

San Diego Bay Environmental Restoration Fund – South

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

VIA Email and US Mail

November 14, 2013

David Gibson
San Diego Regional Water Quality Control Board
2375 Northside Drive, Suite 100
San Diego, CA 92108-2700

Re: October 2013, Monthly Water Column Monitoring Report Submittal
San Diego Shipyard Sediment Site – South Shipyard
Place ID 794466, Order No. R9-2013-0093

To Mr. Gibson:

The October 2013 Monthly Water Column Monitoring Report is being submitted to the San Diego Regional Water Quality Control Board by the San Diego Bay Environmental Restoration Fund – South (Attached).

Should there be any questions regarding this Monthly Report, please do not hesitate to contact me at 619-546-8377 ext. 103 or at mpalmer@demaximis.com.

Sincerely,



Mike Palmer
Project Coordinator

Attachment: San Diego Shipyard Sediment Site – South Shipyard (Place ID 794466, Order No. R9-2013-0093) Monthly Water Column Monitoring Report: October 2013

cc: Mike Chee, NASSCO (Via Email)
David Templeton, Anchor QEA (Via Email)
Chad Carpenter, R. E. Staite Engineering (Via Email)

TECHNICAL MEMORANDUM

To: David Gibson, San Diego Regional Water Quality Control Board **Date:** November 12, 2013

From: Chris Osuch, Adam Gale, and Elizabeth Appy, Anchor QEA **Project:** 131003-01.02

Cc: Michael Chee, National Steel and Shipbuilding Company
Michael Palmer, de maximis, inc.
David Templeton and Michael Whelan, Anchor QEA
Robert Smith, U.S. Army Corps of Engineers

Re: San Diego Shipyard Sediment Site – South Shipyard (Place ID 794466, Order No. R9-2013-0093) Monthly Water Column Monitoring Report: October 2013

INTRODUCTION

The San Diego Bay Environmental Restoration Fund – South (South Trust) is remediating contaminated sediments at the South Shipyard portion of the San Diego Shipyard Sediment Site (Site). Remediation is required to comply with Cleanup and Abatement Order (CAO) No. R9-2012-0024 issued by the San Diego Regional Water Quality Control Board (Water Board 2012a). Sediment is being dredged from the South Shipyard and if suitable, dredged material will be disposed of at the Otay Landfill. Water column monitoring must be conducted during dredging operations in order to comply with Waste Discharge Requirements and Section 401 Water Quality Certification (WDR/WQC; Water Board 2013). Anchor QEA was contracted by the South Trust to conduct this water column monitoring.

This technical memorandum summarizes dredging operations and results of water column monitoring during October 2013. Monitoring during dredging was conducted on October 1, 15, 17, 24, and 31. Monitoring was performed in accordance with the WDR/WQC Section VIII(A) (Water Board 2013) and Appendix C of the Remedial Action Plan (RAP; Anchor QEA 2012). Water quality monitoring included dissolved oxygen (DO), pH, turbidity, and visual observations.

In addition to the manual water quality monitoring conducted by Anchor QEA, an automatic monitoring system was set up and monitored by Tierra Data, Inc. (TDI) in accordance with the Mitigation Monitoring and Reporting Program (MMRP; Water Board

2012b). Automatic monitoring buoys were installed by TDI on September 26 prior to commencing dredging. Buoys are located at the reference station and two early warning stations. The reference station is located 1,000 feet from the remedial footprint in the direction of the ocean. Early warning stations are located 250 feet from the construction area;¹ however, it was necessary to slightly adjust this distance to allow for vessel traffic, including barge and tugboat access. Automatic monitoring is intended to alert the contractor if early warning triggers are achieved during dredging to allow for additional dredging best management practices (BMPs) to be implemented to prevent an exceedance at the compliance boundary. Automatic monitoring data are not presented in this technical memorandum but are available at <http://www.wqdata.com/webdblink/buoys.php>.

DREDGE VOLUMES AND LOCATIONS

In October, 7,070 cubic yards (cy) of sediment was dredged from the Site, consisting of 3,900 cy from within Sediment Management Unit (SMU)-3 and 3,170 cy from within SMU-4 (Figure 1). Daily production rates ranged from 20 to 1,000 cy. All sediment was disposed of at the Otay Landfill. A summary of daily dredge volumes, locations from which sediment was removed, and final disposal locations is presented in Table 1. Waste manifests are provided in Attachment A.

WATER QUALITY MONITORING RESULTS

This section describes water quality monitoring results, including sampling locations, water column measurements, and visual observations.

Sampling Locations

Monitoring was performed at the reference station, two early warning stations, and four compliance stations. The reference station is located 1,000 feet from the remedial footprint in the direction of the ocean and beyond the influence of construction activities (Figure 2). Early warning and compliance stations are located 250 and 500 feet from the construction area, respectively. The general layout of early warning and compliance monitoring locations for SMU-3 and -4 are shown on Figures 3 and 4, respectively; however, actual locations were

¹ The construction area is defined as the area occupied by the dredging barge, sediment scow, sand and rock placement equipment, demolition work equipment, silt curtains, and other work.

positioned in the field relative to the construction area. Latitude and longitude coordinates for each monitoring location are presented in Table 2.

Water Column Measurements

DO, pH, and turbidity were measured 10 feet below the surface at each station using a Hydrolab MS5 multi-probe sonde. The instrument was calibrated prior to sampling according to the manufacturer's recommendations. Hydrolab calibration worksheets for each sampling event are provided in Attachment B. Water quality sample forms are provided in Attachment C. A summary of monitoring results during dredging is presented in Table 2.

During dredging, DO, pH, and turbidity results at each compliance station were compared to receiving water limitation compliance criteria. DO and pH concentrations were similar to the reference station and met compliance criteria. On October 1, 2013, the turbidity concentration at one station was more than 20 percent greater than the reference, indicating a potential exceedance. In accordance with procedures described in the WDR/WQC (Water Board 2013) and Appendix C of the RAP (Anchor QEA 2012), visual evidence was evaluated and measurements were re-taken at the reference station and compliance station to confirm the exceedance. No visual evidence of discoloration, turbidity, or surface pollution was observed. The double silt curtain was in place, and no damage, dislocation, or gaps were observed. Turbidity was re-taken, and the concentration was within 20 percent of the reference; therefore, compliance criteria were met and no confirmed exceedances occurred.

Turbidity values were very low at all stations during dredging, with concentrations ranging from 0.7 to 2.9 Nephelometric Turbidity Units (NTU). With values this low, variability is expected to be higher; therefore, a small difference in turbidity due to natural variability may result in a 20 percent exceedance of the reference station. The potential exceedance observed at the compliance station is believed to be the result of natural variability, which was increased due to very low turbidity concentrations.

Visual Observations

Visual observations are summarized in Table 2. No odors or visual evidence of discoloration, turbidity, or surface pollution was observed at any station. The double silt curtain was in place during all dredging operations, and no damage, dislocation, or gaps were observed.

Visual monitoring of turbidity inside and outside the silt curtains was performed in concert with water quality parameter monitoring. Attachment D provides site photographs of the silt curtains that visualize typical conditions during construction, showing an attenuating turbidity plume inside the two silt curtains. These visual observations are consistent with the results presented in this technical memorandum.

SUMMARY OF NON-COMPLIANCE

Based on the results of water quality monitoring, there were no incidents of non-compliance during October.

PERSONS CONTRIBUTING TO THIS REPORT

Names, affiliations, and qualifications of the persons contributing to this technical memorandum are summarized in Table 3.

REFERENCES

Anchor QEA, 2012. *Remedial Action Plan*. San Diego Shipyard Sediment Site. Revised October 2012.

Water Board (San Diego Regional Water Quality Control Board), 2012a. Cleanup and Abatement Order R9-2012-0024 for the Shipyard Sediment Site. Issued March 14, 2012.

Water Board, 2012b. Mitigation Monitoring and Reporting Program for the Shipyard Sediment Remediation Project Environmental Impact Report (SCH#2009111098). Issued on March 14, 2012.

Water Board, 2013. Waste Discharge Requirements for San Diego Shipyard Sediment Remediation Project, San Diego Bay, San Diego, California. Order No. R9-2013-0093. Issued on July 10, 2013.

