ENVIRONMENTAL REMEDIATION GROUP
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VIA: Geotracker

August 31, 2015

Mr. Dean Thomas, PG
Engineering Geologist
Central Coast Regional Water Quality Control Board
895 Aerovista Place, Suite 101
San Luis Obispo, California 93401

Subject: 2015 Semiannual Groundwater Monitoring Report
Olin Site
425 Tennant Ave
Morgan Hill, California

Dear Mr. Thomas:

The 2015 Semiannual Groundwater Monitoring Report (reporting data from First and Second Quarters of 2015) for the Olin Site in Morgan Hill, California is attached. The report is prepared pursuant to Monitoring and Reporting Program (MRP) R3-2008-0028 and Cleanup or Abatement Order (CAO) R3-2004-0101, as modified by the State Water Resources Control Board and other Central Coast Regional Water Quality Control Board letters.

With my signature below, as a duly authorized Olin representative, I certify under penalty of perjury that to the best of my knowledge the contents within this report are true, complete, and correct.

If you have any questions, please call me.

Sincerely,
O L I N C O R P O R A T I O N

David M. Share
Director
Environmental Remediation Group

cc (via e-mail):
Thea Tryon, Water Board
Karl Bjarke, City of Morgan Hill
Andria Ventura, PCAG
Vanessa De La Piedra, Santa Clara Valley Water District
Curt Richards, Rick McClure, Dane Grimshaw (Olin)
Michael Taraszki, Mari Gilmore, Susan Panttaja (Amec Foster Wheeler)
Evan Cox, Jim Deitsch (Geosyntec)

August 31, 2015

Project 6107150012

Mr. Dean Thomas, PG
Engineering Geologist
Central Coast Regional Water Quality Control Board
895 Aerovista Place, Suite 101
San Luis Obispo, California 93401

Subject: 2015 Semiannual Groundwater Monitoring Report
Monitoring and Reporting Program R3-2008-0028
Olin Site
425 Tennant Avenue
Morgan Hill, California

Dear Mr. Thomas:

This report has been prepared on behalf of Olin Corporation (Olin) by Amec Foster Wheeler Environment & Infrastructure, Inc. ("Amec Foster Wheeler") to present the results of the January 1 through June 30, 2015 (the first semiannual reporting period, referred to herein as "1SA15") groundwater monitoring and remediation activities conducted for the Olin Site located at 425 Tennant Avenue, Morgan Hill, California (the "Site"). This report describes the activities conducted pursuant to *Monitoring and Reporting Program (MRP) No. R3-2008-0028* and pursuant to *Cleanup or Abatement Order R3-2004-0101*, as modified by the Central Coast Regional Water Quality Control Board (the "Water Board"; Water Board, 2004) and the State Water Resources Control Board (the "State Board") *Order WQ 2005-0007* ("State Board Order"; State Board, 2005), which established the Replacement Water Program (RWP). Remediation activities were conducted in compliance with *Cleanup and Abatement Order R3-2007-0077*, Ordering Paragraph D (the "CAO"; Water Board, 2007).

Groundwater monitoring activities conducted in January and February 2015 were in accordance with the MRP published on March 5, 2014 (Water Board, 2014), as revised in May 2014 (AMEC Environment & Infrastructure, Inc. [AMEC], 2014b). On February 20, 2015, the Water Board issued a revised MRP (Water Board, 2015), incorporating several requested changes to the monitoring network, sampling frequencies, and reporting requirements. The refined monitoring requirements were implemented beginning in March 2015. This report is also consistent with the reporting requirements included in the revised MRP.

BACKGROUND

The Site is an approximately 13-acre parcel of land located in the City of Morgan Hill, California, within the Llagas Subbasin (the "Subbasin") of the Gilroy-Hollister Groundwater Basin in southern Santa Clara County (see Figure 1). The geologic and hydrogeologic features of the Subbasin are detailed in the *Llagas Subbasin Characterization – 2008* report (MACTEC Environment & Infrastructure, Inc. [MACTEC], 2009), with refined descriptions included in the 2009, 2010, 2011, 2012, 2013, and 2014 *Annual Cleanup Progress Status Reports* (CPSRs; MACTEC, 2010a, 2011; AMEC, 2012, 2013, 2014a; Amec Foster Wheeler, 2015c).

Groundwater flow occurs in three aquifers, as follows:

- Shallow aquifer – from surface to approximately 50 feet below ground surface (bgs)
- Intermediate aquifer – approximately 70–180 feet bgs
- Deep aquifer – approximately 200–400 feet bgs

These depth intervals vary with distance from the Site and are separated by aquitards that consist of silty material with discontinuous sand stringers. The intermediate and deep aquifers are each subdivided into three zones (upper, middle, and lower), based on hydraulic head profiles at depth-discrete monitoring wells. Most groundwater pumped by domestic and agricultural wells in the Subbasin originates from the intermediate aquifer, whereas groundwater pumped by municipal supply wells is produced predominantly from the deep aquifer zones. Due to the current drought, some domestic and agricultural wells have recently also been installed in the upper and middle deep aquifer zones.

The perchlorate distribution in groundwater within the Subbasin is described in terms of three perchlorate concentration priority zones (PZ; MACTEC, 2007), as follows:

- PZA – concentrations above 24.5 micrograms per liter (µg/L)
- PZB – concentrations between 11.1 and 24.5 µg/L
- PZC – concentrations between 6 and 11 µg/L

California's perchlorate maximum contaminant level (MCL) is 6 µg/L. The CAO defines the perchlorate plume core as consisting of PZA and PZB in the intermediate aquifer and PZA in the deep aquifer (Water Board, 2007). The priority zones were first described in the *Llagas Subbasin Cleanup Work Plan* (MACTEC, 2007).

The on-site groundwater treatment system (GWTS) that operated from 2004 to February 2012 was replaced with an expanded GWTS constructed during 2012. The expanded GWTS began full-time operation on September 7, 2012. The GWTS consists of the following systems:

- The groundwater extraction system (GES), which includes 2 extraction wells in the shallow aquifer (EW-01A and EW-02A) that are currently inactive, 2 extraction wells in the intermediate aquifer (EW-01B1 and IEW-1R), and 1 extraction well in the upper and middle deep aquifer zones (DEW-1).
- The ion exchange system (IES).
- The on-site recharge (OSR) system, which includes the injection of treated water via 6 injection wells screened in the shallow aquifer.

The GWTS is operated pursuant to *Waste Discharge Requirements Order No. R3-2011-0209* (the "WDR"; Water Board, 2011) and the Santa Clara Valley Water District's approved Treated Groundwater Recharge and Reinjection agreement. Standard operations comply with the

Operations, Maintenance, and Monitoring Plan for the Groundwater Treatment System (OMMP; Geosyntec, 2014).

GROUNDWATER MONITORING ACTIVITIES

Groundwater monitoring conducted during 1SA15 consisted of the following field activities:

- Measuring depths to groundwater at 155 monitoring wells and piezometers.
- Collecting groundwater samples from 11 domestic wells, 5 extraction wells, and 89 monitoring wells for perchlorate analysis.
- Collecting groundwater samples from 5 extraction wells, 3 domestic wells, and 42 monitoring wells for nitrate analysis.
- Routinely operating and monitoring 3 active domestic ion exchange (IX) systems, including collecting quarterly groundwater samples, inspecting each system monthly, and performing routine repairs and maintenance.
- Routinely operating and monitoring the GWTS, including collecting monthly groundwater samples, inspecting the system monthly, and performing routine repairs and maintenance.

Sampling procedures, protocols, and purge methods for the monitoring wells are described in the *Quality Assurance Project Plan* (QAPP; MACTEC, 2010b, and Amec Foster Wheeler, 2015a) and *Sampling and Analysis Plan* (SAP; AMEC, 2011 and Amec Foster Wheeler, 2015b). The QAPP and SAP were revised in March 2015 to update procedures, methods, and references that had changed since the previous document revisions.

GROUNDWATER FLOW DIRECTIONS AND GRADIENTS

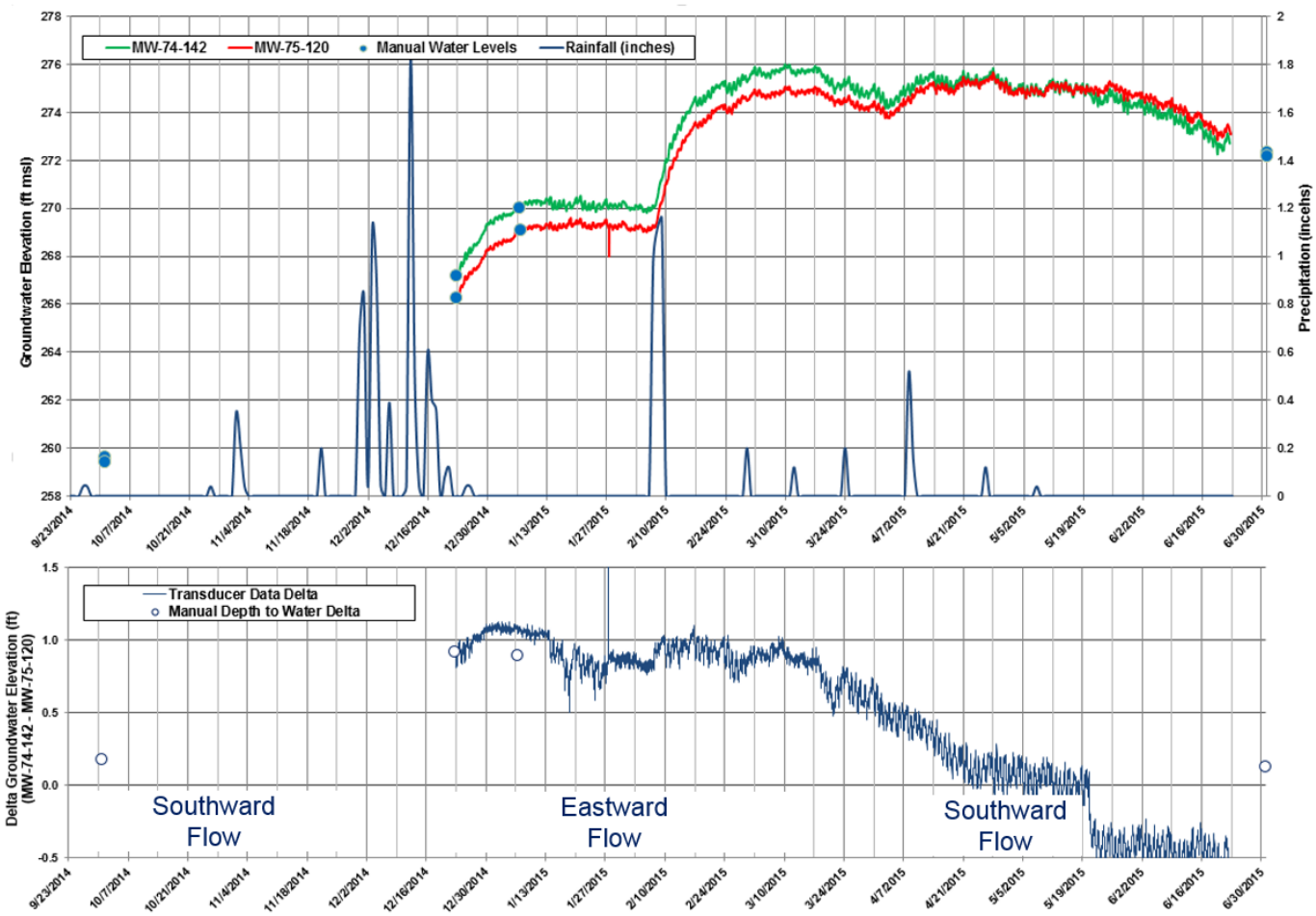
Groundwater elevations measured at wells specified in the MRP during 1SA15 (Table 1) were used to estimate groundwater flow directions and calculate horizontal and vertical gradients. Where a groundwater level could not be measured (e.g., due to some shallow aquifer wells being dry) that exception is noted on Table 1. Groundwater elevation contours for each aquifer zone are shown on Figures 2 through 6. The results of the groundwater elevation measurements are described briefly below:

- Relative to measurements taken in Fourth Quarter 2014 (“4Q14”), groundwater elevations in 1SA15 increased throughout the Subbasin. Average groundwater elevations increased approximately 7 feet in the shallow aquifer, 11 feet in the intermediate aquifer, and 14 feet in the deep aquifer. These measurements reflect a typical seasonal response during the winter, although the amount of precipitation during this period was less than typical. In addition, data provided by the Santa Clara Valley Water District (SCVWD)in July 2015 indicate recharge of imported water to the shallow and intermediate aquifers via the Madrone Ponds was significantly reduced in 4Q14 relative to typical recharge rates and was suspended altogether in

first quarter 2015 ("1Q15"; George Cook, personal communication[1]). The moderate rebound observed in the deep aquifer is consistent with seasonally-reduced extraction during the winter months.

- Except for the intermediate aquifer, groundwater flow directions, as well as horizontal and vertical gradients, are generally consistent with previous observations, allowing for seasonal variations, drought conditions, and local effects of pumping from extraction wells EW-01B1, IEW-1R, and DEW-1.
- In the intermediate aquifer, 1SA15 groundwater flow directions (collected January 2015) were more easterly in the northern part of the Subbasin than have been observed during previous monitoring periods (Figure 3). To analyze this further, continuous groundwater elevation data collected via pressure transducers at intermediate aquifer wells MW-74 and MW-75, which are oriented approximately east-west of each other, were used to evaluate groundwater flow directions in response to the December 2014 rainfall event. Because of the wells' orientation, the smaller the head difference between these two wells, the more southward groundwater flows (as opposed to northward, based on water level data from surrounding wells).
- As illustrated below, manual depth-to-water measurements in 4Q14 (before the rainfall event) indicate predominantly southward flow conditions (i.e., 0.18 feet of head difference between wells MW-74-142 and MW-75-120). In late 4Q14, just after the December 2014 rainfall event, transducers were installed in these wells. The transducer data (supported by the manual depth-to-water data) show that in early 1Q15, likely in response to the December 2014 rainfall event, the head difference increased to approximately 1.0 feet between MW-74-142 and MW-75-120, which reflects an eastward groundwater flow direction and suggests preferential recharge from the west. By late April 2015, the head difference between these wells, based on transducer data, had diminished to approximately zero (or slightly negative), indicating a return to a predominantly southward groundwater flow direction. Consequently, the easterly flow direction illustrated in Figure 3 represents a transient groundwater flow condition that reflects a combination of approximately 6.5 inches of precipitation that occurred in December 2014, effects of the ongoing drought, and reduced recharge to the nearby Madrone Ponds by the SCVWD in 4Q14.

[1] George Cook, SCVWD, email to Amec Foster Wheeler on July 14, 2015.



- In the middle-deep aquifer zone (Figure 5), the groundwater divide zone noted in previous monitoring reports was more subtle and farther north than in 4Q14 (Amec Foster Wheeler, 2015c). This observation is consistent with the reduced pumping at City of Morgan Hill supply wells in response to ongoing drought conditions, in addition to seasonal reduced pumping in the winter months.

GROUNDWATER ANALYTICAL RESULTS

Groundwater samples collected in 1SA15 were analyzed for perchlorate using U.S. Environmental Protection Agency (USEPA) Test Method 314.0 modified (monitoring wells and domestic wells with IX treatment systems) and USEPA Method 331.0 (domestic wells without IX treatment systems), in accordance with the QAPP (MACTEC, 2010b and Amec Foster Wheeler, 2015a). Perchlorate analytical results are provided in Tables 2 and 3, and the laboratory reports are provided in Appendix A. Field measurements associated with the monitoring well purging are provided in Appendix B. An updated Microsoft Access database file of analytical results is provided in Appendix C.

Figures 7 through 11 illustrate the perchlorate distribution in the shallow and intermediate aquifers and the upper deep, middle deep, and lower deep aquifer zones, respectively. As summarized below, perchlorate distribution and concentrations are generally consistent with the previous monitoring period (Amec Foster Wheeler, 2015c).

- The shallow aquifer perchlorate distribution is consistent with 4Q14 observations (Amec Foster Wheeler, 2015c; Figure 7), although 3 of the 18 shallow MRP wells were dry for the 1SA15 sampling event.
- In the intermediate aquifer, perchlorate distribution is generally consistent with 4Q14 observations (Amec Foster Wheeler, 2015c; Figure 8). 1SA15 sample results and those from grab groundwater samples collected during the late 2014 and early 2015 cone penetrometer test (CPT) investigation (Amec Foster Wheeler, 2015d) were incorporated into Figure 8. A PZB perchlorate concentration was detected at MW-75-120 in the first quarter 2015 sample, but the perchlorate result for the second quarter 2015 was in the sub-PZC range, consistent with previous results for this well. A PZA concentration was detected at MP-04-088 in 1SA15, consistent with an increasing trend observed at this well since 2005 (Amec Foster Wheeler, 2015c).
- Perchlorate distributions in the upper, middle, and lower deep aquifer zones (Figures 9, 10, and 11, respectively) are generally consistent with 4Q14 observations (Amec Foster Wheeler, 2015c). In the upper deep aquifer zone, perchlorate concentrations remained below the PZA threshold (Figure 9). In the middle and lower deep aquifer zones, the priority zone distributions are consistent with previous observations (Figures 10 and 11, respectively).

Perchlorate was detected above the MCL in 7 domestic wells at concentrations ranging from 8.8 to 38 µg/L (Table 4). These wells are in or adjacent to the plume core and within approximately 1 mile south of the Site (Figures 8, 9, and 10). In accordance with the State Board Order, replacement water is provided for domestic wells with perchlorate concentrations above the MCL (Table 4). Pursuant to the State Board Order, IX treatment systems have been or will be installed on domestic wells with perchlorate concentrations above 7.9 µg/L, except a well) where owner maintenance is required (09S03E34C002) and one where bottled water is the owner's preference (09S03E35N008). Installation of two IX systems is planned for the second half of 2015 at wells 09S03E35N014 (identified during the 2013 Annual Domestic Well Survey) and 09S03E34J012 (identified during the 2015 Annual Domestic Well Survey). Until the IX systems are installed for these wells, bottled water is being provided. Bottled water is also provided to users of the remaining domestic wells with perchlorate concentrations above the MCL that do not have IX systems installed. During 1SA15, groundwater from 3 domestic wells was treated by IX systems and users of 5 domestic wells received bottled water (Table 4).

Perchlorate concentration trends were calculated using the Mann Kendall nonparametric statistical trend test and procedures (Gilbert, 1987) for the most recent two years of analytical data, or using four data points, whichever data set is larger (Table 5). Of the 84 wells sampled in 1SA15 that meet the criteria for Mann Kendall analysis, the results are as follows:

- 63 domestic and monitoring wells (approximately 75 percent) exhibit a *decreasing*, *probably decreasing*, or *stable* trend.
- 15 wells (approximately 18 percent) exhibit *no trend*.
- 6 wells (approximately 7 percent) exhibit *increasing* trends.

Of the five monitoring wells and one domestic well with increasing trends, three are intermediate aquifer wells (MP-60-082, PM-01B1, and PMW-05-090) located within the capture zone of intermediate extraction wells IEW-1R or EW-01B1. Intermediate aquifer well MP-04-088 is located east of the Site and that area is the focus of an ongoing intermediate aquifer and A/B aquitard investigation. Upper deep well MP-52-273 has PZC detections. Domestic well 09S03E35N008 is monitored in the RWP and the residents are currently being provided bottled water.

Groundwater samples were analyzed for nitrate using USEPA Test Method 300.0 in accordance with the MRP (Water Board, 2014 and 2015). The analytical results are provided in Table 6 and are comparable to previously observed concentrations and expected concentration trends associated with GWTS operation.

TREATMENT SYSTEM OPERATIONS AND PERFORMANCE

The GWTS is operating as designed and perchlorate was not detected in the effluent samples in compliance with the WDR. All treated groundwater is recharged to the Llagas Subbasin. The monthly flow rates and flow volumes recorded by the GES and OSR system flowmeters are provided in Table 7.

Three GES extraction wells were operated during 1SA15, including off-site extraction wells IEW-1R and DEW-1 and on-site extraction well EW-01B1. Perchlorate concentration results for these extraction wells are presented in Table 2. A thorough analysis of GWTS hydraulic containment will be presented in the forthcoming 2015 CPSR.

Off-site intermediate extraction well IEW-1R was operated at a calculated average flow rate of approximately 184 gallons per minute (gpm) during 1SA15 (Table 7), and the average influent perchlorate concentration was 8.5 µg/L (Table 2). Influent perchlorate concentrations, though stable for the reporting period, are indicative of a continued decline since operation of the GWTS began in September 2012, when the influent concentration was 15 µg/L. As shown on Figure 8, perchlorate concentrations for most intermediate wells upgradient of IEW-1R generally exhibited stable trends or had no trends in 1SA15, while most intermediate aquifer wells downgradient of IEW-1R exhibited stable or decreasing trends.

Off-site upper and middle deep aquifer zone extraction well DEW-1 was operated at a calculated average flow rate of approximately 121 gpm during 1SA15 (Table 7), and the average perchlorate concentration was 15 µg/L (Table 2). The flow rate from DEW-1 has increased since the end of 4Q14 as water levels in the deep aquifer have risen. During this time, groundwater extraction by City of Morgan Hill municipal wells has decreased in response to lower seasonal demand and drought conditions.

On-site intermediate aquifer extraction well EW-01B1 was operated at an average flow rate of approximately 10.7 gpm during 1SA15 (Table 7), and average perchlorate concentrations was 113 µg/L (Table 2) during 1SA15. On-site shallow aquifer extraction wells EW-01A and EW-02A have not been operated since 2011 because perchlorate concentrations remain below threshold restart levels set forth in the OMMP (Geosyntec, 2014).

Due primarily to increased extraction from extraction wells IEW-1R and DEW-1, average injection well flow rates and associated mounding have increased when compared to those observed during 4Q14. Recharge patterns are likely consistent with those presented in the 2014 CPSR (Amec Foster Wheeler, 2015c).

Monthly samples were collected from the IES at three sampling ports (influent [SV-100], midpoint [SV-200], and effluent [SV-300]) and analyzed for perchlorate, major anions, and field parameters. The results are presented in Table 8. Perchlorate was not detected in the IES effluent samples, which is in compliance with the WDR. Based on the treated volume of approximately 79.9 million gallons of groundwater and on perchlorate concentrations observed in samples from SV-100, approximately 4.57 kilograms (kg), or approximately 10.1 pounds of perchlorate were removed during 1SA15. The cumulative perchlorate mass removed by system operations since 2004 is approximately 81.84 kg, or approximately 180.4 pounds. Cumulative and 2015 quarterly average values of perchlorate mass removed and treated groundwater volumes are provided in Table 9.

Three domestic IX systems are operated, maintained, and monitored in accordance with the *Operation, Maintenance, and Monitoring Plan for Residential Ion Exchange Systems* (Evoqua, 2015). Installation of two additional domestic IX systems is being planned, as discussed above. Performance monitoring results indicate that the domestic IX systems are operating as designed. Analytical results are provided in Appendix A and summarized in Table 10. Field forms related to operation, maintenance, and monitoring of the IX systems are provided in Appendix D.

DATA ACCURACY AND PRECISION

The data validation and precision assessments for 1SA15 were performed in accordance with the procedures specified in the *USEPA Contract Laboratory Program, National Functional Guidelines for Inorganic Data Review* (National Functional Guidelines [USEPA, 2010, 2014]), the QAPP (MACTEC, 2010b and Amec Foster Wheeler, 2015a), and quality control criteria specified in the analytical methods and the MRP. Results of the data validation and precision are included in Appendix E.

Based upon the data review, the 1SA15 results are considered valid and usable to support project decisions with additional data qualifiers as described. Data completeness (the number of successful analyses relative to the number of requested analyses) was 100 percent for 1SA15 samples.

REMEDIATION ACTIVITIES

During 1SA15, final CPT soundings and grab groundwater sample collection activities proposed in the *Intermediate Aquifer and A/B Aquitard Investigation Work Plan* (AMEC, 2014c) were completed. The results of these activities were presented in the *Intermediate Aquifer Investigation and GDR Recommendation Report* (Amec Foster Wheeler, 2015d). The results of pore water borings completed in 2014 were reported in the *A/B Aquitard Data Report* (Geosyntec, 2015), submitted to the Water Board on March 31, 2015. These reports recommended additional intermediate aquifer and A/B aquitard data collection, which began in the third quarter of 2015. Additionally, installation of three additional well couplets was proposed in May 2015 and was completed in third quarter 2015: one well couplet (MW-75) in the lower intermediate aquifer zone and upper deep aquifer zone east of the Site, one well couplet (MW-76) in the upper and middle intermediate aquifer zones south of the Site, and one well couplet (MW-77) in the middle deep aquifer zone between the Site and monitoring well MP-16. Findings from these activities will be reported under separate cover.

REPORT RELIANCE

This document was prepared for the sole use of the regulatory agencies for the Olin Site who are the only intended beneficiaries of this work. No other party should rely on the information contained herein without the prior written consent of Olin. This report and the interpretations, conclusions, and recommendations contained within are based in part on information presented in other documents that are cited in the text and listed in the references. Therefore, this report is subject to the limitations and qualifications presented in the referenced documents.

Should you have any questions regarding this report, please contact Mr. Rick McClure, Olin Corporate Environmental Remediation Group, at (423) 336-4576.

Sincerely,
Amec Foster Wheeler Environment & Infrastructure, Inc.

Susan K. Panttaja, PG
Associate Geologist

Mari Gilmore, PG
Project Manager

SKP/MMG/MDT/sc

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I certify under penalty of perjury that information contained within this document (2015 Semiannual Groundwater Monitoring Report) and all attachments, exclusive of work prepared by other consultants, is true and accurate, to the best of my knowledge. The services described in this document have been provided in a manner consistent with current standards of the profession, and to the best of my knowledge comply with all applicable federal, state, and local statutes, regulations, and ordinances.

Michael D. Taraszki, PG, CHG, PMP
Principal Hydrogeologist

Enclosures:

Table 1	Groundwater Depths and Elevations
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Appendix B	Field Sampling Data
Appendix C	Analytical Results, Microsoft Access Database [provided separately]
Appendix D	Domestic Ion Exchange Treatment System Inspection Forms
Appendix E	Data Validation and Precision Assessment Results

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TABLES

TABLE 1

GROUNDWATER DEPTHS AND ELEVATIONS
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Well ID	Screen or BARCAD Interval (feet)[1]	Top of Casing Elevation (feet)[2]	Sample Date	Depth to Water (feet)[3]	Groundwater Surface Elevation (feet)[2]	Aquifer	Comments
EW-01A	11.7-51.7	326.24	01/06/2015	30.21	296.03	Shallow	
EW-02A	17.5-57.5	325.64	01/06/2015	29.90	295.74	Shallow	
MP-02-035	29-41	333.14	01/06/2015	37.91	295.23	Shallow	
MP-02-095	92-98	333.14	01/06/2015	63.97	269.17	Intermediate-Upper	
MP-02-255	252-258	333.14	01/06/2015	77.90	255.24	Deep-Upper	
MP-02-285	285.3-285.5	333.14	01/06/2015	78.39	254.75	Deep-Upper	
MP-03-086	85-88	342.78	01/06/2015	71.98	270.80	Intermediate-Upper	
MP-03-120	117-123	342.78	01/06/2015	71.28	271.50	Intermediate-Upper	
MP-03-255	252-258	342.78	01/06/2015	76.42	266.36	Deep-Upper	
MP-04-038	32-44	327.83	01/06/2015	31.55	296.28	Shallow	
MP-04-088	85-91	327.83	01/06/2015	56.55	271.28	Intermediate-Upper	
MP-04-251	248-254	327.83	01/06/2015	71.91	255.92	Deep-Upper	
MP-04-291	291.3-291.5	327.83	01/06/2015	83.51	244.32	Deep-Middle	
MP-05-039	32-46	329.86	01/06/2015	39.55	290.31	Shallow	
MP-05-090	88-91	329.86	01/06/2015	62.12	267.74	Intermediate-Upper	
MP-05-260	257-263	329.86	01/06/2015	76.66	253.20	Deep-Upper	
MP-16-138	142.3-148.3	329.27	01/06/2015	61.26	268.01	Intermediate-Middle	
MP-16-229	233.3-239.3	329.27	01/06/2015	78.22	251.05	Deep-Upper	
MP-16-261	265.3-271.3	329.27	01/06/2015	81.39	247.88	Deep-Middle	
MP-16-285	292.1-292.3	329.27	01/06/2015	83.14	246.13	Deep-Middle	
MP-17-110	105-114	319.66	01/06/2015	49.73	269.93	Intermediate-Upper	
MP-21-089	86-92	307.91	01/06/2015	49.69	258.22	Intermediate-Upper	
MP-21-230	222-238	307.91	01/06/2015	63.75	244.16	Deep-Upper	
MP-21-278	275-281	307.91	01/06/2015	64.65	243.26	Deep-Middle	
MP-21-295	294.3-294.5	307.91	01/06/2015	67.06	240.85	Deep-Middle	
MP-26-140	132-148	275.38	01/06/2015	70.57	204.81	Intermediate	
MP-26-242	239-245	275.38	01/06/2015	60.81	214.57	Deep-Upper	
MP-29-169	166-172	271.32	01/06/2015	82.48	188.84	Intermediate	
MP-29-242	236-248	271.32	01/06/2015	83.98	187.34	Deep-Upper	
MP-29-292	291.9-292	271.32	01/06/2015	86.11	185.21	Deep-Middle	
MP-35-162	159-165	240.29	01/06/2015	66.78	173.51	Intermediate	
MP-35-273	272.3-272.5	240.29	01/06/2015	66.54	173.75	Deep-Middle	
MP-40-185	179-191	202.49	01/06/2015	41.87	160.62	Intermediate	
MP-44-141	138-144	190.79	01/06/2015	38.68	152.11	Intermediate	
MP-51-164	159-168	244.87	01/06/2015	61.23	183.64	Intermediate	
MP-51-213	208-217	244.87	01/06/2015	61.70	183.17	Deep-Upper	

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Well ID	Screen or BARCAD Interval (feet)[1]	Top of Casing Elevation (feet)[2]	Sample Date	Depth to Water (feet)[3]	Groundwater Surface Elevation (feet)[2]	Aquifer	Comments
MP-51-272	271.8-272	244.87	01/06/2015	64.29	180.58	Deep-Middle	
MP-52-032	24-40	321.32	01/06/2015	32.47	288.85	Shallow	
MP-52-095	88-102	321.32	01/06/2015	54.48	266.84	Intermediate-Upper	
MP-52-273	267-278	321.32	01/06/2015	71.08	250.24	Deep-Upper	
MP-57-260	257-262	277.08	01/06/2015	87.71	189.37	Deep-Middle	
MW-01	20.5-35	328.20	01/06/2015	32.11	296.09	Shallow	
MW-02	20-34.5	328.25	01/06/2015	32.61	295.64	Shallow	
MW-04B	257-260	328.01	01/06/2015	74.29	253.72	Deep-Upper	Barcad well; measurement not representative
MW-04C	335-338	327.59	01/06/2015	81.87	245.72	Deep-Middle	Barcad well; measurement not representative
MW-05B	243-246	327.94	01/06/2015	19.75	308.19	Deep-Upper	Barcad well; measurement not representative
MW-05C	322.5-325.5	327.31	01/06/2015	81.98	245.33	Deep-Middle	Barcad well; measurement not representative
MW-06C	338-341	329.06	01/06/2015	82.30	246.76	Deep-Middle	Barcad well; measurement not representative
MW-07SA2	89-92	327.78	01/06/2015	56.71	271.07	Intermediate-Upper	
MW-12A	31.5-56.5	328.37	01/06/2015	31.58	296.79	Shallow	
MW-12B1	79.5-99.5	328.32	01/06/2015	53.10	275.22	Intermediate-Upper	
MW-13A	27-52	330.76	01/06/2015	30.79	299.97	Shallow	
MW-13B1	85-105	330.20	01/06/2015	57.81	272.39	Intermediate-Upper	
MW-14A	28-53	330.22	01/06/2015	32.00	298.22	Shallow	
MW-14B1	83-103	329.68	01/06/2015	57.35	272.33	Intermediate-Upper	
MW-15	10-25	329.54	01/06/2015	22.58	306.96	Shallow	Dry; measurement at bottom of casing
MW-16	25-40	329.42	01/06/2015	32.64	296.78	Shallow	
MW-16-027	23.7-43.7	328.82	01/06/2015	39.98	288.84	Shallow	
MW-16-082	83.6-93.6	328.85	01/06/2015	59.27	269.58	Intermediate-Upper	
MW-16-328	325.1-345.1	328.84	01/06/2015	83.97	244.87	Deep-Middle	Co-located with MP-16-261 and MP-16-285 used for contouring
MW-17	10-25	327.63	01/06/2015	--	--	Shallow	Dry
MW-17-025	15-35	319.28	01/06/2015	32.27	287.01	Shallow	
MW-17-085	80-90	319.28	01/06/2015	48.19	271.09	Intermediate-Upper	
MW-19	79-89	329.28	01/06/2015	57.15	272.13	Intermediate-Upper	
MW-26-342	332-352	275.51	01/06/2015	85.77	189.74	Deep-Middle	
MW-26-415	405-425	275.53	01/06/2015	85.70	189.83	Deep-Lower	
MW-29-352	342-362	271.30	01/06/2015	86.55	184.75	Deep-Middle	
MW-52-347	341.5-351.5	321.04	01/06/2015	76.65	244.39	Deep-Middle	
MW-52-403	398-408	321.06	01/06/2015	86.98	234.08	Deep-Lower	
MW-53-044	42-47	320.96	01/06/2015	35.40	285.56	Shallow	
MW-53-078	73-83	320.91	01/06/2015	43.35	277.56	Intermediate-Upper	

