

**Pinellas County, Florida, Site
Environmental Restoration Project**

**Semiannual Progress Report
for the 4.5 Acre Site**

**December 2014 Through
May 2015**

June 2015



U.S. DEPARTMENT OF
ENERGY

Legacy
Management

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Abbreviations

cDCE	<i>cis</i> -1,2-dichloroethene
COPC	contaminant of potential concern
CTL	cleanup target level
DOE	U.S. Department of Energy
FAC	<i>Florida Administrative Code</i>
FDEP	Florida Department of Environmental Protection
ft amsl	feet above mean sea level
IRA	Interim Remedial Action
LDA	large-diameter auger
LM	Office of Legacy Management
µg/L	micrograms per liter
RPD	relative percent difference
STAR Center	Young - Rainey Science, Technology, and Research Center
TCE	trichloroethene
tDCE	<i>trans</i> -1,2-dichloroethene
VC	vinyl chloride
VOC	volatile organic compound

1.0 Introduction

This *Pinellas County, Florida, Site Environmental Restoration Project Semiannual Progress Report for the 4.5 Acre Site* describes environmental restoration activities for the Pinellas 4.5 Acre Site located in Pinellas County, Largo, Florida (Figure 1). The former U.S. Department of Energy (DOE) Pinellas Plant facility consisted of the 4.5 Acre Site and what is now the STAR Center (Young - Rainey Science, Technology, and Research Center). Both the 4.5 Acre Site and the STAR Center are part of the overall Pinellas County, Florida, Site (Figure 2).

The Pinellas Plant facility was constructed in the mid-1950s as part of a nationwide nuclear weapons research, development, and production complex. Production of weapons-related components ceased in September 1994. However, as a result of these operations, contamination exists in the surficial groundwater beneath the site.

Administration of DOE activities at the 4.5 Acre Site is the responsibility of the DOE Office of Legacy Management (LM) in Grand Junction, Colorado. Stoller Newport News Nuclear, Inc., a wholly owned subsidiary of Huntington Ingalls Industries, Inc., and a prime contractor to LM, provides technical support to DOE for the remediation and closure of all active solid-waste management units on the STAR Center and for the 4.5 Acre Site.

The 4.5 Acre Site is located immediately northwest of the STAR Center, in the northeast quarter of Section 13, Township 30 South, Range 15 East. DOE owned this parcel from 1957 to 1972, at which time it was sold to a private landowner. During the period of DOE ownership, the property was used for the disposal of drums of waste resins and solvents. As a result of this practice, the surficial aquifer was impacted by volatile organic compounds (VOCs)—primarily vinyl chloride (VC), toluene, trichloroethene (TCE), and 1,2-dichloroethene. DOE completed a drum removal action in 1985.

An Interim Remedial Action (IRA), consisting of groundwater extraction and treatment via air stripping, and a routine groundwater monitoring program, was initiated in May 1990. In July 1997, a modification of the IRA, involving the installation of dual-phase extraction wells, provided a more aggressive system to remove groundwater contamination. In November 1999, the dual-phase extraction/air-stripping system was replaced with an in situ biosparge treatment system.

The Florida Department of Environmental Protection (FDEP) approved the *4.5 Acre Site Biosparge System Integration Plan* (DOE 2000) on January 17, 2001. This plan stated that performance monitoring of the biosparge system would be undertaken on a quarterly basis. Therefore, in April 2001, quarterly performance monitoring through the use of direct-push technology was undertaken. This continued until the biosparge system was shut off in May 2003.

The *Remedial Action Plan for the Pinellas 4.5 Acre Site* (DOE 2001) outlined a groundwater recovery system as a contingency option in the event that biosparging resulted in extending the contaminant plume. The *Interim Remedial Action Plan for Ground Water Recovery at the 4.5 Acre Site* (DOE 2003) was submitted to FDEP on August 29, 2003, and approved by FDEP on September 19, 2003. Construction of the IRA treatment system began on March 8, 2004, and the system began operations on April 26, 2004. The treatment system consisted of an extraction

well field (three recovery wells), pumps and associated piping, a water transmission pipeline, a utility connection, a low-profile tray air-stripper unit, and effluent piping.

In April 2005, the *4.5 Acre Site Remedial Action Plan Addendum* (DOE 2005) was submitted to FDEP. That document presented a proposed final action for the 4.5 Acre Site that involved the closure of the site using the provisions of the State of Florida Global Risk-Based Corrective Action regulations. Part of DOE's proposed final action for the 4.5 Acre Site was to shut down the groundwater recovery system and begin a 2-year monitoring period. Approval from FDEP to shut down the system was received on December 20, 2005, thus commencing DOE's 2-year monitoring period.

Although DOE has conducted numerous remediation activities at the 4.5 Acre Site since 1985, FDEP in 2005 suggested that, based on continuing elevated levels of VOCs in groundwater, a source of VOCs might remain in the subsurface and that the removal of contaminated soil might be necessary (Armstrong 2005). To investigate this concern, 1,172 soil samples were collected from 138 soil borings completed at two areas of the site during the summer of 2007. Analytical results demonstrated that the following contaminants were present in site sediments at concentrations that likely represented a source of contamination to groundwater: TCE, *cis*-1,2-dichloroethene (cDCE), *trans*-1,2-dichloroethene (tDCE), and toluene. Results from this characterization effort are available in the *4.5 Acre Site Source Characterization Data Report* (DOE 2007).