TABLES

Table 1
Estimated Dredge Volumes, Dredging Locations, and Final Disposal Locations
for October 2013

Date	Estimated Dredge Volume (cubic yards)	Dredging Location	Final Disposal Location¹
10/1/2013	650	SMU-4	Otay Landfill
10/15/2013	100	SMU-4	Otay Landfill
10/17/2013	400	SMU-4	Otay Landfill
10/18/2013	600	SMU-4	Otay Landfill
10/22/2013	600	SMU-4	Otay Landfill
10/23/2013	800	SMU-4	Otay Landfill
10/24/2013	20	SMU-4	Otay Landfill
10/26/2013	800	SMU-3	Otay Landfill
10/28/2013	500	SMU-3	Otay Landfill
10/29/2013	1,000	SMU-3	Otay Landfill
10/30/2013	800	SMU-3	Otay Landfill
10/31/2013	800	SMU-3	Otay Landfill
Total	7,070	-	-

Notes:

SMU = Sediment Management Unit

1 Otay Landfill is located at 1700 Maxwell Road, Chula Vista, California 91912

Table 2
Water Quality Monitoring Results During Dredging - October 2013

Date	Time	Station Type	Station ID	Latitude ¹	Longitude ¹	Water Quality Measurements			Visual Observations		
						DO (mg/L)	pH	Turbidity (NTU)	Odor	Presence of Surface Pollution	Discoloration or Turbidity
10/1/2013	12:51:58	Reference	D-BG-131001	32.69169	-117.15039	7.0	8.0	1.7	No	No	No
10/1/2013	13:17:52	Early Warning	D-EWS-131001	32.68691	-117.14014	7.1	8.0	1.6	No	No	No
10/1/2013	13:30:36	Early Warning	D-EWN-1001	32.68851	-117.13930	6.7	8.0	0.8	No	No	No
10/1/2013	13:39:06	Compliance	D-CNN-131001	32.68904	-117.13918	6.7	8.0	0.7	No	No	No
10/1/2013	13:55:42	Compliance	D-CON-131001	32.68914	-117.14016	7.0	8.0	1.7	No	No	No
10/1/2013	14:04:53	Compliance	D-COS-131001	32.68786	-117.14087	7.1	8.0	1.6	No	No	No
10/1/2013	14:34:48	Compliance	D-CNS-131001	32.68595	-117.14001	7.2	8.0	2.6 ²	No	No	No
10/1/2013	14:54:39	Reference	D-BG-131001	32.69180	-117.15039	7.0	8.0	2.8 ³	No	No	No
10/1/2013	15:06:42	Compliance	D-CNS-131001	32.68596	-117.13991	7.3	8.0	2.8 ³	No	No	No
10/15/2013	15:00:28	Reference	D-BG-131015	32.69156	-117.15026	6.9	8.1	1.9	No	No	No
10/15/2013	17:25:31	Early Warning	D-EWS-131015	32.68692	-117.14028	6.9	8.0	1.3	No	No	No
10/15/2013	17:31:03	Early Warning	D-EWN-131015	32.68849	-117.13926	7.3	8.1	1.4	No	No	No
10/15/2013	17:35:53	Compliance	D-CNN-131015	32.68957	-117.13942	7.4	8.1	1.6	No	No	No
10/15/2013	17:42:26	Compliance	D-CON-131015	32.68905	-117.14065	7.1	8.1	1.7	No	No	No
10/15/2013	17:52:25	Compliance	D-CNS-131015	32.68616	-117.13916	7.1	8.1	1.9	No	No	No
10/15/2013	17:59:48	Compliance	D-COS-131015	32.68600	-117.13963	7.1	8.1	1.9	No	No	No
10/17/2013	13:16:17	Reference	D-BG-131017	32.69153	-117.15047	7.0	7.9	1.9	No	No	No
10/17/2013	13:32:26	Early Warning	D-EWS-131017	32.68678	-117.13983	6.7	7.9	1.1	No	No	No
10/17/2013	13:39:03	Early Warning	D-EWN-131017	32.68867	-117.13938	6.8	7.9	1.7	No	No	No
10/17/2013	13:43:08	Compliance	D-CNN-131017	32.68938	-117.13917	6.7	7.9	1.7	No	No	No
10/17/2013	13:47:53	Compliance	D-CON-131017	32.68830	-117.14065	6.6	7.9	2.0	No	No	No
10/17/2013	13:55:29	Compliance	D-CNS-131017	32.68615	-117.13910	7.0	7.9	1.9	No	No	No
10/17/2013	14:03:35	Compliance	D-COS-131017	32.68600	-117.14000	7.0	7.9	1.7	No	No	No
10/24/2013	13:58:17	Reference	D-BG-131024	32.69167	-117.15015	6.6	7.9	1.7	No	No	No
10/24/2013	14:19:43	Early Warning	D-EWS-131024	32.68655	-117.13952	6.4	7.9	1.9	No	No	No
10/24/2013	14:26:08	Early Warning	D-EWN-131024	32.68878	-117.13927	6.4	7.9	1.2	No	No	No
10/24/2013	14:29:13	Compliance	D-CNN-131024	32.68950	-117.13918	6.3	7.9	1.9	No	No	No
10/24/2013	14:34:02	Compliance	D-CON-131024	32.68795	-117.14072	6.3	7.9	1.1	No	No	No
10/24/2013	14:37:51	Compliance	D-CNS-131024	32.68593	-117.13892	6.5	7.9	1.4	No	No	No
10/24/2013	14:45:18	Compliance	D-COS-131024	32.68605	-117.14017	6.5	7.9	1.5	No	No	No

Table 2
Water Quality Monitoring Results During Dredging - October 2013

Date	Time	Station Type	Station ID	Latitude ¹	Longitude ¹	Water Quality Measurements			Visual Observations		
						(mg/L)	pH	(NTU)	Odor	Surface Pollution	Turbidity
10/31/2013	12:40:12	Reference	D-BG-131031	32.69172	-117.15057	7.1	7.9	2.9	No	No	No
10/31/2013	13:06:55	Early Warning	D-EWN-131031	32.68978	-117.13920	6.8	7.9	1.1	No	No	No
10/31/2013	13:17:31	Early Warning	D-EWS-131031	32.68740	-117.13937	6.6	7.9	2.0	No	No	No
10/31/2013	13:22:12	Compliance	D-CNN-131031	32.68964	-117.14029	6.7	7.9	1.9	No	No	No
10/31/2013	13:26:12	Compliance	D-CON-131031	32.68779	-117.14066	6.7	7.9	1.9	No	No	No
10/31/2013	13:30:36	Compliance	D-CNS-131031	32.68643	-117.13951	6.7	8.0	1.9	No	No	No
10/31/2013	13:39:40	Compliance	D-COS-131031	32.68663	-117.14044	7.0	8.0	1.8	No	No	No

Notes:

Receiving water limitation compliance criteria: DO shall not be depressed more than 10 percent from the reference (BG); pH shall not be changed more than 0.2 unit from reference (BG); pH shall not be depressed below 7.0 nor raised above 9.0; turbidity must not exceed 20 percent of reference (BG; if natural turbidity from 0 to 50 NTU).

DO = dissolved oxygen

mg/L = milligrams per liter

NTU = Nephelometric Turbidity Units

1 Latitude and longitude coordinates in decimal degrees, North American Datum 1983 (NAD83)

2 Compliance station potentially exceeds receiving water limitation compliance criteria. Upon further investigation, potential exceedances were not confirmed.

3 Measurements were re-taken at the reference station and compliance stations to confirm the exceedance. Turbidity concentrations were within 20 percent of the reference; therefore, compliance criteria were met.