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Well ID	Screen or BARCAD Interval (feet)[1]	Top of Casing Elevation (feet)[2]	Sample Date	Depth to Water (feet)[3]	Groundwater Surface Elevation (feet)[2]	Aquifer	Comments
MW-53-195	185-205	320.93	01/06/2015	54.08	266.85	Intermediate-Lower	Not representative of intermediate aquifer
MW-53-264	254-274	320.93	01/06/2015	71.80	249.13	Deep-Middle	
MW-54-260	250-270	287.31	01/06/2015	81.25	206.06	Deep-Middle	
MW-54-400	395-405	287.35	01/06/2015	92.08	195.27	Deep-Lower	
MW-55-275	270-280	324.37	01/06/2015	75.31	249.06	Deep-Upper	
MW-55-339	330-348	324.72	01/06/2015	81.86	242.86	Deep-Middle	
MW-55-410	407-413	324.68	01/06/2015	92.62	232.06	Deep-Lower	
MW-56-220	215-225	286.23	01/06/2015	87.14	199.09	Deep-Upper	
MW-56-335	330-340	286.10	01/06/2015	95.22	190.88	Deep-Middle	Not representative of middle deep aquifer zone
MW-56-433	428-438	286.24	01/06/2015	94.19	192.05	Deep-Lower	
MW-59-090	80-100	300.59	01/06/2015	45.20	255.39	Intermediate-Upper	
MW-59-250	240-260	300.63	01/06/2015	66.94	233.69	Deep-Middle	
MW-59-345	335-355	300.40	01/06/2015	77.61	222.79	Deep-Middle	Co-located with MW-59-250 used for contouring
MW-59-386	376-396	300.32	01/06/2015	77.72	222.60	Deep-Lower	
MW-60-082	72-92	312.39	01/06/2015	47.63	264.76	Intermediate-Upper	
MW-60-180	172-187	312.38	01/06/2015	48.40	263.98	Intermediate-Lower	
MW-60-220	215-225	312.51	01/06/2015	66.61	245.90	Deep-Upper	
MW-60-270	265-275	312.54	01/06/2015	67.28	245.26	Deep-Upper	
MW-60-300	295-305	312.22	01/06/2015	68.82	243.40	Deep-Middle	
MW-60-345	340-350	312.21	01/06/2015	71.66	240.55	Deep-Middle	
MW-61-047	45-50	325.13	01/06/2015	31.60	293.53	Shallow	
MW-61-056	54-59	325.13	01/06/2015	32.31	292.82	A/B Aquitard	
MW-62-041	39-44	321.47	01/06/2015	32.29	289.18	Shallow	
MW-62-055	53-58	321.48	01/06/2015	49.25	272.23	A/B Aquitard	
MW-63-035	30-40	316.81	01/06/2015	39.52	277.29	Shallow	Dry; measurement at bottom of casing
MW-63-057	52-62	316.84	01/06/2015	39.61	277.23	A/B Aquitard	
MW-63-080	75-85	316.73	01/06/2015	46.11	270.62	Intermediate-Upper	
MW-64-027	22-32	313.53	01/06/2015	32.98	280.55	Shallow	
MW-64-060	55-65	313.76	01/06/2015	45.90	267.86	A/B Aquitard	
MW-64-082	77-87	313.89	01/06/2015	46.46	267.43	Intermediate-Upper	
MW-65-027	22-32	307.78	01/06/2015	28.96	278.82	Shallow	
MW-65-052	47-57	307.86	01/06/2015	37.56	270.30	A/B Aquitard	
MW-65-087	82-92	307.72	01/06/2015	47.19	260.53	Intermediate-Upper	
MW-65-114	109-119	307.89	01/06/2015	47.34	260.55	Intermediate-Upper	
MW-65-153	148-158	307.93	01/06/2015	46.05	261.88	Intermediate-Middle	
MW-66-245	240-250	288.63	01/06/2015	71.29	217.34	Deep-Middle	

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Well ID	Screen or BARCAD Interval (feet)[1]	Top of Casing Elevation (feet)[2]	Sample Date	Depth to Water (feet)[3]	Groundwater Surface Elevation (feet)[2]	Aquifer	Comments
MW-66-335	330-340	288.41	01/06/2015	85.15	203.26	Deep-Middle	Co-located with MW-66-245 used for contouring
MW-66-390	385-395	288.57	01/06/2015	88.56	200.01	Deep-Lower	
MW-67-248	240-255	306.64	01/06/2015	71.67	234.97	Deep-Upper	
MW-67-485	480-490	306.64	01/06/2015	91.73	214.91	Deep-Lower	
MW-68-382	377-387	304.97	01/06/2015	97.16	207.81	Deep-Lower	
MW-69-360	335-365	291.89	01/06/2015	95.84	196.05	Deep-Lower	
MW-70-240	235-245	320.20	01/06/2015	73.14	247.06	Deep-Upper	
MW-70-317	312-322	320.21	01/06/2015	78.41	241.80	Deep-Middle	
MW-70-355	350-360	320.26	01/06/2015	82.98	237.28	Deep-Middle	Co-located well MW-70-317 used for contouring
MW-70-433	428-438	320.30	01/06/2015	89.51	230.79	Deep-Lower	
MW-71-075	70-80	307.94	01/06/2015	47.08	260.86	Intermediate-Upper	
MW-71-115	105-125	307.94	01/06/2015	47.85	260.09	Intermediate-Middle	
MW-72-070	60-80	314.39	01/06/2015	42.06	272.33	Intermediate-Upper	
MW-72-145	135-155	314.43	01/06/2015	47.95	266.48	Intermediate-Lower	
MW-73-270	265-275	305.69	01/06/2015	64.44	241.25	Deep-Middle	Co-located well MW-73-315 used for contouring
MW-73-315	310-320	305.68	01/06/2015	67.43	238.25	Deep-Middle	
MW-73-395	390-400	305.69	01/06/2015	79.78	225.91	Deep-Lower	
MW-74-084	78.3-88.3	328.04	01/06/2015	56.21	271.83	Intermediate-Upper	
MW-74-142	136.9-146.9	328.03	01/06/2015	58.02	270.01	Intermediate-Middle	
MW-75-085	80-90	330.62	01/06/2015	61.68	268.94	Intermediate-Upper	
MW-75-120	114.9-124.9	330.60	01/06/2015	61.48	269.12	Intermediate-Middle	
OW-01A	10.3-50.3	327.69	01/06/2015	31.54	296.15	Shallow	
OW-01B1	77.5-102.5	328.13	01/06/2015	57.48	270.65	Intermediate-Upper	
OW-01B3	179-199	327.82	01/06/2015	59.11	268.71	Intermediate-Lower	
PM-01A	25-50	327.75	01/06/2015	31.99	295.76	Shallow	
PM-01B1	80-100	327.49	01/06/2015	55.55	271.94	Intermediate-Upper	
PM-02A	24.5-49.5	329.77	01/06/2015	34.95	294.82	Shallow	
PM-03A	25.7-50.7	326.62	01/06/2015	30.40	296.22	Shallow	
PM-03B1	80-100	326.77	01/06/2015	54.88	271.89	Intermediate-Upper	
PMW-04-090	80-100	316.12	01/06/2015	51.89	264.23	Intermediate-Upper	
PMW-04-125	115-135	316.13	01/06/2015	51.88	264.25	Intermediate-Middle	
PMW-04-225	215-235	315.99	01/06/2015	68.84	247.15	Deep-Upper	
PMW-04-255	245-265	315.97	01/06/2015	69.13	246.84	Deep-Upper	
PMW-04-282	277-287	315.77	01/06/2015	69.67	246.10	Deep-Upper	
PMW-04-312	307-317	315.73	01/06/2015	72.36	243.37	Deep-Middle	
PMW-05-090	80-100	309.97	01/06/2015	47.07	262.90	Intermediate-Upper	

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Well ID	Screen or BARCAD Interval (feet)[1]	Top of Casing Elevation (feet)[2]	Sample Date	Depth to Water (feet)[3]	Groundwater Surface Elevation (feet)[2]	Aquifer	Comments
PMW-05-305	295-315	310.03	01/06/2015	67.57	242.46	Deep-Middle	
PMW-06-416	411-421	331.54	01/06/2015	96.18	235.36	Deep-Lower	
PMW-06-445	440-450	331.64	01/06/2015	96.24	235.40	Deep-Lower	
PZ-02-315	310-320	333.17	01/06/2015	85.06	248.11	Deep-Middle	Not comparable with neighboring wells
PZ-02-415	410-420	333.17	01/06/2015	97.73	235.44	Deep-Lower	
PZ-03-325	320-330	342.31	01/06/2015	96.88	245.43	Deep-Middle	
PZ-03-427	422-432	342.32	01/06/2015	106.00	236.32	Deep-Lower	
PZ-04-335	330-340	327.93	01/06/2015	81.38	246.55	Deep-Middle	
PZ-04-375	370-380	327.92	01/06/2015	--	--	Deep-Middle	
PZ-05-339	334-344	330.43	01/06/2015	84.98	245.45	Deep-Middle	
PZ-05-390	386-393	330.51	01/06/2015	95.51	235.00	Deep-Lower	

Notes
1. Depths measured in feet below ground surface.
2. Elevations are given in feet relative to the National Geodetic Vertical Datum of 1929 (NGVD 29).
3. Depth to water is measured from top of well casing.

Abbreviations
-- = not applicable

TABLE 2

PERCHLORATE RESULTS - MONITORING AND EXTRACTION WELLS
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Well ID	Sample Type	Sample Date	Test Method	Perchlorate Concentration (µg/L)[1]	Lab MDL (µg/L)	Lab Qualifier	Validation Qualifier	Aquifer
EW-01A	Primary	01/07/2015	EPA314.0M	1.5	0.75	J	--	Shallow
EW-01A	Primary	04/03/2015	EPA314.0M	1.8	0.75	J	--	Shallow
EW-01A	Duplicate	04/03/2015	EPA314.0M	1.6	0.75	J	--	Shallow
EW-02A	Primary	01/07/2015	EPA314.0M	ND < 4.0	0.75	--	--	Shallow
EW-02A	Duplicate	01/07/2015	EPA314.0M	0.8	0.75	J	--	Shallow
EW-02A	Primary	04/03/2015	EPA314.0M	1.3	0.75	J	--	Shallow
MP-04-038	--	NS	--	--	--	--	--	Shallow
MP-52-032	--	NS	--	--	--	--	--	Shallow
MW-01	--	NS	--	--	--	--	--	Shallow
MW-02	--	NS	--	--	--	--	--	Shallow
MW-13A	Primary	01/27/2015	EPA314.0M	ND < 4.0	0.75	--	--	Shallow
MW-15	--	NS	--	--	--	--	--	Shallow
MW-17	--	NS	--	--	--	--	--	Shallow
MW-17-025	--	NS	--	--	--	--	--	Shallow
MW-61-047	Primary	01/20/2015	EPA314.0M	5.1	0.75	--	--	Shallow
MW-62-041	Primary	01/15/2015	EPA314.0M	ND < 4.0	0.75	J,B	U	Shallow
MW-63-035	--	NS	--	--	--	--	--	Shallow
MW-64-027	--	NS	--	--	--	--	--	Shallow
MW-65-027	--	NS	--	--	--	--	--	Shallow
OW-01A	--	NS	--	--	--	--	--	Shallow
PM-01A	Primary	01/27/2015	EPA314.0M	2.8	0.75	J	--	Shallow
PM-02A	--	NS	--	--	--	--	--	Shallow
MW-61-056	Primary	01/15/2015	EPA314.0M	**8.6**	0.75	B	--	A/B Aquitard
MP-26-140	Primary	01/27/2015	EPA314.0M	3.0	0.75	J	--	Intermediate
MP-26-140	Duplicate	01/27/2015	EPA314.0M	3.0	0.75	J	--	Intermediate
MP-29-169	Primary	01/28/2015	EPA314.0M	3.8	0.75	J	--	Intermediate
MP-35-162	Primary	01/29/2015	EPA314.0M	3.2	0.75	J	--	Intermediate
MP-40-185	Primary	01/30/2015	EPA314.0M	3.4	0.75	J	--	Intermediate
MP-44-141	Primary	01/29/2015	EPA314.0M	3.6	0.75	J	--	Intermediate
MP-51-164	Primary	01/29/2015	EPA314.0M	2.8	0.75	J	--	Intermediate
EW-01B1	Primary	01/07/2015	EPA314.0M	**100**	7.5	--	--	Intermediate-Upper
EW-01B1	Primary	02/06/2015	EPA314.0M	**100**	7.5	--	--	Intermediate-Upper
EW-01B1	Primary	03/03/2015	EPA314.0M	**110**	7.5	--	--	Intermediate-Upper
EW-01B1	Primary	04/03/2015	EPA314.0M	**120**	7.5	F1	--	Intermediate-Upper
EW-01B1	Primary	05/11/2015	EPA314.0M	**110**	7.5	--	--	Intermediate-Upper
EW-01B1	Primary	06/02/2015	EPA314.0M	**130**	7.5	--	--	Intermediate-Upper
EW-01B1	Duplicate	06/02/2015	EPA314.0M	**140**	7.5	--	--	Intermediate-Upper
IEW-1R	Primary	01/07/2015	EPA314.0M	**8.8**	0.75	--	--	Intermediate-Upper
IEW-1R	Primary	02/06/2015	EPA314.0M	**8.5**	0.75	--	--	Intermediate-Upper
IEW-1R	Primary	03/03/2015	EPA314.0M	**8.0**	0.75	--	--	Intermediate-Upper
IEW-1R	Primary	04/03/2015	EPA314.0M	**8.6**	0.75	--	--	Intermediate-Upper
IEW-1R	Primary	05/11/2015	EPA314.0M	**7.8**	0.75	--	--	Intermediate-Upper
IEW-1R	Primary	06/02/2015	EPA314.0M	**9.3**	0.75	--	--	Intermediate-Upper
MP-04-088	Primary	01/27/2015	EPA314.0M	**30**	1.5	--	--	Intermediate-Upper
MP-04-088	Duplicate	01/27/2015	EPA314.0M	**29**	1.5	--	--	Intermediate-Upper
MP-21-089	Primary	01/28/2015	EPA314.0M	**9.5**	0.75	--	--	Intermediate-Upper
MP-52-095	Primary	01/27/2015	EPA314.0M	**7.2**	0.75	--	--	Intermediate-Upper
MW-16-082	Primary	01/06/2015	EPA314.0M	**33**	3.8	--	--	Intermediate-Upper
MW-17-085	Primary	02/03/2015	EPA314.0M	**9.4**	0.75	--	--	Intermediate-Upper
MW-17-085	Duplicate	02/03/2015	EPA314.0M	**9.2**	0.75	--	--	Intermediate-Upper
MW-60-082	Primary	01/20/2015	EPA314.0M	**22**	0.75	--	--	Intermediate-Upper
MW-60-082	Primary	05/21/2015	EPA314.0M	**15**	1.5	--	--	Intermediate-Upper
MW-63-080	Primary	01/13/2015	EPA314.0M	**19**	0.75	B	--	Intermediate-Upper
MW-64-082	Primary	01/13/2015	EPA314.0M	**9.5**	0.75	--	--	Intermediate-Upper
MW-64-082	Duplicate	01/13/2015	EPA314.0M	**9.4**	0.75	--	--	Intermediate-Upper
MW-65-087	Primary	01/15/2015	EPA314.0M	**14**	0.75	B	--	Intermediate-Upper
MW-65-114	Primary	02/02/2015	EPA314.0M	**7.0**	0.75	--	--	Intermediate-Upper
MW-71-075	Primary	01/21/2015	EPA314.0M	**18**	0.75	--	--	Intermediate-Upper
MW-72-070	Primary	01/20/2015	EPA314.0M	**9.0**	0.75	--	--	Intermediate-Upper

TABLE 2

PERCHLORATE RESULTS - MONITORING AND EXTRACTION WELLS
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Well ID	Sample Type	Sample Date	Test Method	Perchlorate Concentration (µg/L)[1]	Lab MDL (µg/L)	Lab Qualifier	Validation Qualifier	Aquifer
MW-74-084	Primary	01/19/2015	EPA314.0M	3.9	0.75	J	--	Intermediate-Upper
MW-74-084	Primary	05/20/2015	EPA314.0M	4.4	0.75	--	--	Intermediate-Upper
MW-74-084	Duplicate	05/20/2015	EPA314.0M	4.4	0.75	--	--	Intermediate-Upper
MW-75-085	Primary	01/19/2015	EPA314.0M	**54**	3.8	--	--	Intermediate-Upper
MW-75-085	Primary	05/21/2015	EPA314.0M	**51**	3.8	--	--	Intermediate-Upper
PM-01B1	Primary	01/27/2015	EPA314.0M	**130**	7.5	--	--	Intermediate-Upper
PM-01B1	Primary	05/19/2015	EPA314.0M	**93**	7.5	--	--	Intermediate-Upper
PM-03B1	Primary	01/29/2015	EPA314.0M	**7.2**	0.75	--	--	Intermediate-Upper
PM-03B1	Duplicate	01/29/2015	EPA314.0M	**7.5**	0.75	--	--	Intermediate-Upper
PMW-04-090	Primary	01/20/2015	EPA314.0M	ND < 4.0	0.75	--	--	Intermediate-Upper
PMW-05-090	Primary	01/13/2015	EPA314.0M	**13**	0.75	B	--	Intermediate-Upper
PMW-05-090	Primary	05/21/2015	EPA314.0M	**13**	0.75	--	--	Intermediate-Upper
MW-71-115	Primary	01/21/2015	EPA314.0M	4.7	0.75	--	--	Intermediate-Middle
MW-74-142	Primary	01/19/2015	EPA314.0M	2.3	0.75	J	--	Intermediate-Middle
MW-74-142	Primary	05/20/2015	EPA314.0M	2.2	0.75	J	--	Intermediate-Middle
MW-75-120	Primary	01/19/2015	EPA314.0M	**19**	0.75	--	--	Intermediate-Middle
MW-75-120	Duplicate	01/19/2015	EPA314.0M	**18**	0.75	--	--	Intermediate-Middle
MW-75-120	Primary	05/21/2015	EPA314.0M	4.4	0.75	--	--	Intermediate-Middle
PMW-04-125	Primary	01/12/2015	EPA314.0M	ND < 4.0	0.75	--	--	Intermediate-Middle
PMW-04-125	Duplicate	01/12/2015	EPA314.0M	ND < 4.0	0.75	--	--	Intermediate-Middle
MW-53-195	Primary	01/14/2015	EPA314.0M	2.9	0.75	J	--	Intermediate-Lower
MW-60-180	Primary	01/12/2015	EPA314.0M	4.3	0.75	--	--	Intermediate-Lower
MW-72-145	Primary	01/12/2015	EPA314.0M	1.6	0.75	J	--	Intermediate-Lower
MP-16-229	Primary	01/06/2015	EPA314.0M	**12**	0.75	--	--	Deep-Upper
MP-51-213	Primary	01/29/2015	EPA314.0M	4.1	0.75	--	--	Deep-Upper
MP-52-273	Primary	01/27/2015	EPA314.0M	**8.2**	0.75	--	--	Deep-Upper
MW-56-220	Primary	01/21/2015	EPA314.0M	4.6	0.75	--	--	Deep-Upper
MW-60-220	Primary	01/13/2015	EPA314.0M	**11**	0.75	--	--	Deep-Upper
MW-60-270	Primary	01/13/2015	EPA314.0M	**23**	1.5	--	--	Deep-Upper
PMW-04-225	Primary	01/14/2015	EPA314.0M	**11**	0.75	B	--	Deep-Upper
PMW-04-255	Primary	01/12/2015	EPA314.0M	5.5	0.75	--	--	Deep-Upper
DEW-01	Primary	01/07/2015	EPA314.0M	**17**	1.5	--	--	Deep-Upper-Middle
DEW-01	Primary	02/06/2015	EPA314.0M	**15**	0.75	--	--	Deep-Upper-Middle
DEW-01	Primary	03/03/2015	EPA314.0M	**15**	0.75	--	--	Deep-Upper-Middle
DEW-01	Duplicate	03/03/2015	EPA314.0M	**15**	0.75	--	--	Deep-Upper-Middle
DEW-01	Primary	04/03/2015	EPA314.0M	**15**	0.75	--	--	Deep-Upper-Middle
DEW-01	Primary	05/11/2015	EPA314.0M	**13**	0.75	--	--	Deep-Upper-Middle
DEW-01	Primary	06/02/2015	EPA314.0M	**15**	0.75	--	--	Deep-Upper-Middle
MP-16-261	Primary	01/06/2015	EPA314.0M	**14**	0.75	--	--	Deep-Middle
MP-21-278	Primary	01/28/2015	EPA314.0M	4.3	0.75	--	--	Deep-Middle
MP-29-292	Primary	01/29/2015	EPA314.0M	6.0	0.75	--	--	Deep-Middle
MW-04C	Primary	02/04/2015	EPA314.0M	**16**	0.75	--	--	Deep-Middle
MW-04C	Duplicate	02/04/2015	EPA314.0M	**16**	0.75	--	--	Deep-Middle
MW-05C	Primary	02/24/2015	EPA314.0M	3.0	0.75	J	--	Deep-Middle
MW-06C	Primary	02/04/2015	EPA314.0M	2.9	0.75	J	--	Deep-Middle
MW-16-328	Primary	01/06/2015	EPA314.0M	**44**	3.8	--	--	Deep-Middle
MW-16-363	Primary	01/06/2015	EPA314.0M	**34**	3.8	--	--	Deep-Middle
MW-21-332	Primary	02/02/2015	EPA314.0M	4.0	0.75	--	--	Deep-Middle
MW-26-342	Primary	01/26/2015	EPA314.0M	5.0	0.75	--	--	Deep-Middle
MW-29-352	Primary	01/26/2015	EPA314.0M	**8.0**	0.75	--	--	Deep-Middle
MW-52-347	Primary	01/15/2015	EPA314.0M	2.9	0.75	J	--	Deep-Middle
MW-53-264	Primary	01/14/2015	EPA314.0M	**12**	0.75	--	--	Deep-Middle
MW-54-333	Primary	01/22/2015	EPA314.0M	3.8	0.75	J	--	Deep-Middle
MW-56-335	Primary	01/22/2015	EPA314.0M	**8.6**	0.75	--	--	Deep-Middle
MW-59-250	Primary	01/19/2015	EPA314.0M	**11**	0.75	--	--	Deep-Middle
MW-59-345	Primary	01/21/2015	EPA314.0M	**7.4**	0.75	--	--	Deep-Middle
MW-60-300	Primary	01/14/2015	EPA314.0M	**35**	3.8	B	--	Deep-Middle
MW-60-345	Primary	01/13/2015	EPA314.0M	**25**	3.8	--	--	Deep-Middle
MW-66-245	Primary	01/22/2015	EPA314.0M	**10**	0.75	--	--	Deep-Middle

TABLE 2

PERCHLORATE RESULTS - MONITORING AND EXTRACTION WELLS
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Well ID	Sample Type	Sample Date	Test Method	Perchlorate Concentration (µg/L)[1]	Lab MDL (µg/L)	Lab Qualifier	Validation Qualifier	Aquifer
MW-73-315	Primary	01/21/2015	EPA314.0M	3.6	0.75	J	--	Deep-Middle
PMW-04-312	Primary	01/14/2015	EPA314.0M	ND < 4.0	0.75	J,B	U	Deep-Middle
PMW-05-305	Primary	01/20/2015	EPA314.0M	**25**	1.5	--	--	Deep-Middle
PMW-05-305	Primary	05/21/2015	EPA314.0M	**19**	1.5	--	--	Deep-Middle
PZ-02-315	Primary	01/16/2015	EPA314.0M	4.1	0.75	B	--	Deep-Middle
PZ-03-325	Primary	01/16/2015	EPA314.0M	ND < 4.0	0.75	J,B	U	Deep-Middle
PZ-04-335	Primary	01/16/2015	EPA314.0M	**8.2**	0.75	B	--	Deep-Middle
PZ-04-335	Primary	05/27/2015	EPA314.0M	**8.9**	0.75	--	--	Deep-Middle
PZ-04-375	--	NS	--	--	--	--	--	Deep-Middle
PZ-05-339	Primary	01/15/2015	EPA314.0M	ND < 4.0	0.75	J,B	U	Deep-Middle
MW-26-415	Primary	01/26/2015	EPA314.0M	**13**	0.75	--	--	Deep-Lower
MW-26-415	Duplicate	01/26/2015	EPA314.0M	**13**	0.75	--	--	Deep-Lower
MW-26-415	Primary	05/28/2015	EPA314.0M	2.8	0.75	J	--	Deep-Lower
MW-29-428	Primary	01/26/2015	EPA314.0M	3.6	0.75	J	--	Deep-Lower
MW-29-428	Primary	05/28/2015	EPA314.0M	3.6	0.75	J	--	Deep-Lower
MW-52-403	Primary	01/14/2015	EPA314.0M	**33**	3.8	B	--	Deep-Lower
MW-54-400	Primary	01/22/2015	EPA314.0M	**8.3**	0.75	--	--	Deep-Lower
MW-56-433	Primary	01/21/2015	EPA314.0M	5.9	0.75	--	--	Deep-Lower
MW-59-386	Primary	01/19/2015	EPA314.0M	**40**	3.8	--	--	Deep-Lower
MW-66-390	Primary	01/30/2015	EPA314.0M	**9.6**	0.75	--	--	Deep-Lower
MW-73-395	Primary	01/21/2015	EPA314.0M	**36**	3.8	--	--	Deep-Lower
MW-73-395	Duplicate	01/21/2015	EPA314.0M	**36**	3.8	--	--	Deep-Lower
PMW-06-416	Primary	02/03/2015	EPA314.0M	5.4	0.75	--	--	Deep-Lower
PMW-06-416	Primary	05/27/2015	EPA314.0M	4.0	0.75	--	--	Deep-Lower
PMW-06-416	Duplicate	05/27/2015	EPA314.0M	4.0	0.75	--	--	Deep-Lower
PMW-06-445	Primary	02/03/2015	EPA314.0M	**6.3**	0.75	--	--	Deep-Lower
PMW-06-445	Primary	05/27/2015	EPA314.0M	**6.4**	0.75	--	--	Deep-Lower
PZ-02-415	Primary	01/20/2015	EPA314.0M	3.9	0.75	J	--	Deep-Lower
PZ-02-415	Primary	05/27/2015	EPA314.0M	4.5	0.75	--	--	Deep-Lower
PZ-03-427	Primary	01/16/2015	EPA314.0M	5.5	0.75	B	--	Deep-Lower
PZ-03-427	Primary	05/29/2015	EPA314.0M	5.2	0.75	--	--	Deep-Lower
PZ-05-390	Primary	01/15/2015	EPA314.0M	**9.5**	0.75	B	--	Deep-Lower
PZ-05-390	Primary	05/27/2015	EPA314.0M	5.9	0.75	--	--	Deep-Lower

Notes
1. **Bold face type** denotes concentration that exceeds the Maximum Contaminant Level (6 µg/L).
2. All wells designated for semiannual sampling for perchlorate in the MRP dated 3/05/14 were sampled during 1Q15, with the exceptions noted above.
3. All wells designated for quarterly sampling for perchlorate in the MRP dated 2/20/15 were sampled during 2Q15.

Abbreviations
-- = not applicable
µg/L = micrograms per liter; equivalent to parts per billion
1Q15 = First Quarter 2015
2Q15 = Second Quarter 2015
MDL = Method Detection Limit
MRP = Monitoring and Reporting Program R3-2008-0028
MS = matrix spike sample
MSD = matrix spike duplicate sample
ND < = Not Detected at or above the reporting limit shown
NS = Well could not be sampled because of insufficient water in the well or blockage in well

Laboratory Qualifiers
B = Compound was detected in the blank and sample
J = Perchlorate detected between the MDL and reporting limit. The reported value is estimated.
F1 = MS and/or MSD Recovery exceeds the control limits.

Validation Qualifiers
U = Result qualified as not detected because the analyte was observed in an associated laboratory or field blank.
See Appendix E, Data Validation and Precision Assessment Results, for rationale of specific qualifiers.

TABLE 3

PERCHLORATE RESULTS - DOMESTIC AND IRRIGATION WELLS

2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Well ID[1]	Sample Type	Sample Date	Test Method	Perchlorate Concentration (µg/L)[2]	Lab MDL (µg/L)	Lab Qualifier	Validation Qualifier	Aquifer
09S03E34C001	Primary	02/02/2015	EPA331.0	2.1	0.082	--	--	Intermediate
09S03E35N013	Primary	02/02/2015	EPA331.0	2.1	0.082	--	--	Intermediate
09S03E34C002	Primary	02/02/2015	EPA331.0	**20**	0.16	--	--	Intermediate (Unk)
09S03E34C002	Primary	05/19/2015	EPA331.0	**20**	0.082	--	--	Intermediate (Unk)
09S03E34C003	Primary	01/15/2015	EPA314.0M	**44**	3.8	B	--	Intermediate (Unk)
09S03E34C003	Primary	04/10/2015	EPA314.0M	**38**	3.8	--	--	Intermediate (Unk)
09S03E34G001	Primary	01/15/2015	EPA314.0M	**13**	0.75	B	--	Intermediate (Unk)
09S03E34G001	Primary	04/10/2015	EPA314.0M	**12**	0.75	--	--	Intermediate (Unk)
09S03E34G001	Duplicate	04/10/2015	EPA314.0M	**12**	0.75	--	--	Intermediate (Unk)
09S03E34G002	Primary	01/15/2015	EPA314.0M	**20**	0.75	B	--	Intermediate (Unk)
09S03E34G002	Duplicate	01/15/2015	EPA314.0M	**20**	0.75	B	--	Intermediate (Unk)
09S03E34G002	Primary	04/10/2015	EPA314.0M	**12**	1.5	--	--	Intermediate (Unk)
09S03E34J003	--	NS	--	--	--	--	--	Intermediate (Unk)
09S03E34R007	Primary	02/02/2015	EPA331.0	5.1	0.082	--	--	Intermediate (Unk)
09S03E34R007	Primary	05/19/2015	EPA331.0	4.7	0.082	--	J	Intermediate (Unk)
09S03E34R007	Duplicate	05/19/2015	EPA331.0	3.1	0.082	--	J	Intermediate (Unk)
09S03E35N008	Primary	01/30/2015	EPA331.0	**6.5**	0.082	--	--	Intermediate (Unk)
09S03E35N008	Primary	02/10/2015	EPA331.0	**7.0**	0.082	--	--	Intermediate (Unk)
09S03E35N008	Primary	05/19/2015	EPA331.0	**8.7**	0.082	--	--	Intermediate (Unk)
09S03E35N008	Primary	06/02/2015	EPA331.0	**8.8**	0.082	--	--	Intermediate (Unk)
09S03E34J012	Primary	02/02/2015	EPA331.0	**9.0**	0.082	--	--	Intermediate-Deep
09S03E34J012	Primary	02/10/2015	EPA331.0	**9.3**	0.082	--	--	Intermediate-Deep
09S03E34J012	Primary	05/19/2015	EPA331.0	**9.0**	0.082	--	--	Intermediate-Deep
09S03E35N014	Primary	02/02/2015	EPA331.0	**18**	0.16	--	--	Deep-Middle
09S03E35N014	Duplicate	02/02/2015	EPA331.0	**17**	0.082	--	--	Deep-Middle
09S03E35N014	Primary	05/19/2015	EPA331.0	**18**	0.082	--	--	Deep-Middle

TABLE 3

PERCHLORATE RESULTS - DOMESTIC AND IRRIGATION WELLS

2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Well ID[1]	Sample Type	Sample Date	Test Method	Perchlorate Concentration (µg/L)[2]	Lab MDL (µg/L)	Lab Qualifier	Validation Qualifier	Aquifer
10S04E29F007	Primary	02/24/2015	EPA331.0	5.3	0.082	--	--	Deep

Notes
1. See Table 4 for replacement water status.
2. **Bold face type** denotes concentration that exceeds the Maximum Contaminant Level (6 µg/L).
3. All wells designated for semiannual sampling for perchlorate in the MRP dated 3/05/14 were sampled during 1Q15, and all wells designated for quarterly sampling for perchlorate in the MRP dated 2/20/15 were sampled during 2Q15. Wells were also sampled in accordance with the replacement water program.
4. Well Larson-2 replaces well 09S03E34J003.

Abbreviations
-- = not applicable
µg/L = micrograms per liter; equivalent to parts per billion
1Q15 = First Quarter 2015
2Q15 = Second Quarter 2015
Intermediate (Unk) = Screen interval unknown; assigned to intermediate aquifer based on production rate and local domestic wells
MDL = Method Detection Limit
ND < = Not Detected at or above the reporting limit shown
NS = Well could not be sampled because of insufficient water in the well or blockage in well

Laboratory Qualifiers
B = Compound was found in the blank and sample

Validation Qualifiers
J = Concentration qualified as estimated in accordance with the Quality Assurance Project Plan.
See Appendix E, Data Validation and Precision Assessment Results, for rationale of specific qualifiers.

TABLE 4

REPLACEMENT WATER PROGRAM WELL STATUS
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Well ID	Replacement Water Method	RWP Approved Sampling Frequency	MRP Sampling Frequency	Most Recent Perchlorate Concentration (µg/L)[1]	Most Recent Quarter Sampled
09S03E34C002	BW	QTR	--	**20**	2Q15
09S03E34C003	IX	QTR	SEMI	**38**	2Q15
09S03E34G001	IX	QTR	--	**12**	2Q15
09S03E34G002	IX	QTR	--	**12**	2Q15
09S03E34J012	BW	QTR	ANN	**9.0**	2Q15
09S03E34R007	BW	QTR	SEMI	4.7	2Q15
09S03E35N008	BW	QTR	SEMI	**8.8**	2Q15
09S03E35N013	--	SEMI	SEMI	2.1	1Q15
09S03E35N014	BW	QTR	--	**18**	2Q15

Notes
1. **Bold face type** denotes concentration that exceeds the Maximum Contaminant Level (6 µg/L).
2. 09S03E34J012 is the new well ID for Well Larson-2, which replaces well 09S03E34J003.

