were over four times the spike amount, therefore the recoveries could not be calculated.

For PCB Aroclors by EPA 8082 matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

Surrogates

Surrogate recoveries for all applicable tests and samples were within acceptable control limits.

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Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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Calscience Environmental Laboratories, Inc.

# Work Order Narrative

Work Order: 13-04-0778



**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/10/13. They were assigned to Work Order 13-04-0778.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with an immediate holding time (HT </= 15 minutes --40CFR-136.3 Table II footnote 4), is considered a "field" test and reported samples results are not flagged unless the analysis is performed beyond 24 hours of the time of collection.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Calscience Environmental Laboratories, Inc.

# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC<br>27201 Puerta Real, Suite 350<br>Mission Viejo, CA 92691-8306 | Work Order: | 13-04-0778 |
| | | Project Name: | NASSCO South Shipyard Sediment Study |
| | | PO Number: | |
| | | Date Received: | 04/10/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| SD-S-P-NASC11-0001 | 13-04-0778-1 | 04/09/13 15:25 | 3 | Sediment |
| SD-S-P-NASC11-0102 | 13-04-0778-2 | 04/09/13 15:25 | 3 | Sediment |
| SD-S-P-NASC11-0203 | 13-04-0778-3 | 04/09/13 15:25 | 3 | Sediment |
| SD-S-P-NASC11-0304 | 13-04-0778-4 | 04/09/13 15:25 | 3 | Sediment |
| SD-S-P-NASC11-0405 | 13-04-0778-5 | 04/09/13 15:25 | 3 | Sediment |
| SD-S-P-NASC11-0506 | 13-04-0778-6 | 04/09/13 15:25 | 3 | Sediment |
| SD-S-P-NASC11-0607 | 13-04-0778-7 | 04/09/13 15:25 | 3 | Sediment |
| SD-S-P-NASC11-0708 | 13-04-0778-8 | 04/09/13 15:25 | 3 | Sediment |
| SD-S-P-NASC11-0809 | 13-04-0778-9 | 04/09/13 15:25 | 3 | Sediment |
| SD-S-P-NASC11-Plug | 13-04-0778-10 | 04/09/13 15:25 | 1 | Sediment |
| COMP-C11-TOP | 13-04-0778-11 | 04/09/13 15:25 | 1 | Sediment |
| COMP-C11-BOTTOM | 13-04-0778-12 | 04/09/13 15:25 | 1 | Sediment |

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0778 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C11-TOP** | **13-04-0778-11-A** | **04/09/13 15:25** | **Sediment** | **GC 46** | **06/12/13** | **06/13/13 18:45** | **130612B12** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | 5.2 | 5.0 | 1.8 | 1 | |
| C15-C16 | 9.3 | 5.0 | 1.8 | 1 | |
| C17-C18 | 11 | 5.0 | 1.8 | 1 | |
| C19-C20 | 10 | 5.0 | 1.8 | 1 | |
| C21-C22 | 6.4 | 5.0 | 1.8 | 1 | |
| C23-C24 | 4.9 | 5.0 | 1.7 | 1 | J |
| C25-C28 | 8.8 | 5.0 | 2.4 | 1 | |
| C29-C32 | 10 | 5.0 | 2.4 | 1 | |
| C33-C36 | 7.6 | 5.0 | 2.6 | 1 | |
| C37-C40 | 3.4 | 5.0 | 1.6 | 1 | J |
| C8-C40 Total | 77 | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 116 | 61-145 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0778 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C11-BOTTOM** | **13-04-0778-12-A** | **04/09/13 15:25** | **Sediment** | **GC 46** | **06/12/13** | **06/13/13 19:33** | **130612B12** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | 3.4 | 5.0 | 1.8 | 1 | J |
| C15-C16 | 5.8 | 5.0 | 1.8 | 1 | |
| C17-C18 | 7.1 | 5.0 | 1.8 | 1 | |
| C19-C20 | 6.1 | 5.0 | 1.8 | 1 | |
| C21-C22 | 4.8 | 5.0 | 1.8 | 1 | J |
| C23-C24 | 4.1 | 5.0 | 1.7 | 1 | J |
| C25-C28 | 7.4 | 5.0 | 2.4 | 1 | |
| C29-C32 | 8.1 | 5.0 | 2.4 | 1 | |
| C33-C36 | 5.5 | 5.0 | 2.6 | 1 | |
| C37-C40 | 3.1 | 5.0 | 1.6 | 1 | J |
| C8-C40 Total | 55 | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 110 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0778 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-15-500-15** | **N/A** | **Soil** | **GC 46** | **06/12/13** | **06/13/13 17:39** | **130612B12** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | ND | 5.0 | 1.8 | 1 | |
| C19-C20 | ND | 5.0 | 1.8 | 1 | |
| C21-C22 | ND | 5.0 | 1.8 | 1 | |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | ND | 5.0 | 2.4 | 1 | |
| C29-C32 | ND | 5.0 | 2.4 | 1 | |
| C33-C36 | ND | 5.0 | 2.6 | 1 | |
| C37-C40 | ND | 5.0 | 1.6 | 1 | |
| C8-C40 Total | ND | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 108 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0778 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C11-TOP** | **13-04-0778-11-B** | **04/09/13 15:25** | **Sediment** | **GC 57** | **06/12/13** | **06/12/13 19:12** | **130612B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | 0.40 | 0.50 | 0.15 | 1 | J |
| C11-C12 | 1.4 | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | 1.8 | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 83 | 42-126 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C11-BOTTOM** | **13-04-0778-12-A** | **04/09/13 15:25** | **Sediment** | **GC 22** | **06/14/13** | **06/14/13 18:27** | **130614B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | 0.16 | 0.50 | 0.15 | 1 | J |
| C11-C12 | 0.49 | 0.50 | 0.23 | 1 | J |
| GRO (C4-C12) Total | 0.65 | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 82 | 42-126 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0778 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-13-045-160** | **N/A** | **Soil** | **GC 57** | **06/12/13** | **06/12/13 12:39** | **130612B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 67 | 42-126 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-13-045-163** | **N/A** | **Soil** | **GC 22** | **06/14/13** | **06/14/13 12:26** | **130614B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 78 | 42-126 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0778 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C11-TOP** | **13-04-0778-11-A** | **04/09/13 15:25** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:41** | **130612L07** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 6.23 | 0.750 | 0.259 | 1 | |
| Barium | 68.3 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.294 | 0.250 | 0.137 | 1 | |
| Cadmium | 1.22 | 0.500 | 0.135 | 1 | |
| Chromium | 36.0 | 0.250 | 0.142 | 1 | |
| Cobalt | 5.44 | 0.250 | 0.148 | 1 | |
| Copper | 138 | 0.500 | 0.135 | 1 | |
| Lead | 49.8 | 0.500 | 0.132 | 1 | |
| Molybdenum | 0.899 | 0.250 | 0.132 | 1 | |
| Nickel | 8.60 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | 1.18 | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 34.7 | 0.250 | 0.141 | 1 | |
| Zinc | 187 | 1.00 | 0.178 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0778 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C11-BOTTOM** | **13-04-0778-12-A** | **04/09/13 15:25** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:42** | **130612L07** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 5.73 | 0.750 | 0.259 | 1 | |
| Barium | 72.4 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.377 | 0.250 | 0.137 | 1 | |
| Cadmium | 0.704 | 0.500 | 0.135 | 1 | |
| Chromium | 24.1 | 0.250 | 0.142 | 1 | |
| Cobalt | 7.36 | 0.250 | 0.148 | 1 | |
| Copper | 38.5 | 0.500 | 0.135 | 1 | |
| Lead | 21.0 | 0.500 | 0.132 | 1 | |
| Molybdenum | 0.137 | 0.250 | 0.132 | 1 | J |
| Nickel | 7.90 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | 0.142 | 0.250 | 0.0857 | 1 | J |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 46.4 | 0.250 | 0.141 | 1 | |
| Zinc | 81.7 | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0778 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-01-002-16918** | **N/A** | **Soil** | **ICP 7300** | **06/12/13** | **06/13/13 23:15** | **130612L07** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | ND | 0.750 | 0.259 | 1 | |
| Barium | ND | 0.500 | 0.154 | 1 | |
| Beryllium | ND | 0.250 | 0.137 | 1 | |
| Cadmium | ND | 0.500 | 0.135 | 1 | |
| Chromium | ND | 0.250 | 0.142 | 1 | |
| Cobalt | ND | 0.250 | 0.148 | 1 | |
| Copper | ND | 0.500 | 0.135 | 1 | |
| Lead | ND | 0.500 | 0.132 | 1 | |
| Molybdenum | ND | 0.250 | 0.132 | 1 | |
| Nickel | ND | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | ND | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | ND | 0.250 | 0.141 | 1 | |
| Zinc | ND | 1.00 | 0.178 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0778 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C11-TOP** | **13-04-0778-11-A** | **04/09/13 15:25** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 19:56** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.866 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C11-BOTTOM** | **13-04-0778-12-A** | **04/09/13 15:25** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 20:02** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.776 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-04-007-9356** | **N/A** | **Soil** | **Mercury** | **06/12/13** | **06/12/13 19:51** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | ND | 0.0835 | 0.00588 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0778 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C11-TOP** | **13-04-0778-11-A** | **04/09/13 15:25** | **Sediment** | **GC 58** | **06/13/13** | **06/18/13 11:10** | **130613L09** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | 79 | 10 | 2.9 | 1 | |
| Aroclor-1254 | 160 | 10 | 2.4 | 1 | |
| Aroclor-1260 | 77 | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 117 | 50-130 | |
| Decachlorobiphenyl | 117 | 50-130 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C11-BOTTOM** | **13-04-0778-12-A** | **04/09/13 15:25** | **Sediment** | **GC 58** | **06/13/13** | **06/18/13 11:28** | **130613L09** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | 15 | 10 | 2.9 | 1 | |
| Aroclor-1254 | 29 | 10 | 2.4 | 1 | |
| Aroclor-1260 | 15 | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 99 | 50-130 | |
| Decachlorobiphenyl | 125 | 50-130 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0778 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-12-565-339** | **N/A** | **Soil** | **GC 58** | **06/13/13** | **06/18/13 09:58** | **130613L09** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | ND | 10 | 2.9 | 1 | |
| Aroclor-1254 | ND | 10 | 2.4 | 1 | |
| Aroclor-1260 | ND | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 79 | 50-130 | |
| Decachlorobiphenyl | 88 | 50-130 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0778 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **COMP-C11-TOP** | **Sediment** | **GC 46** | **06/12/13** | **06/13/13 18:12** | **130612S12** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| TPH as Diesel | 78.67 | 400.0 | 506.3 | 107 | 599.0 | 130 | 64-130 | 17 | 0-15 | 4 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0778 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **COMP-C11-TOP** | **Sediment** | **GC 57** | **06/12/13** | **06/12/13 19:44** | **130612S01** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| GRO (C4-C12) Total | 1.771 | 10.00 | 3.056 | 13 | 3.441 | 17 | 48-114 | 12 | 0-25 | 3 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0778 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **COMP-C11-BOTTOM** | **Sediment** | **GC 22** | **06/14/13** | **06/14/13 18:59** | **130614S02** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| GRO (C4-C12) Total | 0.6479 | 10.00 | 5.593 | 49 | 4.836 | 42 | 48-114 | 15 | 0-25 | 3 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0778 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **COMP-C11-TOP** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 12:32** | **130612S07A** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 4.854 | 19 | 4.754 | 19 | 50-115 | 2 | 0-20 | 3 |
| Arsenic | 6.231 | 25.00 | 32.63 | 106 | 32.66 | 106 | 75-125 | 0 | 0-20 | |
| Barium | 68.27 | 25.00 | 98.65 | 122 | 123.7 | 222 | 75-125 | 22 | 0-20 | 3,4 |
| Beryllium | 0.2937 | 25.00 | 26.95 | 107 | 26.52 | 105 | 75-125 | 2 | 0-20 | |
| Cadmium | 1.217 | 25.00 | 26.29 | 100 | 26.10 | 100 | 75-125 | 1 | 0-20 | |
| Chromium | 36.00 | 25.00 | 64.79 | 115 | 65.73 | 119 | 75-125 | 1 | 0-20 | |
| Cobalt | 5.444 | 25.00 | 32.20 | 107 | 31.88 | 106 | 75-125 | 1 | 0-20 | |
| Copper | 137.5 | 25.00 | 165.2 | 4X | 160.6 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 49.80 | 25.00 | 78.50 | 115 | 75.99 | 105 | 75-125 | 3 | 0-20 | |
| Molybdenum | 0.8986 | 25.00 | 21.84 | 84 | 21.66 | 83 | 75-125 | 1 | 0-20 | |
| Nickel | 8.600 | 25.00 | 35.09 | 106 | 35.09 | 106 | 75-125 | 0 | 0-20 | |
| Selenium | ND | 25.00 | 22.89 | 92 | 22.86 | 91 | 75-125 | 0 | 0-20 | |
| Silver | 1.180 | 12.50 | 14.18 | 104 | 14.12 | 104 | 75-125 | 0 | 0-20 | |
| Thallium | ND | 25.00 | 22.19 | 89 | 21.49 | 86 | 75-125 | 3 | 0-20 | |
| Vanadium | 34.72 | 25.00 | 61.84 | 108 | 61.72 | 108 | 75-125 | 0 | 0-20 | |
| Zinc | 187.3 | 25.00 | 233.5 | 4X | 271.3 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0778 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **COMP-C11-TOP** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 19:58** | **130612S08** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.8662 | 0.8350 | 1.685 | 98 | 1.721 | 102 | 71-137 | 2 | 0-14 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0778 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 6 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **COMP-C11-TOP** | **Sediment** | **GC 58** | **06/13/13** | **06/18/13 17:03** | **130613S09** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | ND | 20.00 | 125.3 | 627 | 100.0 | 500 | 50-135 | 22 | 0-25 | 3 |
| Aroclor-1260 | 77.40 | 20.00 | 123.1 | 228 | 114.7 | 187 | 50-135 | 7 | 0-25 | 3 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0778 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-15-500-15** | **Soil** | **GC 46** | **06/13/13 17:55** | **130612B12** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| TPH as Diesel | 400.0 | 479.6 | 120 | 75-123 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0778 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-13-045-160** | **Soil** | **GC 57** | **06/12/13 13:11** | **130612B01** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| GRO (C4-C12) Total | 10.00 | 8.906 | 89 | 70-124 | |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0778 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-13-045-163** | **Soil** | **GC 22** | **06/14/13 12:59** | **130614B01** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| GRO (C4-C12) Total | 10.00 | 8.796 | 88 | 70-124 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0778 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **097-01-002-16918** | **Soil** | **ICP 7300** | **06/13/13 23:23** | **130612L07** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | ME CL | Qualifiers |
|---|---|---|---|---|---|---|
| Antimony | 25.00 | 25.66 | 103 | 80-120 | 73-127 | |
| Arsenic | 25.00 | 25.77 | 103 | 80-120 | 73-127 | |
| Barium | 25.00 | 27.89 | 112 | 80-120 | 73-127 | |
| Beryllium | 25.00 | 25.57 | 102 | 80-120 | 73-127 | |
| Cadmium | 25.00 | 26.51 | 106 | 80-120 | 73-127 | |
| Chromium | 25.00 | 26.27 | 105 | 80-120 | 73-127 | |
| Cobalt | 25.00 | 27.42 | 110 | 80-120 | 73-127 | |
| Copper | 25.00 | 25.16 | 101 | 80-120 | 73-127 | |
| Lead | 25.00 | 26.54 | 106 | 80-120 | 73-127 | |
| Molybdenum | 25.00 | 26.03 | 104 | 80-120 | 73-127 | |
| Nickel | 25.00 | 28.35 | 113 | 80-120 | 73-127 | |
| Selenium | 25.00 | 24.44 | 98 | 80-120 | 73-127 | |
| Silver | 12.50 | 13.34 | 107 | 80-120 | 73-127 | |
| Thallium | 25.00 | 26.22 | 105 | 80-120 | 73-127 | |
| Vanadium | 25.00 | 25.55 | 102 | 80-120 | 73-127 | |
| Zinc | 25.00 | 27.93 | 112 | 80-120 | 73-127 | |

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0778 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-04-007-9356** | **Soil** | **Mercury** | **06/12/13 19:54** | **130612L08** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.8350 | 0.8143 | 98 | 85-121 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0778 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 6 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-12-565-339** | **Soil** | **GC 58** | **06/18/13 10:16** | **130613L09** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | 20.00 | 18.49 | 92 | 50-135 | |
| Aroclor-1260 | 20.00 | 16.45 | 82 | 50-135 | |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order: 13-04-0778



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| 4 | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range. |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

For any analysis identified as a "field" test with a holding time (HT) </= 15 minutes where the sample is received outside of HT, Calscience will adhere to its internal HT of 24 hours. In cases where sample analysis does not meet Calscience's internal HT, results will be appropriately qualified.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/9/13

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

P.O. NO.: 1315100800

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

QUOTE NO.:

SAMPLER(S): (SIGNATURE)

LAB USE ONLY: 13-04-0778

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)

☐ RWQCB REPORTING ☒ ARCHIVE SAMPLES UNTIL 4 / 30 / 14

SPECIAL INSTRUCTIONS

Please HOLD samples.
Analysis will be determined at a later date.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

1x803. jar
1x1603. jar
1x grain size baggie

## REQUESTED ANALYSIS

Please list tests required

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | HOLD |
|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASCI | -0001 | 4/9/13 | 1525 | sed | 3 | X |
| 2 | | -0102 | 4/9/13 | | | | X |
| 3 | | -0203 | | | | | X |
| 4 | | -0304 | | | | | X |
| 5 | | -0405 | | | | | X |
| 6 | | -0506 | | | | | X |
| 7 | | -0607 | | | | | X |
| 8 | | -0708 | | | | | X |
| 9 | | -0809 | | | | | X |
| 10 | | Plug | | | | 1 | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| Kimbrie Gobbi | | | |
| Barry J. Snyder | | 4/10/13 | 1545 |
| | Dannyle | 4/10/13 | 18:45 |



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|
| NAS-C1 | | | | |
| SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| SD-S-P-NASC1-0102 | | | | |
| SD-S-P-NASC1-0203 | | | | |
| SD-S-P-NASC1-0304 | | | | |
| SD-S-P-NASC1-0405 | | | | |
| SD-S-P-NASC1-0506 | | | | BOTTOM |
| SD-S-P-NASC1-0607 | | | | |
| SD-S-P-NASC1-0708 | | | | |
| SD-S-P-NASC1-0809 | | | | |
| NAS-C2 | | | | |
| SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| SD-S-P-NASC2-0102 | | | | |
| SD-S-P-NASC2-0203 | | | | |
| SD-S-P-NASC2-0304 | | | | |
| SD-S-P-NASC2-0405 | | | | |
| SD-S-P-NASC2-0506 | | | | BOTTOM |
| SD-S-P-NASC2-0607 | | | | |
| SD-S-P-NASC2-0708 | | | | |
| SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | |
| SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| SD-S-P-NASC3-0102 | | | | |
| SD-S-P-NASC3-0203 | | | | |
| SD-S-P-NASC3-0304 | | | | |
| SD-S-P-NASC3-0405 | | | | |
| SD-S-P-NASC3-0506 | | | | BOTTOM |
| SD-S-P-NASC3-0607 | | | | |
| SD-S-P-NASC3-0708 | | | | |
| SD-S-P-NASC3-0809 | | | | |
| SD-S-P-NASC3-0910 | | | | |
| SD-S-P-NASC3-0910-PLUG | | | | not included[c] |
| NAS-C4 | | | | |
| SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| SD-S-P-NASC4-0102 | | | | |
| SD-S-P-NASC4-0203 | | | | |
| SD-S-P-NASC4-0304 | | | | |
| SD-S-P-NASC4-0405 | | | | |
| SD-S-P-NASC4-0506 | | | | BOTTOM |
| SD-S-P-NASC4-0607 | | | | |
| SD-S-P-NASC4-0708 | | | | |
| SD-S-P-NASC4-0809 | | | | |
| SD-S-P-NASC4-0910 | | | | |
| SD-S-P-NASC4-0910-PLUG | | | | not included[c] |
| NAS-C5 | | | | |
| SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| SD-S-P-NASC5-0102 | | | | |
| SD-S-P-NASC5-0203 | | | | |
| SD-S-P-NASC5-0304 | | | | BOTTOM |
| SD-S-P-NASC5-0405 | | | | |
| SD-S-P-NASC5-0506-PLUG | | | | not included[c] |
| NAS-C6 | | | | |
| SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| SD-S-P-NASC6-0102 | | | | |
| SD-S-P-NASC6-0203 | | | | BOTTOM |
| SD-S-P-NASC6-0304-PLUG | | | | not included[c] |
| NAS-C7 | | | | |
| SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| SD-S-P-NASC7-0102 | | | | |
| SD-S-P-NASC7-0203 | | | | |
| SD-S-P-NASC7-0304 | | | | |
| SD-S-P-NASC7-0405 | | | | BOTTOM |
| SD-S-P-NASC7-0506 | | | | |
| SD-S-P-NASC7-0607 | | | | |
| SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | |
| SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| SD-S-P-NASC8-0102 | | | | |
| SD-S-P-NASC8-0203 | | | | |
| SD-S-P-NASC8-0304 | | | | |
| SD-S-P-NASC8-0405 | | | | |
| SD-S-P-NASC8-0506 | | | | BOTTOM |
| SD-S-P-NASC8-0607 | | | | |
| SD-S-P-NASC8-0708 | | | | |
| SD-S-P-NASC8-0809 | | | | |
| SD-S-P-NASC8-0910 | | | | |
| SD-S-P-NASC8-0910-PLUG | | | | not included[c] |
| NAS-C9 | | | | |
| SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| SD-S-P-NASC9-0102 | | | | |
| SD-S-P-NASC9-0203 | | | | |
| SD-S-P-NASC9-0304 | | | | |
| SD-S-P-NASC9-0405 | | | | BOTTOM |
| SD-S-P-NASC9-0506 | | | | |
| SD-S-P-NASC9-0607 | | | | |
| NAS-C10 | | | | |
| SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| SD-S-P-NASC10-0102 | | | | |
| SD-S-P-NASC10-0203 | | | | |
| SD-S-P-NASC10-0304 | | | | |
| SD-S-P-NASC10-0405 | | | | BOTTOM |
| SD-S-P-NASC10-0506 | | | | |
| SD-S-P-NASC10-0607 | | | | |
| SD-S-P-NASC10-0708 | | | | |
| NAS-C11 | | | | |
| SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| SD-S-P-NASC11-0102 | | | | |
| SD-S-P-NASC11-0203 | | | | |
| SD-S-P-NASC11-0304 | | | | |
| SD-S-P-NASC11-0405 | | | | BOTTOM |
| SD-S-P-NASC11-0506 | | | | |
| SD-S-P-NASC11-0607 | | | | |
| SD-S-P-NASC11-0708 | | | | |
| SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | |
| SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| SD-S-P-NASC12-0102 | | | | |
| SD-S-P-NASC12-0203 | | | | |
| SD-S-P-NASC12-0304 | | | | |
| SD-S-P-NASC12-0405 | | | | BOTTOM |
| SD-S-P-NASC12-0506 | | | | |
| SD-S-P-NASC12-0607 | | | | |
| SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | |
| SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| SD-S-P-NASC13-0102 | | | | |
| SD-S-P-NASC13-0203 | | | | |
| SD-S-P-NASC13-0304 | | | | BOTTOM |
| SD-S-P-NASC13-0405 | | | | |
| SD-S-P-NASC13-0506 | | | | |
| SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | |
| SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| SD-S-P-NASC14-0102 | | | | |
| SD-S-P-NASC14-0203 | | | | BOTTOM |
| SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | |
| SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| SD-S-P-NASC15-0102 | | | | |
| SD-S-P-NASC15-0203 | | | | |
| SD-S-P-NASC15-0304 | | | | BOTTOM |
| SD-S-P-NASC15-0405 | | | | |
| SD-S-P-NASC15-0506 | | | | |

Notes:
0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on
a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.
b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.
A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)
c - sample not included due to low volume available and because it represents native material which will not be dredged



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| ~~13-04-1000-1~~ | ~~SD-S-P-NASC1-0001~~ | COMP-A | 4/11/2013 | 1335 | TOP |
| ~~13-04-1000-2~~ | ~~SD-S-P-NASC1-0102~~ | | | | |
| ~~13-04-1000-3~~ | ~~SD-S-P-NASC1-0203~~ | | | | |
| ~~13-04-1000-4~~ | ~~SD-S-P-NASC1-0304~~ | | | | |
| ~~13-04-1000-5~~ | ~~SD-S-P-NASC1-0405~~ | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| ~~13-04-1111-1~~ | ~~SD-S-P-NASC2-0001~~ | COMP-A | 4/12/2013 | 1021 | TOP |
| ~~13-04-1111-2~~ | ~~SD-S-P-NASC2-0102~~ | | | | |
| ~~13-04-1111-3~~ | ~~SD-S-P-NASC2-0203~~ | | | | |
| ~~13-04-1111-4~~ | ~~SD-S-P-NASC2-0304~~ | | | | |
| ~~13-04-1111-5~~ | ~~SD-S-P-NASC2-0405~~ | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| ~~13-04-1113-1~~ | ~~SD-S-P-NASC3-0001~~ | COMP-A | 4/12/2013 | 751 | TOP |
| ~~13-04-1113-2~~ | ~~SD-S-P-NASC3-0102~~ | | | | |
| ~~13-04-1113-3~~ | ~~SD-S-P-NASC3-0203~~ | | | | |
| ~~13-04-1113-4~~ | ~~SD-S-P-NASC3-0304~~ | | | | |
| ~~13-04-1113-5~~ | ~~SD-S-P-NASC3-0405~~ | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| ~~13-04-1002-1~~ | ~~SD-S-P-NASC4-0001~~ | COMP-A | 4/11/2013 | 930 | TOP |
| ~~13-04-1002-2~~ | ~~SD-S-P-NASC4-0102~~ | | | | |
| ~~13-04-1002-3~~ | ~~SD-S-P-NASC4-0203~~ | | | | |
| ~~13-04-1002-4~~ | ~~SD-S-P-NASC4-0304~~ | | | | |
| ~~13-04-1002-5~~ | ~~SD-S-P-NASC4-0405~~ | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| ~~13-04-1003-1~~ | ~~SD-S-P-NASC5-0001~~ | COMP-A | 4/11/2013 | 755 | TOP |
| ~~13-04-1003-2~~ | ~~SD-S-P-NASC5-0102~~ | | | | |
| ~~13-04-1003-3~~ | ~~SD-S-P-NASC5-0203~~ | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| ~~13-04-1001-1~~ | ~~SD-S-P-NASC6-0001~~ | COMP-A | 4/11/2013 | 1200 | TOP |
| ~~13-04-1001-2~~ | ~~SD-S-P-NASC6-0102~~ | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| ~~13-04-0902-1~~ | ~~SD-S-P-NASC7-0001~~ | COMP-A | 4/10/2013 | 1430 | TOP |
| ~~13-04-0902-2~~ | ~~SD-S-P-NASC7-0102~~ | | | | |
| ~~13-04-0902-3~~ | ~~SD-S-P-NASC7-0203~~ | | | | |
| ~~13-04-0902-4~~ | ~~SD-S-P-NASC7-0304~~ | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| ~~13-04-0903-1~~ | ~~SD-S-P-NASC8-0001~~ | COMP-A | 4/10/2013 | 830 | TOP |
| ~~13-04-0903-2~~ | ~~SD-S-P-NASC8-0102~~ | | | | |
| ~~13-04-0903-3~~ | ~~SD-S-P-NASC8-0203~~ | | | | |
| ~~13-04-0903-4~~ | ~~SD-S-P-NASC8-0304~~ | | | | |
| ~~13-04-0903-5~~ | ~~SD-S-P-NASC8-0405~~ | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| ~~13-04-0901-1~~ | ~~SD-S-P-NASC9-0001~~ | COMP-A | 4/10/2013 | 1315 | TOP |
| ~~13-04-0901-2~~ | ~~SD-S-P-NASC9-0102~~ | | | | |
| ~~13-04-0901-3~~ | ~~SD-S-P-NASC9-0203~~ | | | | |
| ~~13-04-0901-4~~ | ~~SD-S-P-NASC9-0304~~ | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607-PLUG~~ | | | | |
| NAS-C10 | | | | | |
| ~~13-04-0904-1~~ | ~~SD-S-P-NASC10-0001~~ | COMP-D | 4/10/2013 | 1010 | TOP |
| ~~13-04-0904-2~~ | ~~SD-S-P-NASC10-0102~~ | | | | |
| ~~13-04-0904-3~~ | ~~SD-S-P-NASC10-0203~~ | | | | |
| ~~13-04-0904-4~~ | ~~SD-S-P-NASC10-0304~~ | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-8 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| ~~13-04-0778-1~~ | ~~SD-S-P-NASC11-0001~~ | COMP-D | 4/9/2013 | 1525 | TOP |
| ~~13-04-0778-2~~ | ~~SD-S-P-NASC11-0102~~ | | | | |
| ~~13-04-0778-3~~ | ~~SD-S-P-NASC11-0203~~ | | | | |
| ~~13-04-0778-4~~ | ~~SD-S-P-NASC11-0304~~ | | | | |
| ~~13-04-0778-5~~ | ~~SD-S-P-NASC11-0405~~ | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| ~~13-04-0780-1~~ | ~~SD-S-P-NASC12-0001~~ | COMP-D | 4/9/2013 | 1410 | TOP |
| ~~13-04-0780-2~~ | ~~SD-S-P-NASC12-0102~~ | | | | |
| ~~13-04-0780-3~~ | ~~SD-S-P-NASC12-0203~~ | | | | |
| ~~13-04-0780-4~~ | ~~SD-S-P-NASC12-0304~~ | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| ~~13-04-0781-1~~ | ~~SD-S-P-NASC13-0001~~ | COMP-E | 4/9/2013 | 1055 | TOP |
| ~~13-04-0781-2~~ | ~~SD-S-P-NASC13-0102~~ | | | | |
| ~~13-04-0781-3~~ | ~~SD-S-P-NASC13-0203~~ | | | | |
| ~~13-04-0781-4~~ | ~~SD-S-P-NASC13-0304~~ | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| ~~13-04-0782-1~~ | ~~SD-S-P-NASC14-0001~~ | COMP-E | 4/9/2013 | 815 | TOP |
| ~~13-04-0782-2~~ | ~~SD-S-P-NASC14-0102~~ | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| ~~13-04-0779-1~~ | ~~SD-S-P-NASC15-0001~~ | COMP-E | 4/9/2013 | 940 | TOP |
| ~~13-04-0779-2~~ | ~~SD-S-P-NASC15-0102~~ | | | | |
| ~~13-04-0779-3~~ | ~~SD-S-P-NASC15-0203~~ | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0778

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/10/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.7 °C - 0.2 °C (CF) = 1.5 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: [illegible]

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: [illegible]

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: AMC

| **SAMPLE CONDITION:** | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ WSC 04-10-13 | ☑ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ Z

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** AMC

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WSC

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WK



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0 7 7 8

# SAMPLE ANOMALY FORM

## SAMPLES - CONTAINERS & LABELS:

Comments:

- ☐ Sample(s) NOT RECEIVED but listed on COC
- ☐ Sample(s) received but NOT LISTED on COC
- ☐ Holding time expired – list sample ID(s) and test
- ☐ Insufficient quantities for analysis – list test
- ☐ Improper container(s) used – list test
- ☐ Improper preservative used – list test
- ☐ No preservative noted on COC or label – list test & notify lab
- ☐ Sample labels illegible – note test/container type
- ☑ Sample label(s) do not match COC – Note in comments
  - ☐ Sample ID
  - ☐ Date and/or Time Collected
  - ☐ Project Information
  - ☑ # of Container(s)
  - ☐ Analysis
- ☐ Sample container(s) compromised – Note in comments
  - ☐ Water present in sample container
  - ☐ Broken
- ☐ Sample container(s) not labeled
- ☐ Air sample container(s) compromised – Note in comments
  - ☐ Flat
  - ☐ Very low in volume
  - ☐ Leaking (Not transferred - duplicate bag submitted)
  - ☐ Leaking (transferred into Calscience Tedlar® Bag*)
  - ☐ Leaking (transferred into Client's Tedlar® Bag*)
- ☐ Other: _____

(H0) received 2 containers
1 x 16 OZ Jar +
1 plastic bag

## HEADSPACE – Containers with Bubble > 6mm or ¼ inch:

| Sample # | Container ID(s) | # of Vials Received | Sample # | Container ID(s) | # of Vials Received | Sample # | Container ID(s) | # of Cont. received | Analysis |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Comments: _____

*Transferred at Client's request.

Initial / Date: WS 04 /10 /13



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| 13-04-1004-1 | SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| 13-04-1004-2 | SD-S-P-NASC1-0102 | | | | |
| 13-04-1004-3 | SD-S-P-NASC1-0203 | | | | |
| 13-04-1004-4 | SD-S-P-NASC1-0304 | | | | |
| 13-04-1004-5 | SD-S-P-NASC1-0405 | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| 13-04-1111-1 | SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| 13-04-1111-2 | SD-S-P-NASC2-0102 | | | | |
| 13-04-1111-3 | SD-S-P-NASC2-0203 | | | | |
| 13-04-1111-4 | SD-S-P-NASC2-0304 | | | | |
| 13-04-1111-5 | SD-S-P-NASC2-0405 | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| 13-04-1113-1 | SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| 13-04-1113-2 | SD-S-P-NASC3-0102 | | | | |
| 13-04-1113-3 | SD-S-P-NASC3-0203 | | | | |
| 13-04-1113-4 | SD-S-P-NASC3-0304 | | | | |
| 13-04-1113-5 | SD-S-P-NASC3-0405 | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| 13-04-1002-1 | SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| 13-04-1002-2 | SD-S-P-NASC4-0102 | | | | |
| 13-04-1002-3 | SD-S-P-NASC4-0203 | | | | |
| 13-04-1002-4 | SD-S-P-NASC4-0304 | | | | |
| 13-04-1002-5 | SD-S-P-NASC4-0405 | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| 13-04-1003-1 | SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| 13-04-1003-2 | SD-S-P-NASC5-0102 | | | | |
| 13-04-1003-3 | SD-S-P-NASC5-0203 | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| 13-04-1001-1 | SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| 13-04-1001-2 | SD-S-P-NASC6-0102 | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| 13-04-0902-1 | SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| 13-04-0902-2 | SD-S-P-NASC7-0102 | | | | |
| 13-04-0902-3 | SD-S-P-NASC7-0203 | | | | |
| 13-04-0902-4 | SD-S-P-NASC7-0304 | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| 13-04-0903-1 | SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| 13-04-0903-2 | SD-S-P-NASC8-0102 | | | | |
| 13-04-0903-3 | SD-S-P-NASC8-0203 | | | | |
| 13-04-0903-4 | SD-S-P-NASC8-0304 | | | | |
| 13-04-0903-5 | SD-S-P-NASC8-0405 | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| 13-04-0901-1 | SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| 13-04-0901-2 | SD-S-P-NASC9-0102 | | | | |
| 13-04-0901-3 | SD-S-P-NASC9-0203 | | | | |
| 13-04-0901-4 | SD-S-P-NASC9-0304 | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607 PLUG~~ | | | | |
| NAS-C10 | | | | | |
| 13-04-0904-1 | SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| 13-04-0904-2 | SD-S-P-NASC10-0102 | | | | |
| 13-04-0904-3 | SD-S-P-NASC10-0203 | | | | |
| 13-04-0904-4 | SD-S-P-NASC10-0304 | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-9 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| 13-04-0778-1 | SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| 13-04-0778-2 | SD-S-P-NASC11-0102 | | | | |
| 13-04-0778-3 | SD-S-P-NASC11-0203 | | | | |
| 13-04-0778-4 | SD-S-P-NASC11-0304 | | | | |
| 13-04-0778-5 | SD-S-P-NASC11-0405 | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| 13-04-0780-1 | SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| 13-04-0780-2 | SD-S-P-NASC12-0102 | | | | |
| 13-04-0780-3 | SD-S-P-NASC12-0203 | | | | |
| 13-04-0780-4 | SD-S-P-NASC12-0304 | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| 13-04-0781-1 | SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| 13-04-0781-2 | SD-S-P-NASC13-0102 | | | | |
| 13-04-0781-3 | SD-S-P-NASC13-0203 | | | | |
| 13-04-0781-4 | SD-S-P-NASC13-0304 | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| 13-04-0782-1 | SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| 13-04-0782-2 | SD-S-P-NASC14-0102 | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| 13-04-0779-1 | SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| 13-04-0779-2 | SD-S-P-NASC15-0102 | | | | |
| 13-04-0779-3 | SD-S-P-NASC15-0203 | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged

Calscience Environmental Laboratories, Inc.

# CALSCIENCE

## WORK ORDER NUMBER: 13-04-0780

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard Sediment Study

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 06/20/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

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Client Project Name: NASSCO South Shipyard Sediment Study
Work Order Number: 13-04-0780


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Calscience Environmental Laboratories, Inc.

# CASE NARRATIVE

## Calscience Work Order No.: 13-04-0780
## Project ID: NASSCO Shipyard Sediment Study

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

Nine sediment samples were received for this project on April 10, 2013. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 1.5°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in refrigeration units pending chemistry testing.

On June 12, 2013 samples were composited into two samples as per client instructions.

COC discrepancies were noted in the Sample Anomaly Form.

***Tests Performed***

The two composite samples were analyzed for the following analyses:

C8-C40 by EPA 8015B (M)
C4-C12 by EPA 8015B (M)
Title 22 Metals by EPA 6010B
Mercury by EPA 7471A
PCB Aroclors by EPA 8082

***Data Summary***

<u>Holding times</u>

All samples were analyzed past the EPA recommended holding times for TPH C4-12, TPH-C8-40, PCB Aroclors and Mercury. However, all samples were frozen (-20 °C) upon receipt at the laboratory and remained in that condition until sample preparation/analysis. Per the Puget Sound Protocol (and other references), which states the holding time for sediments may be extended up to one year if kept frozen after collection, the samples were analyzed within the allowable one year holding time. In addition, PCBs are known to be very stable compounds, and SW-846 Ch.4, Table 4-1 (Rev. 4) lists “None” as the recommended holding time for PCBs. However, because the samples were analyzed outside of normal EPA hold times, the data is flagged as such.

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Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

Concentrations of target analytes in the method blank were found to be below reporting limits for all analyses.

Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the MDL, and where applicable, "J" flags were reported.

Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test. All parameters were within established control limits.

Matrix Spikes

Matrix spikes and matrix spike duplicates were performed for each applicable analysis on project samples. All parameters were within the acceptable control limits unless otherwise noted.

For C8-C40 by EPA 8015B (M) matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

For C4-C12 by EPA 8015B (M) matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

For Title 22 Metals by EPA 6010B matrix spike and/or matrix spike duplicate recoveries were outside the established control limits for antimony, lead, molybdenum and thallium. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action. The concentrations of copper and zinc in the sample were over four times the spike amount, therefore the recoveries could not be calculated.

For PCB Aroclors by EPA 8082 matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

Surrogates

Return to Contents

Surrogate recoveries for all applicable tests and samples were within acceptable control limits.

Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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Calscience Environmental Laboratories, Inc.

# Work Order Narrative

Work Order: 13-04-0780 Page 1 of 1

**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/10/13. They were assigned to Work Order 13-04-0780.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with an immediate holding time (HT </= 15 minutes --40CFR-136.3 Table II footnote 4), is considered a "field" test and reported samples results are not flagged unless the analysis is performed beyond 24 hours of the time of collection.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Calscience Environmental Laboratories, Inc.

# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC<br>27201 Puerta Real, Suite 350<br>Mission Viejo, CA 92691-8306 | Work Order: | 13-04-0780 |
| | | Project Name: | NASSCO South Shipyard Sediment Study |
| | | PO Number: | |
| | | Date Received: | 04/10/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| SD-S-P-NASC12-0001 | 13-04-0780-1 | 04/09/13 14:10 | 3 | Sediment |
| SD-S-P-NASC12-0102 | 13-04-0780-2 | 04/09/13 14:10 | 3 | Sediment |
| SD-S-P-NASC12-0203 | 13-04-0780-3 | 04/09/13 14:10 | 3 | Sediment |
| SD-S-P-NASC12-0304 | 13-04-0780-4 | 04/09/13 14:10 | 3 | Sediment |
| SD-S-P-NASC12-0405 | 13-04-0780-5 | 04/09/13 14:10 | 3 | Sediment |
| SD-S-P-NASC12-0506 | 13-04-0780-6 | 04/09/13 14:10 | 3 | Sediment |
| SD-S-P-NASC12-0607 | 13-04-0780-7 | 04/09/13 14:10 | 3 | Sediment |
| SD-S-P-NASC12-0708 | 13-04-0780-8 | 04/09/13 14:10 | 3 | Sediment |
| SD-S-P-NASC12-Plug | 13-04-0780-9 | 04/09/13 14:10 | 3 | Sediment |
| COMP-C12-TOP | 13-04-0780-10 | 04/09/13 14:10 | 1 | Sediment |
| COMP-C12-BOTTOM | 13-04-0780-11 | 04/09/13 14:10 | 1 | Sediment |

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0780 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C12-TOP** | **13-04-0780-10-A** | **04/09/13 14:10** | **Sediment** | **GC 46** | **06/12/13** | **06/13/13 20:39** | **130612B12** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | 1.9 | 5.0 | 1.7 | 1 | J |
| C13-C14 | 6.9 | 5.0 | 1.8 | 1 | |
| C15-C16 | 12 | 5.0 | 1.8 | 1 | |
| C17-C18 | 16 | 5.0 | 1.8 | 1 | |
| C19-C20 | 15 | 5.0 | 1.8 | 1 | |
| C21-C22 | 9.1 | 5.0 | 1.8 | 1 | |
| C23-C24 | 6.7 | 5.0 | 1.7 | 1 | |
| C25-C28 | 13 | 5.0 | 2.4 | 1 | |
| C29-C32 | 15 | 5.0 | 2.4 | 1 | |
| C33-C36 | 10 | 5.0 | 2.6 | 1 | |
| C37-C40 | 7.3 | 5.0 | 1.6 | 1 | |
| C8-C40 Total | 110 | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 100 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0780 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C12-BOTTOM** | **13-04-0780-11-A** | **04/09/13 14:10** | **Sediment** | **GC 46** | **06/12/13** | **06/13/13 20:55** | **130612B12** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | ND | 5.0 | 1.8 | 1 | |
| C19-C20 | ND | 5.0 | 1.8 | 1 | |
| C21-C22 | ND | 5.0 | 1.8 | 1 | |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | ND | 5.0 | 2.4 | 1 | |
| C29-C32 | 3.2 | 5.0 | 2.4 | 1 | J |
| C33-C36 | ND | 5.0 | 2.6 | 1 | |
| C37-C40 | ND | 5.0 | 1.6 | 1 | |
| C8-C40 Total | 3.2 | 5.0 | 1.6 | 1 | J |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 105 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0780 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-15-500-15** | **N/A** | **Soil** | **GC 46** | **06/12/13** | **06/13/13 17:39** | **130612B12** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | ND | 5.0 | 1.8 | 1 | |
| C19-C20 | ND | 5.0 | 1.8 | 1 | |
| C21-C22 | ND | 5.0 | 1.8 | 1 | |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | ND | 5.0 | 2.4 | 1 | |
| C29-C32 | ND | 5.0 | 2.4 | 1 | |
| C33-C36 | ND | 5.0 | 2.6 | 1 | |
| C37-C40 | ND | 5.0 | 1.6 | 1 | |
| C8-C40 Total | ND | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 108 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0780 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C12-TOP** | **13-04-0780-10-B** | **04/09/13 14:10** | **Sediment** | **GC 57** | **06/12/13** | **06/12/13 22:23** | **130612B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | 0.46 | 0.50 | 0.23 | 1 | J |
| GRO (C4-C12) Total | 0.46 | 0.50 | 0.23 | 1 | J |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 74 | 42-126 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C12-BOTTOM** | **13-04-0780-11-B** | **04/09/13 14:10** | **Sediment** | **GC 57** | **06/12/13** | **06/12/13 22:55** | **130612B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 90 | 42-126 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0780 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-13-045-160** | **N/A** | **Soil** | **GC 57** | **06/12/13** | **06/12/13 12:39** | **130612B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 67 | 42-126 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0780 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C12-TOP** | **13-04-0780-10-A** | **04/09/13 14:10** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:57** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 6.90 | 0.750 | 0.259 | 1 | |
| Barium | 69.2 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.319 | 0.250 | 0.137 | 1 | |
| Cadmium | 1.43 | 0.500 | 0.135 | 1 | |
| Chromium | 41.6 | 0.250 | 0.142 | 1 | |
| Cobalt | 6.25 | 0.250 | 0.148 | 1 | |
| Copper | 131 | 0.500 | 0.135 | 1 | |
| Lead | 61.3 | 0.500 | 0.132 | 1 | |
| Molybdenum | 1.38 | 0.250 | 0.132 | 1 | |
| Nickel | 10.4 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | 1.32 | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 38.7 | 0.250 | 0.141 | 1 | |
| Zinc | 256 | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0780 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C12-BOTTOM** | **13-04-0780-11-A** | **04/09/13 14:10** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:59** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 3.54 | 0.750 | 0.259 | 1 | |
| Barium | 52.9 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.225 | 0.250 | 0.137 | 1 | J |
| Cadmium | 0.230 | 0.500 | 0.135 | 1 | J |
| Chromium | 10.9 | 0.250 | 0.142 | 1 | |
| Cobalt | 6.25 | 0.250 | 0.148 | 1 | |
| Copper | 11.2 | 0.500 | 0.135 | 1 | |
| Lead | 6.06 | 0.500 | 0.132 | 1 | |
| Molybdenum | ND | 0.250 | 0.132 | 1 | |
| Nickel | 4.93 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | ND | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 41.5 | 0.250 | 0.141 | 1 | |
| Zinc | 32.2 | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0780 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-01-002-16915** | **N/A** | **Soil** | **ICP 7300** | **06/12/13** | **06/13/13 23:17** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | ND | 0.750 | 0.259 | 1 | |
| Barium | ND | 0.500 | 0.154 | 1 | |
| Beryllium | ND | 0.250 | 0.137 | 1 | |
| Cadmium | ND | 0.500 | 0.135 | 1 | |
| Chromium | ND | 0.250 | 0.142 | 1 | |
| Cobalt | ND | 0.250 | 0.148 | 1 | |
| Copper | ND | 0.500 | 0.135 | 1 | |
| Lead | ND | 0.500 | 0.132 | 1 | |
| Molybdenum | ND | 0.250 | 0.132 | 1 | |
| Nickel | ND | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | ND | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | ND | 0.250 | 0.141 | 1 | |
| Zinc | ND | 1.00 | 0.178 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0780 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C12-TOP** | **13-04-0780-10-A** | **04/09/13 14:10** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 20:24** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 1.15 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C12-BOTTOM** | **13-04-0780-11-A** | **04/09/13 14:10** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 20:26** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.203 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-04-007-9356** | **N/A** | **Soil** | **Mercury** | **06/12/13** | **06/12/13 19:51** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | ND | 0.0835 | 0.00588 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0780 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C12-TOP** | **13-04-0780-10-A** | **04/09/13 14:10** | **Sediment** | **GC 58** | **06/13/13** | **06/18/13 12:40** | **130613L09** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 50 | 14 | 5 | |
| Aroclor-1221 | ND | 50 | 13 | 5 | |
| Aroclor-1232 | ND | 50 | 11 | 5 | |
| Aroclor-1242 | ND | 50 | 12 | 5 | |
| Aroclor-1248 | 190 | 50 | 14 | 5 | |
| Aroclor-1254 | 350 | 50 | 12 | 5 | |
| Aroclor-1260 | 130 | 50 | 12 | 5 | |
| Aroclor-1262 | ND | 50 | 12 | 5 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 67 | 50-130 | |
| Decachlorobiphenyl | 103 | 50-130 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C12-BOTTOM** | **13-04-0780-11-A** | **04/09/13 14:10** | **Sediment** | **GC 58** | **06/13/13** | **06/18/13 12:58** | **130613L09** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | 4.3 | 10 | 2.9 | 1 | J |
| Aroclor-1254 | 7.1 | 10 | 2.4 | 1 | J |
| Aroclor-1260 | ND | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 92 | 50-130 | |
| Decachlorobiphenyl | 111 | 50-130 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0780 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-12-565-339** | **N/A** | **Soil** | **GC 58** | **06/13/13** | **06/18/13 09:58** | **130613L09** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | ND | 10 | 2.9 | 1 | |
| Aroclor-1254 | ND | 10 | 2.4 | 1 | |
| Aroclor-1260 | ND | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 79 | 50-130 | |
| Decachlorobiphenyl | 88 | 50-130 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0780 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **GC 46** | **06/12/13** | **06/13/13 18:12** | **130612S12** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| TPH as Diesel | 78.67 | 400.0 | 506.3 | 107 | 599.0 | 130 | 64-130 | 17 | 0-15 | 4 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0780 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **GC 57** | **06/12/13** | **06/12/13 19:44** | **130612S01** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| GRO (C4-C12) Total | 1.771 | 10.00 | 3.056 | 13 | 3.441 | 17 | 48-114 | 12 | 0-25 | 3 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0780 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:26** | **130612S08** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 3.137 | 13 | 4.170 | 17 | 50-115 | 28 | 0-20 | 3,4 |
| Arsenic | 7.019 | 25.00 | 31.38 | 97 | 33.08 | 104 | 75-125 | 5 | 0-20 | |
| Barium | 77.89 | 25.00 | 104.4 | 106 | 104.6 | 107 | 75-125 | 0 | 0-20 | |
| Beryllium | 0.3681 | 25.00 | 24.97 | 98 | 26.62 | 105 | 75-125 | 6 | 0-20 | |
| Cadmium | 2.118 | 25.00 | 25.41 | 93 | 27.20 | 100 | 75-125 | 7 | 0-20 | |
| Chromium | 56.89 | 25.00 | 79.48 | 90 | 83.39 | 106 | 75-125 | 5 | 0-20 | |
| Cobalt | 6.268 | 25.00 | 31.06 | 99 | 33.09 | 107 | 75-125 | 6 | 0-20 | |
| Copper | 130.4 | 25.00 | 155.7 | 4X | 154.6 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 64.02 | 25.00 | 79.41 | 62 | 104.9 | 163 | 75-125 | 28 | 0-20 | 3,4 |
| Molybdenum | 1.256 | 25.00 | 19.88 | 74 | 21.44 | 81 | 75-125 | 8 | 0-20 | 3 |
| Nickel | 11.79 | 25.00 | 36.12 | 97 | 38.66 | 108 | 75-125 | 7 | 0-20 | |
| Selenium | ND | 25.00 | 20.85 | 83 | 22.54 | 90 | 75-125 | 8 | 0-20 | |
| Silver | 1.853 | 12.50 | 13.80 | 96 | 14.56 | 102 | 75-125 | 5 | 0-20 | |
| Thallium | ND | 25.00 | 12.84 | 51 | 17.83 | 71 | 75-125 | 33 | 0-20 | 3,4 |
| Vanadium | 41.15 | 25.00 | 65.57 | 98 | 67.38 | 105 | 75-125 | 3 | 0-20 | |
| Zinc | 223.5 | 25.00 | 243.1 | 4X | 248.6 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0780 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 19:58** | **130612S08** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.8662 | 0.8350 | 1.685 | 98 | 1.721 | 102 | 71-137 | 2 | 0-14 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0780 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **GC 58** | **06/13/13** | **06/18/13 17:03** | **130613S09** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | ND | 20.00 | 125.3 | 627 | 100.0 | 500 | 50-135 | 22 | 0-25 | 3 |
| Aroclor-1260 | 77.40 | 20.00 | 123.1 | 228 | 114.7 | 187 | 50-135 | 7 | 0-25 | 3 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - PDS/PDSD

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0780 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | PDS/PDSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **ICP 7300** | **06/12/13 00:00** | **06/14/13 11:28** | **130612S08** |

| Parameter | Sample Conc. | Spike Added | PDS Conc. | PDS %Rec. | PDSD Conc. | PDSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 24.06 | 96 | 24.33 | 97 | 75-125 | 1 | 0-20 | |
| Arsenic | 7.019 | 25.00 | 32.16 | 101 | 31.68 | 99 | 75-125 | 2 | 0-20 | |
| Barium | 77.89 | 25.00 | 104.1 | 105 | 104.8 | 108 | 75-125 | 1 | 0-20 | |
| Beryllium | 0.3681 | 25.00 | 25.81 | 102 | 25.83 | 102 | 75-125 | 0 | 0-20 | |
| Cadmium | 2.118 | 25.00 | 26.46 | 97 | 26.55 | 98 | 75-125 | 0 | 0-20 | |
| Chromium | 56.89 | 25.00 | 81.26 | 98 | 81.29 | 98 | 75-125 | 0 | 0-20 | |
| Cobalt | 6.268 | 25.00 | 31.90 | 103 | 31.74 | 102 | 75-125 | 1 | 0-20 | |
| Copper | 130.4 | 25.00 | 155.3 | 4X | 155.9 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 64.02 | 25.00 | 88.41 | 98 | 88.29 | 97 | 75-125 | 0 | 0-20 | |
| Molybdenum | 1.256 | 25.00 | 25.70 | 98 | 25.51 | 97 | 75-125 | 1 | 0-20 | |
| Nickel | 11.79 | 25.00 | 37.17 | 102 | 36.89 | 100 | 75-125 | 1 | 0-20 | |
| Selenium | ND | 25.00 | 23.17 | 93 | 22.53 | 90 | 75-125 | 3 | 0-20 | |
| Silver | 1.853 | 12.50 | 14.78 | 103 | 14.96 | 105 | 75-125 | 1 | 0-20 | |
| Thallium | ND | 25.00 | 21.46 | 86 | 21.26 | 85 | 75-125 | 1 | 0-20 | |
| Vanadium | 41.15 | 25.00 | 65.69 | 98 | 65.57 | 98 | 75-125 | 0 | 0-20 | |
| Zinc | 223.5 | 25.00 | 247.6 | 4X | 247.8 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0780 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-15-500-15** | **Soil** | **GC 46** | **06/13/13 17:55** | **130612B12** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| TPH as Diesel | 400.0 | 479.6 | 120 | 75-123 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0780 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-13-045-160** | **Soil** | **GC 57** | **06/12/13 13:11** | **130612B01** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| GRO (C4-C12) Total | 10.00 | 8.906 | 89 | 70-124 | |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0780 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **097-01-002-16915** | **Soil** | **ICP 7300** | **06/13/13 23:19** | **130612L08** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | ME CL | Qualifiers |
|---|---|---|---|---|---|---|
| Antimony | 25.00 | 25.43 | 102 | 80-120 | 73-127 | |
| Arsenic | 25.00 | 25.43 | 102 | 80-120 | 73-127 | |
| Barium | 25.00 | 27.85 | 111 | 80-120 | 73-127 | |
| Beryllium | 25.00 | 25.37 | 101 | 80-120 | 73-127 | |
| Cadmium | 25.00 | 26.29 | 105 | 80-120 | 73-127 | |
| Chromium | 25.00 | 26.05 | 104 | 80-120 | 73-127 | |
| Cobalt | 25.00 | 27.11 | 108 | 80-120 | 73-127 | |
| Copper | 25.00 | 25.14 | 101 | 80-120 | 73-127 | |
| Lead | 25.00 | 26.26 | 105 | 80-120 | 73-127 | |
| Molybdenum | 25.00 | 25.63 | 103 | 80-120 | 73-127 | |
| Nickel | 25.00 | 28.06 | 112 | 80-120 | 73-127 | |
| Selenium | 25.00 | 23.91 | 96 | 80-120 | 73-127 | |
| Silver | 12.50 | 13.23 | 106 | 80-120 | 73-127 | |
| Thallium | 25.00 | 25.94 | 104 | 80-120 | 73-127 | |
| Vanadium | 25.00 | 25.32 | 101 | 80-120 | 73-127 | |
| Zinc | 25.00 | 27.69 | 111 | 80-120 | 73-127 | |

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0780 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-04-007-9356** | **Soil** | **Mercury** | **06/12/13 19:54** | **130612L08** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.8350 | 0.8143 | 98 | 85-121 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0780 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-12-565-339** | **Soil** | **GC 58** | **06/18/13 10:16** | **130613L09** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | 20.00 | 18.49 | 92 | 50-135 | |
| Aroclor-1260 | 20.00 | 16.45 | 82 | 50-135 | |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order: 13-04-0780



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| 4 | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range. |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

For any analysis identified as a "field" test with a holding time (HT) </= 15 minutes where the sample is received outside of HT, Calscience will adhere to its internal HT of 24 hours. In cases where sample analysis does not meet Calscience's internal HT, results will be appropriately qualified.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/9/13

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

P.O. NO.: 1315100800

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

QUOTE NO.:

SAMPLER(S): (SIGNATURE) KGH

LAB USE ONLY: 13-04-0780

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☒ ARCHIVE SAMPLES UNTIL 4/30/14

SPECIAL INSTRUCTIONS
Please HOLD samples.
Analysis will be determined at a later date.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

1x 8oz. jar
1x 16oz. jar
1x grain size baggie

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | HOLD |
|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC12- | 0001 | 4/9/13 | 1410 | sed | 3 | | X |
| 2 | | 0102 ~~0202~~ | | | | | | X |
| 3 | | 0203 | | | | | | X |
| 4 | | 0304 | | | | | | X |
| 5 | | 0405 | | | | | | X |
| 6 | | 0506 | | | | | | X |
| 7 | | 0607 | | | | | | X |
| 8 | | 0708 | | | | | | X |
| 9 | | Plug | | | | 1 | | X |
| | | | | | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| Kimbrie Gobbi | | | |
| Barry Snyder | | @ 04/10/13 | 1545 |
| | Danielle Gonsman | 4/10/13 | 18:45 |



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|
| NAS-C1 | | | | |
| SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| SD-S-P-NASC1-0102 | | | | |
| SD-S-P-NASC1-0203 | | | | |
| SD-S-P-NASC1-0304 | | | | |
| SD-S-P-NASC1-0405 | | | | |
| SD-S-P-NASC1-0506 | | | | BOTTOM |
| SD-S-P-NASC1-0607 | | | | |
| SD-S-P-NASC1-0708 | | | | |
| SD-S-P-NASC1-0809 | | | | |
| NAS-C2 | | | | |
| SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| SD-S-P-NASC2-0102 | | | | |
| SD-S-P-NASC2-0203 | | | | |
| SD-S-P-NASC2-0304 | | | | |
| SD-S-P-NASC2-0405 | | | | |
| SD-S-P-NASC2-0506 | | | | BOTTOM |
| SD-S-P-NASC2-0607 | | | | |
| SD-S-P-NASC2-0708 | | | | |
| SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | |
| SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| SD-S-P-NASC3-0102 | | | | |
| SD-S-P-NASC3-0203 | | | | |
| SD-S-P-NASC3-0304 | | | | |
| SD-S-P-NASC3-0405 | | | | |
| SD-S-P-NASC3-0506 | | | | BOTTOM |
| SD-S-P-NASC3-0607 | | | | |
| SD-S-P-NASC3-0708 | | | | |
| SD-S-P-NASC3-0809 | | | | |
| SD-S-P-NASC3-0910 | | | | |
| SD-S-P-NASC3-0910-PLUG | | | | not included[c] |
| NAS-C4 | | | | |
| SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| SD-S-P-NASC4-0102 | | | | |
| SD-S-P-NASC4-0203 | | | | |
| SD-S-P-NASC4-0304 | | | | |
| SD-S-P-NASC4-0405 | | | | |
| SD-S-P-NASC4-0506 | | | | BOTTOM |
| SD-S-P-NASC4-0607 | | | | |
| SD-S-P-NASC4-0708 | | | | |
| SD-S-P-NASC4-0809 | | | | |
| SD-S-P-NASC4-0910 | | | | |
| SD-S-P-NASC4-0910-PLUG | | | | not included[c] |
| NAS-C5 | | | | |
| SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| SD-S-P-NASC5-0102 | | | | |
| SD-S-P-NASC5-0203 | | | | |
| SD-S-P-NASC5-0304 | | | | BOTTOM |
| SD-S-P-NASC5-0405 | | | | |
| SD-S-P-NASC5-0506-PLUG | | | | not included[c] |
| NAS-C6 | | | | |
| SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| SD-S-P-NASC6-0102 | | | | |
| SD-S-P-NASC6-0203 | | | | BOTTOM |
| SD-S-P-NASC6-0304-PLUG | | | | not included[c] |
| NAS-C7 | | | | |
| SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| SD-S-P-NASC7-0102 | | | | |
| SD-S-P-NASC7-0203 | | | | |
| SD-S-P-NASC7-0304 | | | | |
| SD-S-P-NASC7-0405 | | | | BOTTOM |
| SD-S-P-NASC7-0506 | | | | |
| SD-S-P-NASC7-0607 | | | | |
| SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | |
| SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| SD-S-P-NASC8-0102 | | | | |
| SD-S-P-NASC8-0203 | | | | |
| SD-S-P-NASC8-0304 | | | | |
| SD-S-P-NASC8-0405 | | | | |
| SD-S-P-NASC8-0506 | | | | BOTTOM |
| SD-S-P-NASC8-0607 | | | | |
| SD-S-P-NASC8-0708 | | | | |
| SD-S-P-NASC8-0809 | | | | |
| SD-S-P-NASC8-0910 | | | | |
| SD-S-P-NASC8-0910-PLUG | | | | not included[c] |
| NAS-C9 | | | | |
| SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| SD-S-P-NASC9-0102 | | | | |
| SD-S-P-NASC9-0203 | | | | |
| SD-S-P-NASC9-0304 | | | | |
| SD-S-P-NASC9-0405 | | | | BOTTOM |
| SD-S-P-NASC9-0506 | | | | |
| SD-S-P-NASC9-0607 | | | | |
| NAS-C10 | | | | |
| SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| SD-S-P-NASC10-0102 | | | | |
| SD-S-P-NASC10-0203 | | | | |
| SD-S-P-NASC10-0304 | | | | BOTTOM |
| SD-S-P-NASC10-0405 | | | | |
| SD-S-P-NASC10-0506 | | | | |
| SD-S-P-NASC10-0607 | | | | |
| SD-S-P-NASC10-0708 | | | | |
| NAS-C11 | | | | |
| SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| SD-S-P-NASC11-0102 | | | | |
| SD-S-P-NASC11-0203 | | | | |
| SD-S-P-NASC11-0304 | | | | |
| SD-S-P-NASC11-0405 | | | | BOTTOM |
| SD-S-P-NASC11-0506 | | | | |
| SD-S-P-NASC11-0607 | | | | |
| SD-S-P-NASC11-0708 | | | | |
| SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | |
| SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| SD-S-P-NASC12-0102 | | | | |
| SD-S-P-NASC12-0203 | | | | |
| SD-S-P-NASC12-0304 | | | | |
| SD-S-P-NASC12-0405 | | | | BOTTOM |
| SD-S-P-NASC12-0506 | | | | |
| SD-S-P-NASC12-0607 | | | | |
| SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | |
| SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| SD-S-P-NASC13-0102 | | | | |
| SD-S-P-NASC13-0203 | | | | |
| SD-S-P-NASC13-0304 | | | | BOTTOM |
| SD-S-P-NASC13-0405 | | | | |
| SD-S-P-NASC13-0506 | | | | |
| SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | |
| SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| SD-S-P-NASC14-0102 | | | | |
| SD-S-P-NASC14-0203 | | | | BOTTOM |
| SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | |
| SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| SD-S-P-NASC15-0102 | | | | |
| SD-S-P-NASC15-0203 | | | | |
| SD-S-P-NASC15-0304 | | | | BOTTOM |
| SD-S-P-NASC15-0405 | | | | |
| SD-S-P-NASC15-0506 | | | | |

Notes:
0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on
a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.
b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.
A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)
c - sample not included due to low volume available and because it represents native material which will not be dredged



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0780

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/10/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.7 °C - 0.2 °C (CF) = 1.5 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter Initial: [illegible]

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: [illegible]

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: HH

| SAMPLE CONDITION: | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑Z_____

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** HH

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WSL

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WSL



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| 13-04-1004-1 | SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| 13-04-1004-2 | SD-S-P-NASC1-0102 | | | | |
| 13-04-1004-3 | SD-S-P-NASC1-0203 | | | | |
| 13-04-1004-4 | SD-S-P-NASC1-0304 | | | | |
| 13-04-1004-5 | SD-S-P-NASC1-0405 | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| 13-04-1111-1 | SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| 13-04-1111-2 | SD-S-P-NASC2-0102 | | | | |
| 13-04-1111-3 | SD-S-P-NASC2-0203 | | | | |
| 13-04-1111-4 | SD-S-P-NASC2-0304 | | | | |
| 13-04-1111-5 | SD-S-P-NASC2-0405 | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| 13-04-1113-1 | SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| 13-04-1113-2 | SD-S-P-NASC3-0102 | | | | |
| 13-04-1113-3 | SD-S-P-NASC3-0203 | | | | |
| 13-04-1113-4 | SD-S-P-NASC3-0304 | | | | |
| 13-04-1113-5 | SD-S-P-NASC3-0405 | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| 13-04-1002-1 | SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| 13-04-1002-2 | SD-S-P-NASC4-0102 | | | | |
| 13-04-1002-3 | SD-S-P-NASC4-0203 | | | | |
| 13-04-1002-4 | SD-S-P-NASC4-0304 | | | | |
| 13-04-1002-5 | SD-S-P-NASC4-0405 | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| 13-04-1003-1 | SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| 13-04-1003-2 | SD-S-P-NASC5-0102 | | | | |
| 13-04-1003-3 | SD-S-P-NASC5-0203 | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| 13-04-1001-1 | SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| 13-04-1001-2 | SD-S-P-NASC6-0102 | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| 13-04-0902-1 | SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| 13-04-0902-2 | SD-S-P-NASC7-0102 | | | | |
| 13-04-0902-3 | SD-S-P-NASC7-0203 | | | | |
| 13-04-0902-4 | SD-S-P-NASC7-0304 | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| 13-04-0903-1 | SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| 13-04-0903-2 | SD-S-P-NASC8-0102 | | | | |
| 13-04-0903-3 | SD-S-P-NASC8-0203 | | | | |
| 13-04-0903-4 | SD-S-P-NASC8-0304 | | | | |
| 13-04-0903-5 | SD-S-P-NASC8-0405 | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| 13-04-0901-1 | SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| 13-04-0901-2 | SD-S-P-NASC9-0102 | | | | |
| 13-04-0901-3 | SD-S-P-NASC9-0203 | | | | |
| 13-04-0901-4 | SD-S-P-NASC9-0304 | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607 PLUG~~ | | | | |
| NAS-C10 | | | | | |
| 13-04-0904-1 | SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| 13-04-0904-2 | SD-S-P-NASC10-0102 | | | | |
| 13-04-0904-3 | SD-S-P-NASC10-0203 | | | | |
| 13-04-0904-4 | SD-S-P-NASC10-0304 | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-9 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| 13-04-0778-1 | SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| 13-04-0778-2 | SD-S-P-NASC11-0102 | | | | |
| 13-04-0778-3 | SD-S-P-NASC11-0203 | | | | |
| 13-04-0778-4 | SD-S-P-NASC11-0304 | | | | |
| 13-04-0778-5 | SD-S-P-NASC11-0405 | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| 13-04-0780-1 | SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| 13-04-0780-2 | SD-S-P-NASC12-0102 | | | | |
| 13-04-0780-3 | SD-S-P-NASC12-0203 | | | | |
| 13-04-0780-4 | SD-S-P-NASC12-0304 | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| 13-04-0781-1 | SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| 13-04-0781-2 | SD-S-P-NASC13-0102 | | | | |
| 13-04-0781-3 | SD-S-P-NASC13-0203 | | | | |
| 13-04-0781-4 | SD-S-P-NASC13-0304 | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| 13-04-0782-1 | SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| 13-04-0782-2 | SD-S-P-NASC14-0102 | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| 13-04-0779-1 | SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| 13-04-0779-2 | SD-S-P-NASC15-0102 | | | | |
| 13-04-0779-3 | SD-S-P-NASC15-0203 | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged

Calscience Environmental Laboratories, Inc.

# CALSCIENCE

## WORK ORDER NUMBER: 13-04-0781

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard Sediment Study

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 06/20/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

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Work Order Number: 13-04-0781


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Calscience Environmental Laboratories, Inc.

# CASE NARRATIVE

## Calscience Work Order No.: 13-04-0781
## Project ID: NASSCO Shipyard Sediment Study

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

Eight sediment samples were received for this project on April 10, 2013. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 1.4°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in freezers pending chemistry testing.

On June 12, 2013 samples were composited into two samples as per client instructions.

COC discrepancies were noted in the Sample Anomaly Form.

***Tests Performed***

The two composite samples were analyzed for the following analyses:

C8-C40 by EPA 8015B (M)
C4-C12 by EPA 8015B (M)
Title 22 Metals by EPA 6010B
Mercury by EPA 7471A
PCB Aroclors by EPA 8082

***Data Summary***

<u>Holding times</u>

All samples were analyzed past the EPA recommended holding times for TPH C4-12, TPH-C8-40, PCB Aroclors and Mercury. However, all samples were frozen (-20 °C) upon receipt at the laboratory and remained in that condition until sample preparation/analysis. Per the Puget Sound Protocol (and other references), which states the holding time for sediments may be extended up to one year if kept frozen after collection, the samples were analyzed within the allowable one year holding time. In addition, PCBs are known to be very stable compounds, and SW-846 Ch.4, Table 4-1 (Rev. 4) lists “None” as the recommended holding time for PCBs. However, because the samples were analyzed outside of normal EPA hold times, the data is flagged as such.

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Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

Concentrations of target analytes in the method blank were found to be below reporting limits for all analyses.

Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the MDL, and where applicable, "J" flags were reported.

Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test. All parameters were within established control limits.

Matrix Spikes

Matrix spikes and matrix spike duplicates were performed for each applicable analysis on project samples. All parameters were within the acceptable control limits unless otherwise noted.

For C8-C40 by EPA 8015B (M) matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

For C4-C12 by EPA 8015B (M) matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

For Title 22 Metals by EPA 6010B matrix spike and/or matrix spike duplicate recoveries were outside the established control limits for antimony, lead, molybdenum and thallium. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action. The concentrations of copper and zinc in the sample were over four times the spike amount, therefore the recoveries could not be calculated.

For PCB Aroclors by EPA 8082 matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

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Surrogates

Surrogate recoveries for all applicable tests and samples were within acceptable control limits with the following exceptions:

For PCB Aroclors by EPA 8082 the decachlorobiphenyl recovery was high in sample 9.

Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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Calscience Environmental Laboratories, Inc.

# Work Order Narrative

Work Order: 13-04-0781



**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/10/13. They were assigned to Work Order 13-04-0781.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with an immediate holding time (HT </= 15 minutes --40CFR-136.3 Table II footnote 4), is considered a "field" test and reported samples results are not flagged unless the analysis is performed beyond 24 hours of the time of collection.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Calscience Environmental Laboratories, Inc.

# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC<br>27201 Puerta Real, Suite 350<br>Mission Viejo, CA 92691-8306 | Work Order: | 13-04-0781 |
| | | Project Name: | NASSCO South Shipyard Sediment Study |
| | | PO Number: | |
| | | Date Received: | 04/10/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| SD-S-P-NASC13-0001 | 13-04-0781-1 | 04/09/13 10:55 | 3 | Sediment |
| SD-S-P-NASC13-0102 | 13-04-0781-2 | 04/09/13 10:55 | 3 | Sediment |
| SD-S-P-NASC13-0203 | 13-04-0781-3 | 04/09/13 10:55 | 3 | Sediment |
| SD-S-P-NASC13-0304 | 13-04-0781-4 | 04/09/13 10:55 | 3 | Sediment |
| SD-S-P-NASC13-0405 | 13-04-0781-5 | 04/09/13 10:55 | 3 | Sediment |
| SD-S-P-NASC13-0506 | 13-04-0781-6 | 04/09/13 10:55 | 3 | Sediment |
| SD-S-P-NASC13-0607 | 13-04-0781-7 | 04/09/13 10:55 | 3 | Sediment |
| SD-S-P-NASC13-Plug | 13-04-0781-8 | 04/09/13 10:55 | 1 | Sediment |
| COMP-C13-TOP | 13-04-0781-9 | 04/09/13 10:55 | 1 | Sediment |
| COMP-C13-BOTTOM | 13-04-0781-10 | 04/09/13 10:55 | 1 | Sediment |

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0781 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C13-TOP** | **13-04-0781-9-A** | **04/09/13 10:55** | **Sediment** | **GC 46** | **06/12/13** | **06/13/13 19:01** | **130612B12** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | 2.1 | 5.0 | 1.8 | 1 | J |
| C19-C20 | 2.7 | 5.0 | 1.8 | 1 | J |
| C21-C22 | 2.8 | 5.0 | 1.8 | 1 | J |
| C23-C24 | 3.1 | 5.0 | 1.7 | 1 | J |
| C25-C28 | 6.9 | 5.0 | 2.4 | 1 | |
| C29-C32 | 7.9 | 5.0 | 2.4 | 1 | |
| C33-C36 | 4.9 | 5.0 | 2.6 | 1 | J |
| C37-C40 | 2.2 | 5.0 | 1.6 | 1 | J |
| C8-C40 Total | 32 | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 95 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0781 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C13-BOTTOM** | **13-04-0781-10-A** | **04/09/13 10:55** | **Sediment** | **GC 46** | **06/12/13** | **06/13/13 19:17** | **130612B12** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | ND | 5.0 | 1.8 | 1 | |
| C19-C20 | ND | 5.0 | 1.8 | 1 | |
| C21-C22 | ND | 5.0 | 1.8 | 1 | |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | ND | 5.0 | 2.4 | 1 | |
| C29-C32 | ND | 5.0 | 2.4 | 1 | |
| C33-C36 | ND | 5.0 | 2.6 | 1 | |
| C37-C40 | ND | 5.0 | 1.6 | 1 | |
| C8-C40 Total | ND | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 98 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0781 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-15-500-15** | **N/A** | **Soil** | **GC 46** | **06/12/13** | **06/13/13 17:39** | **130612B12** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | ND | 5.0 | 1.8 | 1 | |
| C19-C20 | ND | 5.0 | 1.8 | 1 | |
| C21-C22 | ND | 5.0 | 1.8 | 1 | |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | ND | 5.0 | 2.4 | 1 | |
| C29-C32 | ND | 5.0 | 2.4 | 1 | |
| C33-C36 | ND | 5.0 | 2.6 | 1 | |
| C37-C40 | ND | 5.0 | 1.6 | 1 | |
| C8-C40 Total | ND | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 108 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0781 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C13-TOP** | **13-04-0781-9-B** | **04/09/13 10:55** | **Sediment** | **GC 57** | **06/12/13** | **06/12/13 23:27** | **130612B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 108 | 42-126 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C13-BOTTOM** | **13-04-0781-10-B** | **04/09/13 10:55** | **Sediment** | **GC 57** | **06/12/13** | **06/12/13 23:58** | **130612B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 86 | 42-126 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0781 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-13-045-160** | **N/A** | **Soil** | **GC 57** | **06/12/13** | **06/12/13 12:39** | **130612B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 67 | 42-126 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0781 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C13-TOP** | **13-04-0781-9-A** | **04/09/13 10:55** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:51** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 6.69 | 0.750 | 0.259 | 1 | |
| Barium | 66.0 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.373 | 0.250 | 0.137 | 1 | |
| Cadmium | 0.710 | 0.500 | 0.135 | 1 | |
| Chromium | 32.9 | 0.250 | 0.142 | 1 | |
| Cobalt | 7.06 | 0.250 | 0.148 | 1 | |
| Copper | 79.8 | 0.500 | 0.135 | 1 | |
| Lead | 34.4 | 0.500 | 0.132 | 1 | |
| Molybdenum | 2.08 | 0.250 | 0.132 | 1 | |
| Nickel | 8.26 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | 0.302 | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 42.3 | 0.250 | 0.141 | 1 | |
| Zinc | 163 | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0781 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C13-BOTTOM** | **13-04-0781-10-A** | **04/09/13 10:55** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:52** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 4.65 | 0.750 | 0.259 | 1 | |
| Barium | 48.9 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.188 | 0.250 | 0.137 | 1 | J |
| Cadmium | 0.147 | 0.500 | 0.135 | 1 | J |
| Chromium | 9.26 | 0.250 | 0.142 | 1 | |
| Cobalt | 3.60 | 0.250 | 0.148 | 1 | |
| Copper | 7.79 | 0.500 | 0.135 | 1 | |
| Lead | 10.6 | 0.500 | 0.132 | 1 | |
| Molybdenum | ND | 0.250 | 0.132 | 1 | |
| Nickel | 3.30 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | ND | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 36.0 | 0.250 | 0.141 | 1 | |
| Zinc | 26.3 | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0781 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-01-002-16915** | **N/A** | **Soil** | **ICP 7300** | **06/12/13** | **06/13/13 23:17** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | ND | 0.750 | 0.259 | 1 | |
| Barium | ND | 0.500 | 0.154 | 1 | |
| Beryllium | ND | 0.250 | 0.137 | 1 | |
| Cadmium | ND | 0.500 | 0.135 | 1 | |
| Chromium | ND | 0.250 | 0.142 | 1 | |
| Cobalt | ND | 0.250 | 0.148 | 1 | |
| Copper | ND | 0.500 | 0.135 | 1 | |
| Lead | ND | 0.500 | 0.132 | 1 | |
| Molybdenum | ND | 0.250 | 0.132 | 1 | |
| Nickel | ND | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | ND | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | ND | 0.250 | 0.141 | 1 | |
| Zinc | ND | 1.00 | 0.178 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0781 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C13-TOP** | **13-04-0781-9-A** | **04/09/13 10:55** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 20:06** | **130612L05** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.544 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C13-BOTTOM** | **13-04-0781-10-A** | **04/09/13 10:55** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 20:08** | **130612L05** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.119 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-04-007-9353** | **N/A** | **Soil** | **Mercury** | **06/12/13** | **06/12/13 13:13** | **130612L05** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | ND | 0.0835 | 0.00588 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0781 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C13-TOP** | **13-04-0781-9-A** | **04/09/13 10:55** | **Sediment** | **GC 58** | **06/13/13** | **06/18/13 13:16** | **130613L09** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | 7.3 | 10 | 2.9 | 1 | J |
| Aroclor-1254 | 42 | 10 | 2.4 | 1 | |
| Aroclor-1260 | 17 | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 102 | 50-130 | |
| Decachlorobiphenyl | 138 | 50-130 | 2,7 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C13-BOTTOM** | **13-04-0781-10-A** | **04/09/13 10:55** | **Sediment** | **GC 58** | **06/13/13** | **06/18/13 13:34** | **130613L09** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | ND | 10 | 2.9 | 1 | |
| Aroclor-1254 | ND | 10 | 2.4 | 1 | |
| Aroclor-1260 | ND | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 86 | 50-130 | |
| Decachlorobiphenyl | 100 | 50-130 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0781 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-12-565-339** | **N/A** | **Soil** | **GC 58** | **06/13/13** | **06/18/13 09:58** | **130613L09** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | ND | 10 | 2.9 | 1 | |
| Aroclor-1254 | ND | 10 | 2.4 | 1 | |
| Aroclor-1260 | ND | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 79 | 50-130 | |
| Decachlorobiphenyl | 88 | 50-130 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0781 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **GC 46** | **06/12/13** | **06/13/13 18:12** | **130612S12** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| TPH as Diesel | 78.67 | 400.0 | 506.3 | 107 | 599.0 | 130 | 64-130 | 17 | 0-15 | 4 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0781 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **GC 57** | **06/12/13** | **06/12/13 19:44** | **130612S01** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| GRO (C4-C12) Total | 1.771 | 10.00 | 3.056 | 13 | 3.441 | 17 | 48-114 | 12 | 0-25 | 3 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0781 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:26** | **130612S08** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 3.137 | 13 | 4.170 | 17 | 50-115 | 28 | 0-20 | 3,4 |
| Arsenic | 7.019 | 25.00 | 31.38 | 97 | 33.08 | 104 | 75-125 | 5 | 0-20 | |
| Barium | 77.89 | 25.00 | 104.4 | 106 | 104.6 | 107 | 75-125 | 0 | 0-20 | |
| Beryllium | 0.3681 | 25.00 | 24.97 | 98 | 26.62 | 105 | 75-125 | 6 | 0-20 | |
| Cadmium | 2.118 | 25.00 | 25.41 | 93 | 27.20 | 100 | 75-125 | 7 | 0-20 | |
| Chromium | 56.89 | 25.00 | 79.48 | 90 | 83.39 | 106 | 75-125 | 5 | 0-20 | |
| Cobalt | 6.268 | 25.00 | 31.06 | 99 | 33.09 | 107 | 75-125 | 6 | 0-20 | |
| Copper | 130.4 | 25.00 | 155.7 | 4X | 154.6 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 64.02 | 25.00 | 79.41 | 62 | 104.9 | 163 | 75-125 | 28 | 0-20 | 3,4 |
| Molybdenum | 1.256 | 25.00 | 19.88 | 74 | 21.44 | 81 | 75-125 | 8 | 0-20 | 3 |
| Nickel | 11.79 | 25.00 | 36.12 | 97 | 38.66 | 108 | 75-125 | 7 | 0-20 | |
| Selenium | ND | 25.00 | 20.85 | 83 | 22.54 | 90 | 75-125 | 8 | 0-20 | |
| Silver | 1.853 | 12.50 | 13.80 | 96 | 14.56 | 102 | 75-125 | 5 | 0-20 | |
| Thallium | ND | 25.00 | 12.84 | 51 | 17.83 | 71 | 75-125 | 33 | 0-20 | 3,4 |
| Vanadium | 41.15 | 25.00 | 65.57 | 98 | 67.38 | 105 | 75-125 | 3 | 0-20 | |
| Zinc | 223.5 | 25.00 | 243.1 | 4X | 248.6 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0781 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-06-0714-1** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 13:24** | **130612S05** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.1584 | 0.8350 | 0.9514 | 95 | 0.9984 | 101 | 76-136 | 5 | 0-16 | |

RPD: Relative Percent Difference. CL: Control Limits



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# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0781 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **COMP-C13-BOTTOM** | **Sediment** | **Mercury** | **06/12/13** | **06/17/13 15:48** | **130612S05B** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.1193 | 0.8350 | 1.016 | 107 | 1.032 | 109 | 71-137 | 2 | 0-14 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0781 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 6 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **GC 58** | **06/13/13** | **06/18/13 17:03** | **130613S09** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | ND | 20.00 | 125.3 | 627 | 100.0 | 500 | 50-135 | 22 | 0-25 | 3 |
| Aroclor-1260 | 77.40 | 20.00 | 123.1 | 228 | 114.7 | 187 | 50-135 | 7 | 0-25 | 3 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - PDS/PDSD

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0781 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | PDS/PDSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **ICP 7300** | **06/12/13 00:00** | **06/14/13 11:28** | **130612S08** |

| Parameter | Sample Conc. | Spike Added | PDS Conc. | PDS %Rec. | PDSD Conc. | PDSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 24.06 | 96 | 24.33 | 97 | 75-125 | 1 | 0-20 | |
| Arsenic | 7.019 | 25.00 | 32.16 | 101 | 31.68 | 99 | 75-125 | 2 | 0-20 | |
| Barium | 77.89 | 25.00 | 104.1 | 105 | 104.8 | 108 | 75-125 | 1 | 0-20 | |
| Beryllium | 0.3681 | 25.00 | 25.81 | 102 | 25.83 | 102 | 75-125 | 0 | 0-20 | |
| Cadmium | 2.118 | 25.00 | 26.46 | 97 | 26.55 | 98 | 75-125 | 0 | 0-20 | |
| Chromium | 56.89 | 25.00 | 81.26 | 98 | 81.29 | 98 | 75-125 | 0 | 0-20 | |
| Cobalt | 6.268 | 25.00 | 31.90 | 103 | 31.74 | 102 | 75-125 | 1 | 0-20 | |
| Copper | 130.4 | 25.00 | 155.3 | 4X | 155.9 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 64.02 | 25.00 | 88.41 | 98 | 88.29 | 97 | 75-125 | 0 | 0-20 | |
| Molybdenum | 1.256 | 25.00 | 25.70 | 98 | 25.51 | 97 | 75-125 | 1 | 0-20 | |
| Nickel | 11.79 | 25.00 | 37.17 | 102 | 36.89 | 100 | 75-125 | 1 | 0-20 | |
| Selenium | ND | 25.00 | 23.17 | 93 | 22.53 | 90 | 75-125 | 3 | 0-20 | |
| Silver | 1.853 | 12.50 | 14.78 | 103 | 14.96 | 105 | 75-125 | 1 | 0-20 | |
| Thallium | ND | 25.00 | 21.46 | 86 | 21.26 | 85 | 75-125 | 1 | 0-20 | |
| Vanadium | 41.15 | 25.00 | 65.69 | 98 | 65.57 | 98 | 75-125 | 0 | 0-20 | |
| Zinc | 223.5 | 25.00 | 247.6 | 4X | 247.8 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0781 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-15-500-15** | **Soil** | **GC 46** | **06/13/13 17:55** | **130612B12** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| TPH as Diesel | 400.0 | 479.6 | 120 | 75-123 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0781 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-13-045-160** | **Soil** | **GC 57** | **06/12/13 13:11** | **130612B01** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| GRO (C4-C12) Total | 10.00 | 8.906 | 89 | 70-124 | |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0781 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **097-01-002-16915** | **Soil** | **ICP 7300** | **06/13/13 23:19** | **130612L08** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | ME CL | Qualifiers |
|---|---|---|---|---|---|---|
| Antimony | 25.00 | 25.43 | 102 | 80-120 | 73-127 | |
| Arsenic | 25.00 | 25.43 | 102 | 80-120 | 73-127 | |
| Barium | 25.00 | 27.85 | 111 | 80-120 | 73-127 | |
| Beryllium | 25.00 | 25.37 | 101 | 80-120 | 73-127 | |
| Cadmium | 25.00 | 26.29 | 105 | 80-120 | 73-127 | |
| Chromium | 25.00 | 26.05 | 104 | 80-120 | 73-127 | |
| Cobalt | 25.00 | 27.11 | 108 | 80-120 | 73-127 | |
| Copper | 25.00 | 25.14 | 101 | 80-120 | 73-127 | |
| Lead | 25.00 | 26.26 | 105 | 80-120 | 73-127 | |
| Molybdenum | 25.00 | 25.63 | 103 | 80-120 | 73-127 | |
| Nickel | 25.00 | 28.06 | 112 | 80-120 | 73-127 | |
| Selenium | 25.00 | 23.91 | 96 | 80-120 | 73-127 | |
| Silver | 12.50 | 13.23 | 106 | 80-120 | 73-127 | |
| Thallium | 25.00 | 25.94 | 104 | 80-120 | 73-127 | |
| Vanadium | 25.00 | 25.32 | 101 | 80-120 | 73-127 | |
| Zinc | 25.00 | 27.69 | 111 | 80-120 | 73-127 | |

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0781 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-04-007-9353** | **Soil** | **Mercury** | **06/12/13 13:15** | **130612L05** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.8350 | 0.8128 | 97 | 85-121 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0781 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-12-565-339** | **Soil** | **GC 58** | **06/18/13 10:16** | **130613L09** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | 20.00 | 18.49 | 92 | 50-135 | |
| Aroclor-1260 | 20.00 | 16.45 | 82 | 50-135 | |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order: 13-04-0781



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| 4 | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range. |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

For any analysis identified as a "field" test with a holding time (HT) </= 15 minutes where the sample is received outside of HT, Calscience will adhere to its internal HT of 24 hours. In cases where sample analysis does not meet Calscience's internal HT, results will be appropriately qualified.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/9/13

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

P.O. NO.: 1315100800

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

QUOTE NO.:

SAMPLER(S): (SIGNATURE)

LAB USE ONLY: 13-04-0781

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)

☐ RWQCB REPORTING ☒ ARCHIVE SAMPLES UNTIL 4/30/14

SPECIAL INSTRUCTIONS

Please HOLD samples.
Analysis will be determined at a later date.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

1x 8oz. jar
1x 16oz. jar
1x ziplocklaggie

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC | 3-0001 | 4/9/13 | 1055 | sed | 3 | | | | X |
| 2 | | -0102 | | | | | | | | X |
| 3 | | -0203 | | | | | | | | X |
| 4 | | -0304 | | | | | | | | X |
| 5 | | -0405 | | | | | | | | X |
| 6 | | -0506 | | | | | | | | X |
| 7 | | -0607 | | | | | | | | X |
| 8 | | Plug | | | | 1 | | | | X |
| | | | | | | | | | | X |
| | | | | | | | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| Kimbrie Gobbi | | | |
| Barry Snyder | | 04/10/13 | 1545 |
| | Dannyle | 4/10/13 | 18:45 |



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|
| NAS-C1 | | | | |
| SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| SD-S-P-NASC1-0102 | | | | |
| SD-S-P-NASC1-0203 | | | | |
| SD-S-P-NASC1-0304 | | | | |
| SD-S-P-NASC1-0405 | | | | |
| SD-S-P-NASC1-0506 | | | | BOTTOM |
| SD-S-P-NASC1-0607 | | | | |
| SD-S-P-NASC1-0708 | | | | |
| SD-S-P-NASC1-0809 | | | | |
| NAS-C2 | | | | |
| SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| SD-S-P-NASC2-0102 | | | | |
| SD-S-P-NASC2-0203 | | | | |
| SD-S-P-NASC2-0304 | | | | |
| SD-S-P-NASC2-0405 | | | | |
| SD-S-P-NASC2-0506 | | | | BOTTOM |
| SD-S-P-NASC2-0607 | | | | |
| SD-S-P-NASC2-0708 | | | | |
| SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | |
| SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| SD-S-P-NASC3-0102 | | | | |
| SD-S-P-NASC3-0203 | | | | |
| SD-S-P-NASC3-0304 | | | | |
| SD-S-P-NASC3-0405 | | | | |
| SD-S-P-NASC3-0506 | | | | BOTTOM |
| SD-S-P-NASC3-0607 | | | | |
| SD-S-P-NASC3-0708 | | | | |
| SD-S-P-NASC3-0809 | | | | |
| SD-S-P-NASC3-0910 | | | | |
| SD-S-P-NASC3-0910-PLUG | | | | not included[c] |
| NAS-C4 | | | | |
| SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| SD-S-P-NASC4-0102 | | | | |
| SD-S-P-NASC4-0203 | | | | |
| SD-S-P-NASC4-0304 | | | | |
| SD-S-P-NASC4-0405 | | | | |
| SD-S-P-NASC4-0506 | | | | BOTTOM |
| SD-S-P-NASC4-0607 | | | | |
| SD-S-P-NASC4-0708 | | | | |
| SD-S-P-NASC4-0809 | | | | |
| SD-S-P-NASC4-0910 | | | | |
| SD-S-P-NASC4-0910-PLUG | | | | not included[c] |
| NAS-C5 | | | | |
| SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| SD-S-P-NASC5-0102 | | | | |
| SD-S-P-NASC5-0203 | | | | |
| SD-S-P-NASC5-0304 | | | | BOTTOM |
| SD-S-P-NASC5-0405 | | | | |
| SD-S-P-NASC5-0506-PLUG | | | | not included[c] |
| NAS-C6 | | | | |
| SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| SD-S-P-NASC6-0102 | | | | |
| SD-S-P-NASC6-0203 | | | | BOTTOM |
| SD-S-P-NASC6-0304-PLUG | | | | not included[c] |
| NAS-C7 | | | | |
| SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| SD-S-P-NASC7-0102 | | | | |
| SD-S-P-NASC7-0203 | | | | |
| SD-S-P-NASC7-0304 | | | | |
| SD-S-P-NASC7-0405 | | | | BOTTOM |
| SD-S-P-NASC7-0506 | | | | |
| SD-S-P-NASC7-0607 | | | | |
| SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | |
| SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| SD-S-P-NASC8-0102 | | | | |
| SD-S-P-NASC8-0203 | | | | |
| SD-S-P-NASC8-0304 | | | | |
| SD-S-P-NASC8-0405 | | | | |
| SD-S-P-NASC8-0506 | | | | BOTTOM |
| SD-S-P-NASC8-0607 | | | | |
| SD-S-P-NASC8-0708 | | | | |
| SD-S-P-NASC8-0809 | | | | |
| SD-S-P-NASC8-0910 | | | | |
| SD-S-P-NASC8-0910-PLUG | | | | not included[c] |
| NAS-C9 | | | | |
| SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| SD-S-P-NASC9-0102 | | | | |
| SD-S-P-NASC9-0203 | | | | |
| SD-S-P-NASC9-0304 | | | | |
| SD-S-P-NASC9-0405 | | | | BOTTOM |
| SD-S-P-NASC9-0506 | | | | |
| SD-S-P-NASC9-0607 | | | | |
| NAS-C10 | | | | |
| SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| SD-S-P-NASC10-0102 | | | | |
| SD-S-P-NASC10-0203 | | | | |
| SD-S-P-NASC10-0304 | | | | BOTTOM |
| SD-S-P-NASC10-0405 | | | | |
| SD-S-P-NASC10-0506 | | | | |
| SD-S-P-NASC10-0607 | | | | |
| SD-S-P-NASC10-0708 | | | | |
| NAS-C11 | | | | |
| SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| SD-S-P-NASC11-0102 | | | | |
| SD-S-P-NASC11-0203 | | | | |
| SD-S-P-NASC11-0304 | | | | |
| SD-S-P-NASC11-0405 | | | | BOTTOM |
| SD-S-P-NASC11-0506 | | | | |
| SD-S-P-NASC11-0607 | | | | |
| SD-S-P-NASC11-0708 | | | | |
| SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | |
| SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| SD-S-P-NASC12-0102 | | | | |
| SD-S-P-NASC12-0203 | | | | |
| SD-S-P-NASC12-0304 | | | | |
| SD-S-P-NASC12-0405 | | | | BOTTOM |
| SD-S-P-NASC12-0506 | | | | |
| SD-S-P-NASC12-0607 | | | | |
| SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | |
| SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| SD-S-P-NASC13-0102 | | | | |
| SD-S-P-NASC13-0203 | | | | |
| SD-S-P-NASC13-0304 | | | | BOTTOM |
| SD-S-P-NASC13-0405 | | | | |
| SD-S-P-NASC13-0506 | | | | |
| SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | |
| SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| SD-S-P-NASC14-0102 | | | | |
| SD-S-P-NASC14-0203 | | | | BOTTOM |
| SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | |
| SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| SD-S-P-NASC15-0102 | | | | |
| SD-S-P-NASC15-0203 | | | | |
| SD-S-P-NASC15-0304 | | | | BOTTOM |
| SD-S-P-NASC15-0405 | | | | |
| SD-S-P-NASC15-0506 | | | | |

Notes:
0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on
a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.
b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.
A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)
c - sample not included due to low volume available and because it represents native material which will not be dredged



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-6 7 8 1

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/10/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.6 °C - 0.2 °C (CF) = 1.4 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: KB

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: KB

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: MC

| **SAMPLE CONDITION:** | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ Z

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** MC

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WK

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WK



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| 13-04-1004-1 | SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| 13-04-1004-2 | SD-S-P-NASC1-0102 | | | | |
| 13-04-1004-3 | SD-S-P-NASC1-0203 | | | | |
| 13-04-1004-4 | SD-S-P-NASC1-0304 | | | | |
| 13-04-1004-5 | SD-S-P-NASC1-0405 | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| 13-04-1111-1 | SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| 13-04-1111-2 | SD-S-P-NASC2-0102 | | | | |
| 13-04-1111-3 | SD-S-P-NASC2-0203 | | | | |
| 13-04-1111-4 | SD-S-P-NASC2-0304 | | | | |
| 13-04-1111-5 | SD-S-P-NASC2-0405 | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| 13-04-1113-1 | SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| 13-04-1113-2 | SD-S-P-NASC3-0102 | | | | |
| 13-04-1113-3 | SD-S-P-NASC3-0203 | | | | |
| 13-04-1113-4 | SD-S-P-NASC3-0304 | | | | |
| 13-04-1113-5 | SD-S-P-NASC3-0405 | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| 13-04-1002-1 | SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| 13-04-1002-2 | SD-S-P-NASC4-0102 | | | | |
| 13-04-1002-3 | SD-S-P-NASC4-0203 | | | | |
| 13-04-1002-4 | SD-S-P-NASC4-0304 | | | | |
| 13-04-1002-5 | SD-S-P-NASC4-0405 | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| 13-04-1003-1 | SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| 13-04-1003-2 | SD-S-P-NASC5-0102 | | | | |
| 13-04-1003-3 | SD-S-P-NASC5-0203 | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| 13-04-1001-1 | SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| 13-04-1001-2 | SD-S-P-NASC6-0102 | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| 13-04-0902-1 | SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| 13-04-0902-2 | SD-S-P-NASC7-0102 | | | | |
| 13-04-0902-3 | SD-S-P-NASC7-0203 | | | | |
| 13-04-0902-4 | SD-S-P-NASC7-0304 | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| 13-04-0903-1 | SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| 13-04-0903-2 | SD-S-P-NASC8-0102 | | | | |
| 13-04-0903-3 | SD-S-P-NASC8-0203 | | | | |
| 13-04-0903-4 | SD-S-P-NASC8-0304 | | | | |
| 13-04-0903-5 | SD-S-P-NASC8-0405 | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| 13-04-0901-1 | SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| 13-04-0901-2 | SD-S-P-NASC9-0102 | | | | |
| 13-04-0901-3 | SD-S-P-NASC9-0203 | | | | |
| 13-04-0901-4 | SD-S-P-NASC9-0304 | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607 PLUG~~ | | | | |
| NAS-C10 | | | | | |
| 13-04-0904-1 | SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| 13-04-0904-2 | SD-S-P-NASC10-0102 | | | | |
| 13-04-0904-3 | SD-S-P-NASC10-0203 | | | | |
| 13-04-0904-4 | SD-S-P-NASC10-0304 | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-9 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| 13-04-0778-1 | SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| 13-04-0778-2 | SD-S-P-NASC11-0102 | | | | |
| 13-04-0778-3 | SD-S-P-NASC11-0203 | | | | |
| 13-04-0778-4 | SD-S-P-NASC11-0304 | | | | |
| 13-04-0778-5 | SD-S-P-NASC11-0405 | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| 13-04-0780-1 | SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| 13-04-0780-2 | SD-S-P-NASC12-0102 | | | | |
| 13-04-0780-3 | SD-S-P-NASC12-0203 | | | | |
| 13-04-0780-4 | SD-S-P-NASC12-0304 | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| 13-04-0781-1 | SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| 13-04-0781-2 | SD-S-P-NASC13-0102 | | | | |
| 13-04-0781-3 | SD-S-P-NASC13-0203 | | | | |
| 13-04-0781-4 | SD-S-P-NASC13-0304 | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| 13-04-0782-1 | SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| 13-04-0782-2 | SD-S-P-NASC14-0102 | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| 13-04-0779-1 | SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| 13-04-0779-2 | SD-S-P-NASC15-0102 | | | | |
| 13-04-0779-3 | SD-S-P-NASC15-0203 | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged

Calscience Environmental Laboratories, Inc.

# CALSCIENCE

## WORK ORDER NUMBER: 13-04-0782

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard Sediment Study

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 06/20/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

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Work Order Number: 13-04-0782


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# CASE NARRATIVE

## Calscience Work Order No.: 13-04-0782
## Project ID: NASSCO Shipyard Sediment Study

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

Five sediment samples were received for this project on April 10, 2013. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 1.4°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in freezers pending chemistry testing.

On June 12, 2013 samples were composited into two samples as per client instructions.

COC discrepancies were noted in the Sample Anomaly Form.

***Tests Performed***

The two composite samples were analyzed for the following analyses:

C8-C40 by EPA 8015B (M)
C4-C12 by EPA 8015B (M)
Title 22 Metals by EPA 6010B
Mercury by EPA 7471A
PCB Aroclors by EPA 8082

***Data Summary***

<u>Holding times</u>

All samples were analyzed past the EPA recommended holding times for TPH C4-12, TPH-C8-40, PCB Aroclors and Mercury. However, all samples were frozen (-20 °C) upon receipt at the laboratory and remained in that condition until sample preparation/analysis. Per the Puget Sound Protocol (and other references), which states the holding time for sediments may be extended up to one year if kept frozen after collection, the samples were analyzed within the allowable one year holding time. In addition, PCBs are known to be very stable compounds, and SW-846 Ch.4, Table 4-1 (Rev. 4) lists “None” as the recommended holding time for PCBs. However, because the samples were analyzed outside of normal EPA hold times, the data is flagged as such.

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Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

Concentrations of target analytes in the method blank were found to be below reporting limits for all analyses.

Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the MDL, and where applicable, "J" flags were reported.

Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test. All parameters were within established control limits.

Matrix Spikes

Matrix spikes and matrix spike duplicates were performed for each applicable analysis on project samples. All parameters were within the acceptable control limits unless otherwise noted.

For C8-C40 by EPA 8015B (M) matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

For C4-C12 by EPA 8015B (M) matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

For Title 22 Metals by EPA 6010B matrix spike and/or matrix spike duplicate recoveries were outside the established control limits for antimony and barium. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action. The concentrations of copper and zinc in the sample were over four times the spike amount, therefore the recoveries could not be calculated.

For PCB Aroclors by EPA 8082 matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

Surrogates

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Surrogate recoveries for all applicable tests and samples were within acceptable control limits with the following exceptions:

For PCB Aroclors by EPA 8082 the decachlorobiphenyl recovery was high in sample 6.

Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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# Work Order Narrative

Work Order: 13-04-0782



**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/10/13. They were assigned to Work Order 13-04-0782.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with an immediate holding time (HT </= 15 minutes --40CFR-136.3 Table II footnote 4), is considered a "field" test and reported samples results are not flagged unless the analysis is performed beyond 24 hours of the time of collection.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Calscience Environmental Laboratories, Inc.

# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC<br>27201 Puerta Real, Suite 350<br>Mission Viejo, CA 92691-8306 | Work Order: | 13-04-0782 |
| | | Project Name: | NASSCO South Shipyard Sediment Study |
| | | PO Number: | |
| | | Date Received: | 04/10/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| SD-S-P-NASC14-0001 | 13-04-0782-1 | 04/09/13 08:15 | 3 | Sediment |
| SD-S-P-NASC14-0102 | 13-04-0782-2 | 04/09/13 08:15 | 3 | Sediment |
| SD-S-P-NASC14-0203 | 13-04-0782-3 | 04/09/13 08:15 | 3 | Sediment |
| SD-S-P-NASC14-0304 | 13-04-0782-4 | 04/09/13 08:15 | 3 | Sediment |
| SD-S-P-NASC14 Plug | 13-04-0782-5 | 04/09/13 08:15 | 1 | Sediment |
| COMP-C14-TOP | 13-04-0782-6 | 04/09/13 08:15 | 1 | Sediment |
| COMP-C14-BOTTOM | 13-04-0782-7 | 04/09/13 08:15 | 1 | Sediment |

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0782 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C14-TOP** | **13-04-0782-6-A** | **04/09/13 08:15** | **Sediment** | **GC 46** | **06/12/13** | **06/13/13 21:12** | **130612B12** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | ND | 5.0 | 1.8 | 1 | |
| C19-C20 | ND | 5.0 | 1.8 | 1 | |
| C21-C22 | ND | 5.0 | 1.8 | 1 | |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | ND | 5.0 | 2.4 | 1 | |
| C29-C32 | ND | 5.0 | 2.4 | 1 | |
| C33-C36 | ND | 5.0 | 2.6 | 1 | |
| C37-C40 | ND | 5.0 | 1.6 | 1 | |
| C8-C40 Total | ND | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 112 | 61-145 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0782 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C14-BOTTOM** | **13-04-0782-7-A** | **04/09/13 08:15** | **Sediment** | **GC 46** | **06/12/13** | **06/13/13 21:45** | **130612B12** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | ND | 5.0 | 1.8 | 1 | |
| C19-C20 | ND | 5.0 | 1.8 | 1 | |
| C21-C22 | ND | 5.0 | 1.8 | 1 | |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | 2.9 | 5.0 | 2.4 | 1 | J |
| C29-C32 | 4.0 | 5.0 | 2.4 | 1 | J |
| C33-C36 | 3.1 | 5.0 | 2.6 | 1 | J |
| C37-C40 | ND | 5.0 | 1.6 | 1 | |
| C8-C40 Total | 10 | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 96 | 61-145 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0782 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-15-500-15** | **N/A** | **Soil** | **GC 46** | **06/12/13** | **06/13/13 17:39** | **130612B12** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | ND | 5.0 | 1.8 | 1 | |
| C19-C20 | ND | 5.0 | 1.8 | 1 | |
| C21-C22 | ND | 5.0 | 1.8 | 1 | |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | ND | 5.0 | 2.4 | 1 | |
| C29-C32 | ND | 5.0 | 2.4 | 1 | |
| C33-C36 | ND | 5.0 | 2.6 | 1 | |
| C37-C40 | ND | 5.0 | 1.6 | 1 | |
| C8-C40 Total | ND | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 108 | 61-145 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0782 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C14-TOP** | **13-04-0782-6-B** | **04/09/13 08:15** | **Sediment** | **GC 57** | **06/12/13** | **06/13/13 00:30** | **130612B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 69 | 42-126 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C14-BOTTOM** | **13-04-0782-7-B** | **04/09/13 08:15** | **Sediment** | **GC 57** | **06/12/13** | **06/13/13 01:02** | **130612B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 96 | 42-126 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0782 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-13-045-160** | **N/A** | **Soil** | **GC 57** | **06/12/13** | **06/12/13 12:39** | **130612B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 67 | 42-126 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0782 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C14-TOP** | **13-04-0782-6-A** | **04/09/13 08:15** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:43** | **130612L07** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 8.58 | 0.750 | 0.259 | 1 | |
| Barium | 63.5 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.323 | 0.250 | 0.137 | 1 | |
| Cadmium | 0.446 | 0.500 | 0.135 | 1 | J |
| Chromium | 33.2 | 0.250 | 0.142 | 1 | |
| Cobalt | 6.40 | 0.250 | 0.148 | 1 | |
| Copper | 166 | 0.500 | 0.135 | 1 | |
| Lead | 46.0 | 0.500 | 0.132 | 1 | |
| Molybdenum | 2.92 | 0.250 | 0.132 | 1 | |
| Nickel | 7.17 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | 0.610 | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 34.1 | 0.250 | 0.141 | 1 | |
| Zinc | 258 | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0782 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C14-BOTTOM** | **13-04-0782-7-A** | **04/09/13 08:15** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:45** | **130612L07** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 7.21 | 0.750 | 0.259 | 1 | |
| Barium | 87.1 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.306 | 0.250 | 0.137 | 1 | |
| Cadmium | 0.456 | 0.500 | 0.135 | 1 | J |
| Chromium | 25.2 | 0.250 | 0.142 | 1 | |
| Cobalt | 7.47 | 0.250 | 0.148 | 1 | |
| Copper | 113 | 0.500 | 0.135 | 1 | |
| Lead | 36.1 | 0.500 | 0.132 | 1 | |
| Molybdenum | 2.71 | 0.250 | 0.132 | 1 | |
| Nickel | 7.01 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | 0.185 | 0.250 | 0.0857 | 1 | J |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 41.7 | 0.250 | 0.141 | 1 | |
| Zinc | 226 | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0782 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-01-002-16918** | **N/A** | **Soil** | **ICP 7300** | **06/12/13** | **06/13/13 23:15** | **130612L07** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | ND | 0.750 | 0.259 | 1 | |
| Barium | ND | 0.500 | 0.154 | 1 | |
| Beryllium | ND | 0.250 | 0.137 | 1 | |
| Cadmium | ND | 0.500 | 0.135 | 1 | |
| Chromium | ND | 0.250 | 0.142 | 1 | |
| Cobalt | ND | 0.250 | 0.148 | 1 | |
| Copper | ND | 0.500 | 0.135 | 1 | |
| Lead | ND | 0.500 | 0.132 | 1 | |
| Molybdenum | ND | 0.250 | 0.132 | 1 | |
| Nickel | ND | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | ND | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | ND | 0.250 | 0.141 | 1 | |
| Zinc | ND | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0782 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C14-TOP** | **13-04-0782-6-A** | **04/09/13 08:15** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 20:18** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.322 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C14-BOTTOM** | **13-04-0782-7-A** | **04/09/13 08:15** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 20:20** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.201 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-04-007-9356** | **N/A** | **Soil** | **Mercury** | **06/12/13** | **06/12/13 19:51** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | ND | 0.0835 | 0.00588 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0782 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C14-TOP** | **13-04-0782-6-A** | **04/09/13 08:15** | **Sediment** | **GC 58** | **06/13/13** | **06/18/13 13:52** | **130613L09** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | ND | 10 | 2.9 | 1 | |
| Aroclor-1254 | 140 | 10 | 2.4 | 1 | |
| Aroclor-1260 | ND | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 82 | 50-130 | |
| Decachlorobiphenyl | 215 | 50-130 | 2,7 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C14-BOTTOM** | **13-04-0782-7-A** | **04/09/13 08:15** | **Sediment** | **GC 58** | **06/13/13** | **06/18/13 14:10** | **130613L09** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 100 | 29 | 10 | |
| Aroclor-1221 | ND | 100 | 26 | 10 | |
| Aroclor-1232 | ND | 100 | 21 | 10 | |
| Aroclor-1242 | ND | 100 | 25 | 10 | |
| Aroclor-1248 | ND | 100 | 29 | 10 | |
| Aroclor-1254 | 350 | 100 | 24 | 10 | |
| Aroclor-1260 | ND | 100 | 23 | 10 | |
| Aroclor-1262 | ND | 100 | 25 | 10 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 88 | 50-130 | |
| Decachlorobiphenyl | 111 | 50-130 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0782 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-12-565-339** | **N/A** | **Soil** | **GC 58** | **06/13/13** | **06/18/13 09:58** | **130613L09** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | ND | 10 | 2.9 | 1 | |
| Aroclor-1254 | ND | 10 | 2.4 | 1 | |
| Aroclor-1260 | ND | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 79 | 50-130 | |
| Decachlorobiphenyl | 88 | 50-130 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0782 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **GC 46** | **06/12/13** | **06/13/13 18:12** | **130612S12** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| TPH as Diesel | 78.67 | 400.0 | 506.3 | 107 | 599.0 | 130 | 64-130 | 17 | 0-15 | 4 |

RPD: Relative Percent Difference. CL: Control Limits



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# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0782 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **GC 57** | **06/12/13** | **06/12/13 19:44** | **130612S01** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| GRO (C4-C12) Total | 1.771 | 10.00 | 3.056 | 13 | 3.441 | 17 | 48-114 | 12 | 0-25 | 3 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0782 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-1004-11** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:35** | **130612S07** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 5.156 | 21 | 4.888 | 20 | 50-115 | 5 | 0-20 | 3 |
| Arsenic | 6.382 | 25.00 | 30.80 | 98 | 31.62 | 101 | 75-125 | 3 | 0-20 | |
| Barium | 77.69 | 25.00 | 94.87 | 69 | 96.62 | 76 | 75-125 | 2 | 0-20 | 3 |
| Beryllium | 0.3050 | 25.00 | 26.76 | 106 | 26.91 | 106 | 75-125 | 1 | 0-20 | |
| Cadmium | 2.288 | 25.00 | 27.48 | 101 | 27.65 | 101 | 75-125 | 1 | 0-20 | |
| Chromium | 52.02 | 25.00 | 74.33 | 89 | 75.67 | 95 | 75-125 | 2 | 0-20 | |
| Cobalt | 5.278 | 25.00 | 31.48 | 105 | 31.77 | 106 | 75-125 | 1 | 0-20 | |
| Copper | 119.0 | 25.00 | 135.0 | 4X | 139.8 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 57.88 | 25.00 | 83.51 | 103 | 77.28 | 78 | 75-125 | 8 | 0-20 | |
| Molybdenum | 2.003 | 25.00 | 22.60 | 82 | 22.75 | 83 | 75-125 | 1 | 0-20 | |
| Nickel | 12.13 | 25.00 | 37.27 | 101 | 37.84 | 103 | 75-125 | 2 | 0-20 | |
| Selenium | ND | 25.00 | 22.86 | 91 | 23.59 | 94 | 75-125 | 3 | 0-20 | |
| Silver | 2.133 | 12.50 | 14.64 | 100 | 14.64 | 100 | 75-125 | 0 | 0-20 | |
| Thallium | ND | 25.00 | 18.96 | 76 | 20.36 | 81 | 75-125 | 7 | 0-20 | |
| Vanadium | 39.62 | 25.00 | 62.66 | 92 | 64.14 | 98 | 75-125 | 2 | 0-20 | |
| Zinc | 212.5 | 25.00 | 224.3 | 4X | 232.0 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0782 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 19:58** | **130612S08** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.8662 | 0.8350 | 1.685 | 98 | 1.721 | 102 | 71-137 | 2 | 0-14 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0782 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **GC 58** | **06/13/13** | **06/18/13 17:03** | **130613S09** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | ND | 20.00 | 125.3 | 627 | 100.0 | 500 | 50-135 | 22 | 0-25 | 3 |
| Aroclor-1260 | 77.40 | 20.00 | 123.1 | 228 | 114.7 | 187 | 50-135 | 7 | 0-25 | 3 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - PDS/PDSD

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0782 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | PDS/PDSD Batch Number |
|---|---|---|---|---|---|
| **13-04-1004-11** | **Sediment** | **ICP 7300** | **06/12/13 00:00** | **06/14/13 11:38** | **130612S07** |

| Parameter | Sample Conc. | Spike Added | PDS Conc. | PDS %Rec. | PDSD Conc. | PDSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 24.28 | 97 | 24.90 | 100 | 75-125 | 3 | 0-20 | |
| Arsenic | 6.382 | 25.00 | 31.90 | 102 | 31.54 | 101 | 75-125 | 1 | 0-20 | |
| Barium | 77.69 | 25.00 | 103.9 | 105 | 103.8 | 104 | 75-125 | 0 | 0-20 | |
| Beryllium | 0.3050 | 25.00 | 26.15 | 103 | 26.17 | 103 | 75-125 | 0 | 0-20 | |
| Cadmium | 2.288 | 25.00 | 27.00 | 99 | 26.98 | 99 | 75-125 | 0 | 0-20 | |
| Chromium | 52.02 | 25.00 | 76.25 | 97 | 76.16 | 97 | 75-125 | 0 | 0-20 | |
| Cobalt | 5.278 | 25.00 | 31.07 | 103 | 31.32 | 104 | 75-125 | 1 | 0-20 | |
| Copper | 119.0 | 25.00 | 144.2 | 4X | 143.8 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 57.88 | 25.00 | 81.45 | 94 | 82.11 | 97 | 75-125 | 1 | 0-20 | |
| Molybdenum | 2.003 | 25.00 | 26.24 | 97 | 26.48 | 98 | 75-125 | 1 | 0-20 | |
| Nickel | 12.13 | 25.00 | 37.35 | 101 | 37.74 | 102 | 75-125 | 1 | 0-20 | |
| Selenium | ND | 25.00 | 23.15 | 93 | 23.94 | 96 | 75-125 | 3 | 0-20 | |
| Silver | 2.133 | 12.50 | 15.06 | 103 | 15.05 | 103 | 75-125 | 0 | 0-20 | |
| Thallium | ND | 25.00 | 22.31 | 89 | 23.20 | 93 | 75-125 | 4 | 0-20 | |
| Vanadium | 39.62 | 25.00 | 63.75 | 97 | 63.75 | 97 | 75-125 | 0 | 0-20 | |
| Zinc | 212.5 | 25.00 | 236.1 | 4X | 236.6 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0782 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-15-500-15** | **Soil** | **GC 46** | **06/13/13 17:55** | **130612B12** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| TPH as Diesel | 400.0 | 479.6 | 120 | 75-123 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0782 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-13-045-160** | **Soil** | **GC 57** | **06/12/13 13:11** | **130612B01** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| GRO (C4-C12) Total | 10.00 | 8.906 | 89 | 70-124 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0782 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **097-01-002-16918** | **Soil** | **ICP 7300** | **06/13/13 23:23** | **130612L07** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | ME CL | Qualifiers |
|---|---|---|---|---|---|---|
| Antimony | 25.00 | 25.66 | 103 | 80-120 | 73-127 | |
| Arsenic | 25.00 | 25.77 | 103 | 80-120 | 73-127 | |
| Barium | 25.00 | 27.89 | 112 | 80-120 | 73-127 | |
| Beryllium | 25.00 | 25.57 | 102 | 80-120 | 73-127 | |
| Cadmium | 25.00 | 26.51 | 106 | 80-120 | 73-127 | |
| Chromium | 25.00 | 26.27 | 105 | 80-120 | 73-127 | |
| Cobalt | 25.00 | 27.42 | 110 | 80-120 | 73-127 | |
| Copper | 25.00 | 25.16 | 101 | 80-120 | 73-127 | |
| Lead | 25.00 | 26.54 | 106 | 80-120 | 73-127 | |
| Molybdenum | 25.00 | 26.03 | 104 | 80-120 | 73-127 | |
| Nickel | 25.00 | 28.35 | 113 | 80-120 | 73-127 | |
| Selenium | 25.00 | 24.44 | 98 | 80-120 | 73-127 | |
| Silver | 12.50 | 13.34 | 107 | 80-120 | 73-127 | |
| Thallium | 25.00 | 26.22 | 105 | 80-120 | 73-127 | |
| Vanadium | 25.00 | 25.55 | 102 | 80-120 | 73-127 | |
| Zinc | 25.00 | 27.93 | 112 | 80-120 | 73-127 | |

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0782 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-04-007-9356** | **Soil** | **Mercury** | **06/12/13 19:54** | **130612L08** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.8350 | 0.8143 | 98 | 85-121 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0782 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 5 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-12-565-339** | **Soil** | **GC 58** | **06/18/13 10:16** | **130613L09** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | 20.00 | 18.49 | 92 | 50-135 | |
| Aroclor-1260 | 20.00 | 16.45 | 82 | 50-135 | |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order: 13-04-0782



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| 4 | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range. |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

For any analysis identified as a "field" test with a holding time (HT) </= 15 minutes where the sample is received outside of HT, Calscience will adhere to its internal HT of 24 hours. In cases where sample analysis does not meet Calscience's internal HT, results will be appropriately qualified.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Calscience Environmental Laboratories, Inc.

7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/9/13

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

P.O. NO.: 1315100800

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

QUOTE NO.:

SAMPLER(S): (SIGNATURE)

LAB USE ONLY: 13-04-0782

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)

☐ RWQCB REPORTING ☒ ARCHIVE SAMPLES UNTIL 4 / 30 / ~~13~~ 14

SPECIAL INSTRUCTIONS

Please HOLD samples.
Analysis will be determined at a later date.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

1x 1603. jar
1x 8003. jar
1x ziplock baggie

REQUESTED ANALYSIS

Please list tests required

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | HOLD |
|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC14-0001 | | 4/9/13 | 0815 | sed | 3 | X |
| 2 | | -0102 | | | | | X |
| | | ~~-0201~~ KA | | | | | X |
| 3 | | -0203 | | | | | X |
| 4 | | -0304 | | | | | X |
| 5 | Plug | Plug | | | | 4 11 | X |
| | | | | | | BS | X |
| | | | | | | | X |
| | | | | | | | X |
| | | | | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | | | |
| Barry J. Snyder | | 04/10/13 | 1545 |
| | Danielle CEL | 4/10/13 | 18:45 |



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|
| NAS-C1 | | | | |
| SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| SD-S-P-NASC1-0102 | | | | |
| SD-S-P-NASC1-0203 | | | | |
| SD-S-P-NASC1-0304 | | | | |
| SD-S-P-NASC1-0405 | | | | |
| SD-S-P-NASC1-0506 | | | | BOTTOM |
| SD-S-P-NASC1-0607 | | | | |
| SD-S-P-NASC1-0708 | | | | |
| SD-S-P-NASC1-0809 | | | | |
| NAS-C2 | | | | |
| SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| SD-S-P-NASC2-0102 | | | | |
| SD-S-P-NASC2-0203 | | | | |
| SD-S-P-NASC2-0304 | | | | |
| SD-S-P-NASC2-0405 | | | | |
| SD-S-P-NASC2-0506 | | | | BOTTOM |
| SD-S-P-NASC2-0607 | | | | |
| SD-S-P-NASC2-0708 | | | | |
| SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | |
| SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| SD-S-P-NASC3-0102 | | | | |
| SD-S-P-NASC3-0203 | | | | |
| SD-S-P-NASC3-0304 | | | | |
| SD-S-P-NASC3-0405 | | | | |
| SD-S-P-NASC3-0506 | | | | BOTTOM |
| SD-S-P-NASC3-0607 | | | | |
| SD-S-P-NASC3-0708 | | | | |
| SD-S-P-NASC3-0809 | | | | |
| SD-S-P-NASC3-0910 | | | | |
| SD-S-P-NASC3-0910-PLUG | | | | not included[c] |
| NAS-C4 | | | | |
| SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| SD-S-P-NASC4-0102 | | | | |
| SD-S-P-NASC4-0203 | | | | |
| SD-S-P-NASC4-0304 | | | | |
| SD-S-P-NASC4-0405 | | | | |
| SD-S-P-NASC4-0506 | | | | BOTTOM |
| SD-S-P-NASC4-0607 | | | | |
| SD-S-P-NASC4-0708 | | | | |
| SD-S-P-NASC4-0809 | | | | |
| SD-S-P-NASC4-0910 | | | | |
| SD-S-P-NASC4-0910-PLUG | | | | not included[c] |
| NAS-C5 | | | | |
| SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| SD-S-P-NASC5-0102 | | | | |
| SD-S-P-NASC5-0203 | | | | |
| SD-S-P-NASC5-0304 | | | | BOTTOM |
| SD-S-P-NASC5-0405 | | | | |
| SD-S-P-NASC5-0506-PLUG | | | | not included[c] |
| NAS-C6 | | | | |
| SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| SD-S-P-NASC6-0102 | | | | |
| SD-S-P-NASC6-0203 | | | | BOTTOM |
| SD-S-P-NASC6-0304-PLUG | | | | not included[c] |
| NAS-C7 | | | | |
| SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| SD-S-P-NASC7-0102 | | | | |
| SD-S-P-NASC7-0203 | | | | |
| SD-S-P-NASC7-0304 | | | | |
| SD-S-P-NASC7-0405 | | | | BOTTOM |
| SD-S-P-NASC7-0506 | | | | |
| SD-S-P-NASC7-0607 | | | | |
| SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | |
| SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| SD-S-P-NASC8-0102 | | | | |
| SD-S-P-NASC8-0203 | | | | |
| SD-S-P-NASC8-0304 | | | | |
| SD-S-P-NASC8-0405 | | | | |
| SD-S-P-NASC8-0506 | | | | BOTTOM |
| SD-S-P-NASC8-0607 | | | | |
| SD-S-P-NASC8-0708 | | | | |
| SD-S-P-NASC8-0809 | | | | |
| SD-S-P-NASC8-0910 | | | | |
| SD-S-P-NASC8-0910-PLUG | | | | not included[c] |
| NAS-C9 | | | | |
| SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| SD-S-P-NASC9-0102 | | | | |
| SD-S-P-NASC9-0203 | | | | |
| SD-S-P-NASC9-0304 | | | | |
| SD-S-P-NASC9-0405 | | | | BOTTOM |
| SD-S-P-NASC9-0506 | | | | |
| SD-S-P-NASC9-0607 | | | | |
| NAS-C10 | | | | |
| SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| SD-S-P-NASC10-0102 | | | | |
| SD-S-P-NASC10-0203 | | | | |
| SD-S-P-NASC10-0304 | | | | BOTTOM |
| SD-S-P-NASC10-0405 | | | | |
| SD-S-P-NASC10-0506 | | | | |
| SD-S-P-NASC10-0607 | | | | |
| SD-S-P-NASC10-0708 | | | | |
| NAS-C11 | | | | |
| SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| SD-S-P-NASC11-0102 | | | | |
| SD-S-P-NASC11-0203 | | | | |
| SD-S-P-NASC11-0304 | | | | |
| SD-S-P-NASC11-0405 | | | | BOTTOM |
| SD-S-P-NASC11-0506 | | | | |
| SD-S-P-NASC11-0607 | | | | |
| SD-S-P-NASC11-0708 | | | | |
| SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | |
| SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| SD-S-P-NASC12-0102 | | | | |
| SD-S-P-NASC12-0203 | | | | |
| SD-S-P-NASC12-0304 | | | | |
| SD-S-P-NASC12-0405 | | | | BOTTOM |
| SD-S-P-NASC12-0506 | | | | |
| SD-S-P-NASC12-0607 | | | | |
| SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | |
| SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| SD-S-P-NASC13-0102 | | | | |
| SD-S-P-NASC13-0203 | | | | |
| SD-S-P-NASC13-0304 | | | | BOTTOM |
| SD-S-P-NASC13-0405 | | | | |
| SD-S-P-NASC13-0506 | | | | |
| SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | |
| SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| SD-S-P-NASC14-0102 | | | | |
| SD-S-P-NASC14-0203 | | | | BOTTOM |
| SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | |
| SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| SD-S-P-NASC15-0102 | | | | |
| SD-S-P-NASC15-0203 | | | | |
| SD-S-P-NASC15-0304 | | | | BOTTOM |
| SD-S-P-NASC15-0405 | | | | |
| SD-S-P-NASC15-0506 | | | | |

Notes:
0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on
a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.
b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.
A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)
c - sample not included due to low volume available and because it represents native material which will not be dredged



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AMEC Environment & Infrastructure
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Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| ~~13-04-1000-1~~ | ~~SD-S-P-NASC1-0001~~ | COMP-A | 4/11/2013 | 1335 | TOP |
| ~~13-04-1000-2~~ | ~~SD-S-P-NASC1-0102~~ | | | | |
| ~~13-04-1000-3~~ | ~~SD-S-P-NASC1-0203~~ | | | | |
| ~~13-04-1000-4~~ | ~~SD-S-P-NASC1-0304~~ | | | | |
| ~~13-04-1000-5~~ | ~~SD-S-P-NASC1-0405~~ | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| ~~13-04-1111-1~~ | ~~SD-S-P-NASC2-0001~~ | COMP-A | 4/12/2013 | 1021 | TOP |
| ~~13-04-1111-2~~ | ~~SD-S-P-NASC2-0102~~ | | | | |
| ~~13-04-1111-3~~ | ~~SD-S-P-NASC2-0203~~ | | | | |
| ~~13-04-1111-4~~ | ~~SD-S-P-NASC2-0304~~ | | | | |
| ~~13-04-1111-5~~ | ~~SD-S-P-NASC2-0405~~ | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| ~~13-04-1113-1~~ | ~~SD-S-P-NASC3-0001~~ | COMP-A | 4/12/2013 | 751 | TOP |
| ~~13-04-1113-2~~ | ~~SD-S-P-NASC3-0102~~ | | | | |
| ~~13-04-1113-3~~ | ~~SD-S-P-NASC3-0203~~ | | | | |
| ~~13-04-1113-4~~ | ~~SD-S-P-NASC3-0304~~ | | | | |
| ~~13-04-1113-5~~ | ~~SD-S-P-NASC3-0405~~ | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| ~~13-04-1002-1~~ | ~~SD-S-P-NASC4-0001~~ | COMP-A | 4/11/2013 | 930 | TOP |
| ~~13-04-1002-2~~ | ~~SD-S-P-NASC4-0102~~ | | | | |
| ~~13-04-1002-3~~ | ~~SD-S-P-NASC4-0203~~ | | | | |
| ~~13-04-1002-4~~ | ~~SD-S-P-NASC4-0304~~ | | | | |
| ~~13-04-1002-5~~ | ~~SD-S-P-NASC4-0405~~ | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| ~~13-04-1003-1~~ | ~~SD-S-P-NASC5-0001~~ | COMP-A | 4/11/2013 | 755 | TOP |
| ~~13-04-1003-2~~ | ~~SD-S-P-NASC5-0102~~ | | | | |
| ~~13-04-1003-3~~ | ~~SD-S-P-NASC5-0203~~ | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| ~~13-04-1001-1~~ | ~~SD-S-P-NASC6-0001~~ | COMP-B | 4/11/2013 | 1200 | TOP |
| ~~13-04-1001-2~~ | ~~SD-S-P-NASC6-0102~~ | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| ~~13-04-0902-1~~ | ~~SD-S-P-NASC7-0001~~ | COMP-B | 4/10/2013 | 1430 | TOP |
| ~~13-04-0902-2~~ | ~~SD-S-P-NASC7-0102~~ | | | | |
| ~~13-04-0902-3~~ | ~~SD-S-P-NASC7-0203~~ | | | | |
| ~~13-04-0902-4~~ | ~~SD-S-P-NASC7-0304~~ | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| ~~13-04-0903-1~~ | ~~SD-S-P-NASC8-0001~~ | COMP-B | 4/10/2013 | 830 | TOP |
| ~~13-04-0903-2~~ | ~~SD-S-P-NASC8-0102~~ | | | | |
| ~~13-04-0903-3~~ | ~~SD-S-P-NASC8-0203~~ | | | | |
| ~~13-04-0903-4~~ | ~~SD-S-P-NASC8-0304~~ | | | | |
| ~~13-04-0903-5~~ | ~~SD-S-P-NASC8-0405~~ | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| ~~13-04-0901-1~~ | ~~SD-S-P-NASC9-0001~~ | COMP-B | 4/10/2013 | 1315 | TOP |
| ~~13-04-0901-2~~ | ~~SD-S-P-NASC9-0102~~ | | | | |
| ~~13-04-0901-3~~ | ~~SD-S-P-NASC9-0203~~ | | | | |
| ~~13-04-0901-4~~ | ~~SD-S-P-NASC9-0304~~ | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607-PLUG~~ | | | | |
| NAS-C10 | | | | | |
| ~~13-04-0904-1~~ | ~~SD-S-P-NASC10-0001~~ | COMP-D | 4/10/2013 | 1010 | TOP |
| ~~13-04-0904-2~~ | ~~SD-S-P-NASC10-0102~~ | | | | |
| ~~13-04-0904-3~~ | ~~SD-S-P-NASC10-0203~~ | | | | |
| ~~13-04-0904-4~~ | ~~SD-S-P-NASC10-0304~~ | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-8 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| ~~13-04-0778-1~~ | ~~SD-S-P-NASC11-0001~~ | COMP-D | 4/9/2013 | 1525 | TOP |
| ~~13-04-0778-2~~ | ~~SD-S-P-NASC11-0102~~ | | | | |
| ~~13-04-0778-3~~ | ~~SD-S-P-NASC11-0203~~ | | | | |
| ~~13-04-0778-4~~ | ~~SD-S-P-NASC11-0304~~ | | | | |
| ~~13-04-0778-5~~ | ~~SD-S-P-NASC11-0405~~ | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| ~~13-04-0780-1~~ | ~~SD-S-P-NASC12-0001~~ | COMP-D | 4/9/2013 | 1410 | TOP |
| ~~13-04-0780-2~~ | ~~SD-S-P-NASC12-0102~~ | | | | |
| ~~13-04-0780-3~~ | ~~SD-S-P-NASC12-0203~~ | | | | |
| ~~13-04-0780-4~~ | ~~SD-S-P-NASC12-0304~~ | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| ~~13-04-0781-1~~ | ~~SD-S-P-NASC13-0001~~ | COMP-E | 4/9/2013 | 1055 | TOP |
| ~~13-04-0781-2~~ | ~~SD-S-P-NASC13-0102~~ | | | | |
| ~~13-04-0781-3~~ | ~~SD-S-P-NASC13-0203~~ | | | | |
| ~~13-04-0781-4~~ | ~~SD-S-P-NASC13-0304~~ | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| ~~13-04-0782-1~~ | ~~SD-S-P-NASC14-0001~~ | COMP-E | 4/9/2013 | 815 | TOP |
| ~~13-04-0782-2~~ | ~~SD-S-P-NASC14-0102~~ | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| ~~13-04-0779-1~~ | ~~SD-S-P-NASC15-0001~~ | COMP-E | 4/9/2013 | 940 | TOP |
| ~~13-04-0779-2~~ | ~~SD-S-P-NASC15-0102~~ | | | | |
| ~~13-04-0779-3~~ | ~~SD-S-P-NASC15-0203~~ | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0782

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/10/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.6 °C - 0.2 °C (CF) = 1.4 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter Initial: KB

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: KB

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: AMC

| SAMPLE CONDITION: | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ 3

**Water:** ☐VOA ☐VOA**h** ☐VOA**$na_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**$na_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**$na_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** AMC

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WSC

**Preservative:** **h:** HCL **n:** $HNO_3$ **$na_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WSC



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AMEC Environment & Infrastructure
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April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| 13-04-1004-1 | SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| 13-04-1004-2 | SD-S-P-NASC1-0102 | | | | |
| 13-04-1004-3 | SD-S-P-NASC1-0203 | | | | |
| 13-04-1004-4 | SD-S-P-NASC1-0304 | | | | |
| 13-04-1004-5 | SD-S-P-NASC1-0405 | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| 13-04-1111-1 | SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| 13-04-1111-2 | SD-S-P-NASC2-0102 | | | | |
| 13-04-1111-3 | SD-S-P-NASC2-0203 | | | | |
| 13-04-1111-4 | SD-S-P-NASC2-0304 | | | | |
| 13-04-1111-5 | SD-S-P-NASC2-0405 | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| 13-04-1113-1 | SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| 13-04-1113-2 | SD-S-P-NASC3-0102 | | | | |
| 13-04-1113-3 | SD-S-P-NASC3-0203 | | | | |
| 13-04-1113-4 | SD-S-P-NASC3-0304 | | | | |
| 13-04-1113-5 | SD-S-P-NASC3-0405 | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| 13-04-1002-1 | SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| 13-04-1002-2 | SD-S-P-NASC4-0102 | | | | |
| 13-04-1002-3 | SD-S-P-NASC4-0203 | | | | |
| 13-04-1002-4 | SD-S-P-NASC4-0304 | | | | |
| 13-04-1002-5 | SD-S-P-NASC4-0405 | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| 13-04-1003-1 | SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| 13-04-1003-2 | SD-S-P-NASC5-0102 | | | | |
| 13-04-1003-3 | SD-S-P-NASC5-0203 | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| 13-04-1001-1 | SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| 13-04-1001-2 | SD-S-P-NASC6-0102 | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| 13-04-0902-1 | SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| 13-04-0902-2 | SD-S-P-NASC7-0102 | | | | |
| 13-04-0902-3 | SD-S-P-NASC7-0203 | | | | |
| 13-04-0902-4 | SD-S-P-NASC7-0304 | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| 13-04-0903-1 | SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| 13-04-0903-2 | SD-S-P-NASC8-0102 | | | | |
| 13-04-0903-3 | SD-S-P-NASC8-0203 | | | | |
| 13-04-0903-4 | SD-S-P-NASC8-0304 | | | | |
| 13-04-0903-5 | SD-S-P-NASC8-0405 | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| 13-04-0901-1 | SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| 13-04-0901-2 | SD-S-P-NASC9-0102 | | | | |
| 13-04-0901-3 | SD-S-P-NASC9-0203 | | | | |
| 13-04-0901-4 | SD-S-P-NASC9-0304 | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607 PLUG~~ | | | | |
| NAS-C10 | | | | | |
| 13-04-0904-1 | SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| 13-04-0904-2 | SD-S-P-NASC10-0102 | | | | |
| 13-04-0904-3 | SD-S-P-NASC10-0203 | | | | |
| 13-04-0904-4 | SD-S-P-NASC10-0304 | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-9 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| 13-04-0778-1 | SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| 13-04-0778-2 | SD-S-P-NASC11-0102 | | | | |
| 13-04-0778-3 | SD-S-P-NASC11-0203 | | | | |
| 13-04-0778-4 | SD-S-P-NASC11-0304 | | | | |
| 13-04-0778-5 | SD-S-P-NASC11-0405 | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| 13-04-0780-1 | SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| 13-04-0780-2 | SD-S-P-NASC12-0102 | | | | |
| 13-04-0780-3 | SD-S-P-NASC12-0203 | | | | |
| 13-04-0780-4 | SD-S-P-NASC12-0304 | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| 13-04-0781-1 | SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| 13-04-0781-2 | SD-S-P-NASC13-0102 | | | | |
| 13-04-0781-3 | SD-S-P-NASC13-0203 | | | | |
| 13-04-0781-4 | SD-S-P-NASC13-0304 | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| 13-04-0782-1 | SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| 13-04-0782-2 | SD-S-P-NASC14-0102 | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| 13-04-0779-1 | SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| 13-04-0779-2 | SD-S-P-NASC15-0102 | | | | |
| 13-04-0779-3 | SD-S-P-NASC15-0203 | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged

Calscience Environmental Laboratories, Inc.

# CALSCIENCE

## WORK ORDER NUMBER: 13-04-0779

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard Sediment Study

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 06/20/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

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Work Order Number: 13-04-0779


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Calscience Environmental Laboratories, Inc.

# CASE NARRATIVE

## Calscience Work Order No.: 13-04-0779
## Project ID: NASSCO Shipyard Sediment Study

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

Six sediment samples were received for this project on April 10, 2013. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 1.5°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in refrigeration units pending chemistry testing.

On June 12, 2013 samples were composited into two samples as per client instructions.

COC discrepancies were noted in the Sample Anomaly Form.

***Tests Performed***

The two composite samples and a laboratory duplicate were analyzed for the following analyses:

C8-C40 by EPA 8015B (M)
C4-C12 by EPA 8015B (M)
Title 22 Metals by EPA 6010B
Mercury by EPA 7471A
PCB Aroclors by EPA 8082

***Data Summary***

<u>Holding times</u>

All samples were analyzed past the EPA recommended holding times for TPH C4-12, TPH-C8-40, PCB Aroclors and Mercury. However, all samples were frozen (-20 °C) upon receipt at the laboratory and remained in that condition until sample preparation/analysis. Per the Puget Sound Protocol (and other references), which states the holding time for sediments may be extended up to one year if kept frozen after collection, the samples were analyzed within the allowable one year holding time. In addition, PCBs are known to be very stable compounds, and SW-846 Ch.4, Table 4-1 (Rev. 4) lists “None” as the recommended holding time for PCBs. However, because the samples were analyzed outside of normal EPA hold times, the data is flagged as such.

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Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

Concentrations of target analytes in the method blank were found to be below reporting limits for all analyses.

Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the MDL, and where applicable, "J" flags were reported.

Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test. All parameters were within established control limits.

Matrix Spikes

Matrix spikes and matrix spike duplicates were performed for each applicable analysis on project samples. All parameters were within the acceptable control limits unless otherwise noted.

For C8-C40 by EPA 8015B (M) matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

For C4-C12 by EPA 8015B (M) one of the matrix spike and matrix spike duplicate recoveries were outside the established control limits. One MS/MSD pair was in control. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

For Title 22 Metals by EPA 6010B matrix spike and matrix spike duplicate recoveries were outside the established control limits for antimony and barium. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action. The concentrations of copper and zinc in the sample were over four times the spike amount, therefore the recoveries could not be calculated.

For PCB Aroclors by EPA 8082 matrix spike and matrix spike duplicate recoveries were outside the established control limits. This may indicate a matrix effect since the LCS recoveries were in control, therefore, the results are released with no further action.

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Surrogates

Surrogate recoveries for all applicable tests and samples were within acceptable control limits.

Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/10/13. They were assigned to Work Order 13-04-0779.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with an immediate holding time (HT </= 15 minutes --40CFR-136.3 Table II footnote 4), is considered a "field" test and reported samples results are not flagged unless the analysis is performed beyond 24 hours of the time of collection.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Calscience Environmental Laboratories, Inc.

# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC<br>27201 Puerta Real, Suite 350<br>Mission Viejo, CA 92691-8306 | Work Order: | 13-04-0779 |
| | | Project Name: | NASSCO South Shipyard Sediment Study |
| | | PO Number: | |
| | | Date Received: | 04/10/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| SD-S-P-NASC15-0001 | 13-04-0779-1 | 04/09/13 09:40 | 3 | Sediment |
| SD-S-P-NASC15-0102 | 13-04-0779-2 | 04/09/13 09:40 | 3 | Sediment |
| SD-S-P-NASC15-0203 | 13-04-0779-3 | 04/09/13 09:40 | 3 | Sediment |
| SD-S-P-NASC15-0304 | 13-04-0779-4 | 04/09/13 09:40 | 3 | Sediment |
| SD-S-P-NASC15-0405 | 13-04-0779-5 | 04/09/13 09:40 | 3 | Sediment |
| SD-S-P-NASC15-0506 | 13-04-0779-6 | 04/09/13 09:40 | 3 | Sediment |
| SD-S-P-NASC15 Plug | 13-04-0779-7 | 04/09/13 09:40 | 1 | Sediment |
| SD-S-P-NASC15 Plug/Bottom of core | 13-04-0779-8 | 04/09/13 09:15 | 1 | Sediment |
| COMP-C15-TOP | 13-04-0779-9 | 04/09/13 09:40 | 1 | Sediment |
| COMP-C15-BOTTOM | 13-04-0779-10 | 04/09/13 09:40 | 1 | Sediment |
| COMP-C15-BOTTOM-LAB DUP | 13-04-0779-11 | 04/09/13 09:40 | 1 | Sediment |

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 4 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C15-TOP** | **13-04-0779-9-A** | **04/09/13 09:40** | **Sediment** | **GC 46** | **06/12/13** | **06/13/13 19:50** | **130612B12** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | 2.8 | 5.0 | 1.8 | 1 | J |
| C17-C18 | 4.9 | 5.0 | 1.8 | 1 | J |
| C19-C20 | 5.8 | 5.0 | 1.8 | 1 | |
| C21-C22 | 5.1 | 5.0 | 1.8 | 1 | |
| C23-C24 | 5.0 | 5.0 | 1.7 | 1 | |
| C25-C28 | 11 | 5.0 | 2.4 | 1 | |
| C29-C32 | 13 | 5.0 | 2.4 | 1 | |
| C33-C36 | 8.9 | 5.0 | 2.6 | 1 | |
| C37-C40 | 6.7 | 5.0 | 1.6 | 1 | |
| C8-C40 Total | 63 | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 105 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 4 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C15-BOTTOM** | **13-04-0779-10-A** | **04/09/13 09:40** | **Sediment** | **GC 46** | **06/12/13** | **06/13/13 20:05** | **130612B12** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | 2.1 | 5.0 | 1.8 | 1 | J |
| C15-C16 | 3.8 | 5.0 | 1.8 | 1 | J |
| C17-C18 | 8.8 | 5.0 | 1.8 | 1 | |
| C19-C20 | 7.9 | 5.0 | 1.8 | 1 | |
| C21-C22 | 6.4 | 5.0 | 1.8 | 1 | |
| C23-C24 | 6.3 | 5.0 | 1.7 | 1 | |
| C25-C28 | 13 | 5.0 | 2.4 | 1 | |
| C29-C32 | 15 | 5.0 | 2.4 | 1 | |
| C33-C36 | 11 | 5.0 | 2.6 | 1 | |
| C37-C40 | 6.1 | 5.0 | 1.6 | 1 | |
| C8-C40 Total | 80 | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 95 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 4 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C15-BOTTOM-LAB DUP** | **13-04-0779-11-A** | **04/09/13 09:40** | **Sediment** | **GC 46** | **06/12/13** | **06/13/13 20:23** | **130612B12** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | 3.7 | 5.0 | 1.8 | 1 | J |
| C17-C18 | 5.5 | 5.0 | 1.8 | 1 | |
| C19-C20 | 6.3 | 5.0 | 1.8 | 1 | |
| C21-C22 | 4.6 | 5.0 | 1.8 | 1 | J |
| C23-C24 | 4.8 | 5.0 | 1.7 | 1 | J |
| C25-C28 | 9.5 | 5.0 | 2.4 | 1 | |
| C29-C32 | 9.9 | 5.0 | 2.4 | 1 | |
| C33-C36 | 8.9 | 5.0 | 2.6 | 1 | |
| C37-C40 | 4.0 | 5.0 | 1.6 | 1 | J |
| C8-C40 Total | 57 | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 113 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 4 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-15-500-15** | **N/A** | **Soil** | **GC 46** | **06/12/13** | **06/13/13 17:39** | **130612B12** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C8 | ND | 5.0 | 2.4 | 1 | |
| C9-C10 | ND | 5.0 | 3.1 | 1 | |
| C11-C12 | ND | 5.0 | 1.7 | 1 | |
| C13-C14 | ND | 5.0 | 1.8 | 1 | |
| C15-C16 | ND | 5.0 | 1.8 | 1 | |
| C17-C18 | ND | 5.0 | 1.8 | 1 | |
| C19-C20 | ND | 5.0 | 1.8 | 1 | |
| C21-C22 | ND | 5.0 | 1.8 | 1 | |
| C23-C24 | ND | 5.0 | 1.7 | 1 | |
| C25-C28 | ND | 5.0 | 2.4 | 1 | |
| C29-C32 | ND | 5.0 | 2.4 | 1 | |
| C33-C36 | ND | 5.0 | 2.6 | 1 | |
| C37-C40 | ND | 5.0 | 1.6 | 1 | |
| C8-C40 Total | ND | 5.0 | 1.6 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| n-Octacosane | 108 | 61-145 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C15-TOP** | **13-04-0779-9-B** | **04/09/13 09:40** | **Sediment** | **GC 57** | **06/12/13** | **06/12/13 21:20** | **130612B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 103 | 42-126 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C15-BOTTOM** | **13-04-0779-10-B** | **04/09/13 09:40** | **Sediment** | **GC 57** | **06/12/13** | **06/12/13 21:51** | **130612B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 103 | 42-126 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C15-BOTTOM-LAB DUP** | **13-04-0779-11-B** | **04/09/13 09:40** | **Sediment** | **GC 4** | **06/13/13** | **06/14/13 05:41** | **130613B02** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 84 | 42-126 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-13-045-160** | **N/A** | **Soil** | **GC 57** | **06/12/13** | **06/12/13 12:39** | **130612B01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 67 | 42-126 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-13-045-161** | **N/A** | **Soil** | **GC 4** | **06/13/13** | **06/14/13 00:44** | **130613B02** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| C4-C5 | ND | 0.50 | 0.12 | 1 | |
| C6 | ND | 0.50 | 0.14 | 1 | |
| C7 | ND | 0.50 | 0.15 | 1 | |
| C8 | ND | 0.50 | 0.15 | 1 | |
| C9-C10 | ND | 0.50 | 0.15 | 1 | |
| C11-C12 | ND | 0.50 | 0.23 | 1 | |
| GRO (C4-C12) Total | ND | 0.50 | 0.23 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 1,4-Bromofluorobenzene - FID | 85 | 42-126 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 4 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C15-TOP** | **13-04-0779-9-A** | **04/09/13 09:40** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:53** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 9.86 | 0.750 | 0.259 | 1 | |
| Barium | 69.7 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.342 | 0.250 | 0.137 | 1 | |
| Cadmium | 0.558 | 0.500 | 0.135 | 1 | |
| Chromium | 36.7 | 0.250 | 0.142 | 1 | |
| Cobalt | 7.31 | 0.250 | 0.148 | 1 | |
| Copper | 211 | 0.500 | 0.135 | 1 | |
| Lead | 52.8 | 0.500 | 0.132 | 1 | |
| Molybdenum | 4.34 | 0.250 | 0.132 | 1 | |
| Nickel | 8.63 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | 0.800 | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 36.1 | 0.250 | 0.141 | 1 | |
| Zinc | 261 | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 4 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C15-BOTTOM** | **13-04-0779-10-A** | **04/09/13 09:40** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:55** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 6.83 | 0.750 | 0.259 | 1 | |
| Barium | 120 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.249 | 0.250 | 0.137 | 1 | J |
| Cadmium | 0.715 | 0.500 | 0.135 | 1 | |
| Chromium | 26.1 | 0.250 | 0.142 | 1 | |
| Cobalt | 7.02 | 0.250 | 0.148 | 1 | |
| Copper | 130 | 0.500 | 0.135 | 1 | |
| Lead | 39.7 | 0.500 | 0.132 | 1 | |
| Molybdenum | 6.91 | 0.250 | 0.132 | 1 | |
| Nickel | 5.93 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | 0.381 | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 28.5 | 0.250 | 0.141 | 1 | |
| Zinc | 261 | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 4 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C15-BOTTOM-LAB DUP** | **13-04-0779-11-A** | **04/09/13 09:40** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 16:59** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | 7.11 | 0.750 | 0.259 | 1 | |
| Barium | 120 | 0.500 | 0.154 | 1 | |
| Beryllium | 0.248 | 0.250 | 0.137 | 1 | J |
| Cadmium | 0.717 | 0.500 | 0.135 | 1 | |
| Chromium | 25.4 | 0.250 | 0.142 | 1 | |
| Cobalt | 7.05 | 0.250 | 0.148 | 1 | |
| Copper | 130 | 0.500 | 0.135 | 1 | |
| Lead | 39.2 | 0.500 | 0.132 | 1 | |
| Molybdenum | 9.73 | 0.250 | 0.132 | 1 | |
| Nickel | 5.82 | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | 0.265 | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | 28.2 | 0.250 | 0.141 | 1 | |
| Zinc | 263 | 1.00 | 0.178 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 4 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-01-002-16915** | **N/A** | **Soil** | **ICP 7300** | **06/12/13** | **06/13/13 23:17** | **130612L08** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Antimony | ND | 0.750 | 0.149 | 1 | |
| Arsenic | ND | 0.750 | 0.259 | 1 | |
| Barium | ND | 0.500 | 0.154 | 1 | |
| Beryllium | ND | 0.250 | 0.137 | 1 | |
| Cadmium | ND | 0.500 | 0.135 | 1 | |
| Chromium | ND | 0.250 | 0.142 | 1 | |
| Cobalt | ND | 0.250 | 0.148 | 1 | |
| Copper | ND | 0.500 | 0.135 | 1 | |
| Lead | ND | 0.500 | 0.132 | 1 | |
| Molybdenum | ND | 0.250 | 0.132 | 1 | |
| Nickel | ND | 0.250 | 0.145 | 1 | |
| Selenium | ND | 0.750 | 0.300 | 1 | |
| Silver | ND | 0.250 | 0.0857 | 1 | |
| Thallium | ND | 0.750 | 0.152 | 1 | |
| Vanadium | ND | 0.250 | 0.141 | 1 | |
| Zinc | ND | 1.00 | 0.178 | 1 | |

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C15-TOP** | **13-04-0779-9-A** | **04/09/13 09:40** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 19:55** | **130612L05** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.562 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C15-BOTTOM** | **13-04-0779-10-A** | **04/09/13 09:40** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 19:57** | **130612L05** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.472 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C15-BOTTOM-LAB DUP** | **13-04-0779-11-A** | **04/09/13 09:40** | **Sediment** | **Mercury** | **06/12/13** | **06/12/13 19:59** | **130612L05** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.494 | 0.0835 | 0.00588 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-04-007-9353** | **N/A** | **Soil** | **Mercury** | **06/12/13** | **06/12/13 13:13** | **130612L05** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Mercury | ND | 0.0835 | 0.00588 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C15-TOP** | **13-04-0779-9-A** | **04/09/13 09:40** | **Sediment** | **GC 58** | **06/13/13** | **06/18/13 11:46** | **130613L09** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | ND | 10 | 2.9 | 1 | |
| Aroclor-1254 | 160 | 10 | 2.4 | 1 | |
| Aroclor-1260 | 53 | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 89 | 50-130 | |
| Decachlorobiphenyl | 111 | 50-130 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C15-BOTTOM** | **13-04-0779-10-A** | **04/09/13 09:40** | **Sediment** | **GC 58** | **06/13/13** | **06/18/13 12:04** | **130613L09** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 50 | 14 | 5 | |
| Aroclor-1221 | ND | 50 | 13 | 5 | |
| Aroclor-1232 | ND | 50 | 11 | 5 | |
| Aroclor-1242 | ND | 50 | 12 | 5 | |
| Aroclor-1248 | ND | 50 | 14 | 5 | |
| Aroclor-1254 | 290 | 50 | 12 | 5 | |
| Aroclor-1260 | 120 | 50 | 12 | 5 | |
| Aroclor-1262 | ND | 50 | 12 | 5 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 90 | 50-130 | |
| Decachlorobiphenyl | 124 | 50-130 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C15-BOTTOM-LAB DUP** | **13-04-0779-11-A** | **04/09/13 09:40** | **Sediment** | **GC 58** | **06/13/13** | **06/18/13 12:22** | **130613L09** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Sample extracted outside recommended holding time.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 50 | 14 | 5 | |
| Aroclor-1221 | ND | 50 | 13 | 5 | |
| Aroclor-1232 | ND | 50 | 11 | 5 | |
| Aroclor-1242 | ND | 50 | 12 | 5 | |
| Aroclor-1248 | ND | 50 | 14 | 5 | |
| Aroclor-1254 | 300 | 50 | 12 | 5 | |
| Aroclor-1260 | 130 | 50 | 12 | 5 | |
| Aroclor-1262 | ND | 50 | 12 | 5 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 78 | 50-130 | |
| Decachlorobiphenyl | 114 | 50-130 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-12-565-339** | **N/A** | **Soil** | **GC 58** | **06/13/13** | **06/18/13 09:58** | **130613L09** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | ND | 10 | 2.9 | 1 | |
| Aroclor-1221 | ND | 10 | 2.6 | 1 | |
| Aroclor-1232 | ND | 10 | 2.1 | 1 | |
| Aroclor-1242 | ND | 10 | 2.5 | 1 | |
| Aroclor-1248 | ND | 10 | 2.9 | 1 | |
| Aroclor-1254 | ND | 10 | 2.4 | 1 | |
| Aroclor-1260 | ND | 10 | 2.3 | 1 | |
| Aroclor-1262 | ND | 10 | 2.5 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4,5,6-Tetrachloro-m-Xylene | 79 | 50-130 | |
| Decachlorobiphenyl | 88 | 50-130 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **GC 46** | **06/12/13** | **06/13/13 18:12** | **130612S12** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| TPH as Diesel | 78.67 | 400.0 | 506.3 | 107 | 599.0 | 130 | 64-130 | 17 | 0-15 | 4 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **GC 57** | **06/12/13** | **06/12/13 19:44** | **130612S01** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| GRO (C4-C12) Total | 1.771 | 10.00 | 3.056 | 13 | 3.441 | 17 | 48-114 | 12 | 0-25 | 3 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-1004-11** | **Sediment** | **GC 4** | **06/13/13** | **06/14/13 04:02** | **130613S03** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| GRO (C4-C12) Total | 1.375 | 10.00 | 6.343 | 50 | 6.357 | 50 | 48-114 | 0 | 0-25 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **ICP 7300** | **06/12/13** | **06/14/13 11:26** | **130612S08** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 3.137 | 13 | 4.170 | 17 | 50-115 | 28 | 0-20 | 3,4 |
| Arsenic | 7.019 | 25.00 | 31.38 | 97 | 33.08 | 104 | 75-125 | 5 | 0-20 | |
| Barium | 77.89 | 25.00 | 104.4 | 106 | 104.6 | 107 | 75-125 | 0 | 0-20 | |
| Beryllium | 0.3681 | 25.00 | 24.97 | 98 | 26.62 | 105 | 75-125 | 6 | 0-20 | |
| Cadmium | 2.118 | 25.00 | 25.41 | 93 | 27.20 | 100 | 75-125 | 7 | 0-20 | |
| Chromium | 56.89 | 25.00 | 79.48 | 90 | 83.39 | 106 | 75-125 | 5 | 0-20 | |
| Cobalt | 6.268 | 25.00 | 31.06 | 99 | 33.09 | 107 | 75-125 | 6 | 0-20 | |
| Copper | 130.4 | 25.00 | 155.7 | 4X | 154.6 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 64.02 | 25.00 | 79.41 | 62 | 104.9 | 163 | 75-125 | 28 | 0-20 | 3,4 |
| Molybdenum | 1.256 | 25.00 | 19.88 | 74 | 21.44 | 81 | 75-125 | 8 | 0-20 | 3 |
| Nickel | 11.79 | 25.00 | 36.12 | 97 | 38.66 | 108 | 75-125 | 7 | 0-20 | |
| Selenium | ND | 25.00 | 20.85 | 83 | 22.54 | 90 | 75-125 | 8 | 0-20 | |
| Silver | 1.853 | 12.50 | 13.80 | 96 | 14.56 | 102 | 75-125 | 5 | 0-20 | |
| Thallium | ND | 25.00 | 12.84 | 51 | 17.83 | 71 | 75-125 | 33 | 0-20 | 3,4 |
| Vanadium | 41.15 | 25.00 | 65.57 | 98 | 67.38 | 105 | 75-125 | 3 | 0-20 | |
| Zinc | 223.5 | 25.00 | 243.1 | 4X | 248.6 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0781-10** | **Sediment** | **Mercury** | **06/12/13** | **06/17/13 15:48** | **130612S05B** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Mercury | 0.1193 | 0.8350 | 1.016 | 107 | 1.032 | 109 | 71-137 | 2 | 0-14 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 6 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0778-11** | **Sediment** | **GC 58** | **06/13/13** | **06/18/13 17:03** | **130613S09** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Aroclor-1016 | ND | 20.00 | 125.3 | 627 | 100.0 | 500 | 50-135 | 22 | 0-25 | 3 |
| Aroclor-1260 | 77.40 | 20.00 | 123.1 | 228 | 114.7 | 187 | 50-135 | 7 | 0-25 | 3 |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - PDS/PDSD

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | PDS/PDSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **ICP 7300** | **06/12/13 00:00** | **06/14/13 11:28** | **130612S08** |

| Parameter | Sample Conc. | Spike Added | PDS Conc. | PDS %Rec. | PDSD Conc. | PDSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Antimony | ND | 25.00 | 24.06 | 96 | 24.33 | 97 | 75-125 | 1 | 0-20 | |
| Arsenic | 7.019 | 25.00 | 32.16 | 101 | 31.68 | 99 | 75-125 | 2 | 0-20 | |
| Barium | 77.89 | 25.00 | 104.1 | 105 | 104.8 | 108 | 75-125 | 1 | 0-20 | |
| Beryllium | 0.3681 | 25.00 | 25.81 | 102 | 25.83 | 102 | 75-125 | 0 | 0-20 | |
| Cadmium | 2.118 | 25.00 | 26.46 | 97 | 26.55 | 98 | 75-125 | 0 | 0-20 | |
| Chromium | 56.89 | 25.00 | 81.26 | 98 | 81.29 | 98 | 75-125 | 0 | 0-20 | |
| Cobalt | 6.268 | 25.00 | 31.90 | 103 | 31.74 | 102 | 75-125 | 1 | 0-20 | |
| Copper | 130.4 | 25.00 | 155.3 | 4X | 155.9 | 4X | 75-125 | 4X | 0-20 | Q |
| Lead | 64.02 | 25.00 | 88.41 | 98 | 88.29 | 97 | 75-125 | 0 | 0-20 | |
| Molybdenum | 1.256 | 25.00 | 25.70 | 98 | 25.51 | 97 | 75-125 | 1 | 0-20 | |
| Nickel | 11.79 | 25.00 | 37.17 | 102 | 36.89 | 100 | 75-125 | 1 | 0-20 | |
| Selenium | ND | 25.00 | 23.17 | 93 | 22.53 | 90 | 75-125 | 3 | 0-20 | |
| Silver | 1.853 | 12.50 | 14.78 | 103 | 14.96 | 105 | 75-125 | 1 | 0-20 | |
| Thallium | ND | 25.00 | 21.46 | 86 | 21.26 | 85 | 75-125 | 1 | 0-20 | |
| Vanadium | 41.15 | 25.00 | 65.69 | 98 | 65.57 | 98 | 75-125 | 0 | 0-20 | |
| Zinc | 223.5 | 25.00 | 247.6 | 4X | 247.8 | 4X | 75-125 | 4X | 0-20 | Q |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3550B |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-15-500-15** | **Soil** | **GC 46** | **06/13/13 17:55** | **130612B12** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| TPH as Diesel | 400.0 | 479.6 | 120 | 75-123 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-13-045-160** | **Soil** | **GC 57** | **06/12/13 13:11** | **130612B01** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| GRO (C4-C12) Total | 10.00 | 8.906 | 89 | 70-124 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |
| Project: NASSCO South Shipyard Sediment Study | | | Page 3 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-13-045-161** | **Soil** | **GC 4** | **06/14/13 01:17** | **130613B02** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| GRO (C4-C12) Total | 10.00 | 9.893 | 99 | 70-124 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3050B |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 4 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **097-01-002-16915** | **Soil** | **ICP 7300** | **06/13/13 23:19** | **130612L08** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | ME CL | Qualifiers |
|---|---|---|---|---|---|---|
| Antimony | 25.00 | 25.43 | 102 | 80-120 | 73-127 | |
| Arsenic | 25.00 | 25.43 | 102 | 80-120 | 73-127 | |
| Barium | 25.00 | 27.85 | 111 | 80-120 | 73-127 | |
| Beryllium | 25.00 | 25.37 | 101 | 80-120 | 73-127 | |
| Cadmium | 25.00 | 26.29 | 105 | 80-120 | 73-127 | |
| Chromium | 25.00 | 26.05 | 104 | 80-120 | 73-127 | |
| Cobalt | 25.00 | 27.11 | 108 | 80-120 | 73-127 | |
| Copper | 25.00 | 25.14 | 101 | 80-120 | 73-127 | |
| Lead | 25.00 | 26.26 | 105 | 80-120 | 73-127 | |
| Molybdenum | 25.00 | 25.63 | 103 | 80-120 | 73-127 | |
| Nickel | 25.00 | 28.06 | 112 | 80-120 | 73-127 | |
| Selenium | 25.00 | 23.91 | 96 | 80-120 | 73-127 | |
| Silver | 12.50 | 13.23 | 106 | 80-120 | 73-127 | |
| Thallium | 25.00 | 25.94 | 104 | 80-120 | 73-127 | |
| Vanadium | 25.00 | 25.32 | 101 | 80-120 | 73-127 | |
| Zinc | 25.00 | 27.69 | 111 | 80-120 | 73-127 | |

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 7471A Total |
| | | Method: | EPA 7471A |
| Project: NASSCO South Shipyard Sediment Study | | | Page 5 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-04-007-9353** | **Soil** | **Mercury** | **06/12/13 13:15** | **130612L05** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Mercury | 0.8350 | 0.8128 | 97 | 85-121 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8082 |
| Project: NASSCO South Shipyard Sediment Study | | | Page 6 of 6 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-12-565-339** | **Soil** | **GC 58** | **06/18/13 10:16** | **130613L09** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Aroclor-1016 | 20.00 | 18.49 | 92 | 50-135 | |
| Aroclor-1260 | 20.00 | 16.45 | 82 | 50-135 | |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| 4 | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range. |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

For any analysis identified as a "field" test with a holding time (HT) </= 15 minutes where the sample is received outside of HT, Calscience will adhere to its internal HT of 24 hours. In cases where sample analysis does not meet Calscience's internal HT, results will be appropriately qualified.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/9/13

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

P.O. NO.: 1315100800

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

QUOTE NO.:

SAMPLER(S): (SIGNATURE)

LAB USE ONLY: 13-04-0779

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)

☐ RWQCB REPORTING ☒ ARCHIVE SAMPLES UNTIL 4/30/14

SPECIAL INSTRUCTIONS

Please HOLD samples.
Analysis will be determined at a later date.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

1x 1603. jar
1x 803. jar
1x ziplockbag

## REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SD-SP-NASC15-0001 | | 4/9/13 | 0940 | sed | 3 | | | | X |
| 2 | | -0102 | | | | | | | | X |
| 3 | | -0203 | | | | | | | | X |
| 4 | | -0304 | | | | | | | | X |
| 5 | | -0405 | | | | | | | | X |
| 6 | | -0506 | | | | | | | | X |
| | | | | | | | | | | X |
| 7 | ~~Plug~~ Plug (BS) | Plug | 4/9 | 0940 | sed | 1 | | | | X |
| | | | | | | | | | | X |
| | | | | | | | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| Kimbrie Gobbi | | | |
| Barry J. Snyder | | 04/10/13 | 1545 |
| | Bannyle | 4/10/13 | 18:45 |

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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|
| NAS-C1 | | | | |
| SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| SD-S-P-NASC1-0102 | | | | |
| SD-S-P-NASC1-0203 | | | | |
| SD-S-P-NASC1-0304 | | | | |
| SD-S-P-NASC1-0405 | | | | |
| SD-S-P-NASC1-0506 | | | | BOTTOM |
| SD-S-P-NASC1-0607 | | | | |
| SD-S-P-NASC1-0708 | | | | |
| SD-S-P-NASC1-0809 | | | | |
| NAS-C2 | | | | |
| SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| SD-S-P-NASC2-0102 | | | | |
| SD-S-P-NASC2-0203 | | | | |
| SD-S-P-NASC2-0304 | | | | |
| SD-S-P-NASC2-0405 | | | | |
| SD-S-P-NASC2-0506 | | | | BOTTOM |
| SD-S-P-NASC2-0607 | | | | |
| SD-S-P-NASC2-0708 | | | | |
| SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | |
| SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| SD-S-P-NASC3-0102 | | | | |
| SD-S-P-NASC3-0203 | | | | |
| SD-S-P-NASC3-0304 | | | | |
| SD-S-P-NASC3-0405 | | | | |
| SD-S-P-NASC3-0506 | | | | BOTTOM |
| SD-S-P-NASC3-0607 | | | | |
| SD-S-P-NASC3-0708 | | | | |
| SD-S-P-NASC3-0809 | | | | |
| SD-S-P-NASC3-0910 | | | | |
| SD-S-P-NASC3-0910-PLUG | | | | not included[c] |
| NAS-C4 | | | | |
| SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| SD-S-P-NASC4-0102 | | | | |
| SD-S-P-NASC4-0203 | | | | |
| SD-S-P-NASC4-0304 | | | | |
| SD-S-P-NASC4-0405 | | | | |
| SD-S-P-NASC4-0506 | | | | BOTTOM |
| SD-S-P-NASC4-0607 | | | | |
| SD-S-P-NASC4-0708 | | | | |
| SD-S-P-NASC4-0809 | | | | |
| SD-S-P-NASC4-0910 | | | | |
| SD-S-P-NASC4-0910-PLUG | | | | not included[c] |
| NAS-C5 | | | | |
| SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| SD-S-P-NASC5-0102 | | | | |
| SD-S-P-NASC5-0203 | | | | |
| SD-S-P-NASC5-0304 | | | | BOTTOM |
| SD-S-P-NASC5-0405 | | | | |
| SD-S-P-NASC5-0506-PLUG | | | | not included[c] |
| NAS-C6 | | | | |
| SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| SD-S-P-NASC6-0102 | | | | |
| SD-S-P-NASC6-0203 | | | | BOTTOM |
| SD-S-P-NASC6-0304-PLUG | | | | not included[c] |
| NAS-C7 | | | | |
| SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| SD-S-P-NASC7-0102 | | | | |
| SD-S-P-NASC7-0203 | | | | |
| SD-S-P-NASC7-0304 | | | | |
| SD-S-P-NASC7-0405 | | | | BOTTOM |
| SD-S-P-NASC7-0506 | | | | |
| SD-S-P-NASC7-0607 | | | | |
| SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | |
| SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| SD-S-P-NASC8-0102 | | | | |
| SD-S-P-NASC8-0203 | | | | |
| SD-S-P-NASC8-0304 | | | | |
| SD-S-P-NASC8-0405 | | | | |
| SD-S-P-NASC8-0506 | | | | BOTTOM |
| SD-S-P-NASC8-0607 | | | | |
| SD-S-P-NASC8-0708 | | | | |
| SD-S-P-NASC8-0809 | | | | |
| SD-S-P-NASC8-0910 | | | | |
| SD-S-P-NASC8-0910-PLUG | | | | not included[c] |
| NAS-C9 | | | | |
| SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| SD-S-P-NASC9-0102 | | | | |
| SD-S-P-NASC9-0203 | | | | |
| SD-S-P-NASC9-0304 | | | | |
| SD-S-P-NASC9-0405 | | | | BOTTOM |
| SD-S-P-NASC9-0506 | | | | |
| SD-S-P-NASC9-0607 | | | | |
| NAS-C10 | | | | |
| SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| SD-S-P-NASC10-0102 | | | | |
| SD-S-P-NASC10-0203 | | | | |
| SD-S-P-NASC10-0304 | | | | |
| SD-S-P-NASC10-0405 | | | | BOTTOM |
| SD-S-P-NASC10-0506 | | | | |
| SD-S-P-NASC10-0607 | | | | |
| SD-S-P-NASC10-0708 | | | | |
| NAS-C11 | | | | |
| SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| SD-S-P-NASC11-0102 | | | | |
| SD-S-P-NASC11-0203 | | | | |
| SD-S-P-NASC11-0304 | | | | |
| SD-S-P-NASC11-0405 | | | | BOTTOM |
| SD-S-P-NASC11-0506 | | | | |
| SD-S-P-NASC11-0607 | | | | |
| SD-S-P-NASC11-0708 | | | | |
| SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | |
| SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| SD-S-P-NASC12-0102 | | | | |
| SD-S-P-NASC12-0203 | | | | |
| SD-S-P-NASC12-0304 | | | | |
| SD-S-P-NASC12-0405 | | | | BOTTOM |
| SD-S-P-NASC12-0506 | | | | |
| SD-S-P-NASC12-0607 | | | | |
| SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | |
| SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| SD-S-P-NASC13-0102 | | | | |
| SD-S-P-NASC13-0203 | | | | |
| SD-S-P-NASC13-0304 | | | | BOTTOM |
| SD-S-P-NASC13-0405 | | | | |
| SD-S-P-NASC13-0506 | | | | |
| SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | |
| SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| SD-S-P-NASC14-0102 | | | | |
| SD-S-P-NASC14-0203 | | | | BOTTOM |
| SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | |
| SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| SD-S-P-NASC15-0102 | | | | |
| SD-S-P-NASC15-0203 | | | | |
| SD-S-P-NASC15-0304 | | | | BOTTOM |
| SD-S-P-NASC15-0405 | | | | |
| SD-S-P-NASC15-0506 | | | | |

Notes:
0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on
a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.
b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.
A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)
c - sample not included due to low volume available and because it represents native material which will not be dredged

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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| ~~13-04-1004-1~~ | ~~SD-S-P-NASC1-0001~~ | COMP-A | 4/11/2013 | 1335 | TOP |
| ~~13-04-1004-2~~ | ~~SD-S-P-NASC1-0102~~ | | | | |
| ~~13-04-1004-3~~ | ~~SD-S-P-NASC1-0203~~ | | | | |
| ~~13-04-1004-4~~ | ~~SD-S-P-NASC1-0304~~ | | | | |
| ~~13-04-1004-5~~ | ~~SD-S-P-NASC1-0405~~ | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| ~~13-04-1111-1~~ | ~~SD-S-P-NASC2-0001~~ | COMP-A | 4/12/2013 | 1021 | TOP |
| ~~13-04-1111-2~~ | ~~SD-S-P-NASC2-0102~~ | | | | |
| ~~13-04-1111-3~~ | ~~SD-S-P-NASC2-0203~~ | | | | |
| ~~13-04-1111-4~~ | ~~SD-S-P-NASC2-0304~~ | | | | |
| ~~13-04-1111-5~~ | ~~SD-S-P-NASC2-0405~~ | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| ~~13-04-1113-1~~ | ~~SD-S-P-NASC3-0001~~ | COMP-A | 4/12/2013 | 751 | TOP |
| ~~13-04-1113-2~~ | ~~SD-S-P-NASC3-0102~~ | | | | |
| ~~13-04-1113-3~~ | ~~SD-S-P-NASC3-0203~~ | | | | |
| ~~13-04-1113-4~~ | ~~SD-S-P-NASC3-0304~~ | | | | |
| ~~13-04-1113-5~~ | ~~SD-S-P-NASC3-0405~~ | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| ~~13-04-1002-1~~ | ~~SD-S-P-NASC4-0001~~ | COMP-A | 4/11/2013 | 930 | TOP |
| ~~13-04-1002-2~~ | ~~SD-S-P-NASC4-0102~~ | | | | |
| ~~13-04-1002-3~~ | ~~SD-S-P-NASC4-0203~~ | | | | |
| ~~13-04-1002-4~~ | ~~SD-S-P-NASC4-0304~~ | | | | |
| ~~13-04-1002-5~~ | ~~SD-S-P-NASC4-0405~~ | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| ~~13-04-1003-1~~ | ~~SD-S-P-NASC5-0001~~ | | 4/11/2013 | 755 | TOP |
| ~~13-04-1003-2~~ | ~~SD-S-P-NASC5-0102~~ | | | | |
| ~~13-04-1003-3~~ | ~~SD-S-P-NASC5-0203~~ | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| ~~13-04-1001-1~~ | ~~SD-S-P-NASC6-0001~~ | | 4/11/2013 | 1200 | TOP |
| ~~13-04-1001-2~~ | ~~SD-S-P-NASC6-0102~~ | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| ~~13-04-0902-1~~ | ~~SD-S-P-NASC7-0001~~ | | 4/10/2013 | 1430 | TOP |
| ~~13-04-0902-2~~ | ~~SD-S-P-NASC7-0102~~ | | | | |
| ~~13-04-0902-3~~ | ~~SD-S-P-NASC7-0203~~ | | | | |
| ~~13-04-0902-4~~ | ~~SD-S-P-NASC7-0304~~ | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| ~~13-04-0903-1~~ | ~~SD-S-P-NASC8-0001~~ | | 4/10/2013 | 830 | TOP |
| ~~13-04-0903-2~~ | ~~SD-S-P-NASC8-0102~~ | | | | |
| ~~13-04-0903-3~~ | ~~SD-S-P-NASC8-0203~~ | | | | |
| ~~13-04-0903-4~~ | ~~SD-S-P-NASC8-0304~~ | | | | |
| ~~13-04-0903-5~~ | ~~SD-S-P-NASC8-0405~~ | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| ~~13-04-0901-1~~ | ~~SD-S-P-NASC9-0001~~ | | 4/10/2013 | 1315 | TOP |
| ~~13-04-0901-2~~ | ~~SD-S-P-NASC9-0102~~ | | | | |
| ~~13-04-0901-3~~ | ~~SD-S-P-NASC9-0203~~ | | | | |
| ~~13-04-0901-4~~ | ~~SD-S-P-NASC9-0304~~ | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607-PLUG~~ | | | | |
| NAS-C10 | | | | | |
| ~~13-04-0904-1~~ | ~~SD-S-P-NASC10-0001~~ | COMP-D | 4/10/2013 | 1010 | TOP |
| ~~13-04-0904-2~~ | ~~SD-S-P-NASC10-0102~~ | | | | |
| ~~13-04-0904-3~~ | ~~SD-S-P-NASC10-0203~~ | | | | |
| ~~13-04-0904-4~~ | ~~SD-S-P-NASC10-0304~~ | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-8 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| ~~13-04-0778-1~~ | ~~SD-S-P-NASC11-0001~~ | COMP-D | 4/9/2013 | 1525 | TOP |
| ~~13-04-0778-2~~ | ~~SD-S-P-NASC11-0102~~ | | | | |
| ~~13-04-0778-3~~ | ~~SD-S-P-NASC11-0203~~ | | | | |
| ~~13-04-0778-4~~ | ~~SD-S-P-NASC11-0304~~ | | | | |
| ~~13-04-0778-5~~ | ~~SD-S-P-NASC11-0405~~ | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| ~~13-04-0780-1~~ | ~~SD-S-P-NASC12-0001~~ | COMP-D | 4/9/2013 | 1410 | TOP |
| ~~13-04-0780-2~~ | ~~SD-S-P-NASC12-0102~~ | | | | |
| ~~13-04-0780-3~~ | ~~SD-S-P-NASC12-0203~~ | | | | |
| ~~13-04-0780-4~~ | ~~SD-S-P-NASC12-0304~~ | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| ~~13-04-0781-1~~ | ~~SD-S-P-NASC13-0001~~ | COMP-E | 4/9/2013 | 1055 | TOP |
| ~~13-04-0781-2~~ | ~~SD-S-P-NASC13-0102~~ | | | | |
| ~~13-04-0781-3~~ | ~~SD-S-P-NASC13-0203~~ | | | | |
| ~~13-04-0781-4~~ | ~~SD-S-P-NASC13-0304~~ | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| ~~13-04-0782-1~~ | ~~SD-S-P-NASC14-0001~~ | COMP-E | 4/9/2013 | 815 | TOP |
| ~~13-04-0782-2~~ | ~~SD-S-P-NASC14-0102~~ | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| ~~13-04-0779-1~~ | ~~SD-S-P-NASC15-0001~~ | COMP-E | 4/9/2013 | 940 | TOP |
| ~~13-04-0779-2~~ | ~~SD-S-P-NASC15-0102~~ | | | | |
| ~~13-04-0779-3~~ | ~~SD-S-P-NASC15-0203~~ | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged

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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0779

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/10/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.7 °C - 0.2 °C (CF) = 1.5 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter Initial: KB

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: KB

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: HH

| SAMPLE CONDITION: | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | 4/10/13 | |
| Sampler's name indicated on COC | ☑ | ☑ HH | ☐ |
| Sample container label(s) consistent with COC | ☐ | ☑ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ R

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** HH

**Container: C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WK

**Preservative: h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WK



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0779

# SAMPLE ANOMALY FORM

## SAMPLES - CONTAINERS & LABELS:

Comments:

- ☐ **Sample(s) NOT RECEIVED but listed on COC**
- ☑ **Sample(s) received but NOT LISTED on COC**
- ☐ **Holding time expired** – list sample ID(s) and test
- ☐ **Insufficient quantities for analysis** – list test
- ☐ **Improper container(s) used** – list test
- ☐ **Improper preservative used** – list test
- ☐ **No preservative noted on COC or label** – list test & notify lab
- ☐ **Sample labels illegible** – note test/container type
- ☐ **Sample label(s) do not match COC** – Note in comments
  - ☐ **Sample ID**
  - ☐ **Date and/or Time Collected**
  - ☐ **Project Information**
  - ☐ **# of Container(s)**
  - ☐ **Analysis**
- ☐ **Sample container(s) compromised** – Note in comments
  - ☐ **Water present in sample container**
  - ☐ **Broken**
- ☐ **Sample container(s) not labeled**
- ☐ **Air sample container(s) compromised** – Note in comments
  - ☐ **Flat**
  - ☐ **Very low in volume**
  - ☐ **Leaking (Not transferred - duplicate bag submitted)**
  - ☐ **Leaking (transferred into Calscience Tedlar® Bag*)**
  - ☐ **Leaking (transferred into Client's Tedlar® Bag*)**
- ☐ **Other:** _____

(-8) SD-S-P-NASC 15 plug / Bottom of core 04/09/13 @ 9:15 not listed on COC.

## HEADSPACE – Containers with Bubble > 6mm or ¼ inch:

| Sample # | Container ID(s) | # of Vials Received | Sample # | Container ID(s) | # of Vials Received | Sample # | Container ID(s) | # of Cont. received | Analysis |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Comments: _____

*Transferred at Client's request.

Initial / Date: HH 04/10/13



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| 13-04-1004-1 | SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| 13-04-1004-2 | SD-S-P-NASC1-0102 | | | | |
| 13-04-1004-3 | SD-S-P-NASC1-0203 | | | | |
| 13-04-1004-4 | SD-S-P-NASC1-0304 | | | | |
| 13-04-1004-5 | SD-S-P-NASC1-0405 | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| 13-04-1111-1 | SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| 13-04-1111-2 | SD-S-P-NASC2-0102 | | | | |
| 13-04-1111-3 | SD-S-P-NASC2-0203 | | | | |
| 13-04-1111-4 | SD-S-P-NASC2-0304 | | | | |
| 13-04-1111-5 | SD-S-P-NASC2-0405 | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| 13-04-1113-1 | SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| 13-04-1113-2 | SD-S-P-NASC3-0102 | | | | |
| 13-04-1113-3 | SD-S-P-NASC3-0203 | | | | |
| 13-04-1113-4 | SD-S-P-NASC3-0304 | | | | |
| 13-04-1113-5 | SD-S-P-NASC3-0405 | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| 13-04-1002-1 | SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| 13-04-1002-2 | SD-S-P-NASC4-0102 | | | | |
| 13-04-1002-3 | SD-S-P-NASC4-0203 | | | | |
| 13-04-1002-4 | SD-S-P-NASC4-0304 | | | | |
| 13-04-1002-5 | SD-S-P-NASC4-0405 | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| 13-04-1003-1 | SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| 13-04-1003-2 | SD-S-P-NASC5-0102 | | | | |
| 13-04-1003-3 | SD-S-P-NASC5-0203 | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| 13-04-1001-1 | SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| 13-04-1001-2 | SD-S-P-NASC6-0102 | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| 13-04-0902-1 | SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| 13-04-0902-2 | SD-S-P-NASC7-0102 | | | | |
| 13-04-0902-3 | SD-S-P-NASC7-0203 | | | | |
| 13-04-0902-4 | SD-S-P-NASC7-0304 | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| 13-04-0903-1 | SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| 13-04-0903-2 | SD-S-P-NASC8-0102 | | | | |
| 13-04-0903-3 | SD-S-P-NASC8-0203 | | | | |
| 13-04-0903-4 | SD-S-P-NASC8-0304 | | | | |
| 13-04-0903-5 | SD-S-P-NASC8-0405 | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| 13-04-0901-1 | SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| 13-04-0901-2 | SD-S-P-NASC9-0102 | | | | |
| 13-04-0901-3 | SD-S-P-NASC9-0203 | | | | |
| 13-04-0901-4 | SD-S-P-NASC9-0304 | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607 PLUG~~ | | | | |
| NAS-C10 | | | | | |
| 13-04-0904-1 | SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| 13-04-0904-2 | SD-S-P-NASC10-0102 | | | | |
| 13-04-0904-3 | SD-S-P-NASC10-0203 | | | | |
| 13-04-0904-4 | SD-S-P-NASC10-0304 | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-9 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| 13-04-0778-1 | SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| 13-04-0778-2 | SD-S-P-NASC11-0102 | | | | |
| 13-04-0778-3 | SD-S-P-NASC11-0203 | | | | |
| 13-04-0778-4 | SD-S-P-NASC11-0304 | | | | |
| 13-04-0778-5 | SD-S-P-NASC11-0405 | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| 13-04-0780-1 | SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| 13-04-0780-2 | SD-S-P-NASC12-0102 | | | | |
| 13-04-0780-3 | SD-S-P-NASC12-0203 | | | | |
| 13-04-0780-4 | SD-S-P-NASC12-0304 | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| 13-04-0781-1 | SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| 13-04-0781-2 | SD-S-P-NASC13-0102 | | | | |
| 13-04-0781-3 | SD-S-P-NASC13-0203 | | | | |
| 13-04-0781-4 | SD-S-P-NASC13-0304 | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| 13-04-0782-1 | SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| 13-04-0782-2 | SD-S-P-NASC14-0102 | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| 13-04-0779-1 | SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| 13-04-0779-2 | SD-S-P-NASC15-0102 | | | | |
| 13-04-0779-3 | SD-S-P-NASC15-0203 | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged

Calscience Environmental Laboratories, Inc.

# CALSCIENCE

## WORK ORDER NUMBER: 13-06-0651

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 06/20/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

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Work Order Number: 13-06-0651


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Calscience Environmental Laboratories, Inc.

# CASE NARRATIVE

## Calscience Work Order No.: 13-06-0651
## Project ID: South Shipyard NASSCO Sediment Study

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

One-hundred and twelve sediment samples were received for this project on April 10, April 11 and April 12, 2013 under the following CEL Work Order Numbers:

| | | | | |
|---|---|---|---|---|
| 13-04-0778 | 13-04-0779 | 13-04-0780 | 13-04-0781 | 13-04-0782 |
| 13-04-0901 | 13-04-0902 | 13-04-0903 | 13-04-0904 | |
| 13-04-1001 | 13-04-1002 | 13-04-1003 | 13-04-1004 | |
| 13-04-1111 | 13-04-1113 | | | |

The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory ranged from 1.4–1.7°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in freezerss pending chemistry testing and/or compositing.

Any COC discrepancies were noted in the Sample Anomaly Form.

Per client request, on June 11, 2013 five Composite samples were created with the samples following the client's instructions included with the Chain of Custody documents. The composite samples were given a new Work Order Number, logged into LIMS and stored in refrigeration units pending chemistry testing.

***Tests Performed***

The composite samples were tested for the following:

Chlorinated Pesticides by EPA 8081A
Chlorinated Herbicides by EPA 8151A
Semi-Volatile Organics by EPA 8270C

***Data Summary***

All discrete samples were homogenized prior to compositing. Results are reported on a wet-weight basis.

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Holding times

All samples were analyzed past the EPA recommended holding times for Chlorinated Herbicides, Pesticides and SVOCs. However, all samples were frozen (-20 °C) upon receipt at the laboratory and remained in that condition until sample preparation/analysis. Per the Puget Sound Protocol (and other references), which states the holding time for sediments may be extended up to one year if kept frozen after collection, the samples were analyzed within the allowable one year holding time. However, because the samples were analyzed outside of normal EPA hold times, the data is flagged as such.

Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

Concentrations of target analytes in the method blank were found to be below reporting limits for all testing.

Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the Reporting Limit.

Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test.

Matrix Spikes

Matrix spiking was performed at the required frequencies on project sample COMP-C. All parameters for the project sample matrix spikes were within the acceptable control limits with the following exceptions.

For Chlorinated Pesticides by EPA 8081A, the 4,4-DDE, 4,4-DDT and 4,4-DDD MS and/or MSD recoveries were slightly high due to matrix interference. The 4,4-DDT and methoxychlor RPDs was high. Since the LCS recoveries were within acceptable limits, the data are released with no further action.

Surrogates

Surrogate recoveries for all applicable tests and samples were within acceptable control limits.

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Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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Calscience Environmental Laboratories, Inc.

# Work Order Narrative



**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 06/11/13. They were assigned to Work Order 13-06-0651.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with an immediate holding time (HT </= 15 minutes --40CFR-136.3 Table II footnote 4), is considered a "field" test and reported samples results are not flagged unless the analysis is performed beyond 24 hours of the time of collection.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Calscience Environmental Laboratories, Inc.

# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC | Work Order: | 13-06-0651 |
| | 27201 Puerta Real, Suite 350 | Project Name: | NASSCO South Shipyard |
| | Mission Viejo, CA 92691-8306 | PO Number: | Work Order 3 |
| | | Date Received: | 06/11/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| Comp-A (NASC01-03) | 13-06-0651-1 | 04/11/13 00:00 | 1 | Soil |
| Comp-B (NASC04-06) | 13-06-0651-2 | 04/11/13 00:00 | 1 | Soil |
| Comp-C (NASC07-09) | 13-06-0651-3 | 04/10/13 00:00 | 1 | Soil |
| Comp-D (NASC10-12) | 13-06-0651-4 | 04/09/13 00:00 | 1 | Soil |
| Comp-E (NASC13-15) | 13-06-0651-5 | 04/09/13 00:00 | 1 | Soil |

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8081A |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard | | | Page 1 of 6 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Comp-A (NASC01-03)** | **13-06-0651-1-A** | **04/11/13 00:00** | **Soil** | **GC 51** | **06/14/13** | **06/18/13 14:31** | **130614L03** |

Comment(s): - Sample received after recommended holding time.

- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aldrin | ND | 5.0 | 1.6 | 1 | |
| Alpha-BHC | ND | 5.0 | 1.6 | 1 | |
| Beta-BHC | ND | 5.0 | 1.3 | 1 | |
| Chlordane | ND | 50 | 16 | 1 | |
| 4,4'-DDD | ND | 5.0 | 1.6 | 1 | |
| 4,4'-DDE | ND | 5.0 | 1.5 | 1 | |
| 4,4'-DDT | ND | 5.0 | 1.7 | 1 | |
| Delta-BHC | ND | 5.0 | 1.3 | 1 | |
| Dieldrin | ND | 5.0 | 1.6 | 1 | |
| Endosulfan I | ND | 5.0 | 1.3 | 1 | |
| Endosulfan II | ND | 5.0 | 1.4 | 1 | |
| Endosulfan Sulfate | ND | 5.0 | 1.7 | 1 | |
| Endrin | ND | 5.0 | 1.8 | 1 | |
| Endrin Aldehyde | ND | 5.0 | 1.2 | 1 | |
| Endrin Ketone | ND | 5.0 | 1.7 | 1 | |
| Gamma-BHC | ND | 5.0 | 1.7 | 1 | |
| Heptachlor | ND | 5.0 | 1.6 | 1 | |
| Heptachlor Epoxide | ND | 5.0 | 1.8 | 1 | |
| Methoxychlor | ND | 5.0 | 1.6 | 1 | |
| Toxaphene | ND | 100 | 32 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| Decachlorobiphenyl | 107 | 50-135 | |
| 2,4,5,6-Tetrachloro-m-Xylene | 89 | 50-135 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8081A |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard | | | Page 2 of 6 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Comp-B (NASC04-06)** | **13-06-0651-2-A** | **04/11/13 00:00** | **Soil** | **GC 51** | **06/14/13** | **06/18/13 14:46** | **130614L03** |

Comment(s): - Sample received after recommended holding time.

- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aldrin | ND | 5.0 | 1.6 | 1 | |
| Alpha-BHC | ND | 5.0 | 1.6 | 1 | |
| Beta-BHC | ND | 5.0 | 1.3 | 1 | |
| Chlordane | ND | 50 | 16 | 1 | |
| 4,4'-DDD | ND | 5.0 | 1.6 | 1 | |
| 4,4'-DDE | ND | 5.0 | 1.5 | 1 | |
| 4,4'-DDT | ND | 5.0 | 1.7 | 1 | |
| Delta-BHC | ND | 5.0 | 1.3 | 1 | |
| Dieldrin | ND | 5.0 | 1.6 | 1 | |
| Endosulfan I | ND | 5.0 | 1.3 | 1 | |
| Endosulfan II | ND | 5.0 | 1.4 | 1 | |
| Endosulfan Sulfate | ND | 5.0 | 1.7 | 1 | |
| Endrin | ND | 5.0 | 1.8 | 1 | |
| Endrin Aldehyde | ND | 5.0 | 1.2 | 1 | |
| Endrin Ketone | ND | 5.0 | 1.7 | 1 | |
| Gamma-BHC | ND | 5.0 | 1.7 | 1 | |
| Heptachlor | ND | 5.0 | 1.6 | 1 | |
| Heptachlor Epoxide | ND | 5.0 | 1.8 | 1 | |
| Methoxychlor | ND | 5.0 | 1.6 | 1 | |
| Toxaphene | ND | 100 | 32 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| Decachlorobiphenyl | 80 | 50-135 | |
| 2,4,5,6-Tetrachloro-m-Xylene | 73 | 50-135 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8081A |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard | | | Page 3 of 6 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Comp-C (NASC07-09)** | **13-06-0651-3-A** | **04/10/13 00:00** | **Soil** | **GC 51** | **06/14/13** | **06/18/13 15:01** | **130614L03** |

Comment(s): - Sample received after recommended holding time.

- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aldrin | ND | 5.0 | 1.6 | 1 | |
| Alpha-BHC | ND | 5.0 | 1.6 | 1 | |
| Beta-BHC | ND | 5.0 | 1.3 | 1 | |
| Chlordane | ND | 50 | 16 | 1 | |
| 4,4'-DDD | ND | 5.0 | 1.6 | 1 | |
| 4,4'-DDE | ND | 5.0 | 1.5 | 1 | |
| 4,4'-DDT | ND | 5.0 | 1.7 | 1 | |
| Delta-BHC | ND | 5.0 | 1.3 | 1 | |
| Dieldrin | ND | 5.0 | 1.6 | 1 | |
| Endosulfan I | ND | 5.0 | 1.3 | 1 | |
| Endosulfan II | ND | 5.0 | 1.4 | 1 | |
| Endosulfan Sulfate | ND | 5.0 | 1.7 | 1 | |
| Endrin | ND | 5.0 | 1.8 | 1 | |
| Endrin Aldehyde | ND | 5.0 | 1.2 | 1 | |
| Endrin Ketone | ND | 5.0 | 1.7 | 1 | |
| Gamma-BHC | ND | 5.0 | 1.7 | 1 | |
| Heptachlor | ND | 5.0 | 1.6 | 1 | |
| Heptachlor Epoxide | ND | 5.0 | 1.8 | 1 | |
| Methoxychlor | ND | 5.0 | 1.6 | 1 | |
| Toxaphene | ND | 100 | 32 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| Decachlorobiphenyl | 85 | 50-135 | |
| 2,4,5,6-Tetrachloro-m-Xylene | 79 | 50-135 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8081A |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard | | | Page 4 of 6 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Comp-D (NASC10-12)** | **13-06-0651-4-A** | **04/09/13 00:00** | **Soil** | **GC 51** | **06/14/13** | **06/18/13 15:15** | **130614L03** |

Comment(s): - Sample received after recommended holding time.

- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aldrin | ND | 5.0 | 1.6 | 1 | |
| Alpha-BHC | ND | 5.0 | 1.6 | 1 | |
| Beta-BHC | ND | 5.0 | 1.3 | 1 | |
| Chlordane | ND | 50 | 16 | 1 | |
| 4,4'-DDD | ND | 5.0 | 1.6 | 1 | |
| 4,4'-DDE | ND | 5.0 | 1.5 | 1 | |
| 4,4'-DDT | ND | 5.0 | 1.7 | 1 | |
| Delta-BHC | ND | 5.0 | 1.3 | 1 | |
| Dieldrin | ND | 5.0 | 1.6 | 1 | |
| Endosulfan I | ND | 5.0 | 1.3 | 1 | |
| Endosulfan II | ND | 5.0 | 1.4 | 1 | |
| Endosulfan Sulfate | ND | 5.0 | 1.7 | 1 | |
| Endrin | ND | 5.0 | 1.8 | 1 | |
| Endrin Aldehyde | ND | 5.0 | 1.2 | 1 | |
| Endrin Ketone | ND | 5.0 | 1.7 | 1 | |
| Gamma-BHC | ND | 5.0 | 1.7 | 1 | |
| Heptachlor | ND | 5.0 | 1.6 | 1 | |
| Heptachlor Epoxide | ND | 5.0 | 1.8 | 1 | |
| Methoxychlor | ND | 5.0 | 1.6 | 1 | |
| Toxaphene | ND | 100 | 32 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| Decachlorobiphenyl | 98 | 50-135 | |
| 2,4,5,6-Tetrachloro-m-Xylene | 89 | 50-135 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.



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# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8081A |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard | | | Page 5 of 6 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Comp-E (NASC13-15)** | **13-06-0651-5-A** | **04/09/13 00:00** | **Soil** | **GC 51** | **06/14/13** | **06/18/13 15:30** | **130614L03** |

Comment(s): - Sample received after recommended holding time.

- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aldrin | ND | 5.0 | 1.6 | 1 | |
| Alpha-BHC | ND | 5.0 | 1.6 | 1 | |
| Beta-BHC | ND | 5.0 | 1.3 | 1 | |
| Chlordane | ND | 50 | 16 | 1 | |
| 4,4'-DDD | ND | 5.0 | 1.6 | 1 | |
| 4,4'-DDE | ND | 5.0 | 1.5 | 1 | |
| 4,4'-DDT | ND | 5.0 | 1.7 | 1 | |
| Delta-BHC | ND | 5.0 | 1.3 | 1 | |
| Dieldrin | ND | 5.0 | 1.6 | 1 | |
| Endosulfan I | ND | 5.0 | 1.3 | 1 | |
| Endosulfan II | ND | 5.0 | 1.4 | 1 | |
| Endosulfan Sulfate | ND | 5.0 | 1.7 | 1 | |
| Endrin | ND | 5.0 | 1.8 | 1 | |
| Endrin Aldehyde | ND | 5.0 | 1.2 | 1 | |
| Endrin Ketone | ND | 5.0 | 1.7 | 1 | |
| Gamma-BHC | ND | 5.0 | 1.7 | 1 | |
| Heptachlor | ND | 5.0 | 1.6 | 1 | |
| Heptachlor Epoxide | ND | 5.0 | 1.8 | 1 | |
| Methoxychlor | ND | 5.0 | 1.6 | 1 | |
| Toxaphene | ND | 100 | 32 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| Decachlorobiphenyl | 83 | 50-135 | |
| 2,4,5,6-Tetrachloro-m-Xylene | 76 | 50-135 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8081A |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard | | | Page 6 of 6 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-12-537-1390** | **N/A** | **Soil** | **GC 51** | **06/14/13** | **06/18/13 13:48** | **130614L03** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Aldrin | ND | 5.0 | 1.6 | 1 | |
| Alpha-BHC | ND | 5.0 | 1.6 | 1 | |
| Beta-BHC | ND | 5.0 | 1.3 | 1 | |
| Chlordane | ND | 50 | 16 | 1 | |
| 4,4'-DDD | ND | 5.0 | 1.6 | 1 | |
| 4,4'-DDE | ND | 5.0 | 1.5 | 1 | |
| 4,4'-DDT | ND | 5.0 | 1.7 | 1 | |
| Delta-BHC | ND | 5.0 | 1.3 | 1 | |
| Dieldrin | ND | 5.0 | 1.6 | 1 | |
| Endosulfan I | ND | 5.0 | 1.3 | 1 | |
| Endosulfan II | ND | 5.0 | 1.4 | 1 | |
| Endosulfan Sulfate | ND | 5.0 | 1.7 | 1 | |
| Endrin | ND | 5.0 | 1.8 | 1 | |
| Endrin Aldehyde | ND | 5.0 | 1.2 | 1 | |
| Endrin Ketone | ND | 5.0 | 1.7 | 1 | |
| Gamma-BHC | ND | 5.0 | 1.7 | 1 | |
| Heptachlor | ND | 5.0 | 1.6 | 1 | |
| Heptachlor Epoxide | ND | 5.0 | 1.8 | 1 | |
| Methoxychlor | ND | 5.0 | 1.6 | 1 | |
| Toxaphene | ND | 100 | 32 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| Decachlorobiphenyl | 103 | 50-135 | |
| 2,4,5,6-Tetrachloro-m-Xylene | 97 | 50-135 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 8151A |
| | | Method: | EPA 8151A |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard | | | Page 1 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Comp-A (NASC01-03)** | **13-06-0651-1-A** | **04/11/13 00:00** | **Soil** | **GC 40** | **06/12/13** | **06/18/13 15:58** | **130612L14** |

Comment(s): - Sample received after recommended holding time.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Dalapon | ND | 250 | 73 | 1 | |
| Dicamba | ND | 10 | 1.2 | 1 | |
| MCPP | ND | 10000 | 3200 | 1 | |
| MCPA | ND | 10000 | 2100 | 1 | |
| Dichlorprop | ND | 100 | 17 | 1 | |
| 2,4-D | ND | 100 | 14 | 1 | |
| 2,4,5-TP (Silvex) | ND | 10 | 2.3 | 1 | |
| 2,4,5-T | ND | 10 | 1.1 | 1 | |
| 2,4-DB | ND | 100 | 16 | 1 | |
| Dinoseb | ND | 50 | 5.1 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4-Dichlorophenylacetic acid | 91 | 30-130 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Comp-B (NASC04-06)** | **13-06-0651-2-A** | **04/11/13 00:00** | **Soil** | **GC 40** | **06/12/13** | **06/18/13 16:24** | **130612L14** |

Comment(s): - Sample received after recommended holding time.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Dalapon | ND | 250 | 73 | 1 | |
| Dicamba | ND | 10 | 1.2 | 1 | |
| MCPP | ND | 10000 | 3200 | 1 | |
| MCPA | ND | 10000 | 2100 | 1 | |
| Dichlorprop | ND | 100 | 17 | 1 | |
| 2,4-D | ND | 100 | 14 | 1 | |
| 2,4,5-TP (Silvex) | ND | 10 | 2.3 | 1 | |
| 2,4,5-T | ND | 10 | 1.1 | 1 | |
| 2,4-DB | ND | 100 | 16 | 1 | |
| Dinoseb | ND | 50 | 5.1 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4-Dichlorophenylacetic acid | 92 | 30-130 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 8151A |
| | | Method: | EPA 8151A |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Comp-C (NASC07-09)** | **13-06-0651-3-A** | **04/10/13 00:00** | **Soil** | **GC 40** | **06/12/13** | **06/18/13 16:49** | **130612L14** |

Comment(s): - Sample received after recommended holding time.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Dalapon | ND | 250 | 73 | 1 | |
| Dicamba | ND | 10 | 1.2 | 1 | |
| MCPP | ND | 10000 | 3200 | 1 | |
| MCPA | ND | 10000 | 2100 | 1 | |
| Dichlorprop | ND | 100 | 17 | 1 | |
| 2,4-D | ND | 100 | 14 | 1 | |
| 2,4,5-TP (Silvex) | ND | 10 | 2.3 | 1 | |
| 2,4,5-T | ND | 10 | 1.1 | 1 | |
| 2,4-DB | ND | 100 | 16 | 1 | |
| Dinoseb | ND | 50 | 5.1 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4-Dichlorophenylacetic acid | 80 | 30-130 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Comp-D (NASC10-12)** | **13-06-0651-4-A** | **04/09/13 00:00** | **Soil** | **GC 40** | **06/12/13** | **06/18/13 17:15** | **130612L14** |

Comment(s): - Sample received after recommended holding time.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Dalapon | ND | 250 | 73 | 1 | |
| Dicamba | ND | 10 | 1.2 | 1 | |
| MCPP | ND | 10000 | 3200 | 1 | |
| MCPA | ND | 10000 | 2100 | 1 | |
| Dichlorprop | ND | 100 | 17 | 1 | |
| 2,4-D | ND | 100 | 14 | 1 | |
| 2,4,5-TP (Silvex) | ND | 10 | 2.3 | 1 | |
| 2,4,5-T | ND | 10 | 1.1 | 1 | |
| 2,4-DB | ND | 100 | 16 | 1 | |
| Dinoseb | ND | 50 | 5.1 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4-Dichlorophenylacetic acid | 87 | 30-130 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 8151A |
| | | Method: | EPA 8151A |
| | | Units: | ug/kg |
| Project: NASSCO South Shipyard | | | Page 3 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Comp-E (NASC13-15)** | **13-06-0651-5-A** | **04/09/13 00:00** | **Soil** | **GC 40** | **06/12/13** | **06/18/13 17:41** | **130612L14** |

Comment(s): - Sample received after recommended holding time.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Dalapon | ND | 250 | 73 | 1 | |
| Dicamba | ND | 10 | 1.2 | 1 | |
| MCPP | ND | 10000 | 3200 | 1 | |
| MCPA | ND | 10000 | 2100 | 1 | |
| Dichlorprop | ND | 100 | 17 | 1 | |
| 2,4-D | ND | 100 | 14 | 1 | |
| 2,4,5-TP (Silvex) | ND | 10 | 2.3 | 1 | |
| 2,4,5-T | ND | 10 | 1.1 | 1 | |
| 2,4-DB | ND | 100 | 16 | 1 | |
| Dinoseb | ND | 50 | 5.1 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4-Dichlorophenylacetic acid | 88 | 30-130 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **095-01-033-1100** | **N/A** | **Soil** | **GC 40** | **06/12/13** | **06/18/13 12:44** | **130612L14** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Dalapon | ND | 250 | 73 | 1 | |
| Dicamba | ND | 10 | 1.2 | 1 | |
| MCPP | ND | 10000 | 3200 | 1 | |
| MCPA | ND | 10000 | 2100 | 1 | |
| Dichlorprop | ND | 100 | 17 | 1 | |
| 2,4-D | ND | 100 | 14 | 1 | |
| 2,4,5-TP (Silvex) | ND | 10 | 2.3 | 1 | |
| 2,4,5-T | ND | 10 | 1.1 | 1 | |
| 2,4-DB | ND | 100 | 16 | 1 | |
| Dinoseb | ND | 50 | 5.1 | 1 | |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2,4-Dichlorophenylacetic acid | 97 | 30-130 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8270C |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard | | | Page 1 of 18 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Comp-A (NASC01-03)** | **13-06-0651-1-A** | **04/11/13 00:00** | **Soil** | **GC/MS CCC** | **06/14/13** | **06/17/13 17:07** | **130614L01** |

Comment(s): - Sample received after recommended holding time.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Acenaphthene | 0.53 | 2.5 | 0.49 | 5 | J |
| Acenaphthylene | ND | 2.5 | 0.64 | 5 | |
| Aniline | ND | 2.5 | 0.56 | 5 | |
| Anthracene | 0.97 | 2.5 | 0.57 | 5 | J |
| Azobenzene | ND | 2.5 | 0.54 | 5 | |
| Benzidine | ND | 50 | 4.6 | 5 | |
| Benzo (a) Anthracene | 1.3 | 2.5 | 0.95 | 5 | J |
| Benzo (a) Pyrene | 1.2 | 2.5 | 0.43 | 5 | J |
| Benzo (b) Fluoranthene | 1.2 | 2.5 | 0.42 | 5 | J |
| Benzo (g,h,i) Perylene | 0.50 | 2.5 | 0.45 | 5 | J |
| Benzo (k) Fluoranthene | 1.4 | 2.5 | 0.55 | 5 | J |
| Benzoic Acid | ND | 12 | 3.9 | 5 | |
| Benzyl Alcohol | ND | 2.5 | 0.77 | 5 | |
| Bis(2-Chloroethoxy) Methane | ND | 2.5 | 0.62 | 5 | |
| Bis(2-Chloroethyl) Ether | ND | 12 | 0.57 | 5 | |
| Bis(2-Chloroisopropyl) Ether | ND | 2.5 | 0.60 | 5 | |
| Bis(2-Ethylhexyl) Phthalate | ND | 2.5 | 0.48 | 5 | |
| 4-Bromophenyl-Phenyl Ether | ND | 2.5 | 0.50 | 5 | |
| Butyl Benzyl Phthalate | ND | 2.5 | 0.50 | 5 | |
| 4-Chloro-3-Methylphenol | ND | 2.5 | 0.76 | 5 | |
| 4-Chloroaniline | ND | 2.5 | 0.62 | 5 | |
| 2-Chloronaphthalene | ND | 2.5 | 0.49 | 5 | |
| 2-Chlorophenol | ND | 2.5 | 0.68 | 5 | |
| 4-Chlorophenyl-Phenyl Ether | ND | 2.5 | 0.52 | 5 | |
| Chrysene | 1.5 | 2.5 | 0.47 | 5 | J |
| Di-n-Butyl Phthalate | ND | 2.5 | 0.48 | 5 | |
| Di-n-Octyl Phthalate | ND | 2.5 | 0.42 | 5 | |
| Dibenz (a,h) Anthracene | ND | 2.5 | 0.45 | 5 | |
| Dibenzofuran | ND | 2.5 | 0.58 | 5 | |
| 1,2-Dichlorobenzene | ND | 2.5 | 0.59 | 5 | |
| 1,3-Dichlorobenzene | ND | 2.5 | 0.52 | 5 | |
| 1,4-Dichlorobenzene | ND | 2.5 | 0.71 | 5 | |
| 3,3'-Dichlorobenzidine | ND | 50 | 5.4 | 5 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8270C |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard | | | Page 2 of 18 |

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| 2,4-Dichlorophenol | ND | 2.5 | 0.69 | 5 | |
| Diethyl Phthalate | ND | 2.5 | 0.79 | 5 | |
| Dimethyl Phthalate | ND | 2.5 | 0.90 | 5 | |
| 2,4-Dimethylphenol | ND | 2.5 | 0.60 | 5 | |
| 4,6-Dinitro-2-Methylphenol | ND | 12 | 7.9 | 5 | |
| 2,4-Dinitrophenol | ND | 12 | 3.6 | 5 | |
| 2,4-Dinitrotoluene | ND | 2.5 | 0.76 | 5 | |
| 2,6-Dinitrotoluene | ND | 2.5 | 0.83 | 5 | |
| Fluoranthene | 4.1 | 2.5 | 0.54 | 5 | |
| Fluorene | ND | 2.5 | 0.53 | 5 | |
| Hexachloro-1,3-Butadiene | ND | 2.5 | 0.50 | 5 | |
| Hexachlorobenzene | ND | 2.5 | 0.52 | 5 | |
| Hexachlorocyclopentadiene | ND | 12 | 3.5 | 5 | |
| Hexachloroethane | ND | 2.5 | 0.54 | 5 | |
| Indeno (1,2,3-c,d) Pyrene | ND | 2.5 | 0.49 | 5 | |
| Isophorone | ND | 2.5 | 0.59 | 5 | |
| 2-Methylnaphthalene | ND | 2.5 | 0.47 | 5 | |
| 1-Methylnaphthalene | ND | 2.5 | 0.48 | 5 | |
| 2-Methylphenol | ND | 2.5 | 0.70 | 5 | |
| 3/4-Methylphenol | ND | 2.5 | 0.68 | 5 | |
| N-Nitroso-di-n-propylamine | ND | 2.5 | 0.58 | 5 | |
| N-Nitrosodimethylamine | ND | 2.5 | 0.58 | 5 | |
| N-Nitrosodiphenylamine | ND | 2.5 | 0.59 | 5 | |
| Naphthalene | ND | 2.5 | 0.65 | 5 | |
| 4-Nitroaniline | ND | 2.5 | 0.70 | 5 | |
| 3-Nitroaniline | ND | 2.5 | 0.79 | 5 | |
| 2-Nitroaniline | ND | 2.5 | 0.82 | 5 | |
| Nitrobenzene | ND | 12 | 3.8 | 5 | |
| 4-Nitrophenol | ND | 2.5 | 0.79 | 5 | |
| 2-Nitrophenol | ND | 2.5 | 0.64 | 5 | |
| Pentachlorophenol | ND | 12 | 6.4 | 5 | |
| Phenanthrene | 0.97 | 2.5 | 0.58 | 5 | J |
| Phenol | ND | 2.5 | 0.71 | 5 | |
| Pyrene | 5.5 | 2.5 | 0.51 | 5 | |
| Pyridine | ND | 2.5 | 1.7 | 5 | |
| 1,2,4-Trichlorobenzene | ND | 2.5 | 0.55 | 5 | |
| 2,4,6-Trichlorophenol | ND | 2.5 | 0.79 | 5 | |
| 2,4,5-Trichlorophenol | ND | 2.5 | 0.76 | 5 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8270C |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard | | | Page 3 of 18 |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2-Fluorobiphenyl | 100 | 38-134 | |
| 2-Fluorophenol | 84 | 42-120 | |
| Nitrobenzene-d5 | 80 | 42-150 | |
| p-Terphenyl-d14 | 109 | 35-167 | |
| Phenol-d6 | 76 | 46-118 | |
| 2,4,6-Tribromophenol | 93 | 36-132 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8270C |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard | | | Page 4 of 18 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Comp-B (NASC04-06)** | **13-06-0651-2-A** | **04/11/13 00:00** | **Soil** | **GC/MS CCC** | **06/14/13** | **06/17/13 17:33** | **130614L01** |

Comment(s): - Sample received after recommended holding time.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Acenaphthene | ND | 0.50 | 0.099 | 1 | |
| Acenaphthylene | ND | 0.50 | 0.13 | 1 | |
| Aniline | ND | 0.50 | 0.11 | 1 | |
| Anthracene | ND | 0.50 | 0.11 | 1 | |
| Azobenzene | ND | 0.50 | 0.11 | 1 | |
| Benzidine | ND | 10 | 0.93 | 1 | |
| Benzo (a) Anthracene | ND | 0.50 | 0.19 | 1 | |
| Benzo (a) Pyrene | 0.43 | 0.50 | 0.085 | 1 | J |
| Benzo (b) Fluoranthene | 0.45 | 0.50 | 0.084 | 1 | J |
| Benzo (g,h,i) Perylene | 0.18 | 0.50 | 0.090 | 1 | J |
| Benzo (k) Fluoranthene | 0.51 | 0.50 | 0.11 | 1 | |
| Benzoic Acid | ND | 2.5 | 0.78 | 1 | |
| Benzyl Alcohol | ND | 0.50 | 0.15 | 1 | |
| Bis(2-Chloroethoxy) Methane | ND | 0.50 | 0.12 | 1 | |
| Bis(2-Chloroethyl) Ether | ND | 2.5 | 0.11 | 1 | |
| Bis(2-Chloroisopropyl) Ether | ND | 0.50 | 0.12 | 1 | |
| Bis(2-Ethylhexyl) Phthalate | 0.25 | 0.50 | 0.096 | 1 | J |
| 4-Bromophenyl-Phenyl Ether | ND | 0.50 | 0.10 | 1 | |
| Butyl Benzyl Phthalate | ND | 0.50 | 0.10 | 1 | |
| 4-Chloro-3-Methylphenol | ND | 0.50 | 0.15 | 1 | |
| 4-Chloroaniline | ND | 0.50 | 0.12 | 1 | |
| 2-Chloronaphthalene | ND | 0.50 | 0.097 | 1 | |
| 2-Chlorophenol | ND | 0.50 | 0.14 | 1 | |
| 4-Chlorophenyl-Phenyl Ether | ND | 0.50 | 0.10 | 1 | |
| Chrysene | 0.23 | 0.50 | 0.094 | 1 | J |
| Di-n-Butyl Phthalate | ND | 0.50 | 0.096 | 1 | |
| Di-n-Octyl Phthalate | ND | 0.50 | 0.083 | 1 | |
| Dibenz (a,h) Anthracene | ND | 0.50 | 0.090 | 1 | |
| Dibenzofuran | ND | 0.50 | 0.12 | 1 | |
| 1,2-Dichlorobenzene | ND | 0.50 | 0.12 | 1 | |
| 1,3-Dichlorobenzene | ND | 0.50 | 0.10 | 1 | |
| 1,4-Dichlorobenzene | ND | 0.50 | 0.14 | 1 | |
| 3,3'-Dichlorobenzidine | ND | 10 | 1.1 | 1 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8270C |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard | | | Page 5 of 18 |