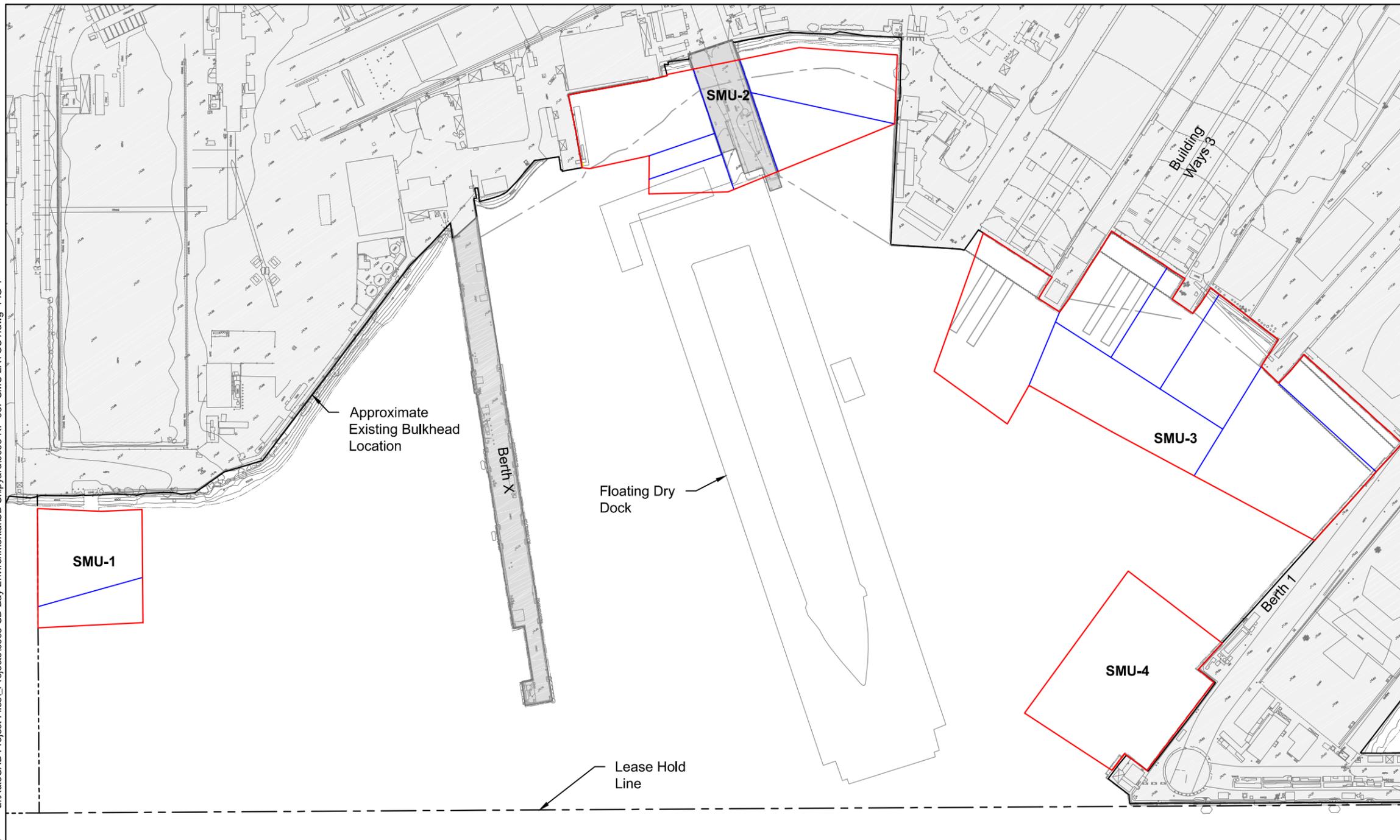
Table 3
Persons Contributing to this Report

Name	Title	Affiliation	Qualifications
Chris Osuch	Senior Scientist	Anchor QEA	University of California, Santa Barbara, B.A., Environmental Studies, 1998 Environmental scientist with more than 14 years of professional experience Experienced with collecting and measuring water quality parameters
Adam Gale	Senior Planner	Anchor QEA	University of Washington, Certificate Program in Geographic Information Systems, 2007; California Polytechnic State University, San Luis Obispo, B.S., Ecology and Systematic Biology, 2004 Planner with more than 8 years of professional experience Experienced with implementing water quality monitoring programs for remediation projects
Elizabeth Appy	Managing Scientist	Anchor QEA	Colby College, B.A., Biology, 1994; Oregon State University, M.S., Marine Resource Management, 2000 Managing scientist with more than 15 years of professional experience Experienced with implementing water quality monitoring programs for remediation projects
Brittany Geisler	Environmental Scientist	Anchor QEA	University of California, Irvine, B.A., Social Ecology, 2006 Environmental scientist with more than 5 years of professional experience Experienced with collecting and measuring water quality parameters

FIGURES

L:\AutoCAD Project Files\Projects\0995-SD Bay Environmental\SD Shipyard\0995-RP-037 SMU LAYOUT.dwg FIG 1

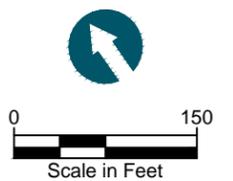
Nov 07, 2013 10:43am mpratschmer



LEGEND:

- Remediation Boundary
- Sub-SMU Boundary

SOURCE: Upland topography from Digital Mapping Inc., dated September 2009, and supplemented by Environmental Data Solutions survey dated April 13, 2013.
HORIZONTAL DATUM: California State Plane, Zone 6, NAD83, U.S. Feet.



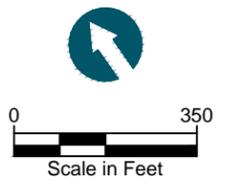
L:\AutoCAD Project Files\Projects\0995-SD Bay Environmental\SD Shipyard\0995-RP-027 REF SAMP 2.dwg FIG 2

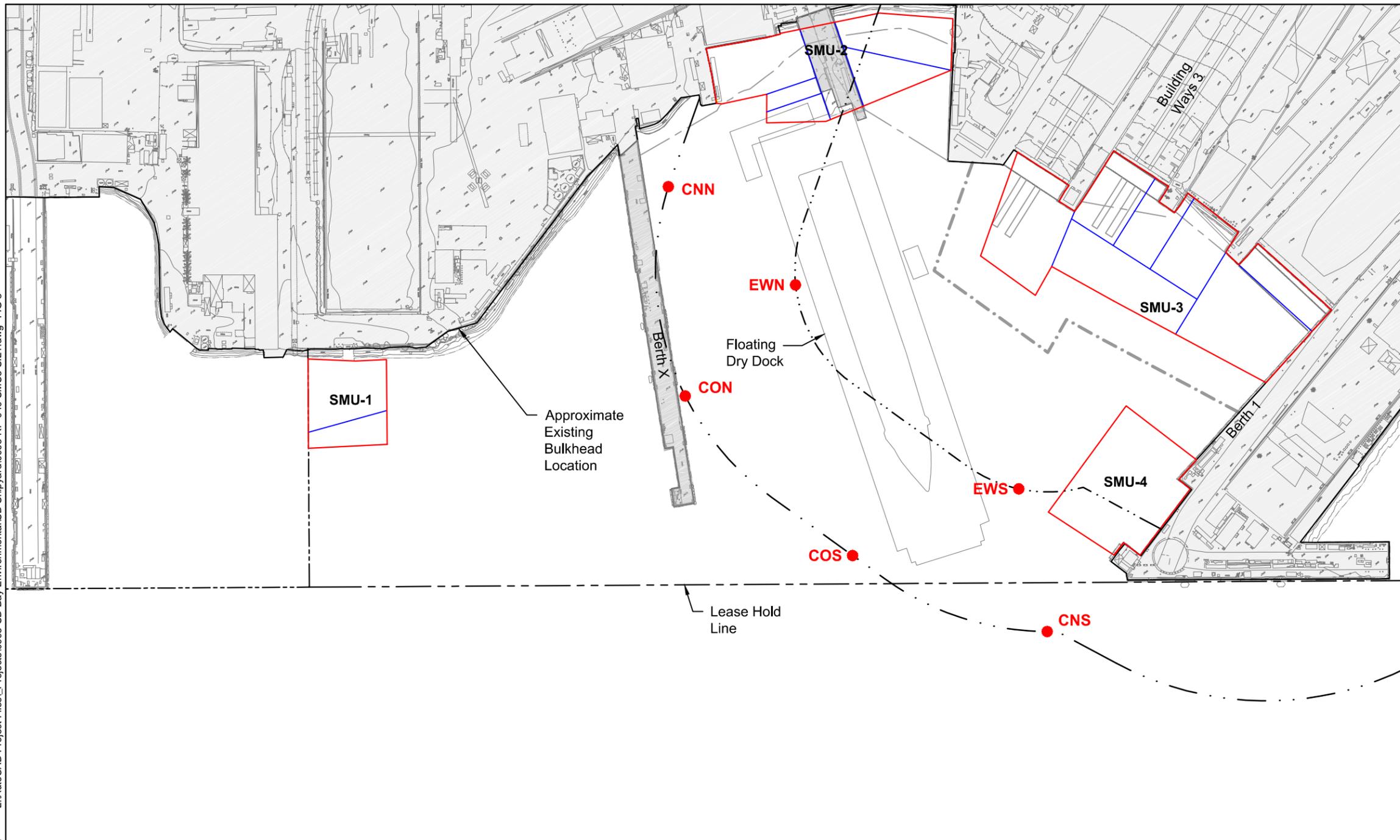
Nov 07, 2013 10:04am mpratschner



SOURCE: Aerial from ESRI base maps. Upland topography from Digital Mapping Inc., dated September 2009, and supplemented by Environmental Data Solutions survey dated April 13, 2013.
HORIZONTAL DATUM: California State Plane, Zone 6, NAD83, U.S. Feet.