Abbreviations
-- = Not required
µg/L = micrograms per liter
2Q15 = Second Quarter 2015
ANN = annual
BW = well receiving bottled water
IX = well with ion exchange system installed
MRP = Monitoring and Reporting Program
QTR = quarterly
RWP = Replacement Water Program
SEMI = semiannual

TABLE 5

MANN KENDALL TREND ANALYSIS - DOMESTIC AND MONITORING WELLS

2015 Semiannual Groundwater Monitoring Report

Olin Site

Morgan Hill, California

Well ID	Aquifer	Number of Samples[1] 3Q13-2Q15	Number of Detects[1] 3Q13-2Q15	Perchlorate Concentration (µg/L)				Mann Kendall Evaluation[2]			
				Historic Minimum	Historic Maximum	1Q15 Maximum[3]	2Q15 Maximum[3]	Coefficient of Variation	Mann Kendall Statistic	Confidence in Trend	Concentration Trend
09S03E34G001	Intermediate (Unk)	8	8	12	78	**13**	**12**	0.18	-18	98.4%	D
09S03E34R007	Intermediate (Unk)	8	8	ND < 4.0	15	5.1	4.7	0.18	-24	99.9%	D
DEW-01	Deep-Upper-Middle	24	24	ND < 4.0	29	**17**	**15**	0.12	-172	100.0%	D
IEW-1R	Intermediate-Upper	24	24	7.8	15	**8.8**	**9.3**	0.08	-99	99.4%	D
MW-16-082	Intermediate-Upper	4	4	17	110	**33**	--	0.18	-6	95.8%	D
MW-16-363	Deep-Middle	4	4	9.6	44	**34**	--	0.09	-6	95.8%	D
MW-53-264	Deep-Middle	4	4	8.1	17	**12**	--	0.15	-6	95.8%	D
MW-65-114	Intermediate-Upper	4	4	7	21	**7.0**	--	0.34	-6	95.8%	D
MW-71-075	Intermediate-Upper	7	7	17	25.4	**18**	--	0.08	-15	98.5%	D
MW-71-115	Intermediate-Middle	7	7	4.7	16	4.7	--	0.33	-18	99.7%	D
PZ-05-390	Deep-Lower	6	6	ND < 4.0	28	**9.5**	5.9	0.32	-13	99.2%	D
09S03E35N013	Intermediate	7	7	2.1	19	2.1	--	0.53	-10	90.7%	PD
EW-02A	Shallow	8	7	ND < 4.0	140	0.8	1.3	0.6	-14	94.6%	PD
MW-60-180	Intermediate-Lower	5	5	3.2	5.8	4.3	--	0.05	-7	92.1%	PD
MW-72-070	Intermediate-Upper	7	7	7.7	21.9	**9.0**	--	0.09	-12	94.9%	PD
09S03E34C002	Intermediate (Unk)	8	8	2.7	100	**20**	**20**	0.65	-7	76.4%	S
09S03E34C003	Intermediate (Unk)	8	8	2.46	100	**44**	**38**	0.09	-8	80.1%	S
09S03E34G002	Intermediate (Unk)	10	10	12	32	**20**	**12**	0.15	-3	56.9%	S
10S04E29F007	Deep	5	5	4.7	5.4	5.3	--	0.07	-3	67.5%	S
MP-16-229	Deep-Upper	4	4	ND < 4.0	32	**12**	--	0.29	0	37.5%	S
MP-21-089	Intermediate-Upper	4	4	2.3	24	**9.5**	--	0.02	-3	72.9%	S
MP-26-140	Intermediate	4	4	ND < 4.0	7.7	3.0	--	0.07	-2	62.5%	S
MP-35-162	Intermediate	4	4	ND < 4.0	7.7	3.2	--	0.19	0	37.5%	S
MW-04C	Deep-Middle	4	4	ND < 2.0	36	**16**	--	0.1	-5	89.6%	S
MW-06C	Deep-Middle	4	4	ND < 4.0	312	2.9	--	0.11	-5	89.6%	S
MW-16-328	Deep-Middle	4	4	41	62	**44**	--	0.04	-1	50.0%	S
MW-17-085	Intermediate-Upper	4	4	9.4	94	**9.4**	--	0.58	-4	83.3%	S
MW-21-332	Deep-Middle	4	4	4	17	4.0	--	0.26	-4	83.3%	S
MW-26-342	Deep-Middle	4	4	ND < 4.0	6.3	5.0	--	0.05	0	37.5%	S
MW-26-415	Deep-Lower	6	6	2.8	13	**13**	2.8	0.41	-5	76.5%	S
MW-52-347	Deep-Middle	4	4	2.8	22	2.9	--	0.16	-2	62.5%	S
MW-53-195	Intermediate-Lower	4	4	ND < 4.0	42	2.9	--	0.15	-2	62.5%	S
MW-54-333	Deep-Middle	4	4	3.2	6.5	3.8	--	0.11	-4	83.3%	S
MW-54-400	Deep-Lower	4	4	2.6	14	**8.3**	--	0.06	-4	83.3%	S
MW-56-220	Deep-Upper	4	4	4.6	9.8	4.6	--	0.19	-5	89.6%	S

TABLE 5

MANN KENDALL TREND ANALYSIS - DOMESTIC AND MONITORING WELLS
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Well ID	Aquifer	Number of Samples[1] 3Q13-2Q15	Number of Detects[1] 3Q13-2Q15	Perchlorate Concentration (µg/L)				Mann Kendall Evaluation[2]			
				Historic Minimum	Historic Maximum	1Q15 Maximum[3]	2Q15 Maximum[3]	Coefficient of Variation	Mann Kendall Statistic	Confidence in Trend	Concentration Trend
MW-56-335	Deep-Middle	4	4	ND < 4.0	11	8.6	--	0.06	-5	89.6%	S
MW-56-433	Deep-Lower	4	4	2.1	7.7	5.9	--	0.04	0	37.5%	S
MW-59-250	Deep-Middle	4	4	9.1	14	**11**	--	0	0	37.5%	S
MW-59-345	Deep-Middle	4	4	7.4	50.8	**7.4**	--	0.07	-4	83.3%	S
MW-59-386	Deep-Lower	4	4	38.7	58	**40**	--	0.04	-3	72.9%	S
MW-60-220	Deep-Upper	4	4	10	25	**11**	--	0.07	-3	72.9%	S
MW-60-270	Deep-Upper	4	4	2	23	**23**	--	0.02	-1	50.0%	S
MW-60-300	Deep-Middle	4	4	18.1	47	**35**	--	0.07	-2	62.5%	S
MW-60-345	Deep-Middle	4	4	18	44	**25**	--	0.24	-4	83.3%	S
MW-61-047	Shallow	4	4	2.2	37	5.1	--	0.32	0	37.5%	S
MW-61-056	A/B Aquitard	4	4	8.6	140	**8.6**	--	0.11	-4	83.3%	S
MW-62-041	Shallow	4	3	ND < 4.0	12	ND < 4.0	--	0.31	-1	50.0%	S
MW-63-080	Intermediate-Upper	4	4	13	41	**19**	--	0.16	0	37.5%	S
MW-64-082	Intermediate-Upper	4	4	7.1	34	**9.5**	--	0.15	-4	83.3%	S
MW-65-087	Intermediate-Upper	4	4	12.2	31	**14**	--	0.12	-4	83.3%	S
MW-66-245	Deep-Middle	4	4	5.3	15	**10**	--	0.07	-3	72.9%	S
MW-73-315	Deep-Middle	5	5	3.6	7.5	3.6	--	0.17	-2	59.2%	S
MW-73-395	Deep-Lower	7	7	34	43	**36**	--	0.04	-8	84.5%	S
MW-75-085	Intermediate-Upper	6	6	51	70	**54**	**51**	0.11	-6	81.5%	S
PM-01A	Shallow	4	4	ND < 4.0	18	2.8	--	0.31	-4	83.3%	S
PM-03B1	Intermediate-Upper	7	7	2.2	96	**7.5**	--	0.37	-5	71.9%	S
PMW-04-255	Deep-Upper	4	4	ND < 4.0	6.4	5.5	--	0.04	-1	50.0%	S
PMW-05-305	Deep-Middle	8	8	19	45	**25**	**19**	0.16	-4	64.0%	S
PMW-06-416	Deep-Lower	5	5	4	6	5.4	4.0	0.15	0	40.8%	S
PZ-02-315	Deep-Middle	4	4	ND < 4.0	5.4	4.1	--	0.05	0	37.5%	S
PZ-02-415	Deep-Lower	5	5	ND < 4.0	5.4	3.9	4.5	0.12	-3	67.5%	S
PZ-03-427	Deep-Lower	5	5	ND < 4.0	6	5.5	5.2	0.15	-3	67.5%	S
PZ-04-335	Deep-Middle	5	5	ND < 4.0	14	**8.2**	**8.9**	0.21	-3	67.5%	S
09S03E35N008	Intermediate (Unk)	10	10	2.7	19	**7.0**	**8.8**	0.39	38	100.0%	I
MP-04-088	Intermediate-Upper	4	4	6.8	30	**30**	--	0.17	6	95.8%	I
MP-52-273	Deep-Upper	4	4	ND < 4.0	11	**8.2**	--	0.38	6	95.8%	I
MW-60-082	Intermediate-Upper	8	8	5	26.9	**22**	**15**	0.41	19	98.9%	I
PM-01B1	Intermediate-Upper	8	8	4.5	300	**130**	**93**	0.76	21	99.6%	I
PMW-05-090	Intermediate-Upper	8	8	1.4	14	**13**	**13**	0.6	19	98.9%	I
09S03E35N014	Deep-Middle	10	10	6.7	23	**18**	**18**	0.32	5	63.6%	NT

TABLE 5

MANN KENDALL TREND ANALYSIS - DOMESTIC AND MONITORING WELLS
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Well ID	Aquifer	Number of Samples[1] 3Q13-2Q15	Number of Detects[1] 3Q13-2Q15	Perchlorate Concentration (µg/L)				Mann Kendall Evaluation[2]			
				Historic Minimum	Historic Maximum	1Q15 Maximum[3]	2Q15 Maximum[3]	Coefficient of Variation	Mann Kendall Statistic	Confidence in Trend	Concentration Trend
MP-16-261	Deep-Middle	4	1	ND < 4.0	84	**14**	--	1.2	3	72.9%	NT
MP-21-278	Deep-Middle	4	4	ND < 4.0	9.2	4.3	--	0.45	2	62.5%	NT
MP-29-169	Intermediate	4	4	ND < 4.0	6.6	3.8	--	0.1	1	50.0%	NT
MP-29-292	Deep-Middle	4	4	ND < 4.0	6.5	6.0	--	0.25	4	83.3%	NT
MP-40-185	Intermediate	4	3	ND < 4.0	6.5	3.4	--	0.27	2	62.5%	NT
MP-44-141	Intermediate	4	3	ND < 4.0	6.2	3.6	--	0.3	2	62.5%	NT
MP-51-213	Deep-Upper	4	4	ND < 4.0	6.7	4.1	--	0.24	2	62.5%	NT
MW-05C	Deep-Middle	4	3	ND < 4.0	29.2	3.0	--	0.28	2	62.5%	NT
MW-29-352	Deep-Middle	4	4	3.7	9.2	**8.0**	--	0.04	4	83.3%	NT
MW-52-403	Deep-Lower	4	4	6	40	**33**	--	0.03	1	50.0%	NT
MW-66-390	Deep-Lower	4	4	4.9	11	**9.6**	--	0.07	1	50.0%	NT
MW-75-120	Intermediate-Middle	5	5	2.5	19	**19**	4.4	1.04	6	88.3%	NT
PMW-04-225	Deep-Upper	4	4	ND < 4.0	11	**11**	--	0.05	2	62.5%	NT
PMW-06-445	Deep-Lower	5	5	5.3	8.4	**6.3**	**6.4**	0.17	6	88.3%	NT

Notes
1. The Number of Samples and Number of Detects shown above are for the past two years or four samples, whichever dataset is larger. Where duplicate samples were collected, the greater concentration value is used.
2. Calculated using MAROS Software Version 2, 2003, AFCEE.
3. **Bold face type** denotes highest concentration detected in the current reporting period that exceeds the Maximum Contaminant Level (6 µg/L).

Abbreviations
µg/L = micrograms per liter
3Q13 = Third Quarter 2013
1Q15 = First Quarter 2015
2Q15 = Second Quarter 2015
D = Decreasing
I = Increasing
Intermediate (Unk) = Screen interval unknown; assigned to intermediate aquifer based on production rate and local domestic wells.
ND < = Not Detected at or above the reporting limit shown
NT = No Trend
PD = Probably Decreasing
S = Stable

TABLE 6

NITRATE RESULTS
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Well ID	Sample Type	Sample Date	Nitrate Concentration (mg/L)	Lab MDL (mg/L)	Lab Qualifier	Validation Qualifier	Aquifer
EW-01A	Primary	01/07/2015	30	2.6	--	--	Shallow
EW-01A	Primary	04/03/2015	33	2.6	--	--	Shallow
EW-01A	Duplicate	04/03/2015	32	2.6	--	--	Shallow
EW-02A	Primary	01/07/2015	30	2.6	--	--	Shallow
EW-02A	Duplicate	01/07/2015	30	2.6	--	--	Shallow
EW-02A	Primary	04/03/2015	31	2.6	--	--	Shallow
MP-04-038	--	NS	--	--	--	--	Shallow
MP-17-025	--	NS	--	--	--	--	Shallow
MP-52-032	--	NS	--	--	--	--	Shallow
MW-01	--	NS	--	--	--	--	Shallow
MW-13A	Primary	01/27/2015	32	2.6	--	--	Shallow
MW-53-044	Primary	01/19/2015	22	2.6	--	--	Shallow
MW-61-047	Primary	01/20/2015	31	2.6	--	--	Shallow
MW-63-035	--	NS	--	--	--	--	Shallow
PM-01A	Primary	01/27/2015	32	2.6	--	--	Shallow
PM-02A	--	NS	--	--	--	--	Shallow
09S03E34C001	Primary	02/02/2015	15	0.26	--	--	Intermediate
EW-01B1	Primary	01/07/2015	33	2.6	--	--	Intermediate-Upper
EW-01B1	Primary	02/06/2015	33	2.6	--	--	Intermediate-Upper
EW-01B1	Primary	03/03/2015	33	2.6	--	--	Intermediate-Upper
EW-01B1	Primary	04/03/2015	34	2.6	--	--	Intermediate-Upper
EW-01B1	Primary	05/11/2015	32	2.6	--	--	Intermediate-Upper
EW-01B1	Primary	06/02/2015	31	2.6	--	--	Intermediate-Upper
IEW-1R	Primary	01/07/2015	35	2.6	--	--	Intermediate-Upper
IEW-1R	Primary	02/06/2015	34	2.6	--	--	Intermediate-Upper
IEW-1R	Primary	03/03/2015	34	2.6	--	--	Intermediate-Upper
IEW-1R	Primary	04/03/2015	34	2.6	--	--	Intermediate-Upper
IEW-1R	Primary	05/11/2015	31	2.6	--	--	Intermediate-Upper
IEW-1R	Primary	06/02/2015	30	2.6	--	--	Intermediate-Upper
MP-04-088	Primary	01/27/2015	30	2.6	--	--	Intermediate-Upper
MP-52-095	Primary	01/27/2015	23	2.6	--	--	Intermediate-Upper
MW-16-082	Primary	01/06/2015	30	2.6	--	--	Intermediate-Upper
MW-60-082	Primary	01/20/2015	37	2.6	--	--	Intermediate-Upper
MW-64-082	Primary	01/13/2015	24	2.6	--	--	Intermediate-Upper
MW-64-082	Duplicate	01/13/2015	26	2.6	--	--	Intermediate-Upper
MW-72-070	Primary	01/20/2015	19	0.26	--	--	Intermediate-Upper
MW-74-084	Primary	01/19/2015	26	2.6	--	--	Intermediate-Upper
MW-74-084	Primary	05/20/2015	27	2.6	--	--	Intermediate-Upper
MW-74-084	Duplicate	05/20/2015	28	2.6	--	--	Intermediate-Upper
MW-75-085	Primary	01/19/2015	71	2.6	--	--	Intermediate-Upper
MW-75-085	Primary	05/21/2015	64	2.6	--	--	Intermediate-Upper
OW-01B1	Primary	01/29/2015	38	2.6	--	--	Intermediate-Upper
PM-01B1	Primary	01/27/2015	49	2.6	--	--	Intermediate-Upper
PM-03B1	Primary	01/29/2015	31	2.6	--	--	Intermediate-Upper
PM-03B1	Duplicate	01/29/2015	31	2.6	--	--	Intermediate-Upper
MW-74-142	Primary	01/19/2015	33	2.6	--	--	Intermediate-Middle
MW-74-142	Primary	05/20/2015	30	2.6	--	--	Intermediate-Middle
MW-75-120	Primary	01/19/2015	27	2.6	--	--	Intermediate-Middle
MW-75-120	Duplicate	01/19/2015	26	2.6	--	--	Intermediate-Middle
MW-75-120	Primary	05/21/2015	23	2.6	--	--	Intermediate-Middle
OW-01B3	Primary	01/29/2015	27	2.6	--	--	Intermediate-Lower
09S03E34C003	Primary	01/15/2015	35	2.6	--	--	Intermediate (Unk)
09S03E34J003	--	NS	--	--	--	--	Intermediate (Unk)
MP-16-229	Primary	01/06/2015	11	0.26	--	--	Deep-Upper

TABLE 6

NITRATE RESULTS
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Well ID	Sample Type	Sample Date	Nitrate Concentration (mg/L)	Lab MDL (mg/L)	Lab Qualifier	Validation Qualifier	Aquifer
MP-52-273	Primary	01/27/2015	27	2.6	--	--	Deep-Upper
MW-04B	Primary	02/04/2015	34	2.6	--	--	Deep-Upper
MW-60-220	Primary	01/13/2015	37	2.6	--	--	Deep-Upper
MW-60-270	Primary	01/13/2015	36	2.6	--	--	Deep-Upper
PMW-04-225	Primary	01/14/2015	30	2.6	--	--	Deep-Upper
DEW-01	Primary	01/07/2015	31	2.6	--	--	Deep-Upper-Middle
DEW-01	Primary	02/06/2015	31	2.6	--	--	Deep-Upper-Middle
DEW-01	Primary	03/03/2015	31	2.6	--	--	Deep-Upper-Middle
DEW-01	Duplicate	03/03/2015	30	2.6	--	--	Deep-Upper-Middle
DEW-01	Primary	04/03/2015	31	2.6	--	--	Deep-Upper-Middle
DEW-01	Primary	05/11/2015	29	2.6	--	--	Deep-Upper-Middle
DEW-01	Primary	06/02/2015	29	2.6	--	--	Deep-Upper-Middle
MP-16-261	Primary	01/06/2015	13	0.26	--	--	Deep-Middle
MW-04C	Primary	02/04/2015	24	2.6	--	--	Deep-Middle
MW-16-328	Primary	01/06/2015	38	2.6	--	--	Deep-Middle
MW-16-363	Primary	01/06/2015	36	2.6	--	--	Deep-Middle
MW-52-347	Primary	01/15/2015	22	2.6	--	--	Deep-Middle
MW-60-300	Primary	01/14/2015	38	2.6	--	--	Deep-Middle
MW-60-345	Primary	01/13/2015	36	2.6	--	--	Deep-Middle
PMW-04-312	Primary	01/14/2015	21	2.6	--	--	Deep-Middle
PZ-05-339	Primary	01/15/2015	22	2.6	--	--	Deep-Middle
MW-52-403	Primary	01/14/2015	34	2.6	--	--	Deep-Lower
PMW-06-416	Primary	02/03/2015	25	2.6	--	--	Deep-Lower
PMW-06-416	Primary	05/27/2015	15	0.26	--	--	Deep-Lower
PMW-06-445	Primary	02/03/2015	28	2.6	--	--	Deep-Lower
PMW-06-445	Primary	05/27/2015	28	2.6	--	--	Deep-Lower
PZ-05-390	Primary	01/15/2015	19	0.26	--	--	Deep-Lower

Note
1. Some MRP wells designated for semiannual sampling could not be sampled during the the reporting period, as indicated in this table. the shallow wells had insufficient water to collect a representative sample; well 09S03E34J003 was blocked.

Abbreviations
-- = not applicable
Intermediate (Unk) = Screen interval unknown; assigned to intermediate aquifer based on production rate and local domestic wells.
MDL = Method Detection Limit
MRP = Monitoring and Reporting Program
mg/L = milligrams per liter; equivalent to parts per million
ND < = Not Detected at or above the reporting limit shown
NS = Well could not be sampled because of insufficient water in the well

TABLE 7

QUARTERLY AVERAGE FLOW RATES AND VOLUMES EXTRACTED
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Monitoring Period	Extraction System			Injection System		
	Wells	Average Flow Rate (gpm)[1]	Total Monthly Flow (gallons)	Wells	Average Flow Rate (gpm)[1]	Total Monthly Flow (gallons)
January (12/31/14 - 1/31/15)	EW-01A	0	561	INJ-001	42	1,881,472
	EW-02A	0	505	INJ-002	32	1,406,531
	EW-01B1	9	386,769	INJ-003	82	3,645,040
	IEW-1R	175	7,791,368	INJ-004	100	4,464,328
	DEW-1	125	5,581,696	INJ-005	44	1,943,136
				INJ-006	13	584,012
February (1/31/15 - 2/28/15)	EW-01A	0	0	INJ-001	43	1,717,872
	EW-02A	0	0	INJ-002	26	1,032,972
	EW-01B1	11	427,682	INJ-003	82	3,300,482
	IEW-1R	175	7,060,208	INJ-004	99	3,999,120
	DEW-1	122	4,928,976	INJ-005	43	1,745,368
				INJ-006	13	508,588
March (2/28/15 - 3/31/15)	EW-01A	0	0	INJ-001	43	1,929,552
	EW-02A	0	0	INJ-002	25	1,135,284
	EW-01B1	11	495,936	INJ-003	82	3,647,902
	IEW-1R	173	7,719,760	INJ-004	99	4,403,984
	DEW-1	123	5,472,192	INJ-005	43	1,929,384
				INJ-006	12	544,444
April (3/31/15 - 4/30/15)	EW-01A	0	749	INJ-001	47	2,017,912
	EW-02A	0	706	INJ-002	27	1,160,404
	EW-01B1	11	475,700	INJ-003	89	3,828,448
	IEW-1R	189	8,147,264	INJ-004	104	4,477,632
	DEW-1	124	5,372,720	INJ-005	46	1,991,496
				INJ-006	13	577,300
May (4/30/15 - 5/31/15)	EW-01A	0	0	INJ-001	45	2,023,848
	EW-02A	0	0	INJ-002	26	1,170,328
	EW-01B1	11	479,858	INJ-003	92	4,106,000
	IEW-1R	194	8,644,896	INJ-004	102	4,573,056
	DEW-1	120	5,356,320	INJ-005	46	2,040,336
				INJ-006	14	611,724
June (5/31/15 - 6/30/15)	EW-01A	0	0	INJ-001	45	1,961,096
	EW-02A	0	0	INJ-002	26	1,139,532
	EW-01B1	11	478,514	INJ-003	93	3,998,176
	IEW-1R	197	8,516,016	INJ-004	104	4,473,952
	DEW-1	112	4,825,104	INJ-005	46	1,983,960
				INJ-006	14	606,536
Total Flow - 1SA2015 (gallons)			**82,163,500**			**82,561,207**
Percent Reinjected[2]:			**100%**			

Notes

1. Average flow rates were calculated over the period of operation. Average monthly flow rates less than 0.5 gpm are rounded to zero.
2. All extracted groundwater is reinjected to the Llagas Subbasin per design of the GWTS. Differences between recorded extraction and injection volumes originate either from groundwater in temporary storage within the treatment system or slight differences in meter tolerances. Additional differences may arise from treatment and injection of water originating from monitoring well purging activities or other investigation-derived water.

TABLE 7

QUARTERLY AVERAGE FLOW RATES AND VOLUMES EXTRACTED
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Abbreviations
1SA2015 = first semiannual period of 2015
gpm = gallons per minute
GWTS = Groundwater Treatment System

TABLE 8

GROUNDWATER TREATMENT SYSTEM ANALYTICAL RESULTS
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Parameters	Date	SV-100 (Influent)	SV-200 (Midpoint)[1]	SV-300 (Effluent)	Lab MDL	Reporting Limit	Test Method
Critical Parameters							
Perchlorate, µg/L	1/7/2015	14	ND < 4.0	ND < 4.0	0.75	4	EPA 314.0M
	2/6/2015	14	ND < 4.0 / ND < 4.0 [2]	ND < 4.0	0.75	4	EPA 314.0M
	3/3/2015	14	0.76 [3]	ND < 4.0	0.75	4	EPA 314.0M
	4/3/2015	15	0.81 [3]	ND < 4.0	0.75	4	EPA 314.0M
	5/11/2015	14 / 14 [2]	ND < 4.0	ND < 4.0	0.75	4	EPA 314.0M
	6/2/2015	16	1.1 [3]	ND < 4.0	0.75	4	EPA 314.0M
pH (field)	1/7/2015	6.96	7.00	7.02	--	--	--
	2/6/2015	6.94	6.89	7.03	--	--	--
	3/3/2015	7.09	7.13	7.22	--	--	--
	4/3/2015	6.99	6.95	6.97	--	--	--
	5/11/2015	6.86	6.94	6.96	--	--	--
	6/2/2015	6.86	6.79	6.67	--	--	--
Additional Analytical Data							
Chloride, mg/L	1/7/2015	41	--	41	5	10	EPA 300.0
	2/6/2015	36	--	37	5	10	EPA 300.0
	3/3/2015	39	--	36	5	10	EPA 300.0
	4/3/2015	37	--	37	5	10	EPA 300.0
	5/11/2015	38 / 38 [2]	--	39	5	10	EPA 300.0
	6/2/2015	38	--	38	5	10	EPA 300.0
Nitrate (as NO_3), mg/L	1/7/2015	33	33	33	2.6	10	EPA 300.0
	2/6/2015	32	32 / 33 [2]	33	2.6	10	EPA 300.0
	3/3/2015	32	33	32	2.6	10	EPA 300.0
	4/3/2015	33	33	33	2.6	10	EPA 300.0
	5/11/2015	30 / 30 [2]	31	31	2.6	10	EPA 300.0
	6/2/2015	30	31	31	2.6	10	EPA 300.0
Sulfate, mg/L	1/7/2015	28	--	27	4	10	EPA 300.0
	2/6/2015	27	--	28	4	10	EPA 300.0
	3/3/2015	28	--	27	4	10	EPA 300.0
	4/3/2015	30	--	30	4	10	EPA 300.0
	5/11/2015	27 / 27 [2]	--	28	4	10	EPA 300.0
	6/2/2015	27	--	27	4	10	EPA 300.0
Field Data							
Specific Conductivity, µS/cm	1/7/2015	507	510	544	--	--	--
	2/6/2015	431	430	434	--	--	--
	3/3/2015	455	455	465	--	--	--
	4/3/2015	460	462	474	--	--	--
	5/11/2015	441	442	446	--	--	--
	6/2/2015	429	429	448	--	--	--
Temperature, °C	1/7/2015	18.51	18.62	19.19	--	--	--
	2/6/2015	18.29	18.41	18.75	--	--	--
	3/3/2015	17.97	17.94	17.70	--	--	--
	4/3/2015	18.95	18.90	19.28	--	--	--
	5/11/2015	18.20	18.20	18.18	--	--	--
	6/2/2015	18.47	18.85	19.51	--	--	--
Total Dissolved Solids, mg/L	1/7/2015	330	331	353	--	--	--
	2/6/2015	280	280	282	--	--	--
	3/3/2015	296	296	302	--	--	--
	4/3/2015	299	300	308	--	--	--
	5/11/2015	289	289	291	--	--	--
	6/2/2015	279	279	291	--	--	--

Notes
1. Midpoint refers to the effluent of the lead IX resin vessel prior to entering the lag IX resin vessel.
2. Duplicate sample results are separated by a forward slash.
3. Perchlorate was detected below the laboratory reporting limit and is considered an estimated value.

TABLE 8

GROUNDWATER TREATMENT SYSTEM ANALYTICAL RESULTS
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Abbreviations
-- = Not analyzed or not applicable
°C = degrees Celsius
µg/L = micrograms per liter
µS/cm = microsiemens per centimeter
EPA = United States Environmental Protection Agency
IX = treatment
MDL = method detection limit
mg/L = milligrams per liter
ND < = Not Detected at or above the laboratory reporting limit shown

TABLE 9

PERCHLORATE MASS REMOVED

2015 Semiannual Groundwater Monitoring Report

Olin Site

Morgan Hill, California

Date	Perchlorate Concentrations[1] (µg/L)	Treated Volume (gallons)	Mass Removal[2] (kg)
02/23/04	45	--	--
02/24/04	73	--	--
02/26/04	76	--	--
03/03/04	31	200,000	0.04
03/04/04	47	140,000	0.02
03/12/04	35	880,000	0.14
03/18/04	62	1,110,000	0.20
03/25/04	71	430,000	0.11
03/31/04	64	--	--
04/06/04	--	2,200,000	0.56
04/07/04	58	190,000	0.04
04/21/04	49	2,680,000	0.54
05/04/04	43	2,250,000	0.39
06/03/04	27	4,550,000	0.60
07/07/04	23	4,540,000	0.43
08/05/04	31	3,670,000	0.38
09/09/04	31	2,910,000	0.34
10/06/04	44	1,560,000	0.22
11/09/04	30	2,190,000	0.31
12/14/04	36	2,600,000	0.33
01/10/05	35	2,130,000	0.29
02/04/05	59	2,970,000	0.53
03/08/05	85	4,940,000	1.35
04/06/05	110	5,880,000	2.17
05/11/05	64	6,720,000	2.21
06/07/05	65	5,450,000	1.33
06/30/05	45	4,330,000	0.90
08/03/05	29	6,570,000	0.92
09/02/05	26	4,900,000	0.51
09/29/05	70	--	--
09/30/05	84	--	--
10/15/05	--	4,440,000	1.01
11/02/05	84	--	--
11/03/05	--	1,220,000	0.39
11/17/05	160	--	--
11/25/05	--	1,970,000	0.91
01/05/06	130	4,950,000	2.72
01/11/06	88	--	--
01/12/06	--	1,370,000	0.56
02/07/06	71	--	--
02/09/06	--	5,270,000	1.59
02/28/06	63	--	--
03/01/06	--	3,910,000	0.99
03/30/06	58	5,540,000	1.27

TABLE 9

PERCHLORATE MASS REMOVED

2015 Semiannual Groundwater Monitoring Report

Olin Site

Morgan Hill, California

Date	Perchlorate Concentrations[1] (µg/L)	Treated Volume (gallons)	Mass Removal[2] (kg)
04/13/06	60	2,770,000	0.62
05/03/06	73	3,880,000	0.98
06/01/06	77	1,910,000	0.54
06/30/06	35	4,390,000	0.93
07/31/06	24	6,100,000	0.68
08/30/06	27	4,300,000	0.42
09/27/06	17	5,270,000	0.44
10/30/06	16	6,250,000	0.39
11/30/06 [3]	15	5,080,000	0.30
12/29/06 [3]	--	5,520,000	--
01/04/07 [3]	16	1,150,000	0.39
01/31/07 [3]	15	5,080,000	0.30
02/28/07 [3]	23	4,960,000	0.36
03/29/07 [3]	17	6,040,000	0.46
04/30/07	18	6,670,000	0.44
05/31/07	15	6,940,000	0.43
06/28/07	12	5,230,000	0.27
07/31/07	13	6,580,000	0.31
08/14/07	18	1,970,000	0.12
08/28/07	15	3,060,000	0.19
09/13/07	16	3,100,000	0.18
09/27/07	17	2,340,000	0.15
10/16/07	16	--	--
10/31/07	16	5,360,000	0.33
11/29/07	17	4,580,000	0.29
12/31/07	21	4,030,000	0.29
01/31/08	40	3,930,000	0.45
02/29/08	25	3,150,000	0.39
03/31/08	19	6,990,000	0.58
04/30/08	18	6,130,000	0.43
05/29/08	19	4,390,000	0.31
06/30/08	23	5,780,000	0.46
07/31/08	110	1,980,000	0.50
08/28/08	110	450,000	0.19
09/30/08	110	490,000	0.20
10/17/08	--	160,000	--
10/30/08	79	--	0.06
11/24/08	56	--	--
12/31/08	150	--	--
01/07/09	25.2	0	0.00
01/27/09	87.3	600,000	0.13
02/26/09	NS	130,000	0.03
03/31/09	NS	0	0.00
04/02/09	94.9	0	0.00

TABLE 9

PERCHLORATE MASS REMOVED

2015 Semiannual Groundwater Monitoring Report

Olin Site

Morgan Hill, California

Date	Perchlorate Concentrations[1] (µg/L)	Treated Volume (gallons)	Mass Removal[2] (kg)
04/29/09	110	640,000	0.25
05/28/09	115	380,000	0.16
06/30/09	99.5	710,000	0.29
07/30/09	114	500,000	0.20
08/31/09	--	520,000	--
09/09/09	116	--	0.22
09/29/09	107	--	--
09/30/09	--	360,000	0.15
10/29/09 [3]	--	490,000	--
11/03/09	118	--	0.21
12/01/09 [3]	90.4	290,000	0.11
12/31/09 [3]	116	550,000	0.22
02/01/10 [3]	124	440,000	0.20
03/01/10 [4]	109	570,000	0.25
04/01/10 [3]	150	920,000	0.45
05/03/10	130	1,180,000	0.62
06/01/10	110	1,790,000	0.81
06/30/10	85	1,640,000	0.60
07/29/10	79	1,610,000	0.50
08/31/10	68	1,820,000	0.51
09/30/10	--	1,660,000	--
10/01/10	55	--	0.39
10/29/10	49	1,600,000	0.31
11/30/10	54	1,200,000	0.23
12/30/10	--	1,410,000	--
01/04/11	55	--	0.29
01/31/11	--	1,190,000	--
02/03/11	57	--	0.25
02/28/11	--	1,110,000	--
03/02/11	69	--	0.26
03/30/11	--	1,690,000	--
04/06/11	130	--	0.64
04/29/11	--	1,890,000	--
05/03/11	92	--	0.79
05/31/11	--	1,540,000	--
06/01/11	79	--	0.50
06/30/11	--	1,330,000	--
07/01/11	47	--	0.32
07/29/11	--	1,640,000	--
08/01/11	45	--	0.29
08/15/11	99	--	--
08/31/11	100	1,130,000	0.35
09/15/11	98	280,000	0.11

TABLE 9

PERCHLORATE MASS REMOVED

2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Date	Perchlorate Concentrations[1] (µg/L)	Treated Volume (gallons)	Mass Removal[2] (kg)
09/30/11	110	280,000	0.11
10/14/11	96	--	--
10/31/11	95	590,000	0.21
11/15/11	87	--	--
11/30/11	96	570,000	0.20
12/12/11	95	--	--
12/29/11	--	370,000	0.13
01/03/12	96	--	--
01/16/12	96	330,000	0.12
02/02/12	88	320,000	0.11
02/16/12	--	270,000	0.09
--	--	--	--
7/12/12 [5]	20	--	--
07/31/12	--	6,740,000	0.48
08/02/12	18	--	--
08/08/12	17	--	--
08/30/12	18	--	--
08/31/12	--	24,860,000	1.79
09/28/12	23	--	--
09/30/12	--	16,460,000	1.40
10/02/12	22	--	--
10/31/12	--	13,600,000	1.13
11/01/12	22	--	--
11/30/12	--	13,670,000	1.14
12/04/12	22	--	--
12/31/12	--	13,430,000	1.19
01/03/13	25	--	--
01/31/13	--	14,870,000	1.27
02/06/13	20	--	--
02/28/13	--	13,090,000	0.97
03/07/13	19	--	--
03/31/13	--	13,830,000	0.99
04/02/13	19	--	--
04/30/13	--	14,690,000	1.06
05/06/13	19	--	--
05/31/13	--	15,640,000	1.07
06/04/13	17	--	--
06/30/13	--	17,270,000	1.11
07/08/13	17	--	--
07/31/13	--	14,520,000	0.93
08/05/13	17	--	--
08/31/13	--	16,880,000	1.05
09/04/13	16	--	--
09/30/13	--	16,260,000	0.98

TABLE 9

PERCHLORATE MASS REMOVED

2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Date	Perchlorate Concentrations[1] (µg/L)	Treated Volume (gallons)	Mass Removal[2] (kg)
10/02/13	16	--	--
10/31/13	--	14,680,000	0.81
11/08/13	13	--	--
11/31/13	--	14,820,000	0.79
12/03/13	15	--	--
12/31/13	--	16,100,000	0.88
01/08/14	14	--	--
01/31/14	--	16,160,000	0.89
02/04/14	15	--	--
02/28/14	--	14,590,000	0.83
03/06/14	15	--	--
03/31/14	--	17,130,000	0.94
04/02/14	14	--	--
04/30/14	--	16,660,000	0.88
05/06/14	14	--	--
05/31/14	--	16,000,000	0.88
06/04/14	15	--	--
06/30/14	--	14,300,000	0.81
07/15/14	15	--	--
07/31/14	--	13,540,000	0.77
08/08/14	15	--	--
08/31/14	--	12,060,000	0.68
09/05/14	15	--	--
09/30/14	--	9,180,000	0.52
10/02/14	15	--	--
10/31/14	--	11,180,000	0.63
11/11/14	15	--	--
11/30/14	--	8,700,000	0.44
12/02/14	12	--	--
12/31/14	--	13,530,000	0.67
1/7/2015	14	--	--
01/31/15	--	13,760,000	0.73
2/6/2015	14	--	--
02/28/15	--	12,420,000	0.66
3/3/2015	14	--	--
03/31/15	--	13,690,000	0.75
4/3/2015	15	--	--
4/30/2015	--	14,000,000	0.77
5/11/2015	14	--	--

TABLE 9

PERCHLORATE MASS REMOVED

2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Date	Perchlorate Concentrations[1] (µg/L)	Treated Volume (gallons)	Mass Removal[2] (kg)
5/31/2015	--	14,480,000	0.82
6/2/2015	16	--	--
6/30/2015	--	13,820,000	0.84
Total 1Q2015	--	**39,870,000**	**2.14**
Total 2Q2015	--	**42,300,000**	**2.43**
Total 1SA2015	--	**82,170,000**	**4.57**
Grand Total	--	**802,820,000**	**81.84**

Notes

1. Samples from GWTS influent (SV-100)
2. Mass Removal = (treated volume) * (average concentrations between sample periods)
3. Total volume from extraction wells
4. Total volume from injection wells
5. Expanded Groundwater Treatment System testing began 7/12/12 and full operation began 9/07/12. Treated volume is the sum of groundwater extracted from all active extraction wells.

Abbreviations

-- = not applicable
1Q2015 = first quarter 2015 (January through March)
1SA2015 = first semiannual reporting period of 2015 (January through June)
2Q2015 = second quarter 2015 (April through June)
µg/L = micrograms per liter
gpm = gallons per minute
kg = kilogram
NS = not sampled; EW-01B1 was not sampled at the end of February or March 2009 because the groundwater treatment system was not operating.