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| 2,4-Dichlorophenol | ND | 0.50 | 0.14 | 1 | |
| Diethyl Phthalate | ND | 0.50 | 0.16 | 1 | |
| Dimethyl Phthalate | ND | 0.50 | 0.18 | 1 | |
| 2,4-Dimethylphenol | ND | 0.50 | 0.12 | 1 | |
| 4,6-Dinitro-2-Methylphenol | ND | 2.5 | 1.6 | 1 | |
| 2,4-Dinitrophenol | ND | 2.5 | 0.72 | 1 | |
| 2,4-Dinitrotoluene | ND | 0.50 | 0.15 | 1 | |
| 2,6-Dinitrotoluene | ND | 0.50 | 0.17 | 1 | |
| Fluoranthene | 0.40 | 0.50 | 0.11 | 1 | J |
| Fluorene | ND | 0.50 | 0.11 | 1 | |
| Hexachloro-1,3-Butadiene | ND | 0.50 | 0.10 | 1 | |
| Hexachlorobenzene | ND | 0.50 | 0.10 | 1 | |
| Hexachlorocyclopentadiene | ND | 2.5 | 0.70 | 1 | |
| Hexachloroethane | ND | 0.50 | 0.11 | 1 | |
| Indeno (1,2,3-c,d) Pyrene | 0.18 | 0.50 | 0.099 | 1 | J |
| Isophorone | ND | 0.50 | 0.12 | 1 | |
| 2-Methylnaphthalene | ND | 0.50 | 0.095 | 1 | |
| 1-Methylnaphthalene | ND | 0.50 | 0.095 | 1 | |
| 2-Methylphenol | ND | 0.50 | 0.14 | 1 | |
| 3/4-Methylphenol | ND | 0.50 | 0.14 | 1 | |
| N-Nitroso-di-n-propylamine | ND | 0.50 | 0.12 | 1 | |
| N-Nitrosodimethylamine | ND | 0.50 | 0.12 | 1 | |
| N-Nitrosodiphenylamine | ND | 0.50 | 0.12 | 1 | |
| Naphthalene | ND | 0.50 | 0.13 | 1 | |
| 4-Nitroaniline | ND | 0.50 | 0.14 | 1 | |
| 3-Nitroaniline | ND | 0.50 | 0.16 | 1 | |
| 2-Nitroaniline | ND | 0.50 | 0.16 | 1 | |
| Nitrobenzene | ND | 2.5 | 0.76 | 1 | |
| 4-Nitrophenol | ND | 0.50 | 0.16 | 1 | |
| 2-Nitrophenol | ND | 0.50 | 0.13 | 1 | |
| Pentachlorophenol | ND | 2.5 | 1.3 | 1 | |
| Phenanthrene | ND | 0.50 | 0.12 | 1 | |
| Phenol | ND | 0.50 | 0.14 | 1 | |
| Pyrene | 0.65 | 0.50 | 0.10 | 1 | |
| Pyridine | ND | 0.50 | 0.33 | 1 | |
| 1,2,4-Trichlorobenzene | ND | 0.50 | 0.11 | 1 | |
| 2,4,6-Trichlorophenol | ND | 0.50 | 0.16 | 1 | |
| 2,4,5-Trichlorophenol | ND | 0.50 | 0.15 | 1 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8270C |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard | | | Page 6 of 18 |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2-Fluorobiphenyl | 79 | 38-134 | |
| 2-Fluorophenol | 76 | 42-120 | |
| Nitrobenzene-d5 | 70 | 42-150 | |
| p-Terphenyl-d14 | 89 | 35-167 | |
| Phenol-d6 | 73 | 46-118 | |
| 2,4,6-Tribromophenol | 83 | 36-132 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8270C |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard | | | Page 7 of 18 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Comp-C (NASC07-09)** | **13-06-0651-3-A** | **04/10/13 00:00** | **Soil** | **GC/MS CCC** | **06/14/13** | **06/17/13 17:59** | **130614L01** |

Comment(s): - Sample received after recommended holding time.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Acenaphthene | ND | 0.50 | 0.099 | 1 | |
| Acenaphthylene | ND | 0.50 | 0.13 | 1 | |
| Aniline | ND | 0.50 | 0.11 | 1 | |
| Anthracene | ND | 0.50 | 0.11 | 1 | |
| Azobenzene | ND | 0.50 | 0.11 | 1 | |
| Benzidine | ND | 10 | 0.93 | 1 | |
| Benzo (a) Anthracene | ND | 0.50 | 0.19 | 1 | |
| Benzo (a) Pyrene | 0.13 | 0.50 | 0.085 | 1 | J |
| Benzo (b) Fluoranthene | 0.11 | 0.50 | 0.084 | 1 | J |
| Benzo (g,h,i) Perylene | ND | 0.50 | 0.090 | 1 | |
| Benzo (k) Fluoranthene | 0.12 | 0.50 | 0.11 | 1 | J |
| Benzoic Acid | ND | 2.5 | 0.78 | 1 | |
| Benzyl Alcohol | ND | 0.50 | 0.15 | 1 | |
| Bis(2-Chloroethoxy) Methane | ND | 0.50 | 0.12 | 1 | |
| Bis(2-Chloroethyl) Ether | ND | 2.5 | 0.11 | 1 | |
| Bis(2-Chloroisopropyl) Ether | ND | 0.50 | 0.12 | 1 | |
| Bis(2-Ethylhexyl) Phthalate | ND | 0.50 | 0.096 | 1 | |
| 4-Bromophenyl-Phenyl Ether | ND | 0.50 | 0.10 | 1 | |
| Butyl Benzyl Phthalate | ND | 0.50 | 0.10 | 1 | |
| 4-Chloro-3-Methylphenol | ND | 0.50 | 0.15 | 1 | |
| 4-Chloroaniline | ND | 0.50 | 0.12 | 1 | |
| 2-Chloronaphthalene | ND | 0.50 | 0.097 | 1 | |
| 2-Chlorophenol | ND | 0.50 | 0.14 | 1 | |
| 4-Chlorophenyl-Phenyl Ether | ND | 0.50 | 0.10 | 1 | |
| Chrysene | ND | 0.50 | 0.094 | 1 | |
| Di-n-Butyl Phthalate | ND | 0.50 | 0.096 | 1 | |
| Di-n-Octyl Phthalate | ND | 0.50 | 0.083 | 1 | |
| Dibenz (a,h) Anthracene | ND | 0.50 | 0.090 | 1 | |
| Dibenzofuran | ND | 0.50 | 0.12 | 1 | |
| 1,2-Dichlorobenzene | ND | 0.50 | 0.12 | 1 | |
| 1,3-Dichlorobenzene | ND | 0.50 | 0.10 | 1 | |
| 1,4-Dichlorobenzene | ND | 0.50 | 0.14 | 1 | |
| 3,3'-Dichlorobenzidine | ND | 10 | 1.1 | 1 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8270C |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard | | | Page 8 of 18 |

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| 2,4-Dichlorophenol | ND | 0.50 | 0.14 | 1 | |
| Diethyl Phthalate | ND | 0.50 | 0.16 | 1 | |
| Dimethyl Phthalate | ND | 0.50 | 0.18 | 1 | |
| 2,4-Dimethylphenol | ND | 0.50 | 0.12 | 1 | |
| 4,6-Dinitro-2-Methylphenol | ND | 2.5 | 1.6 | 1 | |
| 2,4-Dinitrophenol | ND | 2.5 | 0.72 | 1 | |
| 2,4-Dinitrotoluene | ND | 0.50 | 0.15 | 1 | |
| 2,6-Dinitrotoluene | ND | 0.50 | 0.17 | 1 | |
| Fluoranthene | ND | 0.50 | 0.11 | 1 | |
| Fluorene | ND | 0.50 | 0.11 | 1 | |
| Hexachloro-1,3-Butadiene | ND | 0.50 | 0.10 | 1 | |
| Hexachlorobenzene | ND | 0.50 | 0.10 | 1 | |
| Hexachlorocyclopentadiene | ND | 2.5 | 0.70 | 1 | |
| Hexachloroethane | ND | 0.50 | 0.11 | 1 | |
| Indeno (1,2,3-c,d) Pyrene | ND | 0.50 | 0.099 | 1 | |
| Isophorone | ND | 0.50 | 0.12 | 1 | |
| 2-Methylnaphthalene | ND | 0.50 | 0.095 | 1 | |
| 1-Methylnaphthalene | ND | 0.50 | 0.095 | 1 | |
| 2-Methylphenol | ND | 0.50 | 0.14 | 1 | |
| 3/4-Methylphenol | ND | 0.50 | 0.14 | 1 | |
| N-Nitroso-di-n-propylamine | ND | 0.50 | 0.12 | 1 | |
| N-Nitrosodimethylamine | ND | 0.50 | 0.12 | 1 | |
| N-Nitrosodiphenylamine | ND | 0.50 | 0.12 | 1 | |
| Naphthalene | ND | 0.50 | 0.13 | 1 | |
| 4-Nitroaniline | ND | 0.50 | 0.14 | 1 | |
| 3-Nitroaniline | ND | 0.50 | 0.16 | 1 | |
| 2-Nitroaniline | ND | 0.50 | 0.16 | 1 | |
| Nitrobenzene | ND | 2.5 | 0.76 | 1 | |
| 4-Nitrophenol | ND | 0.50 | 0.16 | 1 | |
| 2-Nitrophenol | ND | 0.50 | 0.13 | 1 | |
| Pentachlorophenol | ND | 2.5 | 1.3 | 1 | |
| Phenanthrene | ND | 0.50 | 0.12 | 1 | |
| Phenol | ND | 0.50 | 0.14 | 1 | |
| Pyrene | 0.27 | 0.50 | 0.10 | 1 | J |
| Pyridine | ND | 0.50 | 0.33 | 1 | |
| 1,2,4-Trichlorobenzene | ND | 0.50 | 0.11 | 1 | |
| 2,4,6-Trichlorophenol | ND | 0.50 | 0.16 | 1 | |
| 2,4,5-Trichlorophenol | ND | 0.50 | 0.15 | 1 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8270C |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard | | | Page 9 of 18 |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2-Fluorobiphenyl | 69 | 38-134 | |
| 2-Fluorophenol | 77 | 42-120 | |
| Nitrobenzene-d5 | 67 | 42-150 | |
| p-Terphenyl-d14 | 95 | 35-167 | |
| Phenol-d6 | 75 | 46-118 | |
| 2,4,6-Tribromophenol | 79 | 36-132 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8270C |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard | | | Page 10 of 18 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Comp-D (NASC10-12)** | **13-06-0651-4-A** | **04/09/13 00:00** | **Soil** | **GC/MS CCC** | **06/14/13** | **06/17/13 18:25** | **130614L01** |

Comment(s): - Sample received after recommended holding time.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Acenaphthene | ND | 0.50 | 0.099 | 1 | |
| Acenaphthylene | ND | 0.50 | 0.13 | 1 | |
| Aniline | ND | 0.50 | 0.11 | 1 | |
| Anthracene | ND | 0.50 | 0.11 | 1 | |
| Azobenzene | ND | 0.50 | 0.11 | 1 | |
| Benzidine | ND | 10 | 0.93 | 1 | |
| Benzo (a) Anthracene | ND | 0.50 | 0.19 | 1 | |
| Benzo (a) Pyrene | 0.19 | 0.50 | 0.085 | 1 | J |
| Benzo (b) Fluoranthene | 0.18 | 0.50 | 0.084 | 1 | J |
| Benzo (g,h,i) Perylene | 0.099 | 0.50 | 0.090 | 1 | J |
| Benzo (k) Fluoranthene | 0.19 | 0.50 | 0.11 | 1 | J |
| Benzoic Acid | ND | 2.5 | 0.78 | 1 | |
| Benzyl Alcohol | ND | 0.50 | 0.15 | 1 | |
| Bis(2-Chloroethoxy) Methane | ND | 0.50 | 0.12 | 1 | |
| Bis(2-Chloroethyl) Ether | ND | 2.5 | 0.11 | 1 | |
| Bis(2-Chloroisopropyl) Ether | ND | 0.50 | 0.12 | 1 | |
| Bis(2-Ethylhexyl) Phthalate | 0.17 | 0.50 | 0.096 | 1 | J |
| 4-Bromophenyl-Phenyl Ether | ND | 0.50 | 0.10 | 1 | |
| Butyl Benzyl Phthalate | ND | 0.50 | 0.10 | 1 | |
| 4-Chloro-3-Methylphenol | ND | 0.50 | 0.15 | 1 | |
| 4-Chloroaniline | ND | 0.50 | 0.12 | 1 | |
| 2-Chloronaphthalene | ND | 0.50 | 0.097 | 1 | |
| 2-Chlorophenol | ND | 0.50 | 0.14 | 1 | |
| 4-Chlorophenyl-Phenyl Ether | ND | 0.50 | 0.10 | 1 | |
| Chrysene | 0.12 | 0.50 | 0.094 | 1 | J |
| Di-n-Butyl Phthalate | ND | 0.50 | 0.096 | 1 | |
| Di-n-Octyl Phthalate | ND | 0.50 | 0.083 | 1 | |
| Dibenz (a,h) Anthracene | ND | 0.50 | 0.090 | 1 | |
| Dibenzofuran | ND | 0.50 | 0.12 | 1 | |
| 1,2-Dichlorobenzene | ND | 0.50 | 0.12 | 1 | |
| 1,3-Dichlorobenzene | ND | 0.50 | 0.10 | 1 | |
| 1,4-Dichlorobenzene | ND | 0.50 | 0.14 | 1 | |
| 3,3'-Dichlorobenzidine | ND | 10 | 1.1 | 1 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8270C |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard | | | Page 11 of 18 |

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| 2,4-Dichlorophenol | ND | 0.50 | 0.14 | 1 | |
| Diethyl Phthalate | ND | 0.50 | 0.16 | 1 | |
| Dimethyl Phthalate | ND | 0.50 | 0.18 | 1 | |
| 2,4-Dimethylphenol | ND | 0.50 | 0.12 | 1 | |
| 4,6-Dinitro-2-Methylphenol | ND | 2.5 | 1.6 | 1 | |
| 2,4-Dinitrophenol | ND | 2.5 | 0.72 | 1 | |
| 2,4-Dinitrotoluene | ND | 0.50 | 0.15 | 1 | |
| 2,6-Dinitrotoluene | ND | 0.50 | 0.17 | 1 | |
| Fluoranthene | 0.17 | 0.50 | 0.11 | 1 | J |
| Fluorene | ND | 0.50 | 0.11 | 1 | |
| Hexachloro-1,3-Butadiene | ND | 0.50 | 0.10 | 1 | |
| Hexachlorobenzene | ND | 0.50 | 0.10 | 1 | |
| Hexachlorocyclopentadiene | ND | 2.5 | 0.70 | 1 | |
| Hexachloroethane | ND | 0.50 | 0.11 | 1 | |
| Indeno (1,2,3-c,d) Pyrene | ND | 0.50 | 0.099 | 1 | |
| Isophorone | ND | 0.50 | 0.12 | 1 | |
| 2-Methylnaphthalene | ND | 0.50 | 0.095 | 1 | |
| 1-Methylnaphthalene | ND | 0.50 | 0.095 | 1 | |
| 2-Methylphenol | ND | 0.50 | 0.14 | 1 | |
| 3/4-Methylphenol | ND | 0.50 | 0.14 | 1 | |
| N-Nitroso-di-n-propylamine | ND | 0.50 | 0.12 | 1 | |
| N-Nitrosodimethylamine | ND | 0.50 | 0.12 | 1 | |
| N-Nitrosodiphenylamine | ND | 0.50 | 0.12 | 1 | |
| Naphthalene | ND | 0.50 | 0.13 | 1 | |
| 4-Nitroaniline | ND | 0.50 | 0.14 | 1 | |
| 3-Nitroaniline | ND | 0.50 | 0.16 | 1 | |
| 2-Nitroaniline | ND | 0.50 | 0.16 | 1 | |
| Nitrobenzene | ND | 2.5 | 0.76 | 1 | |
| 4-Nitrophenol | ND | 0.50 | 0.16 | 1 | |
| 2-Nitrophenol | ND | 0.50 | 0.13 | 1 | |
| Pentachlorophenol | ND | 2.5 | 1.3 | 1 | |
| Phenanthrene | ND | 0.50 | 0.12 | 1 | |
| Phenol | ND | 0.50 | 0.14 | 1 | |
| Pyrene | 0.50 | 0.50 | 0.10 | 1 | |
| Pyridine | ND | 0.50 | 0.33 | 1 | |
| 1,2,4-Trichlorobenzene | ND | 0.50 | 0.11 | 1 | |
| 2,4,6-Trichlorophenol | ND | 0.50 | 0.16 | 1 | |
| 2,4,5-Trichlorophenol | ND | 0.50 | 0.15 | 1 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8270C |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard | | | Page 12 of 18 |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2-Fluorobiphenyl | 76 | 38-134 | |
| 2-Fluorophenol | 82 | 42-120 | |
| Nitrobenzene-d5 | 75 | 42-150 | |
| p-Terphenyl-d14 | 93 | 35-167 | |
| Phenol-d6 | 79 | 46-118 | |
| 2,4,6-Tribromophenol | 82 | 36-132 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8270C |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard | | | Page 13 of 18 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Comp-E (NASC13-15)** | **13-06-0651-5-A** | **04/09/13 00:00** | **Soil** | **GC/MS CCC** | **06/14/13** | **06/17/13 16:15** | **130614L01** |

Comment(s): - Sample received after recommended holding time.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Acenaphthene | ND | 0.50 | 0.099 | 1 | |
| Acenaphthylene | ND | 0.50 | 0.13 | 1 | |
| Aniline | ND | 0.50 | 0.11 | 1 | |
| Anthracene | ND | 0.50 | 0.11 | 1 | |
| Azobenzene | ND | 0.50 | 0.11 | 1 | |
| Benzidine | ND | 10 | 0.93 | 1 | |
| Benzo (a) Anthracene | ND | 0.50 | 0.19 | 1 | |
| Benzo (a) Pyrene | 0.13 | 0.50 | 0.085 | 1 | J |
| Benzo (b) Fluoranthene | 0.12 | 0.50 | 0.084 | 1 | J |
| Benzo (g,h,i) Perylene | 0.092 | 0.50 | 0.090 | 1 | J |
| Benzo (k) Fluoranthene | ND | 0.50 | 0.11 | 1 | |
| Benzoic Acid | ND | 2.5 | 0.78 | 1 | |
| Benzyl Alcohol | ND | 0.50 | 0.15 | 1 | |
| Bis(2-Chloroethoxy) Methane | ND | 0.50 | 0.12 | 1 | |
| Bis(2-Chloroethyl) Ether | ND | 2.5 | 0.11 | 1 | |
| Bis(2-Chloroisopropyl) Ether | ND | 0.50 | 0.12 | 1 | |
| Bis(2-Ethylhexyl) Phthalate | 0.36 | 0.50 | 0.096 | 1 | J |
| 4-Bromophenyl-Phenyl Ether | ND | 0.50 | 0.10 | 1 | |
| Butyl Benzyl Phthalate | ND | 0.50 | 0.10 | 1 | |
| 4-Chloro-3-Methylphenol | ND | 0.50 | 0.15 | 1 | |
| 4-Chloroaniline | ND | 0.50 | 0.12 | 1 | |
| 2-Chloronaphthalene | ND | 0.50 | 0.097 | 1 | |
| 2-Chlorophenol | ND | 0.50 | 0.14 | 1 | |
| 4-Chlorophenyl-Phenyl Ether | ND | 0.50 | 0.10 | 1 | |
| Chrysene | ND | 0.50 | 0.094 | 1 | |
| Di-n-Butyl Phthalate | ND | 0.50 | 0.096 | 1 | |
| Di-n-Octyl Phthalate | ND | 0.50 | 0.083 | 1 | |
| Dibenz (a,h) Anthracene | ND | 0.50 | 0.090 | 1 | |
| Dibenzofuran | ND | 0.50 | 0.12 | 1 | |
| 1,2-Dichlorobenzene | ND | 0.50 | 0.12 | 1 | |
| 1,3-Dichlorobenzene | ND | 0.50 | 0.10 | 1 | |
| 1,4-Dichlorobenzene | ND | 0.50 | 0.14 | 1 | |
| 3,3'-Dichlorobenzidine | ND | 10 | 1.1 | 1 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8270C |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard | | | Page 14 of 18 |

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| 2,4-Dichlorophenol | ND | 0.50 | 0.14 | 1 | |
| Diethyl Phthalate | ND | 0.50 | 0.16 | 1 | |
| Dimethyl Phthalate | ND | 0.50 | 0.18 | 1 | |
| 2,4-Dimethylphenol | ND | 0.50 | 0.12 | 1 | |
| 4,6-Dinitro-2-Methylphenol | ND | 2.5 | 1.6 | 1 | |
| 2,4-Dinitrophenol | ND | 2.5 | 0.72 | 1 | |
| 2,4-Dinitrotoluene | ND | 0.50 | 0.15 | 1 | |
| 2,6-Dinitrotoluene | ND | 0.50 | 0.17 | 1 | |
| Fluoranthene | ND | 0.50 | 0.11 | 1 | |
| Fluorene | ND | 0.50 | 0.11 | 1 | |
| Hexachloro-1,3-Butadiene | ND | 0.50 | 0.10 | 1 | |
| Hexachlorobenzene | ND | 0.50 | 0.10 | 1 | |
| Hexachlorocyclopentadiene | ND | 2.5 | 0.70 | 1 | |
| Hexachloroethane | ND | 0.50 | 0.11 | 1 | |
| Indeno (1,2,3-c,d) Pyrene | ND | 0.50 | 0.099 | 1 | |
| Isophorone | ND | 0.50 | 0.12 | 1 | |
| 2-Methylnaphthalene | ND | 0.50 | 0.095 | 1 | |
| 1-Methylnaphthalene | ND | 0.50 | 0.095 | 1 | |
| 2-Methylphenol | ND | 0.50 | 0.14 | 1 | |
| 3/4-Methylphenol | ND | 0.50 | 0.14 | 1 | |
| N-Nitroso-di-n-propylamine | ND | 0.50 | 0.12 | 1 | |
| N-Nitrosodimethylamine | ND | 0.50 | 0.12 | 1 | |
| N-Nitrosodiphenylamine | ND | 0.50 | 0.12 | 1 | |
| Naphthalene | ND | 0.50 | 0.13 | 1 | |
| 4-Nitroaniline | ND | 0.50 | 0.14 | 1 | |
| 3-Nitroaniline | ND | 0.50 | 0.16 | 1 | |
| 2-Nitroaniline | ND | 0.50 | 0.16 | 1 | |
| Nitrobenzene | ND | 2.5 | 0.76 | 1 | |
| 4-Nitrophenol | ND | 0.50 | 0.16 | 1 | |
| 2-Nitrophenol | ND | 0.50 | 0.13 | 1 | |
| Pentachlorophenol | ND | 2.5 | 1.3 | 1 | |
| Phenanthrene | ND | 0.50 | 0.12 | 1 | |
| Phenol | ND | 0.50 | 0.14 | 1 | |
| Pyrene | 0.14 | 0.50 | 0.10 | 1 | J |
| Pyridine | ND | 0.50 | 0.33 | 1 | |
| 1,2,4-Trichlorobenzene | ND | 0.50 | 0.11 | 1 | |
| 2,4,6-Trichlorophenol | ND | 0.50 | 0.16 | 1 | |
| 2,4,5-Trichlorophenol | ND | 0.50 | 0.15 | 1 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8270C |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard | | | Page 15 of 18 |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2-Fluorobiphenyl | 60 | 38-134 | |
| 2-Fluorophenol | 80 | 42-120 | |
| Nitrobenzene-d5 | 73 | 42-150 | |
| p-Terphenyl-d14 | 87 | 35-167 | |
| Phenol-d6 | 78 | 46-118 | |
| 2,4,6-Tribromophenol | 77 | 36-132 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8270C |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard | | | Page 16 of 18 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-12-549-2497** | **N/A** | **Soil** | **GC/MS CCC** | **06/14/13** | **06/17/13 15:49** | **130614L01** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Acenaphthene | ND | 0.50 | 0.099 | 1 | |
| Acenaphthylene | ND | 0.50 | 0.13 | 1 | |
| Aniline | ND | 0.50 | 0.11 | 1 | |
| Anthracene | ND | 0.50 | 0.11 | 1 | |
| Azobenzene | ND | 0.50 | 0.11 | 1 | |
| Benzidine | ND | 10 | 0.93 | 1 | |
| Benzo (a) Anthracene | ND | 0.50 | 0.19 | 1 | |
| Benzo (a) Pyrene | ND | 0.50 | 0.085 | 1 | |
| Benzo (b) Fluoranthene | ND | 0.50 | 0.084 | 1 | |
| Benzo (g,h,i) Perylene | ND | 0.50 | 0.090 | 1 | |
| Benzo (k) Fluoranthene | ND | 0.50 | 0.11 | 1 | |
| Benzoic Acid | ND | 2.5 | 0.78 | 1 | |
| Benzyl Alcohol | ND | 0.50 | 0.15 | 1 | |
| Bis(2-Chloroethoxy) Methane | ND | 0.50 | 0.12 | 1 | |
| Bis(2-Chloroethyl) Ether | ND | 2.5 | 0.11 | 1 | |
| Bis(2-Chloroisopropyl) Ether | ND | 0.50 | 0.12 | 1 | |
| Bis(2-Ethylhexyl) Phthalate | ND | 0.50 | 0.096 | 1 | |
| 4-Bromophenyl-Phenyl Ether | ND | 0.50 | 0.10 | 1 | |
| Butyl Benzyl Phthalate | ND | 0.50 | 0.10 | 1 | |
| 4-Chloro-3-Methylphenol | ND | 0.50 | 0.15 | 1 | |
| 4-Chloroaniline | ND | 0.50 | 0.12 | 1 | |
| 2-Chloronaphthalene | ND | 0.50 | 0.097 | 1 | |
| 2-Chlorophenol | ND | 0.50 | 0.14 | 1 | |
| 4-Chlorophenyl-Phenyl Ether | ND | 0.50 | 0.10 | 1 | |
| Chrysene | ND | 0.50 | 0.094 | 1 | |
| Di-n-Butyl Phthalate | ND | 0.50 | 0.096 | 1 | |
| Di-n-Octyl Phthalate | ND | 0.50 | 0.083 | 1 | |
| Dibenz (a,h) Anthracene | ND | 0.50 | 0.090 | 1 | |
| Dibenzofuran | ND | 0.50 | 0.12 | 1 | |
| 1,2-Dichlorobenzene | ND | 0.50 | 0.12 | 1 | |
| 1,3-Dichlorobenzene | ND | 0.50 | 0.10 | 1 | |
| 1,4-Dichlorobenzene | ND | 0.50 | 0.14 | 1 | |
| 3,3'-Dichlorobenzidine | ND | 10 | 1.1 | 1 | |
| 2,4-Dichlorophenol | ND | 0.50 | 0.14 | 1 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8270C |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard | | | Page 17 of 18 |

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Diethyl Phthalate | ND | 0.50 | 0.16 | 1 | |
| Dimethyl Phthalate | ND | 0.50 | 0.18 | 1 | |
| 2,4-Dimethylphenol | ND | 0.50 | 0.12 | 1 | |
| 4,6-Dinitro-2-Methylphenol | ND | 2.5 | 1.6 | 1 | |
| 2,4-Dinitrophenol | ND | 2.5 | 0.72 | 1 | |
| 2,4-Dinitrotoluene | ND | 0.50 | 0.15 | 1 | |
| 2,6-Dinitrotoluene | ND | 0.50 | 0.17 | 1 | |
| Fluoranthene | ND | 0.50 | 0.11 | 1 | |
| Fluorene | ND | 0.50 | 0.11 | 1 | |
| Hexachloro-1,3-Butadiene | ND | 0.50 | 0.10 | 1 | |
| Hexachlorobenzene | ND | 0.50 | 0.10 | 1 | |
| Hexachlorocyclopentadiene | ND | 2.5 | 0.70 | 1 | |
| Hexachloroethane | ND | 0.50 | 0.11 | 1 | |
| Indeno (1,2,3-c,d) Pyrene | ND | 0.50 | 0.099 | 1 | |
| Isophorone | ND | 0.50 | 0.12 | 1 | |
| 2-Methylnaphthalene | ND | 0.50 | 0.095 | 1 | |
| 1-Methylnaphthalene | ND | 0.50 | 0.095 | 1 | |
| 2-Methylphenol | ND | 0.50 | 0.14 | 1 | |
| 3/4-Methylphenol | ND | 0.50 | 0.14 | 1 | |
| N-Nitroso-di-n-propylamine | ND | 0.50 | 0.12 | 1 | |
| N-Nitrosodimethylamine | ND | 0.50 | 0.12 | 1 | |
| N-Nitrosodiphenylamine | ND | 0.50 | 0.12 | 1 | |
| Naphthalene | ND | 0.50 | 0.13 | 1 | |
| 4-Nitroaniline | ND | 0.50 | 0.14 | 1 | |
| 3-Nitroaniline | ND | 0.50 | 0.16 | 1 | |
| 2-Nitroaniline | ND | 0.50 | 0.16 | 1 | |
| Nitrobenzene | ND | 2.5 | 0.76 | 1 | |
| 4-Nitrophenol | ND | 0.50 | 0.16 | 1 | |
| 2-Nitrophenol | ND | 0.50 | 0.13 | 1 | |
| Pentachlorophenol | ND | 2.5 | 1.3 | 1 | |
| Phenanthrene | ND | 0.50 | 0.12 | 1 | |
| Phenol | ND | 0.50 | 0.14 | 1 | |
| Pyrene | ND | 0.50 | 0.10 | 1 | |
| Pyridine | ND | 0.50 | 0.33 | 1 | |
| 1,2,4-Trichlorobenzene | ND | 0.50 | 0.11 | 1 | |
| 2,4,6-Trichlorophenol | ND | 0.50 | 0.16 | 1 | |
| 2,4,5-Trichlorophenol | ND | 0.50 | 0.15 | 1 | |

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8270C |
| | | Units: | mg/kg |
| Project: NASSCO South Shipyard | | | Page 18 of 18 |

| Surrogate | Rec. (%) | Control Limits | Qualifiers |
|---|---|---|---|
| 2-Fluorobiphenyl | 87 | 38-134 | |
| 2-Fluorophenol | 87 | 42-120 | |
| Nitrobenzene-d5 | 84 | 42-150 | |
| p-Terphenyl-d14 | 102 | 35-167 | |
| Phenol-d6 | 88 | 46-118 | |
| 2,4,6-Tribromophenol | 87 | 36-132 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8081A |
| Project: NASSCO South Shipyard | | | Page 1 of 3 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **Comp-A (NASC01-03)** | **Soil** | **GC 51** | **06/14/13** | **06/18/13 14:03** | **130614S03** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Aldrin | ND | 25.00 | 22.59 | 90 | 21.56 | 86 | 50-135 | 5 | 0-25 | |
| Alpha-BHC | ND | 25.00 | 21.32 | 85 | 21.16 | 85 | 50-135 | 1 | 0-25 | |
| Beta-BHC | ND | 25.00 | 28.80 | 115 | 29.20 | 117 | 50-135 | 1 | 0-25 | |
| 4,4'-DDD | ND | 25.00 | 44.81 | 179 | 42.21 | 169 | 50-135 | 6 | 0-25 | 3 |
| 4,4'-DDE | ND | 25.00 | 40.11 | 160 | 37.51 | 150 | 50-135 | 7 | 0-25 | 3 |
| 4,4'-DDT | ND | 25.00 | 39.16 | 157 | 29.86 | 119 | 50-135 | 27 | 0-25 | 3,4 |
| Delta-BHC | ND | 25.00 | 20.81 | 83 | 20.39 | 82 | 50-135 | 2 | 0-25 | |
| Dieldrin | ND | 25.00 | 27.60 | 110 | 27.23 | 109 | 50-135 | 1 | 0-25 | |
| Endosulfan I | ND | 25.00 | 23.01 | 92 | 22.58 | 90 | 50-135 | 2 | 0-25 | |
| Endosulfan II | ND | 25.00 | 23.47 | 94 | 23.09 | 92 | 50-135 | 2 | 0-25 | |
| Endosulfan Sulfate | ND | 25.00 | 25.67 | 103 | 24.17 | 97 | 50-135 | 6 | 0-25 | |
| Endrin | ND | 25.00 | 29.60 | 118 | 28.34 | 113 | 50-135 | 4 | 0-25 | |
| Endrin Aldehyde | ND | 25.00 | 24.69 | 99 | 23.86 | 95 | 50-135 | 3 | 0-25 | |
| Gamma-BHC | ND | 25.00 | 24.31 | 97 | 23.70 | 95 | 50-135 | 3 | 0-25 | |
| Heptachlor | ND | 25.00 | 24.13 | 97 | 22.14 | 89 | 50-135 | 9 | 0-25 | |
| Heptachlor Epoxide | ND | 25.00 | 23.38 | 94 | 23.30 | 93 | 50-135 | 0 | 0-25 | |
| Methoxychlor | ND | 25.00 | 33.49 | 134 | 22.86 | 91 | 50-135 | 38 | 0-25 | 4 |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 8151A |
| | | Method: | EPA 8151A |
| Project: NASSCO South Shipyard | | | Page 2 of 3 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **Comp-A (NASC01-03)** | **Soil** | **GC 40** | **06/12/13** | **06/18/13 13:36** | **130612S14** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| 2,4-D | ND | 400.0 | 306.9 | 77 | 325.6 | 81 | 30-130 | 6 | 0-30 | |
| 2,4,5-T | ND | 40.00 | 34.10 | 85 | 37.00 | 92 | 30-130 | 8 | 0-30 | |
| 2,4-DB | ND | 400.0 | 277.4 | 69 | 301.2 | 75 | 30-130 | 8 | 0-30 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8270C |
| Project: NASSCO South Shipyard | | | Page 3 of 3 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **Comp-A (NASC01-03)** | **Soil** | **GC/MS CCC** | **06/14/13** | **06/17/13 20:37** | **130614S01** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Acenaphthene | ND | 10.00 | 10.51 | 105 | 10.00 | 100 | 49-133 | 5 | 0-18 | |
| Acenaphthylene | ND | 10.00 | 10.30 | 103 | 9.891 | 99 | 50-150 | 4 | 0-20 | |
| Butyl Benzyl Phthalate | ND | 10.00 | 11.07 | 111 | 10.48 | 105 | 50-150 | 6 | 0-20 | |
| 4-Chloro-3-Methylphenol | ND | 10.00 | 9.122 | 91 | 8.722 | 87 | 50-128 | 4 | 0-17 | |
| 2-Chlorophenol | ND | 10.00 | 8.730 | 87 | 8.308 | 83 | 57-111 | 5 | 0-17 | |
| 1,4-Dichlorobenzene | ND | 10.00 | 9.752 | 98 | 9.418 | 94 | 49-127 | 3 | 0-20 | |
| Dimethyl Phthalate | ND | 10.00 | 9.390 | 94 | 8.957 | 90 | 50-150 | 5 | 0-20 | |
| 2,4-Dinitrotoluene | ND | 10.00 | 8.853 | 89 | 8.059 | 81 | 50-128 | 9 | 0-18 | |
| Fluorene | ND | 10.00 | 10.64 | 106 | 10.04 | 100 | 50-150 | 6 | 0-20 | |
| N-Nitroso-di-n-propylamine | ND | 10.00 | 8.497 | 85 | 8.148 | 81 | 54-144 | 4 | 0-17 | |
| Naphthalene | ND | 10.00 | 10.07 | 101 | 9.671 | 97 | 50-150 | 4 | 0-20 | |
| 4-Nitrophenol | ND | 10.00 | 6.232 | 62 | 5.947 | 59 | 30-144 | 5 | 0-21 | |
| Pentachlorophenol | ND | 10.00 | 7.014 | 70 | 6.488 | 65 | 29-113 | 8 | 0-22 | |
| Phenol | ND | 10.00 | 7.549 | 75 | 7.221 | 72 | 57-123 | 4 | 0-16 | |
| Pyrene | 5.519 | 10.00 | 15.89 | 104 | 14.86 | 93 | 47-149 | 7 | 0-20 | |
| 1,2,4-Trichlorobenzene | ND | 10.00 | 10.35 | 104 | 9.938 | 99 | 42-132 | 4 | 0-20 | |

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RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8081A |
| Project: NASSCO South Shipyard | | | Page 1 of 3 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-12-537-1390** | **Soil** | **GC 51** | **06/18/13 19:44** | **130614L03** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | ME CL | Qualifiers |
|---|---|---|---|---|---|---|
| Aldrin | 25.00 | 23.76 | 95 | 50-135 | 36-149 | |
| Alpha-BHC | 25.00 | 23.72 | 95 | 50-135 | 36-149 | |
| Beta-BHC | 25.00 | 24.22 | 97 | 50-135 | 36-149 | |
| 4,4'-DDD | 25.00 | 25.65 | 103 | 50-135 | 36-149 | |
| 4,4'-DDE | 25.00 | 25.30 | 101 | 50-135 | 36-149 | |
| 4,4'-DDT | 25.00 | 23.79 | 95 | 50-135 | 36-149 | |
| Delta-BHC | 25.00 | 19.03 | 76 | 50-135 | 36-149 | |
| Dieldrin | 25.00 | 24.54 | 98 | 50-135 | 36-149 | |
| Endosulfan I | 25.00 | 24.58 | 98 | 50-135 | 36-149 | |
| Endosulfan II | 25.00 | 24.54 | 98 | 50-135 | 36-149 | |
| Endosulfan Sulfate | 25.00 | 23.04 | 92 | 50-135 | 36-149 | |
| Endrin | 25.00 | 27.21 | 109 | 50-135 | 36-149 | |
| Endrin Aldehyde | 25.00 | 24.66 | 99 | 50-135 | 36-149 | |
| Gamma-BHC | 25.00 | 23.35 | 93 | 50-135 | 36-149 | |
| Heptachlor | 25.00 | 23.06 | 92 | 50-135 | 36-149 | |
| Heptachlor Epoxide | 25.00 | 24.65 | 99 | 50-135 | 36-149 | |
| Methoxychlor | 25.00 | 25.80 | 103 | 50-135 | 36-149 | |

Total number of LCS compounds: 17
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 8151A |
| | | Method: | EPA 8151A |
| Project: NASSCO South Shipyard | | | Page 2 of 3 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **095-01-033-1100** | **Soil** | **GC 40** | **06/18/13 13:10** | **130612L14** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| 2,4-D | 400.0 | 424.5 | 106 | 30-130 | |
| 2,4,5-T | 40.00 | 40.90 | 102 | 30-130 | |
| 2,4-DB | 400.0 | 349.7 | 87 | 30-130 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 06/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-06-0651 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 3545 |
| | | Method: | EPA 8270C |
| Project: NASSCO South Shipyard | | | Page 3 of 3 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-12-549-2497** | **Soil** | **GC/MS CCC** | **06/17/13 15:23** | **130614L01** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | ME CL | Qualifiers |
|---|---|---|---|---|---|---|
| Acenaphthene | 10.00 | 8.886 | 89 | 59-125 | 48-136 | |
| Acenaphthylene | 10.00 | 8.528 | 85 | 33-145 | 14-164 | |
| Butyl Benzyl Phthalate | 10.00 | 9.434 | 94 | 0-152 | 0-177 | |
| 4-Chloro-3-Methylphenol | 10.00 | 9.347 | 93 | 61-121 | 51-131 | |
| 2-Chlorophenol | 10.00 | 8.820 | 88 | 60-114 | 51-123 | |
| 1,4-Dichlorobenzene | 10.00 | 8.884 | 89 | 61-121 | 51-131 | |
| Dimethyl Phthalate | 10.00 | 8.950 | 90 | 0-112 | 0-131 | |
| 2,4-Dinitrotoluene | 10.00 | 9.003 | 90 | 51-141 | 36-156 | |
| Fluorene | 10.00 | 9.531 | 95 | 59-121 | 49-131 | |
| N-Nitroso-di-n-propylamine | 10.00 | 7.107 | 71 | 64-136 | 52-148 | |
| Naphthalene | 10.00 | 8.971 | 90 | 21-133 | 2-152 | |
| 4-Nitrophenol | 10.00 | 7.974 | 80 | 38-152 | 19-171 | |
| Pentachlorophenol | 10.00 | 7.877 | 79 | 38-116 | 25-129 | |
| Phenol | 10.00 | 8.199 | 82 | 59-125 | 48-136 | |
| Pyrene | 10.00 | 9.424 | 94 | 51-141 | 36-156 | |
| 1,2,4-Trichlorobenzene | 10.00 | 9.081 | 91 | 58-118 | 48-128 | |

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order: 13-06-0651



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| 4 | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range. |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

For any analysis identified as a "field" test with a holding time (HT) </= 15 minutes where the sample is received outside of HT, Calscience will adhere to its internal HT of 24 hours. In cases where sample analysis does not meet Calscience's internal HT, results will be appropriately qualified.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 06/11/13

PAGE: 1 OF 1

LABORATORY CLIENT: Anchor QEA
ADDRESS: 27201 Puerta Real, Suite 350
CITY: Mission Viejo, CA 92691
TEL: 949.347.2780
FAX:
E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: South Shipyard (NASSCO)
PROJECT CONTACT: David Templeton
SAMPLER(S): (SIGNATURE)
P.O. NO.:
QUOTE NO.:
LAB USE ONLY: 13-06-0651

TURNAROUND TIME
☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☒ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | EPA 8151B Cl. Herbicides | EPA 8081A OC Pest. | EPA 8270C SVOCs | MS/MSD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | COMP-A | | 04/11/13 | 0000 | sed | 1 | X | X | X | x |
| 2 | COMP-B | | 04/11/13 | 0000 | sed | 1 | X | X | X | |
| 3 | COMP-C | | 04/11/13 | 0000 | sed | 1 | X | X | X | |
| 4 | COMP-D | | 04/11/13 | 0000 | sed | 1 | X | X | X | |
| 5 | COMP-E | | 04/11/13 | 0000 | sed | 1 | X | X | X | |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| Dannyle | [signature] | 6/11/13 | 18:30 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-06-0651

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 06/11/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 2.1 °C - 0.2 °C (CF) = 1.9 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter Initial: D.L

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: D.L

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: D.L

**SAMPLE CONDITION:**

| | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☐ | ☑ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☐8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☐_____

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** DL

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WSC

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WSC



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|
| NAS-C1 | | | | |
| SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| SD-S-P-NASC1-0102 | | | | |
| SD-S-P-NASC1-0203 | | | | |
| SD-S-P-NASC1-0304 | | | | |
| SD-S-P-NASC1-0405 | | | | |
| SD-S-P-NASC1-0506 | | | | BOTTOM |
| SD-S-P-NASC1-0607 | | | | |
| SD-S-P-NASC1-0708 | | | | |
| SD-S-P-NASC1-0809 | | | | |
| NAS-C2 | | | | |
| SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| SD-S-P-NASC2-0102 | | | | |
| SD-S-P-NASC2-0203 | | | | |
| SD-S-P-NASC2-0304 | | | | |
| SD-S-P-NASC2-0405 | | | | |
| SD-S-P-NASC2-0506 | | | | BOTTOM |
| SD-S-P-NASC2-0607 | | | | |
| SD-S-P-NASC2-0708 | | | | |
| SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | |
| SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| SD-S-P-NASC3-0102 | | | | |
| SD-S-P-NASC3-0203 | | | | |
| SD-S-P-NASC3-0304 | | | | |
| SD-S-P-NASC3-0405 | | | | |
| SD-S-P-NASC3-0506 | | | | BOTTOM |
| SD-S-P-NASC3-0607 | | | | |
| SD-S-P-NASC3-0708 | | | | |
| SD-S-P-NASC3-0809 | | | | |
| SD-S-P-NASC3-0910 | | | | |
| SD-S-P-NASC3-0910-PLUG | | | | not included[c] |
| NAS-C4 | | | | |
| SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| SD-S-P-NASC4-0102 | | | | |
| SD-S-P-NASC4-0203 | | | | |
| SD-S-P-NASC4-0304 | | | | |
| SD-S-P-NASC4-0405 | | | | |
| SD-S-P-NASC4-0506 | | | | BOTTOM |
| SD-S-P-NASC4-0607 | | | | |
| SD-S-P-NASC4-0708 | | | | |
| SD-S-P-NASC4-0809 | | | | |
| SD-S-P-NASC4-0910 | | | | |
| SD-S-P-NASC4-0910-PLUG | | | | not included[c] |
| NAS-C5 | | | | |
| SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| SD-S-P-NASC5-0102 | | | | |
| SD-S-P-NASC5-0203 | | | | |
| SD-S-P-NASC5-0304 | | | | BOTTOM |
| SD-S-P-NASC5-0405 | | | | |
| SD-S-P-NASC5-0506-PLUG | | | | not included[c] |

| Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|
| NAS-C6 | | | | |
| SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| SD-S-P-NASC6-0102 | | | | |
| SD-S-P-NASC6-0203 | | | | BOTTOM |
| SD-S-P-NASC6-0304-PLUG | | | | not included |
| NAS-C7 | | | | |
| SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| SD-S-P-NASC7-0102 | | | | |
| SD-S-P-NASC7-0203 | | | | |
| SD-S-P-NASC7-0304 | | | | |
| SD-S-P-NASC7-0405 | | | | BOTTOM |
| SD-S-P-NASC7-0506 | | | | |
| SD-S-P-NASC7-0607 | | | | |
| SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | |
| SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| SD-S-P-NASC8-0102 | | | | |
| SD-S-P-NASC8-0203 | | | | |
| SD-S-P-NASC8-0304 | | | | |
| SD-S-P-NASC8-0405 | | | | |
| SD-S-P-NASC8-0506 | | | | BOTTOM |
| SD-S-P-NASC8-0607 | | | | |
| SD-S-P-NASC8-0708 | | | | |
| SD-S-P-NASC8-0809 | | | | |
| SD-S-P-NASC8-0910 | | | | |
| SD-S-P-NASC8-0910-PLUG | | | | not included[c] |
| NAS-C9 | | | | |
| SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| SD-S-P-NASC9-0102 | | | | |
| SD-S-P-NASC9-0203 | | | | |
| SD-S-P-NASC9-0304 | | | | |
| SD-S-P-NASC9-0405 | | | | BOTTOM |
| SD-S-P-NASC9-0506 | | | | |
| SD-S-P-NASC9-0607 | | | | |
| NAS-C10 | | | | |
| SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| SD-S-P-NASC10-0102 | | | | |
| SD-S-P-NASC10-0203 | | | | |
| SD-S-P-NASC10-0304 | | | | |
| SD-S-P-NASC10-0405 | | | | BOTTOM |
| SD-S-P-NASC10-0506 | | | | |
| SD-S-P-NASC10-0607 | | | | |
| SD-S-P-NASC10-0708 | | | | |

| Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|
| NAS-C11 | | | | |
| SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| SD-S-P-NASC11-0102 | | | | |
| SD-S-P-NASC11-0203 | | | | |
| SD-S-P-NASC11-0304 | | | | |
| SD-S-P-NASC11-0405 | | | | |
| SD-S-P-NASC11-0506 | | | | BOTTOM |
| SD-S-P-NASC11-0607 | | | | |
| SD-S-P-NASC11-0708 | | | | |
| SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | |
| SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| SD-S-P-NASC12-0102 | | | | |
| SD-S-P-NASC12-0203 | | | | |
| SD-S-P-NASC12-0304 | | | | |
| SD-S-P-NASC12-0405 | | | | BOTTOM |
| SD-S-P-NASC12-0506 | | | | |
| SD-S-P-NASC12-0607 | | | | |
| SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | |
| SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| SD-S-P-NASC13-0102 | | | | |
| SD-S-P-NASC13-0203 | | | | |
| SD-S-P-NASC13-0304 | | | | |
| SD-S-P-NASC13-0405 | | | | BOTTOM |
| SD-S-P-NASC13-0506 | | | | |
| SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | |
| SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| SD-S-P-NASC14-0102 | | | | |
| SD-S-P-NASC14-0203 | | | | BOTTOM |
| SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | |
| SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| SD-S-P-NASC15-0102 | | | | |
| SD-S-P-NASC15-0203 | | | | |
| SD-S-P-NASC15-0304 | | | | BOTTOM |
| SD-S-P-NASC15-0405 | | | | |
| SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged

AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| 13-04-1004-1 | SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| 13-04-1004-2 | SD-S-P-NASC1-0102 | | | | |
| 13-04-1004-3 | SD-S-P-NASC1-0203 | | | | |
| 13-04-1004-4 | SD-S-P-NASC1-0304 | | | | |
| 13-04-1004-5 | SD-S-P-NASC1-0405 | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| 13-04-1111-1 | SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| 13-04-1111-2 | SD-S-P-NASC2-0102 | | | | |
| 13-04-1111-3 | SD-S-P-NASC2-0203 | | | | |
| 13-04-1111-4 | SD-S-P-NASC2-0304 | | | | |
| 13-04-1111-5 | SD-S-P-NASC2-0405 | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| 13-04-1113-1 | SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| 13-04-1113-2 | SD-S-P-NASC3-0102 | | | | |
| 13-04-1113-3 | SD-S-P-NASC3-0203 | | | | |
| 13-04-1113-4 | SD-S-P-NASC3-0304 | | | | |
| 13-04-1113-5 | SD-S-P-NASC3-0405 | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| 13-04-1002-1 | SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| 13-04-1002-2 | SD-S-P-NASC4-0102 | | | | |
| 13-04-1002-3 | SD-S-P-NASC4-0203 | | | | |
| 13-04-1002-4 | SD-S-P-NASC4-0304 | | | | |
| 13-04-1002-5 | SD-S-P-NASC4-0405 | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910 PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| 13-04-1003-1 | SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| 13-04-1003-2 | SD-S-P-NASC5-0102 | | | | |
| 13-04-1003-3 | SD-S-P-NASC5-0203 | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| 13-04-1001-1 | SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| 13-04-1001-2 | SD-S-P-NASC6-0102 | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| 13-04-0902-1 | SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| 13-04-0902-2 | SD-S-P-NASC7-0102 | | | | |
| 13-04-0902-3 | SD-S-P-NASC7-0203 | | | | |
| 13-04-0902-4 | SD-S-P-NASC7-0304 | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| 13-04-0903-1 | SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| 13-04-0903-2 | SD-S-P-NASC8-0102 | | | | |
| 13-04-0903-3 | SD-S-P-NASC8-0203 | | | | |
| 13-04-0903-4 | SD-S-P-NASC8-0304 | | | | |
| 13-04-0903-5 | SD-S-P-NASC8-0405 | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| 13-04-0901-1 | SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| 13-04-0901-2 | SD-S-P-NASC9-0102 | | | | |
| 13-04-0901-3 | SD-S-P-NASC9-0203 | | | | |
| 13-04-0901-4 | SD-S-P-NASC9-0304 | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607 PLUG~~ | | | | |
| NAS-C10 | | | | | |
| 13-04-0904-1 | SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| 13-04-0904-2 | SD-S-P-NASC10-0102 | | | | |
| 13-04-0904-3 | SD-S-P-NASC10-0203 | | | | |
| 13-04-0904-4 | SD-S-P-NASC10-0304 | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-9 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[b] | Composite Grouping[b] | Date | Time | COMPOSITE[a] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| 13-04-0778-1 | SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| 13-04-0778-2 | SD-S-P-NASC11-0102 | | | | |
| 13-04-0778-3 | SD-S-P-NASC11-0203 | | | | |
| 13-04-0778-4 | SD-S-P-NASC11-0304 | | | | |
| 13-04-0778-5 | SD-S-P-NASC11-0405 | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| 13-04-0780-1 | SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| 13-04-0780-2 | SD-S-P-NASC12-0102 | | | | |
| 13-04-0780-3 | SD-S-P-NASC12-0203 | | | | |
| 13-04-0780-4 | SD-S-P-NASC12-0304 | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| 13-04-0781-1 | SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| 13-04-0781-2 | SD-S-P-NASC13-0102 | | | | |
| 13-04-0781-3 | SD-S-P-NASC13-0203 | | | | |
| 13-04-0781-4 | SD-S-P-NASC13-0304 | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| 13-04-0782-1 | SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| 13-04-0782-2 | SD-S-P-NASC14-0102 | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| 13-04-0779-1 | SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| 13-04-0779-2 | SD-S-P-NASC15-0102 | | | | |
| 13-04-0779-3 | SD-S-P-NASC15-0203 | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged

Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/9/13

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

P.O. NO.: 1315100800

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

QUOTE NO.:

SAMPLER(S): (SIGNATURE)

LAB USE ONLY: 13-04-0778

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☒ ARCHIVE SAMPLES UNTIL 4 / 30 / 14

SPECIAL INSTRUCTIONS
Please HOLD samples.
Analysis will be determined at a later date.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

1x803. jar
1x1603. jar
1x grain size baggie

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASCI | -0001 | 4/9/13 | 1525 | sed | 3 | | | | X |
| 2 | | -0102 | 4/9/13 | | | | | | | X |
| 3 | | -0203 | | | | | | | | X |
| 4 | | -0304 | | | | | | | | X |
| 5 | | -0405 | | | | | | | | X |
| 6 | | -0506 | | | | | | | | X |
| 7 | | -0607 | | | | | | | | X |
| 8 | | -0708 | | | | | | | | X |
| 9 | | -0809 | | | | | | | | X |
| 10 | | Plug | | | | 1 | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| Kimbrie Gobbi | | | |
| Barry J. Snyder | | 4/10/13 | 1545 |
| | Danielle | 4/10/13 | 18:45 |

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0778

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/10/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.7 °C - 0.2 °C (CF) = 1.5 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter Initial: [illegible]

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: [illegible]

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: AMC

| SAMPLE CONDITION: | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ WSC 04-10-13 | ☑ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ Z

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** AMC

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WSC

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WK

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0778

# SAMPLE ANOMALY FORM

**SAMPLES - CONTAINERS & LABELS:**

- ☐ **Sample(s) NOT RECEIVED but listed on COC**
- ☐ **Sample(s) received but NOT LISTED on COC**
- ☐ **Holding time expired** – list sample ID(s) and test
- ☐ **Insufficient quantities for analysis** – list test
- ☐ **Improper container(s) used** – list test
- ☐ **Improper preservative used** – list test
- ☐ **No preservative noted on COC or label** – list test & notify lab
- ☐ **Sample labels illegible** – note test/container type
- ☑ **Sample label(s) do not match COC** – Note in comments
  - ☐ **Sample ID**
  - ☐ **Date and/or Time Collected**
  - ☐ **Project Information**
  - ☑ **# of Container(s)**
  - ☐ **Analysis**
- ☐ **Sample container(s) compromised** – Note in comments
  - ☐ **Water present in sample container**
  - ☐ **Broken**
- ☐ **Sample container(s) not labeled**
- ☐ **Air sample container(s) compromised** – Note in comments
  - ☐ **Flat**
  - ☐ **Very low in volume**
  - ☐ **Leaking (Not transferred - duplicate bag submitted)**
  - ☐ **Leaking (transferred into Calscience Tedlar® Bag*)**
  - ☐ **Leaking (transferred into Client's Tedlar® Bag*)**
- ☐ **Other:** _____

**Comments:**

(40) received 2 containers
1 x 16 oz Jar +
1 plastic bag

**HEADSPACE – Containers with Bubble > 6mm or ¼ inch:**

| Sample # | Container ID(s) | # of Vials Received | Sample # | Container ID(s) | # of Vials Received | Sample # | Container ID(s) | # of Cont. received | Analysis |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

**Comments:** _____

*Transferred at Client's request.

Initial / Date: [illegible] 04 /10 /13

Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/9/13

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

P.O. NO.: 1315100800

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

QUOTE NO.:

SAMPLER(S): (SIGNATURE)

LAB USE ONLY: 13-04-0779

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)

☐ RWQCB REPORTING ☒ ARCHIVE SAMPLES UNTIL 4/30/14

SPECIAL INSTRUCTIONS

Please HOLD samples.
Analysis will be determined at a later date.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

1x 1603.jar
1x 803.jar
1x ziplockbag

## REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SD-SP-NASC15-0001 | | 4/9/13 | 0940 | sed | 3 | | | | X |
| 2 | | -0102 | | | | | | | | X |
| 3 | | -0203 | | | | | | | | X |
| 4 | | -0304 | | | | | | | | X |
| 5 | | -0405 | | | | | | | | X |
| 6 | | -0506 | | | | | | | | X |
| | | | | | | | | | | X |
| 7 | ~~Plug~~ BS | Plug | 4/9 | 0940 | sed | 1 | | | | X |
| | | | | | | | | | | X |
| | | | | | | | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| Kimbrie Gobbi | | | |
| Barry J. Snyder | | 04/10/13 | 1545 |
| | Bannyle | 4/10/13 | 18:45 |

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0779

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/10/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.7 °C - 0.2 °C (CF) = 1.5 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter Initial: [illegible]

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: [illegible]

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: HH

| SAMPLE CONDITION: | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | 4/10/13 | |
| Sampler's name indicated on COC | ☑ | ☑ HH | ☐ |
| Sample container label(s) consistent with COC | ☐ | ☑ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ R

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** HH

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WK

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WK

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0779

# SAMPLE ANOMALY FORM

## SAMPLES - CONTAINERS & LABELS:

Comments:

- ☐ **Sample(s) NOT RECEIVED but listed on COC**
- ☑ **Sample(s) received but NOT LISTED on COC**
- ☐ **Holding time expired** – list sample ID(s) and test
- ☐ **Insufficient quantities for analysis** – list test
- ☐ **Improper container(s) used** – list test
- ☐ **Improper preservative used** – list test
- ☐ **No preservative noted on COC or label** – list test & notify lab
- ☐ **Sample labels illegible** – note test/container type
- ☐ **Sample label(s) do not match COC** – Note in comments
  - ☐ **Sample ID**
  - ☐ **Date and/or Time Collected**
  - ☐ **Project Information**
  - ☐ **# of Container(s)**
  - ☐ **Analysis**
- ☐ **Sample container(s) compromised** – Note in comments
  - ☐ **Water present in sample container**
  - ☐ **Broken**
- ☐ **Sample container(s) not labeled**
- ☐ **Air sample container(s) compromised** – Note in comments
  - ☐ **Flat**
  - ☐ **Very low in volume**
  - ☐ **Leaking (Not transferred - duplicate bag submitted)**
  - ☐ **Leaking (transferred into Calscience Tedlar® Bag*)**
  - ☐ **Leaking (transferred into Client's Tedlar® Bag*)**
- ☐ **Other:** _____

(-8) SD-S-P-NASC15 plug / Bottom of core 04/09/13 @ 9:15 not listed on COC.

## HEADSPACE – Containers with Bubble > 6mm or ¼ inch:

| Sample # | Container ID(s) | # of Vials Received | Sample # | Container ID(s) | # of Vials Received | Sample # | Container ID(s) | # of Cont. received | Analysis |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Comments: _____

*Transferred at Client's request.

Initial / Date: HH 04/10/13

Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/9/13

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 FAX: 858-300-4301 E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

P.O. NO.: 1315100800

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

QUOTE NO.:

SAMPLER(S): (SIGNATURE) KGG

LAB USE ONLY: 13-04-0780

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☒ ARCHIVE SAMPLES UNTIL 4/30/14

SPECIAL INSTRUCTIONS:
Please HOLD samples. 1x 8oz. jar
Analysis will be determined at a later date. 1x 16oz. jar
New COC will be submitted with analysis when confirmed. 1x grain size baggie
Danielle Gonsman is PM.

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | HOLD |
|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC12 | -0001 | 4/9/13 | 1410 | sed | 3 | | X |
| 2 | | -0102 ~~0102~~ | | | | | | X |
| 3 | | -0203 | | | | | | X |
| 4 | | -0304 | | | | | | X |
| 5 | | -0405 | | | | | | X |
| 6 | | -0506 | | | | | | X |
| 7 | | -0607 | | | | | | X |
| 8 | | -0708 | | | | | | X |
| 9 | | Plug | | | | 1 | | X |
| | | | | | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| Kimbrie Gobbi | | | |
| Barry Snyder | [signature] | 04/10/13 | 1545 |
| [signature] | Dannyle Lee | 4/10/13 | 18:45 |

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0780

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/10/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.7 °C - 0.2 °C (CF) = 1.5 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter Initial: [illegible]

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: [illegible]

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: HH

| SAMPLE CONDITION: | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑Z_____

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** HH

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WSL

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WSL

Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/9/13

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

P.O. NO.: 1315100800

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

QUOTE NO.:

SAMPLER(S): (SIGNATURE)

LAB USE ONLY: 13-04-0781

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)

☐ RWQCB REPORTING ☒ ARCHIVE SAMPLES UNTIL 4 / 30 / 14

SPECIAL INSTRUCTIONS

Please HOLD samples.
Analysis will be determined at a later date.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

1x 8oz. jar
1x 16oz. jar
1x ziplock baggie

## REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC | 3-0001 | 4/9/13 | 1055 | sed | 3 | | | | X |
| 2 | | -0102 | | | | | | | | X |
| 3 | | -0203 | | | | | | | | X |
| 4 | | -0304 | | | | | | | | X |
| 5 | | -0405 | | | | | | | | X |
| 6 | | -0506 | | | | | | | | X |
| 7 | | -0607 | | | | | | | | X |
| 8 | | Plug | | | | 1 | | | | X |
| | | | | | | | | | | X |
| | | | | | | | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| Kimbrie Gobbi | | | |
| Barry Snyder | | 04/10/13 | 1545 |
| | Dannyle | 4/10/13 | 18:45 |

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-6 7 8 1

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/10/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.6 °C - 0.2 °C (CF) = 1.4 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: [illegible]

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: [illegible]

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: MC

| **SAMPLE CONDITION:** | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ Z

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** MC

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WK

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WK

Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/9/13

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

SAMPLER(S): (SIGNATURE)

P.O. NO.: 1315100800

QUOTE NO.:

LAB USE ONLY: 13-04-0782

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)

☐ RWQCB REPORTING ☒ ARCHIVE SAMPLES UNTIL 4 / 30 / ~~13~~ 14

SPECIAL INSTRUCTIONS

Please HOLD samples.
Analysis will be determined at a later date.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

1x 1603. jar
1x 8003. jar
1x ziplock baggie

REQUESTED ANALYSIS

Please list tests required

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | HOLD |
|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC14-0001 | | 4/9/13 | 0815 | sed | 3 | X |
| 2 | | -0102 | | | | | X |
| | | ~~-0201~~ KA | | | | | X |
| 3 | | -0203 | | | | | X |
| 4 | | -0304 | | | | | X |
| 5 | Plug | Plug | | | | 4 (1) | X |
| | | | | | | BS | X |
| | | | | | | | X |
| | | | | | | | X |
| | | | | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | | | |
| Barry J. Snyder | | 04/10/13 | 1545 |
| | Danielle CEL | 4/10/13 | 18:45 |

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0782

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/10/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.6 °C - 0.2 °C (CF) = 1.4 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: KD

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: KD

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: AMC

| **SAMPLE CONDITION:** | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ 3

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐ _____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** AMC

**Container: C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WSC

**Preservative: h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WSC

Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/10/13

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

P.O. NO.: 1315100800

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

QUOTE NO.:

SAMPLER(S): (SIGNATURE)

LAB USE ONLY: 13-04-0901

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___/___/___

SPECIAL INSTRUCTIONS
Please HOLD samples. 3 cont.= 1x16oz DO NOT Freeze
Analysis will be determined at a later date. 1x 8oz 1x grainsize composite or grainsize bag
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

## REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC09-0001 | | 04/10/13 | 1315 | Sed | 3 | | | | X |
| 2 | SD-S-P-NASC09-0102 | | | | | | | | | X |
| 3 | SD-S-P-NASC09-0203 | | | | | | | | | X |
| 4 | SD-S-P-NASC09-0304 | | | | | | | | | X |
| 5 | SD-S-P-NASC09-0405 | | | | | | | | | X |
| 6 | SD-S-P-NASC09-0506 | | | | | | | | | X |
| 7 | SD-S-P-NASC09-0607 Plug | | | | | | | | | X |
| 8 | SD-S-P-NASC08-comp | | 4/10/13 | 0830 | | 1 | | | | X |
| 9 | SD-S-P-NASC08-0910 Plug | | | 0830 | | 3 | | | | X |
| 10 | SD-S-P-NASC09-comp | | | 1315 | | 1 | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | | 04/11/13 | 1445 |
| | | 04/11/13 | 1910 |
| | | | |

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0901

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/11/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.9 °C - 0.2 °C (CF) = 1.7 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: B

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: B

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: HH

| SAMPLE CONDITION: | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑2

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** HH

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** TN

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** TN

Calscience Environmental Laboratories, Inc.

7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/10/13

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

P.O. NO.: 1315100800

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

QUOTE NO.:

SAMPLER(S): (SIGNATURE)

LAB USE ONLY: 13-04-0902

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS
Please HOLD samples.
Analysis will be determined at a later date.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM. DO NOT FREEZE COMPOSITE OR GRAIN SIZE

3 containers = 1x16oz, 1x8oz, 1x gallon size bag

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC07-0001 | | 4/10/13 | 1430 | Sed | 3 | | | | X |
| 2 | SD-S-P-NASC07-0002 | | | | | | | | | X |
| 3 | SD-S-P-NASC07-0203 | | | | | | | | | X |
| 4 | SD-S-P-NASC07-0304 | | | | | | | | | X |
| 5 | SD-S-P-NASC07-0405 | | | | | | | | | X |
| 6 | SD-S-P-NASC07-0606 | | | | | | | | | X |
| 7 | SD-S-P-NASC07-0607 | | | | | | | | | X |
| 8 | SD-S-P-NASC07-0708 | | | | | | | | | X |
| 9 | SD-S-P-NASC07-0708 Plug | | | | | | | | | X |
| 10 | SD-S-P-NASC07-Comp | | | | | | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | | 04/11/13 | 1445 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| | | 04/11/13 | 1910 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0902

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/11/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.6 °C - 0.2 °C (CF) = 1.4 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter Initial: BJ

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: BJ

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: HH

| SAMPLE CONDITION: | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑2

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** HH

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** TN

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** TN

Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/10/13

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

P.O. NO.: 1315100800

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

QUOTE NO.:

SAMPLER(S): (SIGNATURE)

LAB USE ONLY: 13-04-0903

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___/___/___

SPECIAL INSTRUCTIONS

Please HOLD samples. 3 cont. = 1 x 16oz Jar
Analysis will be determined at a later date. 1x 8oz Jar 1x grainsize
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM. DO NOT FREEZE COMPOSITE OR GRAIN SIZE

## REQUESTED ANALYSIS

Please list tests required

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | HOLD |
|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC08-0001 | | 4/10/13 | 0830 | Sed | 3 | X |
| 2 | SD-S-P-NASC08-0102 | | | | | | X |
| 3 | SD-S-P-NASC08-0203 | | | | | | X |
| 4 | SD-S-P-NASC08-0304 | | | | | | X |
| 5 | SD-S-P-NASC08-0405 | | | | | | X |
| 6 | SD-S-P-NASC08-0506 | | | | | | X |
| 7 | SD-S-P-NASC08-0607 | | | | | | X |
| 8 | SD-S-P-NASC08-0708 | | | | | | X |
| 9 | SD-S-P-NASC08-0809 | | | | | | X |
| 10 | SD-S-P-NASC08-0910 | | | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | CDL | 04/11/13 | 1445 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| | CDL | 04/11/13 | 1910 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| | | | |

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0903

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/11/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.8 °C - 0.2 °C (CF) = 1.6 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: [illegible]

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: [illegible]

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: HH

| SAMPLE CONDITION: | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☐ | ☑ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ 2

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** HH

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** TN

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** TN

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0903

# SAMPLE ANOMALY FORM

## SAMPLES - CONTAINERS & LABELS:

- ☐ Sample(s) NOT RECEIVED but listed on COC
- ☑ Sample(s) received but NOT LISTED on COC
- ☐ Holding time expired – list sample ID(s) and test
- ☐ Insufficient quantities for analysis – list test
- ☐ Improper container(s) used – list test
- ☐ Improper preservative used – list test
- ☐ No preservative noted on COC or label – list test & notify lab
- ☐ Sample labels illegible – note test/container type
- ☑ Sample label(s) do not match COC – Note in comments
  - ☑ Sample ID
  - ☐ Date and/or Time Collected
  - ☐ Project Information
  - ☐ # of Container(s)
  - ☐ Analysis
- ☐ Sample container(s) compromised – Note in comments
  - ☐ Water present in sample container
  - ☐ Broken
- ☐ Sample container(s) not labeled
- ☐ Air sample container(s) compromised – Note in comments
  - ☐ Flat
  - ☐ Very low in volume
  - ☐ Leaking (Not transferred - duplicate bag submitted)
  - ☐ Leaking (transferred into Calscience Tedlar® Bag*)
  - ☐ Leaking (transferred into Client's Tedlar® Bag*)
- ☐ Other: _____

**Comments:**

(-11) Received 1 Ziploc bag labeled as SD-S-P-NASC-10 (Plug/Rock) 4/7/13 @ 8:00 not on COC.

(-1) Received 1 Ziploc bag (Grain Size per Label) labeled as SD-S-P-NASC10-0001 4/10/13 @ 08:00

## HEADSPACE – Containers with Bubble > 6mm or ¼ inch:

| Sample # | Container ID(s) | # of Vials Received | Sample # | Container ID(s) | # of Vials Received | Sample # | Container ID(s) | # of Cont. received | Analysis |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Comments: _____

*Transferred at Client's request.

Initial / Date: D.L 04/11/13

Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/10/13

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

SAMPLER(S): (SIGNATURE)

P.O. NO.: 1315100800

QUOTE NO.:

LAB USE ONLY: 13-04-0904

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS

Please HOLD samples.
Analysis will be determined at a later date.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM. DO NOT FREEZE COMPOSITE OR GRAIN SIZE SAMPLE

3 Containers = 1x 16oz
1x 8oz
1x grain size bag

## REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC10-0001 | | 4/10/13 | 1010 | Sed | 3 | | | | X |
| 2 | SD-S-P-NASC10-0102 | | | | | | | | | X |
| 3 | SD-S-P-NASC10-0203 | | | | | | | | | X |
| 4 | SD-S-P-NASC10-0304 | | | | | | | | | X |
| 5 | SD-S-P-NASC10-0405 | | | | | | | | | X |
| 6 | SD-S-P-NASC10-0506 | | | | | | | | | X |
| 7 | SD-S-P-NASC10-0607 | | | | | | | | | X |
| | ~~SD-S-P-NASC10-0708~~ | | | | | 2 | | | | X |
| 8 | SD-S-P-NASC10-Comp | | | | | 1 | | | | X |
| 9 | SD-S-P-NASC10-0708 Plug | | | | | 2 | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | | 04/11/13 | 1445 |
| Relinquished by: (Signature) | Received by: (Signature) | 04/11/13 | 1910 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0904

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/11/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.8 °C - 0.2 °C (CF) = 1.6 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: NB

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: NB

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: HH

| SAMPLE CONDITION: | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ 2

**Water:** ☐VOA ☐VOA**h** ☐VOA**$na_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**$na_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**$na_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** HH

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** TN

**Preservative:** **h:** HCL **n:** $HNO_3$ **$na_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** TN

Calscience Environmental Laboratories, Inc.