NOTES:
 Reference Sampling Location BG
 Latitude: 32° 41.4970'
 Longitude: 117° 09.0185'



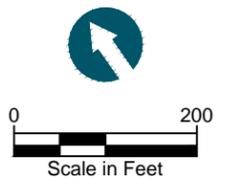


LEGEND:

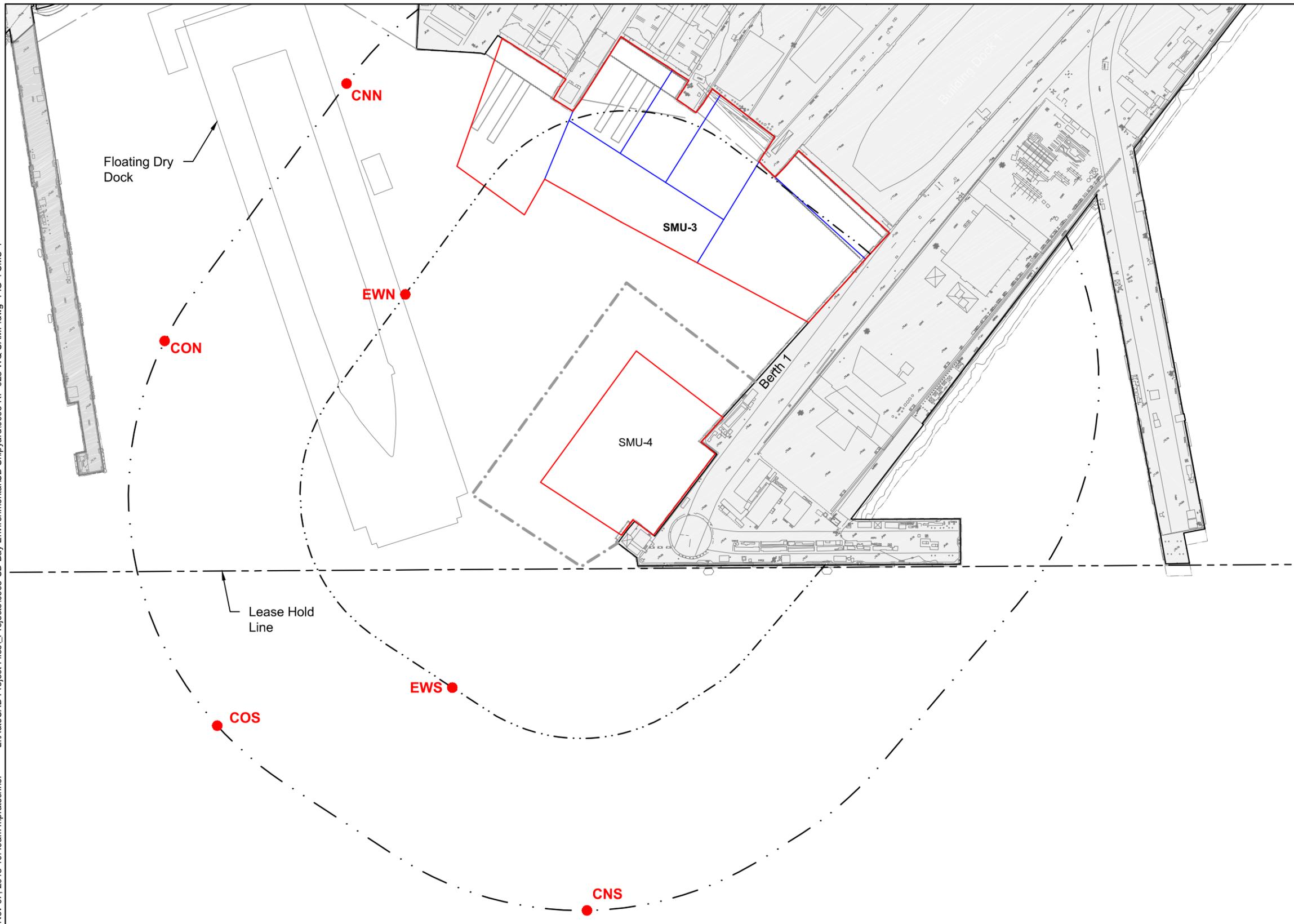
	Remediation Boundary
	Sub-SMU Boundary
	250 ft from Construction Area
	500 ft from Construction Area
	Sampling Location
	Silt Curtain
EWN	Early Warning North
EWS	Early Warning South
CNN	Compliance Nearshore North
CNS	Compliance Nearshore South
CON	Compliance Offshore North
COS	Compliance Offshore North

NOTE:
Actual locations were positioned in the field relative to the construction area.

SOURCE: Upland topography from Digital Mapping Inc., dated September 2009, and supplemented by Environmental Data Solutions survey dated April 13, 2013.
HORIZONTAL DATUM: California State Plane, Zone 6, NAD83, U.S. Feet.



Nov 07, 2013 10:49am mpratschner L:\AutoCAD Project Files\Projects\0995-SD Bay Environmental\SD Shipyard\0995-RP-023 WQ SAMP.dwg FIG 4 SMU-4

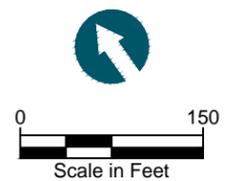


LEGEND:

	Remediation Boundary
	Sub-SMU Boundary
	250 ft from Construction Area
	500 ft from Construction Area
	Sampling Location
	Silt Curtain
EWN	Early Warning North
EWS	Early Warning South
CNN	Compliance Nearshore North
CNS	Compliance Nearshore South
CON	Compliance Offshore North
COS	Compliance Offshore North

SOURCE: Upland topography from Digital Mapping Inc., dated September 2009, and supplemented by Environmental Data Solutions survey dated April 13, 2013.
HORIZONTAL DATUM: California State Plane, Zone 6, NAD83, U.S. Feet.

NOTE:
 Actual sampling locations determined in the field based on the location of the construction area.



ATTACHMENT A
WASTE MANIFESTS

ATTACHMENT B
CALIBRATION LOGS

HYDROLAB CALIBRATION WORKSHEET

PROJECT(S): SD Shipyards

PROJECT #: 131003-01.02

REMINDER: ALLOW TWO MINUTES WARMUP BEFORE CALIBRATION OR USE.

Calib by:	Date	Time (24 Hr)	DO				pH					REDOX		
			Temp. (°C)	BP (mm Hg)	Initial DO (mg/L)	Final DO (mg/L)	Initial pH 7.0	Final pH 7.0	Temp. (°C)	Initial pH: 10.0	Final pH: 10.0	Initial (mV)	Final (mV)	Temp. (°C)
DF	10.01.13	0530	24.6	755.2	8.2	8.2	7.0	7.0	24.4	9.9	10.02			

Calib by:	Date	Time (24 Hr)	CONDUCTIVITY				TURBIDITY					
			Initial 0 µs/cm	Final 0 µs/cm	Temp. (°C)	Initial 1412 µs/cm	Final 1412 µs/cm	Initial 0 NTU	Final 0 NTU	Temp. (°C)	Initial 40 NTU	Final 40 NTU
DF	10.01.13	0530	0.0	0.0	21.2	1413	1412	0.0	0.0	24.4	41.7	40.0

Dissolved Oxygen Method (circle one):

Air Saturated Water Winkler Titration

Source of Barometric Pressure Surveyor
Turb (40 NTU)
 Lot # A2326 Exp. 11/14

Turbidity Std (40.1 NTU)

Lot# A3003 Exp. Date: 12/14

Conductivity Stds: Calibration: 1412 µs/cm

Lot # A2340 Exp. Date: 12/13

Verification: _____ µs/cm

Lot # _____ Exp. Date: _____

pH Buffers:

pH 7.0 Lot # A3046 Exp. Date: 2/15

pH 10 Lot# A3042 Exp. Date: 2/14

pH 4 Lot# A3042 Exp. Date: 2/17

4.2 @ 24.5
4.01

Redox Standard:

428 mV ± @ 25 °C (Zobell's)

Lot# _____ Exp. Date: _____

NOTES:

HYDROLAB CALIBRATION WORKSHEET

PROJECT(S): SD Shipyards

PROJECT #: 131003-01.02

REMINDER: ALLOW TWO MINUTES WARMUP BEFORE CALIBRATION OR USE.