TABLE 10

PERCHLORATE RESULTS - DOMESTIC ION EXCHANGE SYSTEMS
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Station	Sample Type	Sample Date	Test Method	Perchlorate Concentration (µg/L)[1]	Lab MDL (µg/L)	Lab Qualifier	Validation Qualifier	Aquifer
09S03E34C003	Primary	01/15/2015	EPA314.0M	**44**	3.8	B	--	Intermediate (Unk)
09S03E34C003-MID	Primary	01/15/2015	EPA314.0M	ND < 4.0	0.75	--	--	Intermediate (Unk)
09S03E34C003-EFF	Primary	01/15/2015	EPA314.0M	ND < 4.0	0.75	--	--	Intermediate (Unk)
09S03E34C003	Primary	04/10/2015	EPA314.0M	**38**	3.8	--	--	Intermediate (Unk)
09S03E34C003-MID	Primary	04/10/2015	EPA314.0M	ND < 4.0	0.75	--	--	Intermediate (Unk)
09S03E34C003-EFF	Primary	04/10/2015	EPA314.0M	ND < 4.0	0.75	--	--	Intermediate (Unk)
09S03E34G001	Primary	01/15/2015	EPA314.0M	**13**	0.75	B	--	Intermediate (Unk)
09S03E34G001-MID	Primary	01/15/2015	EPA314.0M	ND < 4.0	0.75	--	--	Intermediate (Unk)
09S03E34G001-EFF	Primary	01/15/2015	EPA314.0M	ND < 4.0	0.75	--	--	Intermediate (Unk)
09S03E34G001	Primary	04/10/2015	EPA314.0M	**12**	0.75	--	--	Intermediate (Unk)
09S03E34G001-DUP	Duplicate	04/10/2015	EPA314.0M	**12**	0.75	--	--	Intermediate (Unk)
09S03E34G001-MID	Primary	04/10/2015	EPA314.0M	ND < 4.0	0.75	--	--	Intermediate (Unk)
09S03E34G001-EFF	Primary	04/10/2015	EPA314.0M	ND < 4.0	0.75	--	--	Intermediate (Unk)
09S03E34G002	Primary	01/15/2015	EPA314.0M	**20**	0.75	B	--	Intermediate (Unk)
09S03E34G002-DUP	Duplicate	01/15/2015	EPA314.0M	**20**	0.75	B	--	Intermediate (Unk)
09S03E34G002-MID	Primary	01/15/2015	EPA314.0M	ND < 4.0	0.75	--	--	Intermediate (Unk)
09S03E34G002-EFF	Primary	01/15/2015	EPA314.0M	ND < 4.0	0.75	--	--	Intermediate (Unk)
09S03E34G002	Primary	04/10/2015	EPA314.0M	**12**	1.5	--	--	Intermediate (Unk)
09S03E34G002-MID	Primary	04/10/2015	EPA314.0M	ND < 4.0	0.75	--	--	Intermediate (Unk)
09S03E34G002-EFF	Primary	04/10/2015	EPA314.0M	ND < 4.0	0.75	--	--	Intermediate (Unk)

Note
1. **Bold face type** denotes concentration that exceeds the Maximum Contaminant Level (6 µg/L).

TABLE 10

PERCHLORATE RESULTS - DOMESTIC ION EXCHANGE SYSTEMS

2015 Semiannual Groundwater Monitoring Report

Olin Site

Morgan Hill, California

Abbreviations

-- = not applicable

µg/L = micrograms per liter; equivalent to parts per billion

EFF = Treated effluent sample, collected downstream of the lag ion exchange vessel

Intermediate (Unk) = Screen interval unknown; assigned to intermediate aquifer based on production rate and local domestic wells

MID = Midpoint sample, collected between the lead and lag ion exchange vessels

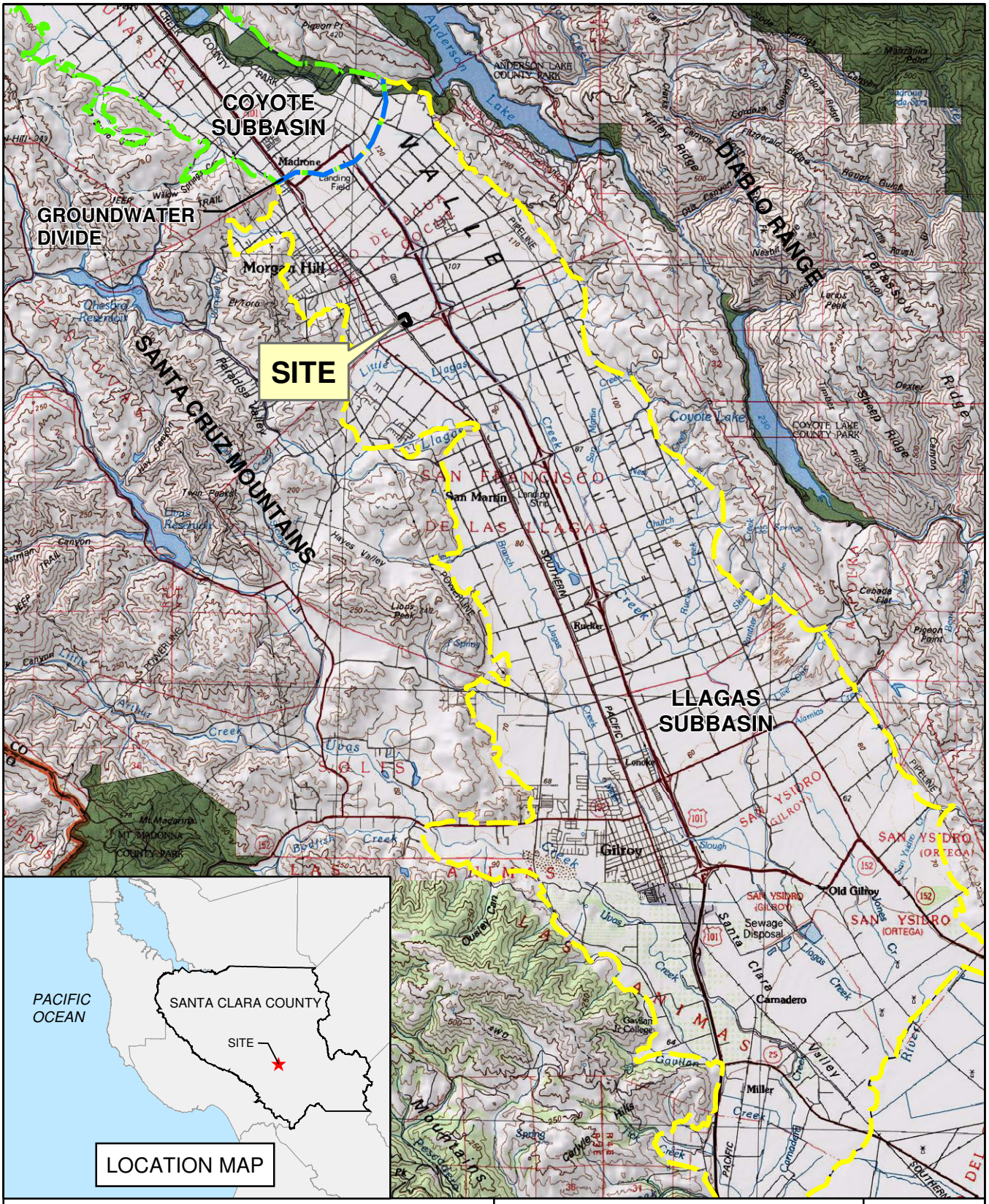
MDL = Method Detection Limit

ND < = Not Detected at or above the reporting limit shown

Laboratory Qualifier

B = Compound was found in the blank and sample

FIGURES



N

2 1 0 2
Miles

Source: San Jose and Monterey Quadrangles
(USGS 1:100,000 sheets)

SITE LOCATION MAP
2015 Semiannual Groundwater
Monitoring Report
Olin Site
Morgan Hill, California

amec foster wheeler

Date: 06/16/2015 | Project No. 6107150012

Figure
1

Tuesday, June 16, 2015 4:50:16 PM
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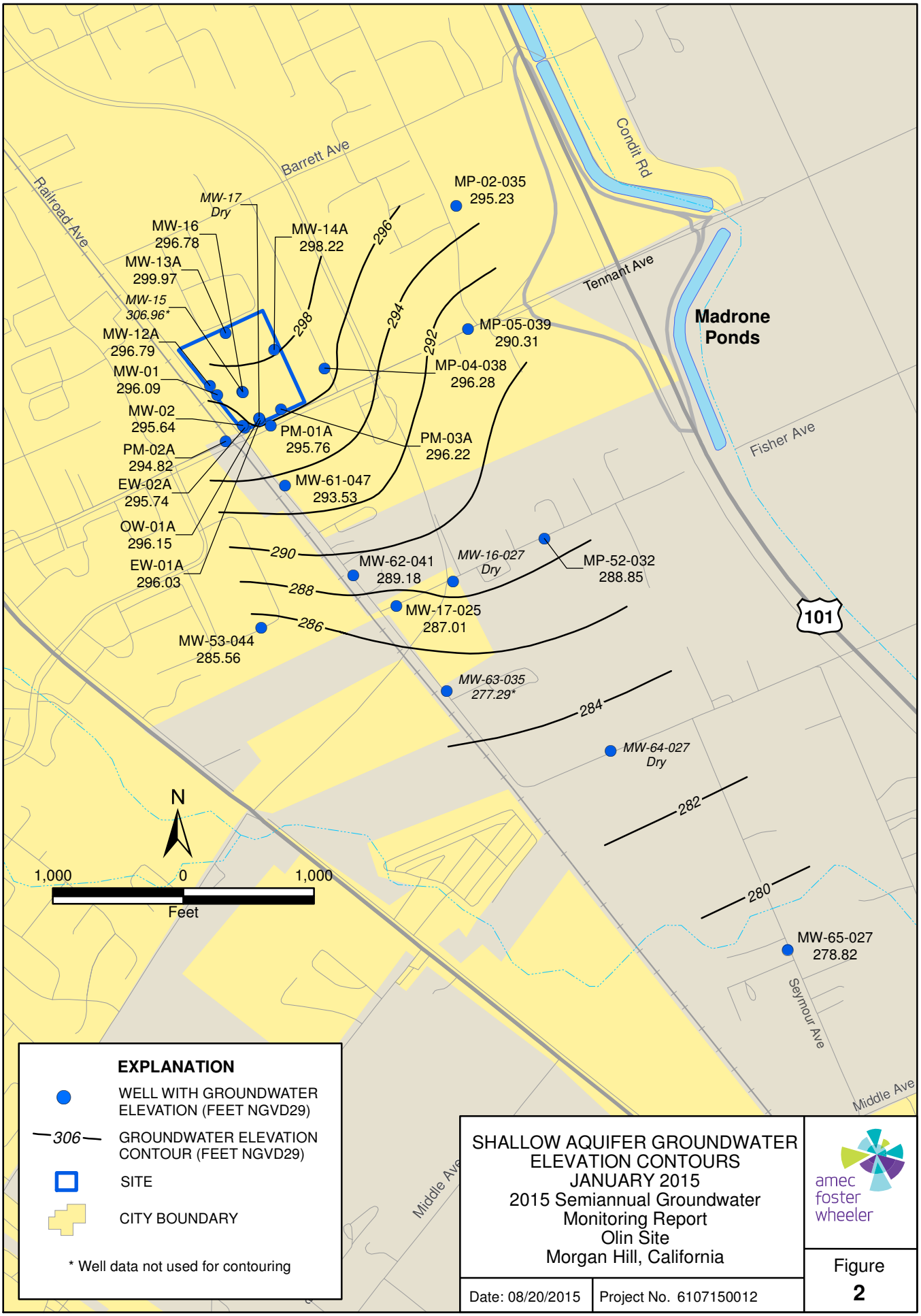

SHALLOW AQUIFER GROUNDWATER ELEVATION CONTOURS
JANUARY 2015
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

amec foster wheeler

Date: 08/20/2015 | Project No. 6107150012

Figure 2

Wednesday, August 26, 2015 2:32:28 PM
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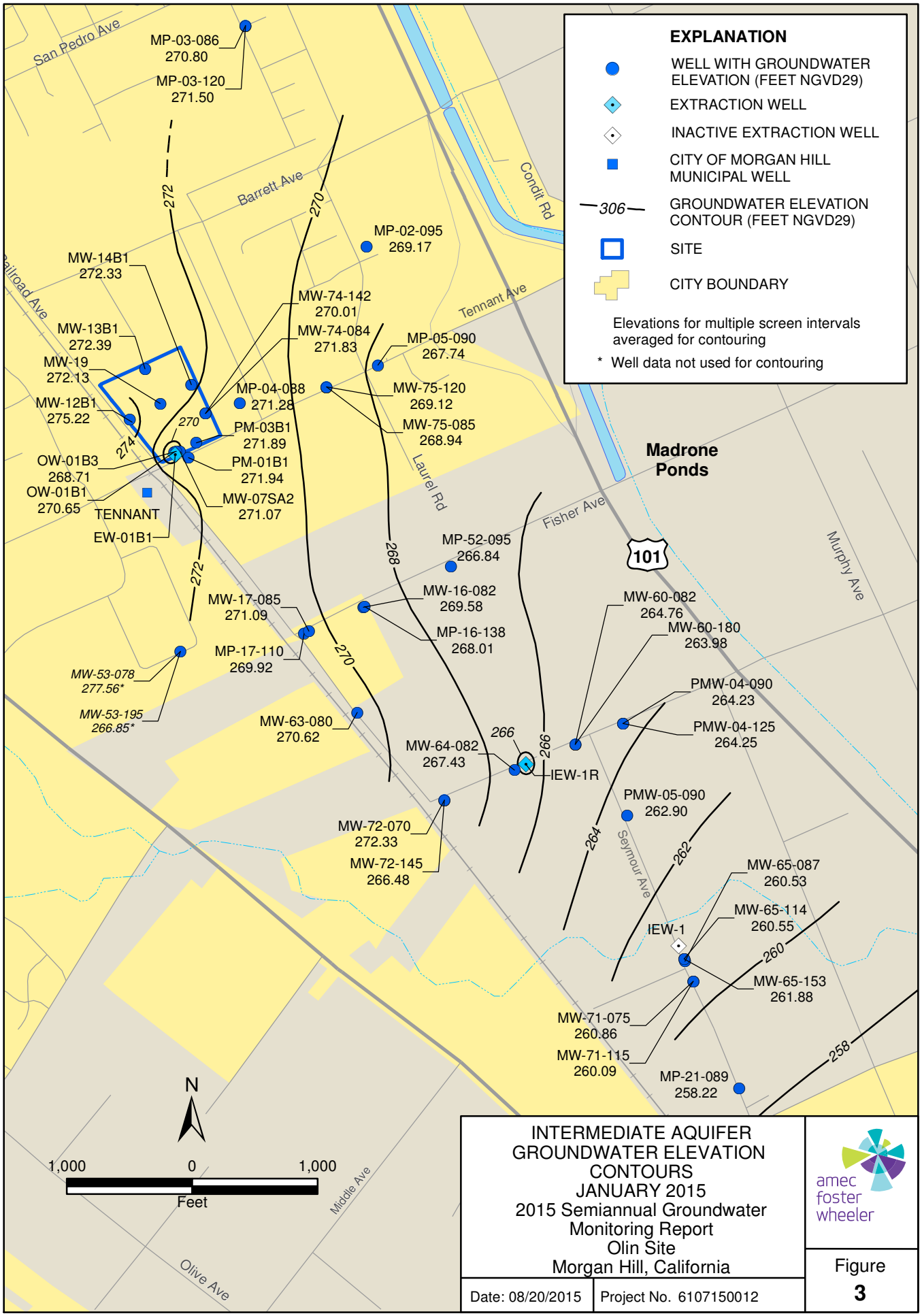

INTERMEDIATE AQUIFER GROUNDWATER ELEVATION CONTOURS
JANUARY 2015
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Date: 08/20/2015 | Project No. 6107150012

amec foster wheeler

Figure 3

Thursday, August 20, 2015 5:07:15 PM
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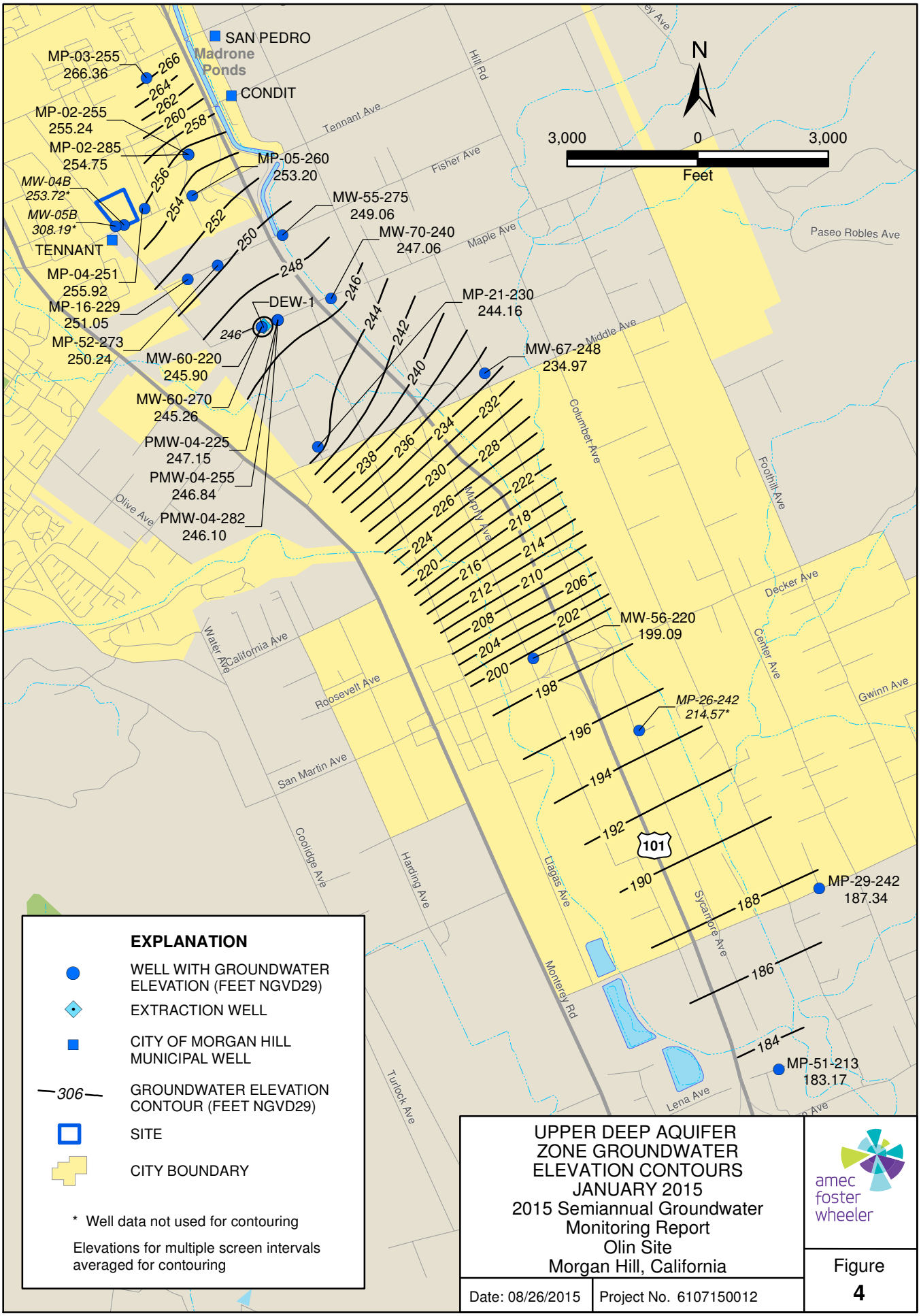

UPPER DEEP AQUIFER ZONE GROUNDWATER ELEVATION CONTOURS
JANUARY 2015
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

amec foster wheeler

Date: 08/26/2015 | Project No. 6107150012

Figure 4

Wednesday, August 26, 2015 3:15:31 PM
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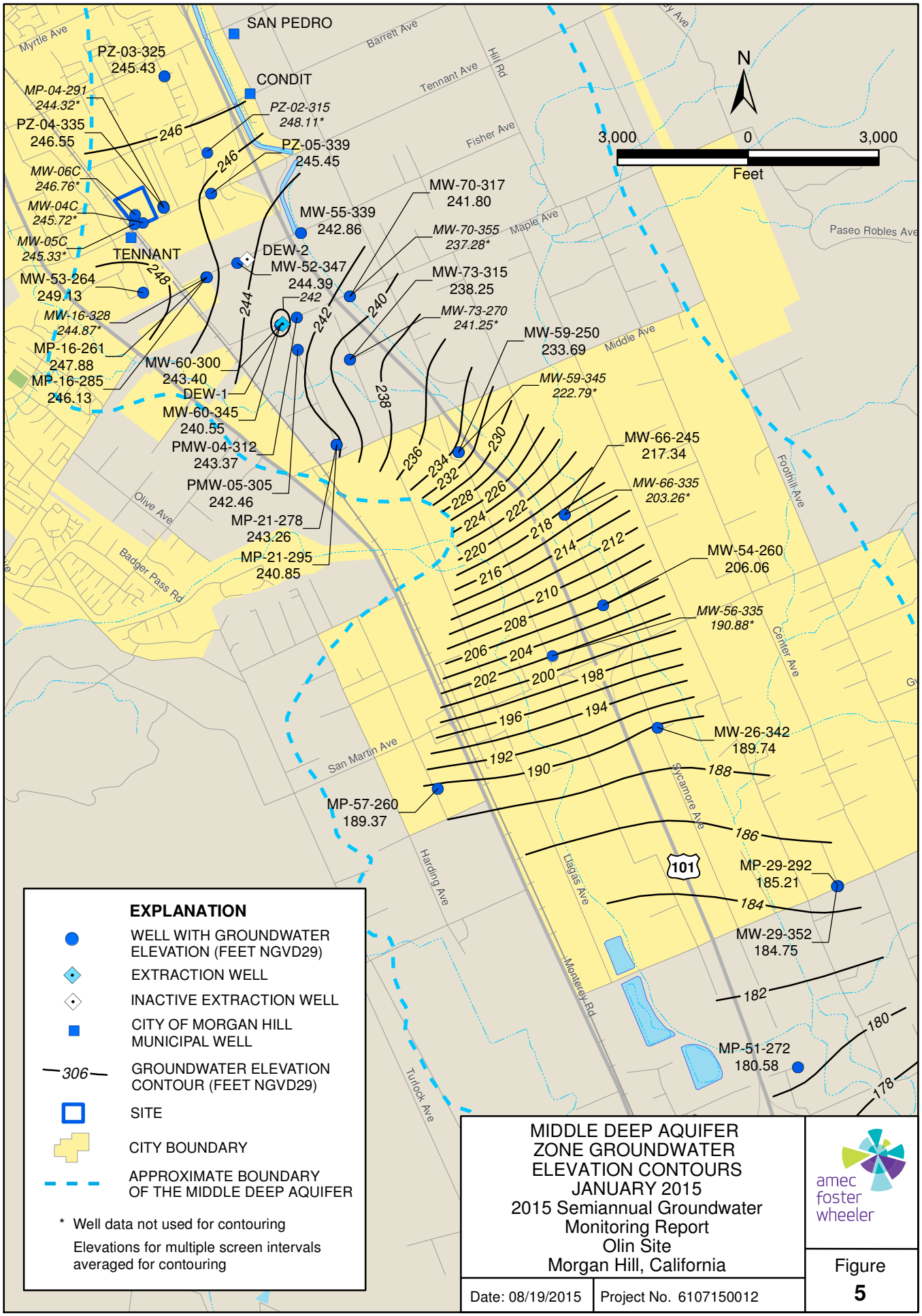

MIDDLE DEEP AQUIFER ZONE GROUNDWATER ELEVATION CONTOURS JANUARY 2015

2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

amec foster wheeler

Date: 08/19/2015 | Project No. 6107150012

Figure 5

Wednesday, August 19, 2015 4:47:48 PM
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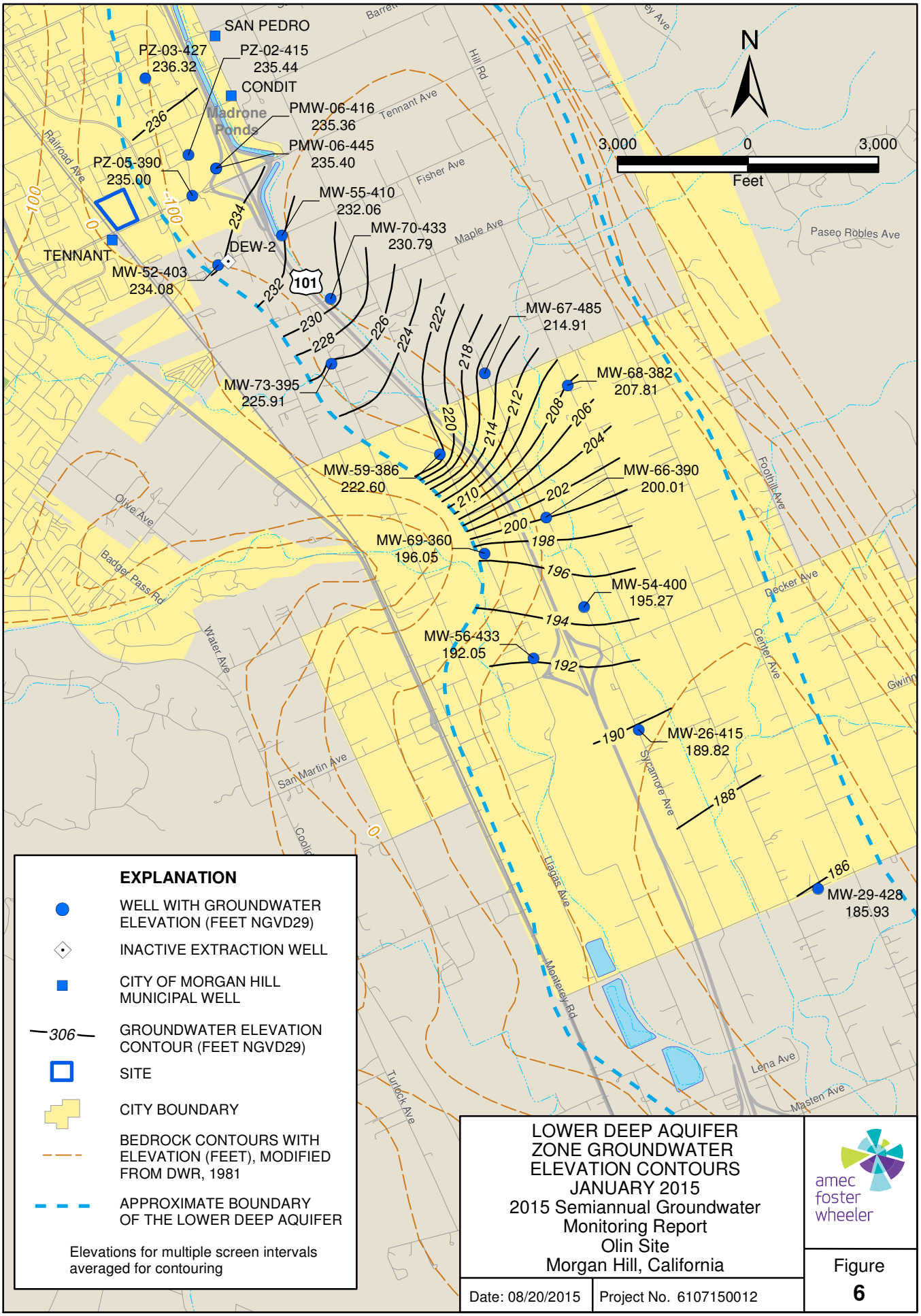

LOWER DEEP AQUIFER ZONE GROUNDWATER ELEVATION CONTOURS
JANUARY 2015
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

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Date: 08/20/2015 | Project No. 6107150012

Figure 6

Thursday, August 20, 2015 6:21:09 PM
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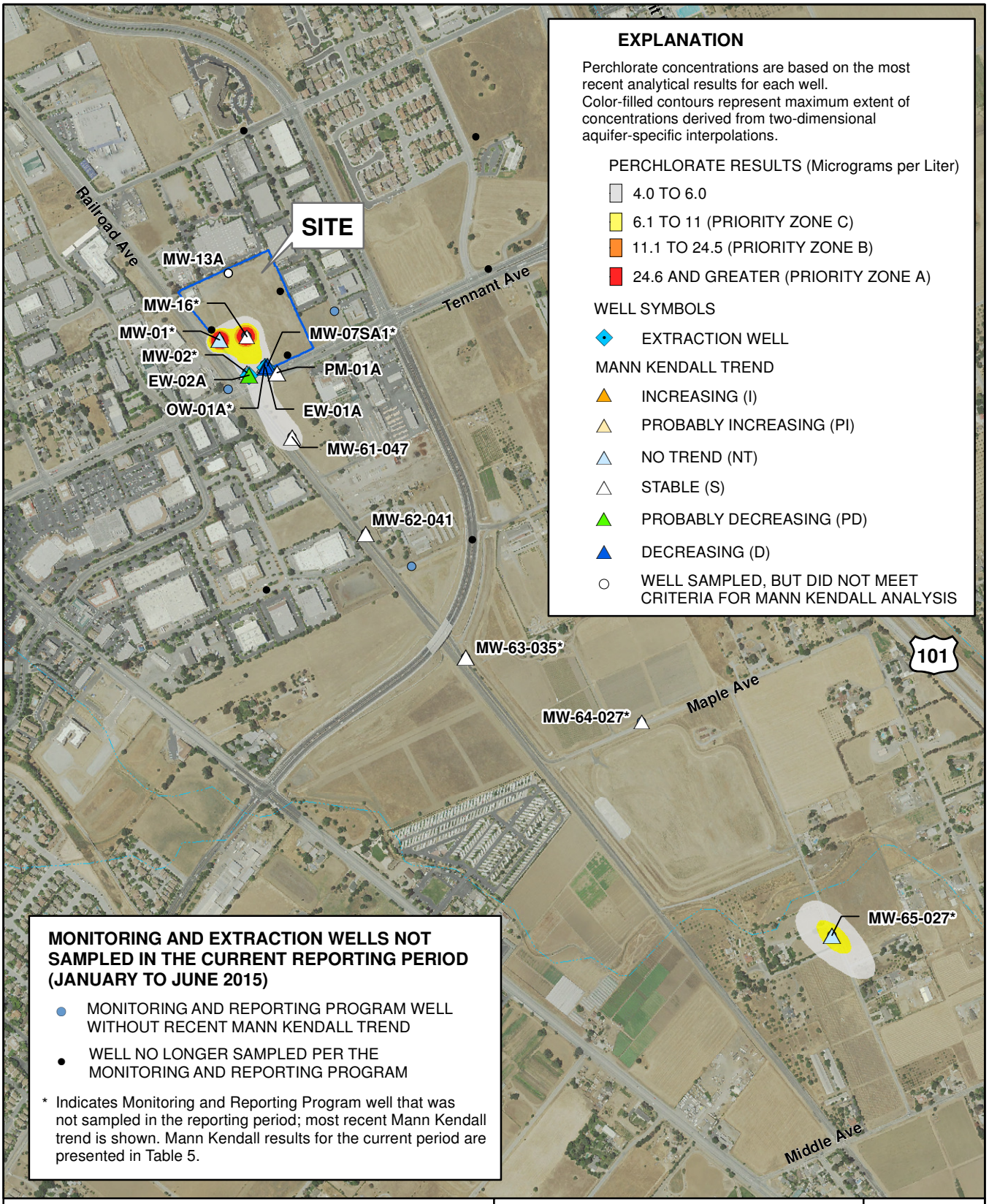

N

1,000 0 1,000

Feet

PERCHLORATE RESULTS
SHALLOW AQUIFER
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

amec foster wheeler

Date: 06/18/2015 | Project No. 6107150012

Figure 7

Thursday, June 18, 2015 6:00:26 PM
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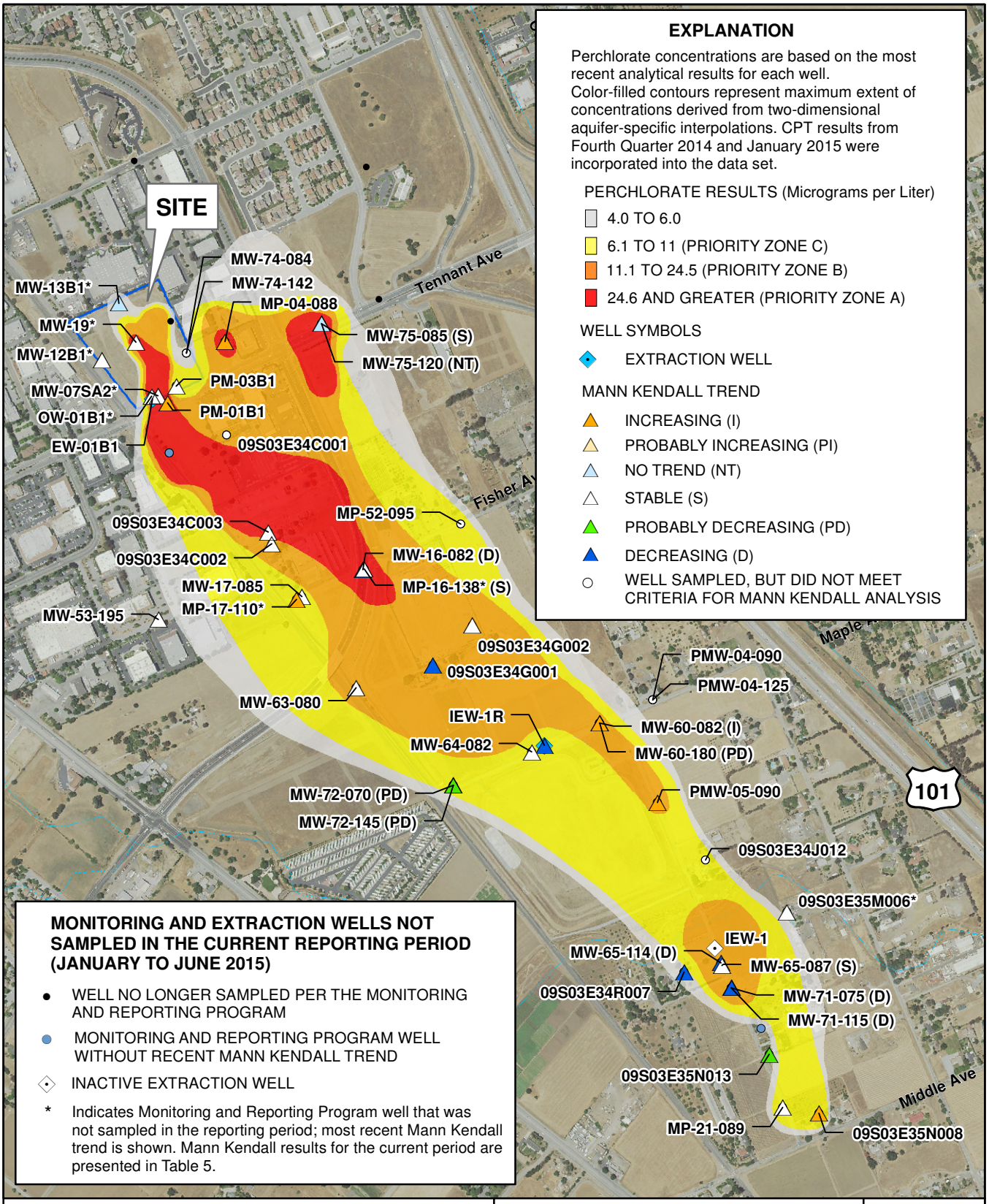

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Feet

PERCHLORATE RESULTS
INTERMEDIATE AQUIFER
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

amec foster wheeler

Date: 08/05/2015 | Project No. 6107150012

Figure 8

Wednesday, August 05, 2015 11:55:02 AM
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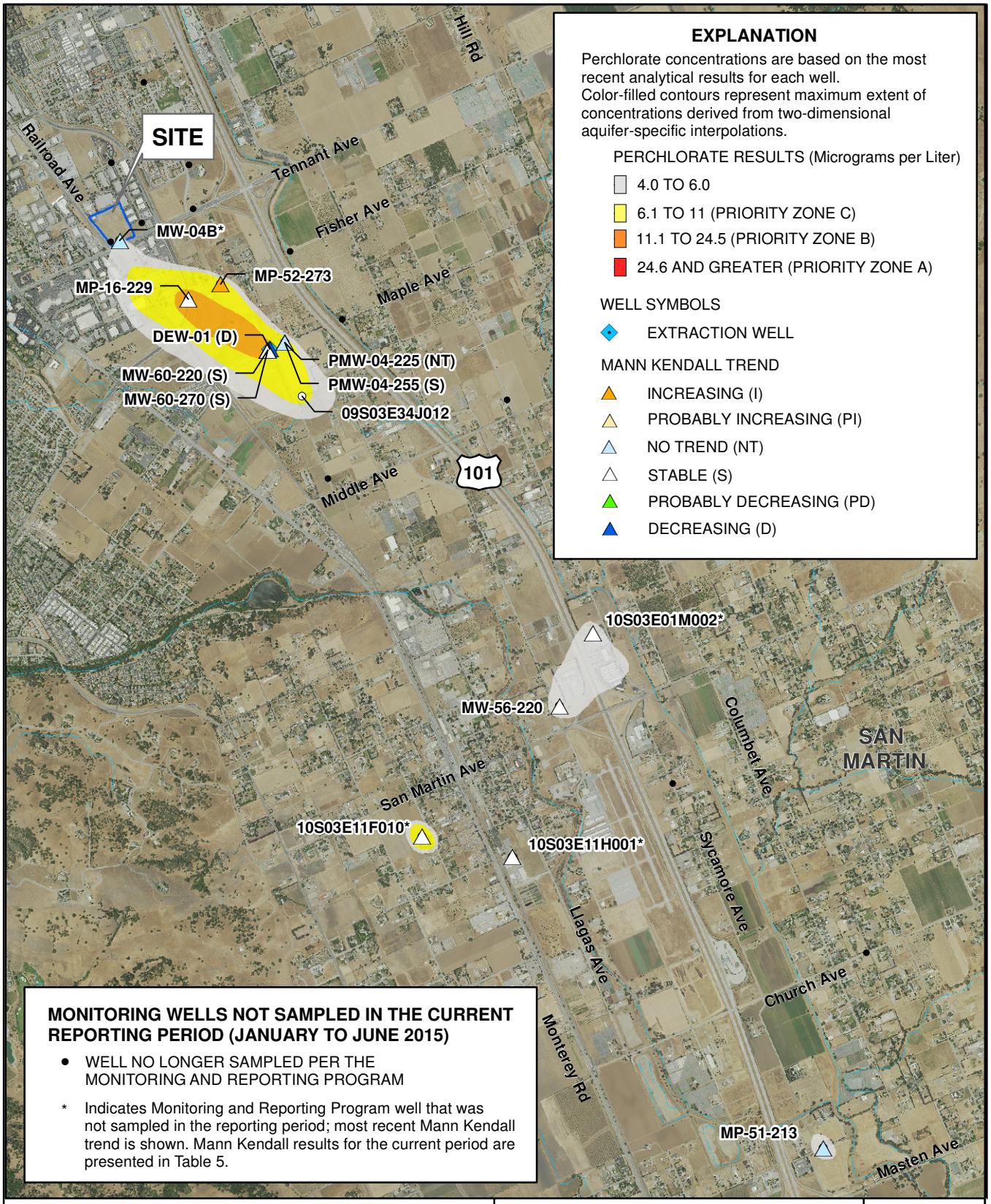

MONITORING WELLS NOT SAMPLED IN THE CURRENT REPORTING PERIOD (JANUARY TO JUNE 2015)

- WELL NO LONGER SAMPLED PER THE MONITORING AND REPORTING PROGRAM

* Indicates Monitoring and Reporting Program well that was not sampled in the reporting period; most recent Mann Kendall trend is shown. Mann Kendall results for the current period are presented in Table 5.