In April 2008, DOE completed a feasibility study that evaluated the available contaminant source removal technologies (DOE 2008a). The preferred option for source removal at the 4.5 Acre Site was determined to be soil excavation using a large-diameter auger (LDA) and offsite disposal of soil. FDEP agreed with this option in a letter dated May 14, 2008 (Armstrong 2008).

An *Interim Remedial Action Plan for Source Removal at the 4.5 Acre Site* (DOE 2008b) was prepared in late July 2008 and approved by FDEP on August 19, 2008. The objective of this IRA was to remove the source of contamination at the site. On March 31, 2009, LDA operations commenced at the 4.5 Acre Site and were completed on May 27, 2009. Two hundred twenty-one large-diameter and 325 small-diameter borings were completed. Approximately 7,035 cubic yards of soil were excavated. Of this total, 4,464 cubic yards were removed as clean overburden, and 2,571 cubic yards of contaminated soil were removed, characterized for waste disposal, and disposed of at a Resource Conservation and Recovery Act Subtitle D landfill. Additional information regarding the 4.5 Acre Site LDA work is available in the *Data Report for Overburden Soil at the Northeast Site and the 4.5 Acre Site* (DOE 2009b) and the *Interim Remedial Action for Source Removal at the 4.5 Acre Site, Final Report* (DOE 2009c).

Routine monitoring at the site in March 2009 identified VC in a sample from offsite monitoring well PIN20-M035. DOE reported this discovery to FDEP and to the property owner in accordance with FDEP notification requirements.

As a follow-up to the LDA work, emulsified soybean oil and the microorganism *Dehalococcoides mccartyi* (formerly known as *Dehalococcoides ethenogenes*) were injected into the subsurface at 95 points at the site in February 2010 to enhance contaminant biodegradation. The document *Injection of Emulsified Soybean Oil at the Northeast Site and 4.5 Acre Site* (DOE 2010) was prepared to describe the work performed for this task. This project resulted in a

significant decrease in contaminant mass and concentration around the former contaminant source areas and in the downgradient contaminant plume.

A second emulsified soybean oil injection event was conducted in July 2013. Approximately 23,000 gallons of diluted emulsified soybean oil and the microorganism *Dehalococcoides mccartyi* were injected at 46 locations along the southwest property boundary and adjacent to monitoring well pair PIN20-0502/0503. This project is described in detail in the *4.5 Acre Interim Remedial Action Report* (DOE 2013).

With (1) the completion of the LDA project to remove contaminant source material and (2) the two emulsified soybean oil injection events, DOE is proceeding to close the site under FDEP's Risk-Based Corrective Action regulations (*Florida Administrative Code* Section 62-780.680 [FAC 62-780.680]). The *Closure Monitoring Plan for the Northeast Site and 4.5 Acre Site* (DOE 2009a) describes the closure monitoring that is necessary under the Risk-Based Corrective Action regulations, according to the requirements in FAC Section 62-780.750, "Post Active Remediation Monitoring." That DOE document was approved by FDEP on December 21, 2009.

Closure monitoring began with the August/September 2009 sampling event. During a meeting with FDEP in August 2014, it was determined that the list of closure monitoring wells should be revised to exclude wells in the interior of the site and add wells along the southwest property boundary. This change was implemented starting with the September 2014 sampling event. Subsequently, DOE decided to continue monitoring the three wells with contaminants of potential concern (COPC) detections in the site interior. Current monitoring wells are listed in Table 1.

This document is the semiannual progress report for the 4.5 Acre Site for December 2014 through May 2015, as requested by FDEP. This report provides the results of monitoring activities and a summary of ongoing and projected work.

1.1 Site Activities

The following work took place during the December 2014 through May 2015 period:

- Conducted semiannual sampling, which consisted of collecting groundwater samples for VOCs analysis from 11 monitoring wells on March 5 and 6, 2015, and measuring water levels in all accessible wells and nearby ponds on March 4, 2015.
- Reported the results of the semiannual closure monitoring (this document).

2.0 Monitoring Data

2.1 Groundwater Elevations and Flow

During this reporting period, depth-to-water measurements were taken in all accessible monitoring wells at the 4.5 Acre Site on March 4, 2015. The depth to water in each well was measured with an electronic water-level indicator. The groundwater elevation data are listed in Table 2. Surface water elevations for the West Pond (to the east) and Pond 5 (to the southeast)

are listed in Table 3. The water elevation data were used to construct contours of water levels in the shallow and deep portions of the surficial aquifer (Figures 3 and 4).

In March 2015, groundwater in the shallow surficial aquifer (Figure 3) generally flowed to the west-northwest. There was also a component of flow toward the southeast in the southern part of the site. The flow patterns in the deep surficial aquifer (Figure 4) indicate similar flow directions. The average hydraulic gradient in most of the site was approximately 0.002 foot per foot. This gradient is similar to those observed during the previous few years. Calculations using Darcy's law, along with approximations of 1 foot per day for hydraulic conductivity and 0.3 for effective porosity, indicate that groundwater at the site is estimated to move about 2.4 feet per year. Groundwater velocities at the site have historically ranged from 2 to 10 feet per year.