Calib by:	Date	Time (24 Hr)	DO				pH					REDOX		
			Temp. (°C)	BP (mm Hg)	Initial DO (mg/L)	Final DO (mg/L)	Initial pH 7.0	Final pH 7.0	Temp. (°C)	Initial pH: 10.0	Final pH: 10.0	Initial (mV)	Final (mV)	Temp. (°C)
DF	10.15.13	0630	23.2	757.5	8.4	8.4	7.0	7.0	23.1	10.03	10.03			

Calib by:	Date	Time (24 Hr)	CONDUCTIVITY				TURBIDITY					
			Initial 0 µs/cm	Final 0 µs/cm	Temp. (°C)	Initial 1412 µs/cm	Final 1412 µs/cm	Initial 0 NTU	Final 0 NTU	Temp. (°C)	Initial 40 NTU	Final 40 NTU
DF	10.15.13	0630	0.0	0.0	20.5	1413	1412	0.0	0.0	23.2	39.1	40.0

Dissolved Oxygen Method (circle one):

Air Saturated Water Winkler Titration

Source of Barometric Pressure Surveyor
Turb. Std. (40 NTU)
 Lot#

Turbidity Std (20 NTU)

Lot# A3003 Exp. Date: 12/14

Conductivity Stds: Calibration: 1412 µs/cm

Lot # A2340 Exp. Date: 12/13

Verification: _____ µs/cm
 Lot # _____ Exp. Date: _____

pH Buffers:

pH 7.0 Lot # A3046 Exp. Date: 2/15

pH 10 Lot# A3042 Exp. Date: 2/14

pH 4 Lot# A3042 Exp. Date: 2/17 4.4 @ 23.1
4.01

Redox Standard:

428 mV ± @ 25 °C (Zobell's)

Lot# _____ Exp. Date: _____

NOTES:

HYDROLAB CALIBRATION WORKSHEET

PROJECT(S): SD Shipyards

PROJECT #: 131003-01.02

REMINDER: ALLOW TWO MINUTES WARMUP BEFORE CALIBRATION OR USE.

Calib by:	Date	Time (24 Hr)	DO				pH					REDOX		
			Temp. (°C)	BP (mm Hg)	Initial DO (mg/L)	Final DO (mg/L)	Initial pH 7.0	Final pH 7.0	Temp. (°C)	Initial pH: 10.0	Final pH: 10.0	Initial (mV)	Final (mV)	Temp. (°C)
DF	10.17.13	0930	22.6	757.1	8.7	8.6	7.01	7.0	22.5	10.3	10.03			

Calib by:	Date	Time (24 Hr)	CONDUCTIVITY				TURBIDITY					
			Initial 0 µs/cm	Final 0 µs/cm	Temp. (°C)	Initial 1412 µs/cm	Final 1412 µs/cm	Initial 0 NTU	Final 0 NTU	Temp. (°C)	Initial 40 NTU	Final 40 NTU
DF	10.17.13	0930	0.0	0.0	21.1	1416	1412	0.2	0.0	22.6	39.1	40.0

Dissolved Oxygen Method (circle one):

Air Saturated Water Winkler Titration

Source of Barometric Pressure Surveyor

Turb. std (40 NTU)
Lot # A2326 Exp. 11/14

Turbidity Std (40.1 NTU)

Lot# A3003 Exp. Date: 12/14

Conductivity Stds: Calibration: 1412 µs/cm

Lot # A2340 Exp. Date: 12/13

Verification: _____ µs/cm

Lot # _____ Exp. Date: _____

pH Buffers:

pH 7.0 Lot # A3046 Exp. Date: 2/15

pH 10 Lot# A3042 Exp. Date: 2/14

pH 4 Lot# A3042 Exp. Date: 2/17 4.1 @ 22.10

Redox Standard:

428 mV ± @ 25 °C (Zobell's)

Lot# _____ Exp. Date: _____

NOTES:

HYDROLAB CALIBRATION WORKSHEET

PROJECT(S): SD Shipyards

PROJECT #: 131003-01.02

REMINDER: ALLOW TWO MINUTES WARMUP BEFORE CALIBRATION OR USE.

			DO				pH					REDOX		
Calib by:	Date	Time (24 Hr)	Temp. (°C)	BP (mm Hg)	Initial DO (mg/L)	Final DO (mg/L)	Initial pH 7.0	Final pH 7.0	Temp. (°C)	Initial pH: 10.0	Final pH: 10.0	Initial (mV)	Final (mV)	Temp. (°C)
DF	10.24.13	0830	21.8	761.2	8.6	8.7	7.0	7.0	22.6	10.0	10.03			

			CONDUCTIVITY					TURBIDITY				
Calib by:	Date	Time (24 Hr)	Initial 0 µs/cm	Final 0 µs/cm	Temp. (°C)	Initial 1412 µs/cm	Final 1412 µs/cm	Initial 0 NTU	Final 0 NTU	Temp. (°C)	Initial 40 NTU	Final 40 NTU
DF	10.24.13	0830	0.0	0.0	20.9	1418	1412	0.0	0.0	22.6	39.9	40.0

Dissolved Oxygen Method (circle one):

Air Saturated Water Winkler Titration

Source of Barometric Pressure Surveyor

Turb (40 NTU)
 Lot # A2326 Exp. 11/14

Turbidity Std (40.1 NTU)

Lot# A3003 Exp. Date: 12/14

Conductivity Stds: Calibration: 1412 µs/cm

Lot # A2340 Exp. Date: 12/13

Verification: _____ µs/cm

Lot # _____ Exp. Date: _____

pH Buffers:

pH 7.0 Lot # A3046 Exp. Date: 2/15

pH 10 Lot# A3042 Exp. Date: 2/14

pH 4 Lot# A3042 Exp. Date: 2/17

4.2 @ 22.5
4.0

Redox Standard:

428 mV ± @ 25 °C (Zobell's)

Lot# _____ Exp. Date: _____

NOTES:

HYDROLAB CALIBRATION WORKSHEET

PROJECT(S): SD Shipyards

PROJECT #: 131003-01 02

REMINDER: ALLOW TWO MINUTES WARMUP BEFORE CALIBRATION OR USE.

Calib by:	Date	Time (24 Hr)	DO				pH					REDOX		
			Temp. (°C)	BP (mm Hg)	Initial DO (mg/L)	Final DO (mg/L)	Initial pH 7.0	Final pH 7.0	Temp. (°C)	Initial pH: 10.0	Final pH: 10.0	Initial (mV)	Final (mV)	Temp. (°C)
DF	10.31.13	0630	21.9	760	8.7	8.7	7.03	7.01	21.8	10.1	10.04			

Calib by:	Date	Time (24 Hr)	CONDUCTIVITY				TURBIDITY					
			Initial 0 µs/cm	Final 0 µs/cm	Temp. (°C)	Initial 1412 µs/cm	Final 1412 µs/cm	Initial 0 NTU	Final 0 NTU	Temp. (°C)	Initial 40 NTU	Final 40 NTU
DF	10.31.13	0630	6.1	0.0	20.4	1412	1412	0.0	0.0	21.8	40.9	40.0

Dissolved Oxygen Method (circle one):

Air Saturated Water Winkler Titration

Source of Barometric Pressure Surveyor

Turb. Std. (40 NTU)
Lot # A2326 Exp. 11/14

Turbidity Std (40.1 NTU)

Lot# A3003 Exp. Date: 12/14

Conductivity Stds: Calibration: 1412 µs/cm

Lot # A2340 Exp. Date: 12/13

Verification: _____ µs/cm

Lot # _____ Exp. Date: _____

pH Buffers:

pH 7.0 Lot # A3046 Exp. Date: 2/15

pH 10 Lot# A3042 Exp. Date: 2/14

pH 4 Lot# A3042 Exp. Date: 2/17 4.2 @ 22.0
4.01

Redox Standard:

428 mV ± @ 25 °C (Zobell's)

Lot# _____ Exp. Date: _____

NOTES:

ATTACHMENT C
WATER QUALITY SAMPLE FORMS



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: DF, BG		Date: 10.01.13	Tide: Flood (Ebb) / Slack	
Station ID: D-EWS-131001		Water Depth (ft): 34.7		
Coordinates				
Latitude/Northing: 32° 41' 12.882		Longitude/Easting: 117° 08' 24.510"		
Weather and Wind Conditions: Sunny, Mod. Breeze				
Predominant Current Direction: NW				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
13:17:52	10	7.1	8.0	1.6
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y (N)		Photograph(s) Taken: Y (N)		
Discoloration or Turbidity: Y (N)		Recorded by: BG		
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: DF, BG		Date: 10.01.13	Tide: Flood / <input checked="" type="radio"/> Ebb / Slack	
Station ID: D-EWN-131001			Water Depth (ft): 31.1	
Coordinates				
Latitude/Northing: 32° 41' 18.642"		Longitude/Easting: 117° 08' 21.462"		
Weather and Wind Conditions: Sunny, mod. breeze				
Predominant Current Direction: NW				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
13:30:30	10	6.7	8.0	0.8
Odor: <input checked="" type="radio"/> none slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y/ <input checked="" type="radio"/> N			Photograph(s) Taken: Y/ <input checked="" type="radio"/> N	
Discoloration or Turbidity: Y/ <input checked="" type="radio"/> N			Recorded by: BG	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: DF, BG		Date: 10.01.13	Tide: Flood (Ebb) Slack	
Station ID: D-CNN-131001			Water Depth (ft): 26.1	
Coordinates				
Latitude/Northing: 32° 41' 26.526"		Longitude/Easting: 117° 08' 21.048"		
Weather and Wind Conditions: Sunny, mod. breeze				
Predominant Current Direction: NW				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
13:39:06	10	6.7	8.0	0.7
Odor: (none) slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y (N)			Photograph(s) Taken: Y (N)	
Discoloration or Turbidity: Y (N)			Recorded by: BG	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: DF, BG		Date: 10.01.13	Tide: <u>Flood</u> Ebb / Slack	
Station ID: D-CON-131001			Water Depth (ft): 42.1	
Coordinates				
Latitude/Northing: 32° 41' 20.898"			Longitude/Easting: 117° 08' 24.576"	
Weather and Wind Conditions: Sunny, mod. breeze				
Predominant Current Direction: SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
13:55:42	10	7.0	8.0	1.7
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y/ <u>N</u>			Photograph(s) Taken: Y/ <u>N</u>	
Discoloration or Turbidity: Y/ <u>N</u>			Recorded by: BG	
Comments: Dry dock located where 500ft. mark is. Monitored 600ft. from outer curtain.				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: DF, BG		Date: 10.01.13	Tide: <u>Flood</u> / Ebb / Slack	
Station ID: D-COS-131001			Water Depth (ft): 31.4	
Coordinates				
Latitude/Northing: 32° 41' 16.308"			Longitude/Easting: 117° 08' 27.114"	
Weather and Wind Conditions: Sunny, mod. breeze				
Predominant Current Direction: SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
14:04:53	10	7.1	8.0	1.6
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y / <u>N</u>			Photograph(s) Taken: Y / <u>N</u>	
Discoloration or Turbidity: Y / <u>N</u>			Recorded by: BG	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: DF, BG		Date: 10.01.13	Tide: <u>Flood</u> Ebb / Slack	
Station ID: D-CNS-131001			Water Depth (ft): 34.9 / 34.7	
Coordinates				
Latitude/Northing: 32° 41' 09.414"		Longitude/Easting: 117° 08' 24.018"		
Weather and Wind Conditions: <u>Cloudy, mod. wind</u>				
Predominant Current Direction: <u>SE</u>				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
14:34:48	10	7.2	8.0	2.6
15:06:42	10	7.3	8.0	2.8
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y/ <u>N</u>			Photograph(s) Taken: Y/ <u>N</u>	
Discoloration or Turbidity: Y/ <u>N</u>			Recorded by: <u>BG</u>	
Comments: Wind and current increased just prior to monitoring station. Double silt curtain in place. Outside of defense boom; choppy water. Monitored D-BG-131001 again then returned for second attempt at D-CNS-131001. Attempt 2: Flood Cloudy, windy, SE current, choppy water. <div style="text-align: right;"> Lat: 32° 41' 09.438" Long: 117° 08' 23.482" Turbidity did not exceed 20% parameter at background station. </div>				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Feilers Brittany Geisler		Date: 10.15.13	Tide: <u>Flood</u> / Ebb / Slack	
Station ID: D-BE-131015		Water Depth (ft): 35.3		
Coordinates				
Latitude/Northing: 32° 41' 29.604"		Longitude/Easting: 117° 09' 00.924"		
Weather and Wind Conditions: Sunny, moderate wind				
Predominant Current Direction: NW				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
15:00:28	10	4.9	8.1	1.9
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: <u>Y</u> / <u>N</u>			Photograph(s) Taken: <u>Y</u> /N	
Discoloration or Turbidity: Y/ <u>N</u>			Recorded by: <i>Brittany Geisler</i>	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Fellers Brittany Geisler		Date: 10.15.13	Tide: <input checked="" type="radio"/> Flood <input type="radio"/> Ebb / Slack	
Station ID: D-EWS-131015		Water Depth (ft): 37.1		
Coordinates				
Latitude/Northing: 32°41'12.900"		Longitude/Easting: 117°08'24.990"		
Weather and Wind Conditions: Sunny, mod. wind				
Predominant Current Direction: ⁹⁶ NW SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
17:25:31	10	6.9	8.0	1.3
Odor: <input checked="" type="radio"/> none slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y <input checked="" type="radio"/> N		Photograph(s) Taken <input checked="" type="radio"/> Y <input type="radio"/> N		
Discoloration or Turbidity: Y <input checked="" type="radio"/> N		Recorded by: <i>Brittany Ge</i>		
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Fellers Brittany Geisler		Date: 10.15.13	Tide: <u>Flood</u> / Ebb / Slack	
Station ID: D-EWN-131015		Water Depth (ft): 31.7		
Coordinates				
Latitude/Northing: 32° 41' 18.576"		Longitude/Easting: 117° 08' 21.342"		
Weather and Wind Conditions: Sunny, mod. wind				
Predominant Current Direction: NW SE bc				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
17:31:03	10	7.3	8.1	1.4
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y/ <u>N</u>		Photograph(s) Taken: <u>Y</u> N		
Discoloration or Turbidity: Y/ <u>N</u>		Recorded by: <u>Brittany Geisler</u>		
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Fellers Brittany Geisler		Date: 10.15.13	Tide: Flood / Ebb / Slack	
Station ID: D-CNN-131015		Water Depth (ft): 40.6		
Coordinates				
Latitude/Northing: 32° 41' 22.452"		Longitude/Easting: 117° 08' 21.894"		
Weather and Wind Conditions: Sunny, mod. wind				
Predominant Current Direction: NW SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
17:35:53	10	7.4	8.1	1.6
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y (N)			Photograph(s) Taken: (Y) N	
Discoloration or Turbidity: Y (N)			Recorded by: Brittany Geisler	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Fellers Brittany Geisler		Date: 10.15.13	Tide: <u>Flood</u> / Ebb / Slack	
Station ID: D-CON-131015		Water Depth (ft): 34.3		
Coordinates				
Latitude/Northing: 32° 41' 20.592"		Longitude/Easting: 117° 08' 26.340"		
Weather and Wind Conditions: Sunny, mod. wind				
Predominant Current Direction: <u>NW</u> ^{bc} SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
17:42:26	10	7.1	8.1	1.7
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y / <u>N</u>			Photograph(s) Taken <u>Y</u> / N	
Discoloration or Turbidity: Y / <u>N</u>			Recorded by: <u>Brittany Geisler</u>	
Comments: <p style="text-align: center;">Dry dock blocking / between silt curtain and station con.</p>				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Fellers Brittany Geisler		Date: 10.15.13	Tide: <u>Floody</u> Ebb / Slack	
Station ID: D - CNS - 131015		Water Depth (ft): 38.3		
Coordinates				
Latitude/Northing: 32° 41' 10.158"		Longitude/Easting: 117° 08' 20.958"		
Weather and Wind Conditions: Sunny, mod. wind				
Predominant Current Direction: NW ^{bc} SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
17:52:25	10	7.1	8.1	1.9
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y/ <u>N</u>			Photograph(s) Taken <u>Y</u> /N	
Discoloration or Turbidity: Y/ <u>N</u>			Recorded by: <u>Brittany Geisler</u>	
Comments: Could not gain access to a station location closer to shore due to docks/boats				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Feilers Brittany Geisler		Date: 10.15.13	Tide: <u>Flood</u> Ebb / Slack	
Station ID: D-COS-131015		Water Depth (ft): 37.5		
Coordinates				
Latitude/Northing: 32° 41' 09.612"		Longitude/Easting: 117° 08' 22.680"		
Weather and Wind Conditions: Sunny, mod. wind				
Predominant Current Direction: NW & SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
17:59:48	10	7.1	8.1	1.9
Odor: <u>(none)</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y <u>(N)</u>			Photograph(s) Taken: <u>(Y)</u> N	
Discoloration or Turbidity: Y <u>(N)</u>			Recorded by: <u>Brittany Geisler</u>	
Comments: outside of security boom				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: <i>Dustin Fellers</i> <i>Brittany Geisler</i>		Date: <i>10.17.13</i>	Tide: Flood / <u>Ebb</u> / Slack	
Station ID: <i>D-BG-131017</i>		Water Depth (ft): <i>36.4</i>		
Coordinates				
Latitude/Northing: <i>32° 41.492'</i>		Longitude/Easting: <i>117° 09.028'</i>		
Weather and Wind Conditions:				
Predominant Current Direction: <i>NW</i>				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
<i>13:16:17</i>	<i>10</i>	<i>7.0</i>	<i>7.9</i>	<i>1.9</i>
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y / <u>N</u>			Photograph(s) Taken <u>Y</u> / N	
Discoloration or Turbidity: Y / <u>N</u>			Recorded by: <i>Britt Ge</i>	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Pellers; Britt Geisler		Date: 10.17.13	Tide: Flood <input checked="" type="radio"/> Ebb / Slack	
Station ID: D-EWS-131017		Water Depth (ft): 35.8		
Coordinates				
Latitude/Northing: 32° 41.207'		Longitude/Easting: 117° 08.390'		
Weather and Wind Conditions: Sunny, mod. wind				
Predominant Current Direction: NW SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
13:32:26	10	6.7	7.9	1.1
Odor: <input checked="" type="radio"/> none slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y/ <input checked="" type="radio"/> N			Photograph(s) Taken: <input checked="" type="radio"/> Y N	
Discoloration or Turbidity: Y/ <input checked="" type="radio"/> N			Recorded by: Britt Geisler	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: DUSTIN Fellers Brittany Geisler		Date: 10.17.13	Tide: Flood (Ebb) Slack	
Station ID: D-EWN-131017		Water Depth (ft): 31.8		
Coordinates				
Latitude/Northing: 32° 41.320'		Longitude/Easting: 117° 08.363'		
Weather and Wind Conditions: Sunny, mod. wind				
Predominant Current Direction: NW SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
13:39:03	10	6.8	7.9	1.7
Odor: (none) slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y/(N)			Photograph(s) Taken: (Y) N	
Discoloration or Turbidity: Y/(N)			Recorded by: Britt Ge	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Fellers Britt Geisler		Date: 10.17.13	Tide: Flood / <u>Ebb</u> / Slack	
Station ID: D-CNN-131017		Water Depth (ft): 30.8		
Coordinates				
Latitude/Northing: 32° 41' 36.3"		Longitude/Easting: 117° 08' 35.0"		
Weather and Wind Conditions: Sunny, mod. wind				
Predominant Current Direction: SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
13:43:08	10	6.7	7.9	86 1.9 1.7
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y / <u>N</u>			Photograph(s) Taken: <u>Y</u> / N /	
Discoloration or Turbidity: Y / <u>N</u>			Recorded by: <i>Britt Geisler</i>	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Fellers Britt Geisler		Date: 10.17.13	Tide: Flood / <u>Ebb</u> / Slack	
Station ID: D-CON-131017		Water Depth (ft): 33.5		
Coordinates				
Latitude/Northing: 32° 41.298'		Longitude/Easting: 117° 08.439'		
Weather and Wind Conditions: sunny, mod. wind				
Predominant Current Direction: SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
13:47:53	10	6.6	7.9	2.0
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y <u>(N)</u>			Photograph(s) Taken <u>(Y)</u> N	
Discoloration or Turbidity: Y <u>(N)</u>			Recorded by: <u>Britt Geisler</u>	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Fellers Britt Geisler		Date: 10.17.13	Tide: Flood <input checked="" type="radio"/> Ebb <input type="radio"/> Slack	