N

3,000 0 3,000

Feet

PERCHLORATE RESULTS
UPPER DEEP AQUIFER ZONE
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Date: 08/05/2015 | Project No. 6107150012

amec foster wheeler

Figure 9

Wednesday, August 05, 2015 12:05:03 PM
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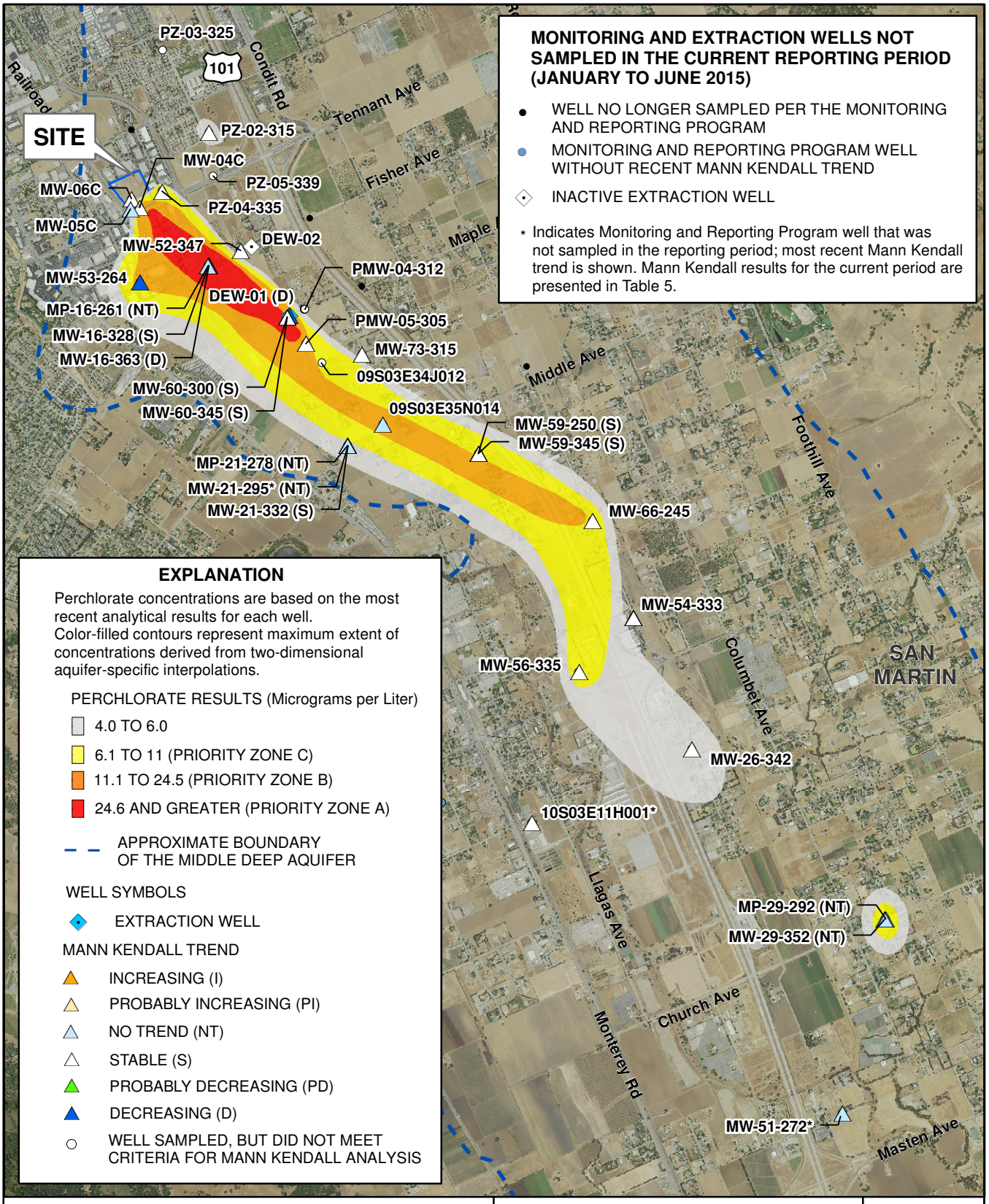

N

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Feet

PERCHLORATE RESULTS
MIDDLE DEEP AQUIFER ZONE
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

amec foster wheeler

Date: 06/18/2015 | Project No. 6107150012

Figure 10

Wednesday, August 05, 2015 12:04:03 PM
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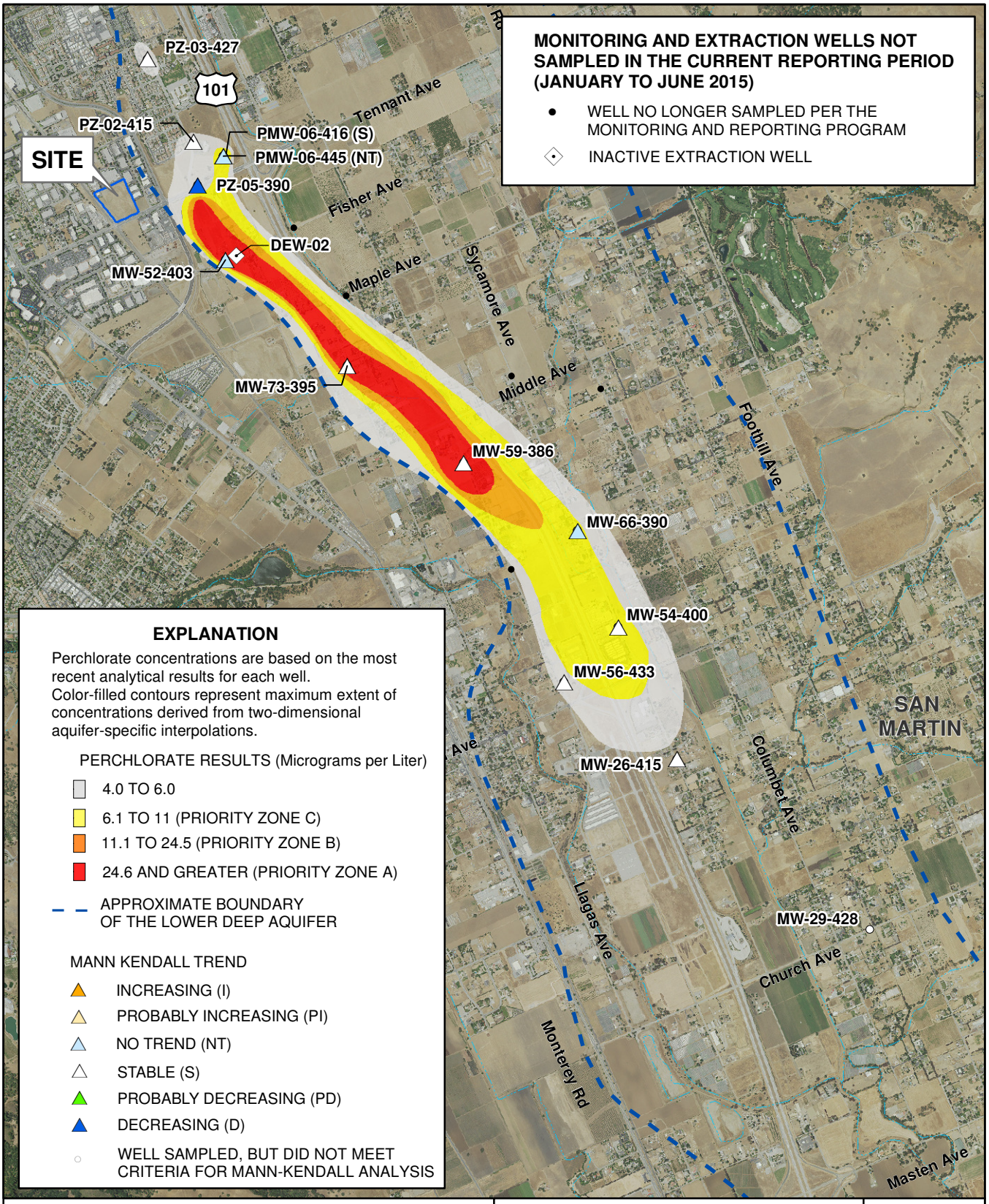

N

3,000 0 3,000

Feet

PERCHLORATE RESULTS
LOWER DEEP AQUIFER ZONE
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

amec foster wheeler

Date: 06/18/2015 | Project No. 6107150012

Figure 11

Thursday, June 18, 2015 6:16:00 PM
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APPENDIX A

Analytical Reports and Chain-of-Custody Records for Groundwater Samples
[provided separately]

APPENDIX B

Field Sampling Data

TABLE B1

OFF-SITE MONITORING WELL PURGE DATA

2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Well	Sample Date	Sample Time	Purge Method	Micro Purge?	Depth to Water	Purge Volume	Purge Volume Units	Flow Rate (ml/min)	Temp (degC)	Specific Conductivity (µmhos/CM)	Dissolved Oxygen (mg/L)	pH (pH units)	Oxygen Reduction Potential (mV)	Turbidity (NTU)
MP-04-088	01/27/2015	09:17	Micro-purge by Double Valve Pump	yes	56.71	Initial	ml	--	17.10	385	6.55	6.94	200.1	max
MP-04-088	01/27/2015	09:47	Micro-purge by Double Valve Pump	yes	NM	4500	ml	125	18.00	435	7.22	6.96	201.5	9.72
MP-04-088	01/27/2015	09:50	Micro-purge by Double Valve Pump	yes	NM	5000	ml	167	18.05	435	7.14	6.96	196.8	8.14
MP-04-088	01/27/2015	09:53	Micro-purge by Double Valve Pump	yes	NM	5500	ml	--	17.99	436	6.98	6.96	195.8	7.38
MP-16-229	01/06/2015	12:40	Micro-purge by Double Valve Pump	yes	78.22	Initial	ml	175	18.50	405	6.38	7.74	-54.0	5.61
MP-16-229	01/06/2015	12:59	Micro-purge by Double Valve Pump	yes	NM	--	ml	--	18.65	446	2.32	7.24	-26.5	4.88
MP-16-229	01/06/2015	13:02	Micro-purge by Double Valve Pump	yes	NM	--	ml	--	18.65	447	2.31	7.25	-26.7	4.00
MP-16-229	01/06/2015	13:05	Micro-purge by Double Valve Pump	yes	NM	--	ml	--	18.65	447	2.29	7.26	-27.0	4.21
MP-16-261	01/06/2015	12:00	Micro-purge by Double Valve Pump	yes	81.39	Initial	ml	170	18.15	397	6.52	7.77	-55.6	4.21
MP-16-261	01/06/2015	12:22	Micro-purge by Double Valve Pump	yes	NM	--	ml	--	18.22	440	2.53	7.32	-30.8	6.00
MP-16-261	01/06/2015	12:24	Micro-purge by Double Valve Pump	yes	NM	--	ml	--	18.21	441	2.51	7.30	-29.9	5.44
MP-16-261	01/06/2015	12:26	Micro-purge by Double Valve Pump	yes	NM	--	ml	--	18.21	442	2.50	7.30	-29.5	5.06
MP-21-089	01/28/2015	11:12	Micro-purge by Double Valve Pump	yes	51.06	Initial	ml	--	17.44	375	7.65	7.05	71.4	115
MP-21-089	01/28/2015	11:28	Micro-purge by Double Valve Pump	yes	NM	3000	ml	167	17.33	417	6.28	6.79	93.6	9.72
MP-21-089	01/28/2015	11:31	Micro-purge by Double Valve Pump	yes	NM	3500	ml	167	17.30	418	6.32	6.79	95.4	8.90
MP-21-089	01/28/2015	11:34	Micro-purge by Double Valve Pump	yes	NM	4000	ml	167	17.39	418	6.18	6.79	96.9	8.50
MP-21-278	01/28/2015	09:46	Micro-purge by Double Valve Pump	yes	64.88	Initial	ml	--	16.45	177	8.64	7.42	11.0	5.63
MP-21-278	01/28/2015	10:47	Micro-purge by Double Valve Pump	yes	NM	7500	ml	100	16.87	545	6.81	6.99	30.8	8.05
MP-21-278	01/28/2015	10:52	Micro-purge by Double Valve Pump	yes	NM	8000	ml	100	16.88	545	6.86	6.98	36.1	6.19
MP-21-278	01/28/2015	10:57	Micro-purge by Double Valve Pump	yes	NM	8500	ml	100	16.88	544	6.87	6.98	38.8	5.71
MP-26-140	01/27/2015	15:38	Micro-purge by Double Valve Pump	yes	67.98	Initial	ml	--	18.10	553	6.53	7.10	-142.7	max
MP-26-140	01/27/2015	16:29	Micro-purge by Double Valve Pump	yes	NM	8500	ml	167	17.43	582	5.96	6.98	59.9	80.0
MP-26-140	01/27/2015	16:32	Micro-purge by Double Valve Pump	yes	NM	9000	ml	167	17.43	582	5.98	6.98	64.1	73.5
MP-26-140	01/27/2015	16:35	Micro-purge by Double Valve Pump	yes	NM	9500	ml	167	17.43	582	6.07	6.98	67.8	64.0
MP-29-169	01/28/2015	13:19	Micro-purge by Double Valve Pump	yes	79.77	Initial	ml	--	19.57	503	7.01	7.33	-174.2	9.48
MP-29-169	01/28/2015	14:00	Micro-purge by Double Valve Pump	yes	NM	6500	ml	167	17.84	623	4.99	7.05	35.2	4.53
MP-29-169	01/28/2015	14:03	Micro-purge by Double Valve Pump	yes	NM	7000	ml	167	17.78	624	5.11	7.05	41.7	4.03
MP-29-169	01/28/2015	14:06	Micro-purge by Double Valve Pump	yes	NM	7500	ml	167	17.80	623	5.15	7.04	44.3	--
MP-29-292	01/29/2015	15:56	Micro-purge by Double Valve Pump	yes	85.10	Initial	ml	--	17.73	146	7.07	6.83	151.5	2.95
MP-29-292	01/29/2015	17:00	Micro-purge by Double Valve Pump	yes	NM	7000	ml	100	17.17	572	4.90	7.13	149.2	9.67
MP-29-292	01/29/2015	17:05	Micro-purge by Double Valve Pump	yes	NM	7500	ml	100	17.19	572	4.94	7.12	152.2	8.00
MP-29-292	01/29/2015	17:10	Micro-purge by Double Valve Pump	yes	NM	8000	ml	100	17.11	572	5.03	7.12	154.5	7.86

TABLE B1

OFF-SITE MONITORING WELL PURGE DATA
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Well	Sample Date	Sample Time	Purge Method	Micro Purge?	Depth to Water	Purge Volume	Purge Volume Units	Flow Rate (ml/min)	Temp (degC)	Specific Conductivity (µmhos/CM)	Dissolved Oxygen (mg/L)	pH (pH units)	Oxygen Reduction Potential (mV)	Turbidity (NTU)
MP-35-162	01/29/2015	12:24	Micro-purge by Double Valve Pump	yes	65.24	Initial	ml	--	18.43	498	6.63	7.56	-171.6	18.5
MP-35-162	01/29/2015	13:09	Micro-purge by Double Valve Pump	yes	NM	6000	ml	125	17.77	622	4.76	7.02	66.8	0.94
MP-35-162	01/29/2015	13:13	Micro-purge by Double Valve Pump	yes	NM	6500	ml	125	17.77	624	4.79	7.02	72.3	0.98
MP-35-162	01/29/2015	13:17	Micro-purge by Double Valve Pump	yes	NM	7000	ml	125	17.77	625	4.77	7.02	75.1	0.81
MP-40-185	01/30/2015	10:01	Micro-purge by Double Valve Pump	yes	40.68	Initial	ml	--	14.39	550	6.96	7.40	-164.2	5.70
MP-40-185	01/30/2015	10:46	Micro-purge by Double Valve Pump	yes	NM	8000	ml	167	16.46	615	4.12	7.16	-15.4	1.44
MP-40-185	01/30/2015	10:49	Micro-purge by Double Valve Pump	yes	NM	8500	ml	167	16.39	616	4.21	7.16	-11.2	1.20
MP-40-185	01/30/2015	10:52	Micro-purge by Double Valve Pump	yes	NM	9000	ml	167	16.39	616	4.26	7.15	-10.4	1.17
MP-44-141	01/29/2015	14:51	Micro-purge by Double Valve Pump	yes	38.18	Initial	ml	--	16.73	620	6.24	7.50	69.6	82.8
MP-44-141	01/29/2015	15:09	Micro-purge by Double Valve Pump	yes	NM	3500	ml	167	16.60	629	3.58	7.12	97.4	9.65
MP-44-141	01/29/2015	15:12	Micro-purge by Double Valve Pump	yes	NM	4000	ml	167	16.58	628	3.58	7.11	101.2	8.70
MP-44-141	01/29/2015	15:15	Micro-purge by Double Valve Pump	yes	NM	4500	ml	167	16.62	627	3.58	7.11	102.9	7.68
MP-51-164	01/29/2015	09:30	Micro-purge by Double Valve Pump	yes	59.69	Initial	ml	--	14.99	216	7.34	6.87	-40.6	445
MP-51-164	01/29/2015	10:09	Micro-purge by Double Valve Pump	yes	NM	7000	ml	167	16.85	542	3.44	7.04	19.4	20.5
MP-51-164	01/29/2015	10:12	Micro-purge by Double Valve Pump	yes	NM	7500	ml	167	16.86	546	3.58	7.04	23.8	20.7
MP-51-164	01/29/2015	10:15	Micro-purge by Double Valve Pump	yes	NM	8000	ml	167	16.86	547	3.58	7.04	25.6	20.1
MP-51-213	01/29/2015	10:45	Micro-purge by Double Valve Pump	yes	59.98	Initial	ml	--	16.88	529	6.94	7.31	-9.2	446
MP-51-213	01/29/2015	11:19	Micro-purge by Double Valve Pump	yes	NM	4000	ml	100	17.42	554	10.76	7.10	84.3	max
MP-51-213	01/29/2015	11:24	Micro-purge by Double Valve Pump	yes	NM	4500	ml	100	17.49	554	10.84	7.10	87.3	max
MP-51-213	01/29/2015	11:29	Micro-purge by Double Valve Pump	yes	NM	5000	ml	100	17.47	556	10.89	7.10	87.2	max
MP-52-095	01/27/2015	12:59	Micro-purge by Double Valve Pump	yes	54.63	Initial	ml	--	17.12	481	8.53	7.83	74.7	8.21
MP-52-095	01/27/2015	13:26	Micro-purge by Double Valve Pump	yes	NM	4000	ml	125	17.68	480	6.39	7.12	88.5	7.81
MP-52-095	01/27/2015	13:30	Micro-purge by Double Valve Pump	yes	NM	4500	ml	125	17.73	481	6.44	7.12	91.0	6.77
MP-52-095	01/27/2015	13:34	Micro-purge by Double Valve Pump	yes	NM	5000	ml	125	17.78	481	6.45	7.12	92.3	5.89
MP-52-273	01/27/2015	11:05	Micro-purge by Double Valve Pump	yes	71.00	Initial	ml	--	17.80	496	6.98	7.29	-124.8	11.4
MP-52-273	01/27/2015	12:23	Micro-purge by Double Valve Pump	yes	NM	9000	ml	100	17.67	505	7.89	7.00	66.6	9.90
MP-52-273	01/27/2015	12:28	Micro-purge by Double Valve Pump	yes	NM	9500	ml	100	17.70	505	8.05	7.00	71.7	8.99
MP-52-273	01/27/2015	12:33	Micro-purge by Double Valve Pump	yes	NM	10000	ml	100	17.73	505	8.09	7.01	74.4	8.21
MW-16-082	01/06/2015	13:40	3 well vol. purge by Waterra Pump	no	59.27	Initial	gal	--	18.50	407	6.75	7.50	-39.4	173
MW-16-082	01/06/2015	13:44	3 well vol. purge by Waterra Pump	no	NM	2	gal	--	18.24	397	7.39	7.08	-17.4	57.3
MW-16-082	01/06/2015	13:47	3 well vol. purge by Waterra Pump	no	NM	4	gal	--	18.23	397	7.05	7.06	-16.4	23.2
MW-16-082	01/06/2015	13:50	3 well vol. purge by Waterra Pump	no	NM	6	gal	--	18.24	397	7.35	7.04	-15.4	27.4

TABLE B1

OFF-SITE MONITORING WELL PURGE DATA

2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Well	Sample Date	Sample Time	Purge Method	Micro Purge?	Depth to Water	Purge Volume	Purge Volume Units	Flow Rate (ml/min)	Temp (degC)	Specific Conductivity (µmhos/CM)	Dissolved Oxygen (mg/L)	pH (pH units)	Oxygen Reduction Potential (mV)	Turbidity (NTU)
MW-16-363	01/06/2015	10:00	3 well vol. purge by Waterra Pump	no	94.28	Initial	gal	--	18.03	454	3.58	7.31	130.1	7.21
MW-16-363	01/06/2015	10:15	3 well vol. purge by Waterra Pump	no	NM	12	gal	--	18.79	453	4.72	7.27	-28.1	22.4
MW-16-363	01/06/2015	10:27	3 well vol. purge by Waterra Pump	no	NM	24	gal	--	19.16	459	6.33	7.29	-29.4	18.0
MW-16-363	01/06/2015	10:44	3 well vol. purge by Waterra Pump	no	NM	36	gal	--	19.24	460	6.27	7.30	-28.4	7.26
MW-17-085	02/03/2015	13:56	3 well vol. purge by Waterra Pump	no	50.53	Initial	gal	--	19.06	408	7.33	6.95	121.4	max
MW-17-085	02/03/2015	14:00	3 well vol. purge by Waterra Pump	no	NM	4	gal	--	18.40	402	7.74	6.78	130.8	max
MW-17-085	02/03/2015	14:01	3 well vol. purge by Waterra Pump	no	NM	5	gal	--	18.37	402	7.66	6.79	133.0	max
MW-17-085	02/03/2015	14:02	3 well vol. purge by Waterra Pump	no	NM	6	gal	--	18.36	402	7.71	6.80	133.6	max
MW-26-342	01/26/2015	12:43	3 well vol. purge by Waterra Pump	no	84.48	Initial	gal	--	18.55	550	4.58	7.18	144.5	28.2
MW-26-342	01/26/2015	13:07	3 well vol. purge by Waterra Pump	no	NM	24	gal	--	18.77	553	4.62	7.15	132.3	8.58
MW-26-342	01/26/2015	13:13	3 well vol. purge by Waterra Pump	no	NM	30	gal	--	18.82	551	4.58	7.15	131.9	6.39
MW-26-342	01/26/2015	13:19	3 well vol. purge by Waterra Pump	no	NM	36	gal	--	18.80	551	4.57	7.16	128.9	6.14
MW-26-415	01/26/2015	11:22	3 well vol. purge by Waterra Pump	no	84.44	Initial	gal	--	19.41	540	7.27	7.39	187.3	40.4
MW-26-415	01/26/2015	12:02	3 well vol. purge by Waterra Pump	no	NM	36	gal	--	19.01	520	3.64	7.22	142.1	552
MW-26-415	01/26/2015	12:13	3 well vol. purge by Waterra Pump	no	NM	45	gal	--	18.99	516	3.77	7.21	137.6	458
MW-26-415	01/26/2015	12:24	3 well vol. purge by Waterra Pump	no	NM	54	gal	--	19.09	514	3.90	7.21	134.4	322
MW-26-415	05/28/2015	11:38	Micro-purge by Double Valve Pump	yes	NM	Initial	ml	225	19.93	543	9.56	7.16	-5.1	17.3
MW-26-415	05/28/2015	11:53	Micro-purge by Double Valve Pump	yes	NM	--	ml	225	18.40	499	2.12	7.23	-50.4	5.06
MW-26-415	05/28/2015	11:56	Micro-purge by Double Valve Pump	yes	NM	--	ml	225	18.36	503	1.79	7.26	-54.7	4.71
MW-26-415	05/28/2015	11:59	Micro-purge by Double Valve Pump	yes	NM	--	ml	225	18.39	504	1.76	7.27	-53.1	4.06
MW-29-352	01/26/2015	14:05	3 well vol. purge by Waterra Pump	no	85.25	Initial	gal	--	18.42	545	6.34	7.41	187.9	21.5
MW-29-352	01/26/2015	14:33	3 well vol. purge by Waterra Pump	no	NM	28	gal	--	18.59	537	5.45	7.24	172.9	23.5
MW-29-352	01/26/2015	14:40	3 well vol. purge by Waterra Pump	no	NM	35	gal	--	18.66	538	5.50	7.23	169.5	11.1
MW-29-352	01/26/2015	14:47	3 well vol. purge by Waterra Pump	no	NM	42	gal	--	18.69	537	5.48	7.23	167.2	11.3
MW-29-428	01/26/2015	16:05	3 well vol. purge by Waterra Pump	no	84.14	Initial	gal	--	17.38	592	4.20	7.43	192.4	16.2
MW-29-428	01/26/2015	16:41	3 well vol. purge by Waterra Pump	no	NM	36	gal	--	19.48	588	1.79	7.33	92.0	83.5
MW-29-428	01/26/2015	16:50	3 well vol. purge by Waterra Pump	no	NM	45	gal	--	19.50	587	1.78	7.32	87.0	65.9
MW-29-428	01/26/2015	16:59	3 well vol. purge by Waterra Pump	no	NM	54	gal	--	19.53	585	1.80	7.32	83.2	55.0
MW-29-428	05/28/2015	10:21	Micro-purge by Double Valve Pump	yes	86.21	Initial	ml	225	22.68	579	4.39	7.43	192.4	16.2
MW-29-428	05/28/2015	10:33	Micro-purge by Double Valve Pump	yes	NM	--	ml	225	22.62	577	4.61	7.33	92.0	83.5
MW-29-428	05/28/2015	10:36	Micro-purge by Double Valve Pump	yes	NM	--	ml	225	21.86	573	4.67	7.32	87.0	65.9
MW-29-428	05/28/2015	10:38	Micro-purge by Double Valve Pump	yes	NM	--	ml	225	21.66	573	4.61	7.32	83.2	55.0

TABLE B1

OFF-SITE MONITORING WELL PURGE DATA
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Well	Sample Date	Sample Time	Purge Method	Micro Purge?	Depth to Water	Purge Volume	Purge Volume Units	Flow Rate (ml/min)	Temp (degC)	Specific Conductivity (µmhos/CM)	Dissolved Oxygen (mg/L)	pH (pH units)	Oxygen Reduction Potential (mV)	Turbidity (NTU)
MW-52-347	01/15/2015	10:01	3 well vol. purge by Waterra Pump	no	80.73	Initial	gal	--	17.05	561	4.03	6.41	241.2	21.9
MW-52-347	01/15/2015	10:22	3 well vol. purge by Waterra Pump	no	NM	21	gal	--	18.69	562	5.98	7.02	187.2	2.58
MW-52-347	01/15/2015	10:29	3 well vol. purge by Waterra Pump	no	NM	28	gal	--	18.75	561	5.99	7.02	181.2	2.26
MW-52-347	01/15/2015	10:36	3 well vol. purge by Waterra Pump	no	NM	35	gal	--	18.77	561	6.03	7.02	176.1	1.74
MW-52-403	01/14/2015	13:14	3 well vol. purge by Waterra Pump	no	89.32	Initial	gal	--	19.01	518	5.92	7.21	178.9	30.4
MW-52-403	01/14/2015	13:50	3 well vol. purge by Waterra Pump	no	NM	24	gal	--	19.00	518	5.57	7.21	156.0	57.6
MW-52-403	01/14/2015	14:02	3 well vol. purge by Waterra Pump	no	NM	32	gal	--	19.17	517	5.62	7.21	153.8	69.2
MW-52-403	01/14/2015	14:14	3 well vol. purge by Waterra Pump	no	NM	40	gal	--	19.20	517	5.65	7.20	152.3	175
MW-53-044	01/19/2015	10:08	3 well vol. purge by Waterra Pump	no	36.78	Initial	gal	--	15.34	377	8.59	5.58	147.6	High
MW-53-044	01/19/2015	10:14	3 well vol. purge by Waterra Pump	no	NM	1.25	gal	--	18.08	370	7.95	6.41	79.1	High
MW-53-044	01/19/2015	10:15	3 well vol. purge by Waterra Pump	no	NM	1.50	gal	--	18.08	370	7.94	6.42	84.0	High
MW-53-044	01/19/2015	10:16	3 well vol. purge by Waterra Pump	no	NM	1.75	gal	--	18.11	370	7.98	6.43	82.1	High
MW-53-195	01/14/2015	15:57	3 well vol. purge by Waterra Pump	no	54.27	Initial	gal	--	19.12	88	6.16	7.44	165.8	20.7
MW-53-195	01/14/2015	16:09	3 well vol. purge by Waterra Pump	no	NM	12	gal	--	18.61	538	6.63	6.79	160.7	0.86
MW-53-195	01/14/2015	16:13	3 well vol. purge by Waterra Pump	no	NM	16	gal	--	18.62	537	6.59	6.79	158.6	0.90
MW-53-195	01/14/2015	16:17	3 well vol. purge by Waterra Pump	no	NM	20	gal	--	18.60	537	6.51	6.78	157.3	0.81
MW-53-264	01/14/2015	15:02	3 well vol. purge by Waterra Pump	no	71.52	Initial	gal	--	20.14	131	6.08	7.75	165.2	13.8
MW-53-264	01/14/2015	15:17	3 well vol. purge by Waterra Pump	no	NM	15	gal	--	19.08	479	6.47	6.94	155.3	74.6
MW-53-264	01/14/2015	15:22	3 well vol. purge by Waterra Pump	no	NM	20	gal	--	19.08	480	6.43	6.94	152.7	96.0
MW-53-264	01/14/2015	15:27	3 well vol. purge by Waterra Pump	no	NM	25	gal	--	19.08	481	6.41	6.94	151.1	107
MW-54-333	01/22/2015	12:19	3 well vol. purge by Waterra Pump	no	87.82	Initial	gal	--	17.17	159	5.49	6.97	194.2	26.6
MW-54-333	01/22/2015	12:40	3 well vol. purge by Waterra Pump	no	NM	21	gal	--	17.89	573	6.55	7.10	155.8	2.11
MW-54-333	01/22/2015	12:47	3 well vol. purge by Waterra Pump	no	NM	28	gal	--	17.87	573	6.55	7.10	154.4	2.31
MW-54-333	01/22/2015	12:54	3 well vol. purge by Waterra Pump	no	NM	35	gal	--	17.88	574	6.52	7.10	153.6	1.35
MW-54-400	01/22/2015	10:57	3 well vol. purge by Waterra Pump	no	90.65	Initial	gal	--	15.31	497	6.91	7.36	186.1	12.0
MW-54-400	01/22/2015	11:25	3 well vol. purge by Waterra Pump	no	NM	28	gal	--	18.00	497	3.35	7.26	168.7	16.4
MW-54-400	01/22/2015	11:32	3 well vol. purge by Waterra Pump	no	NM	35	gal	--	18.21	497	3.63	7.24	166.7	7.51
MW-54-400	01/22/2015	11:39	3 well vol. purge by Waterra Pump	no	NM	42	gal	--	18.11	496	3.89	7.22	164.2	4.09
MW-56-220	01/21/2015	15:50	3 well vol. purge by Waterra Pump	no	86.01	Initial	gal	--	17.48	560	4.58	7.21	110.5	14.4
MW-56-220	01/21/2015	16:02	3 well vol. purge by Waterra Pump	no	NM	12	gal	--	17.73	573	6.00	7.07	114.7	33.3
MW-56-220	01/21/2015	16:06	3 well vol. purge by Waterra Pump	no	NM	16	gal	--	17.74	573	6.02	7.07	116.0	15.7
MW-56-220	01/21/2015	16:10	3 well vol. purge by Waterra Pump	no	NM	20	gal	--	17.74	573	6.03	7.07	116.9	17.1