7440 LINCOLN WAY
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TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/11/2013

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure
ADDRESS: 9210 Sky Park Ct. Ste 200
CITY: San Diego, California 92123
TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study
PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder
SAMPLER(S): (SIGNATURE)

P.O. NO.: 1315100800
QUOTE NO.:
LAB USE ONLY: 13-04-1001

TURNAROUND TIME
☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___/___/___

SPECIAL INSTRUCTIONS
Please HOLD samples. 1x 16 oz per sample
DO NOT FREEZE COMPOSITE SAMPLES. HOLD FOR GEOTECHNICAL.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC06-0001 | | 4/11/2013 | 1200 | sed | 3 | | | | X |
| 2 | SD-S-P-NASC06-0102 | | 4/11/2013 | | sed | 3 | | | | X |
| 3 | SD-S-P-NASC06-0203 | | 4/11/2013 | | sed | 3 | | | | X |
| 4 | SD-S-P-NASC06-0304 Plug | | 4/11/2013 | | sed | 3 | | | | X |
| 5 | SD-S-P-NASC06-Comp | | 4/11/2013 | | sed | 3 | | | | X |
| 6 | SD-S-P-NASC06-0225 | | 4/11/2013 | | sed | 3 | | | | X |
| – | ~~SD-S-P-NASC~~ | | ~~4/__/2013~~ | | ~~sed~~ | ~~3~~ | | | | ~~X~~ |
| – | ~~SD-S-P-NASC~~ | | ~~4/__/2013~~ | | ~~sed~~ | ~~3~~ | | | | ~~X~~ |
| – | ~~SD-S-P-NASC~~ | | ~~4/__/2013~~ | | ~~sed~~ | ~~3~~ | | | | ~~X~~ |
| – | ~~SD-S-P-NASC~~ | | ~~4/__/2013~~ | | ~~sed~~ | ~~3~~ | | | | ~~X~~ |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | | 04/12/13 | 1545 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| | | 04/12/13 | 1800 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-1001

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/12/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.8 °C - 0.2 °C (CF) = 1.6 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: BD

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: BD

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: TN

| SAMPLE CONDITION: | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ Z

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** TN

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WL

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WL

Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/11/2013

PAGE: 1 OF 2

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

P.O. NO.: 1315100800

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

QUOTE NO.:

SAMPLER(S): (SIGNATURE)

LAB USE ONLY: 13-04-1002

TURNAROUND TIME

☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)

☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS

Please HOLD samples. 1x 16 oz per sample
DO NOT FREEZE COMPOSITE SAMPLES. HOLD FOR GEOTECHNICAL.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

## REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC 04 - 0001 | | 4/11/2013 | 0930 | sed | 3 | | | | X |
| 2 | SD-S-P-NASC 04 - 0102 | | 4/11/2013 | | sed | 3 | | | | X |
| 3 | SD-S-P-NASC 04 - 0203 | | 4/11/2013 | | sed | 3 | | | | X |
| 4 | SD-S-P-NASC 04 - 0304 | | 4/11/2013 | | sed | 3 | | | | X |
| 5 | SD-S-P-NASC 04 - 0405 | | 4/11/2013 | | sed | 3 | | | | X |
| 6 | SD-S-P-NASC 04 - 0506 | | 4/11/2013 | | sed | 3 | | | | X |
| 7 | SD-S-P-NASC 04 - 0607 | | 4/11/2013 | | sed | 3 | | | | X |
| 8 | SD-S-P-NASC 04 - 0708 | | 4/11/2013 | | sed | 3 | | | | X |
| 9 | SD-S-P-NASC 04 - 0809 | | 4/11/2013 | | sed | 3 | | | | X |
| 10 | SD-S-P-NASC 04 - 0910 | | 4/11/2013 | | sed | 3 | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | CCL | 04/12/13 | 1545 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| | CCL | 04/12/13 | 1900 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| | | | |

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GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE:
PAGE: 3 of 3

LABORATORY CLIENT: AMEC Environment & Infrastructure
ADDRESS: 9210 Sky Park Ct. Ste 200
CITY: San Diego, California 92123
TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study
PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder
SAMPLER(S): (SIGNATURE)

P.O. NO.: 1315100800
QUOTE NO.:
LAB USE ONLY: 04-1002

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS
Please HOLD samples. 1x 16 oz, 1x 8oz, and 1x ziplock baggie (for grain size) per sample
DO NOT FREEZE COMPOSITE GRAIN SIZE SAMPLES.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11 | SD-S-P-NASC04 | -0910 Plug | 4/11/2013 | 0930 | sed | 3 | | | | X | | | | | | | | | | | | | | |
| 12 | SD-S-P-NASC04 - | Comp | 4/11/2013 | 0930 | sed | 3 | | | | X | | | | | | | | | | | | | | |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X | | | | | | | | | | | | | | |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X | | | | | | | | | | | | | | |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X | | | | | | | | | | | | | | |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X | | | | | | | | | | | | | | |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X | | | | | | | | | | | | | | |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X | | | | | | | | | | | | | | |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X | | | | | | | | | | | | | | |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | CA | 04/12/13 | 1545 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| | CA | 04/12/13 | 1900 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-1002

# SAMPLE RECEIPT FORM

Cooler 1 of 2

CLIENT: AMEC

DATE: 04/12/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.9 °C - 0.2 °C (CF) = 1.7 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: KB

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: KB

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: TN

| SAMPLE CONDITION: | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ Z

**Water:** ☐VOA ☐VOA**h** ☐VOA**$na_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**$na_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**$na_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** TN

**Container: C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WR

**Preservative: h:** HCL **n:** $HNO_3$ **$na_2$:**$Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WR

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-1002

# SAMPLE RECEIPT FORM

Cooler 2 of 2

CLIENT: AMEC

DATE: 04/12/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.7 °C - 0.2 °C (CF) = 1.5 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: BD

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: BD

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: TN

| SAMPLE CONDITION: | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑Z

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** TN

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WL

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WL

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# CHAIN OF CUSTODY RECORD

DATE: 4/11/2013

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure
ADDRESS: 9210 Sky Park Ct. Ste 200
CITY: San Diego, California 92123
TEL: 858-300-4300 FAX: 858-300-4301 E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study
P.O. NO.: 1315100800
PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder
QUOTE NO.:
SAMPLER(S): (SIGNATURE)
LAB USE ONLY: 13-04-1003

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___/___/___

SPECIAL INSTRUCTIONS
Please HOLD samples. 1x 16 oz per sample
DO NOT FREEZE COMPOSITE SAMPLES. HOLD FOR GEOTECHNICAL.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

## REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | HOLD |
|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC05-0001 | | 4/11/2013 | 0755 | sed | 3 | | X |
| 2 | SD-S-P-NASC05-0102 | | 4/11/2013 | | sed | 3 | | X |
| 3 | SD-S-P-NASC05-0203 | | 4/11/2013 | | sed | 3 | | X |
| 4 | SD-S-P-NASC05-0304 | | 4/11/2013 | | sed | 3 | | X |
| 5 | SD-S-P-NASC05-0405 | | 4/11/2013 | | sed | 3 | | X |
| 6 | SD-S-P-NASC05-0506 Plug | | 4/11/2013 | | sed | 3 | | X |
| 7 | SD-S-P-NASC05-Comp | | 4/11/2013 | | sed | ~~3~~ 1 | | X |
| 8 | SD-S-P-NASC05-0304 Sub | | 4/11/2013 | | sed | ~~3~~ 1 | | X |
| – | ~~SD-S-P-NASC~~ | | ~~4/__/2013~~ | | ~~sed~~ | ~~3~~ | | ~~X~~ |
| – | ~~SD-S-P-NASC~~ | | ~~4/__/2013~~ | | ~~sed~~ | ~~3~~ | | ~~X~~ |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| Tyler Hudt | CGL | 04/12/13 | 1545 |
| | CGL | 04/12/13 | ~~1800~~ 1900 |
| | | | 4/12/13 |

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-1003

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/12/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.7 °C - 0.2 °C (CF) = 1.5 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: [illegible]

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: [illegible]

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: TN

| **SAMPLE CONDITION:** | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ Z

**Water:** ☐VOA ☐VOA**h** ☐VOA**$na_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**$na_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**$na_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** TN

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WIC

**Preservative:** **h:** HCL **n:** $HNO_3$ **$na_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WIC

Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/11/2013

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure
ADDRESS: 9210 Sky Park Ct. Ste 200
CITY: San Diego, California 92123
TEL: 858-300-4300 FAX: 858-300-4301 E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study
PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder
SAMPLER(S): (SIGNATURE)

P.O. NO.: 1315100800
QUOTE NO.:
LAB USE ONLY: 13-04-1004

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS
Please HOLD samples. 1x 16 oz per sample
DO NOT FREEZE COMPOSITE SAMPLES. HOLD FOR GEOTECHNICAL.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | HOLD |
|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASCØ1-0001 | | 4/11/2013 | 1335 | sed | 3 | | X |
| 2 | SD-S-P-NASCØ1-0102 | | 4/11/2013 | | sed | 3 | | X |
| 3 | SD-S-P-NASCØ1-0203 | | 4/11/2013 | | sed | 3 | | X |
| 4 | SD-S-P-NASCØ1-0304 | | 4/11/2013 | | sed | 3 | | X |
| 5 | SD-S-P-NASCØ1-0405 | | 4/11/2013 | | sed | 3 | | X |
| 6 | SD-S-P-NASCØ1-0506 | | 4/11/2013 | | sed | 3 | | X |
| 7 | SD-S-P-NASCØ1-0607 | | 4/11/2013 | | sed | 3 | | X |
| 8 | SD-S-P-NASCØ1-0708 | | 4/11/2013 | | sed | 3 | | X |
| 9 | SD-S-P-NASCØ1-0809 plug | | 4/11/2013 | | sed | 3 | | X |
| 10 | SD-S-P-NASCØ1-Comp | | 4/11/2013 | | sed | 3 | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | | 04/12/13 | 1545 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| | | 04/12/13 | 1900 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-1004

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/12/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.8 °C - 0.2 °C (CF) = 1.6 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: BD

**CUSTODY SEALS INTACT:**

| | | | | | |
|---|---|---|---|---|---|
| ☐ Cooler | ☐_____ | ☐ No (Not Intact) | ☑ Not Present | ☐ N/A | Initial: BD |
| ☐ Sample | ☐_____ | ☐ No (Not Intact) | ☑ Not Present | | Initial: TN |

| **SAMPLE CONDITION:** | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑Z

**Water:** ☐VOA ☐VOA**h** ☐VOA**$na_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**$na_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**$na_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** TN

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WJC

**Preservative:** **h:** HCL **n:** $HNO_3$ **$na_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WS

Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/12/13

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

SAMPLER(S): (SIGNATURE)

P.O. NO.: 1315100800

QUOTE NO.:

LAB USE ONLY: 13-04-1111

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS:
Please HOLD samples. 1x 16 oz, 1x 8oz, and 1x ziplock baggie (for grain size) per sample
DO NOT FREEZE COMPOSITE GRAIN SIZE SAMPLES.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | HOLD |
|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASCØ2 -0001 | | 4/12/2013 | 1021 | sed | 3 | | X |
| 2 | SD-S-P-NASCØ2 -0102 | | 4/12/2013 | | sed | 3 | | X |
| 3 | SD-S-P-NASCØ2 -0203 | | 4/12/2013 | | sed | 3 | | X |
| 4 | SD-S-P-NASCØ2 -0304 | | 4/12/2013 | | sed | 3 | | X |
| 5 | SD-S-P-NASCØ2 -0405 | | 4/12/2013 | | sed | 3 | | X |
| 6 | SD-S-P-NASCØ2 -0506 | | 4/12/2013 | | sed | 3 | | X |
| 7 | SD-S-P-NASCØ2 -0607 | | 4/12/2013 | | sed | 3 | | X |
| 8 | SD-S-P-NASCØ2 -0708 | | 4/12/2013 | | sed | 3 | | X |
| 9 | SD-S-P-NASCØ2 -0809 | | 4/12/2013 | | sed | 2 | | X |
| 10 | SD-S-P-NASCØ2 -Comp | | 4/12/2013 | | sed | 1 | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | CDL | 04/15/13 | 1555 |
| | Dannyle CDL | 4/15/13 | 19:10 |
| | | | |

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-1111

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/15/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.8 °C - 0.2 °C (CF) = 1.6 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: VG

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: VG

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: HH

| **SAMPLE CONDITION:** | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ Z

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐ _____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** HH

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** PJ

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** RS

Calscience Environmental Laboratories, Inc.
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# CHAIN OF CUSTODY RECORD

DATE: 4/12/13

PAGE: 1 OF 2

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

SAMPLER(S): (SIGNATURE)

P.O. NO.: 1315100800

QUOTE NO.:

LAB USE ONLY: 13-04-1113

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS

Please HOLD samples. 1x 16 oz, 1x 8oz, and 1x ziplock baggie (for grain size) per sample
DO NOT FREEZE COMPOSITE GRAIN SIZE SAMPLES.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | HOLD |
|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASCØ3 - | 0001 | 4/12/2013 | 0751 | sed | 3 | | X |
| 2 | SD-S-P-NASCØ3 - | 0102 | 4/12/2013 | | sed | 3 | | X |
| 3 | SD-S-P-NASCØ3 - | 0203 | 4/12/2013 | | sed | 3 | | X |
| 4 | SD-S-P-NASCØ3 - | 0304 | 4/12/2013 | | sed | 3 | | X |
| 5 | SD-S-P-NASCØ3 - | 0405 | 4/12/2013 | | sed | 3 | | X |
| 6 | SD-S-P-NASCØ3 - | 0506 | 4/12/2013 | | sed | 3 | | X |
| 7 | SD-S-P-NASCØ3 - | 0607 | 4/12/2013 | | sed | 3 | | X |
| 8 | SD-S-P-NASCØ3 - | 0708 | 4/12/2013 | | sed | 3 | | X |
| 9 | SD-S-P-NASCØ3 - | 0809 | 4/12/2013 | | sed | 3 | | X |
| 10 | SD-S-P-NASCØ3 - | 0910 | 4/12/2013 | | sed | 3 | | X |

| | | | |
|---|---|---|---|
| Relinquished by: (Signature) | Received by: (Signature) CGL | Date: 04/15/13 | Time: 1555 |
| Relinquished by: (Signature) | Received by: (Signature) Dannyle CGL | Date: 4/15/13 | Time: 19:10 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |

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GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/12/13
PAGE: 2 OF 2

LABORATORY CLIENT: AMEC Environment & Infrastructure
ADDRESS: 9210 Sky Park Ct. Ste 200
CITY: San Diego, California 92123
TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study
PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder
SAMPLER(S): (SIGNATURE)

P.O. NO.: 1315100800
QUOTE NO.:
LAB USE ONLY: 04-1113

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS
Please HOLD samples. 1x 16 oz, 1x 8oz, and 1x ziplock baggie (for grain size) per sample
DO NOT FREEZE COMPOSITE GRAIN SIZE SAMPLES.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | SD-S-P-NASCØ3 - | 0910 PLUG | 4/12/2013 | 0751 | sed | 3 | | | | X |
| 12 | SD-S-P-NASCØ3 - | Comp | 4/12/2013 | ↓ | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | CZ | 04/15/13 | 1555 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| | Bannyle CZ | 4/15/13 | 19:10 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| | | | |

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-1113

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/15/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.6 °C - 0.2 °C (CF) = 1.4 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: VB

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: VB

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: HH

| **SAMPLE CONDITION:** | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ 2

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐ _____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** HH

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** JS

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** JS

# SEDIMENT CHEMISTRY
# STLC AND TCLP
# ANALYTICAL RESULTS

Calscience Environmental Laboratories, Inc.

Supplemental Report 1

Additional requested analyses are reported as a stand-alone report.

# CALSCIENCE

## WORK ORDER NUMBER: 13-04-1004

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard Sediment Study

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 07/25/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

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Work Order Number: 13-04-1004


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Calscience Environmental Laboratories, Inc.

# Work Order Narrative

Work Order: 13-04-1004



**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/12/13. They were assigned to Work Order 13-04-1004.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Return to Contents

Calscience Environmental Laboratories, Inc.

# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC<br>27201 Puerta Real, Suite 350<br>Mission Viejo, CA 92691-8306 | Work Order: | 13-04-1004 |
| | | Project Name: | NASSCO South Shipyard Sediment Study |
| | | PO Number: | Work Order #3 |
| | | Date Received: | 04/12/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| COMP-C1-TOP | 13-04-1004-11 | 04/11/13 13:35 | 1 | Sediment |

Return to Contents

Calscience Environmental Laboratories, Inc.

# CASE NARRATIVE

## Calscience Work Order No.: 13-04-1004
## Project ID: NASSCO Shipyard Sediment Study

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

Ten sediment samples were received for this project on April 12, 2013. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 1.6°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in freezers pending chemistry testing.

On June 12, 2013 samples were composited into two samples as per client instructions.

COC discrepancies were noted in the Sample Anomaly Form.

***Tests Performed***

Sample COMP-C1-TOP was analyzed for the following analyses:

Title 22 STLC Lead by EPA 6010B.

***Data Summary***

Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

Lead was found in the blank at a level below the reporting limit. The sample data has been flagged with a “B” as appropriate.

Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the MDL, and where applicable, “J” flags were reported.

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Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test. All parameters were within established control limits.

Matrix Spikes

Matrix spikes and matrix spike duplicates were performed for each applicable analysis on project samples. All parameters were within the acceptable control limits unless otherwise noted.

Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1004 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| | | Units: | mg/L |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C1-TOP** | **13-04-1004-11-A** | **04/11/13 13:35** | **Sediment** | **ICP 7300** | **07/20/13** | **07/22/13 15:53** | **130722LA2** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | 1.89 | 0.100 | 0.0406 | 1 | B |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-05-006-6825** | **N/A** | **Aqueous** | **ICP 7300** | **07/20/13** | **07/22/13 15:50** | **130722LA2** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | 0.0437 | 0.100 | 0.0406 | 1 | J |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1004 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **COMP-C1-TOP** | **Sediment** | **ICP 7300** | **07/20/13** | **07/22/13 15:54** | **130722SA2** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 1.893 | 5.000 | 7.145 | 105 | 6.940 | 101 | 75-125 | 3 | 0-20 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1004 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **097-05-006-6825** | **Aqueous** | **ICP 7300** | **07/22/13 15:51** | **130722LA2** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Lead | 5.000 | 5.268 | 105 | 80-120 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order: 13-04-1004



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control. |
| 4 | The MS/MSD RPD was out of control due to suspected matrix interference. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean). |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/11/2013

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure
ADDRESS: 9210 Sky Park Ct. Ste 200
CITY: San Diego, California 92123
TEL: 858-300-4300 FAX: 858-300-4301 E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study
PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder
SAMPLER(S): (SIGNATURE)

P.O. NO.: 1315100800
QUOTE NO.:
LAB USE ONLY: 13-04-1004

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS
Please HOLD samples. 1x 16 oz per sample
DO NOT FREEZE COMPOSITE SAMPLES. HOLD FOR GEOTECHNICAL.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASCØ1-0001 | | 4/11/2013 | 1335 | sed | 3 | | | | X |
| 2 | SD-S-P-NASCØ1-0102 | | 4/11/2013 | | sed | 3 | | | | X |
| 3 | SD-S-P-NASCØ1-0203 | | 4/11/2013 | | sed | 3 | | | | X |
| 4 | SD-S-P-NASCØ1-0304 | | 4/11/2013 | | sed | 3 | | | | X |
| 5 | SD-S-P-NASCØ1-0405 | | 4/11/2013 | | sed | 3 | | | | X |
| 6 | SD-S-P-NASCØ1-0506 | | 4/11/2013 | | sed | 3 | | | | X |
| 7 | SD-S-P-NASCØ1-0607 | | 4/11/2013 | | sed | 3 | | | | X |
| 8 | SD-S-P-NASCØ1-0708 | | 4/11/2013 | | sed | 3 | | | | X |
| 9 | SD-S-P-NASCØ1-0809 plug | | 4/11/2013 | | sed | 3 | | | | X |
| 10 | SD-S-P-NASCØ1-Comp | | 4/11/2013 | | sed | 3 | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | | 04/12/13 | 1545 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| | | 04/12/13 | 1900 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|
| NAS-C1 | | | | |
| SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| SD-S-P-NASC1-0102 | | | | |
| SD-S-P-NASC1-0203 | | | | |
| SD-S-P-NASC1-0304 | | | | |
| SD-S-P-NASC1-0405 | | | | |
| SD-S-P-NASC1-0506 | | | | BOTTOM |
| SD-S-P-NASC1-0607 | | | | |
| SD-S-P-NASC1-0708 | | | | |
| SD-S-P-NASC1-0809 | | | | |
| NAS-C2 | | | | |
| SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| SD-S-P-NASC2-0102 | | | | |
| SD-S-P-NASC2-0203 | | | | |
| SD-S-P-NASC2-0304 | | | | |
| SD-S-P-NASC2-0405 | | | | |
| SD-S-P-NASC2-0506 | | | | BOTTOM |
| SD-S-P-NASC2-0607 | | | | |
| SD-S-P-NASC2-0708 | | | | |
| SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | |
| SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| SD-S-P-NASC3-0102 | | | | |
| SD-S-P-NASC3-0203 | | | | |
| SD-S-P-NASC3-0304 | | | | |
| SD-S-P-NASC3-0405 | | | | |
| SD-S-P-NASC3-0506 | | | | BOTTOM |
| SD-S-P-NASC3-0607 | | | | |
| SD-S-P-NASC3-0708 | | | | |
| SD-S-P-NASC3-0809 | | | | |
| SD-S-P-NASC3-0910 | | | | |
| SD-S-P-NASC3-0910-PLUG | | | | not included[c] |
| NAS-C4 | | | | |
| SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| SD-S-P-NASC4-0102 | | | | |
| SD-S-P-NASC4-0203 | | | | |
| SD-S-P-NASC4-0304 | | | | |
| SD-S-P-NASC4-0405 | | | | |
| SD-S-P-NASC4-0506 | | | | BOTTOM |
| SD-S-P-NASC4-0607 | | | | |
| SD-S-P-NASC4-0708 | | | | |
| SD-S-P-NASC4-0809 | | | | |
| SD-S-P-NASC4-0910 | | | | |
| SD-S-P-NASC4-0910-PLUG | | | | not included[c] |
| NAS-C5 | | | | |
| SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| SD-S-P-NASC5-0102 | | | | |
| SD-S-P-NASC5-0203 | | | | |
| SD-S-P-NASC5-0304 | | | | BOTTOM |
| SD-S-P-NASC5-0405 | | | | |
| SD-S-P-NASC5-0506-PLUG | | | | not included[c] |
| NAS-C6 | | | | |
| SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| SD-S-P-NASC6-0102 | | | | |
| SD-S-P-NASC6-0203 | | | | BOTTOM |
| SD-S-P-NASC6-0304-PLUG | | | | not included[c] |
| NAS-C7 | | | | |
| SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| SD-S-P-NASC7-0102 | | | | |
| SD-S-P-NASC7-0203 | | | | |
| SD-S-P-NASC7-0304 | | | | |
| SD-S-P-NASC7-0405 | | | | BOTTOM |
| SD-S-P-NASC7-0506 | | | | |
| SD-S-P-NASC7-0607 | | | | |
| SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | |
| SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| SD-S-P-NASC8-0102 | | | | |
| SD-S-P-NASC8-0203 | | | | |
| SD-S-P-NASC8-0304 | | | | |
| SD-S-P-NASC8-0405 | | | | |
| SD-S-P-NASC8-0506 | | | | BOTTOM |
| SD-S-P-NASC8-0607 | | | | |
| SD-S-P-NASC8-0708 | | | | |
| SD-S-P-NASC8-0809 | | | | |
| SD-S-P-NASC8-0910 | | | | |
| SD-S-P-NASC8-0910-PLUG | | | | not included[c] |
| NAS-C9 | | | | |
| SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| SD-S-P-NASC9-0102 | | | | |
| SD-S-P-NASC9-0203 | | | | |
| SD-S-P-NASC9-0304 | | | | |
| SD-S-P-NASC9-0405 | | | | BOTTOM |
| SD-S-P-NASC9-0506 | | | | |
| SD-S-P-NASC9-0607 | | | | |
| NAS-C10 | | | | |
| SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| SD-S-P-NASC10-0102 | | | | |
| SD-S-P-NASC10-0203 | | | | |
| SD-S-P-NASC10-0304 | | | | BOTTOM |
| SD-S-P-NASC10-0405 | | | | |
| SD-S-P-NASC10-0506 | | | | |
| SD-S-P-NASC10-0607 | | | | |
| SD-S-P-NASC10-0708 | | | | |
| NAS-C11 | | | | |
| SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| SD-S-P-NASC11-0102 | | | | |
| SD-S-P-NASC11-0203 | | | | |
| SD-S-P-NASC11-0304 | | | | |
| SD-S-P-NASC11-0405 | | | | BOTTOM |
| SD-S-P-NASC11-0506 | | | | |
| SD-S-P-NASC11-0607 | | | | |
| SD-S-P-NASC11-0708 | | | | |
| SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | |
| SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| SD-S-P-NASC12-0102 | | | | |
| SD-S-P-NASC12-0203 | | | | |
| SD-S-P-NASC12-0304 | | | | |
| SD-S-P-NASC12-0405 | | | | BOTTOM |
| SD-S-P-NASC12-0506 | | | | |
| SD-S-P-NASC12-0607 | | | | |
| SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | |
| SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| SD-S-P-NASC13-0102 | | | | |
| SD-S-P-NASC13-0203 | | | | |
| SD-S-P-NASC13-0304 | | | | BOTTOM |
| SD-S-P-NASC13-0405 | | | | |
| SD-S-P-NASC13-0506 | | | | |
| SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | |
| SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| SD-S-P-NASC14-0102 | | | | |
| SD-S-P-NASC14-0203 | | | | BOTTOM |
| SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | |
| SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| SD-S-P-NASC15-0102 | | | | |
| SD-S-P-NASC15-0203 | | | | |
| SD-S-P-NASC15-0304 | | | | BOTTOM |
| SD-S-P-NASC15-0405 | | | | |
| SD-S-P-NASC15-0506 | | | | |

Notes:
0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on
a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.
b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.
A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)
c - sample not included due to low volume available and because it represents native material which will not be dredged



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| ~~13-04-1000-1~~ | ~~SD-S-P-NASC1-0001~~ | COMP-A | 4/11/2013 | 1335 | TOP |
| ~~13-04-1000-2~~ | ~~SD-S-P-NASC1-0102~~ | | | | |
| ~~13-04-1000-3~~ | ~~SD-S-P-NASC1-0203~~ | | | | |
| ~~13-04-1000-4~~ | ~~SD-S-P-NASC1-0304~~ | | | | |
| ~~13-04-1000-5~~ | ~~SD-S-P-NASC1-0405~~ | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| ~~13-04-1111-1~~ | ~~SD-S-P-NASC2-0001~~ | COMP-A | 4/12/2013 | 1021 | TOP |
| ~~13-04-1111-2~~ | ~~SD-S-P-NASC2-0102~~ | | | | |
| ~~13-04-1111-3~~ | ~~SD-S-P-NASC2-0203~~ | | | | |
| ~~13-04-1111-4~~ | ~~SD-S-P-NASC2-0304~~ | | | | |
| ~~13-04-1111-5~~ | ~~SD-S-P-NASC2-0405~~ | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| ~~13-04-1113-1~~ | ~~SD-S-P-NASC3-0001~~ | COMP-A | 4/12/2013 | 751 | TOP |
| ~~13-04-1113-2~~ | ~~SD-S-P-NASC3-0102~~ | | | | |
| ~~13-04-1113-3~~ | ~~SD-S-P-NASC3-0203~~ | | | | |
| ~~13-04-1113-4~~ | ~~SD-S-P-NASC3-0304~~ | | | | |
| ~~13-04-1113-5~~ | ~~SD-S-P-NASC3-0405~~ | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| ~~13-04-1002-1~~ | ~~SD-S-P-NASC4-0001~~ | COMP-A | 4/11/2013 | 930 | TOP |
| ~~13-04-1002-2~~ | ~~SD-S-P-NASC4-0102~~ | | | | |
| ~~13-04-1002-3~~ | ~~SD-S-P-NASC4-0203~~ | | | | |
| ~~13-04-1002-4~~ | ~~SD-S-P-NASC4-0304~~ | | | | |
| ~~13-04-1002-5~~ | ~~SD-S-P-NASC4-0405~~ | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| ~~13-04-1003-1~~ | ~~SD-S-P-NASC5-0001~~ | COMP-A | 4/11/2013 | 755 | TOP |
| ~~13-04-1003-2~~ | ~~SD-S-P-NASC5-0102~~ | | | | |
| ~~13-04-1003-3~~ | ~~SD-S-P-NASC5-0203~~ | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| ~~13-04-1001-1~~ | ~~SD-S-P-NASC6-0001~~ | COMP-B | 4/11/2013 | 1200 | TOP |
| ~~13-04-1001-2~~ | ~~SD-S-P-NASC6-0102~~ | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| ~~13-04-0902-1~~ | ~~SD-S-P-NASC7-0001~~ | COMP-B | 4/10/2013 | 1430 | TOP |
| ~~13-04-0902-2~~ | ~~SD-S-P-NASC7-0102~~ | | | | |
| ~~13-04-0902-3~~ | ~~SD-S-P-NASC7-0203~~ | | | | |
| ~~13-04-0902-4~~ | ~~SD-S-P-NASC7-0304~~ | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| ~~13-04-0903-1~~ | ~~SD-S-P-NASC8-0001~~ | COMP-B | 4/10/2013 | 830 | TOP |
| ~~13-04-0903-2~~ | ~~SD-S-P-NASC8-0102~~ | | | | |
| ~~13-04-0903-3~~ | ~~SD-S-P-NASC8-0203~~ | | | | |
| ~~13-04-0903-4~~ | ~~SD-S-P-NASC8-0304~~ | | | | |
| ~~13-04-0903-5~~ | ~~SD-S-P-NASC8-0405~~ | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| ~~13-04-0901-1~~ | ~~SD-S-P-NASC9-0001~~ | COMP-B | 4/10/2013 | 1315 | TOP |
| ~~13-04-0901-2~~ | ~~SD-S-P-NASC9-0102~~ | | | | |
| ~~13-04-0901-3~~ | ~~SD-S-P-NASC9-0203~~ | | | | |
| ~~13-04-0901-4~~ | ~~SD-S-P-NASC9-0304~~ | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607-PLUG~~ | | | | |
| NAS-C10 | | | | | |
| ~~13-04-0904-1~~ | ~~SD-S-P-NASC10-0001~~ | COMP-D | 4/10/2013 | 1010 | TOP |
| ~~13-04-0904-2~~ | ~~SD-S-P-NASC10-0102~~ | | | | |
| ~~13-04-0904-3~~ | ~~SD-S-P-NASC10-0203~~ | | | | |
| ~~13-04-0904-4~~ | ~~SD-S-P-NASC10-0304~~ | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-8 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| ~~13-04-0778-1~~ | ~~SD-S-P-NASC11-0001~~ | COMP-D | 4/9/2013 | 1525 | TOP |
| ~~13-04-0778-2~~ | ~~SD-S-P-NASC11-0102~~ | | | | |
| ~~13-04-0778-3~~ | ~~SD-S-P-NASC11-0203~~ | | | | |
| ~~13-04-0778-4~~ | ~~SD-S-P-NASC11-0304~~ | | | | |
| ~~13-04-0778-5~~ | ~~SD-S-P-NASC11-0405~~ | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| ~~13-04-0780-1~~ | ~~SD-S-P-NASC12-0001~~ | COMP-D | 4/9/2013 | 1410 | TOP |
| ~~13-04-0780-2~~ | ~~SD-S-P-NASC12-0102~~ | | | | |
| ~~13-04-0780-3~~ | ~~SD-S-P-NASC12-0203~~ | | | | |
| ~~13-04-0780-4~~ | ~~SD-S-P-NASC12-0304~~ | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| ~~13-04-0781-1~~ | ~~SD-S-P-NASC13-0001~~ | COMP-E | 4/9/2013 | 1055 | TOP |
| ~~13-04-0781-2~~ | ~~SD-S-P-NASC13-0102~~ | | | | |
| ~~13-04-0781-3~~ | ~~SD-S-P-NASC13-0203~~ | | | | |
| ~~13-04-0781-4~~ | ~~SD-S-P-NASC13-0304~~ | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| ~~13-04-0782-1~~ | ~~SD-S-P-NASC14-0001~~ | COMP-E | 4/9/2013 | 815 | TOP |
| ~~13-04-0782-2~~ | ~~SD-S-P-NASC14-0102~~ | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| ~~13-04-0779-1~~ | ~~SD-S-P-NASC15-0001~~ | COMP-E | 4/9/2013 | 940 | TOP |
| ~~13-04-0779-2~~ | ~~SD-S-P-NASC15-0102~~ | | | | |
| ~~13-04-0779-3~~ | ~~SD-S-P-NASC15-0203~~ | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged



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WORK ORDER #: 13-04-1004

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/12/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

**Temperature** 1.8 °C - 0.2 °C (CF) = 1.6 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter **Initial:** BD

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A **Initial:** BD

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present **Initial:** TN

| **SAMPLE CONDITION:** | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑Z

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** TN

**Container: C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WJC

**Preservative: h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WS



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## Danielle Gonsman

**From:** Gobbi, Kimbrie [kimbrie.gobbi@amec.com]
**Sent:** Wednesday, July 17, 2013 10:05 AM
**To:** Danielle Gonsman
**Cc:** Travis Merritts; Cindy Fields; David Templeton; Michael Whelan; Snyder, Barry
**Subject:** South Trust (NASSCO) Shipyard Samples for STLC/TCLP
**Attachments:** STLC-TCLP_Compositing_Scheme.pdf

Hi Danielle!

As per our recent conversations, we are ready to begin STLC and TCLP analysis for lead only on the NASSCO sediment samples. To do this we will need you to perform the following tasks:

1) Re-composite samples highlighted red in the following table as per the last round of testing, see attached for information.
2) Run STLC analysis for lead on the samples highlighted in red.
3) Run TCLP analysis for lead on sample C4-Top and C6-Bottom only (yellow highlights).
4) Provide an official work order for these tasks.
5) Provide an estimate of the fastest possible TAT and all expedited surcharges for the compositing and analysis to **Anchor QEA** so they can confirm the costs.

| **LEAD CONCENTRATION IN SEDIMENT; UNITS (mg/kg)** | |
|---|---|
| Soluble Threshold Limit Concentration (STLC) Trigger Level (mg/kg) | 50 |
| Total Threshold Limit Concentration (TTLC) (Wet Weight) | 1000 |
| COMP-C1-TOP | **57.9** |
| COMP-C1-BOTTOM | 7.38 |
| COMP-C2-TOP | **57.8** |
| COMP-C2-BOTTOM | 10.3 |
| COMP-C3-TOP | **66.5** |
| COMP-C3-BOTTOM | 21.3 |
| COMP-C4-TOP | **132** |
| COMP-C4-BOTTOM | 6.34 |
| COMP-C5-TOP | **52.7** |
| COMP-C5-BOTTOM | 21.8 |
| COMP-C6-TOP | **94.2** |
| COMP-C6-BOTTOM | **141** |
| COMP-C7-TOP | **64.7** |
| COMP-C7-BOTTOM | 19.8 |
| COMP-C8-TOP | **77.4** |
| COMP-C8-BOTTOM | 21.1 |
| COMP-C9-TOP | **64** |
| COMP-C9-BOTTOM | 22.9 |
| COMP-C10-TOP | 23.9 |
| COMP-C10-BOTTOM | **69** |
| COMP-C11-TOP | 49.8 |
| COMP-C11-BOTTOM | 21 |
| COMP-C12-TOP | **61.3** |
| COMP-C12-BOTTOM | 6.06 |
| COMP-C13-TOP | 34.4 |
| COMP-C13-BOTTOM | 10.6 |



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| | |
|---|---|
| COMP-C14-TOP | 46 |
| COMP-C14-BOTTOM | 36.1 |
| COMP-C15-TOP | **52.8** |
| COMP-C15-BOTTOM | 39.7 |

Thank you!

**Kimbrie Gobbi, M. Sc.**
**Marine and Environmental Scientist**
**AMEC**
Environment & Infrastructure
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Supplemental Report 1

Additional requested analyses are reported as a stand-alone report.

# CALSCIENCE

## WORK ORDER NUMBER: 13-04-1111

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard Sediment Study

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 07/25/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

# Contents

Client Project Name: NASSCO South Shipyard Sediment Study
Work Order Number: 13-04-1111


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Calscience Environmental Laboratories, Inc.

# Work Order Narrative

Work Order: 13-04-1111



**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/15/13. They were assigned to Work Order 13-04-1111.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC | Work Order: | 13-04-1111 |
| | 27201 Puerta Real, Suite 350 | Project Name: | NASSCO South Shipyard Sediment Study |
| | Mission Viejo, CA 92691-8306 | PO Number: | Work Order #3 |
| | | Date Received: | 04/15/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| COMP-C2-TOP | 13-04-1111-11 | 04/12/13 10:21 | 1 | Sediment |

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# CASE NARRATIVE

## Calscience Work Order No.: 13-04-1111
## Project ID: NASSCO Shipyard Sediment Study

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

Ten sediment samples were received for this project on April 12, 2013. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 1.6°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in freezers pending chemistry testing.

On June 12, 2013 samples were composited into two samples as per client instructions.

COC discrepancies were noted in the Sample Anomaly Form.

***Tests Performed***

Sample COMP-C2-TOP was analyzed for the following analyses:

Title 22 STLC Lead by EPA 6010B.

***Data Summary***

Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

Lead was found in the blank at a level below the reporting limit. The sample data has been flagged with a “B” as appropriate.

Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the MDL, and where applicable, “J” flags were reported.

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Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test. All parameters were within established control limits.

Matrix Spikes

Matrix spikes and matrix spike duplicates were performed for each applicable analysis on project samples. All parameters were within the acceptable control limits unless otherwise noted.

Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1111 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| | | Units: | mg/L |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C2-TOP** | **13-04-1111-11-A** | **04/12/13 10:21** | **Sediment** | **ICP 7300** | **07/20/13** | **07/22/13 15:58** | **130722LA2** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | 1.22 | 0.100 | 0.0406 | 1 | B |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-05-006-6825** | **N/A** | **Aqueous** | **ICP 7300** | **07/20/13** | **07/22/13 15:50** | **130722LA2** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | 0.0437 | 0.100 | 0.0406 | 1 | J |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1111 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-1004-11** | **Sediment** | **ICP 7300** | **07/20/13** | **07/22/13 15:54** | **130722SA2** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 1.893 | 5.000 | 7.145 | 105 | 6.940 | 101 | 75-125 | 3 | 0-20 | |

RPD: Relative Percent Difference. CL: Control Limits



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# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1111 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **097-05-006-6825** | **Aqueous** | **ICP 7300** | **07/22/13 15:51** | **130722LA2** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Lead | 5.000 | 5.268 | 105 | 80-120 | |

RPD: Relative Percent Difference. CL: Control Limits



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# Glossary of Terms and Qualifiers

Work Order: 13-04-1111



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control. |
| 4 | The MS/MSD RPD was out of control due to suspected matrix interference. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean). |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/12/13

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

P.O. NO.: 1315100800

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

QUOTE NO.:

SAMPLER(S): (SIGNATURE)

LAB USE ONLY: 13-04-1111

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS

Please HOLD samples. 1x 16 oz, 1x 8oz, and 1x ziplock baggie (for grain size) per sample
DO NOT FREEZE COMPOSITE GRAIN SIZE SAMPLES.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASCØ2 | -0001 | 4/12/2013 | 1021 | sed | 3 | | | | X |
| 2 | SD-S-P-NASCØ2 | -0102 | 4/12/2013 | | sed | 3 | | | | X |
| 3 | SD-S-P-NASCØ2 | -0203 | 4/12/2013 | | sed | 3 | | | | X |
| 4 | SD-S-P-NASCØ2 | -0304 | 4/12/2013 | | sed | 3 | | | | X |
| 5 | SD-S-P-NASCØ2 | -0405 | 4/12/2013 | | sed | 3 | | | | X |
| 6 | SD-S-P-NASCØ2 | -0506 | 4/12/2013 | | sed | 3 | | | | X |
| 7 | SD-S-P-NASCØ2 | -0607 | 4/12/2013 | | sed | 3 | | | | X |
| 8 | SD-S-P-NASCØ2 | -0708 | 4/12/2013 | | sed | 3 | | | | X |
| 9 | SD-S-P-NASCØ2 | -0809 | 4/12/2013 | | sed | 2 | | | | X |
| 10 | SD-S-P-NASCØ2 | -Comp | 4/12/2013 | | sed | 1 | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | CGL | 04/15/13 | 1555 |
| | Dannyle CGL | 4/15/13 | 19:10 |
| | | | |



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
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Sample List for Landfill Classification

| Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|
| NAS-C1 | | | | |
| SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| SD-S-P-NASC1-0102 | | | | |
| SD-S-P-NASC1-0203 | | | | |
| SD-S-P-NASC1-0304 | | | | |
| SD-S-P-NASC1-0405 | | | | |
| SD-S-P-NASC1-0506 | | | | BOTTOM |
| SD-S-P-NASC1-0607 | | | | |
| SD-S-P-NASC1-0708 | | | | |
| SD-S-P-NASC1-0809 | | | | |
| NAS-C2 | | | | |
| SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| SD-S-P-NASC2-0102 | | | | |
| SD-S-P-NASC2-0203 | | | | |
| SD-S-P-NASC2-0304 | | | | |
| SD-S-P-NASC2-0405 | | | | |
| SD-S-P-NASC2-0506 | | | | BOTTOM |
| SD-S-P-NASC2-0607 | | | | |
| SD-S-P-NASC2-0708 | | | | |
| SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | |
| SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| SD-S-P-NASC3-0102 | | | | |
| SD-S-P-NASC3-0203 | | | | |
| SD-S-P-NASC3-0304 | | | | |
| SD-S-P-NASC3-0405 | | | | |
| SD-S-P-NASC3-0506 | | | | BOTTOM |
| SD-S-P-NASC3-0607 | | | | |
| SD-S-P-NASC3-0708 | | | | |
| SD-S-P-NASC3-0809 | | | | |
| SD-S-P-NASC3-0910 | | | | |
| SD-S-P-NASC3-0910-PLUG | | | | not included[c] |
| NAS-C4 | | | | |
| SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| SD-S-P-NASC4-0102 | | | | |
| SD-S-P-NASC4-0203 | | | | |
| SD-S-P-NASC4-0304 | | | | |
| SD-S-P-NASC4-0405 | | | | |
| SD-S-P-NASC4-0506 | | | | BOTTOM |
| SD-S-P-NASC4-0607 | | | | |
| SD-S-P-NASC4-0708 | | | | |
| SD-S-P-NASC4-0809 | | | | |
| SD-S-P-NASC4-0910 | | | | |
| SD-S-P-NASC4-0910-PLUG | | | | not included[c] |
| NAS-C5 | | | | |
| SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| SD-S-P-NASC5-0102 | | | | |
| SD-S-P-NASC5-0203 | | | | |
| SD-S-P-NASC5-0304 | | | | BOTTOM |
| SD-S-P-NASC5-0405 | | | | |
| SD-S-P-NASC5-0506-PLUG | | | | not included[c] |
| NAS-C6 | | | | |
| SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| SD-S-P-NASC6-0102 | | | | |
| SD-S-P-NASC6-0203 | | | | BOTTOM |
| SD-S-P-NASC6-0304-PLUG | | | | not included[c] |
| NAS-C7 | | | | |
| SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| SD-S-P-NASC7-0102 | | | | |
| SD-S-P-NASC7-0203 | | | | |
| SD-S-P-NASC7-0304 | | | | |
| SD-S-P-NASC7-0405 | | | | BOTTOM |
| SD-S-P-NASC7-0506 | | | | |
| SD-S-P-NASC7-0607 | | | | |
| SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | |
| SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| SD-S-P-NASC8-0102 | | | | |
| SD-S-P-NASC8-0203 | | | | |
| SD-S-P-NASC8-0304 | | | | |
| SD-S-P-NASC8-0405 | | | | |
| SD-S-P-NASC8-0506 | | | | BOTTOM |
| SD-S-P-NASC8-0607 | | | | |
| SD-S-P-NASC8-0708 | | | | |
| SD-S-P-NASC8-0809 | | | | |
| SD-S-P-NASC8-0910 | | | | |
| SD-S-P-NASC8-0910-PLUG | | | | not included[c] |
| NAS-C9 | | | | |
| SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| SD-S-P-NASC9-0102 | | | | |
| SD-S-P-NASC9-0203 | | | | |
| SD-S-P-NASC9-0304 | | | | |
| SD-S-P-NASC9-0405 | | | | BOTTOM |
| SD-S-P-NASC9-0506 | | | | |
| SD-S-P-NASC9-0607 | | | | |
| NAS-C10 | | | | |
| SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| SD-S-P-NASC10-0102 | | | | |
| SD-S-P-NASC10-0203 | | | | |
| SD-S-P-NASC10-0304 | | | | BOTTOM |
| SD-S-P-NASC10-0405 | | | | |
| SD-S-P-NASC10-0506 | | | | |
| SD-S-P-NASC10-0607 | | | | |
| SD-S-P-NASC10-0708 | | | | |
| NAS-C11 | | | | |
| SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| SD-S-P-NASC11-0102 | | | | |
| SD-S-P-NASC11-0203 | | | | |
| SD-S-P-NASC11-0304 | | | | |
| SD-S-P-NASC11-0405 | | | | BOTTOM |
| SD-S-P-NASC11-0506 | | | | |
| SD-S-P-NASC11-0607 | | | | |
| SD-S-P-NASC11-0708 | | | | |
| SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | |
| SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| SD-S-P-NASC12-0102 | | | | |
| SD-S-P-NASC12-0203 | | | | |
| SD-S-P-NASC12-0304 | | | | |
| SD-S-P-NASC12-0405 | | | | BOTTOM |
| SD-S-P-NASC12-0506 | | | | |
| SD-S-P-NASC12-0607 | | | | |
| SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | |
| SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| SD-S-P-NASC13-0102 | | | | |
| SD-S-P-NASC13-0203 | | | | |
| SD-S-P-NASC13-0304 | | | | BOTTOM |
| SD-S-P-NASC13-0405 | | | | |
| SD-S-P-NASC13-0506 | | | | |
| SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | |
| SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| SD-S-P-NASC14-0102 | | | | |
| SD-S-P-NASC14-0203 | | | | BOTTOM |
| SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | |
| SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| SD-S-P-NASC15-0102 | | | | |
| SD-S-P-NASC15-0203 | | | | |
| SD-S-P-NASC15-0304 | | | | BOTTOM |
| SD-S-P-NASC15-0405 | | | | |
| SD-S-P-NASC15-0506 | | | | |

Notes:
0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on
a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.
b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.
A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)
c - sample not included due to low volume available and because it represents native material which will not be dredged



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NASSCO Sediment Field Collection Effort
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Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| ~~13-04-1000-1~~ | ~~SD-S-P-NASC1-0001~~ | COMP-A | 4/11/2013 | 1335 | TOP |
| ~~13-04-1000-2~~ | ~~SD-S-P-NASC1-0102~~ | | | | |
| ~~13-04-1000-3~~ | ~~SD-S-P-NASC1-0203~~ | | | | |
| ~~13-04-1000-4~~ | ~~SD-S-P-NASC1-0304~~ | | | | |
| ~~13-04-1000-5~~ | ~~SD-S-P-NASC1-0405~~ | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| ~~13-04-1111-1~~ | ~~SD-S-P-NASC2-0001~~ | COMP-A | 4/12/2013 | 1021 | TOP |
| ~~13-04-1111-2~~ | ~~SD-S-P-NASC2-0102~~ | | | | |
| ~~13-04-1111-3~~ | ~~SD-S-P-NASC2-0203~~ | | | | |
| ~~13-04-1111-4~~ | ~~SD-S-P-NASC2-0304~~ | | | | |
| ~~13-04-1111-5~~ | ~~SD-S-P-NASC2-0405~~ | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| ~~13-04-1113-1~~ | ~~SD-S-P-NASC3-0001~~ | COMP-A | 4/12/2013 | 751 | TOP |
| ~~13-04-1113-2~~ | ~~SD-S-P-NASC3-0102~~ | | | | |
| ~~13-04-1113-3~~ | ~~SD-S-P-NASC3-0203~~ | | | | |
| ~~13-04-1113-4~~ | ~~SD-S-P-NASC3-0304~~ | | | | |
| ~~13-04-1113-5~~ | ~~SD-S-P-NASC3-0405~~ | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| ~~13-04-1002-1~~ | ~~SD-S-P-NASC4-0001~~ | COMP-A | 4/11/2013 | 930 | TOP |
| ~~13-04-1002-2~~ | ~~SD-S-P-NASC4-0102~~ | | | | |
| ~~13-04-1002-3~~ | ~~SD-S-P-NASC4-0203~~ | | | | |
| ~~13-04-1002-4~~ | ~~SD-S-P-NASC4-0304~~ | | | | |
| ~~13-04-1002-5~~ | ~~SD-S-P-NASC4-0405~~ | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| ~~13-04-1003-1~~ | ~~SD-S-P-NASC5-0001~~ | COMP-A | 4/11/2013 | 755 | TOP |
| ~~13-04-1003-2~~ | ~~SD-S-P-NASC5-0102~~ | | | | |
| ~~13-04-1003-3~~ | ~~SD-S-P-NASC5-0203~~ | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| ~~13-04-1001-1~~ | ~~SD-S-P-NASC6-0001~~ | COMP-B | 4/11/2013 | 1200 | TOP |
| ~~13-04-1001-2~~ | ~~SD-S-P-NASC6-0102~~ | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| ~~13-04-0902-1~~ | ~~SD-S-P-NASC7-0001~~ | COMP-B | 4/10/2013 | 1430 | TOP |
| ~~13-04-0902-2~~ | ~~SD-S-P-NASC7-0102~~ | | | | |
| ~~13-04-0902-3~~ | ~~SD-S-P-NASC7-0203~~ | | | | |
| ~~13-04-0902-4~~ | ~~SD-S-P-NASC7-0304~~ | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| ~~13-04-0903-1~~ | ~~SD-S-P-NASC8-0001~~ | COMP-B | 4/10/2013 | 830 | TOP |
| ~~13-04-0903-2~~ | ~~SD-S-P-NASC8-0102~~ | | | | |
| ~~13-04-0903-3~~ | ~~SD-S-P-NASC8-0203~~ | | | | |
| ~~13-04-0903-4~~ | ~~SD-S-P-NASC8-0304~~ | | | | |
| ~~13-04-0903-5~~ | ~~SD-S-P-NASC8-0405~~ | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| ~~13-04-0901-1~~ | ~~SD-S-P-NASC9-0001~~ | COMP-B | 4/10/2013 | 1315 | TOP |
| ~~13-04-0901-2~~ | ~~SD-S-P-NASC9-0102~~ | | | | |
| ~~13-04-0901-3~~ | ~~SD-S-P-NASC9-0203~~ | | | | |
| ~~13-04-0901-4~~ | ~~SD-S-P-NASC9-0304~~ | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607-PLUG~~ | | | | |
| NAS-C10 | | | | | |
| ~~13-04-0904-1~~ | ~~SD-S-P-NASC10-0001~~ | COMP-D | 4/10/2013 | 1010 | TOP |
| ~~13-04-0904-2~~ | ~~SD-S-P-NASC10-0102~~ | | | | |
| ~~13-04-0904-3~~ | ~~SD-S-P-NASC10-0203~~ | | | | |
| ~~13-04-0904-4~~ | ~~SD-S-P-NASC10-0304~~ | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-8 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| ~~13-04-0778-1~~ | ~~SD-S-P-NASC11-0001~~ | COMP-D | 4/9/2013 | 1525 | TOP |
| ~~13-04-0778-2~~ | ~~SD-S-P-NASC11-0102~~ | | | | |
| ~~13-04-0778-3~~ | ~~SD-S-P-NASC11-0203~~ | | | | |
| ~~13-04-0778-4~~ | ~~SD-S-P-NASC11-0304~~ | | | | |
| ~~13-04-0778-5~~ | ~~SD-S-P-NASC11-0405~~ | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| ~~13-04-0780-1~~ | ~~SD-S-P-NASC12-0001~~ | COMP-D | 4/9/2013 | 1410 | TOP |
| ~~13-04-0780-2~~ | ~~SD-S-P-NASC12-0102~~ | | | | |
| ~~13-04-0780-3~~ | ~~SD-S-P-NASC12-0203~~ | | | | |
| ~~13-04-0780-4~~ | ~~SD-S-P-NASC12-0304~~ | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| ~~13-04-0781-1~~ | ~~SD-S-P-NASC13-0001~~ | COMP-E | 4/9/2013 | 1055 | TOP |
| ~~13-04-0781-2~~ | ~~SD-S-P-NASC13-0102~~ | | | | |
| ~~13-04-0781-3~~ | ~~SD-S-P-NASC13-0203~~ | | | | |
| ~~13-04-0781-4~~ | ~~SD-S-P-NASC13-0304~~ | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| ~~13-04-0782-1~~ | ~~SD-S-P-NASC14-0001~~ | COMP-E | 4/9/2013 | 815 | TOP |
| ~~13-04-0782-2~~ | ~~SD-S-P-NASC14-0102~~ | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| ~~13-04-0779-1~~ | ~~SD-S-P-NASC15-0001~~ | COMP-E | 4/9/2013 | 940 | TOP |
| ~~13-04-0779-2~~ | ~~SD-S-P-NASC15-0102~~ | | | | |
| ~~13-04-0779-3~~ | ~~SD-S-P-NASC15-0203~~ | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-1111

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/15/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.8 °C - 0.2 °C (CF) = 1.6 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: VG

**CUSTODY SEALS INTACT:**

| | | | | | |
|---|---|---|---|---|---|
| ☐ Cooler | ☐_____ | ☐ No (Not Intact) | ☑ Not Present | ☐ N/A | Initial: VG |
| ☐ Sample | ☐_____ | ☐ No (Not Intact) | ☑ Not Present | | Initial: HH |

**SAMPLE CONDITION:**

| | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ Z

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐ _____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** HH

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** PJ

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** RS



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## Danielle Gonsman

**From:** Gobbi, Kimbrie [kimbrie.gobbi@amec.com]
**Sent:** Wednesday, July 17, 2013 10:05 AM
**To:** Danielle Gonsman
**Cc:** Travis Merritts; Cindy Fields; David Templeton; Michael Whelan; Snyder, Barry
**Subject:** South Trust (NASSCO) Shipyard Samples for STLC/TCLP
**Attachments:** STLC-TCLP_Compositing_Scheme.pdf

Hi Danielle!

As per our recent conversations, we are ready to begin STLC and TCLP analysis for lead only on the NASSCO sediment samples. To do this we will need you to perform the following tasks:

1) Re-composite samples highlighted red in the following table as per the last round of testing, see attached for information.
2) Run STLC analysis for lead on the samples highlighted in red.
3) Run TCLP analysis for lead on sample C4-Top and C6-Bottom only (yellow highlights).
4) Provide an official work order for these tasks.
5) Provide an estimate of the fastest possible TAT and all expedited surcharges for the compositing and analysis to **Anchor QEA** so they can confirm the costs.

| **LEAD CONCENTRATION IN SEDIMENT; UNITS (mg/kg)** | |
|---|---|
| Soluble Threshold Limit Concentration (STLC) Trigger Level (mg/kg) | 50 |
| Total Threshold Limit Concentration (TTLC) (Wet Weight) | 1000 |
| COMP-C1-TOP | **57.9** |
| COMP-C1-BOTTOM | 7.38 |
| COMP-C2-TOP | **57.8** |
| COMP-C2-BOTTOM | 10.3 |
| COMP-C3-TOP | **66.5** |
| COMP-C3-BOTTOM | 21.3 |
| COMP-C4-TOP | **132** |
| COMP-C4-BOTTOM | 6.34 |
| COMP-C5-TOP | **52.7** |
| COMP-C5-BOTTOM | 21.8 |
| COMP-C6-TOP | **94.2** |
| COMP-C6-BOTTOM | **141** |
| COMP-C7-TOP | **64.7** |
| COMP-C7-BOTTOM | 19.8 |
| COMP-C8-TOP | **77.4** |
| COMP-C8-BOTTOM | 21.1 |
| COMP-C9-TOP | **64** |
| COMP-C9-BOTTOM | 22.9 |
| COMP-C10-TOP | 23.9 |
| COMP-C10-BOTTOM | **69** |
| COMP-C11-TOP | 49.8 |
| COMP-C11-BOTTOM | 21 |
| COMP-C12-TOP | **61.3** |
| COMP-C12-BOTTOM | 6.06 |
| COMP-C13-TOP | 34.4 |
| COMP-C13-BOTTOM | 10.6 |



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| | |
|---|---|
| COMP-C14-TOP | 46 |
| COMP-C14-BOTTOM | 36.1 |
| COMP-C15-TOP | **52.8** |
| COMP-C15-BOTTOM | 39.7 |

Thank you!

**Kimbrie Gobbi, M. Sc.**
**Marine and Environmental Scientist**
**AMEC**
Environment & Infrastructure
9210 Sky Park Court, Suite 200, San Diego, CA 92123, USA
Tel +1 (858) 300 4300, Fax +1 (858) 300 4301
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kimbrie.gobbi@amec.com
amec.com

*I speak for the trees! Please consider the environment before printing this email!*

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Supplemental Report 1

Additional requested analyses are reported as a stand-alone report.

# CALSCIENCE

## WORK ORDER NUMBER: 13-04-1113

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard Sediment Study

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 07/25/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

# Contents

Client Project Name: NASSCO South Shipyard Sediment Study
Work Order Number: 13-04-1113


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Calscience Environmental Laboratories, Inc.

# Work Order Narrative

Work Order: 13-04-1113



**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/15/13. They were assigned to Work Order 13-04-1113.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Calscience Environmental Laboratories, Inc.

# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC | Work Order: | 13-04-1113 |
| | 27201 Puerta Real, Suite 350 | Project Name: | NASSCO South Shipyard Sediment Study |
| | Mission Viejo, CA 92691-8306 | PO Number: | Work Order #3 |
| | | Date Received: | 04/15/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| COMP-C3-TOP | 13-04-1113-13 | 04/12/13 07:51 | 1 | Sediment |

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Calscience Environmental Laboratories, Inc.

# CASE NARRATIVE

## Calscience Work Order No.: 13-04-1113
## Project ID: NASSCO Shipyard Sediment Study

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

Twelve sediment samples were received for this project on April 12, 2013. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 1.6°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in freezers pending chemistry testing.

On June 12, 2013 samples were composited into two samples as per client instructions.

COC discrepancies were noted in the Sample Anomaly Form.

***Tests Performed***

Sample COMP-C3-TOP was analyzed for the following analyses:

Title 22 STLC Lead by EPA 6010B.

***Data Summary***

Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

Lead was found in the blank at a level below the reporting limit. The sample data has been flagged with a “B” as appropriate.

Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the MDL, and where applicable, “J” flags were reported.

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Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test. All parameters were within established control limits.

Matrix Spikes

Matrix spikes and matrix spike duplicates were performed for each applicable analysis on project samples. All parameters were within the acceptable control limits unless otherwise noted.

Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1113 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| | | Units: | mg/L |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C3-TOP** | **13-04-1113-13-A** | **04/12/13 07:51** | **Sediment** | **ICP 7300** | **07/20/13** | **07/22/13 15:57** | **130722LA2** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | 1.17 | 0.100 | 0.0406 | 1 | B |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-05-006-6825** | **N/A** | **Aqueous** | **ICP 7300** | **07/20/13** | **07/22/13 15:50** | **130722LA2** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | 0.0437 | 0.100 | 0.0406 | 1 | J |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1113 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-1004-11** | **Sediment** | **ICP 7300** | **07/20/13** | **07/22/13 15:54** | **130722SA2** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 1.893 | 5.000 | 7.145 | 105 | 6.940 | 101 | 75-125 | 3 | 0-20 | |

RPD: Relative Percent Difference. CL: Control Limits



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# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/15/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1113 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **097-05-006-6825** | **Aqueous** | **ICP 7300** | **07/22/13 15:51** | **130722LA2** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Lead | 5.000 | 5.268 | 105 | 80-120 | |

RPD: Relative Percent Difference. CL: Control Limits



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# Glossary of Terms and Qualifiers

Work Order: 13-04-1113



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control. |
| 4 | The MS/MSD RPD was out of control due to suspected matrix interference. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean). |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/12/13

PAGE: 1 OF 2

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

SAMPLER(S): (SIGNATURE)

P.O. NO.: 1315100800

QUOTE NO.:

LAB USE ONLY: 13-04-1113

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS

Please HOLD samples. 1x 16 oz, 1x 8oz, and 1x ziplock baggie (for grain size) per sample
DO NOT FREEZE COMPOSITE GRAIN SIZE SAMPLES.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASCØ3 - | 0001 | 4/12/2013 | 0751 | sed | 3 | | | | X |
| 2 | SD-S-P-NASCØ3 - | 0102 | 4/12/2013 | | sed | 3 | | | | X |
| 3 | SD-S-P-NASCØ3 - | 0203 | 4/12/2013 | | sed | 3 | | | | X |
| 4 | SD-S-P-NASCØ3 - | 0304 | 4/12/2013 | | sed | 3 | | | | X |
| 5 | SD-S-P-NASCØ3 - | 0405 | 4/12/2013 | | sed | 3 | | | | X |
| 6 | SD-S-P-NASCØ3 - | 0506 | 4/12/2013 | | sed | 3 | | | | X |
| 7 | SD-S-P-NASCØ3 - | 0607 | 4/12/2013 | | sed | 3 | | | | X |
| 8 | SD-S-P-NASCØ3 - | 0708 | 4/12/2013 | | sed | 3 | | | | X |
| 9 | SD-S-P-NASCØ3 - | 0809 | 4/12/2013 | | sed | 3 | | | | X |
| 10 | SD-S-P-NASCØ3 - | 0910 | 4/12/2013 | | sed | 3 | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | CCL | 04/15/13 | 1555 |
| | Dannyle CCL | 4/15/13 | 19:10 |
| | | | |



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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/12/13
PAGE: 2 OF 2

LABORATORY CLIENT: AMEC Environment & Infrastructure
ADDRESS: 9210 Sky Park Ct. Ste 200
CITY: San Diego, California 92123
TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study
PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder
SAMPLER(S): (SIGNATURE)
P.O. NO.: 1315100800
QUOTE NO.:
LAB USE ONLY: 04-1113

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS
Please HOLD samples. 1x 16 oz, 1x 8oz, and 1x ziplock baggie (for grain size) per sample
DO NOT FREEZE COMPOSITE GRAIN SIZE SAMPLES.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | SD-S-P-NASCØ3 - | 0910 PLUG | 4/12/2013 | 0751 | sed | 3 | | | | X |
| 12 | SD-S-P-NASCØ3 - | COMP | 4/12/2013 | ↓ | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | CRL | 04/15/13 | 1555 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| | Bannyle CRL | 4/15/13 | 19:10 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| | | | |



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AMEC Environment & Infrastructure
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Sample List for Landfill Classification

| Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|
| NAS-C1 | | | | |
| SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| SD-S-P-NASC1-0102 | | | | |
| SD-S-P-NASC1-0203 | | | | |
| SD-S-P-NASC1-0304 | | | | |
| SD-S-P-NASC1-0405 | | | | |
| SD-S-P-NASC1-0506 | | | | BOTTOM |
| SD-S-P-NASC1-0607 | | | | |
| SD-S-P-NASC1-0708 | | | | |
| SD-S-P-NASC1-0809 | | | | |
| NAS-C2 | | | | |
| SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| SD-S-P-NASC2-0102 | | | | |
| SD-S-P-NASC2-0203 | | | | |
| SD-S-P-NASC2-0304 | | | | |
| SD-S-P-NASC2-0405 | | | | |
| SD-S-P-NASC2-0506 | | | | BOTTOM |
| SD-S-P-NASC2-0607 | | | | |
| SD-S-P-NASC2-0708 | | | | |
| SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | |
| SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| SD-S-P-NASC3-0102 | | | | |
| SD-S-P-NASC3-0203 | | | | |
| SD-S-P-NASC3-0304 | | | | |
| SD-S-P-NASC3-0405 | | | | |
| SD-S-P-NASC3-0506 | | | | BOTTOM |
| SD-S-P-NASC3-0607 | | | | |
| SD-S-P-NASC3-0708 | | | | |
| SD-S-P-NASC3-0809 | | | | |
| SD-S-P-NASC3-0910 | | | | |
| SD-S-P-NASC3-0910-PLUG | | | | not included[c] |
| NAS-C4 | | | | |
| SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| SD-S-P-NASC4-0102 | | | | |
| SD-S-P-NASC4-0203 | | | | |
| SD-S-P-NASC4-0304 | | | | |
| SD-S-P-NASC4-0405 | | | | |
| SD-S-P-NASC4-0506 | | | | BOTTOM |
| SD-S-P-NASC4-0607 | | | | |
| SD-S-P-NASC4-0708 | | | | |
| SD-S-P-NASC4-0809 | | | | |
| SD-S-P-NASC4-0910 | | | | |
| SD-S-P-NASC4-0910-PLUG | | | | not included[c] |
| NAS-C5 | | | | |
| SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| SD-S-P-NASC5-0102 | | | | |
| SD-S-P-NASC5-0203 | | | | |
| SD-S-P-NASC5-0304 | | | | BOTTOM |
| SD-S-P-NASC5-0405 | | | | |
| SD-S-P-NASC5-0506-PLUG | | | | not included[c] |
| NAS-C6 | | | | |
| SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| SD-S-P-NASC6-0102 | | | | |
| SD-S-P-NASC6-0203 | | | | BOTTOM |
| SD-S-P-NASC6-0304-PLUG | | | | not included[c] |
| NAS-C7 | | | | |
| SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| SD-S-P-NASC7-0102 | | | | |
| SD-S-P-NASC7-0203 | | | | |
| SD-S-P-NASC7-0304 | | | | |
| SD-S-P-NASC7-0405 | | | | BOTTOM |
| SD-S-P-NASC7-0506 | | | | |
| SD-S-P-NASC7-0607 | | | | |
| SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | |
| SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| SD-S-P-NASC8-0102 | | | | |
| SD-S-P-NASC8-0203 | | | | |
| SD-S-P-NASC8-0304 | | | | |
| SD-S-P-NASC8-0405 | | | | |
| SD-S-P-NASC8-0506 | | | | BOTTOM |
| SD-S-P-NASC8-0607 | | | | |
| SD-S-P-NASC8-0708 | | | | |
| SD-S-P-NASC8-0809 | | | | |
| SD-S-P-NASC8-0910 | | | | |
| SD-S-P-NASC8-0910-PLUG | | | | not included[c] |
| NAS-C9 | | | | |
| SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| SD-S-P-NASC9-0102 | | | | |
| SD-S-P-NASC9-0203 | | | | |
| SD-S-P-NASC9-0304 | | | | |
| SD-S-P-NASC9-0405 | | | | BOTTOM |
| SD-S-P-NASC9-0506 | | | | |
| SD-S-P-NASC9-0607 | | | | |
| NAS-C10 | | | | |
| SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| SD-S-P-NASC10-0102 | | | | |
| SD-S-P-NASC10-0203 | | | | |
| SD-S-P-NASC10-0304 | | | | |
| SD-S-P-NASC10-0405 | | | | BOTTOM |
| SD-S-P-NASC10-0506 | | | | |
| SD-S-P-NASC10-0607 | | | | |
| SD-S-P-NASC10-0708 | | | | |
| NAS-C11 | | | | |
| SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| SD-S-P-NASC11-0102 | | | | |
| SD-S-P-NASC11-0203 | | | | |
| SD-S-P-NASC11-0304 | | | | |
| SD-S-P-NASC11-0405 | | | | BOTTOM |
| SD-S-P-NASC11-0506 | | | | |
| SD-S-P-NASC11-0607 | | | | |
| SD-S-P-NASC11-0708 | | | | |
| SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | |
| SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| SD-S-P-NASC12-0102 | | | | |
| SD-S-P-NASC12-0203 | | | | |
| SD-S-P-NASC12-0304 | | | | |
| SD-S-P-NASC12-0405 | | | | BOTTOM |
| SD-S-P-NASC12-0506 | | | | |
| SD-S-P-NASC12-0607 | | | | |
| SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | |
| SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| SD-S-P-NASC13-0102 | | | | |
| SD-S-P-NASC13-0203 | | | | |
| SD-S-P-NASC13-0304 | | | | BOTTOM |
| SD-S-P-NASC13-0405 | | | | |
| SD-S-P-NASC13-0506 | | | | |
| SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | |
| SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| SD-S-P-NASC14-0102 | | | | |
| SD-S-P-NASC14-0203 | | | | BOTTOM |
| SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | |
| SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| SD-S-P-NASC15-0102 | | | | |
| SD-S-P-NASC15-0203 | | | | |
| SD-S-P-NASC15-0304 | | | | BOTTOM |
| SD-S-P-NASC15-0405 | | | | |
| SD-S-P-NASC15-0506 | | | | |

Notes:
0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on
a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.
b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.
A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)
c - sample not included due to low volume available and because it represents native material which will not be dredged



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Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| ~~13-04-1004-1~~ | ~~SD-S-P-NASC1-0001~~ | COMP-A | 4/11/2013 | 1335 | TOP |
| ~~13-04-1004-2~~ | ~~SD-S-P-NASC1-0102~~ | | | | |
| ~~13-04-1004-3~~ | ~~SD-S-P-NASC1-0203~~ | | | | |
| ~~13-04-1004-4~~ | ~~SD-S-P-NASC1-0304~~ | | | | |
| ~~13-04-1004-5~~ | ~~SD-S-P-NASC1-0405~~ | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| ~~13-04-1111-1~~ | ~~SD-S-P-NASC2-0001~~ | COMP-A | 4/12/2013 | 1021 | TOP |
| ~~13-04-1111-2~~ | ~~SD-S-P-NASC2-0102~~ | | | | |
| ~~13-04-1111-3~~ | ~~SD-S-P-NASC2-0203~~ | | | | |
| ~~13-04-1111-4~~ | ~~SD-S-P-NASC2-0304~~ | | | | |
| ~~13-04-1111-5~~ | ~~SD-S-P-NASC2-0405~~ | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| ~~13-04-1113-1~~ | ~~SD-S-P-NASC3-0001~~ | COMP-A | 4/12/2013 | 751 | TOP |
| ~~13-04-1113-2~~ | ~~SD-S-P-NASC3-0102~~ | | | | |
| ~~13-04-1113-3~~ | ~~SD-S-P-NASC3-0203~~ | | | | |
| ~~13-04-1113-4~~ | ~~SD-S-P-NASC3-0304~~ | | | | |
| ~~13-04-1113-5~~ | ~~SD-S-P-NASC3-0405~~ | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| ~~13-04-1002-1~~ | ~~SD-S-P-NASC4-0001~~ | COMP-A | 4/11/2013 | 930 | TOP |
| ~~13-04-1002-2~~ | ~~SD-S-P-NASC4-0102~~ | | | | |
| ~~13-04-1002-3~~ | ~~SD-S-P-NASC4-0203~~ | | | | |
| ~~13-04-1002-4~~ | ~~SD-S-P-NASC4-0304~~ | | | | |
| ~~13-04-1002-5~~ | ~~SD-S-P-NASC4-0405~~ | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| ~~13-04-1003-1~~ | ~~SD-S-P-NASC5-0001~~ | COMP-A | 4/11/2013 | 755 | TOP |
| ~~13-04-1003-2~~ | ~~SD-S-P-NASC5-0102~~ | | | | |
| ~~13-04-1003-3~~ | ~~SD-S-P-NASC5-0203~~ | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| ~~13-04-1001-1~~ | ~~SD-S-P-NASC6-0001~~ | COMP-B | 4/11/2013 | 1200 | TOP |
| ~~13-04-1001-2~~ | ~~SD-S-P-NASC6-0102~~ | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| ~~13-04-0902-1~~ | ~~SD-S-P-NASC7-0001~~ | COMP-B | 4/10/2013 | 1430 | TOP |
| ~~13-04-0902-2~~ | ~~SD-S-P-NASC7-0102~~ | | | | |
| ~~13-04-0902-3~~ | ~~SD-S-P-NASC7-0203~~ | | | | |
| ~~13-04-0902-4~~ | ~~SD-S-P-NASC7-0304~~ | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| ~~13-04-0903-1~~ | ~~SD-S-P-NASC8-0001~~ | COMP-B | 4/10/2013 | 830 | TOP |
| ~~13-04-0903-2~~ | ~~SD-S-P-NASC8-0102~~ | | | | |
| ~~13-04-0903-3~~ | ~~SD-S-P-NASC8-0203~~ | | | | |
| ~~13-04-0903-4~~ | ~~SD-S-P-NASC8-0304~~ | | | | |
| ~~13-04-0903-5~~ | ~~SD-S-P-NASC8-0405~~ | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| ~~13-04-0901-1~~ | ~~SD-S-P-NASC9-0001~~ | COMP-B | 4/10/2013 | 1315 | TOP |
| ~~13-04-0901-2~~ | ~~SD-S-P-NASC9-0102~~ | | | | |
| ~~13-04-0901-3~~ | ~~SD-S-P-NASC9-0203~~ | | | | |
| ~~13-04-0901-4~~ | ~~SD-S-P-NASC9-0304~~ | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607-PLUG~~ | | | | |
| NAS-C10 | | | | | |
| ~~13-04-0904-1~~ | ~~SD-S-P-NASC10-0001~~ | COMP-D | 4/10/2013 | 1010 | TOP |
| ~~13-04-0904-2~~ | ~~SD-S-P-NASC10-0102~~ | | | | |
| ~~13-04-0904-3~~ | ~~SD-S-P-NASC10-0203~~ | | | | |
| ~~13-04-0904-4~~ | ~~SD-S-P-NASC10-0304~~ | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-8 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| ~~13-04-0778-1~~ | ~~SD-S-P-NASC11-0001~~ | COMP-D | 4/9/2013 | 1525 | TOP |
| ~~13-04-0778-2~~ | ~~SD-S-P-NASC11-0102~~ | | | | |
| ~~13-04-0778-3~~ | ~~SD-S-P-NASC11-0203~~ | | | | |
| ~~13-04-0778-4~~ | ~~SD-S-P-NASC11-0304~~ | | | | |
| ~~13-04-0778-5~~ | ~~SD-S-P-NASC11-0405~~ | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| ~~13-04-0780-1~~ | ~~SD-S-P-NASC12-0001~~ | COMP-D | 4/9/2013 | 1410 | TOP |
| ~~13-04-0780-2~~ | ~~SD-S-P-NASC12-0102~~ | | | | |
| ~~13-04-0780-3~~ | ~~SD-S-P-NASC12-0203~~ | | | | |
| ~~13-04-0780-4~~ | ~~SD-S-P-NASC12-0304~~ | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| ~~13-04-0781-1~~ | ~~SD-S-P-NASC13-0001~~ | COMP-E | 4/9/2013 | 1055 | TOP |
| ~~13-04-0781-2~~ | ~~SD-S-P-NASC13-0102~~ | | | | |
| ~~13-04-0781-3~~ | ~~SD-S-P-NASC13-0203~~ | | | | |
| ~~13-04-0781-4~~ | ~~SD-S-P-NASC13-0304~~ | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| ~~13-04-0782-1~~ | ~~SD-S-P-NASC14-0001~~ | COMP-E | 4/9/2013 | 815 | TOP |
| ~~13-04-0782-2~~ | ~~SD-S-P-NASC14-0102~~ | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| ~~13-04-0779-1~~ | ~~SD-S-P-NASC15-0001~~ | COMP-E | 4/9/2013 | 940 | TOP |
| ~~13-04-0779-2~~ | ~~SD-S-P-NASC15-0102~~ | | | | |
| ~~13-04-0779-3~~ | ~~SD-S-P-NASC15-0203~~ | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-1113

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/15/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.6 °C - 0.2 °C (CF) = 1.4 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: VB

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: VB

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: HH

| SAMPLE CONDITION: | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ 2

**Water:** ☐VOA ☐VOA**h** ☐VOA**$na_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**$na_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**$na_2$** ☐_____ ☐ _____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** HH

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** JS

**Preservative:** **h:** HCL **n:** $HNO_3$ **$na_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** JS



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## Danielle Gonsman

**From:** Gobbi, Kimbrie [kimbrie.gobbi@amec.com]
**Sent:** Wednesday, July 17, 2013 10:05 AM
**To:** Danielle Gonsman
**Cc:** Travis Merritts; Cindy Fields; David Templeton; Michael Whelan; Snyder, Barry
**Subject:** South Trust (NASSCO) Shipyard Samples for STLC/TCLP
**Attachments:** STLC-TCLP_Compositing_Scheme.pdf

Hi Danielle!