Station ID: B3 D - CNS - 131017		Water Depth (ft): 35.1		
Coordinates				
Latitude/Northing: 32° 41.149'		Longitude/Easting: 117° 08.346'		
Weather and Wind Conditions: Sunny, mod. wind				
Predominant Current Direction: SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
13:55:29	10	7.0	7.9	1.9
Odor: <input checked="" type="radio"/> none <input type="radio"/> slight <input type="radio"/> moderate <input type="radio"/> strong <input type="radio"/> H ₂ S <input type="radio"/> petroleum <input type="radio"/> septic				
Presence of Surface Pollution: Y/ <input checked="" type="radio"/> N			Photograph(s) Taken: <input checked="" type="radio"/> Y <input type="radio"/> N	
Discoloration or Turbidity: Y/ <input checked="" type="radio"/> N			Recorded by: Britt Geisler	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Fellers Britt Geister		Date: 10.17.13	Tide: Flood / <u>Ebb</u> / Slack	
Station ID: D - COS - 131017		Water Depth (ft): 34.3		
Coordinates				
Latitude/Northing: 32° 41.160'		Longitude/Easting: 117° 08.400'		
Weather and Wind Conditions: sunny, mod. wind				
Predominant Current Direction: SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
14:03:35	10	8.6 7.0	7.9	1.7
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y / <u>N</u>			Photograph(s) Taken: <u>Y</u> / <u>N</u> /	
Discoloration or Turbidity: Y / <u>N</u>			Recorded by: <u>Britt Geister</u>	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Fellers Calvin Douglas		Date: 10.24.13	Tide: Flood <input checked="" type="radio"/> Ebb <input type="radio"/> Slack	
Station ID: D-B6-131024		Water Depth (ft): DID NOT get		
Coordinates				
Latitude/Northing: 32° 41.500		Longitude/Easting: 117° 09.009		
Weather and Wind Conditions: Overcast, moderate wind				
Predominant Current Direction: SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
13:58.17	10'	6.6	7.9	1.7
Odor: <input checked="" type="radio"/> none slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y <input checked="" type="radio"/> N <input type="radio"/>			Photograph(s) Taken: Y <input checked="" type="radio"/> N <input type="radio"/>	
Discoloration or Turbidity: Y <input checked="" type="radio"/> N <input type="radio"/>			Recorded by: Calvin Douglas	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Fellers Calvin Douglas		Date: 10-24-13	Tide: Flood (Ebb) / Slack	
Station ID: D-EWS-131024		Water Depth (ft): 38.1		
Coordinates				
Latitude/Northing: 32°41.193		Longitude/Easting: 117° 08.371		
Weather and Wind Conditions: overcast, moderate wind				
Predominant Current Direction: SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
14:19.43	10'	6.4	7.9	1.9
Odor: (none) slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y (N)			Photograph(s) Taken: Y / N 1	
Discoloration or Turbidity: Y (N)			Recorded by: Calvin Douglas	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Fellers Calvin Douglas		Date: 10.24.13	Tide: Flood <input checked="" type="radio"/> Ebb / Slack	
Station ID: D-EWN-131024		Water Depth (ft): 36.2		
Coordinates				
Latitude/Northing: 32° 41.327		Longitude/Easting: 117° 08.356		
Weather and Wind Conditions: Overcast, moderate wind				
Predominant Current Direction: SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
14:26:08	10'	6.4	7.9	1.2
Odor: <input checked="" type="radio"/> none slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y <input checked="" type="radio"/> N			Photograph(s) Taken: <input checked="" type="radio"/> Y / N /	
Discoloration or Turbidity: Y <input checked="" type="radio"/> N			Recorded by: Calvin Douglas	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Fellers Calvin Douglas		Date: 10.24.13	Tide: Flood / <input checked="" type="radio"/> Ebb / Slack	
Station ID: D-CNN-131024		Water Depth (ft): 46.1		
Coordinates				
Latitude/Northing: 32° 41.370		Longitude/Easting: 117° 09.351		
Weather and Wind Conditions: Partly Cloudy, moderate wind				
Predominant Current Direction: SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
14:29:13	10'	6.3	7.9	1.9
Odor: <input checked="" type="radio"/> none slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y / <input checked="" type="radio"/> N			Photograph(s) Taken: <input checked="" type="radio"/> Y / N 1	
Discoloration or Turbidity: Y / <input checked="" type="radio"/> N			Recorded by: Calvin Douglas	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Fellers Calvin Douglas		Date: 10.24.13	Tide: Flood <input checked="" type="radio"/> Ebb <input type="radio"/> Slack	
Station ID: D-CON-131024		Water Depth (ft): 44.2		
Coordinates				
Latitude/Northing: 32° 41.277		Longitude/Easting: 117° 08.443		
Weather and Wind Conditions: Partly Cloudy, moderate wind				
Predominant Current Direction: SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
14:34:02	10'	6.3	7.9	1.1
Odor: <input checked="" type="radio"/> none <input type="radio"/> slight <input type="radio"/> moderate <input type="radio"/> strong <input type="radio"/> H ₂ S <input type="radio"/> petroleum <input type="radio"/> septic				
Presence of Surface Pollution: Y <input checked="" type="radio"/> N <input type="radio"/>			Photograph(s) Taken: <input checked="" type="radio"/> Y <input type="radio"/> N 1	
Discoloration or Turbidity: Y <input checked="" type="radio"/> N <input type="radio"/>			Recorded by: Calvin Douglas	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Fellers Calvin Douglas		Date: 10.24.13	Tide: Flood <input checked="" type="radio"/> Ebb / <input type="radio"/> Slack	
Station ID: D-CNS-131024			Water Depth (ft): 39.9	
Coordinates				
Latitude/Northing: 32° 41.156		Longitude/Easting: 117° 08.335		
Weather and Wind Conditions: Partly Cloudy, moderate wind				
Predominant Current Direction: SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
14:37:51	10	6.5	7.9	1.4
Odor: <input checked="" type="radio"/> none <input type="radio"/> slight <input type="radio"/> moderate <input type="radio"/> strong <input type="radio"/> H ₂ S <input type="radio"/> petroleum <input type="radio"/> septic				
Presence of Surface Pollution: Y <input checked="" type="radio"/> N			Photograph(s) Taken: <input checked="" type="radio"/> Y / <input type="radio"/> N 1	
Discoloration or Turbidity: Y <input checked="" type="radio"/> N			Recorded by: Calvin Douglas	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Fellers Calvin Douglas		Date: 10.24.13	Tide: Flood / <input checked="" type="radio"/> Ebb / Slack	
Station ID: D-COS-131024			Water Depth (ft): 38.4	
Coordinates				
Latitude/Northing: 32° 41.163		Longitude/Easting: 117° 08.410		
Weather and Wind Conditions: Partly Cloudy, moderate wind				
Predominant Current Direction: SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
14:45:18	10'	6.5	7.9	1.5
Odor: <input checked="" type="radio"/> none slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y / <input checked="" type="radio"/> N			Photograph(s) Taken: <input checked="" type="radio"/> Y / N	
Discoloration or Turbidity: Y / <input checked="" type="radio"/> N			Recorded by: Calvin Douglas	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Fellers Brittany Geister		Date: 10.31.13	Tide: Flood <input checked="" type="radio"/> Ebb <input type="radio"/> Slack	
Station ID: D-BB-131031		Water Depth (ft): 36.8		
Coordinates				
Latitude/Northing: 32° 41' 30.204"		Longitude/Easting: 117° 09' 02.058"		
Weather and Wind Conditions: Sunny, moderate wind				
Predominant Current Direction: NW				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
12:40:12	10	7.1	7.9	2.9
Odor: <input checked="" type="radio"/> none slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y <input checked="" type="radio"/> N <input type="radio"/>			Photograph(s) Taken: <input checked="" type="radio"/> Y <input type="radio"/> N	
Discoloration or Turbidity: Y <input checked="" type="radio"/> N <input type="radio"/>			Recorded by: Brittany Geister	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Fellers Brittany Geisler		Date: 10.31.13	Tide: Flood (Ebb) Slack	
Station ID: D- ^{EWN 36} EWS B1031		Water Depth (ft): 40.7		
Coordinates				
Latitude/Northing: 32° 41' 23.190"		Longitude/Easting: 117° 08' 21.102"		
Weather and Wind Conditions: Sunny, light wind				
Predominant Current Direction: NW				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
13:06 55	10	6.8	7.9	1.1
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y/N <u>(N)</u>		Photograph(s) Taken: <u>(Y)</u> (N) 1 B6		
Discoloration or Turbidity: Y/N <u>(N)</u>		Recorded by: <u>Bobby Grel</u>		
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Fellers Brittany Guster		Date: 10.31.13	Tide: Flood / <u>Ebb</u> / Slack	
Station ID: D-EW ^{SBC} -131031			Water Depth (ft): 32.4	
Coordinates				
Latitude/Northing: 32° 41' 14.652"		Longitude/Easting: 117° 08' 21.726"		
Weather and Wind Conditions: Sunny, light wind				
Predominant Current Direction: NW				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
13:17:31	10	6.6	7.9	2.0
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y/ <u>N</u>			Photograph(s) Taken: <u>Y</u> /N	
Discoloration or Turbidity: Y/ <u>N</u>			Recorded by: <u>Brittany G</u>	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Felters Brittany Geister		Date: 10.31.13	Tide: Flood <input checked="" type="radio"/> Ebb <input type="radio"/> Slack	
Station ID: D-CNN-131031			Water Depth (ft): 35.7	
Coordinates				
Latitude/Northing: 32° 41' 22.686"		Longitude/Easting: 117° 08' 25.026"		
Weather and Wind Conditions: Sunny, SW Strong Wind				
Predominant Current Direction: NW				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
13:22:12	10	6.7	7.9	1.9
Odor: <input checked="" type="radio"/> none <input type="radio"/> slight <input type="radio"/> moderate <input type="radio"/> strong <input type="radio"/> H ₂ S <input type="radio"/> petroleum <input type="radio"/> septic				
Presence of Surface Pollution: Y <input checked="" type="radio"/> N <input type="radio"/>			Photograph(s) Taken: Y <input checked="" type="radio"/> N <input type="radio"/>	
Discoloration or Turbidity: Y <input checked="" type="radio"/> N <input type="radio"/>			Recorded by: Brittany Geister	
Comments: Dry dock blocking view of silt curtain. Estimated distance				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Fellers Brittany Geister		Date: 10.31.13	Tide: Flood (Ebb) Slack	
Station ID: D-CON-131031		Water Depth (ft): 40.1		
Coordinates				
Latitude/Northing: 32° 41' 14.050"		Longitude/Easting: 117° 08' 26.382"		
Weather and Wind Conditions: Sunny, mod. wind				
Predominant Current Direction: NW				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
13:26:12	10	4.7	7.9	1.9
Odor: (none) slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y (N)		Photograph(s) Taken (Y) N		
Discoloration or Turbidity: Y (N)		Recorded by: Brittany Geister		
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Fellers Brittany Geister		Date: 10.31.13	Tide: Flood (Ebb) / Slack	
Station ID: D-CNS-131031			Water Depth (ft): 35.2	
Coordinates				
Latitude/Northing: 32° 41' 11.136"		Longitude/Easting: 117° 08' 22.230"		
Weather and Wind Conditions: Sunny, mod. wind				
Predominant Current Direction: NW				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
13:30:36	10	6.7	8.0	1.9
Odor: <input checked="" type="radio"/> none slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y <input checked="" type="radio"/> N			Photograph(s) Taken: Y <input checked="" type="radio"/> N	
Discoloration or Turbidity: Y <input checked="" type="radio"/> N			Recorded by: Brittany Geister	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Fellers Brittany Geister		Date: 10.31.13	Tide: Flood / <u>Ebb</u> / Slack	
Station ID: D-COS-131031			Water Depth (ft): 34.9	
Coordinates				
Latitude/Northing: 32° 41' 11.880"		Longitude/Easting: 117° 08' 25.572"		
Weather and Wind Conditions: Sunny, mod. wind				
Predominant Current Direction: NW				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
13:39:40	10	7.0	8.0	1.8
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y / <u>N</u>		Photograph(s) Taken: Y / N 1		
Discoloration or Turbidity: Y / <u>N</u>		Recorded by: <u>Brittany Geister</u>		
Comments:				