TABLE B1

OFF-SITE MONITORING WELL PURGE DATA
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Well	Sample Date	Sample Time	Purge Method	Micro Purge?	Depth to Water	Purge Volume	Purge Volume Units	Flow Rate (ml/min)	Temp (degC)	Specific Conductivity (µmhos/CM)	Dissolved Oxygen (mg/L)	pH (pH units)	Oxygen Reduction Potential (mV)	Turbidity (NTU)
MW-56-335	01/22/2015	09:48	3 well vol. purge by Waterra Pump	no	94.03	Initial	gal	--	13.64	488	7.67	6.94	240.1	6.48
MW-56-335	01/22/2015	10:09	3 well vol. purge by Waterra Pump	no	NM	21	gal	--	18.60	473	5.42	7.18	201.9	2.93
MW-56-335	01/22/2015	10:16	3 well vol. purge by Waterra Pump	no	NM	28	gal	--	18.54	473	5.41	7.18	197.2	2.72
MW-56-335	01/22/2015	10:23	3 well vol. purge by Waterra Pump	no	NM	35	gal	--	18.59	473	5.41	7.17	191.5	2.62
MW-56-433	01/21/2015	14:47	3 well vol. purge by Waterra Pump	no	92.49	Initial	gal	--	17.95	542	3.82	7.43	131.8	15.0
MW-56-433	01/21/2015	15:14	3 well vol. purge by Waterra Pump	no	NM	27	gal	--	18.96	558	0.53	7.24	101.0	High
MW-56-433	01/21/2015	15:23	3 well vol. purge by Waterra Pump	no	NM	36	gal	--	19.08	555	0.57	7.22	97.7	929
MW-56-433	01/21/2015	15:32	3 well vol. purge by Waterra Pump	no	NM	45	gal	--	19.12	552	0.60	7.22	94.1	801
MW-59-250	01/19/2015	16:04	3 well vol. purge by Waterra Pump	no	66.36	Initial	gal	--	16.99	457	6.52	7.10	89.6	45.4
MW-59-250	01/19/2015	16:24	3 well vol. purge by Waterra Pump	no	NM	20	gal	--	17.90	523	6.40	6.94	102.7	9.02
MW-59-250	01/19/2015	16:29	3 well vol. purge by Waterra Pump	no	NM	25	gal	--	17.86	522	6.38	6.93	106.5	5.91
MW-59-250	01/19/2015	16:34	3 well vol. purge by Waterra Pump	no	NM	30	gal	--	17.83	522	6.38	6.93	108.2	5.51
MW-59-345	01/21/2015	11:25	3 well vol. purge by Waterra Pump	no	77.25	Initial	gal	--	17.08	491	3.70	8.30	-206.4	14.0
MW-59-345	01/21/2015	11:49	3 well vol. purge by Waterra Pump	no	NM	24	gal	--	18.76	522	5.07	7.02	23.6	10.6
MW-59-345	01/21/2015	11:57	3 well vol. purge by Waterra Pump	no	NM	32	gal	--	18.80	522	5.12	7.02	38.5	10.4
MW-59-345	01/21/2015	12:05	3 well vol. purge by Waterra Pump	no	NM	40	gal	--	18.79	522	5.15	7.02	46.8	8.34
MW-59-386	01/19/2015	15:02	3 well vol. purge by Waterra Pump	no	76.99	Initial	gal	--	18.00	455	7.01	8.34	-38.8	14.1
MW-59-386	01/19/2015	15:34	3 well vol. purge by Waterra Pump	no	NM	32	gal	--	19.07	505	6.45	7.19	23.1	5.19
MW-59-386	01/19/2015	15:42	3 well vol. purge by Waterra Pump	no	NM	40	gal	--	19.05	505	6.51	7.18	30.6	4.27
MW-59-386	01/19/2015	15:50	3 well vol. purge by Waterra Pump	no	NM	48	gal	--	19.12	505	6.57	7.18	41.2	4.68
MW-60-082	01/20/2015	11:58	3 well vol. purge by Waterra Pump	no	48.10	Initial	gal	--	16.41	199	7.20	7.45	134.7	72.6
MW-60-082	01/20/2015	12:04	3 well vol. purge by Waterra Pump	no	NM	4	gal	--	17.35	463	7.54	6.89	133.3	17.6
MW-60-082	01/20/2015	12:06	3 well vol. purge by Waterra Pump	no	NM	5	gal	--	17.30	462	7.53	6.90	135.4	15.1
MW-60-082	01/20/2015	12:07	3 well vol. purge by Waterra Pump	no	NM	6	gal	--	17.32	460	7.49	6.89	138.1	14.9
MW-60-082	05/21/2015	13:00	Micro-purge by Double Valve Pump	yes	43.70	Initial	ml	200	19.45	382	8.56	7.72	-55.1	33.0
MW-60-082	05/21/2015	13:16	Micro-purge by Double Valve Pump	yes	NM	--	ml	--	17.84	398	6.01	7.00	-26.2	4.00
MW-60-082	05/21/2015	13:19	Micro-purge by Double Valve Pump	yes	NM	--	ml	--	17.82	399	6.06	7.01	-25.0	4.26
MW-60-082	05/21/2015	13:20	Micro-purge by Double Valve Pump	yes	NM	--	ml	--	17.82	399	6.07	7.01	-24.6	4.01
MW-60-180	01/12/2015	14:44	3 well vol. purge by Waterra Pump	no	48.72	Initial	gal	--	17.59	531	6.43	7.12	156.6	4.53
MW-60-180	01/12/2015	14:56	3 well vol. purge by Waterra Pump	no	NM	12	gal	--	17.66	529	7.00	6.93	145.9	2.56
MW-60-180	01/12/2015	15:00	3 well vol. purge by Waterra Pump	no	NM	16	gal	--	17.65	528	6.91	6.92	145.1	1.70
MW-60-180	01/12/2015	15:04	3 well vol. purge by Waterra Pump	no	NM	20	gal	--	17.66	528	6.91	6.92	144.8	129

TABLE B1

OFF-SITE MONITORING WELL PURGE DATA
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Well	Sample Date	Sample Time	Purge Method	Micro Purge?	Depth to Water	Purge Volume	Purge Volume Units	Flow Rate (ml/min)	Temp (degC)	Specific Conductivity (µmhos/CM)	Dissolved Oxygen (mg/L)	pH (pH units)	Oxygen Reduction Potential (mV)	Turbidity (NTU)
MW-60-220	01/13/2015	11:11	3 well vol. purge by Waterra Pump	no	66.44	Initial	gal	--	17.44	448	8.80	6.92	216.4	5.83
MW-60-220	01/13/2015	11:32	3 well vol. purge by Waterra Pump	no	NM	12	gal	--	17.38	478	6.35	6.89	180.2	1.06
MW-60-220	01/13/2015	11:40	3 well vol. purge by Waterra Pump	no	NM	16	gal	--	17.55	477	6.43	6.89	175.6	0.81
MW-60-220	01/13/2015	11:50	3 well vol. purge by Waterra Pump	no	NM	20	gal	--	17.61	477	6.34	6.90	170.3	0.41
MW-60-270	01/13/2015	12:16	3 well vol. purge by Waterra Pump	no	70.28	Initial	gal	--	17.32	482	3.92	6.99	167.5	7.00
MW-60-270	01/13/2015	12:38	3 well vol. purge by Waterra Pump	no	NM	15	gal	--	17.77	487	7.26	7.07	152.8	2.52
MW-60-270	01/13/2015	12:45	3 well vol. purge by Waterra Pump	no	NM	20	gal	--	17.78	487	7.23	7.07	151.6	1.87
MW-60-270	01/13/2015	12:52	3 well vol. purge by Waterra Pump	no	NM	25	gal	--	17.82	486	7.17	7.07	150.4	1.57
MW-60-300	01/14/2015	09:17	3 well vol. purge by Waterra Pump	no	68.73	Initial	gal	--	13.53	417	4.08	7.51	232.8	11.4
MW-60-300	01/14/2015	09:37	3 well vol. purge by Waterra Pump	no	NM	20	gal	--	17.57	457	6.47	7.10	203.6	1.26
MW-60-300	01/14/2015	09:42	3 well vol. purge by Waterra Pump	no	NM	25	gal	--	17.61	458	6.44	7.08	199.9	1.26
MW-60-300	01/14/2015	09:47	3 well vol. purge by Waterra Pump	no	NM	30	gal	--	17.65	457	6.47	7.07	196.6	1.18
MW-60-345	01/13/2015	13:12	3 well vol. purge by Waterra Pump	no	71.93	Initial	gal	--	17.78	190	6.53	6.91	170.3	52.8
MW-60-345	01/13/2015	13:45	3 well vol. purge by Waterra Pump	no	NM	21	gal	--	17.95	470	7.32	7.05	145.7	0.97
MW-60-345	01/13/2015	13:56	3 well vol. purge by Waterra Pump	no	NM	28	gal	--	18.02	472	7.33	7.05	146.1	1.23
MW-60-345	01/13/2015	14:07	3 well vol. purge by Waterra Pump	no	NM	35	gal	--	18.01	473	7.89	7.06	145.0	0.86
MW-61-047	01/20/2015	10:04	3 well vol. purge by Waterra Pump	no	33.95	Initial	gal	--	11.79	441	9.30	5.91	273.5	131
MW-61-047	01/20/2015	10:08	3 well vol. purge by Waterra Pump	no	NM	1.5	gal	--	16.80	438	7.29	6.56	206.6	392
MW-61-047	01/20/2015	10:10	3 well vol. purge by Waterra Pump	no	NM	2.0	gal	--	16.88	437	7.31	6.59	205.0	414
MW-61-047	01/20/2015	10:11	3 well vol. purge by Waterra Pump	no	NM	2.5	gal	--	16.92	437	7.27	6.59	204.2	416
MW-61-056	01/15/2015	15:02	3 well vol. purge by Waterra Pump	no	33.94	Initial	gal	--	19.97	436	7.96	7.72	145.5	High
MW-61-056	01/15/2015	15:08	3 well vol. purge by Waterra Pump	no	NM	2.5	gal	--	18.52	428	7.27	6.58	151.0	High
MW-61-056	01/15/2015	15:09	3 well vol. purge by Waterra Pump	no	NM	3.0	gal	--	18.50	429	7.32	6.52	153.0	High
MW-61-056	01/15/2015	15:10	3 well vol. purge by Waterra Pump	no	NM	3.5	gal	--	18.50	428	7.33	6.50	152.8	High
MW-62-041	01/15/2015	15:41	3 well vol. purge by Waterra Pump	no	33.98	Initial	gal	--	18.46	438	7.51	7.03	175.5	82.5
MW-62-041	01/15/2015	15:47	3 well vol. purge by Waterra Pump	no	NM	1.00	gal	--	18.41	418	6.82	6.48	175.2	61.8
MW-62-041	01/15/2015	15:48	3 well vol. purge by Waterra Pump	no	NM	1.25	gal	--	18.39	418	6.86	6.48	174.0	70.5
MW-62-041	01/15/2015	15:49	3 well vol. purge by Waterra Pump	no	NM	1.50	gal	--	18.35	418	6.86	6.43	175.0	72.5
MW-63-080	01/13/2015	16:12	3 well vol. purge by Waterra Pump	no	50.10	Initial	gal	--	17.38	432	8.14	7.54	166.4	12.8
MW-63-080	01/13/2015	16:18	3 well vol. purge by Waterra Pump	no	NM	3	gal	--	17.69	376	7.07	6.97	161.6	High
MW-63-080	01/13/2015	16:20	3 well vol. purge by Waterra Pump	no	NM	4	gal	--	17.62	376	7.05	6.95	161.0	High
MW-63-080	01/13/2015	16:22	3 well vol. purge by Waterra Pump	no	NM	5	gal	--	17.57	376	7.05	6.94	160.7	High

TABLE B1

OFF-SITE MONITORING WELL PURGE DATA
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Well	Sample Date	Sample Time	Purge Method	Micro Purge?	Depth to Water	Purge Volume	Purge Volume Units	Flow Rate (ml/min)	Temp (degC)	Specific Conductivity (µmhos/CM)	Dissolved Oxygen (mg/L)	pH (pH units)	Oxygen Reduction Potential (mV)	Turbidity (NTU)
MW-64-082	01/13/2015	10:19	3 well vol. purge by Waterra Pump	no	47.33	Initial	gal	--	15.30	437	7.26	7.95	233.6	17.3
MW-64-082	01/13/2015	10:23	3 well vol. purge by Waterra Pump	no	NM	4	gal	--	17.32	365	7.41	6.85	237.0	23.9
MW-64-082	01/13/2015	10:25	3 well vol. purge by Waterra Pump	no	NM	6	gal	--	17.38	364	7.38	6.79	238.8	19.8
MW-64-082	01/13/2015	10:27	3 well vol. purge by Waterra Pump	no	NM	8	gal	--	17.27	366	7.45	6.72	240.6	18.4
MW-65-087	01/15/2015	16:32	3 well vol. purge by Waterra Pump	no	47.63	Initial	gal	--	16.79	77	6.22	6.70	168.0	48.3
MW-65-087	01/15/2015	16:39	3 well vol. purge by Waterra Pump	no	NM	4	gal	--	17.01	382	7.17	6.60	160.7	8.33
MW-65-087	01/15/2015	16:41	3 well vol. purge by Waterra Pump	no	NM	5	gal	--	17.03	382	7.19	6.61	159.3	7.16
MW-65-087	01/15/2015	16:43	3 well vol. purge by Waterra Pump	no	NM	6	gal	--	17.06	382	7.17	6.62	158.4	5.14
MW-66-245	01/22/2015	16:02	3 well vol. purge by Waterra Pump	no	70.34	Initial	gal	--	16.66	516	5.06	7.13	160.7	9.8
MW-66-245	01/22/2015	16:17	3 well vol. purge by Waterra Pump	no	NM	15	gal	--	17.96	520	7.51	7.02	156.2	202
MW-66-245	01/22/2015	16:22	3 well vol. purge by Waterra Pump	no	NM	20	gal	--	17.95	520	7.48	7.02	156.7	188
MW-66-245	01/22/2015	16:27	3 well vol. purge by Waterra Pump	no	NM	25	gal	--	17.94	520	7.48	7.01	157.2	197
MW-66-390	01/30/2015	11:57	3 well vol. purge by Waterra Pump	no	87.51	Initial	gal	--	15.47	484	6.70	7.43	145.6	39.3
MW-66-390	01/30/2015	13:11	3 well vol. purge by Waterra Pump	no	NM	28	gal	--	18.52	476	1.80	7.27	122.7	High
MW-66-390	01/30/2015	13:30	3 well vol. purge by Waterra Pump	no	NM	35	gal	--	18.56	475	1.77	7.25	123.8	842
MW-66-390	01/30/2015	13:49	3 well vol. purge by Waterra Pump	no	NM	42	gal	--	18.66	476	1.73	7.26	122.6	872
MW-71-075	01/21/2015	13:01	Micro-purge by Double Valve Pump	yes	48.03	Initial	ml	--	18.03	411	7.13	7.07	100.6	3.53
MW-71-075	01/21/2015	13:08	Micro-purge by Double Valve Pump	yes	NM	2500	ml	500	17.36	413	7.06	6.85	104.2	1.56
MW-71-075	01/21/2015	13:10	Micro-purge by Double Valve Pump	yes	NM	3000	ml	500	17.38	413	7.06	6.85	104.2	1.43
MW-71-075	01/21/2015	13:12	Micro-purge by Double Valve Pump	yes	NM	3500	ml	500	17.42	413	7.04	6.85	103.9	0.79
MW-71-115	01/21/2015	12:34	Micro-purge by Double Valve Pump	yes	48.72	Initial	ml	--	17.38	496	5.74	7.06	91.1	5.86
MW-71-115	01/21/2015	12:42	Micro-purge by Double Valve Pump	yes	NM	2000	ml	250	17.45	526	4.48	6.82	94.5	1.63
MW-71-115	01/21/2015	12:44	Micro-purge by Double Valve Pump	yes	NM	2500	ml	250	17.46	525	4.49	6.82	94.8	1.26
MW-71-115	01/21/2015	12:46	Micro-purge by Double Valve Pump	yes	NM	3000	ml	250	17.52	523	4.47	6.82	95.2	--
MW-72-070	01/20/2015	11:08	3 well vol. purge by Waterra Pump	no	44.61	Initial	gal	--	14.39	388	6.55	7.21	197.3	150
MW-72-070	01/20/2015	11:11	3 well vol. purge by Waterra Pump	no	NM	3	gal	--	17.74	343	6.76	6.77	195.9	9.29
MW-72-070	01/20/2015	11:13	3 well vol. purge by Waterra Pump	no	NM	4	gal	--	17.75	343	6.76	6.76	193.5	7.37
MW-72-070	01/20/2015	11:14	3 well vol. purge by Waterra Pump	no	NM	5	gal	--	17.77	343	6.76	6.75	192.1	6.71
MW-72-145	01/12/2015	15:38	3 well vol. purge by Waterra Pump	no	48.38	Initial	gal	--	17.51	304	6.65	7.11	155.1	44.2
MW-72-145	01/12/2015	15:47	3 well vol. purge by Waterra Pump	no	NM	9	gal	--	18.13	617	5.67	6.68	150.8	1.29
MW-72-145	01/12/2015	15:50	3 well vol. purge by Waterra Pump	no	NM	12	gal	--	18.12	618	5.70	6.67	151.0	1.01
MW-72-145	01/12/2015	15:53	3 well vol. purge by Waterra Pump	no	NM	15	gal	--	18.11	618	5.66	6.67	151.5	0.69

TABLE B1

OFF-SITE MONITORING WELL PURGE DATA
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Olin Site
Morgan Hill, California

Well	Sample Date	Sample Time	Purge Method	Micro Purge?	Depth to Water	Purge Volume	Purge Volume Units	Flow Rate (ml/min)	Temp (degC)	Specific Conductivity (µmhos/CM)	Dissolved Oxygen (mg/L)	pH (pH units)	Oxygen Reduction Potential (mV)	Turbidity (NTU)
MW-73-315	01/21/2015	10:18	3 well vol. purge by Waterra Pump	no	67.49	Initial	gal	--	14.95	575	5.11	7.10	132.9	18.3
MW-73-315	01/21/2015	10:42	3 well vol. purge by Waterra Pump	no	NM	24	gal	--	18.65	568	5.96	7.12	122.4	3.14
MW-73-315	01/21/2015	10:48	3 well vol. purge by Waterra Pump	no	NM	30	gal	--	18.67	568	5.96	7.12	123.8	2.11
MW-73-315	01/21/2015	10:54	3 well vol. purge by Waterra Pump	no	NM	36	gal	--	18.66	568	5.98	7.12	124.3	2.09
MW-73-395	01/21/2015	09:33	Micro-purge by Double Valve Pump	yes	79.02	Initial	ml	--	15.83	545	4.60	6.93	-2.9	1.56
MW-73-395	01/21/2015	09:51	Micro-purge by Double Valve Pump	yes	NM	3500	ml	167	16.60	552	2.15	7.20	66.1	0.67
MW-73-395	01/21/2015	09:54	Micro-purge by Double Valve Pump	yes	NM	4000	ml	167	16.65	552	2.23	7.20	70.2	0.48
MW-73-395	01/21/2015	09:57	Micro-purge by Double Valve Pump	yes	NM	4500	ml	167	16.66	552	2.23	7.20	72.9	0.46
MW-74-084	01/19/2015	12:05	3 well vol. purge by Waterra Pump	no	56.28	Initial	gal	--	16.47	473	8.25	7.11	163.8	11.0
MW-74-084	01/19/2015	12:09	3 well vol. purge by Waterra Pump	no	NM	3	gal	--	17.65	481	6.62	6.79	171.4	17.0
MW-74-084	01/19/2015	12:10	3 well vol. purge by Waterra Pump	no	NM	4	gal	--	17.55	479	6.64	6.82	169.4	14.5
MW-74-084	01/19/2015	12:11	3 well vol. purge by Waterra Pump	no	NM	5	gal	--	17.58	479	6.62	6.80	169.6	10.7
MW-74-084	05/20/2015	13:34	Micro-purge by Double Valve Pump	yes	51.84	Initial	ml	200	19.53	415	9.42	7.37	129.6	7.30
MW-74-084	05/20/2015	13:47	Micro-purge by Double Valve Pump	yes	NM	--	ml	200	18.76	410	6.59	6.82	118.5	5.03
MW-74-084	05/20/2015	13:51	Micro-purge by Double Valve Pump	yes	NM	--	ml	200	18.80	410	6.86	6.85	116.0	5.02
MW-74-084	05/20/2015	13:54	Micro-purge by Double Valve Pump	yes	NM	--	ml	200	18.79	410	6.87	6.86	115.3	5.00
MW-74-142	01/19/2015	11:22	3 well vol. purge by Waterra Pump	no	57.86	Initial	gal	--	17.61	536	8.30	6.64	173.3	7.77
MW-74-142	01/19/2015	11:31	3 well vol. purge by Waterra Pump	no	NM	9	gal	--	17.75	533	8.08	6.85	161.9	3.87
MW-74-142	01/19/2015	11:34	3 well vol. purge by Waterra Pump	no	NM	12	gal	--	17.75	533	8.03	6.85	161.4	3.86
MW-74-142	01/19/2015	11:37	3 well vol. purge by Waterra Pump	no	NM	15	gal	--	17.75	533	8.07	6.85	160.9	3.24
MW-74-142	05/20/2015	14:00	Micro-purge by Double Valve Pump	yes	53.09	Initial	ml	200	18.88	467	5.29	7.07	108.4	9.62
MW-74-142	05/20/2015	14:14	Micro-purge by Double Valve Pump	yes	NM	--	ml	200	18.48	473	5.68	6.73	117.5	4.21
MW-74-142	05/20/2015	14:17	Micro-purge by Double Valve Pump	yes	NM	--	ml	200	18.47	473	5.66	6.73	117.0	4.59
MW-74-142	05/20/2015	14:19	Micro-purge by Double Valve Pump	yes	NM	--	ml	200	18.46	473	5.64	6.76	116.8	5.03
MW-75-085	01/19/2015	13:55	3 well vol. purge by Waterra Pump	no	61.44	Initial	gal	--	17.83	532	7.22	7.18	170.3	541
MW-75-085	01/19/2015	13:58	3 well vol. purge by Waterra Pump	no	NM	3	gal	--	17.48	527	7.37	7.03	176.1	51.6
MW-75-085	01/19/2015	13:59	3 well vol. purge by Waterra Pump	no	NM	4	gal	--	17.50	526	7.45	7.02	174.8	42.0
MW-75-085	01/19/2015	14:00	3 well vol. purge by Waterra Pump	no	NM	5	gal	--	17.42	524	7.65	7.03	173.3	39.8
MW-75-085	05/21/2015	10:40	Micro-purge by Double Valve Pump	yes	55.76	Initial	ml	200	19.55	467	8.42	7.71	39.9	23.8
MW-75-085	05/21/2015	10:53	Micro-purge by Double Valve Pump	yes	NM	--	ml	--	17.90	473	5.74	7.33	7.8	4.02
MW-75-085	05/21/2015	10:56	Micro-purge by Double Valve Pump	yes	NM	--	ml	--	17.87	469	5.72	7.32	7.2	4.00
MW-75-085	05/21/2015	10:59	Micro-purge by Double Valve Pump	yes	NM	--	ml	--	17.88	470	5.72	7.32	7.3	4.06

TABLE B1

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Olin Site
Morgan Hill, California

Well	Sample Date	Sample Time	Purge Method	Micro Purge?	Depth to Water	Purge Volume	Purge Volume Units	Flow Rate (ml/min)	Temp (degC)	Specific Conductivity (µmhos/CM)	Dissolved Oxygen (mg/L)	pH (pH units)	Oxygen Reduction Potential (mV)	Turbidity (NTU)
MW-75-120	01/19/2015	13:18	3 well vol. purge by Waterra Pump	no	61.24	Initial	gal	--	17.60	510	5.84	7.33	168.0	11.2
MW-75-120	01/19/2015	13:24	3 well vol. purge by Waterra Pump	no	NM	6	gal	--	17.49	515	6.84	6.84	182.2	14.4
MW-75-120	01/19/2015	13:26	3 well vol. purge by Waterra Pump	no	NM	8	gal	--	17.48	514	6.87	6.87	179.3	13.6
MW-75-120	01/19/2015	13:28	3 well vol. purge by Waterra Pump	no	NM	10	gal	--	17.49	513	6.90	6.89	177.2	12.5
MW-75-120	05/21/2015	11:10	Micro-purge by Double Valve Pump	yes	55.95	Initial	ml	200	17.74	457	5.04	7.31	34.6	23.6
MW-75-120	05/21/2015	11:21	Micro-purge by Double Valve Pump	yes	NM	--	ml	--	17.61	454	6.32	7.04	15.0	4.03
MW-75-120	05/21/2015	11:24	Micro-purge by Double Valve Pump	yes	NM	--	ml	--	17.55	454	6.32	7.04	13.6	4.00
MW-75-120	05/21/2015	11:26	Micro-purge by Double Valve Pump	yes	NM	--	ml	--	17.56	454	6.31	7.04	13.6	4.00
PMW-04-090	01/20/2015	15:30	Micro-purge by Double Valve Pump	yes	52.11	Initial	ml	--	18.14	535	3.87	7.25	132.2	3.23
PMW-04-090	01/20/2015	15:30	Micro-purge by Double Valve Pump	yes	NM	3000	ml	~250	17.95	534	4.60	7.08	144.6	0.28
PMW-04-090	01/20/2015	15:30	Micro-purge by Double Valve Pump	yes	NM	3500	ml	~500	17.85	534	4.60	7.07	144.8	0.28
PMW-04-090	01/20/2015	15:30	Micro-purge by Double Valve Pump	yes	NM	4000	ml	~250	17.91	534	4.55	7.08	144.6	0.26
PMW-04-125	01/12/2015	13:00	3 well vol. purge by Waterra Pump	no	52.13	Initial	gal	--	18.62	533	6.33	7.48	128.6	6.49
PMW-04-125	01/12/2015	13:10	3 well vol. purge by Waterra Pump	no	NM	6	gal	--	17.11	537	4.98	7.11	139.5	0.88
PMW-04-125	01/12/2015	13:13	3 well vol. purge by Waterra Pump	no	NM	8	gal	--	17.65	538	4.97	7.10	139.5	0.66
PMW-04-125	01/12/2015	13:16	3 well vol. purge by Waterra Pump	no	NM	10	gal	--	17.60	538	4.96	7.09	139.3	0.89
PMW-04-225	01/14/2015	11:30	3 well vol. purge by Waterra Pump	no	68.61	Initial	gal	--	17.35	511	4.17	7.06	179.0	13.2
PMW-04-225	01/14/2015	11:40	3 well vol. purge by Waterra Pump	no	NM	15	gal	--	17.97	509	6.47	6.97	159.6	96.0
PMW-04-225	01/14/2015	11:45	3 well vol. purge by Waterra Pump	no	NM	20	gal	--	17.96	509	6.47	6.97	158.7	87.2
PMW-04-225	01/14/2015	11:50	3 well vol. purge by Waterra Pump	no	NM	25	gal	--	17.98	509	6.51	6.97	157.8	84.3
PMW-04-255	01/12/2015	13:47	3 well vol. purge by Waterra Pump	no	68.50	Initial	gal	--	17.71	533	4.43	7.11	148.6	4.26
PMW-04-255	01/12/2015	14:02	3 well vol. purge by Waterra Pump	no	NM	15	gal	--	18.39	535	6.92	7.03	142.1	1.04
PMW-04-255	01/12/2015	14:07	3 well vol. purge by Waterra Pump	no	NM	20	gal	--	18.42	533	6.90	7.03	142.2	1.12
PMW-04-255	01/12/2015	14:12	3 well vol. purge by Waterra Pump	no	NM	25	gal	--	18.45	533	6.90	7.02	142.6	1.05
PMW-04-312	01/14/2015	10:32	3 well vol. purge by Waterra Pump	no	72.23	Initial	gal	--	16.78	566	2.95	6.93	205.3	24.0
PMW-04-312	01/14/2015	10:57	3 well vol. purge by Waterra Pump	no	NM	25	gal	--	18.54	574	5.37	7.09	156.6	8.31
PMW-04-312	01/14/2015	11:02	3 well vol. purge by Waterra Pump	no	NM	30	gal	--	18.53	574	5.35	7.09	156.1	8.15
PMW-04-312	01/14/2015	11:07	3 well vol. purge by Waterra Pump	no	NM	35	gal	--	18.59	574	5.37	7.09	154.8	7.60
PMW-05-090	01/13/2015	15:19	3 well vol. purge by Waterra Pump	no	50.38	Initial	gal	--	17.84	465	7.89	7.52	166.3	7.63
PMW-05-090	01/13/2015	15:34	3 well vol. purge by Waterra Pump	no	NM	4.0	gal	--	17.66	440	7.29	6.95	156.4	7.89
PMW-05-090	01/13/2015	15:37	3 well vol. purge by Waterra Pump	no	NM	5.0	gal	--	17.63	441	7.31	6.94	154.3	5.18
PMW-05-090	01/13/2015	15:40	3 well vol. purge by Waterra Pump	no	NM	6.0	gal	--	17.63	441	7.35	6.94	153.0	5.11

TABLE B1

OFF-SITE MONITORING WELL PURGE DATA
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Well	Sample Date	Sample Time	Purge Method	Micro Purge?	Depth to Water	Purge Volume	Purge Volume Units	Flow Rate (ml/min)	Temp (degC)	Specific Conductivity (µmhos/CM)	Dissolved Oxygen (mg/L)	pH (pH units)	Oxygen Reduction Potential (mV)	Turbidity (NTU)
PMW-05-090	05/21/2015	12:02	Micro-purge by Double Valve Pump	yes	43.44	Initial	ml	200	19.01	407	4.49	7.48	34.8	13.3
PMW-05-090	05/21/2015	12:13	Micro-purge by Double Valve Pump	yes	NM	--	ml	--	17.93	417	5.90	6.98	9.5	4.00
PMW-05-090	05/21/2015	12:16	Micro-purge by Double Valve Pump	yes	NM	--	ml	--	18.06	416	5.90	6.97	8.9	3.21
PMW-05-090	05/21/2015	12:19	Micro-purge by Double Valve Pump	yes	NM	--	ml	--	18.02	416	5.91	6.97	7.7	3.00
PMW-05-305	01/20/2015	16:17	Micro-purge by Double Valve Pump	yes	67.89	Initial	ml	--	17.44	455	3.90	7.23	169.7	0.72
PMW-05-305	01/20/2015	16:31	Micro-purge by Double Valve Pump	yes	NM	3500	ml	250	17.32	454	1.79	7.22	79.6	0.37
PMW-05-305	01/20/2015	16:33	Micro-purge by Double Valve Pump	yes	NM	4000	ml	250	17.29	454	2.04	7.20	86.2	0.36
PMW-05-305	01/20/2015	16:35	Micro-purge by Double Valve Pump	yes	NM	4500	ml	250	17.28	455	2.04	7.19	88.4	0.31
PMW-05-305	05/21/2015	12:25	Micro-purge by Double Valve Pump	yes	68.85	Initial	ml	250	18.28	393	7.92	7.20	-2.5	18.3
PMW-05-305	05/21/2015	12:41	Micro-purge by Double Valve Pump	yes	NM	--	ml	--	17.69	387	1.42	7.21	-20.2	4.44
PMW-05-305	05/21/2015	12:45	Micro-purge by Double Valve Pump	yes	NM	--	ml	--	17.71	387	1.66	7.19	-19.5	4.06
PMW-05-305	05/21/2015	12:47	Micro-purge by Double Valve Pump	yes	NM	--	ml	--	17.71	388	1.69	7.19	-18.6	4.00
PMW-06-416	02/03/2015	11:03	3 well vol. purge by Waterra Pump	no	97.40	Initial	gal	--	17.41	178	3.32	6.76	-110.6	73.3
PMW-06-416	02/03/2015	11:31	3 well vol. purge by Waterra Pump	no	NM	28	gal	--	18.97	558	4.71	7.27	29.4	67.0
PMW-06-416	02/03/2015	11:38	3 well vol. purge by Waterra Pump	no	NM	35	gal	--	19.00	560	4.93	7.26	39.2	55.6
PMW-06-416	02/03/2015	11:45	3 well vol. purge by Waterra Pump	no	NM	42	gal	--	19.03	561	5.09	7.26	45.4	45.5
PMW-06-416	05/27/2015	09:58	Micro-purge by Double Valve Pump	yes	103.80	Initial	ml	250	18.19	545	6.62	6.94	21.6	7.23
PMW-06-416	05/27/2015	10:15	Micro-purge by Double Valve Pump	yes	NM	--	ml	225	17.99	466	0.91	7.32	-30.5	19.8
PMW-06-416	05/27/2015	10:18	Micro-purge by Double Valve Pump	yes	NM	--	ml	225	18.04	467	0.96	7.32	-31.9	15.6
PMW-06-416	05/27/2015	10:20	Micro-purge by Double Valve Pump	yes	NM	--	ml	225	18.05	468	0.77	7.33	-32.2	15.0
PMW-06-445	02/03/2015	12:05	3 well vol. purge by Waterra Pump	no	97.34	Initial	gal	--	17.47	257	2.50	9.09	-137.8	30.0
PMW-06-445	02/03/2015	12:37	3 well vol. purge by Waterra Pump	no	NM	32	gal	--	19.27	569	6.72	7.23	68.1	254
PMW-06-445	02/03/2015	12:45	3 well vol. purge by Waterra Pump	no	NM	40	gal	--	19.33	569	6.80	7.23	75.8	315
PMW-06-445	02/03/2015	12:53	3 well vol. purge by Waterra Pump	no	NM	48	gal	--	19.36	568	6.87	7.22	81.5	316
PMW-06-445	05/27/2015	10:25	Micro-purge by Double Valve Pump	yes	106.70	Initial	ml	225	17.19	505	6.33	7.58	12.2	6.02
PMW-06-445	05/27/2015	10:51	Micro-purge by Double Valve Pump	yes	NM	--	ml	225	17.25	506	3.97	7.27	-19.7	18.4
PMW-06-445	05/27/2015	10:54	Micro-purge by Double Valve Pump	yes	NM	--	ml	225	17.24	505	3.98	7.26	-20.3	19.0
PMW-06-445	05/27/2015	10:57	Micro-purge by Double Valve Pump	yes	NM	--	ml	225	17.27	505	3.97	7.25	-21.0	16.8
PZ-02-315	01/16/2015	09:01	3 well vol. purge by Waterra Pump	no	86.04	Initial	gal	--	16.14	545	6.40	6.84	225.3	5.14
PZ-02-315	01/16/2015	09:22	3 well vol. purge by Waterra Pump	no	NM	21	gal	--	18.62	543	5.51	7.14	194.9	66.6
PZ-02-315	01/16/2015	09:29	3 well vol. purge by Waterra Pump	no	NM	28	gal	--	18.64	543	5.55	7.15	192.4	29.30
PZ-02-315	01/16/2015	09:36	3 well vol. purge by Waterra Pump	no	NM	35	gal	--	18.66	543	5.56	7.14	189.1	NM