2.2 Groundwater Sampling

Groundwater samples from the 11 monitoring wells were analyzed for VOCs in March 2015. In addition, three wells were sampled during an interim sampling event in January 2015. All samples were collected in accordance with the *Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites* (LMS/PRO/S04351), using FDEP procedures. All samples were submitted to TestAmerica Laboratories in Denver, Colorado, for analysis. TestAmerica Denver is accredited by the Florida Department of Health in accordance with the National Environmental Laboratory Accreditation Conference (certification number E87667). VOCs were analyzed using U.S. Environmental Protection Agency SW-846 method 8260B.

A new FDEP-approved sampling technique (allowing water to pass through the pump head before sample collection), first implemented with the September 2014 sampling event, was used at all wells. All monitoring wells were micropurged using high density polyethylene tubing or dedicated Teflon tubing in the well and a peristaltic pump at the surface, and sampling was performed when the field measurements stabilized. Table 4 lists the March 2015 field measurements of temperature, specific conductance, turbidity, pH, oxidation-reduction potential, and dissolved oxygen recorded at the time the samples were collected. Measurements were made using a calibrated multiparameter meter with a flow cell, and turbidity was measured using a nephelometer. Dissolved oxygen was not measured in most wells due to adverse effects from the emulsified soybean oil injection conducted in 2013.

2.3 Groundwater Analytical Results

Table 5 presents individual COPCs in samples collected from the 11 monitoring wells at the 4.5 Acre Site since closure monitoring began in August 2009. Figure 5 shows the total COPCs concentrations (the sum of the individual COPCs concentrations) for March 2015. The COPCs for the 4.5 Acre Site are TCE, cDCE, tDCE, VC, and benzene. Only VC exceeded its cleanup target level (CTL); a VC plume map is included as Figure 6. Laboratory reports for samples collected in March 2015 are provided in Appendix A.

2.4 Quality Assurance/Quality Control

The results from the analytical laboratory, TestAmerica, were checked for quality assurance/quality control through duplicate samples, trip blanks, and equipment blanks. Detected analytes for the duplicate sample collected from the 4.5 Acre Site in March 2015 are listed in Table 6.

The duplicate sample results were compared, and the relative percent differences (RPDs) between the results were calculated. All duplicate results met the U.S. Environmental Protection Agency recommended laboratory duplicate criterion of less than 20 percent RPD for results that are greater than 5 times the practical quantitation limit.

As specified in the *Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites*, duplicate samples should be collected at a frequency of one duplicate for every 20 or fewer samples. During the March 2015 event, 11 samples were collected and one duplicate sample was collected, so this criterion was met.

A data validation software module for identifying and tracking anomalous groundwater data within the SEEPro (Site Environmental Evaluation for Projects) database was used to generate a report of analytical results that fall outside of historical minimum or maximum values. There were no anomalies associated with these results, and the data are acceptable as qualified.

3.0 Data Interpretation

Trend plots for the 11 monitoring wells are shown as Figures 7–17. TCE and benzene were detected infrequently and at very low concentrations during closure monitoring, so only cDCE, tDCE, and VC are shown on these plots.

As can be seen in the trend plots, contaminant concentrations, particularly the VC concentrations, decreased following the July 2013 emulsified soybean oil injection event. In March 2015, VC was the only COPC to exceed its CTL, with the maximum detected concentration at 41 micrograms per liter in well PIN20-M068.

Geochemical parameters measured in the field at the 4.5 Acre Site during March 2015 are listed in Table 4. Conditions are moderately to highly reducing, as evidenced by the low values of dissolved oxygen and oxidation-reduction potential, and therefore are favorable for continued contaminant biodegradation.

In summary, the contaminant plume at the 4.5 Acre Site is stable or decreasing, as shown by generally decreasing contaminant concentration trends. The emulsified soybean oil injected in 2013 should remain active for at least 5 years after injection, so biodegradation of contaminants should continue.

4.0 Upcoming Tasks

During the June to November 2015 period, sampling of the 11 monitoring wells will be conducted in September.

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DOE (U.S. Department of Energy), 2010. *Injection of Emulsified Soybean Oil at the Northeast Site and 4.5 Acre Site*, LMS/PIN/N01494, Office of Legacy Management, Grand Junction, Colorado, April.

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Sampling and Analysis Plan for U.S. Department of Energy Office of Legacy Management Sites, LMS/PRO/S04351, continually updated, prepared by Stoller Newport News Nuclear, Inc., a wholly owned subsidiary of Huntington Ingalls Industries, Inc., for the U.S. Department of Energy Office of Legacy Management.