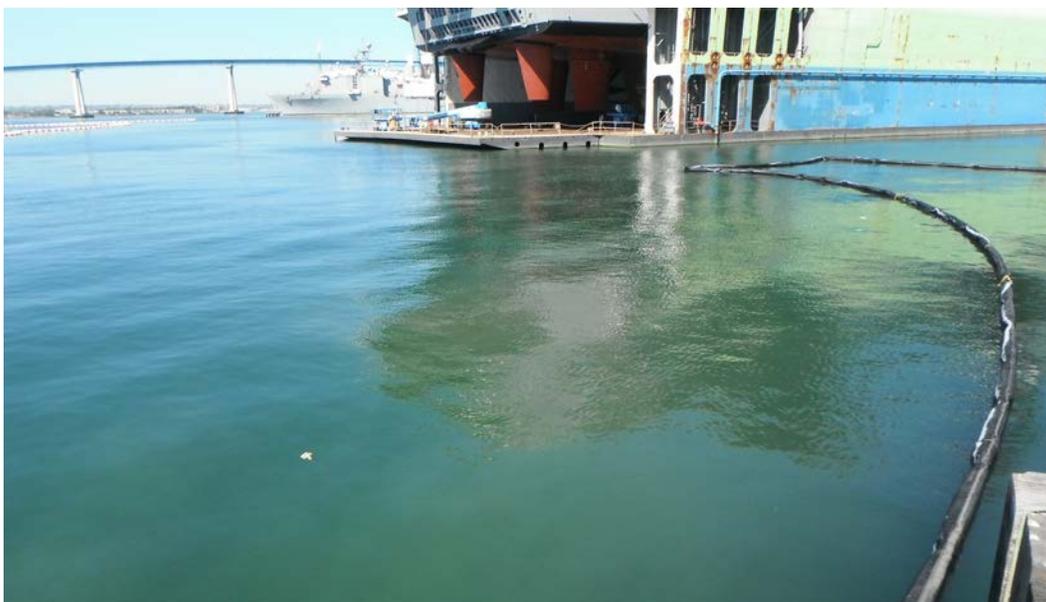
ATTACHMENT D
PHOTOGRAPHS



View northwest of silt curtains at SMU-4, October 1, 2013



View west of silt curtains at SMU-4, October 15, 2013



View northwest of silt curtains at SMU-4, October 17, 2013



View west of silt curtains at SMU-3, October 31, 2013