TABLE B1

OFF-SITE MONITORING WELL PURGE DATA
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Well	Sample Date	Sample Time	Purge Method	Micro Purge?	Depth to Water	Purge Volume	Purge Volume Units	Flow Rate (ml/min)	Temp (degC)	Specific Conductivity (µmhos/CM)	Dissolved Oxygen (mg/L)	pH (pH units)	Oxygen Reduction Potential (mV)	Turbidity (NTU)
PZ-02-415	01/20/2015	14:27	Micro-purge by Double Valve Pump	yes	97.26	Initial	ml	--	17.29	566	2.70	7.52	104.4	0.64
PZ-02-415	01/20/2015	14:42	Micro-purge by Double Valve Pump	yes	NM	2500	ml	~167	17.20	569	3.66	7.18	148.8	1.26
PZ-02-415	01/20/2015	14:45	Micro-purge by Double Valve Pump	yes	NM	3000	ml	~167	17.22	569	3.68	7.18	149.7	0.84
PZ-02-415	01/20/2015	14:48	Micro-purge by Double Valve Pump	yes	NM	3500	ml	~167	17.21	569	3.72	7.19	150.3	0.72
PZ-02-415	05/27/2015	12:43	Micro-purge by Double Valve Pump	yes	104.38	Initial	ml	220	18.81	526	9.72	7.10	34.7	3.06
PZ-02-415	05/27/2015	12:59	Micro-purge by Double Valve Pump	yes	NM	--	ml	220	17.89	487	3.33	7.21	-48.8	7.03
PZ-02-415	05/27/2015	13:02	Micro-purge by Double Valve Pump	yes	NM	--	ml	220	17.90	487	3.92	7.22	-47.4	6.06
PZ-02-415	05/27/2015	13:04	Micro-purge by Double Valve Pump	yes	NM	--	ml	220	17.87	486	3.89	7.23	-47.9	6.00
PZ-03-325	01/16/2015	13:04	3 well vol. purge by Waterra Pump	no	97.74	Initial	gal	--	17.72	541	6.21	7.25	-26.4	18.6
PZ-03-325	01/16/2015	13:25	3 well vol. purge by Waterra Pump	no	NM	21	gal	--	18.79	531	2.07	7.15	37.8	164
PZ-03-325	01/16/2015	13:32	3 well vol. purge by Waterra Pump	no	NM	28	gal	--	18.83	530	2.19	7.15	55.5	115
PZ-03-325	01/16/2015	13:39	3 well vol. purge by Waterra Pump	no	NM	35	gal	--	18.83	529	2.26	7.14	66.9	102
PZ-03-427	01/16/2015	11:33	3 well vol. purge by Waterra Pump	no	107.03	Initial	gal	--	17.55	562	2.69	7.01	189.4	17.7
PZ-03-427	01/16/2015	12:09	3 well vol. purge by Waterra Pump	no	NM	32	gal	--	19.00	559	3.90	7.16	166.1	574
PZ-03-427	01/16/2015	12:18	3 well vol. purge by Waterra Pump	no	NM	40	gal	--	19.06	558	3.89	7.17	166.9	81.8
PZ-03-427	01/16/2015	12:27	3 well vol. purge by Waterra Pump	no	NM	48	gal	--	19.15	557	3.90	7.17	165.6	43.6
PZ-03-427	05/29/2015	09:25	Micro-purge by Double Valve Pump	yes	114.24	Initial	ml	225	18.52	612	9.43	6.81	11.6	17.1
PZ-03-427	05/29/2015	09:39	Micro-purge by Double Valve Pump	yes	NM	--	ml	225	18.27	493	3.53	7.06	-16.1	6.23
PZ-03-427	05/29/2015	09:42	Micro-purge by Double Valve Pump	yes	NM	--	ml	225	18.26	490	3.43	7.09	-19.0	6.03
PZ-03-427	05/29/2015	09:44	Micro-purge by Double Valve Pump	yes	NM	--	ml	225	18.27	489	3.43	7.10	-19.6	6.02
PZ-04-335	01/16/2015	10:16	3 well vol. purge by Waterra Pump	no	83.95	Initial	gal	--	17.60	125	4.30	7.08	209.0	34.5
PZ-04-335	01/16/2015	10:37	3 well vol. purge by Waterra Pump	no	NM	21	gal	--	19.08	537	5.78	7.08	173.4	1.46
PZ-04-335	01/16/2015	10:44	3 well vol. purge by Waterra Pump	no	NM	28	gal	--	19.10	533	5.80	7.08	170.8	1.14
PZ-04-335	01/16/2015	10:51	3 well vol. purge by Waterra Pump	no	NM	35	gal	--	19.13	529	5.82	7.08	169.2	0.90
PZ-04-335	05/27/2015	13:53	Micro-purge by Double Valve Pump	yes	NM	Initial	ml	220	19.98	460	9.88	7.22	18.0	16.3
PZ-04-335	05/27/2015	14:09	Micro-purge by Double Valve Pump	yes	NM	--	ml	220	19.41	460	7.07	7.11	-3.9	4.61
PZ-04-335	05/27/2015	14:12	Micro-purge by Double Valve Pump	yes	NM	--	ml	220	19.32	460	6.41	7.11	-8.2	4.07
PZ-04-335	05/27/2015	14:14	Micro-purge by Double Valve Pump	yes	NM	--	ml	220	19.33	460	6.39	7.11	-8.4	4.00
PZ-05-339	01/15/2015	13:05	3 well vol. purge by Waterra Pump	no	85.56	Initial	gal	--	17.73	565	0.86	7.08	91.0	4.92
PZ-05-339	01/15/2015	13:29	3 well vol. purge by Waterra Pump	no	NM	24	gal	--	18.89	569	5.70	7.15	104.5	2.53
PZ-05-339	01/15/2015	13:35	3 well vol. purge by Waterra Pump	no	NM	30	gal	--	18.91	570	5.80	7.15	106.9	3.04
PZ-05-339	01/15/2015	13:41	3 well vol. purge by Waterra Pump	no	NM	36	gal	--	18.92	570	5.86	7.15	108.7	3.58

TABLE B1

OFF-SITE MONITORING WELL PURGE DATA
2015 Semiannual Groundwater Monitoring Report
Olin Site
Morgan Hill, California

Well	Sample Date	Sample Time	Purge Method	Micro Purge?	Depth to Water	Purge Volume	Purge Volume Units	Flow Rate (ml/min)	Temp (degC)	Specific Conductivity (µmhos/CM)	Dissolved Oxygen (mg/L)	pH (pH units)	Oxygen Reduction Potential (mV)	Turbidity (NTU)
PZ-05-390	01/15/2015	11:47	3 well vol. purge by Waterra Pump	no	96.64	Initial	gal	--	17.61	112	0.75	7.16	-52.8	48.0
PZ-05-390	01/15/2015	12:23	3 well vol. purge by Waterra Pump	no	NM	24	gal	--	19.05	539	3.32	7.29	73.6	131
PZ-05-390	01/15/2015	12:32	3 well vol. purge by Waterra Pump	no	NM	30	gal	--	18.77	543	3.38	7.32	69.9	134
PZ-05-390	01/15/2015	12:41	3 well vol. purge by Waterra Pump	no	NM	36	gal	--	18.79	541	3.45	7.30	73.0	138
PZ-05-390	05/27/2015	11:33	Micro-purge by Double Valve Pump	yes	97.01	Initial	ml	225	21.29	212	2.93	6.96	-8.3	12.0
PZ-05-390	05/27/2015	11:45	Micro-purge by Double Valve Pump	yes	NM	--	ml	225	19.43	460	1.44	7.17	-34.6	10.6
PZ-05-390	05/27/2015	11:48	Micro-purge by Double Valve Pump	yes	NM	--	ml	225	19.45	452	1.53	7.35	-37.9	6.43
PZ-05-390	05/27/2015	11:52	Micro-purge by Double Valve Pump	yes	NM	--	ml	225	19.73	454	1.49	7.36	-38.3	6.00

Abbreviations
-- = not applicable
µmhos/CM = microimhos per centimeter
degC = degrees in Celsius
gal = gallons
max = turbidity above upper limit of turbidimeter measurement capability (1,000 NTU)
mg/L = milligrams per liter
ml = millilters
ml/min = milliliters per minute
mV = millivolts
NM = not measured
NTU = nephelometric trubidity units

APPENDIX C

Analytical Results, Microsoft Access Database
[provided separately]

APPENDIX D

Domestic Ion Exchange Treatment System Inspection Forms

Olin

IX System Inspection Log

Section I – General Information

Project Name: Olin/Standard Fusee	Property Name & Address:	Inspected By: Dane Grimshaw
Project & Task Number: : Monthly Insp.	State Well ID: 09S03E34G002-B	Date & Time Arrived Site: 15 Jan 15 @ 1342

Section II – Treated Water Totalizer Reading

Gallons Treated (Initial/Final)
06595120 / 06595140

Section III – System Status

Is the IX system bypassed/offline?	
Yes	No

Section IV – General Site Inspection (circle *Yes* or *No*)

1.	Are there any unmitigated Health & Safety hazards on the site?	Yes (explain in Section VI)	No	3.	Is the site properly secured (e.g. gated & locked)?	Yes	No (explain in Section VI)
2.	Is general housekeeping acceptable (e.g. no loose trash, high weeds etc.)?	Yes	No (explain in Section VI)				

Section V – System Operating Pressures

While the pump is running record the IX system operating pressures. During the observation period if pressures are fluctuating, note the minimum and maximum pressures, and any miscellaneous observations. If differential pressure between Pre-Inlet Filter and Post-Inlet Filter readings is >15 psi, change the sediment filter.

Gauge Location	Pump On?	Gauge Operational?		Pressure Range (PSI)	Observations
1. Pre-Inlet Filter	☑	Yes	No	53-55	
2. Post-Inlet Filter (Pre-Lead Vessel)	☑	Yes	No	50-51	
3. Mid-Point (Post-lead/pre-Lag Vessel)	☑	Yes	No	41-43	
4. Post-Lag Vessel	☑	Yes	No	40-41	

Section VI – Irresolvable Maintenance Issues (continue on rear if necessary)

Describe system maintenance issues such as leaks, broken gauges, or any other conditions that require Siemens' attention.
1.
2.
3.
4.
5.
6.

Section VII – Describe any light maintenance and housekeeping performed. General comments & observations (continue on rear if necessary):

Sediment Filter Changed: Y N

Sample Collected: Y N Duplicate Collected: Y N Check By-pass Valve: Y N

Signature of Inspector: D-RO Time Departed Site: 1357

Olin

IX System Inspection Log

Section I – General Information

Project Name: Olin/Standard Fusee	Property Name & Address:	Inspected By: Dane Grimshaw
Project & Task Number: : Monthly Insp.	State Well ID: 09S03E34G002-A	Date & Time Arrived Site: 15 Jan 15 @ 1340

Section II – Treated Water Totalizer Reading

Gallons Treated (Initial/Final)
System Bypassed/Offline

Section III – System Status

Is the IX system bypassed/offline?	
Yes	No

Section IV – General Site Inspection (circle *Yes* or *No*)

1.	Are there any unmitigated Health & Safety hazards on the site?	*Yes* (explain in Section VI)	*No*	3.	Is the site properly secured (e.g. gated & locked)?	*Yes*	*No* (explain in Section VI)
2.	Is general housekeeping acceptable (e.g. no loose trash, high weeds etc.)?	*Yes*	*No* (explain in Section VI)				

Section V – System Operating Pressures

While the pump is running record the IX system operating pressures. During the observation period if pressures are fluctuating, note the minimum and maximum pressures, and any miscellaneous observations. If differential pressure between Pre-Inlet Filter and Post-Inlet Filter readings is >15 psi, change the sediment filter.

Gauge Location	Pump On?	Gauge Operational?		Pressure Range (PSI)	Observations
1. Pre-Inlet Filter	☐	*Yes*	*No*		
2. Post-Inlet Filter (Pre-Lead Vessel)	☐	*Yes*	*No*		
3. Mid-Point (Post-lead/pre-Lag Vessel)	☐	*Yes*	*No*		
4. Post-Lag Vessel	☐	*Yes*	*No*		

Section VI – Irresolvable Maintenance Issues (continue on rear if necessary)

Describe system maintenance issues such as leaks, broken gauges, or any other conditions that require Siemens' attention.

1.
2.
3.
4.
5.
6.

Section VII – Describe any light maintenance and housekeeping performed. General comments & observations (continue on rear if necessary):

Sediment Filter Changed: Y N

Sample Collected: Y N Duplicate Collected: Y N

Check By-pass Valve: Y N

Signature of Inspector: D. Jl

Time Departed Site: 1342

Olin

IX System Inspection Log

Section I – General Information

Project Name: Olin/Standard Fusee	Property Name & Address:	Inspected By: Dane Grimshaw
Project & Task Number: : Monthly Insp.	State Well ID: **09S03E34G001**	Date & Time Arrived Site: 15 Jan 15 @ 1403

Section II – Treated Water Totalizer Reading

Gallons Treated (Initial/Final)
06091190 / 06091195

Section III – System Status

Is the IX system bypassed/offline?	
Yes	(No)

Section IV – General Site Inspection (circle *Yes* or *No*)

1.	Are there any unmitigated Health & Safety hazards on the site?	*Yes* (explain in Section VI)	(No)	3.	Is the site properly secured (e.g. gated & locked)?	(Yes)	*No* (explain in Section VI)
2.	Is general housekeeping acceptable (e.g. no loose trash, high weeds etc.)?	(Yes)	*No* (explain in Section VI)				

Section V – System Operating Pressures

While the pump is running record the IX system operating pressures. During the observation period if pressures are fluctuating, note the minimum and maximum pressures, and any miscellaneous observations. If differential pressure between Pre-Inlet Filter and Post-Inlet Filter readings is >15 psi, change the sediment filter.

Gauge Location	Pump On?	Gauge Operational?		Pressure Range (PSI)	Observations
1. Pre-Inlet Filter	☑	(Yes)	*No*	61	
2. Post-Inlet Filter (Pre-Lead Vessel)	☑	(Yes)	*No*	53	
3. Mid-Point (Post-lead/pre-Lag Vessel)	☑	(Yes)	*No*	41	
4. Post-Lag Vessel	☑	(Yes)	*No*	39	

Section VI – Irresolvable Maintenance Issues (continue on rear if necessary)

Describe system maintenance issues such as leaks, broken gauges, or any other conditions that require Siemens' attention.
1.
2.
3.
4.
5.
6.

Section VII – Describe any light maintenance and housekeeping performed. General comments & observations (continue on rear if necessary):

Sediment Filter Changed: Y (N)

Sample Collected: (Y) N Duplicate Collected: Y (N) Check By-pass Valve: (Y) N

Signature of Inspector: D. R. Time Departed Site: 1414

Olin

IX System Inspection Log

Section I – General Information

Project Name: Olin/Standard Fusee	Property Name & Address:	Inspected By: Dane Grimshaw
Project & Task Number: : Monthly Insp	State Well ID: **09S03E34C003**	Date & Time Arrived Site: 15 Jan 15 @ 1414

Section II – Treated Water Totalizer Reading

Gallons Treated (Initial/Final)
020175495/

Section III – System Status

Is the IX system bypassed/offline?	
Yes	(No)

Section IV – General Site Inspection (circle *Yes* or *No*)

1.	Are there any unmitigated Health & Safety hazards on the site?	*Yes* (explain in Section VI)	(No)	3.	Is the site properly secured (e.g. gated & locked)?	(Yes)	*No* (explain in Section VI)
2.	Is general housekeeping acceptable (e.g. no loose trash, high weeds etc.)?	(Yes)	*No* (explain in Section VI)				

Section V – System Operating Pressures

While the pump is running record the IX system operating pressures. During the observation period if pressures are fluctuating, note the minimum and maximum pressures, and any miscellaneous observations. If differential pressure between Pre-Inlet Filter and Post-Inlet Filter readings is >15 psi, change the sediment filter.

Gauge Location	Pump On?	Gauge Operational?		Pressure Range (PSI)	Observations
1. Pre-Inlet Filter	☑	*Yes*	*No*	54-57	
2. Post-Inlet Filter (Pre-Lead Vessel)	☑	*Yes*	*No*	41-43	
3. Mid-Point (Post-lead/pre-Lag Vessel)	☑	*Yes*	*No*	39-42	
4. Post-Lag Vessel	☑	*Yes*	*No*	36-41	

Section VI – Irresolvable Maintenance Issues (continue on rear if necessary)

Describe system maintenance issues such as leaks, broken gauges, or any other conditions that require Siemens' attention.
1.
2.
3.
4.
5.
6.

Section VII – Describe any light maintenance and housekeeping performed. General comments & observations (continue on rear if necessary):

Sediment Filter Changed: Y (N)

Sample Collected: (Y) N Duplicate Collected: Y (N) Check By-pass Valve: (Y) N

Signature of Inspector: [illegible] Time Departed Site: 14

Olin

IX System Inspection Log

Section I – General Information

Project Name: Olin/Standard Fusee	Property Name & Address:	Inspected By: Dane Grimshaw
Project & Task Number: : Monthly Insp.	State Well ID: 09S03E34G002-B	Date & Time Arrived Site: 2/6/15@1400

Section II – Treated Water Totalizer Reading

Gallons Treated (Initial/Final)
06619519 / 06619539

Section III – System Status

Is the IX system bypassed/offline?	
Yes	(No)

Section IV – General Site Inspection (circle *Yes* or *No*)

1.	Are there any unmitigated Health & Safety hazards on the site?	*Yes* (explain in Section VI)	(No)	3.	Is the site properly secured (e.g. gated & locked)?	(Yes)	*No* (explain in Section VI)
2.	Is general housekeeping acceptable (e.g. no loose trash, high weeds etc.)?	(Yes)	*No* (explain in Section VI)				

Section V – System Operating Pressures

While the pump is running record the IX system operating pressures. During the observation period if pressures are fluctuating, note the minimum and maximum pressures, and any miscellaneous observations. If differential pressure between Pre-Inlet Filter and Post-Inlet Filter readings is >15 psi, change the sediment filter.

Gauge Location	Pump On?	Gauge Operational?		Pressure Range (PSI)	Observations
1. Pre-Inlet Filter	☑	(Yes)	*No*	63 / 66	
2. Post-Inlet Filter (Pre-Lead Vessel)	☑	(Yes)	*No*	52 / 55	
3. Mid-Point (Post-lead/pre-Lag Vessel)	☑	(Yes)	*No*	45 / 45	
4. Post-Lag Vessel	☑	(Yes)	*No*	41 / 42	

Section VI – Irresolvable Maintenance Issues (continue on rear if necessary)

Describe system maintenance issues such as leaks, broken gauges, or any other conditions that require Siemens' attention.
1.
2.
3.
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5.
6.

Section VII – Describe any light maintenance and housekeeping performed. General comments & observations (continue on rear if necessary):

Sediment Filter Changed: Y (N)

Sample Collected: Y (N) Duplicate Collected: Y (N) Check By-pass Valve: (Y) N

Signature of Inspector: D-R [illegible] Time Departed Site: 1412

Olin

IX System Inspection Log

Section I – General Information

Project Name: Olin/Standard Fusee	Property Name & Address:	Inspected By: Dane Grimshaw
Project & Task Number: : Monthly Insp.	State Well ID: 09S03E34G002-A	Date & Time Arrived Site: 2/6/15@ 1414

Section II – Treated Water Totalizer Reading

Gallons Treated (Initial/Final)
System Bypassed/Offline

Section III – System Status

Is the IX system bypassed/offline?	
(Yes)	*No*

Section IV – General Site Inspection (circle *Yes* or *No*)

1.	Are there any unmitigated Health & Safety hazards on the site?	*Yes* (explain in Section VI)	*No*	3.	Is the site properly secured (e.g. gated & locked)?	*Yes*	*No* (explain in Section VI)
2.	Is general housekeeping acceptable (e.g. no loose trash, high weeds etc.)?	*Yes*	*No* (explain in Section VI)				

Section V – System Operating Pressures

While the pump is running record the IX system operating pressures. During the observation period if pressures are fluctuating, note the minimum and maximum pressures, and any miscellaneous observations. If differential pressure between Pre-Inlet Filter and Post-Inlet Filter readings is >15 psi, change the sediment filter.

Gauge Location	Pump On?	Gauge Operational?		Pressure Range (PSI)	Observations
1. Pre-Inlet Filter	☐	*Yes*	*No*		
2. Post-Inlet Filter (Pre-Lead Vessel)	☐	*Yes*	*No*		
3. Mid-Point (Post-lead/pre-Lag Vessel)	☐	*Yes*	*No*		
4. Post-Lag Vessel	☐	*Yes*	*No*		

Section VI – Irresolvable Maintenance Issues (continue on rear if necessary)

Describe system maintenance issues such as leaks, broken gauges, or any other conditions that require Siemens' attention.
1.
2.
3.
4.
5.
6.

Section VII – Describe any light maintenance and housekeeping performed. General comments & observations (continue on rear if necessary):

Sediment Filter Changed: Y N

Sample Collected: Y N Duplicate Collected: Y N Check By-pass Valve: Y (N)

Signature of Inspector: [signature] Time Departed Site: 1416

Olin

IX System Inspection Log

Section I – General Information

Project Name: Olin/Standard Fusee	Property Name & Address:	Inspected By: Dane Grimshaw
Project & Task Number: : Monthly Insp.	State Well ID: **09S03E34G001**	Date & Time Arrived Site: 2/6/15 @1423

Section II – Treated Water Totalizer Reading

Gallons Treated (Initial/Final)
06125041 | 06125093

Section III – System Status

Is the IX system bypassed/offline?	
Yes	*No*

Section IV – General Site Inspection (circle *Yes* or *No*)

1.	Are there any unmitigated Health & Safety hazards on the site?	*Yes* (explain in Section VI)	*No*	3.	Is the site properly secured (e.g. gated & locked)?	*Yes*	*No* (explain in Section VI)
2.	Is general housekeeping acceptable (e.g. no loose trash, high weeds etc.)?	*Yes*	*No* (explain in Section VI)				

Section V – System Operating Pressures

While the pump is running record the IX system operating pressures. During the observation period if pressures are fluctuating, note the minimum and maximum pressures, and any miscellaneous observations. If differential pressure between Pre-Inlet Filter and Post-Inlet Filter readings is >15 psi, change the sediment filter.

Gauge Location	Pump On?	Gauge Operational?		Pressure Range (PSI)	Observations
1. Pre-Inlet Filter	☑	*Yes*	*No*	41 | 65	
2. Post-Inlet Filter (Pre-Lead Vessel)	☑	*Yes*	*No*	50 | 53	
3. Mid-Point (Post-lead/pre-Lag Vessel)	☑	*Yes*	*No*	40 | 42	
4. Post-Lag Vessel	☑	*Yes*	*No*	38 | 40	

Section VI – Irresolvable Maintenance Issues (continue on rear if necessary)

Describe system maintenance issues such as leaks, broken gauges, or any other conditions that require Siemens' attention.
1.
2.
3.
4.
5.
6.

Section VII – Describe any light maintenance and housekeeping performed. General comments & observations (continue on rear if necessary):

Sediment Filter Changed: Y N

Sample Collected: Y N Duplicate Collected: Y N Check By-pass Valve: Y N

Signature of Inspector: D-R M Time Departed Site: 1434

Document modified: 1-16-2014

Olin

IX System Inspection Log

Section I – General Information

Project Name: Olin/Standard Fusee	Property Name & Address:	Inspected By: Dane Grimshaw
Project & Task Number: : Monthly Insp	State Well ID: 09S03E34C003	Date & Time Arrived Site: 2/6/15 @ 1440

Section II – Treated Water Totalizer Reading

Gallons Treated (Initial/Final)
0210577 / Running

Section III – System Status

Is the IX system bypassed/offline?	
Yes	(No)

Section IV – General Site Inspection (circle *Yes* or *No*)

1.	Are there any unmitigated Health & Safety hazards on the site?	*Yes* (explain in Section VI)	(No)	3.	Is the site properly secured (e.g. gated & locked)?	(Yes)	*No* (explain in Section VI)
2.	Is general housekeeping acceptable (e.g. no loose trash, high weeds etc.)?	(Yes)	*No* (explain in Section VI)				

Section V – System Operating Pressures

While the pump is running record the IX system operating pressures. During the observation period if pressures are fluctuating, note the minimum and maximum pressures, and any miscellaneous observations. If differential pressure between Pre-Inlet Filter and Post-Inlet Filter readings is >15 psi, change the sediment filter.

Gauge Location	Pump On?	Gauge Operational?		Pressure Range (PSI)	Observations
1. Pre-Inlet Filter	☑	(Yes)	*No*	58	
2. Post-Inlet Filter (Pre-Lead Vessel)	☑	(Yes)	*No*	46	
3. Mid-Point (Post-lead/pre-Lag Vessel)	☑	(Yes)	*No*	42	
4. Post-Lag Vessel	☑	(Yes)	*No*	39	

Section VI – Irresolvable Maintenance Issues (continue on rear if necessary)

Describe system maintenance issues such as leaks, broken gauges, or any other conditions that require Siemens' attention.
1.
2.
3.
4.
5.
6.

Section VII – Describe any light maintenance and housekeeping performed. General comments & observations (continue on rear if necessary):

Sediment Filter Changed: Y (N)

Sample Collected: Y (N) Duplicate Collected: Y (N) Check By-pass Valve: (Y) N

Signature of Inspector: D-R Time Departed Site: 1455

Olin

IX System Inspection Log

Section I – General Information

Project Name: Olin/Standard Fusee	Property Name & Address:	Inspected By: Dane Grimshaw
Project & Task Number: : Monthly Insp.	State Well ID: **09S03E34G002-B**	Date & Time Arrived Site: 3/9/15 @ 1123

Section II – Treated Water Totalizer Reading

Gallons Treated (Initial/Final)
BY PASSED

Section III – System Status

Is the IX system bypassed/offline?	
Yes	*No*

Section IV – General Site Inspection (circle *Yes* or *No*)

1.	Are there any unmitigated Health & Safety hazards on the site?	*Yes* (explain in Section VI)	*No*	3.	Is the site properly secured (e.g. gated & locked)?	*Yes*	*No* (explain in Section VI)
2.	Is general housekeeping acceptable (e.g. no loose trash, high weeds etc.)?	*Yes*	*No* (explain in Section VI)				

Section V – System Operating Pressures

While the pump is running record the IX system operating pressures. During the observation period if pressures are fluctuating, note the minimum and maximum pressures, and any miscellaneous observations. If differential pressure between Pre-Inlet Filter and Post-Inlet Filter readings is >15 psi, change the sediment filter.

Gauge Location	Pump On?	Gauge Operational?		Pressure Range (PSI)	Observations
1. Pre-Inlet Filter	☐	*Yes*	*No*		
2. Post-Inlet Filter (Pre-Lead Vessel)	☐	*Yes*	*No*		
3. Mid-Point (Post-lead/pre-Lag Vessel)	☐	*Yes*	*No*		
4. Post-Lag Vessel	☐	*Yes*	*No*		

Section VI – Irresolvable Maintenance Issues (continue on rear if necessary)

Describe system maintenance issues such as leaks, broken gauges, or any other conditions that require Siemens' attention.
1.
2.
3.
4.
5.
6.

Section VII – Describe any light maintenance and housekeeping performed. General comments & observations (continue on rear if necessary):

Sediment Filter Changed: Y N

Sample Collected: Y N Duplicate Collected: Y N Check By-pass Valve: Y N

Signature of Inspector: D R Time Departed Site: 1131

Olin

IX System Inspection Log

Section I – General Information

Project Name:	Property Name & Address:	Inspected By:
Olin/Standard Fusee		Dane Grimshaw
Project & Task Number: :	State Well ID:	Date & Time Arrived Site:
Monthly Insp	09S03E34G002-B	3/9/15 @ 1131

Section II – Treated Water Totalizer Reading

Gallons Treated (Initial/Final)
06629390 / 06629399

Section III – System Status

Is the IX system bypassed/offline?	
Yes	(No)

Section IV – General Site Inspection (circle *Yes* or *No*)

1.	Are there any unmitigated Health & Safety hazards on the site?	*Yes* (explain in Section VI)	(No)	3.	Is the site properly secured (e.g. gated & locked)?	(Yes)	*No* (explain in Section VI)
2.	Is general housekeeping acceptable (e.g. no loose trash, high weeds etc.)?	(Yes)	*No* (explain in Section VI)				

Section V – System Operating Pressures

While the pump is running record the IX system operating pressures. During the observation period if pressures are fluctuating, note the minimum and maximum pressures, and any miscellaneous observations. If differential pressure between Pre-Inlet Filter and Post-Inlet Filter readings is >15 psi, change the sediment filter.

Gauge Location	Pump On?	Gauge Operational?		Pressure Range (PSI)	Observations
1. Pre-Inlet Filter	☑	(Yes)	*No*	53 / 56	
2. Post-Inlet Filter (Pre-Lead Vessel)	☑	(Yes)	*No*	51 / 53	
3. Mid-Point (Post-lead/pre-Lag Vessel)	☑	(Yes)	*No*	44 / 46	
4. Post-Lag Vessel	☑	(Yes)	*No*	40 / 42	

Section VI – Irresolvable Maintenance Issues (continue on rear if necessary)

Describe system maintenance issues such as leaks, broken gauges, or any other conditions that require Siemens' attention.
1.
2.
3.
4.
5.
6.

Section VII – Describe any light maintenance and housekeeping performed. General comments & observations (continue on rear if necessary):

Removed cob webs, & Filters

Sediment Filter Changed: (Y) N

Sample Collected: Y (N) Duplicate Collected: Y (N)

Check By-pass Valve: (Y) N

Signature of Inspector: [signature]

Time Departed Site: 1155

Olin

IX System Inspection Log

Section I – General Information

Project Name: Olin/Standard Fusee	Property Name & Address:	Inspected By: Dane Grimshaw
Project & Task Number: : Monthly Insp.	State Well ID: **09S03E34G001**	Date & Time Arrived Site: 1/9/15 @ 11:58

Section II – Treated Water Totalizer Reading

Gallons Treated (Initial/Final)
06160165 \ 06160181

Section III – System Status

Is the IX system bypassed/offline?	
Yes	(No)

Section IV – General Site Inspection (circle *Yes* or *No*)

1.	Are there any unmitigated Health & Safety hazards on the site?	*Yes* (explain in Section VI)	(No)	3.	Is the site properly secured (e.g. gated & locked)?	(Yes)	*No* (explain in Section VI)
2.	Is general housekeeping acceptable (e.g. no loose trash, high weeds etc.)?	(Yes)	*No* (explain in Section VI)				

Section V – System Operating Pressures

While the pump is running record the IX system operating pressures. During the observation period if pressures are fluctuating, note the minimum and maximum pressures, and any miscellaneous observations. If differential pressure between Pre-Inlet Filter and Post-Inlet Filter readings is >15 psi, change the sediment filter.

Gauge Location	Pump On?	Gauge Operational?		Pressure Range (PSI)	Observations
1. Pre-Inlet Filter	☑	(Yes)	*No*	57 / 64	
2. Post-Inlet Filter (Pre-Lead Vessel)	☑	(Yes)	*No*	50 / 52	
3. Mid-Point (Post-lead/pre-Lag Vessel)	☑	(Yes)	*No*	41 / 42	
4. Post-Lag Vessel	☑	(Yes)	*No*	40 / 40	

Section VI – Irresolvable Maintenance Issues (continue on rear if necessary)

Describe system maintenance issues such as leaks, broken gauges, or any other conditions that require Siemens' attention.
1.
2.
3.
4.
5.
6.

Section VII – Describe any light maintenance and housekeeping performed. General comments & observations (continue on rear if necessary):

Δ inlet filter. Lubricat lock.

Sediment Filter Changed: (Y) N

Sample Collected: Y (N) Duplicate Collected: Y (N) Check By-pass Valve: Y N

Signature of Inspector: D-R Time Departed Site: ~~1003~~ 1215

Document modified 3/30/2015

Olin

IX System Inspection Log

Section I – General Information

Project Name: Olin/Standard Fusee	Property Name & Address:	Inspected By: Dane Grimshaw
Project & Task Number: : Monthly Insp	State Well ID: **09S03E34C003**	Date & Time Arrived Site: 3/9/15 @ 1215

Section II – Treated Water Totalizer Reading

Gallons Treated (Initial/Final)
02192830 / 02192844

Section III – System Status

Is the IX system bypassed/offline?	
Yes	(No)

Section IV – General Site Inspection (circle *Yes* or *No*)

1.	Are there any unmitigated Health & Safety hazards on the site?	*Yes* (explain in Section VI)	(No)	3.	Is the site properly secured (e.g. gated & locked)?	(Yes)	*No* (explain in Section VI)
2.	Is general housekeeping acceptable (e.g. no loose trash, high weeds etc.)?	(Yes)	*No* (explain in Section VI)				

Section V – System Operating Pressures

While the pump is running record the IX system operating pressures. During the observation period if pressures are fluctuating, note the minimum and maximum pressures, and any miscellaneous observations. If differential pressure between Pre-Inlet Filter and Post-Inlet Filter readings is >15 psi, change the sediment filter.

Gauge Location	Pump On?	Gauge Operational?		Pressure Range (PSI)	Observations
1. Pre-Inlet Filter	☑	(Yes)	*No*	50 / 51	
2. Post-Inlet Filter (Pre-Lead Vessel)	☑	(Yes)	*No*	40 / 42	
3. Mid-Point (Post-lead/pre-Lag Vessel)	☑	(Yes)	*No*	36/36	
4. Post-Lag Vessel	☑	(Yes)	*No*	30 / 31	

Section VI – Irresolvable Maintenance Issues (continue on rear if necessary)

Describe system maintenance issues such as leaks, broken gauges, or any other conditions that require Siemens' attention.
1.
2.
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4.
5.
6.

Section VII – Describe any light maintenance and housekeeping performed. General comments & observations (continue on rear if necessary):

✓ Filter ok. Replace lock.

Sediment Filter Changed: Y (N)

Sample Collected: Y (N) Duplicate Collected: Y (N) Check By-pass Valve: (Y) N

Signature of Inspector: D-K B Time Departed Site: 1230

Document modified 3/16/2015

Olin

IX System Inspection Log

Section I – General Information

Project Name:	Property Name & Address:	Inspected By:
Olin/Standard Fusee		Dane Grimshaw
Project & Task Number: :	State Well ID:	Date & Time Arrived Site:
Monthly Insp.	09S03E34G002-B	4/10/15 @ 1200

Section II – Treated Water Totalizer Reading

Gallons Treated (Initial/Final)
0465958 / 0465944

Section III – System Status

Is the IX system bypassed/offline?	
Yes	(No)

Section IV – General Site Inspection (circle *Yes* or *No*)

1.	Are there any unmitigated Health & Safety hazards on the site?	*Yes* (explain in Section VI)	(No)	3.	Is the site properly secured (e.g. gated & locked)?	(Yes)	*No* (explain in Section VI)
2.	Is general housekeeping acceptable (e.g. no loose trash, high weeds etc.)?	(Yes)	*No* (explain in Section VI)				

Section V – System Operating Pressures

While the pump is running record the IX system operating pressures. During the observation period if pressures are fluctuating, note the minimum and maximum pressures, and any miscellaneous observations. If differential pressure between Pre-Inlet Filter and Post-Inlet Filter readings is >15 psi, change the sediment filter.