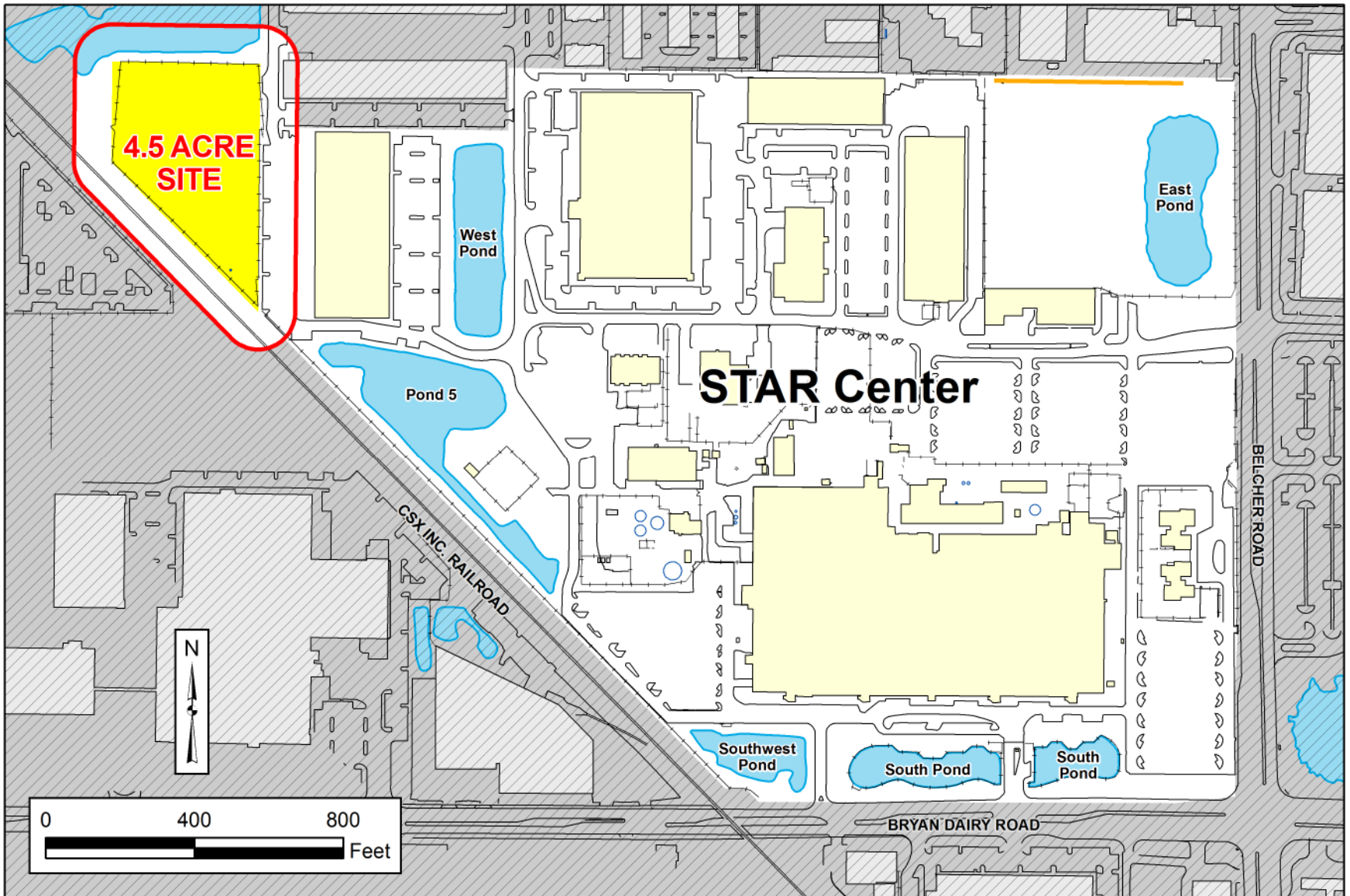
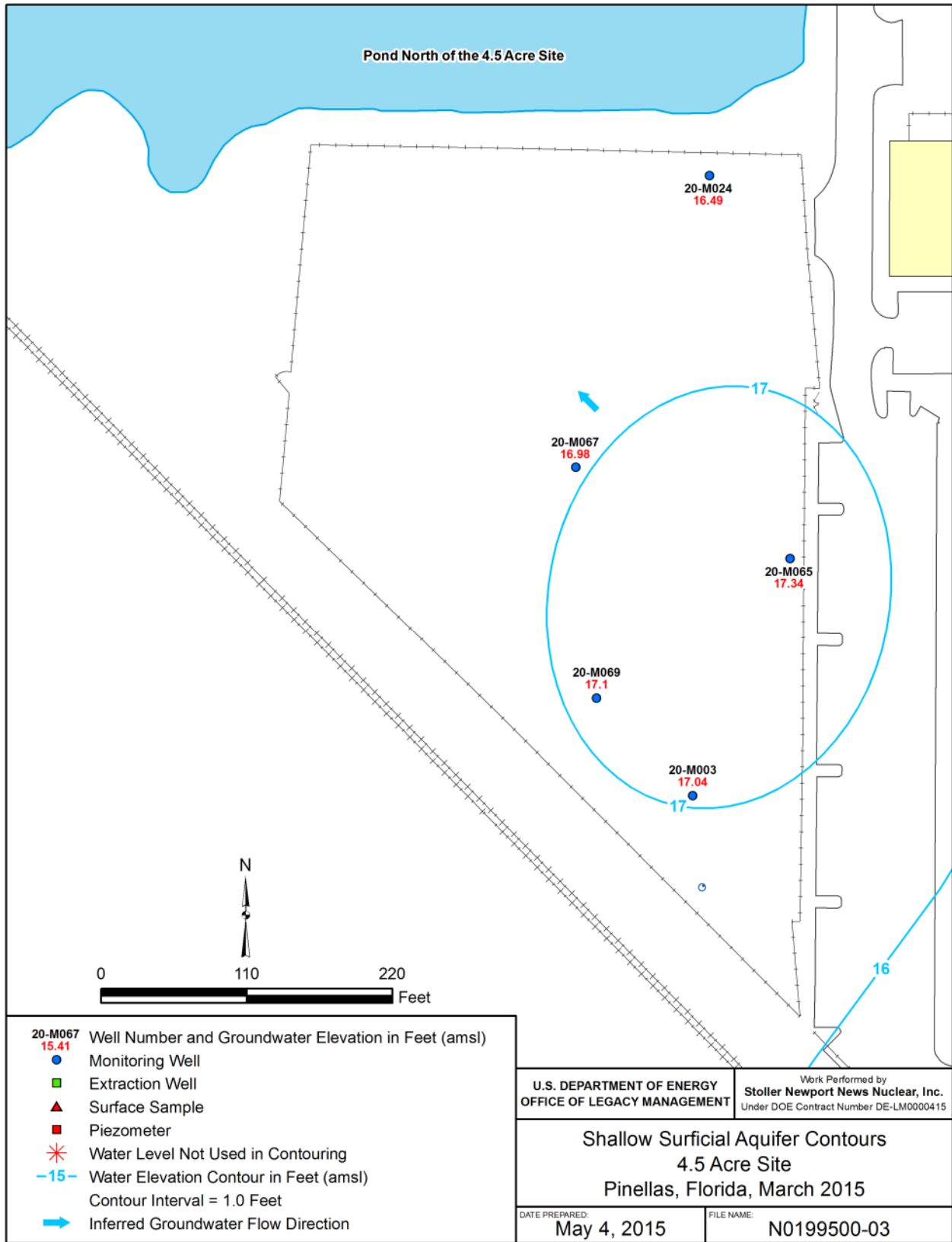