As per our recent conversations, we are ready to begin STLC and TCLP analysis for lead only on the NASSCO sediment samples. To do this we will need you to perform the following tasks:

1) Re-composite samples highlighted red in the following table as per the last round of testing, see attached for information.
2) Run STLC analysis for lead on the samples highlighted in red.
3) Run TCLP analysis for lead on sample C4-Top and C6-Bottom only (yellow highlights).
4) Provide an official work order for these tasks.
5) Provide an estimate of the fastest possible TAT and all expedited surcharges for the compositing and analysis to **Anchor QEA** so they can confirm the costs.

| **LEAD CONCENTRATION IN SEDIMENT; UNITS (mg/kg)** | |
|---|---|
| Soluble Threshold Limit Concentration (STLC) Trigger Level (mg/kg) | 50 |
| Total Threshold Limit Concentration (TTLC) (Wet Weight) | 1000 |
| COMP-C1-TOP | **57.9** |
| COMP-C1-BOTTOM | 7.38 |
| COMP-C2-TOP | **57.8** |
| COMP-C2-BOTTOM | 10.3 |
| COMP-C3-TOP | **66.5** |
| COMP-C3-BOTTOM | 21.3 |
| COMP-C4-TOP | **132** |
| COMP-C4-BOTTOM | 6.34 |
| COMP-C5-TOP | **52.7** |
| COMP-C5-BOTTOM | 21.8 |
| COMP-C6-TOP | **94.2** |
| COMP-C6-BOTTOM | **141** |
| COMP-C7-TOP | **64.7** |
| COMP-C7-BOTTOM | 19.8 |
| COMP-C8-TOP | **77.4** |
| COMP-C8-BOTTOM | 21.1 |
| COMP-C9-TOP | **64** |
| COMP-C9-BOTTOM | 22.9 |
| COMP-C10-TOP | 23.9 |
| COMP-C10-BOTTOM | **69** |
| COMP-C11-TOP | 49.8 |
| COMP-C11-BOTTOM | 21 |
| COMP-C12-TOP | **61.3** |
| COMP-C12-BOTTOM | 6.06 |
| COMP-C13-TOP | 34.4 |
| COMP-C13-BOTTOM | 10.6 |



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| | |
|---|---|
| COMP-C14-TOP | 46 |
| COMP-C14-BOTTOM | 36.1 |
| COMP-C15-TOP | **52.8** |
| COMP-C15-BOTTOM | 39.7 |

Thank you!

**Kimbrie Gobbi, M. Sc.**
**Marine and Environmental Scientist**
**AMEC**
Environment & Infrastructure
9210 Sky Park Court, Suite 200, San Diego, CA 92123, USA
Tel +1 (858) 300 4300, Fax +1 (858) 300 4301
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*I speak for the trees! Please consider the environment before printing this email!*

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Supplemental Report 1

Additional requested analyses are reported as a stand-alone report.

# CALSCIENCE

## WORK ORDER NUMBER: 13-04-1002

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard Sediment Study

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 07/25/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

# Contents

Client Project Name: NASSCO South Shipyard Sediment Study
Work Order Number: 13-04-1002


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Calscience Environmental Laboratories, Inc.

# Work Order Narrative

Work Order: 13-04-1002 Page 1 of 1

**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/12/13. They were assigned to Work Order 13-04-1002.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Calscience Environmental Laboratories, Inc.

# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC | Work Order: | 13-04-1002 |
| | 27201 Puerta Real, Suite 350 | Project Name: | NASSCO South Shipyard Sediment Study |
| | Mission Viejo, CA 92691-8306 | PO Number: | Work Order #3 |
| | | Date Received: | 04/12/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| COMP-C4-TOP | 13-04-1002-13 | 04/11/13 09:30 | 1 | Sediment |

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Calscience Environmental Laboratories, Inc.

# CASE NARRATIVE

## Calscience Work Order No.: 13-04-1002
## Project ID: NASSCO Shipyard Sediment Study

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

Twelve sediment samples were received for this project on April 12, 2013. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 1.7°C and 1.5°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in freezers pending chemistry testing.

On June 12, 2013 samples were composited into two samples as per client instructions.

COC discrepancies were noted in the Sample Anomaly Form.

***Tests Performed***

Sample COMP-C4-TOP was analyzed for the following analyses:

Title 22 STLC Lead by EPA 6010B
TCLP Lead by EPA 1311/6010B

***Data Summary***

Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

Lead was found in the STLC blank at a level below the reporting limit. The sample data has been flagged with a “B” as appropriate.

Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the MDL, and where applicable, “J” flags were reported.

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Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test. All parameters were within established control limits.

Matrix Spikes

Matrix spikes and matrix spike duplicates were performed for each applicable analysis on project samples. All parameters were within the acceptable control limits unless otherwise noted.

Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| | | Units: | mg/L |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C4-TOP** | **13-04-1002-13-A** | **04/11/13 09:30** | **Sediment** | **ICP 7300** | **07/20/13** | **07/22/13 15:55** | **130722LA2** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | 0.0570 | 0.100 | 0.0406 | 1 | B,J |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-05-006-6825** | **N/A** | **Aqueous** | **ICP 7300** | **07/20/13** | **07/22/13 15:50** | **130722LA2** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | 0.0437 | 0.100 | 0.0406 | 1 | J |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 1311 |
| | | Method: | EPA 6010B |
| | | Units: | mg/L |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C4-TOP** | **13-04-1002-13-A** | **04/11/13 09:30** | **Sediment** | **ICP 7300** | **07/19/13** | **07/22/13 12:58** | **130720LA1** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | 0.0422 | 0.100 | 0.0406 | 1 | J |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-14-021-910** | **N/A** | **Aqueous** | **ICP 7300** | **07/19/13** | **07/20/13 16:21** | **130720LA1** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | ND | 0.100 | 0.0406 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-1004-11** | **Sediment** | **ICP 7300** | **07/20/13** | **07/22/13 15:54** | **130722SA2** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 1.893 | 5.000 | 7.145 | 105 | 6.940 | 101 | 75-125 | 3 | 0-20 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 1311 |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-07-1280-1** | **Soil** | **ICP 7300** | **07/19/13** | **07/20/13 16:27** | **130720SA1** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | 5.000 | 5.340 | 107 | 5.242 | 105 | 84-120 | 2 | 0-7 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **097-05-006-6825** | **Aqueous** | **ICP 7300** | **07/22/13 15:51** | **130722LA2** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Lead | 5.000 | 5.268 | 105 | 80-120 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1002 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 1311 |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-14-021-910** | **Aqueous** | **ICP 7300** | **07/20/13 16:23** | **130720LA1** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Lead | 5.000 | 5.370 | 107 | 80-120 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order: 13-04-1002



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control. |
| 4 | The MS/MSD RPD was out of control due to suspected matrix interference. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean). |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/11/2013

PAGE: 1 OF 2

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

P.O. NO.: 1315100800

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

QUOTE NO.:

SAMPLER(S): (SIGNATURE)

LAB USE ONLY: 13-04-1002

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS:
Please HOLD samples. 1x 16 oz per sample
DO NOT FREEZE COMPOSITE SAMPLES. HOLD FOR GEOTECHNICAL.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

## REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC 04 - | 0001 | 4/11/2013 | 0930 | sed | 3 | | | | X |
| 2 | SD-S-P-NASC 04 - | 0102 | 4/11/2013 | | sed | 3 | | | | X |
| 3 | SD-S-P-NASC 04 - | 0203 | 4/11/2013 | | sed | 3 | | | | X |
| 4 | SD-S-P-NASC 04 - | 0304 | 4/11/2013 | | sed | 3 | | | | X |
| 5 | SD-S-P-NASC 04 - | 0405 | 4/11/2013 | | sed | 3 | | | | X |
| 6 | SD-S-P-NASC 04 - | 0506 | 4/11/2013 | | sed | 3 | | | | X |
| 7 | SD-S-P-NASC 04 - | 0607 | 4/11/2013 | | sed | 3 | | | | X |
| 8 | SD-S-P-NASC 04 - | 0708 | 4/11/2013 | | sed | 3 | | | | X |
| 9 | SD-S-P-NASC 04 - | 0809 | 4/11/2013 | | sed | 3 | | | | X |
| 10 | SD-S-P-NASC 04 - | 0910 | 4/11/2013 | | sed | 3 | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | CCL | 04/12/13 | 1545 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| | CCL | 04/12/13 | 1900 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| | | | |



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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE:
PAGE: 3 of 3

LABORATORY CLIENT: AMEC Environment & Infrastructure
ADDRESS: 9210 Sky Park Ct. Ste 200
CITY: San Diego, California 92123
TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study
PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder
SAMPLER(S): (SIGNATURE)

P.O. NO.: 1315100800
QUOTE NO.:
LAB USE ONLY: 04-1002

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS
Please HOLD samples. 1x 16 oz, 1x 8oz, and 1x ziplock baggie (for grain size) per sample
DO NOT FREEZE COMPOSITE GRAIN SIZE SAMPLES.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 11 | SD-S-P-NASC04 | -0910 Plug | 4/11/2013 | 0930 | sed | 3 | | | | X |
| 12 | SD-S-P-NASC04 - | Comp | 4/11/2013 | 0930 | sed | 1 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |
| | SD-S-P-NASC | | 4/__/2013 | | sed | 3 | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | CA | 04/12/13 | 1545 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| | CA | 04/12/13 | 1900 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|
| NAS-C1 | | | | |
| SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| SD-S-P-NASC1-0102 | | | | |
| SD-S-P-NASC1-0203 | | | | |
| SD-S-P-NASC1-0304 | | | | |
| SD-S-P-NASC1-0405 | | | | |
| SD-S-P-NASC1-0506 | | | | BOTTOM |
| SD-S-P-NASC1-0607 | | | | |
| SD-S-P-NASC1-0708 | | | | |
| SD-S-P-NASC1-0809 | | | | |
| NAS-C2 | | | | |
| SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| SD-S-P-NASC2-0102 | | | | |
| SD-S-P-NASC2-0203 | | | | |
| SD-S-P-NASC2-0304 | | | | |
| SD-S-P-NASC2-0405 | | | | |
| SD-S-P-NASC2-0506 | | | | BOTTOM |
| SD-S-P-NASC2-0607 | | | | |
| SD-S-P-NASC2-0708 | | | | |
| SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | |
| SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| SD-S-P-NASC3-0102 | | | | |
| SD-S-P-NASC3-0203 | | | | |
| SD-S-P-NASC3-0304 | | | | |
| SD-S-P-NASC3-0405 | | | | |
| SD-S-P-NASC3-0506 | | | | BOTTOM |
| SD-S-P-NASC3-0607 | | | | |
| SD-S-P-NASC3-0708 | | | | |
| SD-S-P-NASC3-0809 | | | | |
| SD-S-P-NASC3-0910 | | | | |
| SD-S-P-NASC3-0910-PLUG | | | | not included[c] |
| NAS-C4 | | | | |
| SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| SD-S-P-NASC4-0102 | | | | |
| SD-S-P-NASC4-0203 | | | | |
| SD-S-P-NASC4-0304 | | | | |
| SD-S-P-NASC4-0405 | | | | |
| SD-S-P-NASC4-0506 | | | | BOTTOM |
| SD-S-P-NASC4-0607 | | | | |
| SD-S-P-NASC4-0708 | | | | |
| SD-S-P-NASC4-0809 | | | | |
| SD-S-P-NASC4-0910 | | | | |
| SD-S-P-NASC4-0910-PLUG | | | | not included[c] |
| NAS-C5 | | | | |
| SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| SD-S-P-NASC5-0102 | | | | |
| SD-S-P-NASC5-0203 | | | | |
| SD-S-P-NASC5-0304 | | | | BOTTOM |
| SD-S-P-NASC5-0405 | | | | |
| SD-S-P-NASC5-0506-PLUG | | | | not included[c] |
| NAS-C6 | | | | |
| SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| SD-S-P-NASC6-0102 | | | | |
| SD-S-P-NASC6-0203 | | | | BOTTOM |
| SD-S-P-NASC6-0304-PLUG | | | | not included[c] |
| NAS-C7 | | | | |
| SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| SD-S-P-NASC7-0102 | | | | |
| SD-S-P-NASC7-0203 | | | | |
| SD-S-P-NASC7-0304 | | | | |
| SD-S-P-NASC7-0405 | | | | BOTTOM |
| SD-S-P-NASC7-0506 | | | | |
| SD-S-P-NASC7-0607 | | | | |
| SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | |
| SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| SD-S-P-NASC8-0102 | | | | |
| SD-S-P-NASC8-0203 | | | | |
| SD-S-P-NASC8-0304 | | | | |
| SD-S-P-NASC8-0405 | | | | |
| SD-S-P-NASC8-0506 | | | | BOTTOM |
| SD-S-P-NASC8-0607 | | | | |
| SD-S-P-NASC8-0708 | | | | |
| SD-S-P-NASC8-0809 | | | | |
| SD-S-P-NASC8-0910 | | | | |
| SD-S-P-NASC8-0910-PLUG | | | | not included[c] |
| NAS-C9 | | | | |
| SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| SD-S-P-NASC9-0102 | | | | |
| SD-S-P-NASC9-0203 | | | | |
| SD-S-P-NASC9-0304 | | | | |
| SD-S-P-NASC9-0405 | | | | BOTTOM |
| SD-S-P-NASC9-0506 | | | | |
| SD-S-P-NASC9-0607 | | | | |
| NAS-C10 | | | | |
| SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| SD-S-P-NASC10-0102 | | | | |
| SD-S-P-NASC10-0203 | | | | |
| SD-S-P-NASC10-0304 | | | | |
| SD-S-P-NASC10-0405 | | | | BOTTOM |
| SD-S-P-NASC10-0506 | | | | |
| SD-S-P-NASC10-0607 | | | | |
| SD-S-P-NASC10-0708 | | | | |
| NAS-C11 | | | | |
| SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| SD-S-P-NASC11-0102 | | | | |
| SD-S-P-NASC11-0203 | | | | |
| SD-S-P-NASC11-0304 | | | | |
| SD-S-P-NASC11-0405 | | | | BOTTOM |
| SD-S-P-NASC11-0506 | | | | |
| SD-S-P-NASC11-0607 | | | | |
| SD-S-P-NASC11-0708 | | | | |
| SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | |
| SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| SD-S-P-NASC12-0102 | | | | |
| SD-S-P-NASC12-0203 | | | | |
| SD-S-P-NASC12-0304 | | | | |
| SD-S-P-NASC12-0405 | | | | BOTTOM |
| SD-S-P-NASC12-0506 | | | | |
| SD-S-P-NASC12-0607 | | | | |
| SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | |
| SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| SD-S-P-NASC13-0102 | | | | |
| SD-S-P-NASC13-0203 | | | | |
| SD-S-P-NASC13-0304 | | | | BOTTOM |
| SD-S-P-NASC13-0405 | | | | |
| SD-S-P-NASC13-0506 | | | | |
| SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | |
| SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| SD-S-P-NASC14-0102 | | | | |
| SD-S-P-NASC14-0203 | | | | BOTTOM |
| SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | |
| SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| SD-S-P-NASC15-0102 | | | | |
| SD-S-P-NASC15-0203 | | | | |
| SD-S-P-NASC15-0304 | | | | BOTTOM |
| SD-S-P-NASC15-0405 | | | | |
| SD-S-P-NASC15-0506 | | | | |

Notes:
0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on
a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.
b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.
A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)
c - sample not included due to low volume available and because it represents native material which will not be dredged



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| ~~13-04-1000-1~~ | ~~SD-S-P-NASC1-0001~~ | COMP-A | 4/11/2013 | 1335 | TOP |
| ~~13-04-1000-2~~ | ~~SD-S-P-NASC1-0102~~ | | | | |
| ~~13-04-1000-3~~ | ~~SD-S-P-NASC1-0203~~ | | | | |
| ~~13-04-1000-4~~ | ~~SD-S-P-NASC1-0304~~ | | | | |
| ~~13-04-1000-5~~ | ~~SD-S-P-NASC1-0405~~ | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| ~~13-04-1111-1~~ | ~~SD-S-P-NASC2-0001~~ | COMP-A | 4/12/2013 | 1021 | TOP |
| ~~13-04-1111-2~~ | ~~SD-S-P-NASC2-0102~~ | | | | |
| ~~13-04-1111-3~~ | ~~SD-S-P-NASC2-0203~~ | | | | |
| ~~13-04-1111-4~~ | ~~SD-S-P-NASC2-0304~~ | | | | |
| ~~13-04-1111-5~~ | ~~SD-S-P-NASC2-0405~~ | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| ~~13-04-1113-1~~ | ~~SD-S-P-NASC3-0001~~ | COMP-A | 4/12/2013 | 751 | TOP |
| ~~13-04-1113-2~~ | ~~SD-S-P-NASC3-0102~~ | | | | |
| ~~13-04-1113-3~~ | ~~SD-S-P-NASC3-0203~~ | | | | |
| ~~13-04-1113-4~~ | ~~SD-S-P-NASC3-0304~~ | | | | |
| ~~13-04-1113-5~~ | ~~SD-S-P-NASC3-0405~~ | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| ~~13-04-1002-1~~ | ~~SD-S-P-NASC4-0001~~ | COMP-A | 4/11/2013 | 930 | TOP |
| ~~13-04-1002-2~~ | ~~SD-S-P-NASC4-0102~~ | | | | |
| ~~13-04-1002-3~~ | ~~SD-S-P-NASC4-0203~~ | | | | |
| ~~13-04-1002-4~~ | ~~SD-S-P-NASC4-0304~~ | | | | |
| ~~13-04-1002-5~~ | ~~SD-S-P-NASC4-0405~~ | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| ~~13-04-1003-1~~ | ~~SD-S-P-NASC5-0001~~ | COMP-A | 4/11/2013 | 755 | TOP |
| ~~13-04-1003-2~~ | ~~SD-S-P-NASC5-0102~~ | | | | |
| ~~13-04-1003-3~~ | ~~SD-S-P-NASC5-0203~~ | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| ~~13-04-1001-1~~ | ~~SD-S-P-NASC6-0001~~ | COMP-B | 4/11/2013 | 1200 | TOP |
| ~~13-04-1001-2~~ | ~~SD-S-P-NASC6-0102~~ | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| ~~13-04-0902-1~~ | ~~SD-S-P-NASC7-0001~~ | COMP-B | 4/10/2013 | 1430 | TOP |
| ~~13-04-0902-2~~ | ~~SD-S-P-NASC7-0102~~ | | | | |
| ~~13-04-0902-3~~ | ~~SD-S-P-NASC7-0203~~ | | | | |
| ~~13-04-0902-4~~ | ~~SD-S-P-NASC7-0304~~ | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| ~~13-04-0903-1~~ | ~~SD-S-P-NASC8-0001~~ | COMP-B | 4/10/2013 | 830 | TOP |
| ~~13-04-0903-2~~ | ~~SD-S-P-NASC8-0102~~ | | | | |
| ~~13-04-0903-3~~ | ~~SD-S-P-NASC8-0203~~ | | | | |
| ~~13-04-0903-4~~ | ~~SD-S-P-NASC8-0304~~ | | | | |
| ~~13-04-0903-5~~ | ~~SD-S-P-NASC8-0405~~ | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| ~~13-04-0901-1~~ | ~~SD-S-P-NASC9-0001~~ | COMP-B | 4/10/2013 | 1315 | TOP |
| ~~13-04-0901-2~~ | ~~SD-S-P-NASC9-0102~~ | | | | |
| ~~13-04-0901-3~~ | ~~SD-S-P-NASC9-0203~~ | | | | |
| ~~13-04-0901-4~~ | ~~SD-S-P-NASC9-0304~~ | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607-PLUG~~ | | | | |
| NAS-C10 | | | | | |
| ~~13-04-0904-1~~ | ~~SD-S-P-NASC10-0001~~ | COMP-D | 4/10/2013 | 1010 | TOP |
| ~~13-04-0904-2~~ | ~~SD-S-P-NASC10-0102~~ | | | | |
| ~~13-04-0904-3~~ | ~~SD-S-P-NASC10-0203~~ | | | | |
| ~~13-04-0904-4~~ | ~~SD-S-P-NASC10-0304~~ | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-8 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| ~~13-04-0778-1~~ | ~~SD-S-P-NASC11-0001~~ | COMP-D | 4/9/2013 | 1525 | TOP |
| ~~13-04-0778-2~~ | ~~SD-S-P-NASC11-0102~~ | | | | |
| ~~13-04-0778-3~~ | ~~SD-S-P-NASC11-0203~~ | | | | |
| ~~13-04-0778-4~~ | ~~SD-S-P-NASC11-0304~~ | | | | |
| ~~13-04-0778-5~~ | ~~SD-S-P-NASC11-0405~~ | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| ~~13-04-0780-1~~ | ~~SD-S-P-NASC12-0001~~ | COMP-D | 4/9/2013 | 1410 | TOP |
| ~~13-04-0780-2~~ | ~~SD-S-P-NASC12-0102~~ | | | | |
| ~~13-04-0780-3~~ | ~~SD-S-P-NASC12-0203~~ | | | | |
| ~~13-04-0780-4~~ | ~~SD-S-P-NASC12-0304~~ | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| ~~13-04-0781-1~~ | ~~SD-S-P-NASC13-0001~~ | COMP-E | 4/9/2013 | 1055 | TOP |
| ~~13-04-0781-2~~ | ~~SD-S-P-NASC13-0102~~ | | | | |
| ~~13-04-0781-3~~ | ~~SD-S-P-NASC13-0203~~ | | | | |
| ~~13-04-0781-4~~ | ~~SD-S-P-NASC13-0304~~ | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| ~~13-04-0782-1~~ | ~~SD-S-P-NASC14-0001~~ | COMP-E | 4/9/2013 | 815 | TOP |
| ~~13-04-0782-2~~ | ~~SD-S-P-NASC14-0102~~ | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| ~~13-04-0779-1~~ | ~~SD-S-P-NASC15-0001~~ | COMP-E | 4/9/2013 | 940 | TOP |
| ~~13-04-0779-2~~ | ~~SD-S-P-NASC15-0102~~ | | | | |
| ~~13-04-0779-3~~ | ~~SD-S-P-NASC15-0203~~ | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-1002

# SAMPLE RECEIPT FORM

Cooler 1 of 2

CLIENT: AMEC

DATE: 04/12/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.9 °C - 0.2 °C (CF) = 1.7 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter Initial: [illegible]

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: [illegible]

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: TN

**SAMPLE CONDITION:**

| | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ Z

**Water:** ☐VOA ☐VOA**h** ☐VOA**$na_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**$na_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**$na_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** TN

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** [illegible]

**Preservative:** **h:** HCL **n:** $HNO_3$ **$na_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** [illegible]



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-1002

# SAMPLE RECEIPT FORM

Cooler 2 of 2

CLIENT: AMEC

DATE: 04/12/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.7 °C - 0.2 °C (CF) = 1.5 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: [illegible]

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: [illegible]

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: TN

| SAMPLE CONDITION: | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑Z

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** TN

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** [illegible]

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** [illegible]



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## Danielle Gonsman

**From:** Gobbi, Kimbrie [kimbrie.gobbi@amec.com]
**Sent:** Wednesday, July 17, 2013 10:05 AM
**To:** Danielle Gonsman
**Cc:** Travis Merritts; Cindy Fields; David Templeton; Michael Whelan; Snyder, Barry
**Subject:** South Trust (NASSCO) Shipyard Samples for STLC/TCLP
**Attachments:** STLC-TCLP_Compositing_Scheme.pdf

Hi Danielle!

As per our recent conversations, we are ready to begin STLC and TCLP analysis for lead only on the NASSCO sediment samples. To do this we will need you to perform the following tasks:

1) Re-composite samples highlighted red in the following table as per the last round of testing, see attached for information.
2) Run STLC analysis for lead on the samples highlighted in red.
3) Run TCLP analysis for lead on sample C4-Top and C6-Bottom only (yellow highlights).
4) Provide an official work order for these tasks.
5) Provide an estimate of the fastest possible TAT and all expedited surcharges for the compositing and analysis to **Anchor QEA** so they can confirm the costs.

| **LEAD CONCENTRATION IN SEDIMENT; UNITS (mg/kg)** | |
|---|---|
| Soluble Threshold Limit Concentration (STLC) Trigger Level (mg/kg) | 50 |
| Total Threshold Limit Concentration (TTLC) (Wet Weight) | 1000 |
| COMP-C1-TOP | **57.9** |
| COMP-C1-BOTTOM | 7.38 |
| COMP-C2-TOP | **57.8** |
| COMP-C2-BOTTOM | 10.3 |
| COMP-C3-TOP | **66.5** |
| COMP-C3-BOTTOM | 21.3 |
| COMP-C4-TOP | **132** |
| COMP-C4-BOTTOM | 6.34 |
| COMP-C5-TOP | **52.7** |
| COMP-C5-BOTTOM | 21.8 |
| COMP-C6-TOP | **94.2** |
| COMP-C6-BOTTOM | **141** |
| COMP-C7-TOP | **64.7** |
| COMP-C7-BOTTOM | 19.8 |
| COMP-C8-TOP | **77.4** |
| COMP-C8-BOTTOM | 21.1 |
| COMP-C9-TOP | **64** |
| COMP-C9-BOTTOM | 22.9 |
| COMP-C10-TOP | 23.9 |
| COMP-C10-BOTTOM | **69** |
| COMP-C11-TOP | 49.8 |
| COMP-C11-BOTTOM | 21 |
| COMP-C12-TOP | **61.3** |
| COMP-C12-BOTTOM | 6.06 |
| COMP-C13-TOP | 34.4 |
| COMP-C13-BOTTOM | 10.6 |



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| | |
|---|---|
| COMP-C14-TOP | 46 |
| COMP-C14-BOTTOM | 36.1 |
| COMP-C15-TOP | **52.8** |
| COMP-C15-BOTTOM | 39.7 |

Thank you!

**Kimbrie Gobbi, M. Sc.**
**Marine and Environmental Scientist**
**AMEC**
Environment & Infrastructure
9210 Sky Park Court, Suite 200, San Diego, CA 92123, USA
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*I speak for the trees! Please consider the environment before printing this email!*

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Supplemental Report 1

Additional requested analyses are reported as a stand-alone report.

# CALSCIENCE

## WORK ORDER NUMBER: 13-04-1003

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard Sediment Study

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 07/25/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

# Contents

Client Project Name: NASSCO South Shipyard Sediment Study
Work Order Number: 13-04-1003


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Calscience Environmental Laboratories, Inc.

# Work Order Narrative

Work Order: 13-04-1003



**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/12/13. They were assigned to Work Order 13-04-1003.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Calscience Environmental Laboratories, Inc.

# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC | Work Order: | 13-04-1003 |
| | 27201 Puerta Real, Suite 350 | Project Name: | NASSCO South Shipyard Sediment Study |
| | Mission Viejo, CA 92691-8306 | PO Number: | Work Order #3 |
| | | Date Received: | 04/12/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| COMP-C5-TOP | 13-04-1003-9 | 04/11/13 07:55 | 1 | Sediment |

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Calscience Environmental Laboratories, Inc.

# CASE NARRATIVE

## Calscience Work Order No.: 13-04-1003
## Project ID: NASSCO Shipyard Sediment Study

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

Eight sediment samples were received for this project on April 12, 2013. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 1.5°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in freezers pending chemistry testing.

On June 12, 2013 samples were composited into two samples as per client instructions.

COC discrepancies were noted in the Sample Anomaly Form.

***Tests Performed***

Sample COMP-C5-TOP was analyzed for the following analyses:

Title 22 STLC Lead by EPA 6010B.

***Data Summary***

Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

Lead was found in the blank at a level below the reporting limit. The sample data has been flagged with a “B” as appropriate.

Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the MDL, and where applicable, “J” flags were reported.

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Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test. All parameters were within established control limits.

Matrix Spikes

Matrix spikes and matrix spike duplicates were performed for each applicable analysis on project samples. All parameters were within the acceptable control limits unless otherwise noted.

Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1003 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| | | Units: | mg/L |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C5-TOP** | **13-04-1003-9-A** | **04/11/13 07:55** | **Sediment** | **ICP 7300** | **07/20/13** | **07/22/13 15:59** | **130722LA2** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | 0.479 | 0.100 | 0.0406 | 1 | B |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-05-006-6825** | **N/A** | **Aqueous** | **ICP 7300** | **07/20/13** | **07/22/13 15:50** | **130722LA2** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | 0.0437 | 0.100 | 0.0406 | 1 | J |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1003 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-1004-11** | **Sediment** | **ICP 7300** | **07/20/13** | **07/22/13 15:54** | **130722SA2** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 1.893 | 5.000 | 7.145 | 105 | 6.940 | 101 | 75-125 | 3 | 0-20 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1003 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **097-05-006-6825** | **Aqueous** | **ICP 7300** | **07/22/13 15:51** | **130722LA2** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Lead | 5.000 | 5.268 | 105 | 80-120 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order: 13-04-1003



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control. |
| 4 | The MS/MSD RPD was out of control due to suspected matrix interference. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean). |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/11/2013

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure
ADDRESS: 9210 Sky Park Ct. Ste 200
CITY: San Diego, California 92123
TEL: 858-300-4300 FAX: 858-300-4301 E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study
P.O. NO.: 1315100800
PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder
QUOTE NO.:
SAMPLER(S): (SIGNATURE)
LAB USE ONLY: 13-04-1003

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___/___/___

SPECIAL INSTRUCTIONS
Please HOLD samples. 1x 16 oz per sample
DO NOT FREEZE COMPOSITE SAMPLES. HOLD FOR GEOTECHNICAL.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

## REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | HOLD |
|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC05-0001 | | 4/11/2013 | 0755 | sed | 3 | | X |
| 2 | SD-S-P-NASC05-0102 | | 4/11/2013 | | sed | 3 | | X |
| 3 | SD-S-P-NASC05-0203 | | 4/11/2013 | | sed | 3 | | X |
| 4 | SD-S-P-NASC05-0304 | | 4/11/2013 | | sed | 3 | | X |
| 5 | SD-S-P-NASC05-0405 | | 4/11/2013 | | sed | 3 | | X |
| 6 | SD-S-P-NASC05-0506 Plug | | 4/11/2013 | | sed | 3 | | X |
| 7 | SD-S-P-NASC05-Comp | | 4/11/2013 | | sed | ~~3~~ 1 | | X |
| 8 | SD-S-P-NASC05-0304 Sub | | 4/11/2013 | | sed | ~~3~~ 1 | | X |
| ~~–~~ | ~~SD-S-P-NASC~~ | | ~~4/__/2013~~ | | ~~sed~~ | ~~3~~ | | ~~X~~ |
| ~~–~~ | ~~SD-S-P-NASC~~ | | ~~4/__/2013~~ | | ~~sed~~ | ~~3~~ | | ~~X~~ |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| [signature] Tyler Hudt | [signature] CCL | 04/12/13 | 1545 |
| [signature] | [signature] CCL | 04/12/13 | ~~1800~~ 1900 |
| | | | 4/12/13 |



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AMEC Environment & Infrastructure
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Sample List for Landfill Classification

| Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|
| NAS-C1 | | | | |
| SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| SD-S-P-NASC1-0102 | | | | |
| SD-S-P-NASC1-0203 | | | | |
| SD-S-P-NASC1-0304 | | | | |
| SD-S-P-NASC1-0405 | | | | |
| SD-S-P-NASC1-0506 | | | | BOTTOM |
| SD-S-P-NASC1-0607 | | | | |
| SD-S-P-NASC1-0708 | | | | |
| SD-S-P-NASC1-0809 | | | | |
| NAS-C2 | | | | |
| SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| SD-S-P-NASC2-0102 | | | | |
| SD-S-P-NASC2-0203 | | | | |
| SD-S-P-NASC2-0304 | | | | |
| SD-S-P-NASC2-0405 | | | | |
| SD-S-P-NASC2-0506 | | | | BOTTOM |
| SD-S-P-NASC2-0607 | | | | |
| SD-S-P-NASC2-0708 | | | | |
| SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | |
| SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| SD-S-P-NASC3-0102 | | | | |
| SD-S-P-NASC3-0203 | | | | |
| SD-S-P-NASC3-0304 | | | | |
| SD-S-P-NASC3-0405 | | | | |
| SD-S-P-NASC3-0506 | | | | BOTTOM |
| SD-S-P-NASC3-0607 | | | | |
| SD-S-P-NASC3-0708 | | | | |
| SD-S-P-NASC3-0809 | | | | |
| SD-S-P-NASC3-0910 | | | | |
| SD-S-P-NASC3-0910-PLUG | | | | not included[c] |
| NAS-C4 | | | | |
| SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| SD-S-P-NASC4-0102 | | | | |
| SD-S-P-NASC4-0203 | | | | |
| SD-S-P-NASC4-0304 | | | | |
| SD-S-P-NASC4-0405 | | | | |
| SD-S-P-NASC4-0506 | | | | BOTTOM |
| SD-S-P-NASC4-0607 | | | | |
| SD-S-P-NASC4-0708 | | | | |
| SD-S-P-NASC4-0809 | | | | |
| SD-S-P-NASC4-0910 | | | | |
| SD-S-P-NASC4-0910-PLUG | | | | not included[c] |
| NAS-C5 | | | | |
| SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| SD-S-P-NASC5-0102 | | | | |
| SD-S-P-NASC5-0203 | | | | |
| SD-S-P-NASC5-0304 | | | | BOTTOM |
| SD-S-P-NASC5-0405 | | | | |
| SD-S-P-NASC5-0506-PLUG | | | | not included[c] |
| NAS-C6 | | | | |
| SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| SD-S-P-NASC6-0102 | | | | |
| SD-S-P-NASC6-0203 | | | | BOTTOM |
| SD-S-P-NASC6-0304-PLUG | | | | not included[c] |
| NAS-C7 | | | | |
| SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| SD-S-P-NASC7-0102 | | | | |
| SD-S-P-NASC7-0203 | | | | |
| SD-S-P-NASC7-0304 | | | | |
| SD-S-P-NASC7-0405 | | | | BOTTOM |
| SD-S-P-NASC7-0506 | | | | |
| SD-S-P-NASC7-0607 | | | | |
| SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | |
| SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| SD-S-P-NASC8-0102 | | | | |
| SD-S-P-NASC8-0203 | | | | |
| SD-S-P-NASC8-0304 | | | | |
| SD-S-P-NASC8-0405 | | | | |
| SD-S-P-NASC8-0506 | | | | BOTTOM |
| SD-S-P-NASC8-0607 | | | | |
| SD-S-P-NASC8-0708 | | | | |
| SD-S-P-NASC8-0809 | | | | |
| SD-S-P-NASC8-0910 | | | | |
| SD-S-P-NASC8-0910-PLUG | | | | not included[c] |
| NAS-C9 | | | | |
| SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| SD-S-P-NASC9-0102 | | | | |
| SD-S-P-NASC9-0203 | | | | |
| SD-S-P-NASC9-0304 | | | | |
| SD-S-P-NASC9-0405 | | | | BOTTOM |
| SD-S-P-NASC9-0506 | | | | |
| SD-S-P-NASC9-0607 | | | | |
| NAS-C10 | | | | |
| SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| SD-S-P-NASC10-0102 | | | | |
| SD-S-P-NASC10-0203 | | | | |
| SD-S-P-NASC10-0304 | | | | BOTTOM |
| SD-S-P-NASC10-0405 | | | | |
| SD-S-P-NASC10-0506 | | | | |
| SD-S-P-NASC10-0607 | | | | |
| SD-S-P-NASC10-0708 | | | | |
| NAS-C11 | | | | |
| SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| SD-S-P-NASC11-0102 | | | | |
| SD-S-P-NASC11-0203 | | | | |
| SD-S-P-NASC11-0304 | | | | |
| SD-S-P-NASC11-0405 | | | | BOTTOM |
| SD-S-P-NASC11-0506 | | | | |
| SD-S-P-NASC11-0607 | | | | |
| SD-S-P-NASC11-0708 | | | | |
| SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | |
| SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| SD-S-P-NASC12-0102 | | | | |
| SD-S-P-NASC12-0203 | | | | |
| SD-S-P-NASC12-0304 | | | | |
| SD-S-P-NASC12-0405 | | | | BOTTOM |
| SD-S-P-NASC12-0506 | | | | |
| SD-S-P-NASC12-0607 | | | | |
| SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | |
| SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| SD-S-P-NASC13-0102 | | | | |
| SD-S-P-NASC13-0203 | | | | |
| SD-S-P-NASC13-0304 | | | | BOTTOM |
| SD-S-P-NASC13-0405 | | | | |
| SD-S-P-NASC13-0506 | | | | |
| SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | |
| SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| SD-S-P-NASC14-0102 | | | | |
| SD-S-P-NASC14-0203 | | | | BOTTOM |
| SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | |
| SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| SD-S-P-NASC15-0102 | | | | |
| SD-S-P-NASC15-0203 | | | | |
| SD-S-P-NASC15-0304 | | | | BOTTOM |
| SD-S-P-NASC15-0405 | | | | |
| SD-S-P-NASC15-0506 | | | | |

Notes:
0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on
a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.
b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.
A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)
c - sample not included due to low volume available and because it represents native material which will not be dredged



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Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| ~~13-04-1000-1~~ | ~~SD-S-P-NASC1-0001~~ | COMP-A | 4/11/2013 | 1335 | TOP |
| ~~13-04-1000-2~~ | ~~SD-S-P-NASC1-0102~~ | | | | |
| ~~13-04-1000-3~~ | ~~SD-S-P-NASC1-0203~~ | | | | |
| ~~13-04-1000-4~~ | ~~SD-S-P-NASC1-0304~~ | | | | |
| ~~13-04-1000-5~~ | ~~SD-S-P-NASC1-0405~~ | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| ~~13-04-1111-1~~ | ~~SD-S-P-NASC2-0001~~ | COMP-A | 4/12/2013 | 1021 | TOP |
| ~~13-04-1111-2~~ | ~~SD-S-P-NASC2-0102~~ | | | | |
| ~~13-04-1111-3~~ | ~~SD-S-P-NASC2-0203~~ | | | | |
| ~~13-04-1111-4~~ | ~~SD-S-P-NASC2-0304~~ | | | | |
| ~~13-04-1111-5~~ | ~~SD-S-P-NASC2-0405~~ | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| ~~13-04-1113-1~~ | ~~SD-S-P-NASC3-0001~~ | COMP-A | 4/12/2013 | 751 | TOP |
| ~~13-04-1113-2~~ | ~~SD-S-P-NASC3-0102~~ | | | | |
| ~~13-04-1113-3~~ | ~~SD-S-P-NASC3-0203~~ | | | | |
| ~~13-04-1113-4~~ | ~~SD-S-P-NASC3-0304~~ | | | | |
| ~~13-04-1113-5~~ | ~~SD-S-P-NASC3-0405~~ | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| ~~13-04-1002-1~~ | ~~SD-S-P-NASC4-0001~~ | COMP-A | 4/11/2013 | 930 | TOP |
| ~~13-04-1002-2~~ | ~~SD-S-P-NASC4-0102~~ | | | | |
| ~~13-04-1002-3~~ | ~~SD-S-P-NASC4-0203~~ | | | | |
| ~~13-04-1002-4~~ | ~~SD-S-P-NASC4-0304~~ | | | | |
| ~~13-04-1002-5~~ | ~~SD-S-P-NASC4-0405~~ | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| ~~13-04-1003-1~~ | ~~SD-S-P-NASC5-0001~~ | COMP-A | 4/11/2013 | 755 | TOP |
| ~~13-04-1003-2~~ | ~~SD-S-P-NASC5-0102~~ | | | | |
| ~~13-04-1003-3~~ | ~~SD-S-P-NASC5-0203~~ | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| ~~13-04-1001-1~~ | ~~SD-S-P-NASC6-0001~~ | COMP-B | 4/11/2013 | 1200 | TOP |
| ~~13-04-1001-2~~ | ~~SD-S-P-NASC6-0102~~ | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| ~~13-04-0902-1~~ | ~~SD-S-P-NASC7-0001~~ | COMP-B | 4/10/2013 | 1430 | TOP |
| ~~13-04-0902-2~~ | ~~SD-S-P-NASC7-0102~~ | | | | |
| ~~13-04-0902-3~~ | ~~SD-S-P-NASC7-0203~~ | | | | |
| ~~13-04-0902-4~~ | ~~SD-S-P-NASC7-0304~~ | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| ~~13-04-0903-1~~ | ~~SD-S-P-NASC8-0001~~ | COMP-B | 4/10/2013 | 830 | TOP |
| ~~13-04-0903-2~~ | ~~SD-S-P-NASC8-0102~~ | | | | |
| ~~13-04-0903-3~~ | ~~SD-S-P-NASC8-0203~~ | | | | |
| ~~13-04-0903-4~~ | ~~SD-S-P-NASC8-0304~~ | | | | |
| ~~13-04-0903-5~~ | ~~SD-S-P-NASC8-0405~~ | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| ~~13-04-0901-1~~ | ~~SD-S-P-NASC9-0001~~ | COMP-B | 4/10/2013 | 1315 | TOP |
| ~~13-04-0901-2~~ | ~~SD-S-P-NASC9-0102~~ | | | | |
| ~~13-04-0901-3~~ | ~~SD-S-P-NASC9-0203~~ | | | | |
| ~~13-04-0901-4~~ | ~~SD-S-P-NASC9-0304~~ | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607-PLUG~~ | | | | |
| NAS-C10 | | | | | |
| ~~13-04-0904-1~~ | ~~SD-S-P-NASC10-0001~~ | COMP-D | 4/10/2013 | 1010 | TOP |
| ~~13-04-0904-2~~ | ~~SD-S-P-NASC10-0102~~ | | | | |
| ~~13-04-0904-3~~ | ~~SD-S-P-NASC10-0203~~ | | | | |
| ~~13-04-0904-4~~ | ~~SD-S-P-NASC10-0304~~ | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-8 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| ~~13-04-0778-1~~ | ~~SD-S-P-NASC11-0001~~ | COMP-D | 4/9/2013 | 1525 | TOP |
| ~~13-04-0778-2~~ | ~~SD-S-P-NASC11-0102~~ | | | | |
| ~~13-04-0778-3~~ | ~~SD-S-P-NASC11-0203~~ | | | | |
| ~~13-04-0778-4~~ | ~~SD-S-P-NASC11-0304~~ | | | | |
| ~~13-04-0778-5~~ | ~~SD-S-P-NASC11-0405~~ | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| ~~13-04-0780-1~~ | ~~SD-S-P-NASC12-0001~~ | COMP-D | 4/9/2013 | 1410 | TOP |
| ~~13-04-0780-2~~ | ~~SD-S-P-NASC12-0102~~ | | | | |
| ~~13-04-0780-3~~ | ~~SD-S-P-NASC12-0203~~ | | | | |
| ~~13-04-0780-4~~ | ~~SD-S-P-NASC12-0304~~ | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| ~~13-04-0781-1~~ | ~~SD-S-P-NASC13-0001~~ | COMP-E | 4/9/2013 | 1055 | TOP |
| ~~13-04-0781-2~~ | ~~SD-S-P-NASC13-0102~~ | | | | |
| ~~13-04-0781-3~~ | ~~SD-S-P-NASC13-0203~~ | | | | |
| ~~13-04-0781-4~~ | ~~SD-S-P-NASC13-0304~~ | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| ~~13-04-0782-1~~ | ~~SD-S-P-NASC14-0001~~ | COMP-E | 4/9/2013 | 815 | TOP |
| ~~13-04-0782-2~~ | ~~SD-S-P-NASC14-0102~~ | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| ~~13-04-0779-1~~ | ~~SD-S-P-NASC15-0001~~ | COMP-E | 4/9/2013 | 940 | TOP |
| ~~13-04-0779-2~~ | ~~SD-S-P-NASC15-0102~~ | | | | |
| ~~13-04-0779-3~~ | ~~SD-S-P-NASC15-0203~~ | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-1003

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/12/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.7 °C - 0.2 °C (CF) = 1.5 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: [illegible]

**CUSTODY SEALS INTACT:**

| | | | | | |
|---|---|---|---|---|---|
| ☐ Cooler | ☐_____ | ☐ No (Not Intact) | ☑ Not Present | ☐ N/A | Initial: [illegible] |
| ☐ Sample | ☐_____ | ☐ No (Not Intact) | ☑ Not Present | | Initial: TN |

**SAMPLE CONDITION:**

| | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ Z

**Water:** ☐VOA ☐VOA**h** ☐VOA**$na_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**$na_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**$na_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** TN

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WIC

**Preservative:** **h:** HCL **n:** $HNO_3$ **$na_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WIC



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## Danielle Gonsman

**From:** Gobbi, Kimbrie [kimbrie.gobbi@amec.com]
**Sent:** Wednesday, July 17, 2013 10:05 AM
**To:** Danielle Gonsman
**Cc:** Travis Merritts; Cindy Fields; David Templeton; Michael Whelan; Snyder, Barry
**Subject:** South Trust (NASSCO) Shipyard Samples for STLC/TCLP
**Attachments:** STLC-TCLP_Compositing_Scheme.pdf

Hi Danielle!

As per our recent conversations, we are ready to begin STLC and TCLP analysis for lead only on the NASSCO sediment samples. To do this we will need you to perform the following tasks:

1) Re-composite samples highlighted red in the following table as per the last round of testing, see attached for information.
2) Run STLC analysis for lead on the samples highlighted in red.
3) Run TCLP analysis for lead on sample C4-Top and C6-Bottom only (yellow highlights).
4) Provide an official work order for these tasks.
5) Provide an estimate of the fastest possible TAT and all expedited surcharges for the compositing and analysis to **Anchor QEA** so they can confirm the costs.

| **LEAD CONCENTRATION IN SEDIMENT; UNITS (mg/kg)** | |
|---|---|
| Soluble Threshold Limit Concentration (STLC) Trigger Level (mg/kg) | 50 |
| Total Threshold Limit Concentration (TTLC) (Wet Weight) | 1000 |
| COMP-C1-TOP | **57.9** |
| COMP-C1-BOTTOM | 7.38 |
| COMP-C2-TOP | **57.8** |
| COMP-C2-BOTTOM | 10.3 |
| COMP-C3-TOP | **66.5** |
| COMP-C3-BOTTOM | 21.3 |
| COMP-C4-TOP | **132** |
| COMP-C4-BOTTOM | 6.34 |
| COMP-C5-TOP | **52.7** |
| COMP-C5-BOTTOM | 21.8 |
| COMP-C6-TOP | **94.2** |
| COMP-C6-BOTTOM | **141** |
| COMP-C7-TOP | **64.7** |
| COMP-C7-BOTTOM | 19.8 |
| COMP-C8-TOP | **77.4** |
| COMP-C8-BOTTOM | 21.1 |
| COMP-C9-TOP | **64** |
| COMP-C9-BOTTOM | 22.9 |
| COMP-C10-TOP | 23.9 |
| COMP-C10-BOTTOM | **69** |
| COMP-C11-TOP | 49.8 |
| COMP-C11-BOTTOM | 21 |
| COMP-C12-TOP | **61.3** |
| COMP-C12-BOTTOM | 6.06 |
| COMP-C13-TOP | 34.4 |
| COMP-C13-BOTTOM | 10.6 |



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| | |
|---|---|
| COMP-C14-TOP | 46 |
| COMP-C14-BOTTOM | 36.1 |
| COMP-C15-TOP | **52.8** |
| COMP-C15-BOTTOM | 39.7 |

Thank you!

**Kimbrie Gobbi, M. Sc.**
**Marine and Environmental Scientist**
**AMEC**
Environment & Infrastructure
9210 Sky Park Court, Suite 200, San Diego, CA 92123, USA
Tel +1 (858) 300 4300, Fax +1 (858) 300 4301
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kimbrie.gobbi@amec.com
amec.com

*I speak for the trees! Please consider the environment before printing this email!*

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Supplemental Report 1

Additional requested analyses are reported as a stand-alone report.

# CALSCIENCE

## WORK ORDER NUMBER: 13-04-1001

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard Sediment Study

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 07/25/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

# Contents

Client Project Name: NASSCO South Shipyard Sediment Study
Work Order Number: 13-04-1001


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Calscience Environmental Laboratories, Inc.

# Work Order Narrative

Work Order: 13-04-1001



**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/12/13. They were assigned to Work Order 13-04-1001.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Calscience Environmental Laboratories, Inc.

# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC<br>27201 Puerta Real, Suite 350<br>Mission Viejo, CA 92691-8306 | Work Order: | 13-04-1001 |
| | | Project Name: | NASSCO South Shipyard Sediment Study |
| | | PO Number: | Work Order #3 |
| | | Date Received: | 04/12/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| COMP-C6-TOP | 13-04-1001-7 | 04/11/13 12:00 | 1 | Sediment |
| COMP-C6-BOTTOM | 13-04-1001-8 | 04/11/13 12:00 | 1 | Sediment |

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Calscience Environmental Laboratories, Inc.

# CASE NARRATIVE

## Calscience Work Order No.: 13-04-1001
## Project ID: NASSCO Shipyard Sediment Study

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

Six sediment samples were received for this project on April 12, 2013. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 1.6°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in freezers pending chemistry testing.

On June 12, 2013 samples were composited into two samples as per client instructions.

COC discrepancies were noted in the Sample Anomaly Form.

***Tests Performed***

Sample COMP-C6-TOP was analyzed for the following analyses:

Title 22 STLC Lead by EPA 6010B

Sample COMP-C6-BOTTOM was analyzed for the following analyses:

Title 22 STLC Lead by EPA 6010B
TCLP Lead by EPA 1311/6010B

***Data Summary***

Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

Lead was found in the STLC blank at a level below the reporting limit. The sample data has been flagged with a “B” as appropriate.

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Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the MDL, and where applicable, "J" flags were reported.

Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test. All parameters were within established control limits.

Matrix Spikes

Matrix spikes and matrix spike duplicates were performed for each applicable analysis on project samples. All parameters were within the acceptable control limits unless otherwise noted.

Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| | | Units: | mg/L |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C6-TOP** | **13-04-1001-7-A** | **04/11/13 12:00** | **Sediment** | **ICP 7300** | **07/20/13** | **07/22/13 16:00** | **130722LA2** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | 4.32 | 0.100 | 0.0406 | 1 | B |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **COMP-C6-BOTTOM** | **13-04-1001-8-A** | **04/11/13 12:00** | **Sediment** | **ICP 7300** | **07/20/13** | **07/22/13 16:05** | **130722LA2** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | 4.91 | 0.100 | 0.0406 | 1 | B |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-05-006-6825** | **N/A** | **Aqueous** | **ICP 7300** | **07/20/13** | **07/22/13 15:50** | **130722LA2** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | 0.0437 | 0.100 | 0.0406 | 1 | J |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 1311 |
| | | Method: | EPA 6010B |
| | | Units: | mg/L |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C6-BOTTOM** | **13-04-1001-8-A** | **04/11/13 12:00** | **Sediment** | **ICP 7300** | **07/19/13** | **07/22/13 12:57** | **130720LA1** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | 0.321 | 0.100 | 0.0406 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-14-021-910** | **N/A** | **Aqueous** | **ICP 7300** | **07/19/13** | **07/20/13 16:21** | **130720LA1** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | ND | 0.100 | 0.0406 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-1004-11** | **Sediment** | **ICP 7300** | **07/20/13** | **07/22/13 15:54** | **130722SA2** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 1.893 | 5.000 | 7.145 | 105 | 6.940 | 101 | 75-125 | 3 | 0-20 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | EPA 1311 |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 2 of 2 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-07-1280-1** | **Soil** | **ICP 7300** | **07/19/13** | **07/20/13 16:27** | **130720SA1** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead | ND | 5.000 | 5.340 | 107 | 5.242 | 105 | 84-120 | 2 | 0-7 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 2 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **097-05-006-6825** | **Aqueous** | **ICP 7300** | **07/22/13 15:51** | **130722LA2** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Lead | 5.000 | 5.268 | 105 | 80-120 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | |
|---|---|---|
| ANCHOR QEA, LLC | Date Received: | 04/12/13 |
| 27201 Puerta Real, Suite 350 | Work Order: | 13-04-1001 |
| Mission Viejo, CA 92691-8306 | Preparation: | EPA 1311 |
| | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | Page 2 of 2 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **099-14-021-910** | **Aqueous** | **ICP 7300** | **07/20/13 16:23** | **130720LA1** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Lead | 5.000 | 5.370 | 107 | 80-120 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order: 13-04-1001



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control. |
| 4 | The MS/MSD RPD was out of control due to suspected matrix interference. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean). |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/11/2013

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure
ADDRESS: 9210 Sky Park Ct. Ste 200
CITY: San Diego, California 92123
TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study
PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder
SAMPLER(S): (SIGNATURE)
P.O. NO.: 1315100800
QUOTE NO.:
LAB USE ONLY: 13-04-1001

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___/___/___

SPECIAL INSTRUCTIONS:
Please HOLD samples. 1x 16 oz per sample
DO NOT FREEZE COMPOSITE SAMPLES. HOLD FOR GEOTECHNICAL.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC06-0001 | | 4/11/2013 | 1200 | sed | 3 | | | | X |
| 2 | SD-S-P-NASC06-0102 | | 4/11/2013 | | sed | 3 | | | | X |
| 3 | SD-S-P-NASC06-0203 | | 4/11/2013 | | sed | 3 | | | | X |
| 4 | SD-S-P-NASC06-0304 Plug | | 4/11/2013 | | sed | 3 | | | | X |
| 5 | SD-S-P-NASC06-Comp | | 4/11/2013 | | sed | 3 | | | | X |
| 6 | SD-S-P-NASC06-0225 | | 4/11/2013 | | sed | 3 | | | | X |
| — | ~~SD-S-P-NASC~~ | | ~~4/__/2013~~ | | ~~sed~~ | ~~3~~ | | | | ~~X~~ |
| — | ~~SD-S-P-NASC~~ | | ~~4/__/2013~~ | | ~~sed~~ | ~~3~~ | | | | ~~X~~ |
| — | ~~SD-S-P-NASC~~ | | ~~4/__/2013~~ | | ~~sed~~ | ~~3~~ | | | | ~~X~~ |
| — | ~~SD-S-P-NASC~~ | | ~~4/__/2013~~ | | ~~sed~~ | ~~3~~ | | | | ~~X~~ |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | | 04/12/13 | 1545 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| | | 04/12/13 | 1800 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |



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| Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|
| NAS-C1 | | | | |
| SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| SD-S-P-NASC1-0102 | | | | |
| SD-S-P-NASC1-0203 | | | | |
| SD-S-P-NASC1-0304 | | | | |
| SD-S-P-NASC1-0405 | | | | |
| SD-S-P-NASC1-0506 | | | | BOTTOM |
| SD-S-P-NASC1-0607 | | | | |
| SD-S-P-NASC1-0708 | | | | |
| SD-S-P-NASC1-0809 | | | | |
| NAS-C2 | | | | |
| SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| SD-S-P-NASC2-0102 | | | | |
| SD-S-P-NASC2-0203 | | | | |
| SD-S-P-NASC2-0304 | | | | |
| SD-S-P-NASC2-0405 | | | | |
| SD-S-P-NASC2-0506 | | | | BOTTOM |
| SD-S-P-NASC2-0607 | | | | |
| SD-S-P-NASC2-0708 | | | | |
| SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | |
| SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| SD-S-P-NASC3-0102 | | | | |
| SD-S-P-NASC3-0203 | | | | |
| SD-S-P-NASC3-0304 | | | | |
| SD-S-P-NASC3-0405 | | | | |
| SD-S-P-NASC3-0506 | | | | BOTTOM |
| SD-S-P-NASC3-0607 | | | | |
| SD-S-P-NASC3-0708 | | | | |
| SD-S-P-NASC3-0809 | | | | |
| SD-S-P-NASC3-0910 | | | | |
| SD-S-P-NASC3-0910-PLUG | | | | not included[c] |
| NAS-C4 | | | | |
| SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| SD-S-P-NASC4-0102 | | | | |
| SD-S-P-NASC4-0203 | | | | |
| SD-S-P-NASC4-0304 | | | | |
| SD-S-P-NASC4-0405 | | | | |
| SD-S-P-NASC4-0506 | | | | BOTTOM |
| SD-S-P-NASC4-0607 | | | | |
| SD-S-P-NASC4-0708 | | | | |
| SD-S-P-NASC4-0809 | | | | |
| SD-S-P-NASC4-0910 | | | | |
| SD-S-P-NASC4-0910-PLUG | | | | not included[c] |
| NAS-C5 | | | | |
| SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| SD-S-P-NASC5-0102 | | | | |
| SD-S-P-NASC5-0203 | | | | |
| SD-S-P-NASC5-0304 | | | | BOTTOM |
| SD-S-P-NASC5-0405 | | | | |
| SD-S-P-NASC5-0506-PLUG | | | | not included[c] |
| NAS-C6 | | | | |
| SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| SD-S-P-NASC6-0102 | | | | |
| SD-S-P-NASC6-0203 | | | | BOTTOM |
| SD-S-P-NASC6-0304-PLUG | | | | not included[c] |
| NAS-C7 | | | | |
| SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| SD-S-P-NASC7-0102 | | | | |
| SD-S-P-NASC7-0203 | | | | |
| SD-S-P-NASC7-0304 | | | | |
| SD-S-P-NASC7-0405 | | | | BOTTOM |
| SD-S-P-NASC7-0506 | | | | |
| SD-S-P-NASC7-0607 | | | | |
| SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | |
| SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| SD-S-P-NASC8-0102 | | | | |
| SD-S-P-NASC8-0203 | | | | |
| SD-S-P-NASC8-0304 | | | | |
| SD-S-P-NASC8-0405 | | | | |
| SD-S-P-NASC8-0506 | | | | BOTTOM |
| SD-S-P-NASC8-0607 | | | | |
| SD-S-P-NASC8-0708 | | | | |
| SD-S-P-NASC8-0809 | | | | |
| SD-S-P-NASC8-0910 | | | | |
| SD-S-P-NASC8-0910-PLUG | | | | not included[c] |
| NAS-C9 | | | | |
| SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| SD-S-P-NASC9-0102 | | | | |
| SD-S-P-NASC9-0203 | | | | |
| SD-S-P-NASC9-0304 | | | | |
| SD-S-P-NASC9-0405 | | | | BOTTOM |
| SD-S-P-NASC9-0506 | | | | |
| SD-S-P-NASC9-0607 | | | | |
| NAS-C10 | | | | |
| SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| SD-S-P-NASC10-0102 | | | | |
| SD-S-P-NASC10-0203 | | | | |
| SD-S-P-NASC10-0304 | | | | |
| SD-S-P-NASC10-0405 | | | | BOTTOM |
| SD-S-P-NASC10-0506 | | | | |
| SD-S-P-NASC10-0607 | | | | |
| SD-S-P-NASC10-0708 | | | | |
| NAS-C11 | | | | |
| SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| SD-S-P-NASC11-0102 | | | | |
| SD-S-P-NASC11-0203 | | | | |
| SD-S-P-NASC11-0304 | | | | |
| SD-S-P-NASC11-0405 | | | | BOTTOM |
| SD-S-P-NASC11-0506 | | | | |
| SD-S-P-NASC11-0607 | | | | |
| SD-S-P-NASC11-0708 | | | | |
| SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | |
| SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| SD-S-P-NASC12-0102 | | | | |
| SD-S-P-NASC12-0203 | | | | |
| SD-S-P-NASC12-0304 | | | | |
| SD-S-P-NASC12-0405 | | | | BOTTOM |
| SD-S-P-NASC12-0506 | | | | |
| SD-S-P-NASC12-0607 | | | | |
| SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | |
| SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| SD-S-P-NASC13-0102 | | | | |
| SD-S-P-NASC13-0203 | | | | |
| SD-S-P-NASC13-0304 | | | | BOTTOM |
| SD-S-P-NASC13-0405 | | | | |
| SD-S-P-NASC13-0506 | | | | |
| SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | |
| SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| SD-S-P-NASC14-0102 | | | | |
| SD-S-P-NASC14-0203 | | | | BOTTOM |
| SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | |
| SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| SD-S-P-NASC15-0102 | | | | |
| SD-S-P-NASC15-0203 | | | | |
| SD-S-P-NASC15-0304 | | | | BOTTOM |
| SD-S-P-NASC15-0405 | | | | |
| SD-S-P-NASC15-0506 | | | | |

Notes:
0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on
a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.
b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.
A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)
c - sample not included due to low volume available and because it represents native material which will not be dredged



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| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| ~~13-04-1000-1~~ | ~~SD-S-P-NASC1-0001~~ | COMP-A | 4/11/2013 | 1335 | TOP |
| ~~13-04-1000-2~~ | ~~SD-S-P-NASC1-0102~~ | | | | |
| ~~13-04-1000-3~~ | ~~SD-S-P-NASC1-0203~~ | | | | |
| ~~13-04-1000-4~~ | ~~SD-S-P-NASC1-0304~~ | | | | |
| ~~13-04-1000-5~~ | ~~SD-S-P-NASC1-0405~~ | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| ~~13-04-1111-1~~ | ~~SD-S-P-NASC2-0001~~ | COMP-A | 4/12/2013 | 1021 | TOP |
| ~~13-04-1111-2~~ | ~~SD-S-P-NASC2-0102~~ | | | | |
| ~~13-04-1111-3~~ | ~~SD-S-P-NASC2-0203~~ | | | | |
| ~~13-04-1111-4~~ | ~~SD-S-P-NASC2-0304~~ | | | | |
| ~~13-04-1111-5~~ | ~~SD-S-P-NASC2-0405~~ | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| ~~13-04-1113-1~~ | ~~SD-S-P-NASC3-0001~~ | COMP-A | 4/12/2013 | 751 | TOP |
| ~~13-04-1113-2~~ | ~~SD-S-P-NASC3-0102~~ | | | | |
| ~~13-04-1113-3~~ | ~~SD-S-P-NASC3-0203~~ | | | | |
| ~~13-04-1113-4~~ | ~~SD-S-P-NASC3-0304~~ | | | | |
| ~~13-04-1113-5~~ | ~~SD-S-P-NASC3-0405~~ | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| ~~13-04-1002-1~~ | ~~SD-S-P-NASC4-0001~~ | COMP-A | 4/11/2013 | 930 | TOP |
| ~~13-04-1002-2~~ | ~~SD-S-P-NASC4-0102~~ | | | | |
| ~~13-04-1002-3~~ | ~~SD-S-P-NASC4-0203~~ | | | | |
| ~~13-04-1002-4~~ | ~~SD-S-P-NASC4-0304~~ | | | | |
| ~~13-04-1002-5~~ | ~~SD-S-P-NASC4-0405~~ | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| ~~13-04-1003-1~~ | ~~SD-S-P-NASC5-0001~~ | COMP-A | 4/11/2013 | 755 | TOP |
| ~~13-04-1003-2~~ | ~~SD-S-P-NASC5-0102~~ | | | | |
| ~~13-04-1003-3~~ | ~~SD-S-P-NASC5-0203~~ | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| ~~13-04-1001-1~~ | ~~SD-S-P-NASC6-0001~~ | COMP-B | 4/11/2013 | 1200 | TOP |
| ~~13-04-1001-2~~ | ~~SD-S-P-NASC6-0102~~ | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| ~~13-04-0902-1~~ | ~~SD-S-P-NASC7-0001~~ | COMP-B | 4/10/2013 | 1430 | TOP |
| ~~13-04-0902-2~~ | ~~SD-S-P-NASC7-0102~~ | | | | |
| ~~13-04-0902-3~~ | ~~SD-S-P-NASC7-0203~~ | | | | |
| ~~13-04-0902-4~~ | ~~SD-S-P-NASC7-0304~~ | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| ~~13-04-0903-1~~ | ~~SD-S-P-NASC8-0001~~ | COMP-B | 4/10/2013 | 830 | TOP |
| ~~13-04-0903-2~~ | ~~SD-S-P-NASC8-0102~~ | | | | |
| ~~13-04-0903-3~~ | ~~SD-S-P-NASC8-0203~~ | | | | |
| ~~13-04-0903-4~~ | ~~SD-S-P-NASC8-0304~~ | | | | |
| ~~13-04-0903-5~~ | ~~SD-S-P-NASC8-0405~~ | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| ~~13-04-0901-1~~ | ~~SD-S-P-NASC9-0001~~ | COMP-B | 4/10/2013 | 1315 | TOP |
| ~~13-04-0901-2~~ | ~~SD-S-P-NASC9-0102~~ | | | | |
| ~~13-04-0901-3~~ | ~~SD-S-P-NASC9-0203~~ | | | | |
| ~~13-04-0901-4~~ | ~~SD-S-P-NASC9-0304~~ | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607-PLUG~~ | | | | |
| NAS-C10 | | | | | |
| ~~13-04-0904-1~~ | ~~SD-S-P-NASC10-0001~~ | COMP-D | 4/10/2013 | 1010 | TOP |
| ~~13-04-0904-2~~ | ~~SD-S-P-NASC10-0102~~ | | | | |
| ~~13-04-0904-3~~ | ~~SD-S-P-NASC10-0203~~ | | | | |
| ~~13-04-0904-4~~ | ~~SD-S-P-NASC10-0304~~ | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-8 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| ~~13-04-0778-1~~ | ~~SD-S-P-NASC11-0001~~ | COMP-D | 4/9/2013 | 1525 | TOP |
| ~~13-04-0778-2~~ | ~~SD-S-P-NASC11-0102~~ | | | | |
| ~~13-04-0778-3~~ | ~~SD-S-P-NASC11-0203~~ | | | | |
| ~~13-04-0778-4~~ | ~~SD-S-P-NASC11-0304~~ | | | | |
| ~~13-04-0778-5~~ | ~~SD-S-P-NASC11-0405~~ | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| ~~13-04-0780-1~~ | ~~SD-S-P-NASC12-0001~~ | COMP-D | 4/9/2013 | 1410 | TOP |
| ~~13-04-0780-2~~ | ~~SD-S-P-NASC12-0102~~ | | | | |
| ~~13-04-0780-3~~ | ~~SD-S-P-NASC12-0203~~ | | | | |
| ~~13-04-0780-4~~ | ~~SD-S-P-NASC12-0304~~ | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| ~~13-04-0781-1~~ | ~~SD-S-P-NASC13-0001~~ | COMP-E | 4/9/2013 | 1055 | TOP |
| ~~13-04-0781-2~~ | ~~SD-S-P-NASC13-0102~~ | | | | |
| ~~13-04-0781-3~~ | ~~SD-S-P-NASC13-0203~~ | | | | |
| ~~13-04-0781-4~~ | ~~SD-S-P-NASC13-0304~~ | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| ~~13-04-0782-1~~ | ~~SD-S-P-NASC14-0001~~ | COMP-E | 4/9/2013 | 815 | TOP |
| ~~13-04-0782-2~~ | ~~SD-S-P-NASC14-0102~~ | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| ~~13-04-0779-1~~ | ~~SD-S-P-NASC15-0001~~ | COMP-E | 4/9/2013 | 940 | TOP |
| ~~13-04-0779-2~~ | ~~SD-S-P-NASC15-0102~~ | | | | |
| ~~13-04-0779-3~~ | ~~SD-S-P-NASC15-0203~~ | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-1001

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/12/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.8 °C - 0.2 °C (CF) = 1.6 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: BD

**CUSTODY SEALS INTACT:**

| | | | | | |
|---|---|---|---|---|---|
| ☐ Cooler | ☐_____ | ☐ No (Not Intact) | ☑ Not Present | ☐ N/A | Initial: BD |
| ☐ Sample | ☐_____ | ☐ No (Not Intact) | ☑ Not Present | | Initial: TN |

**SAMPLE CONDITION:**

| | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ Z

**Water:** ☐VOA ☐VOA**h** ☐VOA**$na_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**$na_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**$na_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** TN

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WL

**Preservative:** **h:** HCL **n:** $HNO_3$ **$na_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WL



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## Danielle Gonsman

**From:** Gobbi, Kimbrie [kimbrie.gobbi@amec.com]
**Sent:** Wednesday, July 17, 2013 10:05 AM
**To:** Danielle Gonsman
**Cc:** Travis Merritts; Cindy Fields; David Templeton; Michael Whelan; Snyder, Barry
**Subject:** South Trust (NASSCO) Shipyard Samples for STLC/TCLP
**Attachments:** STLC-TCLP_Compositing_Scheme.pdf

Hi Danielle!