Gauge Location	Pump On?	Gauge Operational?		Pressure Range (PSI)	Observations
1. Pre-Inlet Filter	☑	(Yes)	*No*	54/56	
2. Post-Inlet Filter (Pre-Lead Vessel)	☑	(Yes)	*No*	52/54	
3. Mid-Point (Post-lead/pre-Lag Vessel)	☑	(Yes)	*No*	44/45	
4. Post-Lag Vessel	☑	(Yes)	*No*	41/41	

Section VI – Irresolvable Maintenance Issues (continue on rear if necessary)

Describe system maintenance issues such as leaks, broken gauges, or any other conditions that require Siemens' attention.
1.
2.
3.
4.
5.
6.

Section VII – Describe any light maintenance and housekeeping performed. General comments & observations (continue on rear if necessary):

Sediment Filter Changed: Y (N)

Sample Collected: (Y) N Duplicate Collected: Y (N) Check By-pass Valve: (Y) N

Signature of Inspector: D. R. Time Departed Site: 1217

Document mod Rev 01/10/15

Olin

IX System Inspection Log

Section I – General Information

Project Name: Olin/Standard Fusee	Property Name & Address:	Inspected By: Dane Grimshaw
Project & Task Number: : Monthly	State Well ID: **09S03E34G002-A**	Date & Time Arrived Site: 4/10/15 @ 1157

Section II – Treated Water Totalizer Reading

Gallons Treated (Initial/Final)
System Bypassed/Offline

Section III – System Status

Is the IX system bypassed/offline?	
(Yes)	*No*

Section IV – General Site Inspection (circle *Yes* or *No*)

1.	Are there any unmitigated Health & Safety hazards on the site?	*Yes* (explain in Section VI)	*No*	3.	Is the site properly secured (e.g. gated & locked)?	*Yes*	*No* (explain in Section VI)
2.	Is general housekeeping acceptable (e.g. no loose trash, high weeds etc.)?	*Yes*	*No* (explain in Section VI)				

Section V – System Operating Pressures

While the pump is running record the IX system operating pressures. During the observation period if pressures are fluctuating, note the minimum and maximum pressures, and any miscellaneous observations. If differential pressure between Pre-Inlet Filter and Post-Inlet Filter readings is >15 psi, change the sediment filter.

Gauge Location	Pump On?	Gauge Operational?	Pressure Range (PSI)	Observations
1. Pre-Inlet Filter	☐	*Yes* *No*		
2. Post-Inlet Filter (Pre-Lead Vessel)	☐	*Yes* *No*		
3. Mid-Point (Post-lead/pre-Lag Vessel)	☐	*Yes* *No*		
4. Post-Lag Vessel	☐	*Yes* *No*		

Section VI – Irresolvable Maintenance Issues (continue on rear if necessary)

Describe system maintenance issues such as leaks, broken gauges, or any other conditions that require Siemens' attention.
1.
2.
3. BYPASSED
4.
5.
6.

Section VII – Describe any light maintenance and housekeeping performed. General comments & observations (continue on rear if necessary):

Sediment Filter Changed: Y (N)

Sample Collected: Y (N) Duplicate Collected: Y (N) Check By-pass Valve: Y (N)

Signature of Inspector: D-L M Time Departed Site: 1159

Document Revised # 11/2011

Olin

IX System Inspection Log

Section I – General Information

Project Name: Olin/Standard Fusee	Property Name & Address:	Inspected By: Dane Grimshaw
Project & Task Number: : Monthly Insp	State Well ID: 09S03E34G001	Date & Time Arrived Site: 4/13/15 @1221

Section II – Treated Water Totalizer Reading

Gallons Treated (Initial/Final)
06204994 / 06204998

Section III – System Status

Is the IX system bypassed/offline?	
Yes	No

Section IV – General Site Inspection (circle *Yes* or *No*)

1.	Are there any unmitigated Health & Safety hazards on the site?	*Yes* (explain in Section VI)	*No*	3.	Is the site properly secured (e.g. gated & locked)?	*Yes*	*No* (explain in Section VI)
2.	Is general housekeeping acceptable (e.g. no loose trash, high weeds etc.)?	*Yes*	*No* (explain in Section VI)				

Section V – System Operating Pressures

While the pump is running record the IX system operating pressures. During the observation period if pressures are fluctuating, note the minimum and maximum pressures, and any miscellaneous observations. If differential pressure between Pre-Inlet Filter and Post-Inlet Filter readings is >15 psi, change the sediment filter.

Gauge Location	Pump On?	Gauge Operational?		Pressure Range (PSI)	Observations
1. Pre-Inlet Filter	☑	*Yes*	*No*	44/47	
2. Post-Inlet Filter (Pre-Lead Vessel)	☑	*Yes*	*No*	44/45	
3. Mid-Point (Post-lead/pre-Lag Vessel)	☑	*Yes*	*No*	42/41	
4. Post-Lag Vessel	☑	*Yes*	*No*	40/41	

Section VI – Irresolvable Maintenance Issues (continue on rear if necessary)

Describe system maintenance issues such as leaks, broken gauges, or any other conditions that require Siemens' attention.
1.
2.
3.
4.
5.
6.

Section VII – Describe any light maintenance and housekeeping performed. General comments & observations (continue on rear if necessary):

Sediment Filter Changed: Y N

Sample Collected: Y N Duplicate Collected: Y N Check By-pass Valve: Y N

Signature of Inspector: D-R K Time Departed Site: 1243

Olin

IX System Inspection Log

Section I – General Information

Project Name: Olin/Standard Fusee	Property Name & Address:	Inspected By: Dane Grimshaw
Project & Task Number: : Monthly Insp	State Well ID: **09S03E34C003**	Date & Time Arrived Site: 4/10/15 @ 1250

Section II – Treated Water Totalizer Reading

Gallons Treated (Initial/Final)
02205745 / Running

Section III – System Status

Is the IX system bypassed/offline?	
Yes	(No)

Section IV – General Site Inspection (circle *Yes* or *No*)

1.	Are there any unmitigated Health & Safety hazards on the site?	*Yes* (explain in Section VI)	(No)	3.	Is the site properly secured (e.g. gated & locked)?	(Yes)	*No* (explain in Section VI)
2.	Is general housekeeping acceptable (e.g. no loose trash, high weeds etc.)?	(Yes)	*No* (explain in Section VI)				

Section V – System Operating Pressures

While the pump is running record the IX system operating pressures. During the observation period if pressures are fluctuating, note the minimum and maximum pressures, and any miscellaneous observations. If differential pressure between Pre-Inlet Filter and Post-Inlet Filter readings is >15 psi, change the sediment filter.

Gauge Location	Pump On?	Gauge Operational?		Pressure Range (PSI)	Observations
1. Pre-Inlet Filter	☑	(Yes)	*No*	51	
2. Post-Inlet Filter (Pre-Lead Vessel)	☑	(Yes)	*No*	46	
3. Mid-Point (Post-lead/pre-Lag Vessel)	☑	(Yes)	*No*	41	
4. Post-Lag Vessel	☑	(Yes)	*No*	40	

Section VI – Irresolvable Maintenance Issues (continue on rear if necessary)

Describe system maintenance issues such as leaks, broken gauges, or any other conditions that require Siemens' attention.
1.
2.
3.
4.
5.
6.

Section VII – Describe any light maintenance and housekeeping performed. General comments & observations (continue on rear if necessary):

Remove leaves & debris

Sediment Filter Changed: Y (N)

Sample Collected: (Y) N Duplicate Collected: Y (N) Check By-pass Valve: (Y) N

Signature of Inspector: D-Fe Time Departed Site: 1306

IX System Inspection Log Sheet

Olin
IX System Inspection Log

Section I – General Information

Project Name:	Property Name & Address:	Inspected By:
Olin - Morgan Hill		Dana G.
Project & Task Number:	**State Well ID:**	**Date & Time Arrived Site:**
Monthly Insp. 09303E34G002-B		5/12/15 11:19

Section II – Treated Water Totalizer Reading

Gallons Treated (Initial/Final)
6738432 / 6738453

Section III – System Status

Is the IX system bypassed/offline?	
Yes	No

Section IV – General Site Inspection (circle *Yes* or *No*)

1.	Are there potential health & safety concerns (see Health & Safety Plan, Task 8)?	*Yes* (explain in Section VI)	No	3.	Are chemicals, used bag filters and drums properly stored & labeled?	Yes	*No* (explain in Section VI)
2.	Is general housekeeping acceptable (e.g. no loose trash, high weeds etc.)?	Yes	*No* (explain in Section VI)	4.	Is the site properly secured (e.g. gated & locked)?	Yes	*No* (explain in Section VI)

Section V – System Operating Pressures

While the pump is running record the IX system operating pressures. During the observation period if pressures are fluctuating, note the minimum and maximum pressures, and any miscellaneous observations. If differential pressure between Pre-Inlet Filter and Post-Inlet Filter readings is >15 psi, change the sediment filter.

Gauge Location	Pump On?	Gauge Operational?	Pressure Range (PSI)	Observations
1. Pre-Inlet Filter	☑	Yes No	53 / 55	
2. Post-Inlet Filter (Pre-Lead Vessel)	☑	Yes No	51 / 52	
3. Mid-Point (Post-lead/pre-Lag Vessel)	☑	Yes No	43 / 43	
4. Post-Lag Vessel	☑	Yes No	43 / 42	

Section VI – Irresolvable Maintenance Issues (continue on rear if necessary)

Describe system maintenance issues such as leaks, broken gauges, or any other conditions that require Siemens' attention.
1.
2.
3.
4.
5.
6.

Section VII – Describe any light maintenance and housekeeping performed. General comments & observations (continue on rear if necessary):

Applied wasp repellant.

Sediment Filter Changed: Y N

Sample Collected: Y N Duplicate Collected: Y N Check By-pass Valve: Y N

Signature of Inspector: D. R. Time Departed Site: 1125

IX System Inspection Log Sheet

Olin
IX System Inspection Log

Section I – General Information

Project Name:	Property Name & Address:	Inspected By:
Olin - Morgan Hill		Dane G.
Project & Task Number:	**State Well ID:**	**Date & Time Arrived Site:**
Monthly Insp.	09S03E34G002-A	5/12/18 1127

Section II – Treated Water Totalizer Reading

Gallons Treated (Initial/Final)
BYPASSED

Section III – System Status

Is the IX system bypassed/offline?	
(Yes)	No

Section IV – General Site Inspection (circle *Yes* or *No*)

1.	Are there potential health & safety concerns (see Health & Safety Plan, Task 8)?	*Yes* (explain in Section VI)	*No*	3.	Are chemicals, used bag filters and drums properly stored & labeled?	*Yes*	*No* (explain in Section VI)
2.	Is general housekeeping acceptable (e.g. no loose trash, high weeds etc.)?	*Yes*	*No* (explain in Section VI)	4.	Is the site properly secured (e.g. gated & locked)?	*Yes*	*No* (explain in Section VI)

Section V – System Operating Pressures

While the pump is running record the IX system operating pressures. During the observation period if pressures are fluctuating, note the minimum and maximum pressures, and any miscellaneous observations. If differential pressure between Pre-Inlet Filter and Post-Inlet Filter readings is >15 psi, change the sediment filter.

Gauge Location	Pump On?	Gauge Operational?	Pressure Range (PSI)	Observations
1. Pre-Inlet Filter	☐	*Yes* *No*		
2. Post-Inlet Filter (Pre-Lead Vessel)	☐	*Yes* *No*		
3. Mid-Point (Post-lead/pre-Lag Vessel)	☐	*Yes* *No*		
4. Post-Lag Vessel	☐	*Yes* *No*		

Section VI – Irresolvable Maintenance Issues (continue on rear if necessary)

Describe system maintenance issues such as leaks, broken gauges, or any other conditions that require Siemens' attention.
1.
2.
3.
4.
5.
6.

Section VII – Describe any light maintenance and housekeeping performed. General comments & observations (continue on rear if necessary):

Sediment Filter Changed: Y (N)

Sample Collected: Y (N) Duplicate Collected: Y (N) Check By-pass Valve: (Y) N

Signature of Inspector: D-R Time Departed Site: 1130

IX System Inspection Log Sheet

Olin
IX System Inspection Log

Section I – General Information

Project Name:	Property Name & Address:	Inspected By:
Olin - Morgan Hill		Dave G.
Project & Task Number:	**State Well ID:**	**Date & Time Arrived Site:**
Monthly Insp	09S03E34G001	5/12/15 1133

Section II – Treated Water Totalizer Reading

Gallons Treated (Initial/Final)
Running 0337674

Section III – System Status

Is the IX system bypassed/offline?	
Yes	No

Section IV – General Site Inspection (circle *Yes* or *No*)

1.	Are there potential health & safety concerns (see Health & Safety Plan, Task 8)?	*Yes* (explain in Section VI)	No	3.	Are chemicals, used bag filters and drums properly stored & labeled?	Yes	*No* (explain in Section VI)
2.	Is general housekeeping acceptable (e.g. no loose trash, high weeds etc.)?	Yes	*No* (explain in Section VI)	4.	Is the site properly secured (e.g. gated & locked)?	Yes	*No* (explain in Section VI)

Section V – System Operating Pressures

While the pump is running record the IX system operating pressures. During the observation period if pressures are fluctuating, note the minimum and maximum pressures, and any miscellaneous observations. If differential pressure between Pre-Inlet Filter and Post-Inlet Filter readings is >15 psi, change the sediment filter.

Gauge Location	Pump On?	Gauge Operational?		Pressure Range (PSI)	Observations
1. Pre-Inlet Filter	☑	Yes	*No*	60	
2. Post-Inlet Filter (Pre-Lead Vessel)	☑	Yes	*No*	57	
3. Mid-Point (Post-lead/pre-Lag Vessel)	☑	Yes	*No*	53	
4. Post-Lag Vessel	☑	Yes	*No*	50	

Section VI – Irresolvable Maintenance Issues (continue on rear if necessary)

Describe system maintenance issues such as leaks, broken gauges, or any other conditions that require Siemens' attention.
1.
2.
3.
4.
5.
6.

Section VII – Describe any light maintenance and housekeeping performed. General comments & observations (continue on rear if necessary):

System is cycling on/off – late of usage.

Sediment Filter Changed: Y N

Sample Collected: Y N Duplicate Collected: Y N Check By-pass Valve: Y N

Signature of Inspector: D. R. Time Departed Site: 1139

IX System Inspection Log Sheet

Olin
IX System Inspection Log

Section I – General Information

Project Name:	Property Name & Address:	Inspected By:
Olin - Morgan Hill		Dave. G
Project & Task Number:	**State Well ID:**	**Date & Time Arrived Site:**
Monthly Insp	09S03E34C003	5/12/15 @ 1217

Section II – Treated Water Totalizer Reading

Gallons Treated (Initial/Final)
02218060 / 02218068

Section III – System Status

Is the IX system bypassed/offline?	
Yes	(No)

Section IV – General Site Inspection (circle *Yes* or *No*)

1.	Are there potential health & safety concerns (see Health & Safety Plan, Task 8)?	*Yes* (explain in Section VI)	(No)	3.	Are chemicals, used bag filters and drums properly stored & labeled?	(Yes)	*No* (explain in Section VI)
2.	Is general housekeeping acceptable (e.g. no loose trash, high weeds etc.)?	(Yes)	*No* (explain in Section VI)	4.	Is the site properly secured (e.g. gated & locked)?	(Yes)	*No* (explain in Section VI)

Section V – System Operating Pressures

While the pump is running record the IX system operating pressures. During the observation period if pressures are fluctuating, note the minimum and maximum pressures, and any miscellaneous observations. If differential pressure between Pre-Inlet Filter and Post-Inlet Filter readings is >15 psi, change the sediment filter.

Gauge Location	Pump On?	Gauge Operational?		Pressure Range (PSI)	Observations
1. Pre-Inlet Filter	☑	(Yes)	*No*	41/42	
2. Post-Inlet Filter (Pre-Lead Vessel)	☑	(Yes)	*No*	34/39	
3. Mid-Point (Post-lead/pre-Lag Vessel)	☑	(Yes)	*No*	37/38	
4. Post-Lag Vessel	☑	(Yes)	*No*	35/35	

Section VI – Irresolvable Maintenance Issues (continue on rear if necessary)

Describe system maintenance issues such as leaks, broken gauges, or any other conditions that require Siemens' attention.
1.
2.
3.
4.
5.
6.

Section VII – Describe any light maintenance and housekeeping performed. General comments & observations (continue on rear if necessary):

Plumbing repairs: Replace two 2" GF TH Ball Valves. Replace PVC close nipple & 90° Elbow w/ galv steel. Installed union

Sediment Filter Changed: Y (N)

Sample Collected: Y (N) Duplicate Collected: Y (N) Check By-pass Valve: (Y) N

Signature of Inspector: D-2 Time Departed Site: 1340

IX System Inspection Log Sheet

Olin
IX System Inspection Log

Section I – General Information

Project Name:	Property Name & Address:	Inspected By:
Olin - Morgan Hill		Dane G.
Project & Task Number:	**State Well ID:**	**Date & Time Arrived Site:**
Monthly Insp.	09S03E34G002-A	6/4/15 @1006

Section II – Treated Water Totalizer Reading

Gallons Treated (Initial/Final)
N/A

Section III – System Status

Is the IX system bypassed/offline?	
(Yes)	No

Section IV – General Site Inspection (circle *Yes* or *No*)

1.	Are there potential health & safety concerns (see Health & Safety Plan, Task 8)?	*Yes* (explain in Section VI)	*No*	3.	Are chemicals, used bag filters and drums properly stored & labeled?	*Yes*	*No* (explain in Section VI)
2.	Is general housekeeping acceptable (e.g. no loose trash, high weeds etc.)?	*Yes*	*No* (explain in Section VI)	4.	Is the site properly secured (e.g. gated & locked)?	*Yes*	*No* (explain in Section VI)

Section V – System Operating Pressures

While the pump is running record the IX system operating pressures. During the observation period if pressures are fluctuating, note the minimum and maximum pressures, and any miscellaneous observations. If differential pressure between Pre-Inlet Filter and Post-Inlet Filter readings is >15 psi, change the sediment filter.

Gauge Location	Pump On?	Gauge Operational?		Pressure Range (PSI)	Observations
1. Pre-Inlet Filter	☐	*Yes*	*No*		
2. Post-Inlet Filter (Pre-Lead Vessel)	☐	*Yes*	*No*		
3. Mid-Point (Post-lead/pre-Lag Vessel)	☐	*Yes*	*No*		
4. Post-Lag Vessel	☐	*Yes*	*No*		

Section VI – Irresolvable Maintenance Issues (continue on rear if necessary)

Describe system maintenance issues such as leaks, broken gauges, or any other conditions that require Siemens' attention.
1.
2.
3.
4.
5.
6.

Section VII – Describe any light maintenance and housekeeping performed. General comments & observations (continue on rear if necessary):

Sediment Filter Changed: Y (N)

Sample Collected: Y (N) Duplicate Collected: Y (N) Check By-pass Valve: (Y) N

Signature of Inspector: [signature] Time Departed Site: 1005

IX System Inspection Log Sheet

Olin
IX System Inspection Log

Section I – General Information

Project Name:	Property Name & Address:	Inspected By:
Olin - Morgan Hill		Dane G.
Project & Task Number:	**State Well ID:**	**Date & Time Arrived Site:**
Monthly Insp.	09S03E34G002-13	6/4/15 @ 1010

Section II – Treated Water Totalizer Reading

Gallons Treated (Initial/Final)
Running - 6887137

Section III – System Status

Is the IX system bypassed/offline?	
Yes	(No)

Section IV – General Site Inspection (circle *Yes* or *No*)

1.	Are there potential health & safety concerns (see Health & Safety Plan, Task 8)?	*Yes* (explain in Section VI)	(No)	3.	Are chemicals, used bag filters and drums properly stored & labeled?	(Yes)	*No* (explain in Section VI)
2.	Is general housekeeping acceptable (e.g. no loose trash, high weeds etc.)?	(Yes)	*No* (explain in Section VI)	4.	Is the site properly secured (e.g. gated & locked)?	(Yes)	*No* (explain in Section VI)

Section V – System Operating Pressures

While the pump is running record the IX system operating pressures. During the observation period if pressures are fluctuating, note the minimum and maximum pressures, and any miscellaneous observations. If differential pressure between Pre-Inlet Filter and Post-Inlet Filter readings is >15 psi, change the sediment filter.

Gauge Location	Pump On?	Gauge Operational?		Pressure Range (PSI)	Observations
1. Pre-Inlet Filter	☑	(Yes)	*No*	54/56	
2. Post-Inlet Filter (Pre-Lead Vessel)	☑	(Yes)	*No*	52/53	
3. Mid-Point (Post-lead/pre-Lag Vessel)	☑	(Yes)	*No*	44/45	
4. Post-Lag Vessel	☑	(Yes)	*No*	43/44	

Section VI – Irresolvable Maintenance Issues (continue on rear if necessary)

Describe system maintenance issues such as leaks, broken gauges, or any other conditions that require Siemens' attention.
1.
2.
3.
4.
5.
6.

Section VII – Describe any light maintenance and housekeeping performed. General comments & observations (continue on rear if necessary):

Sediment Filter Changed: Y (N)

Sample Collected: Y (N) Duplicate Collected: Y (N) Check By-pass Valve: (Y) N

Signature of Inspector: D-R Time Departed Site: 1017

IX System Inspection Log Sheet

Olin
IX System Inspection Log

Section I – General Information

Project Name:	Property Name & Address:	Inspected By:
Olin - Morgan Hill		Dave G.
Project & Task Number:	**State Well ID:**	**Date & Time Arrived Site:**
Monthly Insp.	09S03E34C003	6/4/15 @1621

Section II – Treated Water Totalizer Reading

Gallons Treated (Initial/Final)
2227551 / 2227566

Section III – System Status

Is the IX system bypassed/offline?	
Yes	(No)

Section IV – General Site Inspection (circle *Yes* or *No*)

1.	Are there potential health & safety concerns (see Health & Safety Plan, Task 8)?	*Yes* (explain in Section VI)	(No)	3.	Are chemicals, used bag filters and drums properly stored & labeled?	(Yes)	*No* (explain in Section VI)
2.	Is general housekeeping acceptable (e.g. no loose trash, high weeds etc.)?	(Yes)	*No* (explain in Section VI)	4.	Is the site properly secured (e.g. gated & locked)?	(Yes)	*No* (explain in Section VI)

Section V – System Operating Pressures

While the pump is running record the IX system operating pressures. During the observation period if pressures are fluctuating, note the minimum and maximum pressures, and any miscellaneous observations. If differential pressure between Pre-Inlet Filter and Post-Inlet Filter readings is >15 psi, change the sediment filter.

Gauge Location	Pump On?	Gauge Operational?	Pressure Range (PSI)	Observations
1. Pre-Inlet Filter	☑	(Yes) *No*	43	
2. Post-Inlet Filter (Pre-Lead Vessel)	☑	(Yes) *No*	40	
3. Mid-Point (Post-lead/pre-Lag Vessel)	☑	(Yes) *No*	38	
4. Post-Lag Vessel	☑	(Yes) *No*	36	

Section VI – Irresolvable Maintenance Issues (continue on rear if necessary)

Describe system maintenance issues such as leaks, broken gauges, or any other conditions that require Siemens' attention.
1.
2.
3.
4.
5.
6.

Section VII – Describe any light maintenance and housekeeping performed. General comments & observations (continue on rear if necessary):

ADAM - new pump installed last week of May. System is working well.

Sediment Filter Changed: Y (N)

Sample Collected: Y (N) Duplicate Collected: Y (N) Check By-pass Valve: (Y) N

Signature of Inspector: [illegible] Time Departed Site: 1038

IX System Inspection Log Sheet

Olin
IX System Inspection Log

Section I – General Information

Project Name:	Property Name & Address:	Inspected By:
Olin - Morgan Hill		Dane. G
Project & Task Number:	**State Well ID:**	**Date & Time Arrived Site:**
Monthly Insp.	09S03E34G001	6/4/18 @ 1036

Section II – Treated Water Totalizer Reading

Gallons Treated (Initial/Final)
6370615 / 6370643

Section III – System Status

Is the IX system bypassed/offline?	
Yes	(*No*)

Section IV – General Site Inspection (circle *Yes* or *No*)

1.	Are there potential health & safety concerns (see Health & Safety Plan, Task 8)?	*Yes* (explain in Section VI)	(*No*)	3.	Are chemicals, used bag filters and drums properly stored & labeled?	(*Yes*)	*No* (explain in Section VI)
2.	Is general housekeeping acceptable (e.g. no loose trash, high weeds etc.)?	(*Yes*)	*No* (explain in Section VI)	4.	Is the site properly secured (e.g. gated & locked)?	(*Yes*)	*No* (explain in Section VI)

Section V – System Operating Pressures

While the pump is running record the IX system operating pressures. During the observation period if pressures are fluctuating, note the minimum and maximum pressures, and any miscellaneous observations. If differential pressure between Pre-Inlet Filter and Post-Inlet Filter readings is >15 psi, change the sediment filter.

Gauge Location	Pump On?	Gauge Operational?	Pressure Range (PSI)	Observations
1. Pre-Inlet Filter	☑	(*Yes*) *No*	62	
2. Post-Inlet Filter (Pre-Lead Vessel)	☑	(*Yes*) *No*	58	
3. Mid-Point (Post-lead/pre-Lag Vessel)	☑	(*Yes*) *No*	53	
4. Post-Lag Vessel	☑	(*Yes*) *No*	47	

Section VI – Irresolvable Maintenance Issues (continue on rear if necessary)

Describe system maintenance issues such as leaks, broken gauges, or any other conditions that require Siemens' attention.
1.
2.
3.
4.
5.
6.

Section VII – Describe any light maintenance and housekeeping performed. General comments & observations (continue on rear if necessary):

Sediment Filter Changed: Y N

Sample Collected: Y (N) Duplicate Collected: Y N

Check By-pass Valve: Y N

Signature of Inspector: D-L

Time Departed Site: 1044

APPENDIX E

Data Validation and Precision Assessment Results

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E1 DATA ACCURACY AND PRECISION E1

E2 REFERENCES E2

TABLES

Table E1 Perchlorate Detected in Quality Control Samples

Table E2 Field Duplicate Relative Percent Differences

E1 DATA ACCURACY AND PRECISION

The data validation and precision assessments for the semiannual period from January through June 2015 (1SA15) were performed in accordance with the procedures specified in the USEPA Contract Laboratory Program, National Functional Guidelines for Inorganic Data Review (National Functional Guidelines [USEPA, 2010 and 2014]), the Quality Assurance Project Plan (QAPP; MACTEC, 2010 and Amec Foster Wheeler, 2015), and quality control (QC) criteria specified in the analytical methods and Monitoring and Reporting Program (MRP) R3-2008-0028 (Water Board, 2015). Results of the data validation and precision assessment indicated the following:

- Analytical accuracy was evaluated by reviewing laboratory control sample (LCS) recoveries, matrix spike/matrix spike duplicate (MS/MSD) recoveries, holding times, and blank results for samples collected in 1SA15. QC criteria were met for the laboratory and field QC samples associated with the project, with the following exceptions:
  - Two method blank samples had estimated perchlorate concentrations of 1.06 (J) micrograms per liter (µg/L) and 0.927 (J) µg/L.
  - Two equipment blank samples and one source blank had estimated perchlorate concentrations ranging from 0.84 (J) µg/L to 0.96 (J) µg/L.

    *In accordance with the National Functional Guidelines, when perchlorate results for the associated field samples were estimated between the method detection limit and reporting limit (RL), a “U” flag was added and the results were reported as non-detect. Field samples that were reported as non-detect or above the RL were accepted as reported. Five project samples were qualified as non-detect (U) at the RL of 4.0 µg/L due to perchlorate in the associated method blank. Blank sample perchlorate detections and associated field samples are provided in Table E1.
- Relative percent differences (RPDs) were calculated for both field duplicate samples and internal laboratory MS/MSD samples. Specific results for perchlorate are:
  - RPD values calculated for 22 field duplicate sample pairs ranged from 0 to 41.0 percent, with an overall average of 4.1 percent. The analytical results for the parent sample and field duplicate with a RPD of 41.0 were qualified as estimated concentrations (J) by professional judgment. All other results met the project-specific RPD criterion of 25 percent. Table E2 presents the field duplicate RPDs.
  - RPD values calculated for 21 project related MS/MSD pairs ranged from 0 to 7.4 percent, with an overall average of 1.2 percent, which meets the QAPP specified 15 percent acceptance criterion.

Based upon the data review, the 1SA15 results are considered valid and usable to support project decisions with additional data qualifiers as described. Data completeness (the number of successful analyses relative to the number of requested analyses) was 100 percent for 1SA15 samples.

E2 REFERENCES

Amec Foster Wheeler Environment & Infrastructure, Inc., 2015. Quality Assurance Project Plan (QAPP), Olin Site, Morgan Hill, California. Revised March.

MACTEC Engineering and Consulting, Inc. (MACTEC), 2010. Quality Assurance Project Plan (QAPP), Olin/Standard Fusee Site, 425 Tennant Avenue, Morgan Hill, California. Revised March.

Water Board, 2015. Monitoring and Reporting Program No. R3-2008-0028 for Olin Corporation, 425 Tennant Avenue, Morgan Hill, Santa Clara County. February 20.

U.S. Environmental Protection Agency (USEPA), 2010. USEPA Contract Laboratory Program, National Functional Guidelines for Inorganic Data Review. January.

———, 2014. USEPA Contract Laboratory Program, National Functional Guidelines for Inorganic Data Review. August.

TABLE E1

PERCHLORATE DETECTED IN QUALITY CONTROL SAMPLES
Olin Site
Morgan Hill, California

QC Sample ID	Analysis Date	Blank Sample Perchlorate Concentration (µg/L)	Associated Field Samples with Estimated (J flagged) Perchlorate Results*	Sample Date
METHOD BLANK				
MB 720-174156/5	1/15/2015	1.06 J	PMW-04-312	1/14/2015
MB 720-174398/5	1/20/2015	0.927 J	PZ-05-339, MW-62-041	1/15/2015
			PZ-03-325	1/16/2015
EQUIPMENT OR SOURCE BLANK				
EQ BLANK-CMT	1/7/2015	0.96 J	None	1/6/2015
EQ BLANK-W	1/7/2015	0.95 J	None	1/6/2015
SOURCE BLANK	1/7/2015	0.84 J	None	1/6/2015

Notes
1. Samples were analyzed for perchlorate using EPA Method 314.0M.
2. * Results reported by the laboratory as estimated, i.e., between the method detection limit and reporting limit; in accordance with the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (2010), results were qualified as nondetect (U) at the reporting limit of 4.0 µg/L.

Abbreviations
µg/L = micrograms per liter
USEPA = United States Environmental Protection Agency
J = estimated concentration

TABLE E2

FIELD DUPLICATE RELATIVE PERCENT DIFFERENCES
Olin Site
Morgan Hill, California

Well	Sample Date	Sample Type	Perchlorate Concentration (µg/L)	RL (µg/L)	MDL (µg/L)	Relative Percent Difference
On-site Wells:						
EW-02A	1/7/2015	Primary	ND (4.0)	4.0	0.75	
EW-02A-DUP	1/7/2015	Field Duplicate	0.8 J	4.0	0.75	N/A
PM-03B1	1/29/2015	Primary	7.2	4.0	0.75	
PM-03B1-DUP	1/29/2015	Field Duplicate	7.5	4.0	0.75	4.1%
MW-04C	2/4/2015	Primary	16	4.0	0.75	
MW-04C-DUP	2/4/2015	Field Duplicate	16	4.0	0.75	0.0%
SV-200	2/6/2015	Primary	ND (4.0)	4.0	0.75	
SV-200-DUP	2/6/2015	Field Duplicate	ND (4.0)	4.0	0.75	N/A
EW-01A	4/3/2015	Primary	1.8 J	4.0	0.75	
EW-01A-DUP	4/3/2015	Field Duplicate	1.6 J	4.0	0.75	N/A
SV-100	5/11/2015	Primary	14	4.0	0.75	
SV-100-DUP	5/11/2015	Field Duplicate	14	4.0	0.75	0.0%
EW-01B1	6/2/2015	Primary	130	40	7.5	
EW-01B1-DUP	6/2/2015	Field Duplicate	140	40	7.5	7.4%
Off-site Wells:						
PMW-04-125	1/12/2015	Primary	ND (4.0)	4.0	0.75	
PMW-04-125-DUP	1/12/2015	Field Duplicate	ND (4.0)	4.0	0.75	N/A
MW-64-082	1/13/2015	Primary	9.5	4.0	0.75	
MW-64-082-DUP	1/13/2015	Field Duplicate	9.4	4.0	0.75	1.1%
09S03E34G002	1/15/2015	Primary	20	4.0	0.75	
09S03E34G002-DUP	1/15/2015	Field Duplicate	20	4.0	0.75	0.0%
MW-75-120	1/19/2015	Primary	19	4.0	0.75	
MW-75-120-DUP	1/19/2015	Field Duplicate	18	4.0	0.75	5.4%
MW-73-395	1/21/2015	Primary	36	20	3.8	
MW-73-395-DUP	1/21/2015	Field Duplicate	36	20	3.8	0.0%

TABLE E2

FIELD DUPLICATE RELATIVE PERCENT DIFFERENCES
Olin Site
Morgan Hill, California

Well	Sample Date	Sample Type	Perchlorate Concentration (µg/L)	RL (µg/L)	MDL (µg/L)	Relative Percent Difference
MW-26-415	1/26/2015	Primary	13	4.0	0.75	
MW-26-415-DUP	1/26/2015	Field Duplicate	13	4.0	0.75	0.0%
MP-04-088	1/27/2015	Primary	30	8.0	1.5	
MP-04-088-DUP	1/27/2015	Field Duplicate	29	8.0	1.5	2.1%
MP-26-140	1/27/2015	Primary	3.0 J	4.0	0.75	
MP-26-140-DUP	1/27/2015	Field Duplicate	3.0 J	4.0	0.75	N/A
09S03E35N014	2/2/2015	Primary	18	1.0	0.16	
09S03E35N014-DUP	2/2/2015	Field Duplicate	17	0.5	0.082	5.7%
MW-17-085	2/3/2015	Primary	9.4	4.0	0.75	
MW-17-085-DUP	2/3/2015	Field Duplicate	9.2	4.0	0.75	2.2%
DEW-1	3/3/2015	Primary	15	4.0	0.75	
DEW-1-DUP	3/3/2015	Field Duplicate	15	4.0	0.75	0.0%
09S03E34G001	4/10/2015	Primary	12	4.0	0.75	
09S03E34G001-DUP	4/10/2015	Field Duplicate	12	4.0	0.75	0.0%
09S03E34R007	5/19/2015	Primary	4.7	0.5	0.082	
09S03E34R007-DUP	5/19/2015	Field Duplicate	3.1	0.5	0.082	41.0%
MW-74-084	5/20/2015	Primary	4.4	4.0	0.75	
MW-74-084-DUP	5/20/2015	Field Duplicate	4.4	4.0	0.75	0.0%
PMW-06-416	5/27/2015	Primary	4.0	4.0	0.75	
PMW-06-416-DUP	5/27/2015	Field Duplicate	4.0	4.0	0.75	0.0%

Maximum RPD	41.0%
Minimum RPD	0%
Average RPD	4.1%

Notes

All concentrations in micrograms per liter (µg/L)

Concentrations between the method detection limit and the reporting limit are qualified as estimated (J).

TABLE E2

FIELD DUPLICATE RELATIVE PERCENT DIFFERENCES

Olin Site

Morgan Hill, California

Abbreviations

MDL = method detection limit

ND = non-detect at the reporting limit specified in parentheses.

N/A = not applicable; RPDs are not calculated for results less than the reporting limit.

RL = reporting limit

RPD = relative percent difference