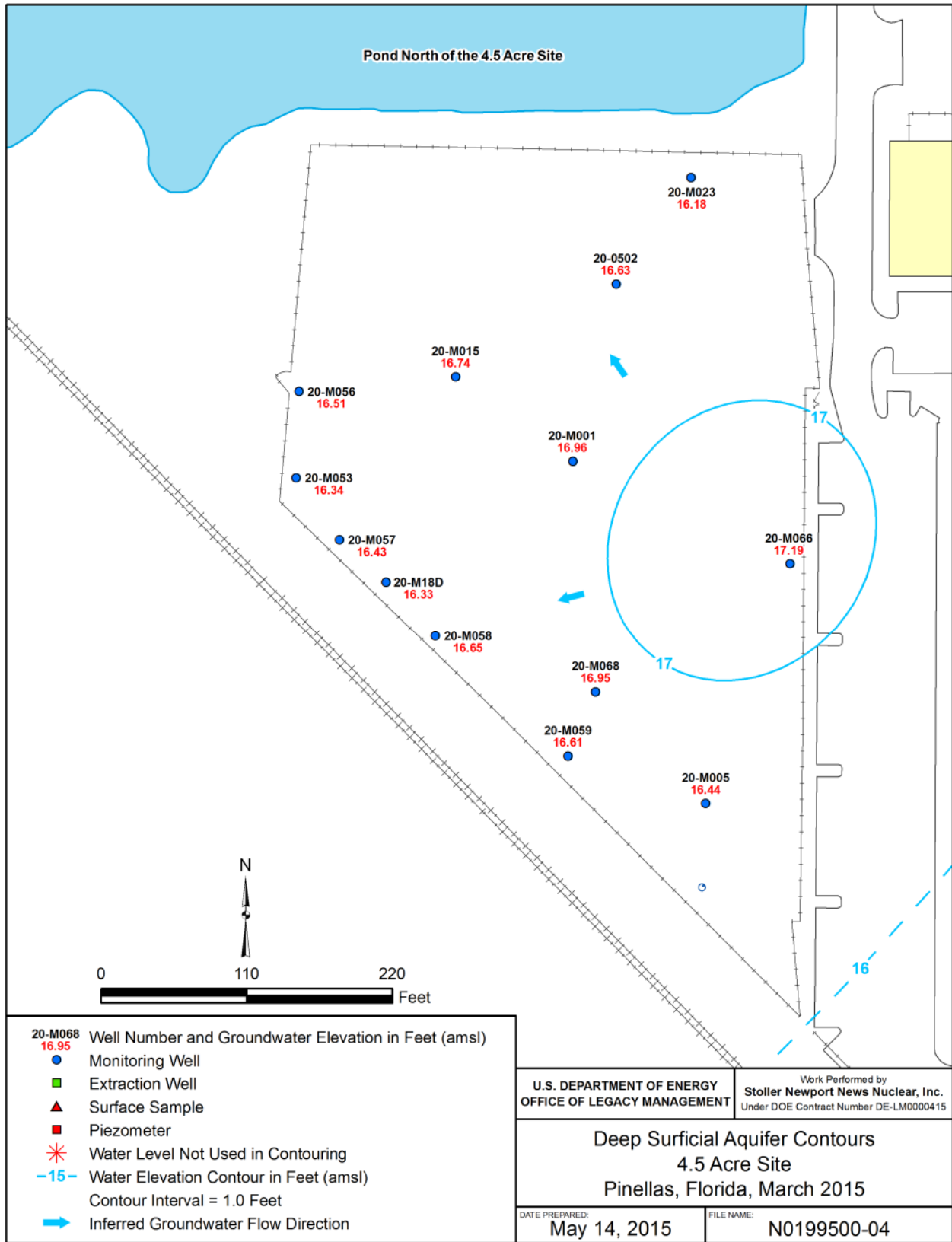