As per our recent conversations, we are ready to begin STLC and TCLP analysis for lead only on the NASSCO sediment samples. To do this we will need you to perform the following tasks:

1) Re-composite samples highlighted red in the following table as per the last round of testing, see attached for information.
2) Run STLC analysis for lead on the samples highlighted in red.
3) Run TCLP analysis for lead on sample C4-Top and C6-Bottom only (yellow highlights).
4) Provide an official work order for these tasks.
5) Provide an estimate of the fastest possible TAT and all expedited surcharges for the compositing and analysis to **Anchor QEA** so they can confirm the costs.

| **LEAD CONCENTRATION IN SEDIMENT; UNITS (mg/kg)** | |
|---|---|
| Soluble Threshold Limit Concentration (STLC) Trigger Level (mg/kg) | 50 |
| Total Threshold Limit Concentration (TTLC) (Wet Weight) | 1000 |
| COMP-C1-TOP | **57.9** |
| COMP-C1-BOTTOM | 7.38 |
| COMP-C2-TOP | **57.8** |
| COMP-C2-BOTTOM | 10.3 |
| COMP-C3-TOP | **66.5** |
| COMP-C3-BOTTOM | 21.3 |
| COMP-C4-TOP | **132** |
| COMP-C4-BOTTOM | 6.34 |
| COMP-C5-TOP | **52.7** |
| COMP-C5-BOTTOM | 21.8 |
| COMP-C6-TOP | **94.2** |
| COMP-C6-BOTTOM | **141** |
| COMP-C7-TOP | **64.7** |
| COMP-C7-BOTTOM | 19.8 |
| COMP-C8-TOP | **77.4** |
| COMP-C8-BOTTOM | 21.1 |
| COMP-C9-TOP | **64** |
| COMP-C9-BOTTOM | 22.9 |
| COMP-C10-TOP | 23.9 |
| COMP-C10-BOTTOM | **69** |
| COMP-C11-TOP | 49.8 |
| COMP-C11-BOTTOM | 21 |
| COMP-C12-TOP | **61.3** |
| COMP-C12-BOTTOM | 6.06 |
| COMP-C13-TOP | 34.4 |
| COMP-C13-BOTTOM | 10.6 |



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| | |
|---|---|
| COMP-C14-TOP | 46 |
| COMP-C14-BOTTOM | 36.1 |
| COMP-C15-TOP | **52.8** |
| COMP-C15-BOTTOM | 39.7 |

Thank you!

**Kimbrie Gobbi, M. Sc.**
**Marine and Environmental Scientist**
**AMEC**
Environment & Infrastructure
9210 Sky Park Court, Suite 200, San Diego, CA 92123, USA
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*I speak for the trees! Please consider the environment before printing this email!*

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Supplemental Report 1

Additional requested analyses are reported as a stand-alone report.

# CALSCIENCE

## WORK ORDER NUMBER: 13-04-0902

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard Sediment Study

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 07/25/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

# Contents

Client Project Name: NASSCO South Shipyard Sediment Study
Work Order Number: 13-04-0902


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Calscience Environmental Laboratories, Inc.

# Work Order Narrative

Work Order: 13-04-0902



**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/11/13. They were assigned to Work Order 13-04-0902.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Calscience Environmental Laboratories, Inc.

# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC | Work Order: | 13-04-0902 |
| | 27201 Puerta Real, Suite 350 | Project Name: | NASSCO South Shipyard Sediment Study |
| | Mission Viejo, CA 92691-8306 | PO Number: | Work Order #3 |
| | | Date Received: | 04/11/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| COMP-C7-TOP | 13-04-0902-11 | 04/10/13 14:30 | 1 | Sediment |

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Calscience Environmental Laboratories, Inc.

# CASE NARRATIVE

## Calscience Work Order No.: 13-04-0902
## Project ID: NASSCO Shipyard Sediment Study

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

Ten sediment samples were received for this project on April 11, 2013. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 1.4°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in freezers pending chemistry testing.

On June 12, 2013 samples were composited into two samples as per client instructions.

COC discrepancies were noted in the Sample Anomaly Form.

***Tests Performed***

Sample COMP-C7-TOP was analyzed for the following analyses:

Title 22 STLC Lead by EPA 6010B.

***Data Summary***

Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

Concentrations of target analytes in the method blank were found to be below reporting limits for all analyses.

Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the MDL, and where applicable, “J” flags were reported.

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Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test. All parameters were within established control limits.

Matrix Spikes

Matrix spikes and matrix spike duplicates were performed for each applicable analysis on project samples. All parameters were within the acceptable control limits unless otherwise noted.

Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0902 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| | | Units: | mg/L |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C7-TOP** | **13-04-0902-11-A** | **04/10/13 14:30** | **Sediment** | **ICP 7300** | **07/20/13** | **07/22/13 16:14** | **130722LA7** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | 0.758 | 0.100 | 0.0406 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-05-006-6824** | **N/A** | **Aqueous** | **ICP 7300** | **07/20/13** | **07/22/13 16:06** | **130722LA7** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | ND | 0.100 | 0.0406 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0902 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **ICP 7300** | **07/20/13** | **07/22/13 16:10** | **130722SA7** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 2.530 | 5.000 | 7.825 | 106 | 7.544 | 100 | 75-125 | 4 | 0-20 | |

RPD: Relative Percent Difference. CL: Control Limits



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# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0902 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **097-05-006-6824** | **Aqueous** | **ICP 7300** | **07/22/13 16:07** | **130722LA7** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Lead | 5.000 | 5.204 | 104 | 80-120 | |

RPD: Relative Percent Difference. CL: Control Limits



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# Glossary of Terms and Qualifiers

Work Order: 13-04-0902



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control. |
| 4 | The MS/MSD RPD was out of control due to suspected matrix interference. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean). |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |
| | Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis. |
| | Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time. |
| | A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations. |

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/10/13

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

SAMPLER(S): (SIGNATURE)

P.O. NO.: 1315100800

QUOTE NO.:

LAB USE ONLY: 13-04-0902

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS

Please HOLD samples.
Analysis will be determined at a later date.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM. DO NOT FREEZE COMPOSITE OR GRAIN SIZE

3 containers = 1 x 16 oz, 1 x 8 oz, 1 x gallon size bag

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC07-0001 | | 4/10/13 | 1430 | Sed | 3 | | | | X |
| 2 | SD-S-P-NASC07-0002 | | | | | | | | | X |
| 3 | SD-S-P-NASC07-0203 | | | | | | | | | X |
| 4 | SD-S-P-NASC07-0304 | | | | | | | | | X |
| 5 | SD-S-P-NASC07-0405 | | | | | | | | | X |
| 6 | SD-S-P-NASC07-0606 | | | | | | | | | X |
| 7 | SD-S-P-NASC07-0607 | | | | | | | | | X |
| 8 | SD-S-P-NASC07-0708 | | | | | | | | | X |
| 9 | SD-S-P-NASC07-0708 Plug | | | | | | | | | X |
| 10 | SD-S-P-NASC07-Comp | | | | | | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | | 04/11/13 | 1445 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| | | 04/11/13 | 1910 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|
| NAS-C1 | | | | |
| SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| SD-S-P-NASC1-0102 | | | | |
| SD-S-P-NASC1-0203 | | | | |
| SD-S-P-NASC1-0304 | | | | |
| SD-S-P-NASC1-0405 | | | | |
| SD-S-P-NASC1-0506 | | | | BOTTOM |
| SD-S-P-NASC1-0607 | | | | |
| SD-S-P-NASC1-0708 | | | | |
| SD-S-P-NASC1-0809 | | | | |
| NAS-C2 | | | | |
| SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| SD-S-P-NASC2-0102 | | | | |
| SD-S-P-NASC2-0203 | | | | |
| SD-S-P-NASC2-0304 | | | | |
| SD-S-P-NASC2-0405 | | | | |
| SD-S-P-NASC2-0506 | | | | BOTTOM |
| SD-S-P-NASC2-0607 | | | | |
| SD-S-P-NASC2-0708 | | | | |
| SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | |
| SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| SD-S-P-NASC3-0102 | | | | |
| SD-S-P-NASC3-0203 | | | | |
| SD-S-P-NASC3-0304 | | | | |
| SD-S-P-NASC3-0405 | | | | |
| SD-S-P-NASC3-0506 | | | | BOTTOM |
| SD-S-P-NASC3-0607 | | | | |
| SD-S-P-NASC3-0708 | | | | |
| SD-S-P-NASC3-0809 | | | | |
| SD-S-P-NASC3-0910 | | | | |
| SD-S-P-NASC3-0910-PLUG | | | | not included[c] |
| NAS-C4 | | | | |
| SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| SD-S-P-NASC4-0102 | | | | |
| SD-S-P-NASC4-0203 | | | | |
| SD-S-P-NASC4-0304 | | | | |
| SD-S-P-NASC4-0405 | | | | |
| SD-S-P-NASC4-0506 | | | | BOTTOM |
| SD-S-P-NASC4-0607 | | | | |
| SD-S-P-NASC4-0708 | | | | |
| SD-S-P-NASC4-0809 | | | | |
| SD-S-P-NASC4-0910 | | | | |
| SD-S-P-NASC4-0910-PLUG | | | | not included[c] |
| NAS-C5 | | | | |
| SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| SD-S-P-NASC5-0102 | | | | |
| SD-S-P-NASC5-0203 | | | | |
| SD-S-P-NASC5-0304 | | | | BOTTOM |
| SD-S-P-NASC5-0405 | | | | |
| SD-S-P-NASC5-0506-PLUG | | | | not included[c] |
| NAS-C6 | | | | |
| SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| SD-S-P-NASC6-0102 | | | | |
| SD-S-P-NASC6-0203 | | | | BOTTOM |
| SD-S-P-NASC6-0304-PLUG | | | | not included[c] |
| NAS-C7 | | | | |
| SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| SD-S-P-NASC7-0102 | | | | |
| SD-S-P-NASC7-0203 | | | | |
| SD-S-P-NASC7-0304 | | | | |
| SD-S-P-NASC7-0405 | | | | BOTTOM |
| SD-S-P-NASC7-0506 | | | | |
| SD-S-P-NASC7-0607 | | | | |
| SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | |
| SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| SD-S-P-NASC8-0102 | | | | |
| SD-S-P-NASC8-0203 | | | | |
| SD-S-P-NASC8-0304 | | | | |
| SD-S-P-NASC8-0405 | | | | |
| SD-S-P-NASC8-0506 | | | | BOTTOM |
| SD-S-P-NASC8-0607 | | | | |
| SD-S-P-NASC8-0708 | | | | |
| SD-S-P-NASC8-0809 | | | | |
| SD-S-P-NASC8-0910 | | | | |
| SD-S-P-NASC8-0910-PLUG | | | | not included[c] |
| NAS-C9 | | | | |
| SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| SD-S-P-NASC9-0102 | | | | |
| SD-S-P-NASC9-0203 | | | | |
| SD-S-P-NASC9-0304 | | | | |
| SD-S-P-NASC9-0405 | | | | BOTTOM |
| SD-S-P-NASC9-0506 | | | | |
| SD-S-P-NASC9-0607 | | | | |
| NAS-C10 | | | | |
| SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| SD-S-P-NASC10-0102 | | | | |
| SD-S-P-NASC10-0203 | | | | |
| SD-S-P-NASC10-0304 | | | | |
| SD-S-P-NASC10-0405 | | | | BOTTOM |
| SD-S-P-NASC10-0506 | | | | |
| SD-S-P-NASC10-0607 | | | | |
| SD-S-P-NASC10-0708 | | | | |
| NAS-C11 | | | | |
| SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| SD-S-P-NASC11-0102 | | | | |
| SD-S-P-NASC11-0203 | | | | |
| SD-S-P-NASC11-0304 | | | | |
| SD-S-P-NASC11-0405 | | | | BOTTOM |
| SD-S-P-NASC11-0506 | | | | |
| SD-S-P-NASC11-0607 | | | | |
| SD-S-P-NASC11-0708 | | | | |
| SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | |
| SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| SD-S-P-NASC12-0102 | | | | |
| SD-S-P-NASC12-0203 | | | | |
| SD-S-P-NASC12-0304 | | | | |
| SD-S-P-NASC12-0405 | | | | BOTTOM |
| SD-S-P-NASC12-0506 | | | | |
| SD-S-P-NASC12-0607 | | | | |
| SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | |
| SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| SD-S-P-NASC13-0102 | | | | |
| SD-S-P-NASC13-0203 | | | | |
| SD-S-P-NASC13-0304 | | | | BOTTOM |
| SD-S-P-NASC13-0405 | | | | |
| SD-S-P-NASC13-0506 | | | | |
| SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | |
| SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| SD-S-P-NASC14-0102 | | | | |
| SD-S-P-NASC14-0203 | | | | BOTTOM |
| SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | |
| SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| SD-S-P-NASC15-0102 | | | | |
| SD-S-P-NASC15-0203 | | | | |
| SD-S-P-NASC15-0304 | | | | BOTTOM |
| SD-S-P-NASC15-0405 | | | | |
| SD-S-P-NASC15-0506 | | | | |

Notes:
0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on
a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.
b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.
A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)
c - sample not included due to low volume available and because it represents native material which will not be dredged



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| ~~13-04-1000-1~~ | ~~SD-S-P-NASC1-0001~~ | COMP-A | 4/11/2013 | 1335 | TOP |
| ~~13-04-1000-2~~ | ~~SD-S-P-NASC1-0102~~ | | | | |
| ~~13-04-1000-3~~ | ~~SD-S-P-NASC1-0203~~ | | | | |
| ~~13-04-1000-4~~ | ~~SD-S-P-NASC1-0304~~ | | | | |
| ~~13-04-1000-5~~ | ~~SD-S-P-NASC1-0405~~ | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| ~~13-04-1111-1~~ | ~~SD-S-P-NASC2-0001~~ | COMP-A | 4/12/2013 | 1021 | TOP |
| ~~13-04-1111-2~~ | ~~SD-S-P-NASC2-0102~~ | | | | |
| ~~13-04-1111-3~~ | ~~SD-S-P-NASC2-0203~~ | | | | |
| ~~13-04-1111-4~~ | ~~SD-S-P-NASC2-0304~~ | | | | |
| ~~13-04-1111-5~~ | ~~SD-S-P-NASC2-0405~~ | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| ~~13-04-1113-1~~ | ~~SD-S-P-NASC3-0001~~ | COMP-A | 4/12/2013 | 751 | TOP |
| ~~13-04-1113-2~~ | ~~SD-S-P-NASC3-0102~~ | | | | |
| ~~13-04-1113-3~~ | ~~SD-S-P-NASC3-0203~~ | | | | |
| ~~13-04-1113-4~~ | ~~SD-S-P-NASC3-0304~~ | | | | |
| ~~13-04-1113-5~~ | ~~SD-S-P-NASC3-0405~~ | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| ~~13-04-1002-1~~ | ~~SD-S-P-NASC4-0001~~ | COMP-A | 4/11/2013 | 930 | TOP |
| ~~13-04-1002-2~~ | ~~SD-S-P-NASC4-0102~~ | | | | |
| ~~13-04-1002-3~~ | ~~SD-S-P-NASC4-0203~~ | | | | |
| ~~13-04-1002-4~~ | ~~SD-S-P-NASC4-0304~~ | | | | |
| ~~13-04-1002-5~~ | ~~SD-S-P-NASC4-0405~~ | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| ~~13-04-1003-1~~ | ~~SD-S-P-NASC5-0001~~ | COMP-A | 4/11/2013 | 755 | TOP |
| ~~13-04-1003-2~~ | ~~SD-S-P-NASC5-0102~~ | | | | |
| ~~13-04-1003-3~~ | ~~SD-S-P-NASC5-0203~~ | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| ~~13-04-1001-1~~ | ~~SD-S-P-NASC6-0001~~ | COMP-A | 4/11/2013 | 1200 | TOP |
| ~~13-04-1001-2~~ | ~~SD-S-P-NASC6-0102~~ | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| ~~13-04-0902-1~~ | ~~SD-S-P-NASC7-0001~~ | COMP-A | 4/10/2013 | 1430 | TOP |
| ~~13-04-0902-2~~ | ~~SD-S-P-NASC7-0102~~ | | | | |
| ~~13-04-0902-3~~ | ~~SD-S-P-NASC7-0203~~ | | | | |
| ~~13-04-0902-4~~ | ~~SD-S-P-NASC7-0304~~ | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| ~~13-04-0903-1~~ | ~~SD-S-P-NASC8-0001~~ | COMP-A | 4/10/2013 | 830 | TOP |
| ~~13-04-0903-2~~ | ~~SD-S-P-NASC8-0102~~ | | | | |
| ~~13-04-0903-3~~ | ~~SD-S-P-NASC8-0203~~ | | | | |
| ~~13-04-0903-4~~ | ~~SD-S-P-NASC8-0304~~ | | | | |
| ~~13-04-0903-5~~ | ~~SD-S-P-NASC8-0405~~ | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| ~~13-04-0901-1~~ | ~~SD-S-P-NASC9-0001~~ | COMP-A | 4/10/2013 | 1315 | TOP |
| ~~13-04-0901-2~~ | ~~SD-S-P-NASC9-0102~~ | | | | |
| ~~13-04-0901-3~~ | ~~SD-S-P-NASC9-0203~~ | | | | |
| ~~13-04-0901-4~~ | ~~SD-S-P-NASC9-0304~~ | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607-PLUG~~ | | | | |
| NAS-C10 | | | | | |
| ~~13-04-0904-1~~ | ~~SD-S-P-NASC10-0001~~ | COMP-D | 4/10/2013 | 1010 | TOP |
| ~~13-04-0904-2~~ | ~~SD-S-P-NASC10-0102~~ | | | | |
| ~~13-04-0904-3~~ | ~~SD-S-P-NASC10-0203~~ | | | | |
| ~~13-04-0904-4~~ | ~~SD-S-P-NASC10-0304~~ | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-8 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| ~~13-04-0778-1~~ | ~~SD-S-P-NASC11-0001~~ | COMP-D | 4/9/2013 | 1525 | TOP |
| ~~13-04-0778-2~~ | ~~SD-S-P-NASC11-0102~~ | | | | |
| ~~13-04-0778-3~~ | ~~SD-S-P-NASC11-0203~~ | | | | |
| ~~13-04-0778-4~~ | ~~SD-S-P-NASC11-0304~~ | | | | |
| ~~13-04-0778-5~~ | ~~SD-S-P-NASC11-0405~~ | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| ~~13-04-0780-1~~ | ~~SD-S-P-NASC12-0001~~ | COMP-D | 4/9/2013 | 1410 | TOP |
| ~~13-04-0780-2~~ | ~~SD-S-P-NASC12-0102~~ | | | | |
| ~~13-04-0780-3~~ | ~~SD-S-P-NASC12-0203~~ | | | | |
| ~~13-04-0780-4~~ | ~~SD-S-P-NASC12-0304~~ | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| ~~13-04-0781-1~~ | ~~SD-S-P-NASC13-0001~~ | COMP-E | 4/9/2013 | 1055 | TOP |
| ~~13-04-0781-2~~ | ~~SD-S-P-NASC13-0102~~ | | | | |
| ~~13-04-0781-3~~ | ~~SD-S-P-NASC13-0203~~ | | | | |
| ~~13-04-0781-4~~ | ~~SD-S-P-NASC13-0304~~ | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| ~~13-04-0782-1~~ | ~~SD-S-P-NASC14-0001~~ | COMP-E | 4/9/2013 | 815 | TOP |
| ~~13-04-0782-2~~ | ~~SD-S-P-NASC14-0102~~ | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| ~~13-04-0779-1~~ | ~~SD-S-P-NASC15-0001~~ | COMP-E | 4/9/2013 | 940 | TOP |
| ~~13-04-0779-2~~ | ~~SD-S-P-NASC15-0102~~ | | | | |
| ~~13-04-0779-3~~ | ~~SD-S-P-NASC15-0203~~ | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0902

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/11/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.6 °C - 0.2 °C (CF) = 1.4 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter Initial: BJ

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: BJ

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: HH

| SAMPLE CONDITION: | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑2

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** HH

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** TN

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** TN



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## Danielle Gonsman

**From:** Gobbi, Kimbrie [kimbrie.gobbi@amec.com]
**Sent:** Wednesday, July 17, 2013 10:05 AM
**To:** Danielle Gonsman
**Cc:** Travis Merritts; Cindy Fields; David Templeton; Michael Whelan; Snyder, Barry
**Subject:** South Trust (NASSCO) Shipyard Samples for STLC/TCLP
**Attachments:** STLC-TCLP_Compositing_Scheme.pdf

Hi Danielle!

As per our recent conversations, we are ready to begin STLC and TCLP analysis for lead only on the NASSCO sediment samples. To do this we will need you to perform the following tasks:

1) Re-composite samples highlighted red in the following table as per the last round of testing, see attached for information.
2) Run STLC analysis for lead on the samples highlighted in red.
3) Run TCLP analysis for lead on sample C4-Top and C6-Bottom only (yellow highlights).
4) Provide an official work order for these tasks.
5) Provide an estimate of the fastest possible TAT and all expedited surcharges for the compositing and analysis to **Anchor QEA** so they can confirm the costs.

| **LEAD CONCENTRATION IN SEDIMENT; UNITS (mg/kg)** | |
|---|---|
| Soluble Threshold Limit Concentration (STLC) Trigger Level (mg/kg) | 50 |
| Total Threshold Limit Concentration (TTLC) (Wet Weight) | 1000 |
| COMP-C1-TOP | **57.9** |
| COMP-C1-BOTTOM | 7.38 |
| COMP-C2-TOP | **57.8** |
| COMP-C2-BOTTOM | 10.3 |
| COMP-C3-TOP | **66.5** |
| COMP-C3-BOTTOM | 21.3 |
| COMP-C4-TOP | **132** |
| COMP-C4-BOTTOM | 6.34 |
| COMP-C5-TOP | **52.7** |
| COMP-C5-BOTTOM | 21.8 |
| COMP-C6-TOP | **94.2** |
| COMP-C6-BOTTOM | **141** |
| COMP-C7-TOP | **64.7** |
| COMP-C7-BOTTOM | 19.8 |
| COMP-C8-TOP | **77.4** |
| COMP-C8-BOTTOM | 21.1 |
| COMP-C9-TOP | **64** |
| COMP-C9-BOTTOM | 22.9 |
| COMP-C10-TOP | 23.9 |
| COMP-C10-BOTTOM | **69** |
| COMP-C11-TOP | 49.8 |
| COMP-C11-BOTTOM | 21 |
| COMP-C12-TOP | **61.3** |
| COMP-C12-BOTTOM | 6.06 |
| COMP-C13-TOP | 34.4 |
| COMP-C13-BOTTOM | 10.6 |



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| | |
|---|---|
| COMP-C14-TOP | 46 |
| COMP-C14-BOTTOM | 36.1 |
| COMP-C15-TOP | **52.8** |
| COMP-C15-BOTTOM | 39.7 |

Thank you!

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Supplemental Report 1

Additional requested analyses are reported as a stand-alone report.

# CALSCIENCE

## WORK ORDER NUMBER: 13-04-0903

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard Sediment Study

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 07/25/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

# Contents

Client Project Name: NASSCO South Shipyard Sediment Study
Work Order Number: 13-04-0903


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Calscience Environmental Laboratories, Inc.

# Work Order Narrative

Work Order: 13-04-0903



**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/11/13. They were assigned to Work Order 13-04-0903.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Calscience Environmental Laboratories, Inc.

# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC | Work Order: | 13-04-0903 |
| | 27201 Puerta Real, Suite 350 | Project Name: | NASSCO South Shipyard Sediment Study |
| | Mission Viejo, CA 92691-8306 | PO Number: | Work Order #3 |
| | | Date Received: | 04/11/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| COMP-C8-TOP | 13-04-0903-12 | 04/10/13 08:30 | 1 | Soil |

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Calscience Environmental Laboratories, Inc.

# CASE NARRATIVE

## Calscience Work Order No.: 13-04-0903
## Project ID: NASSCO Shipyard Sediment Study

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

Eleven sediment samples were received for this project on April 11, 2013. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 1.6°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in freezers pending chemistry testing.

On June 12, 2013 samples were composited into two samples as per client instructions.

COC discrepancies were noted in the Sample Anomaly Form.

***Tests Performed***

Sample COMP-C8-TOP was analyzed for the following analyses:

Title 22 STLC Lead by EPA 6010B.

***Data Summary***

Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

Concentrations of target analytes in the method blank were found to be below reporting limits for all analyses.

Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the MDL, and where applicable, “J” flags were reported.

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Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test. All parameters were within established control limits.

Matrix Spikes

Matrix spikes and matrix spike duplicates were performed for each applicable analysis on project samples. All parameters were within the acceptable control limits unless otherwise noted.

Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0903 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| | | Units: | mg/L |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C8-TOP** | **13-04-0903-12-A** | **04/10/13 08:30** | **Soil** | **ICP 7300** | **07/20/13** | **07/22/13 16:13** | **130722LA7** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | 1.07 | 0.100 | 0.0406 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-05-006-6824** | **N/A** | **Aqueous** | **ICP 7300** | **07/20/13** | **07/22/13 16:06** | **130722LA7** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | ND | 0.100 | 0.0406 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0903 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **ICP 7300** | **07/20/13** | **07/22/13 16:10** | **130722SA7** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 2.530 | 5.000 | 7.825 | 106 | 7.544 | 100 | 75-125 | 4 | 0-20 | |

RPD: Relative Percent Difference. CL: Control Limits



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# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0903 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **097-05-006-6824** | **Aqueous** | **ICP 7300** | **07/22/13 16:07** | **130722LA7** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Lead | 5.000 | 5.204 | 104 | 80-120 | |

RPD: Relative Percent Difference. CL: Control Limits



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# Glossary of Terms and Qualifiers

Work Order: 13-04-0903



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control. |
| 4 | The MS/MSD RPD was out of control due to suspected matrix interference. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean). |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/10/13

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

P.O. NO.: 1315100800

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

QUOTE NO.:

SAMPLER(S): (SIGNATURE)

LAB USE ONLY: 13-04-0903

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___/___/___

SPECIAL INSTRUCTIONS

Please HOLD samples. 3 cont. = 1 x 16oz Jar
Analysis will be determined at a later date. 1x 8oz Jar
New COC will be submitted with analysis when confirmed. 1x grain size
Danielle Gonsman is PM. DO NOT FREEZE COMPOSITE OR GRAIN SIZE

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC08-0001 | | 4/10/13 | 0830 | Sed | 3 | | | | X |
| 2 | SD-S-P-NASC08-0102 | | | | | | | | | X |
| 3 | SD-S-P-NASC08-0203 | | | | | | | | | X |
| 4 | SD-S-P-NASC08-0304 | | | | | | | | | X |
| 5 | SD-S-P-NASC08-0405 | | | | | | | | | X |
| 6 | SD-S-P-NASC08-0506 | | | | | | | | | X |
| 7 | SD-S-P-NASC08-0607 | | | | | | | | | X |
| 8 | SD-S-P-NASC08-0708 | | | | | | | | | X |
| 9 | SD-S-P-NASC08-0809 | | | | | | | | | X |
| 10 | SD-S-P-NASC08-0910 | | | | | | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | COC | 04/11/13 | 1445 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
| | COC | 04/11/13 | 1910 |
| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|
| NAS-C1 | | | | |
| SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| SD-S-P-NASC1-0102 | | | | |
| SD-S-P-NASC1-0203 | | | | |
| SD-S-P-NASC1-0304 | | | | |
| SD-S-P-NASC1-0405 | | | | |
| SD-S-P-NASC1-0506 | | | | BOTTOM |
| SD-S-P-NASC1-0607 | | | | |
| SD-S-P-NASC1-0708 | | | | |
| SD-S-P-NASC1-0809 | | | | |
| NAS-C2 | | | | |
| SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| SD-S-P-NASC2-0102 | | | | |
| SD-S-P-NASC2-0203 | | | | |
| SD-S-P-NASC2-0304 | | | | |
| SD-S-P-NASC2-0405 | | | | |
| SD-S-P-NASC2-0506 | | | | BOTTOM |
| SD-S-P-NASC2-0607 | | | | |
| SD-S-P-NASC2-0708 | | | | |
| SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | |
| SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| SD-S-P-NASC3-0102 | | | | |
| SD-S-P-NASC3-0203 | | | | |
| SD-S-P-NASC3-0304 | | | | |
| SD-S-P-NASC3-0405 | | | | |
| SD-S-P-NASC3-0506 | | | | BOTTOM |
| SD-S-P-NASC3-0607 | | | | |
| SD-S-P-NASC3-0708 | | | | |
| SD-S-P-NASC3-0809 | | | | |
| SD-S-P-NASC3-0910 | | | | |
| SD-S-P-NASC3-0910-PLUG | | | | not included[c] |
| NAS-C4 | | | | |
| SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| SD-S-P-NASC4-0102 | | | | |
| SD-S-P-NASC4-0203 | | | | |
| SD-S-P-NASC4-0304 | | | | |
| SD-S-P-NASC4-0405 | | | | |
| SD-S-P-NASC4-0506 | | | | BOTTOM |
| SD-S-P-NASC4-0607 | | | | |
| SD-S-P-NASC4-0708 | | | | |
| SD-S-P-NASC4-0809 | | | | |
| SD-S-P-NASC4-0910 | | | | |
| SD-S-P-NASC4-0910-PLUG | | | | not included[c] |
| NAS-C5 | | | | |
| SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| SD-S-P-NASC5-0102 | | | | |
| SD-S-P-NASC5-0203 | | | | |
| SD-S-P-NASC5-0304 | | | | BOTTOM |
| SD-S-P-NASC5-0405 | | | | |
| SD-S-P-NASC5-0506-PLUG | | | | not included[c] |
| NAS-C6 | | | | |
| SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| SD-S-P-NASC6-0102 | | | | |
| SD-S-P-NASC6-0203 | | | | BOTTOM |
| SD-S-P-NASC6-0304-PLUG | | | | not included[c] |
| NAS-C7 | | | | |
| SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| SD-S-P-NASC7-0102 | | | | |
| SD-S-P-NASC7-0203 | | | | |
| SD-S-P-NASC7-0304 | | | | |
| SD-S-P-NASC7-0405 | | | | BOTTOM |
| SD-S-P-NASC7-0506 | | | | |
| SD-S-P-NASC7-0607 | | | | |
| SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | |
| SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| SD-S-P-NASC8-0102 | | | | |
| SD-S-P-NASC8-0203 | | | | |
| SD-S-P-NASC8-0304 | | | | |
| SD-S-P-NASC8-0405 | | | | |
| SD-S-P-NASC8-0506 | | | | BOTTOM |
| SD-S-P-NASC8-0607 | | | | |
| SD-S-P-NASC8-0708 | | | | |
| SD-S-P-NASC8-0809 | | | | |
| SD-S-P-NASC8-0910 | | | | |
| SD-S-P-NASC8-0910-PLUG | | | | not included[c] |
| NAS-C9 | | | | |
| SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| SD-S-P-NASC9-0102 | | | | |
| SD-S-P-NASC9-0203 | | | | |
| SD-S-P-NASC9-0304 | | | | |
| SD-S-P-NASC9-0405 | | | | BOTTOM |
| SD-S-P-NASC9-0506 | | | | |
| SD-S-P-NASC9-0607 | | | | |
| NAS-C10 | | | | |
| SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| SD-S-P-NASC10-0102 | | | | |
| SD-S-P-NASC10-0203 | | | | |
| SD-S-P-NASC10-0304 | | | | |
| SD-S-P-NASC10-0405 | | | | BOTTOM |
| SD-S-P-NASC10-0506 | | | | |
| SD-S-P-NASC10-0607 | | | | |
| SD-S-P-NASC10-0708 | | | | |
| NAS-C11 | | | | |
| SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| SD-S-P-NASC11-0102 | | | | |
| SD-S-P-NASC11-0203 | | | | |
| SD-S-P-NASC11-0304 | | | | |
| SD-S-P-NASC11-0405 | | | | BOTTOM |
| SD-S-P-NASC11-0506 | | | | |
| SD-S-P-NASC11-0607 | | | | |
| SD-S-P-NASC11-0708 | | | | |
| SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | |
| SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| SD-S-P-NASC12-0102 | | | | |
| SD-S-P-NASC12-0203 | | | | |
| SD-S-P-NASC12-0304 | | | | |
| SD-S-P-NASC12-0405 | | | | BOTTOM |
| SD-S-P-NASC12-0506 | | | | |
| SD-S-P-NASC12-0607 | | | | |
| SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | |
| SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| SD-S-P-NASC13-0102 | | | | |
| SD-S-P-NASC13-0203 | | | | |
| SD-S-P-NASC13-0304 | | | | BOTTOM |
| SD-S-P-NASC13-0405 | | | | |
| SD-S-P-NASC13-0506 | | | | |
| SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | |
| SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| SD-S-P-NASC14-0102 | | | | |
| SD-S-P-NASC14-0203 | | | | BOTTOM |
| SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | |
| SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| SD-S-P-NASC15-0102 | | | | |
| SD-S-P-NASC15-0203 | | | | |
| SD-S-P-NASC15-0304 | | | | BOTTOM |
| SD-S-P-NASC15-0405 | | | | |
| SD-S-P-NASC15-0506 | | | | |

Notes:
0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on
a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.
b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.
A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)
c - sample not included due to low volume available and because it represents native material which will not be dredged



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| ~~13-04-1000-1~~ | ~~SD-S-P-NASC1-0001~~ | COMP-A | 4/11/2013 | 1335 | TOP |
| ~~13-04-1000-2~~ | ~~SD-S-P-NASC1-0102~~ | | | | |
| ~~13-04-1000-3~~ | ~~SD-S-P-NASC1-0203~~ | | | | |
| ~~13-04-1000-4~~ | ~~SD-S-P-NASC1-0304~~ | | | | |
| ~~13-04-1000-5~~ | ~~SD-S-P-NASC1-0405~~ | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| ~~13-04-1111-1~~ | ~~SD-S-P-NASC2-0001~~ | COMP-A | 4/12/2013 | 1021 | TOP |
| ~~13-04-1111-2~~ | ~~SD-S-P-NASC2-0102~~ | | | | |
| ~~13-04-1111-3~~ | ~~SD-S-P-NASC2-0203~~ | | | | |
| ~~13-04-1111-4~~ | ~~SD-S-P-NASC2-0304~~ | | | | |
| ~~13-04-1111-5~~ | ~~SD-S-P-NASC2-0405~~ | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| ~~13-04-1113-1~~ | ~~SD-S-P-NASC3-0001~~ | COMP-A | 4/12/2013 | 751 | TOP |
| ~~13-04-1113-2~~ | ~~SD-S-P-NASC3-0102~~ | | | | |
| ~~13-04-1113-3~~ | ~~SD-S-P-NASC3-0203~~ | | | | |
| ~~13-04-1113-4~~ | ~~SD-S-P-NASC3-0304~~ | | | | |
| ~~13-04-1113-5~~ | ~~SD-S-P-NASC3-0405~~ | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| ~~13-04-1002-1~~ | ~~SD-S-P-NASC4-0001~~ | COMP-A | 4/11/2013 | 930 | TOP |
| ~~13-04-1002-2~~ | ~~SD-S-P-NASC4-0102~~ | | | | |
| ~~13-04-1002-3~~ | ~~SD-S-P-NASC4-0203~~ | | | | |
| ~~13-04-1002-4~~ | ~~SD-S-P-NASC4-0304~~ | | | | |
| ~~13-04-1002-5~~ | ~~SD-S-P-NASC4-0405~~ | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| ~~13-04-1003-1~~ | ~~SD-S-P-NASC5-0001~~ | COMP-A | 4/11/2013 | 755 | TOP |
| ~~13-04-1003-2~~ | ~~SD-S-P-NASC5-0102~~ | | | | |
| ~~13-04-1003-3~~ | ~~SD-S-P-NASC5-0203~~ | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| ~~13-04-1001-1~~ | ~~SD-S-P-NASC6-0001~~ | COMP-B | 4/11/2013 | 1200 | TOP |
| ~~13-04-1001-2~~ | ~~SD-S-P-NASC6-0102~~ | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| ~~13-04-0902-1~~ | ~~SD-S-P-NASC7-0001~~ | COMP-B | 4/10/2013 | 1430 | TOP |
| ~~13-04-0902-2~~ | ~~SD-S-P-NASC7-0102~~ | | | | |
| ~~13-04-0902-3~~ | ~~SD-S-P-NASC7-0203~~ | | | | |
| ~~13-04-0902-4~~ | ~~SD-S-P-NASC7-0304~~ | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| ~~13-04-0903-1~~ | ~~SD-S-P-NASC8-0001~~ | COMP-B | 4/10/2013 | 830 | TOP |
| ~~13-04-0903-2~~ | ~~SD-S-P-NASC8-0102~~ | | | | |
| ~~13-04-0903-3~~ | ~~SD-S-P-NASC8-0203~~ | | | | |
| ~~13-04-0903-4~~ | ~~SD-S-P-NASC8-0304~~ | | | | |
| ~~13-04-0903-5~~ | ~~SD-S-P-NASC8-0405~~ | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| ~~13-04-0901-1~~ | ~~SD-S-P-NASC9-0001~~ | COMP-B | 4/10/2013 | 1315 | TOP |
| ~~13-04-0901-2~~ | ~~SD-S-P-NASC9-0102~~ | | | | |
| ~~13-04-0901-3~~ | ~~SD-S-P-NASC9-0203~~ | | | | |
| ~~13-04-0901-4~~ | ~~SD-S-P-NASC9-0304~~ | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607-PLUG~~ | | | | |
| NAS-C10 | | | | | |
| ~~13-04-0904-1~~ | ~~SD-S-P-NASC10-0001~~ | COMP-D | 4/10/2013 | 1010 | TOP |
| ~~13-04-0904-2~~ | ~~SD-S-P-NASC10-0102~~ | | | | |
| ~~13-04-0904-3~~ | ~~SD-S-P-NASC10-0203~~ | | | | |
| ~~13-04-0904-4~~ | ~~SD-S-P-NASC10-0304~~ | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-8 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| ~~13-04-0778-1~~ | ~~SD-S-P-NASC11-0001~~ | COMP-D | 4/9/2013 | 1525 | TOP |
| ~~13-04-0778-2~~ | ~~SD-S-P-NASC11-0102~~ | | | | |
| ~~13-04-0778-3~~ | ~~SD-S-P-NASC11-0203~~ | | | | |
| ~~13-04-0778-4~~ | ~~SD-S-P-NASC11-0304~~ | | | | |
| ~~13-04-0778-5~~ | ~~SD-S-P-NASC11-0405~~ | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| ~~13-04-0780-1~~ | ~~SD-S-P-NASC12-0001~~ | COMP-D | 4/9/2013 | 1410 | TOP |
| ~~13-04-0780-2~~ | ~~SD-S-P-NASC12-0102~~ | | | | |
| ~~13-04-0780-3~~ | ~~SD-S-P-NASC12-0203~~ | | | | |
| ~~13-04-0780-4~~ | ~~SD-S-P-NASC12-0304~~ | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| ~~13-04-0781-1~~ | ~~SD-S-P-NASC13-0001~~ | COMP-E | 4/9/2013 | 1055 | TOP |
| ~~13-04-0781-2~~ | ~~SD-S-P-NASC13-0102~~ | | | | |
| ~~13-04-0781-3~~ | ~~SD-S-P-NASC13-0203~~ | | | | |
| ~~13-04-0781-4~~ | ~~SD-S-P-NASC13-0304~~ | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0505 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| ~~13-04-0782-1~~ | ~~SD-S-P-NASC14-0001~~ | COMP-E | 4/9/2013 | 815 | TOP |
| ~~13-04-0782-2~~ | ~~SD-S-P-NASC14-0102~~ | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| ~~13-04-0779-1~~ | ~~SD-S-P-NASC15-0001~~ | COMP-E | 4/9/2013 | 940 | TOP |
| ~~13-04-0779-2~~ | ~~SD-S-P-NASC15-0102~~ | | | | |
| ~~13-04-0779-3~~ | ~~SD-S-P-NASC15-0203~~ | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0903

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/11/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.8 °C - 0.2 °C (CF) = 1.6 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: [illegible]

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: [illegible]

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: HH

| **SAMPLE CONDITION:** | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☐ | ☑ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ 2

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** HH

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** TN

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** TN



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0903

# SAMPLE ANOMALY FORM

## SAMPLES - CONTAINERS & LABELS:

- ☐ Sample(s) NOT RECEIVED but listed on COC
- ☑ Sample(s) received but NOT LISTED on COC
- ☐ Holding time expired – list sample ID(s) and test
- ☐ Insufficient quantities for analysis – list test
- ☐ Improper container(s) used – list test
- ☐ Improper preservative used – list test
- ☐ No preservative noted on COC or label – list test & notify lab
- ☐ Sample labels illegible – note test/container type
- ☑ Sample label(s) do not match COC – Note in comments
  - ☑ Sample ID
  - ☐ Date and/or Time Collected
  - ☐ Project Information
  - ☐ # of Container(s)
  - ☐ Analysis
- ☐ Sample container(s) compromised – Note in comments
  - ☐ Water present in sample container
  - ☐ Broken
- ☐ Sample container(s) not labeled
- ☐ Air sample container(s) compromised – Note in comments
  - ☐ Flat
  - ☐ Very low in volume
  - ☐ Leaking (Not transferred - duplicate bag submitted)
  - ☐ Leaking (transferred into Calscience Tedlar® Bag*)
  - ☐ Leaking (transferred into Client's Tedlar® Bag*)
- ☐ Other: _____

**Comments:**

(-11) Received 1 Ziploc bag labeled as SD-S-P-NASC-10 (Plug/Rock) 4/7/13 @ 8:00 not on COC.

(-1) Received 1 Ziploc bag (Grain Size per Label) labeled as SD-S-P-NASC10-0001 4/10/13 @ 08:00

## HEADSPACE – Containers with Bubble > 6mm or ¼ inch:

| Sample # | Container ID(s) | # of Vials Received | Sample # | Container ID(s) | # of Vials Received | Sample # | Container ID(s) | # of Cont. received | Analysis |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Comments: _____

*Transferred at Client's request.

Initial / Date: D.L 04 / 11 / 13



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## Danielle Gonsman

**From:** Gobbi, Kimbrie [kimbrie.gobbi@amec.com]
**Sent:** Wednesday, July 17, 2013 10:05 AM
**To:** Danielle Gonsman
**Cc:** Travis Merritts; Cindy Fields; David Templeton; Michael Whelan; Snyder, Barry
**Subject:** South Trust (NASSCO) Shipyard Samples for STLC/TCLP
**Attachments:** STLC-TCLP_Compositing_Scheme.pdf

Hi Danielle!

As per our recent conversations, we are ready to begin STLC and TCLP analysis for lead only on the NASSCO sediment samples. To do this we will need you to perform the following tasks:

1) Re-composite samples highlighted red in the following table as per the last round of testing, see attached for information.
2) Run STLC analysis for lead on the samples highlighted in red.
3) Run TCLP analysis for lead on sample C4-Top and C6-Bottom only (yellow highlights).
4) Provide an official work order for these tasks.
5) Provide an estimate of the fastest possible TAT and all expedited surcharges for the compositing and analysis to **Anchor QEA** so they can confirm the costs.

| **LEAD CONCENTRATION IN SEDIMENT; UNITS (mg/kg)** | |
|---|---|
| Soluble Threshold Limit Concentration (STLC) Trigger Level (mg/kg) | 50 |
| Total Threshold Limit Concentration (TTLC) (Wet Weight) | 1000 |
| COMP-C1-TOP | **57.9** |
| COMP-C1-BOTTOM | 7.38 |
| COMP-C2-TOP | **57.8** |
| COMP-C2-BOTTOM | 10.3 |
| COMP-C3-TOP | **66.5** |
| COMP-C3-BOTTOM | 21.3 |
| COMP-C4-TOP | **132** |
| COMP-C4-BOTTOM | 6.34 |
| COMP-C5-TOP | **52.7** |
| COMP-C5-BOTTOM | 21.8 |
| COMP-C6-TOP | **94.2** |
| COMP-C6-BOTTOM | **141** |
| COMP-C7-TOP | **64.7** |
| COMP-C7-BOTTOM | 19.8 |
| COMP-C8-TOP | **77.4** |
| COMP-C8-BOTTOM | 21.1 |
| COMP-C9-TOP | **64** |
| COMP-C9-BOTTOM | 22.9 |
| COMP-C10-TOP | 23.9 |
| COMP-C10-BOTTOM | **69** |
| COMP-C11-TOP | 49.8 |
| COMP-C11-BOTTOM | 21 |
| COMP-C12-TOP | **61.3** |
| COMP-C12-BOTTOM | 6.06 |
| COMP-C13-TOP | 34.4 |
| COMP-C13-BOTTOM | 10.6 |



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| | |
|---|---|
| COMP-C14-TOP | 46 |
| COMP-C14-BOTTOM | 36.1 |
| COMP-C15-TOP | **52.8** |
| COMP-C15-BOTTOM | 39.7 |

Thank you!

**Kimbrie Gobbi, M. Sc.**
**Marine and Environmental Scientist**
**AMEC**
Environment & Infrastructure
9210 Sky Park Court, Suite 200, San Diego, CA 92123, USA
Tel +1 (858) 300 4300, Fax +1 (858) 300 4301
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kimbrie.gobbi@amec.com
amec.com

*I speak for the trees! Please consider the environment before printing this email!*

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Calscience Environmental Laboratories, Inc.

Supplemental Report 1

Additional requested analyses are reported as a stand-alone report.

# CALSCIENCE

## WORK ORDER NUMBER: 13-04-0901

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard Sediment Study

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 07/25/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

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Client Project Name: NASSCO South Shipyard Sediment Study
Work Order Number: 13-04-0901


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Calscience Environmental Laboratories, Inc.

# Work Order Narrative

Work Order: 13-04-0901 Page 1 of 1

**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/11/13. They were assigned to Work Order 13-04-0901.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Calscience Environmental Laboratories, Inc.

# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC | Work Order: | 13-04-0901 |
| | 27201 Puerta Real, Suite 350 | Project Name: | NASSCO South Shipyard Sediment Study |
| | Mission Viejo, CA 92691-8306 | PO Number: | Work Order #3 |
| | | Date Received: | 04/11/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| COMP-C9-TOP | 13-04-0901-11 | 04/10/13 13:15 | 1 | Sediment |

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Calscience Environmental Laboratories, Inc.

# CASE NARRATIVE

## Calscience Work Order No.: 13-04-0901
## Project ID: NASSCO Shipyard Sediment Study

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

Ten sediment samples were received for this project on April 11, 2013. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 1.7°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in freezers pending chemistry testing.

On June 12, 2013 samples were composited into two samples as per client instructions.

COC discrepancies were noted in the Sample Anomaly Form.

***Tests Performed***

Sample COMP-C9-TOP was analyzed for the following analyses:

Title 22 STLC Lead by EPA 6010B.

***Data Summary***

Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

Concentrations of target analytes in the method blank were found to be below reporting limits for all analyses.

Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the MDL, and where applicable, “J” flags were reported.

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Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test. All parameters were within established control limits.

Matrix Spikes

Matrix spikes and matrix spike duplicates were performed for each applicable analysis on project samples. All parameters were within the acceptable control limits unless otherwise noted.

Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0901 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| | | Units: | mg/L |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C9-TOP** | **13-04-0901-11-A** | **04/10/13 13:15** | **Sediment** | **ICP 7300** | **07/20/13** | **07/22/13 16:09** | **130722LA7** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | 2.53 | 0.100 | 0.0406 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-05-006-6824** | **N/A** | **Aqueous** | **ICP 7300** | **07/20/13** | **07/22/13 16:06** | **130722LA7** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | ND | 0.100 | 0.0406 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0901 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **COMP-C9-TOP** | **Sediment** | **ICP 7300** | **07/20/13** | **07/22/13 16:10** | **130722SA7** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 2.530 | 5.000 | 7.825 | 106 | 7.544 | 100 | 75-125 | 4 | 0-20 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0901 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **097-05-006-6824** | **Aqueous** | **ICP 7300** | **07/22/13 16:07** | **130722LA7** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Lead | 5.000 | 5.204 | 104 | 80-120 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order: 13-04-0901



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control. |
| 4 | The MS/MSD RPD was out of control due to suspected matrix interference. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean). |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/10/13

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

P.O. NO.: 1315100800

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

QUOTE NO.:

SAMPLER(S): (SIGNATURE)

LAB USE ONLY: 13-04-0901

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS
Please HOLD samples. 3 cont.= 1x16oz DO NOT Freeze
Analysis will be determined at a later date. 1x 8oz 1x grainsize composite or grainsize
New COC will be submitted with analysis when confirmed. bag
Danielle Gonsman is PM.

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC09-0001 | | 04/10/13 | 1315 | Sed | 3 | | | | X |
| 2 | SD-S-P-NASC09-0102 | | | | | | | | | X |
| 3 | SD-S-P-NASC09-0203 | | | | | | | | | X |
| 4 | SD-S-P-NASC09-0304 | | | | | | | | | X |
| 5 | SD-S-P-NASC09-0405 | | | | | | | | | X |
| 6 | SD-S-P-NASC09-0506 | | | | | | | | | X |
| 7 | SD-S-P-NASC09-0607 Plug | | | | | | | | | X |
| 8 | SD-S-P-NASC08-comp | | 4/10/13 | 0830 | | 1 | | | | X |
| 9 | SD-S-P-NASC08-0910 Plug | | | 0830 | | 3 | | | | X |
| 10 | SD-S-P-NASC09-comp | | | 1315 | | 1 | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | | 04/11/13 | 1445 |
| | | 04/11/13 | 1910 |
| | | | |



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|
| NAS-C1 | | | | |
| SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| SD-S-P-NASC1-0102 | | | | |
| SD-S-P-NASC1-0203 | | | | |
| SD-S-P-NASC1-0304 | | | | |
| SD-S-P-NASC1-0405 | | | | |
| SD-S-P-NASC1-0506 | | | | BOTTOM |
| SD-S-P-NASC1-0607 | | | | |
| SD-S-P-NASC1-0708 | | | | |
| SD-S-P-NASC1-0809 | | | | |
| NAS-C2 | | | | |
| SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| SD-S-P-NASC2-0102 | | | | |
| SD-S-P-NASC2-0203 | | | | |
| SD-S-P-NASC2-0304 | | | | |
| SD-S-P-NASC2-0405 | | | | |
| SD-S-P-NASC2-0506 | | | | BOTTOM |
| SD-S-P-NASC2-0607 | | | | |
| SD-S-P-NASC2-0708 | | | | |
| SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | |
| SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| SD-S-P-NASC3-0102 | | | | |
| SD-S-P-NASC3-0203 | | | | |
| SD-S-P-NASC3-0304 | | | | |
| SD-S-P-NASC3-0405 | | | | |
| SD-S-P-NASC3-0506 | | | | BOTTOM |
| SD-S-P-NASC3-0607 | | | | |
| SD-S-P-NASC3-0708 | | | | |
| SD-S-P-NASC3-0809 | | | | |
| SD-S-P-NASC3-0910 | | | | |
| SD-S-P-NASC3-0910-PLUG | | | | not included[c] |
| NAS-C4 | | | | |
| SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| SD-S-P-NASC4-0102 | | | | |
| SD-S-P-NASC4-0203 | | | | |
| SD-S-P-NASC4-0304 | | | | |
| SD-S-P-NASC4-0405 | | | | |
| SD-S-P-NASC4-0506 | | | | BOTTOM |
| SD-S-P-NASC4-0607 | | | | |
| SD-S-P-NASC4-0708 | | | | |
| SD-S-P-NASC4-0809 | | | | |
| SD-S-P-NASC4-0910 | | | | |
| SD-S-P-NASC4-0910-PLUG | | | | not included[c] |
| NAS-C5 | | | | |
| SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| SD-S-P-NASC5-0102 | | | | |
| SD-S-P-NASC5-0203 | | | | |
| SD-S-P-NASC5-0304 | | | | BOTTOM |
| SD-S-P-NASC5-0405 | | | | |
| SD-S-P-NASC5-0506-PLUG | | | | not included[c] |
| NAS-C6 | | | | |
| SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| SD-S-P-NASC6-0102 | | | | |
| SD-S-P-NASC6-0203 | | | | BOTTOM |
| SD-S-P-NASC6-0304-PLUG | | | | not included[c] |
| NAS-C7 | | | | |
| SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| SD-S-P-NASC7-0102 | | | | |
| SD-S-P-NASC7-0203 | | | | |
| SD-S-P-NASC7-0304 | | | | |
| SD-S-P-NASC7-0405 | | | | BOTTOM |
| SD-S-P-NASC7-0506 | | | | |
| SD-S-P-NASC7-0607 | | | | |
| SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | |
| SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| SD-S-P-NASC8-0102 | | | | |
| SD-S-P-NASC8-0203 | | | | |
| SD-S-P-NASC8-0304 | | | | |
| SD-S-P-NASC8-0405 | | | | |
| SD-S-P-NASC8-0506 | | | | BOTTOM |
| SD-S-P-NASC8-0607 | | | | |
| SD-S-P-NASC8-0708 | | | | |
| SD-S-P-NASC8-0809 | | | | |
| SD-S-P-NASC8-0910 | | | | |
| SD-S-P-NASC8-0910-PLUG | | | | not included[c] |
| NAS-C9 | | | | |
| SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| SD-S-P-NASC9-0102 | | | | |
| SD-S-P-NASC9-0203 | | | | |
| SD-S-P-NASC9-0304 | | | | |
| SD-S-P-NASC9-0405 | | | | BOTTOM |
| SD-S-P-NASC9-0506 | | | | |
| SD-S-P-NASC9-0607 | | | | |
| NAS-C10 | | | | |
| SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| SD-S-P-NASC10-0102 | | | | |
| SD-S-P-NASC10-0203 | | | | |
| SD-S-P-NASC10-0304 | | | | BOTTOM |
| SD-S-P-NASC10-0405 | | | | |
| SD-S-P-NASC10-0506 | | | | |
| SD-S-P-NASC10-0607 | | | | |
| SD-S-P-NASC10-0708 | | | | |
| NAS-C11 | | | | |
| SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| SD-S-P-NASC11-0102 | | | | |
| SD-S-P-NASC11-0203 | | | | |
| SD-S-P-NASC11-0304 | | | | |
| SD-S-P-NASC11-0405 | | | | BOTTOM |
| SD-S-P-NASC11-0506 | | | | |
| SD-S-P-NASC11-0607 | | | | |
| SD-S-P-NASC11-0708 | | | | |
| SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | |
| SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| SD-S-P-NASC12-0102 | | | | |
| SD-S-P-NASC12-0203 | | | | |
| SD-S-P-NASC12-0304 | | | | |
| SD-S-P-NASC12-0405 | | | | BOTTOM |
| SD-S-P-NASC12-0506 | | | | |
| SD-S-P-NASC12-0607 | | | | |
| SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | |
| SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| SD-S-P-NASC13-0102 | | | | |
| SD-S-P-NASC13-0203 | | | | |
| SD-S-P-NASC13-0304 | | | | BOTTOM |
| SD-S-P-NASC13-0405 | | | | |
| SD-S-P-NASC13-0506 | | | | |
| SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | |
| SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| SD-S-P-NASC14-0102 | | | | |
| SD-S-P-NASC14-0203 | | | | BOTTOM |
| SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | |
| SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| SD-S-P-NASC15-0102 | | | | |
| SD-S-P-NASC15-0203 | | | | |
| SD-S-P-NASC15-0304 | | | | BOTTOM |
| SD-S-P-NASC15-0405 | | | | |
| SD-S-P-NASC15-0506 | | | | |

Notes:
0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on
a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.
b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.
A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)
c - sample not included due to low volume available and because it represents native material which will not be dredged



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| ~~13-04-1000-1~~ | ~~SD-S-P-NASC1-0001~~ | COMP-A | 4/11/2013 | 1335 | TOP |
| ~~13-04-1000-2~~ | ~~SD-S-P-NASC1-0102~~ | | | | |
| ~~13-04-1000-3~~ | ~~SD-S-P-NASC1-0203~~ | | | | |
| ~~13-04-1000-4~~ | ~~SD-S-P-NASC1-0304~~ | | | | |
| ~~13-04-1000-5~~ | ~~SD-S-P-NASC1-0405~~ | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| ~~13-04-1111-1~~ | ~~SD-S-P-NASC2-0001~~ | COMP-A | 4/12/2013 | 1021 | TOP |
| ~~13-04-1111-2~~ | ~~SD-S-P-NASC2-0102~~ | | | | |
| ~~13-04-1111-3~~ | ~~SD-S-P-NASC2-0203~~ | | | | |
| ~~13-04-1111-4~~ | ~~SD-S-P-NASC2-0304~~ | | | | |
| ~~13-04-1111-5~~ | ~~SD-S-P-NASC2-0405~~ | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| ~~13-04-1113-1~~ | ~~SD-S-P-NASC3-0001~~ | COMP-A | 4/12/2013 | 751 | TOP |
| ~~13-04-1113-2~~ | ~~SD-S-P-NASC3-0102~~ | | | | |
| ~~13-04-1113-3~~ | ~~SD-S-P-NASC3-0203~~ | | | | |
| ~~13-04-1113-4~~ | ~~SD-S-P-NASC3-0304~~ | | | | |
| ~~13-04-1113-5~~ | ~~SD-S-P-NASC3-0405~~ | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| ~~13-04-1002-1~~ | ~~SD-S-P-NASC4-0001~~ | COMP-A | 4/11/2013 | 930 | TOP |
| ~~13-04-1002-2~~ | ~~SD-S-P-NASC4-0102~~ | | | | |
| ~~13-04-1002-3~~ | ~~SD-S-P-NASC4-0203~~ | | | | |
| ~~13-04-1002-4~~ | ~~SD-S-P-NASC4-0304~~ | | | | |
| ~~13-04-1002-5~~ | ~~SD-S-P-NASC4-0405~~ | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| ~~13-04-1003-1~~ | ~~SD-S-P-NASC5-0001~~ | COMP-A | 4/11/2013 | 755 | TOP |
| ~~13-04-1003-2~~ | ~~SD-S-P-NASC5-0102~~ | | | | |
| ~~13-04-1003-3~~ | ~~SD-S-P-NASC5-0203~~ | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| ~~13-04-1001-1~~ | ~~SD-S-P-NASC6-0001~~ | COMP-B | 4/11/2013 | 1200 | TOP |
| ~~13-04-1001-2~~ | ~~SD-S-P-NASC6-0102~~ | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| ~~13-04-0902-1~~ | ~~SD-S-P-NASC7-0001~~ | COMP-B | 4/10/2013 | 1430 | TOP |
| ~~13-04-0902-2~~ | ~~SD-S-P-NASC7-0102~~ | | | | |
| ~~13-04-0902-3~~ | ~~SD-S-P-NASC7-0203~~ | | | | |
| ~~13-04-0902-4~~ | ~~SD-S-P-NASC7-0304~~ | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| ~~13-04-0903-1~~ | ~~SD-S-P-NASC8-0001~~ | COMP-B | 4/10/2013 | 830 | TOP |
| ~~13-04-0903-2~~ | ~~SD-S-P-NASC8-0102~~ | | | | |
| ~~13-04-0903-3~~ | ~~SD-S-P-NASC8-0203~~ | | | | |
| ~~13-04-0903-4~~ | ~~SD-S-P-NASC8-0304~~ | | | | |
| ~~13-04-0903-5~~ | ~~SD-S-P-NASC8-0405~~ | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| ~~13-04-0901-1~~ | ~~SD-S-P-NASC9-0001~~ | COMP-B | 4/10/2013 | 1315 | TOP |
| ~~13-04-0901-2~~ | ~~SD-S-P-NASC9-0102~~ | | | | |
| ~~13-04-0901-3~~ | ~~SD-S-P-NASC9-0203~~ | | | | |
| ~~13-04-0901-4~~ | ~~SD-S-P-NASC9-0304~~ | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607-PLUG~~ | | | | |
| NAS-C10 | | | | | |
| ~~13-04-0904-1~~ | ~~SD-S-P-NASC10-0001~~ | COMP-D | 4/10/2013 | 1010 | TOP |
| ~~13-04-0904-2~~ | ~~SD-S-P-NASC10-0102~~ | | | | |
| ~~13-04-0904-3~~ | ~~SD-S-P-NASC10-0203~~ | | | | |
| ~~13-04-0904-4~~ | ~~SD-S-P-NASC10-0304~~ | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-8 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| ~~13-04-0778-1~~ | ~~SD-S-P-NASC11-0001~~ | COMP-D | 4/9/2013 | 1525 | TOP |
| ~~13-04-0778-2~~ | ~~SD-S-P-NASC11-0102~~ | | | | |
| ~~13-04-0778-3~~ | ~~SD-S-P-NASC11-0203~~ | | | | |
| ~~13-04-0778-4~~ | ~~SD-S-P-NASC11-0304~~ | | | | |
| ~~13-04-0778-5~~ | ~~SD-S-P-NASC11-0405~~ | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| ~~13-04-0780-1~~ | ~~SD-S-P-NASC12-0001~~ | COMP-D | 4/9/2013 | 1410 | TOP |
| ~~13-04-0780-2~~ | ~~SD-S-P-NASC12-0102~~ | | | | |
| ~~13-04-0780-3~~ | ~~SD-S-P-NASC12-0203~~ | | | | |
| ~~13-04-0780-4~~ | ~~SD-S-P-NASC12-0304~~ | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| ~~13-04-0781-1~~ | ~~SD-S-P-NASC13-0001~~ | COMP-E | 4/9/2013 | 1055 | TOP |
| ~~13-04-0781-2~~ | ~~SD-S-P-NASC13-0102~~ | | | | |
| ~~13-04-0781-3~~ | ~~SD-S-P-NASC13-0203~~ | | | | |
| ~~13-04-0781-4~~ | ~~SD-S-P-NASC13-0304~~ | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| ~~13-04-0782-1~~ | ~~SD-S-P-NASC14-0001~~ | COMP-E | 4/9/2013 | 815 | TOP |
| ~~13-04-0782-2~~ | ~~SD-S-P-NASC14-0102~~ | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| ~~13-04-0779-1~~ | ~~SD-S-P-NASC15-0001~~ | COMP-E | 4/9/2013 | 940 | TOP |
| ~~13-04-0779-2~~ | ~~SD-S-P-NASC15-0102~~ | | | | |
| ~~13-04-0779-3~~ | ~~SD-S-P-NASC15-0203~~ | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged



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WORK ORDER #: 13-04-0901

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/11/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.9 °C - 0.2 °C (CF) = 1.7 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: [illegible]

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: [illegible]

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: HH

| SAMPLE CONDITION: | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ 2

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** HH

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** TN

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** TN



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## Danielle Gonsman

**From:** Gobbi, Kimbrie [kimbrie.gobbi@amec.com]
**Sent:** Wednesday, July 17, 2013 10:05 AM
**To:** Danielle Gonsman
**Cc:** Travis Merritts; Cindy Fields; David Templeton; Michael Whelan; Snyder, Barry
**Subject:** South Trust (NASSCO) Shipyard Samples for STLC/TCLP
**Attachments:** STLC-TCLP_Compositing_Scheme.pdf

Hi Danielle!

As per our recent conversations, we are ready to begin STLC and TCLP analysis for lead only on the NASSCO sediment samples. To do this we will need you to perform the following tasks:

1) Re-composite samples highlighted red in the following table as per the last round of testing, see attached for information.
2) Run STLC analysis for lead on the samples highlighted in red.
3) Run TCLP analysis for lead on sample C4-Top and C6-Bottom only (yellow highlights).
4) Provide an official work order for these tasks.
5) Provide an estimate of the fastest possible TAT and all expedited surcharges for the compositing and analysis to **Anchor QEA** so they can confirm the costs.

| **LEAD CONCENTRATION IN SEDIMENT; UNITS (mg/kg)** | |
|---|---|
| Soluble Threshold Limit Concentration (STLC) Trigger Level (mg/kg) | 50 |
| Total Threshold Limit Concentration (TTLC) (Wet Weight) | 1000 |
| COMP-C1-TOP | **57.9** |
| COMP-C1-BOTTOM | 7.38 |
| COMP-C2-TOP | **57.8** |
| COMP-C2-BOTTOM | 10.3 |
| COMP-C3-TOP | **66.5** |
| COMP-C3-BOTTOM | 21.3 |
| COMP-C4-TOP | **132** |
| COMP-C4-BOTTOM | 6.34 |
| COMP-C5-TOP | **52.7** |
| COMP-C5-BOTTOM | 21.8 |
| COMP-C6-TOP | **94.2** |
| COMP-C6-BOTTOM | **141** |
| COMP-C7-TOP | **64.7** |
| COMP-C7-BOTTOM | 19.8 |
| COMP-C8-TOP | **77.4** |
| COMP-C8-BOTTOM | 21.1 |
| COMP-C9-TOP | **64** |
| COMP-C9-BOTTOM | 22.9 |
| COMP-C10-TOP | 23.9 |
| COMP-C10-BOTTOM | **69** |
| COMP-C11-TOP | 49.8 |
| COMP-C11-BOTTOM | 21 |
| COMP-C12-TOP | **61.3** |
| COMP-C12-BOTTOM | 6.06 |
| COMP-C13-TOP | 34.4 |
| COMP-C13-BOTTOM | 10.6 |



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| | |
|---|---|
| COMP-C14-TOP | 46 |
| COMP-C14-BOTTOM | 36.1 |
| COMP-C15-TOP | **52.8** |
| COMP-C15-BOTTOM | 39.7 |

Thank you!

**Kimbrie Gobbi, M. Sc.**
**Marine and Environmental Scientist**
**AMEC**
Environment & Infrastructure
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Supplemental Report 1

Additional requested analyses are reported as a stand-alone report.

# CALSCIENCE

## WORK ORDER NUMBER: 13-04-0904

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard Sediment Study

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 07/25/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

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Work Order Number: 13-04-0904


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Calscience Environmental Laboratories, Inc.

# Work Order Narrative

Work Order: 13-04-0904



**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/11/13. They were assigned to Work Order 13-04-0904.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Calscience Environmental Laboratories, Inc.

# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC | Work Order: | 13-04-0904 |
| | 27201 Puerta Real, Suite 350 | Project Name: | NASSCO South Shipyard Sediment Study |
| | Mission Viejo, CA 92691-8306 | PO Number: | Work Order #3 |
| | | Date Received: | 04/11/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| COMP-C10-BOTTOM | 13-04-0904-11 | 04/10/13 10:10 | 1 | Sediment |

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Calscience Environmental Laboratories, Inc.

# CASE NARRATIVE

## Calscience Work Order No.: 13-04-0904
## Project ID: NASSCO Shipyard Sediment Study

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

Six sediment samples were received for this project on April 11, 2013. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 1.6°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in freezers pending chemistry testing.

On June 12, 2013 samples were composited into two samples as per client instructions.

COC discrepancies were noted in the Sample Anomaly Form.

***Tests Performed***

Sample COMP-C10-BOTTOM was analyzed for the following analyses:

Title 22 STLC Lead by EPA 6010B.

***Data Summary***

Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

Concentrations of target analytes in the method blank were found to be below reporting limits for all analyses.

Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the MDL, and where applicable, “J” flags were reported.

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Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test. All parameters were within established control limits.

Matrix Spikes

Matrix spikes and matrix spike duplicates were performed for each applicable analysis on project samples. All parameters were within the acceptable control limits unless otherwise noted.

Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0904 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| | | Units: | mg/L |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C10-BOTTOM** | **13-04-0904-11-A** | **04/10/13 10:10** | **Sediment** | **ICP 7300** | **07/20/13** | **07/22/13 16:11** | **130722LA7** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | 3.50 | 0.100 | 0.0406 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-05-006-6824** | **N/A** | **Aqueous** | **ICP 7300** | **07/20/13** | **07/22/13 16:06** | **130722LA7** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | ND | 0.100 | 0.0406 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0904 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **ICP 7300** | **07/20/13** | **07/22/13 16:10** | **130722SA7** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 2.530 | 5.000 | 7.825 | 106 | 7.544 | 100 | 75-125 | 4 | 0-20 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/11/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0904 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **097-05-006-6824** | **Aqueous** | **ICP 7300** | **07/22/13 16:07** | **130722LA7** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Lead | 5.000 | 5.204 | 104 | 80-120 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order: 13-04-0904



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control. |
| 4 | The MS/MSD RPD was out of control due to suspected matrix interference. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean). |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |
| | Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis. |
| | Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time. |
| | A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations. |

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/10/13

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

SAMPLER(S): (SIGNATURE)

P.O. NO.: 1315100800

QUOTE NO.:

LAB USE ONLY: 13-04-0904

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ____/____/____

SPECIAL INSTRUCTIONS

Please HOLD samples.
Analysis will be determined at a later date.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM. DO NOT FREEZE COMPOSITE OR GRAIN SIZE SAMPLE

3 Containers = 1x 16oz
1x 8oz
1x grain size bag

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required: HOLD |
|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC10-0001 | | 4/10/13 | 1010 | Sed | 3 | X |
| 2 | SD-S-P-NASC10-0102 | | | | | | X |
| 3 | SD-S-P-NASC10-0203 | | | | | | X |
| 4 | SD-S-P-NASC10-0304 | | | | | | X |
| 5 | SD-S-P-NASC10-0405 | | | | | | X |
| 6 | SD-S-P-NASC10-0506 | | | | | | X |
| 7 | SD-S-P-NASC10-0607 | | | | | | X |
| | ~~SD-S-P-NASC10-0708~~ | | | | | 2 | X |
| 8 | SD-S-P-NASC10-Comp | | | | | 1 | X |
| 9 | SD-S-P-NASC10-0708 Plug | | | | | 2 | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| | | 04/11/13 | 1445 |
| Relinquished by: (Signature) | Received by: (Signature) | 04/11/13 | 1910 |
| Relinquished by: (Signature) | Received by: (Signature) | | |



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|
| NAS-C1 | | | | |
| SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| SD-S-P-NASC1-0102 | | | | |
| SD-S-P-NASC1-0203 | | | | |
| SD-S-P-NASC1-0304 | | | | |
| SD-S-P-NASC1-0405 | | | | |
| SD-S-P-NASC1-0506 | | | | BOTTOM |
| SD-S-P-NASC1-0607 | | | | |
| SD-S-P-NASC1-0708 | | | | |
| SD-S-P-NASC1-0809 | | | | |
| NAS-C2 | | | | |
| SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| SD-S-P-NASC2-0102 | | | | |
| SD-S-P-NASC2-0203 | | | | |
| SD-S-P-NASC2-0304 | | | | |
| SD-S-P-NASC2-0405 | | | | |
| SD-S-P-NASC2-0506 | | | | BOTTOM |
| SD-S-P-NASC2-0607 | | | | |
| SD-S-P-NASC2-0708 | | | | |
| SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | |
| SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| SD-S-P-NASC3-0102 | | | | |
| SD-S-P-NASC3-0203 | | | | |
| SD-S-P-NASC3-0304 | | | | |
| SD-S-P-NASC3-0405 | | | | |
| SD-S-P-NASC3-0506 | | | | BOTTOM |
| SD-S-P-NASC3-0607 | | | | |
| SD-S-P-NASC3-0708 | | | | |
| SD-S-P-NASC3-0809 | | | | |
| SD-S-P-NASC3-0910 | | | | |
| SD-S-P-NASC3-0910-PLUG | | | | not included[c] |
| NAS-C4 | | | | |
| SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| SD-S-P-NASC4-0102 | | | | |
| SD-S-P-NASC4-0203 | | | | |
| SD-S-P-NASC4-0304 | | | | |
| SD-S-P-NASC4-0405 | | | | |
| SD-S-P-NASC4-0506 | | | | BOTTOM |
| SD-S-P-NASC4-0607 | | | | |
| SD-S-P-NASC4-0708 | | | | |
| SD-S-P-NASC4-0809 | | | | |
| SD-S-P-NASC4-0910 | | | | |
| SD-S-P-NASC4-0910-PLUG | | | | not included[c] |
| NAS-C5 | | | | |
| SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| SD-S-P-NASC5-0102 | | | | |
| SD-S-P-NASC5-0203 | | | | |
| SD-S-P-NASC5-0304 | | | | BOTTOM |
| SD-S-P-NASC5-0405 | | | | |
| SD-S-P-NASC5-0506-PLUG | | | | not included[c] |
| NAS-C6 | | | | |
| SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| SD-S-P-NASC6-0102 | | | | |
| SD-S-P-NASC6-0203 | | | | BOTTOM |
| SD-S-P-NASC6-0304-PLUG | | | | not included[c] |
| NAS-C7 | | | | |
| SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| SD-S-P-NASC7-0102 | | | | |
| SD-S-P-NASC7-0203 | | | | |
| SD-S-P-NASC7-0304 | | | | |
| SD-S-P-NASC7-0405 | | | | BOTTOM |
| SD-S-P-NASC7-0506 | | | | |
| SD-S-P-NASC7-0607 | | | | |
| SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | |
| SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| SD-S-P-NASC8-0102 | | | | |
| SD-S-P-NASC8-0203 | | | | |
| SD-S-P-NASC8-0304 | | | | |
| SD-S-P-NASC8-0405 | | | | |
| SD-S-P-NASC8-0506 | | | | BOTTOM |
| SD-S-P-NASC8-0607 | | | | |
| SD-S-P-NASC8-0708 | | | | |
| SD-S-P-NASC8-0809 | | | | |
| SD-S-P-NASC8-0910 | | | | |
| SD-S-P-NASC8-0910-PLUG | | | | not included[c] |
| NAS-C9 | | | | |
| SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| SD-S-P-NASC9-0102 | | | | |
| SD-S-P-NASC9-0203 | | | | |
| SD-S-P-NASC9-0304 | | | | |
| SD-S-P-NASC9-0405 | | | | BOTTOM |
| SD-S-P-NASC9-0506 | | | | |
| SD-S-P-NASC9-0607 | | | | |
| NAS-C10 | | | | |
| SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| SD-S-P-NASC10-0102 | | | | |
| SD-S-P-NASC10-0203 | | | | |
| SD-S-P-NASC10-0304 | | | | BOTTOM |
| SD-S-P-NASC10-0405 | | | | |
| SD-S-P-NASC10-0506 | | | | |
| SD-S-P-NASC10-0607 | | | | |
| SD-S-P-NASC10-0708 | | | | |
| NAS-C11 | | | | |
| SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| SD-S-P-NASC11-0102 | | | | |
| SD-S-P-NASC11-0203 | | | | |
| SD-S-P-NASC11-0304 | | | | |
| SD-S-P-NASC11-0405 | | | | BOTTOM |
| SD-S-P-NASC11-0506 | | | | |
| SD-S-P-NASC11-0607 | | | | |
| SD-S-P-NASC11-0708 | | | | |
| SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | |
| SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| SD-S-P-NASC12-0102 | | | | |
| SD-S-P-NASC12-0203 | | | | |
| SD-S-P-NASC12-0304 | | | | |
| SD-S-P-NASC12-0405 | | | | BOTTOM |
| SD-S-P-NASC12-0506 | | | | |
| SD-S-P-NASC12-0607 | | | | |
| SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | |
| SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| SD-S-P-NASC13-0102 | | | | |
| SD-S-P-NASC13-0203 | | | | |
| SD-S-P-NASC13-0304 | | | | BOTTOM |
| SD-S-P-NASC13-0405 | | | | |
| SD-S-P-NASC13-0506 | | | | |
| SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | |
| SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| SD-S-P-NASC14-0102 | | | | |
| SD-S-P-NASC14-0203 | | | | BOTTOM |
| SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | |
| SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| SD-S-P-NASC15-0102 | | | | |
| SD-S-P-NASC15-0203 | | | | |
| SD-S-P-NASC15-0304 | | | | BOTTOM |
| SD-S-P-NASC15-0405 | | | | |
| SD-S-P-NASC15-0506 | | | | |

Notes:
0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on
a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.
b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.
A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)
c - sample not included due to low volume available and because it represents native material which will not be dredged



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| ~~13-04-1000-1~~ | ~~SD-S-P-NASC1-0001~~ | COMP-A | 4/11/2013 | 1335 | TOP |
| ~~13-04-1000-2~~ | ~~SD-S-P-NASC1-0102~~ | | | | |
| ~~13-04-1000-3~~ | ~~SD-S-P-NASC1-0203~~ | | | | |
| ~~13-04-1000-4~~ | ~~SD-S-P-NASC1-0304~~ | | | | |
| ~~13-04-1000-5~~ | ~~SD-S-P-NASC1-0405~~ | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| ~~13-04-1111-1~~ | ~~SD-S-P-NASC2-0001~~ | COMP-A | 4/12/2013 | 1021 | TOP |
| ~~13-04-1111-2~~ | ~~SD-S-P-NASC2-0102~~ | | | | |
| ~~13-04-1111-3~~ | ~~SD-S-P-NASC2-0203~~ | | | | |
| ~~13-04-1111-4~~ | ~~SD-S-P-NASC2-0304~~ | | | | |
| ~~13-04-1111-5~~ | ~~SD-S-P-NASC2-0405~~ | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| ~~13-04-1113-1~~ | ~~SD-S-P-NASC3-0001~~ | COMP-A | 4/12/2013 | 751 | TOP |
| ~~13-04-1113-2~~ | ~~SD-S-P-NASC3-0102~~ | | | | |
| ~~13-04-1113-3~~ | ~~SD-S-P-NASC3-0203~~ | | | | |
| ~~13-04-1113-4~~ | ~~SD-S-P-NASC3-0304~~ | | | | |
| ~~13-04-1113-5~~ | ~~SD-S-P-NASC3-0405~~ | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| ~~13-04-1002-1~~ | ~~SD-S-P-NASC4-0001~~ | COMP-A | 4/11/2013 | 930 | TOP |
| ~~13-04-1002-2~~ | ~~SD-S-P-NASC4-0102~~ | | | | |
| ~~13-04-1002-3~~ | ~~SD-S-P-NASC4-0203~~ | | | | |
| ~~13-04-1002-4~~ | ~~SD-S-P-NASC4-0304~~ | | | | |
| ~~13-04-1002-5~~ | ~~SD-S-P-NASC4-0405~~ | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| ~~13-04-1003-1~~ | ~~SD-S-P-NASC5-0001~~ | COMP-A | 4/11/2013 | 755 | TOP |
| ~~13-04-1003-2~~ | ~~SD-S-P-NASC5-0102~~ | | | | |
| ~~13-04-1003-3~~ | ~~SD-S-P-NASC5-0203~~ | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| ~~13-04-1001-1~~ | ~~SD-S-P-NASC6-0001~~ | COMP-B | 4/11/2013 | 1200 | TOP |
| ~~13-04-1001-2~~ | ~~SD-S-P-NASC6-0102~~ | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| ~~13-04-0902-1~~ | ~~SD-S-P-NASC7-0001~~ | COMP-B | 4/10/2013 | 1430 | TOP |
| ~~13-04-0902-2~~ | ~~SD-S-P-NASC7-0102~~ | | | | |
| ~~13-04-0902-3~~ | ~~SD-S-P-NASC7-0203~~ | | | | |
| ~~13-04-0902-4~~ | ~~SD-S-P-NASC7-0304~~ | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| ~~13-04-0903-1~~ | ~~SD-S-P-NASC8-0001~~ | COMP-B | 4/10/2013 | 830 | TOP |
| ~~13-04-0903-2~~ | ~~SD-S-P-NASC8-0102~~ | | | | |
| ~~13-04-0903-3~~ | ~~SD-S-P-NASC8-0203~~ | | | | |
| ~~13-04-0903-4~~ | ~~SD-S-P-NASC8-0304~~ | | | | |
| ~~13-04-0903-5~~ | ~~SD-S-P-NASC8-0405~~ | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| ~~13-04-0901-1~~ | ~~SD-S-P-NASC9-0001~~ | COMP-B | 4/10/2013 | 1315 | TOP |
| ~~13-04-0901-2~~ | ~~SD-S-P-NASC9-0102~~ | | | | |
| ~~13-04-0901-3~~ | ~~SD-S-P-NASC9-0203~~ | | | | |
| ~~13-04-0901-4~~ | ~~SD-S-P-NASC9-0304~~ | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607-PLUG~~ | | | | |
| NAS-C10 | | | | | |
| ~~13-04-0904-1~~ | ~~SD-S-P-NASC10-0001~~ | COMP-D | 4/10/2013 | 1010 | TOP |
| ~~13-04-0904-2~~ | ~~SD-S-P-NASC10-0102~~ | | | | |
| ~~13-04-0904-3~~ | ~~SD-S-P-NASC10-0203~~ | | | | |
| ~~13-04-0904-4~~ | ~~SD-S-P-NASC10-0304~~ | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-8 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| ~~13-04-0778-1~~ | ~~SD-S-P-NASC11-0001~~ | COMP-D | 4/9/2013 | 1525 | TOP |
| ~~13-04-0778-2~~ | ~~SD-S-P-NASC11-0102~~ | | | | |
| ~~13-04-0778-3~~ | ~~SD-S-P-NASC11-0203~~ | | | | |
| ~~13-04-0778-4~~ | ~~SD-S-P-NASC11-0304~~ | | | | |
| ~~13-04-0778-5~~ | ~~SD-S-P-NASC11-0405~~ | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| ~~13-04-0780-1~~ | ~~SD-S-P-NASC12-0001~~ | COMP-D | 4/9/2013 | 1410 | TOP |
| ~~13-04-0780-2~~ | ~~SD-S-P-NASC12-0102~~ | | | | |
| ~~13-04-0780-3~~ | ~~SD-S-P-NASC12-0203~~ | | | | |
| ~~13-04-0780-4~~ | ~~SD-S-P-NASC12-0304~~ | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| ~~13-04-0781-1~~ | ~~SD-S-P-NASC13-0001~~ | COMP-E | 4/9/2013 | 1055 | TOP |
| ~~13-04-0781-2~~ | ~~SD-S-P-NASC13-0102~~ | | | | |
| ~~13-04-0781-3~~ | ~~SD-S-P-NASC13-0203~~ | | | | |
| ~~13-04-0781-4~~ | ~~SD-S-P-NASC13-0304~~ | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| ~~13-04-0782-1~~ | ~~SD-S-P-NASC14-0001~~ | COMP-E | 4/9/2013 | 815 | TOP |
| ~~13-04-0782-2~~ | ~~SD-S-P-NASC14-0102~~ | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| ~~13-04-0779-1~~ | ~~SD-S-P-NASC15-0001~~ | COMP-E | 4/9/2013 | 940 | TOP |
| ~~13-04-0779-2~~ | ~~SD-S-P-NASC15-0102~~ | | | | |
| ~~13-04-0779-3~~ | ~~SD-S-P-NASC15-0203~~ | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged



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WORK ORDER #: 13-04-0904

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/11/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.8 °C - 0.2 °C (CF) = 1.6 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: NB

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: NB

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: HH

| SAMPLE CONDITION: | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ 2

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** HH

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** TN

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** TN



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## Danielle Gonsman

**From:** Gobbi, Kimbrie [kimbrie.gobbi@amec.com]
**Sent:** Wednesday, July 17, 2013 10:05 AM
**To:** Danielle Gonsman
**Cc:** Travis Merritts; Cindy Fields; David Templeton; Michael Whelan; Snyder, Barry
**Subject:** South Trust (NASSCO) Shipyard Samples for STLC/TCLP
**Attachments:** STLC-TCLP_Compositing_Scheme.pdf

Hi Danielle!

As per our recent conversations, we are ready to begin STLC and TCLP analysis for lead only on the NASSCO sediment samples. To do this we will need you to perform the following tasks:

1) Re-composite samples highlighted red in the following table as per the last round of testing, see attached for information.
2) Run STLC analysis for lead on the samples highlighted in red.
3) Run TCLP analysis for lead on sample C4-Top and C6-Bottom only (yellow highlights).
4) Provide an official work order for these tasks.
5) Provide an estimate of the fastest possible TAT and all expedited surcharges for the compositing and analysis to **Anchor QEA** so they can confirm the costs.

| **LEAD CONCENTRATION IN SEDIMENT; UNITS (mg/kg)** | |
|---|---|
| Soluble Threshold Limit Concentration (STLC) Trigger Level (mg/kg) | 50 |
| Total Threshold Limit Concentration (TTLC) (Wet Weight) | 1000 |
| COMP-C1-TOP | **57.9** |
| COMP-C1-BOTTOM | 7.38 |
| COMP-C2-TOP | **57.8** |
| COMP-C2-BOTTOM | 10.3 |
| COMP-C3-TOP | **66.5** |
| COMP-C3-BOTTOM | 21.3 |
| COMP-C4-TOP | **132** |
| COMP-C4-BOTTOM | 6.34 |
| COMP-C5-TOP | **52.7** |
| COMP-C5-BOTTOM | 21.8 |
| COMP-C6-TOP | **94.2** |
| COMP-C6-BOTTOM | **141** |
| COMP-C7-TOP | **64.7** |
| COMP-C7-BOTTOM | 19.8 |
| COMP-C8-TOP | **77.4** |
| COMP-C8-BOTTOM | 21.1 |
| COMP-C9-TOP | **64** |
| COMP-C9-BOTTOM | 22.9 |
| COMP-C10-TOP | 23.9 |
| COMP-C10-BOTTOM | **69** |
| COMP-C11-TOP | 49.8 |
| COMP-C11-BOTTOM | 21 |
| COMP-C12-TOP | **61.3** |
| COMP-C12-BOTTOM | 6.06 |
| COMP-C13-TOP | 34.4 |
| COMP-C13-BOTTOM | 10.6 |



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| | |
|---|---|
| COMP-C14-TOP | 46 |
| COMP-C14-BOTTOM | 36.1 |
| COMP-C15-TOP | **52.8** |
| COMP-C15-BOTTOM | 39.7 |

Thank you!

**Kimbrie Gobbi, M. Sc.**
**Marine and Environmental Scientist**
**AMEC**
Environment & Infrastructure
9210 Sky Park Court, Suite 200, San Diego, CA 92123, USA
Tel +1 (858) 300 4300, Fax +1 (858) 300 4301
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*I speak for the trees! Please consider the environment before printing this email!*

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Supplemental Report 1

Additional requested analyses are reported as a stand-alone report.

# CALSCIENCE

## WORK ORDER NUMBER: 13-04-0780

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard Sediment Study

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 07/25/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

# Contents

Client Project Name: NASSCO South Shipyard Sediment Study
Work Order Number: 13-04-0780


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Calscience Environmental Laboratories, Inc.

# Work Order Narrative

Work Order: 13-04-0780 Page 1 of 1

**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/10/13. They were assigned to Work Order 13-04-0780.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Calscience Environmental Laboratories, Inc.

# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC | Work Order: | 13-04-0780 |
| | 27201 Puerta Real, Suite 350 | Project Name: | NASSCO South Shipyard Sediment Study |
| | Mission Viejo, CA 92691-8306 | PO Number: | Work Order #3 |
| | | Date Received: | 04/10/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| COMP-C12-TOP | 13-04-0780-10 | 04/09/13 14:10 | 1 | Sediment |

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Calscience Environmental Laboratories, Inc.

# CASE NARRATIVE

## Calscience Work Order No.: 13-04-0780
## Project ID: NASSCO Shipyard Sediment Study

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

Nine sediment samples were received for this project on April 10, 2013. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 1.5°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in refrigeration units pending chemistry testing.

On June 12, 2013 samples were composited into two samples as per client instructions.

COC discrepancies were noted in the Sample Anomaly Form.

***Tests Performed***

Sample COMP-C12-TOP was analyzed for the following analyses:

Title 22 STLC Lead by EPA 6010B.

***Data Summary***

Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

Concentrations of target analytes in the method blank were found to be below reporting limits for all analyses.

Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the MDL, and where applicable, “J” flags were reported.

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Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test. All parameters were within established control limits.

Matrix Spikes

Matrix spikes and matrix spike duplicates were performed for each applicable analysis on project samples. All parameters were within the acceptable control limits unless otherwise noted.

Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0780 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| | | Units: | mg/L |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C12-TOP** | **13-04-0780-10-A** | **04/09/13 14:10** | **Sediment** | **ICP 7300** | **07/20/13** | **07/22/13 16:15** | **130722LA7** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | 1.57 | 0.100 | 0.0406 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-05-006-6824** | **N/A** | **Aqueous** | **ICP 7300** | **07/20/13** | **07/22/13 16:06** | **130722LA7** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | ND | 0.100 | 0.0406 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0780 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **ICP 7300** | **07/20/13** | **07/22/13 16:10** | **130722SA7** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 2.530 | 5.000 | 7.825 | 106 | 7.544 | 100 | 75-125 | 4 | 0-20 | |

RPD: Relative Percent Difference. CL: Control Limits



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# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0780 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **097-05-006-6824** | **Aqueous** | **ICP 7300** | **07/22/13 16:07** | **130722LA7** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Lead | 5.000 | 5.204 | 104 | 80-120 | |

RPD: Relative Percent Difference. CL: Control Limits



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# Glossary of Terms and Qualifiers

Work Order: 13-04-0780



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control. |
| 4 | The MS/MSD RPD was out of control due to suspected matrix interference. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean). |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/9/13

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 FAX: 858-300-4301 E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

P.O. NO.: 1315100800

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

QUOTE NO.:

SAMPLER(S): (SIGNATURE) KGG

LAB USE ONLY: 13-04-0780

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY): ☐ RWQCB REPORTING ☒ ARCHIVE SAMPLES UNTIL 4/30/14

SPECIAL INSTRUCTIONS:
Please HOLD samples.
Analysis will be determined at a later date.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

1x 8oz. jar
1x 16oz. jar
1x grain size baggie

REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | HOLD |
|---|---|---|---|---|---|---|---|---|
| 1 | SD-S-P-NASC12 | -0001 | 4/9/13 | 1410 | sed | 3 | | X |
| 2 | | -0102 ~~0102~~ | | | | | | X |
| 3 | | -0203 | | | | | | X |
| 4 | | -0304 | | | | | | X |
| 5 | | -0405 | | | | | | X |
| 6 | | -0506 | | | | | | X |
| 7 | | -0607 | | | | | | X |
| 8 | | -0708 | | | | | | X |
| 9 | | Plug | | | | 1 | | X |
| | | | | | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| Kimbrie Gobbi | | | |
| Barry Snyder | | 04/10/13 | 1545 |
| | Dannyle Lee | 4/10/13 | 18:45 |



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|
| NAS-C1 | | | | |
| SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| SD-S-P-NASC1-0102 | | | | |
| SD-S-P-NASC1-0203 | | | | |
| SD-S-P-NASC1-0304 | | | | |
| SD-S-P-NASC1-0405 | | | | |
| SD-S-P-NASC1-0506 | | | | BOTTOM |
| SD-S-P-NASC1-0607 | | | | |
| SD-S-P-NASC1-0708 | | | | |
| SD-S-P-NASC1-0809 | | | | |
| NAS-C2 | | | | |
| SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| SD-S-P-NASC2-0102 | | | | |
| SD-S-P-NASC2-0203 | | | | |
| SD-S-P-NASC2-0304 | | | | |
| SD-S-P-NASC2-0405 | | | | |
| SD-S-P-NASC2-0506 | | | | BOTTOM |
| SD-S-P-NASC2-0607 | | | | |
| SD-S-P-NASC2-0708 | | | | |
| SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | |
| SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| SD-S-P-NASC3-0102 | | | | |
| SD-S-P-NASC3-0203 | | | | |
| SD-S-P-NASC3-0304 | | | | |
| SD-S-P-NASC3-0405 | | | | |
| SD-S-P-NASC3-0506 | | | | BOTTOM |
| SD-S-P-NASC3-0607 | | | | |
| SD-S-P-NASC3-0708 | | | | |
| SD-S-P-NASC3-0809 | | | | |
| SD-S-P-NASC3-0910 | | | | |
| SD-S-P-NASC3-0910-PLUG | | | | not included[c] |
| NAS-C4 | | | | |
| SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| SD-S-P-NASC4-0102 | | | | |
| SD-S-P-NASC4-0203 | | | | |
| SD-S-P-NASC4-0304 | | | | |
| SD-S-P-NASC4-0405 | | | | |
| SD-S-P-NASC4-0506 | | | | BOTTOM |
| SD-S-P-NASC4-0607 | | | | |
| SD-S-P-NASC4-0708 | | | | |
| SD-S-P-NASC4-0809 | | | | |
| SD-S-P-NASC4-0910 | | | | |
| SD-S-P-NASC4-0910-PLUG | | | | not included[c] |
| NAS-C5 | | | | |
| SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| SD-S-P-NASC5-0102 | | | | |
| SD-S-P-NASC5-0203 | | | | |
| SD-S-P-NASC5-0304 | | | | BOTTOM |
| SD-S-P-NASC5-0405 | | | | |
| SD-S-P-NASC5-0506-PLUG | | | | not included[c] |
| NAS-C6 | | | | |
| SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| SD-S-P-NASC6-0102 | | | | |
| SD-S-P-NASC6-0203 | | | | BOTTOM |
| SD-S-P-NASC6-0304-PLUG | | | | not included[c] |
| NAS-C7 | | | | |
| SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| SD-S-P-NASC7-0102 | | | | |
| SD-S-P-NASC7-0203 | | | | |
| SD-S-P-NASC7-0304 | | | | |
| SD-S-P-NASC7-0405 | | | | BOTTOM |
| SD-S-P-NASC7-0506 | | | | |
| SD-S-P-NASC7-0607 | | | | |
| SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | |
| SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| SD-S-P-NASC8-0102 | | | | |
| SD-S-P-NASC8-0203 | | | | |
| SD-S-P-NASC8-0304 | | | | |
| SD-S-P-NASC8-0405 | | | | |
| SD-S-P-NASC8-0506 | | | | BOTTOM |
| SD-S-P-NASC8-0607 | | | | |
| SD-S-P-NASC8-0708 | | | | |
| SD-S-P-NASC8-0809 | | | | |
| SD-S-P-NASC8-0910 | | | | |
| SD-S-P-NASC8-0910-PLUG | | | | not included[c] |
| NAS-C9 | | | | |
| SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| SD-S-P-NASC9-0102 | | | | |
| SD-S-P-NASC9-0203 | | | | |
| SD-S-P-NASC9-0304 | | | | |
| SD-S-P-NASC9-0405 | | | | BOTTOM |
| SD-S-P-NASC9-0506 | | | | |
| SD-S-P-NASC9-0607 | | | | |
| NAS-C10 | | | | |
| SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| SD-S-P-NASC10-0102 | | | | |
| SD-S-P-NASC10-0203 | | | | |
| SD-S-P-NASC10-0304 | | | | BOTTOM |
| SD-S-P-NASC10-0405 | | | | |
| SD-S-P-NASC10-0506 | | | | |
| SD-S-P-NASC10-0607 | | | | |
| SD-S-P-NASC10-0708 | | | | |
| NAS-C11 | | | | |
| SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| SD-S-P-NASC11-0102 | | | | |
| SD-S-P-NASC11-0203 | | | | |
| SD-S-P-NASC11-0304 | | | | |
| SD-S-P-NASC11-0405 | | | | BOTTOM |
| SD-S-P-NASC11-0506 | | | | |
| SD-S-P-NASC11-0607 | | | | |
| SD-S-P-NASC11-0708 | | | | |
| SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | |
| SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| SD-S-P-NASC12-0102 | | | | |
| SD-S-P-NASC12-0203 | | | | |
| SD-S-P-NASC12-0304 | | | | |
| SD-S-P-NASC12-0405 | | | | BOTTOM |
| SD-S-P-NASC12-0506 | | | | |
| SD-S-P-NASC12-0607 | | | | |
| SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | |
| SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| SD-S-P-NASC13-0102 | | | | |
| SD-S-P-NASC13-0203 | | | | |
| SD-S-P-NASC13-0304 | | | | BOTTOM |
| SD-S-P-NASC13-0405 | | | | |
| SD-S-P-NASC13-0506 | | | | |
| SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | |
| SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| SD-S-P-NASC14-0102 | | | | |
| SD-S-P-NASC14-0203 | | | | BOTTOM |
| SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | |
| SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| SD-S-P-NASC15-0102 | | | | |
| SD-S-P-NASC15-0203 | | | | |
| SD-S-P-NASC15-0304 | | | | BOTTOM |
| SD-S-P-NASC15-0405 | | | | |
| SD-S-P-NASC15-0506 | | | | |

Notes:
0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on
a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.
b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.
A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)
c - sample not included due to low volume available and because it represents native material which will not be dredged



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| ~~13-04-1000-1~~ | ~~SD-S-P-NASC1-0001~~ | COMP-A | 4/11/2013 | 1335 | TOP |
| ~~13-04-1000-2~~ | ~~SD-S-P-NASC1-0102~~ | | | | |
| ~~13-04-1000-3~~ | ~~SD-S-P-NASC1-0203~~ | | | | |
| ~~13-04-1000-4~~ | ~~SD-S-P-NASC1-0304~~ | | | | |
| ~~13-04-1000-5~~ | ~~SD-S-P-NASC1-0405~~ | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| ~~13-04-1111-1~~ | ~~SD-S-P-NASC2-0001~~ | COMP-A | 4/12/2013 | 1021 | TOP |
| ~~13-04-1111-2~~ | ~~SD-S-P-NASC2-0102~~ | | | | |
| ~~13-04-1111-3~~ | ~~SD-S-P-NASC2-0203~~ | | | | |
| ~~13-04-1111-4~~ | ~~SD-S-P-NASC2-0304~~ | | | | |
| ~~13-04-1111-5~~ | ~~SD-S-P-NASC2-0405~~ | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| ~~13-04-1113-1~~ | ~~SD-S-P-NASC3-0001~~ | COMP-A | 4/12/2013 | 751 | TOP |
| ~~13-04-1113-2~~ | ~~SD-S-P-NASC3-0102~~ | | | | |
| ~~13-04-1113-3~~ | ~~SD-S-P-NASC3-0203~~ | | | | |
| ~~13-04-1113-4~~ | ~~SD-S-P-NASC3-0304~~ | | | | |
| ~~13-04-1113-5~~ | ~~SD-S-P-NASC3-0405~~ | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| ~~13-04-1002-1~~ | ~~SD-S-P-NASC4-0001~~ | COMP-A | 4/11/2013 | 930 | TOP |
| ~~13-04-1002-2~~ | ~~SD-S-P-NASC4-0102~~ | | | | |
| ~~13-04-1002-3~~ | ~~SD-S-P-NASC4-0203~~ | | | | |
| ~~13-04-1002-4~~ | ~~SD-S-P-NASC4-0304~~ | | | | |
| ~~13-04-1002-5~~ | ~~SD-S-P-NASC4-0405~~ | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| ~~13-04-1003-1~~ | ~~SD-S-P-NASC5-0001~~ | COMP-A | 4/11/2013 | 755 | TOP |
| ~~13-04-1003-2~~ | ~~SD-S-P-NASC5-0102~~ | | | | |
| ~~13-04-1003-3~~ | ~~SD-S-P-NASC5-0203~~ | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| ~~13-04-1001-1~~ | ~~SD-S-P-NASC6-0001~~ | COMP-B | 4/11/2013 | 1200 | TOP |
| ~~13-04-1001-2~~ | ~~SD-S-P-NASC6-0102~~ | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| ~~13-04-0902-1~~ | ~~SD-S-P-NASC7-0001~~ | COMP-B | 4/10/2013 | 1430 | TOP |
| ~~13-04-0902-2~~ | ~~SD-S-P-NASC7-0102~~ | | | | |
| ~~13-04-0902-3~~ | ~~SD-S-P-NASC7-0203~~ | | | | |
| ~~13-04-0902-4~~ | ~~SD-S-P-NASC7-0304~~ | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| ~~13-04-0903-1~~ | ~~SD-S-P-NASC8-0001~~ | COMP-B | 4/10/2013 | 830 | TOP |
| ~~13-04-0903-2~~ | ~~SD-S-P-NASC8-0102~~ | | | | |
| ~~13-04-0903-3~~ | ~~SD-S-P-NASC8-0203~~ | | | | |
| ~~13-04-0903-4~~ | ~~SD-S-P-NASC8-0304~~ | | | | |
| ~~13-04-0903-5~~ | ~~SD-S-P-NASC8-0405~~ | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| ~~13-04-0901-1~~ | ~~SD-S-P-NASC9-0001~~ | COMP-B | 4/10/2013 | 1315 | TOP |
| ~~13-04-0901-2~~ | ~~SD-S-P-NASC9-0102~~ | | | | |
| ~~13-04-0901-3~~ | ~~SD-S-P-NASC9-0203~~ | | | | |
| ~~13-04-0901-4~~ | ~~SD-S-P-NASC9-0304~~ | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607-PLUG~~ | | | | |
| NAS-C10 | | | | | |
| ~~13-04-0904-1~~ | ~~SD-S-P-NASC10-0001~~ | COMP-D | 4/10/2013 | 1010 | TOP |
| ~~13-04-0904-2~~ | ~~SD-S-P-NASC10-0102~~ | | | | |
| ~~13-04-0904-3~~ | ~~SD-S-P-NASC10-0203~~ | | | | |
| ~~13-04-0904-4~~ | ~~SD-S-P-NASC10-0304~~ | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-8 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| ~~13-04-0778-1~~ | ~~SD-S-P-NASC11-0001~~ | COMP-D | 4/9/2013 | 1525 | TOP |
| ~~13-04-0778-2~~ | ~~SD-S-P-NASC11-0102~~ | | | | |
| ~~13-04-0778-3~~ | ~~SD-S-P-NASC11-0203~~ | | | | |
| ~~13-04-0778-4~~ | ~~SD-S-P-NASC11-0304~~ | | | | |
| ~~13-04-0778-5~~ | ~~SD-S-P-NASC11-0405~~ | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| ~~13-04-0780-1~~ | ~~SD-S-P-NASC12-0001~~ | COMP-D | 4/9/2013 | 1410 | TOP |
| ~~13-04-0780-2~~ | ~~SD-S-P-NASC12-0102~~ | | | | |
| ~~13-04-0780-3~~ | ~~SD-S-P-NASC12-0203~~ | | | | |
| ~~13-04-0780-4~~ | ~~SD-S-P-NASC12-0304~~ | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| ~~13-04-0781-1~~ | ~~SD-S-P-NASC13-0001~~ | COMP-E | 4/9/2013 | 1055 | TOP |
| ~~13-04-0781-2~~ | ~~SD-S-P-NASC13-0102~~ | | | | |
| ~~13-04-0781-3~~ | ~~SD-S-P-NASC13-0203~~ | | | | |
| ~~13-04-0781-4~~ | ~~SD-S-P-NASC13-0304~~ | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0506 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| ~~13-04-0782-1~~ | ~~SD-S-P-NASC14-0001~~ | COMP-E | 4/9/2013 | 815 | TOP |
| ~~13-04-0782-2~~ | ~~SD-S-P-NASC14-0102~~ | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| ~~13-04-0779-1~~ | ~~SD-S-P-NASC15-0001~~ | COMP-E | 4/9/2013 | 940 | TOP |
| ~~13-04-0779-2~~ | ~~SD-S-P-NASC15-0102~~ | | | | |
| ~~13-04-0779-3~~ | ~~SD-S-P-NASC15-0203~~ | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0780

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/10/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.7 °C - 0.2 °C (CF) = 1.5 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter Initial: [illegible]

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: [illegible]

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: HH

| SAMPLE CONDITION: | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☑ | ☐ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑Z_____

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** HH

**Container:** **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WSL

**Preservative:** **h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WSL



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## Danielle Gonsman

**From:** Gobbi, Kimbrie [kimbrie.gobbi@amec.com]
**Sent:** Wednesday, July 17, 2013 10:05 AM
**To:** Danielle Gonsman
**Cc:** Travis Merritts; Cindy Fields; David Templeton; Michael Whelan; Snyder, Barry
**Subject:** South Trust (NASSCO) Shipyard Samples for STLC/TCLP
**Attachments:** STLC-TCLP_Compositing_Scheme.pdf

Hi Danielle!

As per our recent conversations, we are ready to begin STLC and TCLP analysis for lead only on the NASSCO sediment samples. To do this we will need you to perform the following tasks:

1) Re-composite samples highlighted red in the following table as per the last round of testing, see attached for information.
2) Run STLC analysis for lead on the samples highlighted in red.
3) Run TCLP analysis for lead on sample C4-Top and C6-Bottom only (yellow highlights).
4) Provide an official work order for these tasks.
5) Provide an estimate of the fastest possible TAT and all expedited surcharges for the compositing and analysis to **Anchor QEA** so they can confirm the costs.

| **LEAD CONCENTRATION IN SEDIMENT; UNITS (mg/kg)** | |
|---|---|
| Soluble Threshold Limit Concentration (STLC) Trigger Level (mg/kg) | 50 |
| Total Threshold Limit Concentration (TTLC) (Wet Weight) | 1000 |
| COMP-C1-TOP | **57.9** |
| COMP-C1-BOTTOM | 7.38 |
| COMP-C2-TOP | **57.8** |
| COMP-C2-BOTTOM | 10.3 |
| COMP-C3-TOP | **66.5** |
| COMP-C3-BOTTOM | 21.3 |
| COMP-C4-TOP | **132** |
| COMP-C4-BOTTOM | 6.34 |
| COMP-C5-TOP | **52.7** |
| COMP-C5-BOTTOM | 21.8 |
| COMP-C6-TOP | **94.2** |
| COMP-C6-BOTTOM | **141** |
| COMP-C7-TOP | **64.7** |
| COMP-C7-BOTTOM | 19.8 |
| COMP-C8-TOP | **77.4** |
| COMP-C8-BOTTOM | 21.1 |
| COMP-C9-TOP | **64** |
| COMP-C9-BOTTOM | 22.9 |
| COMP-C10-TOP | 23.9 |
| COMP-C10-BOTTOM | **69** |
| COMP-C11-TOP | 49.8 |
| COMP-C11-BOTTOM | 21 |
| COMP-C12-TOP | **61.3** |
| COMP-C12-BOTTOM | 6.06 |
| COMP-C13-TOP | 34.4 |
| COMP-C13-BOTTOM | 10.6 |



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| | |
|---|---|
| COMP-C14-TOP | 46 |
| COMP-C14-BOTTOM | 36.1 |
| COMP-C15-TOP | **52.8** |
| COMP-C15-BOTTOM | 39.7 |

Thank you!

**Kimbrie Gobbi, M. Sc.**
**Marine and Environmental Scientist**
**AMEC**
Environment & Infrastructure
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Tel +1 (858) 300 4300, Fax +1 (858) 300 4301
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*I speak for the trees! Please consider the environment before printing this email!*

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Supplemental Report 1

Additional requested analyses are reported as a stand-alone report.

# CALSCIENCE

## WORK ORDER NUMBER: 13-04-0779

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

**Analytical Report For**

**Client:** ANCHOR QEA, LLC

**Client Project Name:** NASSCO South Shipyard Sediment Study

**Attention:** David Templeton
27201 Puerta Real, Suite 350
Mission Viejo, CA 92691-8306

Approved for release on 07/25/2013 by:
Danielle Gonsman
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

# Contents

Client Project Name: NASSCO South Shipyard Sediment Study
Work Order Number: 13-04-0779


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Calscience Environmental Laboratories, Inc.

# Work Order Narrative

Work Order: 13-04-0779 Page 1 of 1

**Condition Upon Receipt:**

Samples were received under Chain of Custody (COC) on 04/10/13. They were assigned to Work Order 13-04-0779.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

**Holding Times:**

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

**Quality Control:**

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

**Additional Comments:**

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

**Subcontractor Information:**

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

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Calscience Environmental Laboratories, Inc.

# Sample Summary

| | | | |
|---|---|---|---|
| Client: | ANCHOR QEA, LLC | Work Order: | 13-04-0779 |
| | 27201 Puerta Real, Suite 350 | Project Name: | NASSCO South Shipyard Sediment Study |
| | Mission Viejo, CA 92691-8306 | PO Number: | Work Order #3 |
| | | Date Received: | 04/10/13 |
| Attn: | David Templeton | | |

| Sample Identification | Lab Number | Collection Date and Time | Number of Containers | Matrix |
|---|---|---|---|---|
| COMP-C15-TOP | 13-04-0779-9 | 04/09/13 09:40 | 1 | Sediment |

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Calscience Environmental Laboratories, Inc.

# CASE NARRATIVE

## Calscience Work Order No.: 13-04-0779
## Project ID: NASSCO Shipyard Sediment Study

Provided below is a narrative of our analytical effort, including any unique features or anomalies encountered as part of the analysis of the sediment samples.

***Sample Condition on Receipt***

Six sediment samples were received for this project on April 10, 2013. The samples were transferred to the laboratory in an ice-chest with wet ice, following strict chain-of-custody (COC) procedures. The temperature of the samples upon receipt at the laboratory was 1.5°C. All samples were logged into the Laboratory Information Management System (LIMS), given laboratory identification numbers and then stored in refrigeration units pending chemistry testing.

On June 12, 2013 samples were composited into two samples as per client instructions.

COC discrepancies were noted in the Sample Anomaly Form.

***Tests Performed***

Sample COMP-C15-TOP was analyzed for the following analyses:

Title 22 STLC Lead by EPA 6010B.

***Data Summary***

Calibration

Frequency and control criteria for initial and continuing calibration verifications were met.

Blanks

Concentrations of target analytes in the method blank were found to be below reporting limits for all analyses.

Reporting Limits

The Method Detection Limits were met. All sample results were evaluated to the MDL, and where applicable, “J” flags were reported.

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Laboratory Control Samples

A Laboratory Control Sample (LCS) analysis was performed for each applicable test. All parameters were within established control limits.

Matrix Spikes

Matrix spikes and matrix spike duplicates were performed for each applicable analysis on project samples. All parameters were within the acceptable control limits unless otherwise noted.

Acronyms

LCS - Laboratory Control Sample
PDS - Post Digestion Spike
MS/MSD- Matrix Spike/Matrix Spike Duplicate
ME-Marginal Exceedance
RPD- Relative Percent Difference

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Calscience Environmental Laboratories, Inc.

# Analytical Report

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| | | Units: | mg/L |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **COMP-C15-TOP** | **13-04-0779-9-A** | **04/09/13 09:40** | **Sediment** | **ICP 7300** | **07/20/13** | **07/22/13 16:20** | **130722LA7** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | 1.16 | 0.100 | 0.0406 | 1 | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **097-05-006-6824** | **N/A** | **Aqueous** | **ICP 7300** | **07/20/13** | **07/22/13 16:06** | **130722LA7** |

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

| Parameter | Result | RL | MDL | DF | Qualifiers |
|---|---|---|---|---|---|
| Lead | ND | 0.100 | 0.0406 | 1 | |

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

Calscience Environmental Laboratories, Inc.

# Quality Control - Spike/Spike Duplicate

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **13-04-0901-11** | **Sediment** | **ICP 7300** | **07/20/13** | **07/22/13 16:10** | **130722SA7** |

| Parameter | Sample Conc. | Spike Added | MS Conc. | MS %Rec. | MSD Conc. | MSD %Rec. | %Rec. CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Lead | 2.530 | 5.000 | 7.825 | 106 | 7.544 | 100 | 75-125 | 4 | 0-20 | |

RPD: Relative Percent Difference. CL: Control Limits



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# Quality Control - LCS

| | | | |
|---|---|---|---|
| ANCHOR QEA, LLC | | Date Received: | 04/10/13 |
| 27201 Puerta Real, Suite 350 | | Work Order: | 13-04-0779 |
| Mission Viejo, CA 92691-8306 | | Preparation: | T22.11.5. AII |
| | | Method: | EPA 6010B |
| Project: NASSCO South Shipyard Sediment Study | | | Page 1 of 1 |

| Quality Control Sample ID | Matrix | Instrument | Date Analyzed | LCS Batch Number |
|---|---|---|---|---|
| **097-05-006-6824** | **Aqueous** | **ICP 7300** | **07/22/13 16:07** | **130722LA7** |

| Parameter | Spike Added | Conc. Recovered | LCS %Rec. | %Rec. CL | Qualifiers |
|---|---|---|---|---|---|
| Lead | 5.000 | 5.204 | 104 | 80-120 | |

RPD: Relative Percent Difference. CL: Control Limits



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Calscience Environmental Laboratories, Inc.

# Glossary of Terms and Qualifiers

Work Order: 13-04-0779



| Qualifiers | Definition |
|---|---|
| * | See applicable analysis comment. |
| < | Less than the indicated value. |
| > | Greater than the indicated value. |
| 1 | Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification. |
| 2 | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| 3 | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control. |
| 4 | The MS/MSD RPD was out of control due to suspected matrix interference. |
| 5 | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference. |
| 6 | Surrogate recovery below the acceptance limit. |
| 7 | Surrogate recovery above the acceptance limit. |
| B | Analyte was present in the associated method blank. |
| BU | Sample analyzed after holding time expired. |
| BV | Sample received after holding time expired. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| HD | The chromatographic pattern was inconsistent with the profile of the reference fuel standard. |
| HDH | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected). |
| HDL | The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected). |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| ME | LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean). |
| ND | Parameter not detected at the indicated reporting limit. |
| Q | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| SG | The sample extract was subjected to Silica Gel treatment prior to analysis. |
| X | % Recovery and/or RPD out-of-range. |
| Z | Analyte presence was not confirmed by second column or GC/MS analysis. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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Calscience Environmental Laboratories, Inc.
7440 LINCOLN WAY
GARDEN GROVE, CA 92841-1432
TEL: (714) 895-5494 . FAX: (714) 894-7501

# CHAIN OF CUSTODY RECORD

DATE: 4/9/13

PAGE: 1 OF 1

LABORATORY CLIENT: AMEC Environment & Infrastructure

ADDRESS: 9210 Sky Park Ct. Ste 200

CITY: San Diego, California 92123

TEL: 858-300-4300 | FAX: 858-300-4301 | E-MAIL: kimbrie.gobbi@amec.com

CLIENT PROJECT NAME / NUMBER: NASSCO Shipyard Sediment Study

P.O. NO.: 1315100800

PROJECT CONTACT: Kimbrie Gobbi/Barry Snyder

QUOTE NO.:

SAMPLER(S): (SIGNATURE)

LAB USE ONLY: 13-04-0779

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 5 DAYS ☐ 10 DAYS

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)

☐ RWQCB REPORTING ☒ ARCHIVE SAMPLES UNTIL 4/30/14

SPECIAL INSTRUCTIONS

Please HOLD samples.
Analysis will be determined at a later date.
New COC will be submitted with analysis when confirmed.
Danielle Gonsman is PM.

1x 1603. jar
1x 803. jar
1x ziplockbag

## REQUESTED ANALYSIS

| LAB USE ONLY | SAMPLE ID | LOCATION/ DESCRIPTION | SAMPLING DATE | SAMPLING TIME | Matrix | #Cont | Please list tests required | | | HOLD |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SD-SP-NASC15-0001 | | 4/9/13 | 0940 | sed | 3 | | | | X |
| 2 | | -0102 | | | | | | | | X |
| 3 | | -0203 | | | | | | | | X |
| 4 | | -0304 | | | | | | | | X |
| 5 | | -0405 | | | | | | | | X |
| 6 | | -0506 | | | | | | | | X |
| | | | | | | | | | | X |
| 7 | ~~Plug~~ BS | Plug | 4/9 | 0940 | sed | 1 | | | | X |
| | | | | | | | | | | X |
| | | | | | | | | | | X |

| Relinquished by: (Signature) | Received by: (Signature) | Date: | Time: |
|---|---|---|---|
| Kimbrie Gobbi | | | |
| Barry J. Snyder | | 04/10/13 | 1545 |
| | Bannyle | 4/10/13 | 18:45 |



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|
| NAS-C1 | | | | |
| SD-S-P-NASC1-0001 | COMP-A | 4/11/2013 | 1335 | TOP |
| SD-S-P-NASC1-0102 | | | | |
| SD-S-P-NASC1-0203 | | | | |
| SD-S-P-NASC1-0304 | | | | |
| SD-S-P-NASC1-0405 | | | | |
| SD-S-P-NASC1-0506 | | | | BOTTOM |
| SD-S-P-NASC1-0607 | | | | |
| SD-S-P-NASC1-0708 | | | | |
| SD-S-P-NASC1-0809 | | | | |
| NAS-C2 | | | | |
| SD-S-P-NASC2-0001 | COMP-A | 4/12/2013 | 1021 | TOP |
| SD-S-P-NASC2-0102 | | | | |
| SD-S-P-NASC2-0203 | | | | |
| SD-S-P-NASC2-0304 | | | | |
| SD-S-P-NASC2-0405 | | | | |
| SD-S-P-NASC2-0506 | | | | BOTTOM |
| SD-S-P-NASC2-0607 | | | | |
| SD-S-P-NASC2-0708 | | | | |
| SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | |
| SD-S-P-NASC3-0001 | COMP-A | 4/12/2013 | 751 | TOP |
| SD-S-P-NASC3-0102 | | | | |
| SD-S-P-NASC3-0203 | | | | |
| SD-S-P-NASC3-0304 | | | | |
| SD-S-P-NASC3-0405 | | | | |
| SD-S-P-NASC3-0506 | | | | BOTTOM |
| SD-S-P-NASC3-0607 | | | | |
| SD-S-P-NASC3-0708 | | | | |
| SD-S-P-NASC3-0809 | | | | |
| SD-S-P-NASC3-0910 | | | | |
| SD-S-P-NASC3-0910-PLUG | | | | not included[c] |
| NAS-C4 | | | | |
| SD-S-P-NASC4-0001 | COMP-B | 4/11/2013 | 930 | TOP |
| SD-S-P-NASC4-0102 | | | | |
| SD-S-P-NASC4-0203 | | | | |
| SD-S-P-NASC4-0304 | | | | |
| SD-S-P-NASC4-0405 | | | | |
| SD-S-P-NASC4-0506 | | | | BOTTOM |
| SD-S-P-NASC4-0607 | | | | |
| SD-S-P-NASC4-0708 | | | | |
| SD-S-P-NASC4-0809 | | | | |
| SD-S-P-NASC4-0910 | | | | |
| SD-S-P-NASC4-0910-PLUG | | | | not included[c] |
| NAS-C5 | | | | |
| SD-S-P-NASC5-0001 | COMP-B | 4/11/2013 | 755 | TOP |
| SD-S-P-NASC5-0102 | | | | |
| SD-S-P-NASC5-0203 | | | | |
| SD-S-P-NASC5-0304 | | | | BOTTOM |
| SD-S-P-NASC5-0405 | | | | |
| SD-S-P-NASC5-0506-PLUG | | | | not included[c] |
| NAS-C6 | | | | |
| SD-S-P-NASC6-0001 | COMP-B | 4/11/2013 | 1200 | TOP |
| SD-S-P-NASC6-0102 | | | | |
| SD-S-P-NASC6-0203 | | | | BOTTOM |
| SD-S-P-NASC6-0304-PLUG | | | | not included[c] |
| NAS-C7 | | | | |
| SD-S-P-NASC7-0001 | COMP-C | 4/10/2013 | 1430 | TOP |
| SD-S-P-NASC7-0102 | | | | |
| SD-S-P-NASC7-0203 | | | | |
| SD-S-P-NASC7-0304 | | | | |
| SD-S-P-NASC7-0405 | | | | BOTTOM |
| SD-S-P-NASC7-0506 | | | | |
| SD-S-P-NASC7-0607 | | | | |
| SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | |
| SD-S-P-NASC8-0001 | COMP-C | 4/10/2013 | 830 | TOP |
| SD-S-P-NASC8-0102 | | | | |
| SD-S-P-NASC8-0203 | | | | |
| SD-S-P-NASC8-0304 | | | | |
| SD-S-P-NASC8-0405 | | | | |
| SD-S-P-NASC8-0506 | | | | BOTTOM |
| SD-S-P-NASC8-0607 | | | | |
| SD-S-P-NASC8-0708 | | | | |
| SD-S-P-NASC8-0809 | | | | |
| SD-S-P-NASC8-0910 | | | | |
| SD-S-P-NASC8-0910-PLUG | | | | not included[c] |
| NAS-C9 | | | | |
| SD-S-P-NASC9-0001 | COMP-C | 4/10/2013 | 1315 | TOP |
| SD-S-P-NASC9-0102 | | | | |
| SD-S-P-NASC9-0203 | | | | |
| SD-S-P-NASC9-0304 | | | | |
| SD-S-P-NASC9-0405 | | | | BOTTOM |
| SD-S-P-NASC9-0506 | | | | |
| SD-S-P-NASC9-0607 | | | | |
| NAS-C10 | | | | |
| SD-S-P-NASC10-0001 | COMP-D | 4/10/2013 | 1010 | TOP |
| SD-S-P-NASC10-0102 | | | | |
| SD-S-P-NASC10-0203 | | | | |
| SD-S-P-NASC10-0304 | | | | |
| SD-S-P-NASC10-0405 | | | | BOTTOM |
| SD-S-P-NASC10-0506 | | | | |
| SD-S-P-NASC10-0607 | | | | |
| SD-S-P-NASC10-0708 | | | | |
| NAS-C11 | | | | |
| SD-S-P-NASC11-0001 | COMP-D | 4/9/2013 | 1525 | TOP |
| SD-S-P-NASC11-0102 | | | | |
| SD-S-P-NASC11-0203 | | | | |
| SD-S-P-NASC11-0304 | | | | |
| SD-S-P-NASC11-0405 | | | | BOTTOM |
| SD-S-P-NASC11-0506 | | | | |
| SD-S-P-NASC11-0607 | | | | |
| SD-S-P-NASC11-0708 | | | | |
| SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | |
| SD-S-P-NASC12-0001 | COMP-D | 4/9/2013 | 1410 | TOP |
| SD-S-P-NASC12-0102 | | | | |
| SD-S-P-NASC12-0203 | | | | |
| SD-S-P-NASC12-0304 | | | | |
| SD-S-P-NASC12-0405 | | | | BOTTOM |
| SD-S-P-NASC12-0506 | | | | |
| SD-S-P-NASC12-0607 | | | | |
| SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | |
| SD-S-P-NASC13-0001 | COMP-E | 4/9/2013 | 1055 | TOP |
| SD-S-P-NASC13-0102 | | | | |
| SD-S-P-NASC13-0203 | | | | |
| SD-S-P-NASC13-0304 | | | | BOTTOM |
| SD-S-P-NASC13-0405 | | | | |
| SD-S-P-NASC13-0506 | | | | |
| SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | |
| SD-S-P-NASC14-0001 | COMP-E | 4/9/2013 | 815 | TOP |
| SD-S-P-NASC14-0102 | | | | |
| SD-S-P-NASC14-0203 | | | | BOTTOM |
| SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | |
| SD-S-P-NASC15-0001 | COMP-E | 4/9/2013 | 940 | TOP |
| SD-S-P-NASC15-0102 | | | | |
| SD-S-P-NASC15-0203 | | | | |
| SD-S-P-NASC15-0304 | | | | BOTTOM |
| SD-S-P-NASC15-0405 | | | | |
| SD-S-P-NASC15-0506 | | | | |

Notes:
0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on
a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.
b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.
A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)
c - sample not included due to low volume available and because it represents native material which will not be dredged



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AMEC Environment & Infrastructure
NASSCO Sediment Field Collection Effort
April 9 - 12, 2013
Sample List for Landfill Classification

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C1 | | | | | |
| ~~13-04-1000-1~~ | ~~SD-S-P-NASC1-0001~~ | COMP-A | 4/11/2013 | 1335 | TOP |
| ~~13-04-1000-2~~ | ~~SD-S-P-NASC1-0102~~ | | | | |
| ~~13-04-1000-3~~ | ~~SD-S-P-NASC1-0203~~ | | | | |
| ~~13-04-1000-4~~ | ~~SD-S-P-NASC1-0304~~ | | | | |
| ~~13-04-1000-5~~ | ~~SD-S-P-NASC1-0405~~ | | | | |
| 13-04-1004-6 | SD-S-P-NASC1-0506 | | | | BOTTOM |
| 13-04-1004-7 | SD-S-P-NASC1-0607 | | | | |
| 13-04-1004-8 | SD-S-P-NASC1-0708 | | | | |
| ~~13-04-1004-9~~ | ~~SD-S-P-NASC1-0809 PLUG~~ | | | | |
| NAS-C2 | | | | | |
| ~~13-04-1111-1~~ | ~~SD-S-P-NASC2-0001~~ | COMP-A | 4/12/2013 | 1021 | TOP |
| ~~13-04-1111-2~~ | ~~SD-S-P-NASC2-0102~~ | | | | |
| ~~13-04-1111-3~~ | ~~SD-S-P-NASC2-0203~~ | | | | |
| ~~13-04-1111-4~~ | ~~SD-S-P-NASC2-0304~~ | | | | |
| ~~13-04-1111-5~~ | ~~SD-S-P-NASC2-0405~~ | | | | |
| 13-04-1111-6 | SD-S-P-NASC2-0506 | | | | BOTTOM |
| 13-04-1111-7 | SD-S-P-NASC2-0607 | | | | |
| 13-04-1111-8 | SD-S-P-NASC2-0708 | | | | |
| 13-04-1111-9 | SD-S-P-NASC2-0809 | | | | |
| NAS-C3 | | | | | |
| ~~13-04-1113-1~~ | ~~SD-S-P-NASC3-0001~~ | COMP-A | 4/12/2013 | 751 | TOP |
| ~~13-04-1113-2~~ | ~~SD-S-P-NASC3-0102~~ | | | | |
| ~~13-04-1113-3~~ | ~~SD-S-P-NASC3-0203~~ | | | | |
| ~~13-04-1113-4~~ | ~~SD-S-P-NASC3-0304~~ | | | | |
| ~~13-04-1113-5~~ | ~~SD-S-P-NASC3-0405~~ | | | | |
| 13-04-1113-6 | SD-S-P-NASC3-0506 | | | | BOTTOM |
| 13-04-1113-7 | SD-S-P-NASC3-0607 | | | | |
| 13-04-1113-8 | SD-S-P-NASC3-0708 | | | | |
| 13-04-1113-9 | SD-S-P-NASC3-0809 | | | | |
| 13-04-1113-10 | SD-S-P-NASC3-0910 | | | | |
| ~~13-04-1113-11~~ | ~~SD-S-P-NASC3-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C4 | | | | | |
| ~~13-04-1002-1~~ | ~~SD-S-P-NASC4-0001~~ | COMP-A | 4/11/2013 | 930 | TOP |
| ~~13-04-1002-2~~ | ~~SD-S-P-NASC4-0102~~ | | | | |
| ~~13-04-1002-3~~ | ~~SD-S-P-NASC4-0203~~ | | | | |
| ~~13-04-1002-4~~ | ~~SD-S-P-NASC4-0304~~ | | | | |
| ~~13-04-1002-5~~ | ~~SD-S-P-NASC4-0405~~ | | | | |
| 13-04-1002-6 | SD-S-P-NASC4-0506 | | | | BOTTOM |
| 13-04-1002-7 | SD-S-P-NASC4-0607 | | | | |
| 13-04-1002-8 | SD-S-P-NASC4-0708 | | | | |
| 13-04-1002-9 | SD-S-P-NASC4-0809 | | | | |
| 13-04-1002-10 | SD-S-P-NASC4-0910 | | | | |
| ~~13-04-1002-11~~ | ~~SD-S-P-NASC4-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C5 | | | | | |
| ~~13-04-1003-1~~ | ~~SD-S-P-NASC5-0001~~ | COMP-A | 4/11/2013 | 755 | TOP |
| ~~13-04-1003-2~~ | ~~SD-S-P-NASC5-0102~~ | | | | |
| ~~13-04-1003-3~~ | ~~SD-S-P-NASC5-0203~~ | | | | |
| 13-04-1003-4 | SD-S-P-NASC5-0304 | | | | BOTTOM |
| 13-04-1003-5 | SD-S-P-NASC5-0405 | | | | |
| ~~13-04-1003-6~~ | ~~SD-S-P-NASC5-0506-PLUG~~ | not included | | | not included[c] |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C6 | | | | | |
| ~~13-04-1001-1~~ | ~~SD-S-P-NASC6-0001~~ | COMP-B | 4/11/2013 | 1200 | TOP |
| ~~13-04-1001-2~~ | ~~SD-S-P-NASC6-0102~~ | | | | |
| 13-04-1001-3 | SD-S-P-NASC6-0203 | | | | BOTTOM |
| ~~13-04-1001-4~~ | ~~SD-S-P-NASC6-0304-PLUG~~ | not included | | | not included |
| NAS-C7 | | | | | |
| ~~13-04-0902-1~~ | ~~SD-S-P-NASC7-0001~~ | COMP-B | 4/10/2013 | 1430 | TOP |
| ~~13-04-0902-2~~ | ~~SD-S-P-NASC7-0102~~ | | | | |
| ~~13-04-0902-3~~ | ~~SD-S-P-NASC7-0203~~ | | | | |
| ~~13-04-0902-4~~ | ~~SD-S-P-NASC7-0304~~ | | | | |
| 13-04-0902-5 | SD-S-P-NASC7-0405 | | | | BOTTOM |
| 13-04-0902-6 | SD-S-P-NASC7-0506 | | | | |
| 13-04-0902-7 | SD-S-P-NASC7-0607 | | | | |
| 13-04-0902-8 | SD-S-P-NASC7-0708 | | | | |
| NAS-C8 | | | | | |
| ~~13-04-0903-1~~ | ~~SD-S-P-NASC8-0001~~ | COMP-B | 4/10/2013 | 830 | TOP |
| ~~13-04-0903-2~~ | ~~SD-S-P-NASC8-0102~~ | | | | |
| ~~13-04-0903-3~~ | ~~SD-S-P-NASC8-0203~~ | | | | |
| ~~13-04-0903-4~~ | ~~SD-S-P-NASC8-0304~~ | | | | |
| ~~13-04-0903-5~~ | ~~SD-S-P-NASC8-0405~~ | | | | |
| 13-04-0903-6 | SD-S-P-NASC8-0506 | | | | BOTTOM |
| 13-04-0903-7 | SD-S-P-NASC8-0607 | | | | |
| 13-04-0903-8 | SD-S-P-NASC8-0708 | | | | |
| 13-04-0903-9 | SD-S-P-NASC8-0809 | | | | |
| 13-04-0903-10 | SD-S-P-NASC8-0910 | | | | |
| ~~13-04-0903-11~~ | ~~SD-S-P-NASC8-0910-PLUG~~ | not included | | | not included[c] |
| NAS-C9 | | | | | |
| ~~13-04-0901-1~~ | ~~SD-S-P-NASC9-0001~~ | COMP-B | 4/10/2013 | 1315 | TOP |
| ~~13-04-0901-2~~ | ~~SD-S-P-NASC9-0102~~ | | | | |
| ~~13-04-0901-3~~ | ~~SD-S-P-NASC9-0203~~ | | | | |
| ~~13-04-0901-4~~ | ~~SD-S-P-NASC9-0304~~ | | | | |
| 13-04-0901-5 | SD-S-P-NASC9-0405 | | | | BOTTOM |
| 13-04-0901-6 | SD-S-P-NASC9-0506 | | | | |
| ~~13-04-0901-7~~ | ~~SD-S-P-NASC9-0607-PLUG~~ | | | | |
| NAS-C10 | | | | | |
| ~~13-04-0904-1~~ | ~~SD-S-P-NASC10-0001~~ | COMP-D | 4/10/2013 | 1010 | TOP |
| ~~13-04-0904-2~~ | ~~SD-S-P-NASC10-0102~~ | | | | |
| ~~13-04-0904-3~~ | ~~SD-S-P-NASC10-0203~~ | | | | |
| ~~13-04-0904-4~~ | ~~SD-S-P-NASC10-0304~~ | | | | |
| 13-04-0904-5 | SD-S-P-NASC10-0405 | | | | BOTTOM |
| 13-04-0904-6 | SD-S-P-NASC10-0506 | | | | |
| 13-04-0904-7 | SD-S-P-NASC10-0607 | | | | |
| 13-04-0904-8 | SD-S-P-NASC10-0708 plug | | | | |

| CALSCIENCE ID | Sample Id[a] | Composite Grouping[b] | Date | Time | COMPOSITE[c] |
|---|---|---|---|---|---|
| NAS-C11 | | | | | |
| ~~13-04-0778-1~~ | ~~SD-S-P-NASC11-0001~~ | COMP-D | 4/9/2013 | 1525 | TOP |
| ~~13-04-0778-2~~ | ~~SD-S-P-NASC11-0102~~ | | | | |
| ~~13-04-0778-3~~ | ~~SD-S-P-NASC11-0203~~ | | | | |
| ~~13-04-0778-4~~ | ~~SD-S-P-NASC11-0304~~ | | | | |
| ~~13-04-0778-5~~ | ~~SD-S-P-NASC11-0405~~ | | | | |
| 13-04-0778-6 | SD-S-P-NASC11-0506 | | | | BOTTOM |
| 13-04-0778-7 | SD-S-P-NASC11-0607 | | | | |
| 13-04-0778-8 | SD-S-P-NASC11-0708 | | | | |
| 13-04-0778-9 | SD-S-P-NASC11-0809 | | | | |
| NAS-C12 | | | | | |
| ~~13-04-0780-1~~ | ~~SD-S-P-NASC12-0001~~ | COMP-D | 4/9/2013 | 1410 | TOP |
| ~~13-04-0780-2~~ | ~~SD-S-P-NASC12-0102~~ | | | | |
| ~~13-04-0780-3~~ | ~~SD-S-P-NASC12-0203~~ | | | | |
| ~~13-04-0780-4~~ | ~~SD-S-P-NASC12-0304~~ | | | | |
| 13-04-0780-5 | SD-S-P-NASC12-0405 | | | | BOTTOM |
| 13-04-0780-6 | SD-S-P-NASC12-0506 | | | | |
| 13-04-0780-7 | SD-S-P-NASC12-0607 | | | | |
| 13-04-0780-8 | SD-S-P-NASC12-0708 | | | | |
| NAS-C13 | | | | | |
| ~~13-04-0781-1~~ | ~~SD-S-P-NASC13-0001~~ | COMP-E | 4/9/2013 | 1055 | TOP |
| ~~13-04-0781-2~~ | ~~SD-S-P-NASC13-0102~~ | | | | |
| ~~13-04-0781-3~~ | ~~SD-S-P-NASC13-0203~~ | | | | |
| ~~13-04-0781-4~~ | ~~SD-S-P-NASC13-0304~~ | | | | |
| 13-04-0781-5 | SD-S-P-NASC13-0405 | | | | BOTTOM |
| 13-04-0781-6 | SD-S-P-NASC13-0505 | | | | |
| 13-04-0781-7 | SD-S-P-NASC13-0607 | | | | |
| NAS-C14 | | | | | |
| ~~13-04-0782-1~~ | ~~SD-S-P-NASC14-0001~~ | COMP-E | 4/9/2013 | 815 | TOP |
| ~~13-04-0782-2~~ | ~~SD-S-P-NASC14-0102~~ | | | | |
| 13-04-0782-3 | SD-S-P-NASC14-0203 | | | | BOTTOM |
| 13-04-0782-4 | SD-S-P-NASC14-0304 | | | | |
| NAS-C15 | | | | | |
| ~~13-04-0779-1~~ | ~~SD-S-P-NASC15-0001~~ | COMP-E | 4/9/2013 | 940 | TOP |
| ~~13-04-0779-2~~ | ~~SD-S-P-NASC15-0102~~ | | | | |
| ~~13-04-0779-3~~ | ~~SD-S-P-NASC15-0203~~ | | | | |
| 13-04-0779-4 | SD-S-P-NASC15-0304 | | | | BOTTOM |
| 13-04-0779-5 | SD-S-P-NASC15-0405 | | | | |
| 13-04-0779-6 | SD-S-P-NASC15-0506 | | | | |

**Notes:**

0001 = 0 ft to 1 ft; 0102 = 1 ft to 2 ft; 0203 = 2 ft to 3 ft and so on

a - sample will be tested for extended range of total petroleum hydrocarbons (TPH, C4-C40); CAM 17 metals, and polychlorinated biphenyl (PCB) aroclors (Landfill Characterization). 30 Submitted Samples.

b - sample will be tested for semivolatile organic compounds (SVOCs), pesticides, and herbicides. 5 total composites will be created from general areas to classify entire dredge area.

A separate aliquot of sediment will be taken from each jar to create composites A-E. Composites will be: COMP-A (NASC01-03); COMP-B (NASC04-06); COMP-C (NASC07-09); COMP-D (NASC10-12); COMP-E (NASC13-15)

c - sample not included due to low volume available and because it represents native material which will not be dredged



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0779

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: AMEC

DATE: 04/10/13

**TEMPERATURE:** Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen except sediment/tissue)

Temperature 1.7 °C - 0.2 °C (CF) = 1.5 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter Initial: BD

**CUSTODY SEALS INTACT:**

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: BD

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: HH

| SAMPLE CONDITION: | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | 4/10/13 | |
| Sampler's name indicated on COC | ☑ | ☑ HH | ☐ |
| Sample container label(s) consistent with COC | ☐ | ☑ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☐ | ☐ | ☑ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☐ | ☐ | ☑ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☑8ozCGJ ☑16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☑ R

**Water:** ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** HH

**Container: C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WK

**Preservative: h:** HCL **n:** $HNO_3$ **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** $H_3PO_4$ **s:** $H_2SO_4$ **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WK



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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 13-04-0779

# SAMPLE ANOMALY FORM

## SAMPLES - CONTAINERS & LABELS:

Comments:

- ☐ **Sample(s) NOT RECEIVED but listed on COC**
- ☑ **Sample(s) received but NOT LISTED on COC**
- ☐ **Holding time expired** – list sample ID(s) and test
- ☐ **Insufficient quantities for analysis** – list test
- ☐ **Improper container(s) used** – list test
- ☐ **Improper preservative used** – list test
- ☐ **No preservative noted on COC or label** – list test & notify lab
- ☐ **Sample labels illegible** – note test/container type
- ☐ **Sample label(s) do not match COC** – Note in comments
  - ☐ **Sample ID**
  - ☐ **Date and/or Time Collected**
  - ☐ **Project Information**
  - ☐ **# of Container(s)**
  - ☐ **Analysis**
- ☐ **Sample container(s) compromised** – Note in comments
  - ☐ **Water present in sample container**
  - ☐ **Broken**
- ☐ **Sample container(s) not labeled**
- ☐ **Air sample container(s) compromised** – Note in comments
  - ☐ **Flat**
  - ☐ **Very low in volume**
  - ☐ **Leaking (Not transferred - duplicate bag submitted)**
  - ☐ **Leaking (transferred into Calscience Tedlar® Bag*)**
  - ☐ **Leaking (transferred into Client's Tedlar® Bag*)**
- ☐ **Other:** _____

(-8) SD-S-P-NASC 15 plug / Bottom of core 04/09/13 @ 9:15 not listed on COC.

## HEADSPACE – Containers with Bubble > 6mm or ¼ inch:

| Sample # | Container ID(s) | # of Vials Received | Sample # | Container ID(s) | # of Vials Received | Sample # | Container ID(s) | # of Cont. received | Analysis |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Comments: _____

*Transferred at Client's request.

Initial / Date: HH 04/10/13



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## Danielle Gonsman

**From:** Gobbi, Kimbrie [kimbrie.gobbi@amec.com]
**Sent:** Wednesday, July 17, 2013 10:05 AM
**To:** Danielle Gonsman
**Cc:** Travis Merritts; Cindy Fields; David Templeton; Michael Whelan; Snyder, Barry
**Subject:** South Trust (NASSCO) Shipyard Samples for STLC/TCLP
**Attachments:** STLC-TCLP_Compositing_Scheme.pdf

Hi Danielle!

As per our recent conversations, we are ready to begin STLC and TCLP analysis for lead only on the NASSCO sediment samples. To do this we will need you to perform the following tasks:

1) Re-composite samples highlighted red in the following table as per the last round of testing, see attached for information.
2) Run STLC analysis for lead on the samples highlighted in red.
3) Run TCLP analysis for lead on sample C4-Top and C6-Bottom only (yellow highlights).
4) Provide an official work order for these tasks.
5) Provide an estimate of the fastest possible TAT and all expedited surcharges for the compositing and analysis to **Anchor QEA** so they can confirm the costs.

| **LEAD CONCENTRATION IN SEDIMENT; UNITS (mg/kg)** | |
|---|---|
| Soluble Threshold Limit Concentration (STLC) Trigger Level (mg/kg) | 50 |
| Total Threshold Limit Concentration (TTLC) (Wet Weight) | 1000 |
| COMP-C1-TOP | **57.9** |
| COMP-C1-BOTTOM | 7.38 |
| COMP-C2-TOP | **57.8** |
| COMP-C2-BOTTOM | 10.3 |
| COMP-C3-TOP | **66.5** |
| COMP-C3-BOTTOM | 21.3 |
| COMP-C4-TOP | **132** |
| COMP-C4-BOTTOM | 6.34 |
| COMP-C5-TOP | **52.7** |
| COMP-C5-BOTTOM | 21.8 |
| COMP-C6-TOP | **94.2** |
| COMP-C6-BOTTOM | **141** |
| COMP-C7-TOP | **64.7** |
| COMP-C7-BOTTOM | 19.8 |
| COMP-C8-TOP | **77.4** |
| COMP-C8-BOTTOM | 21.1 |
| COMP-C9-TOP | **64** |
| COMP-C9-BOTTOM | 22.9 |
| COMP-C10-TOP | 23.9 |
| COMP-C10-BOTTOM | **69** |
| COMP-C11-TOP | 49.8 |
| COMP-C11-BOTTOM | 21 |
| COMP-C12-TOP | **61.3** |
| COMP-C12-BOTTOM | 6.06 |
| COMP-C13-TOP | 34.4 |
| COMP-C13-BOTTOM | 10.6 |



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| | |
|---|---|
| COMP-C14-TOP | 46 |
| COMP-C14-BOTTOM | 36.1 |
| COMP-C15-TOP | **52.8** |
| COMP-C15-BOTTOM | 39.7 |

Thank you!

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*I speak for the trees! Please consider the environment before printing this email!*

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