Figure 2. 4.5 Acre Site Location



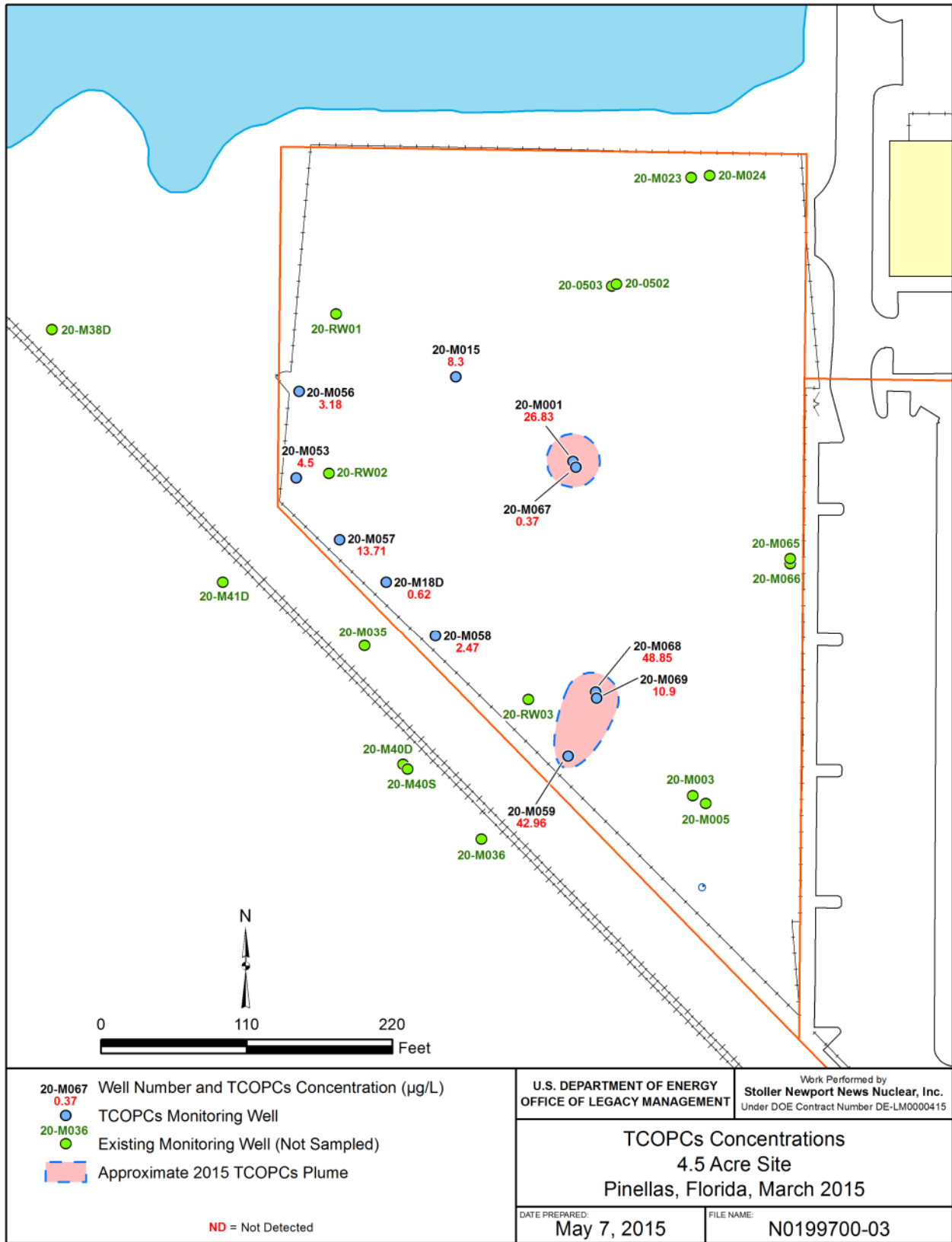
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Figure 3. Shallow Surficial Aquifer Flow, March 2015



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Figure 4. Deep Surficial Aquifer Flow, March 2015



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Figure 5. Total COPCs Concentrations, March 2015

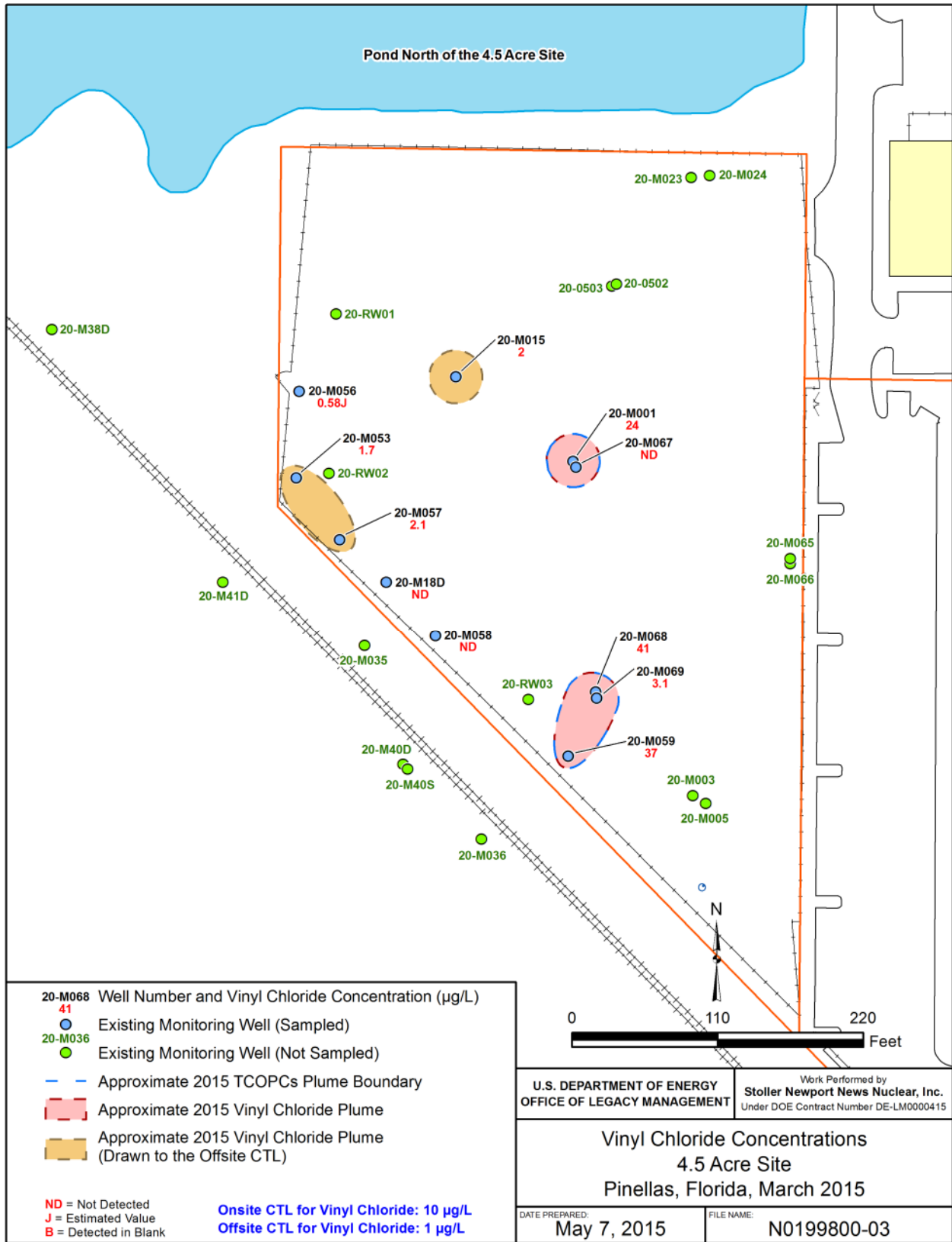


Figure 6. Vinyl Chloride Concentrations, March 2015

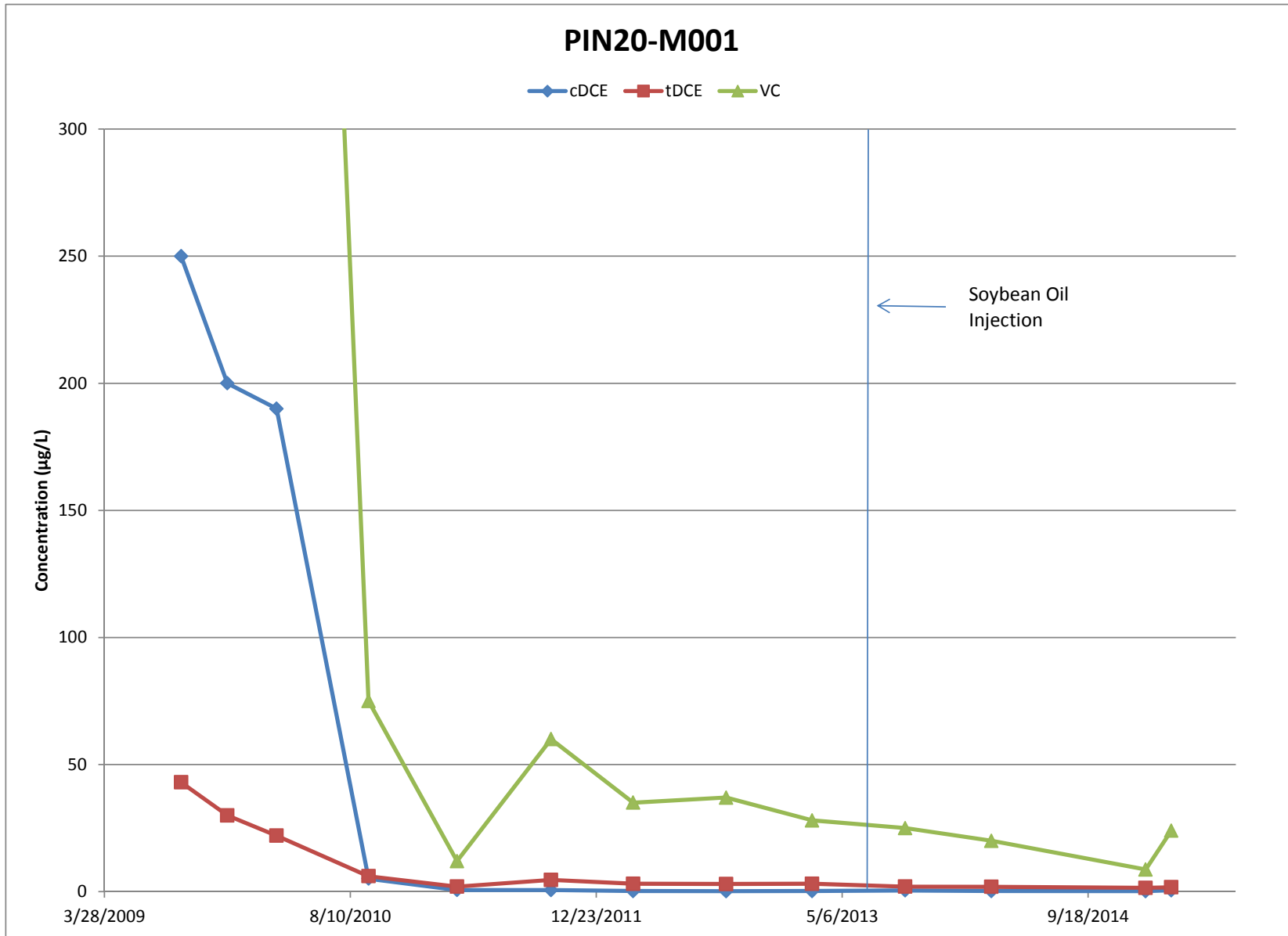


Figure 7. cDCE, tDCE, and VC in Well PIN20-M001, 2009–2015

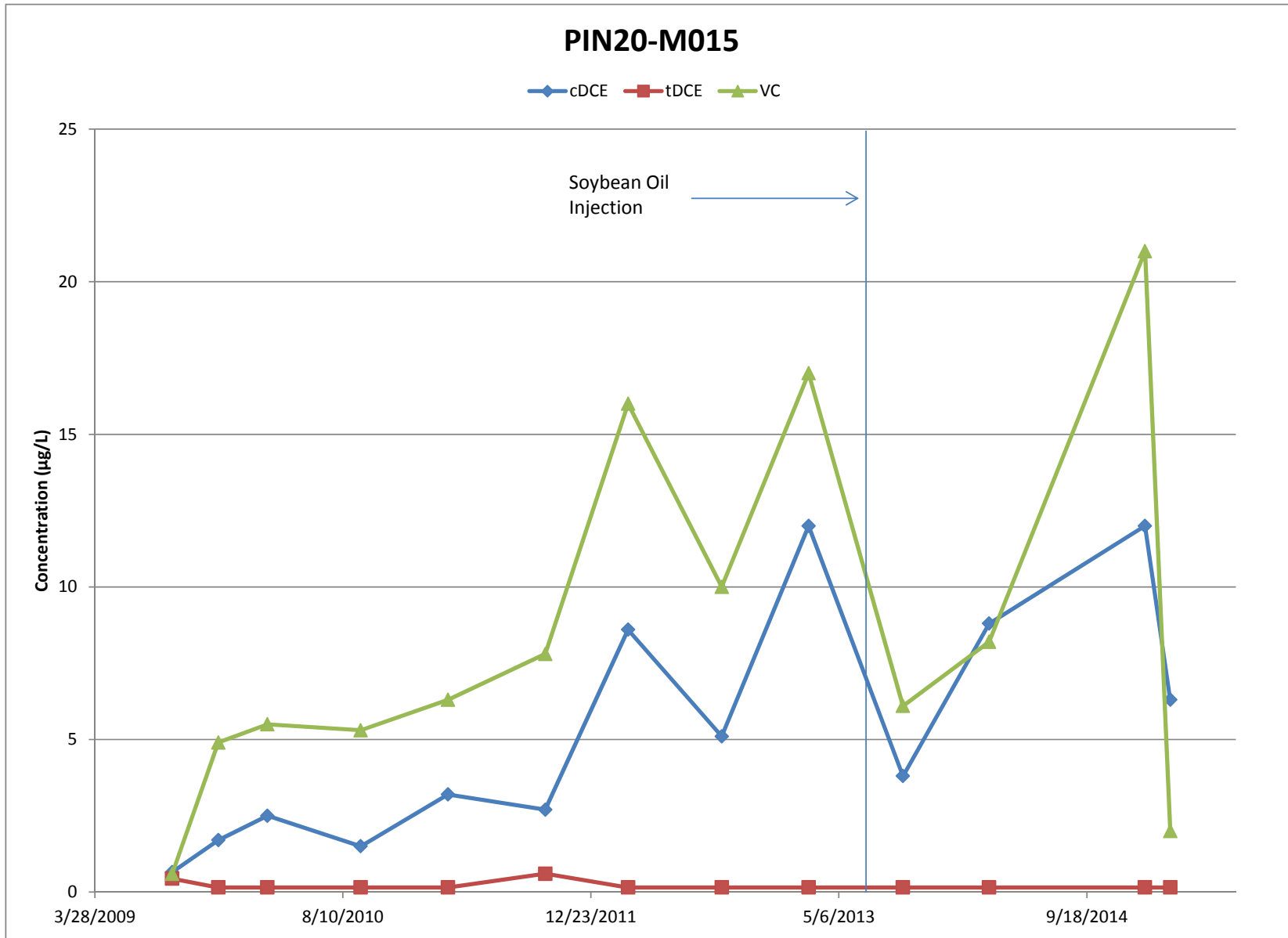


Figure 8. cDCE, tDCE, and VC in Well PIN20-M015, 2009–2015

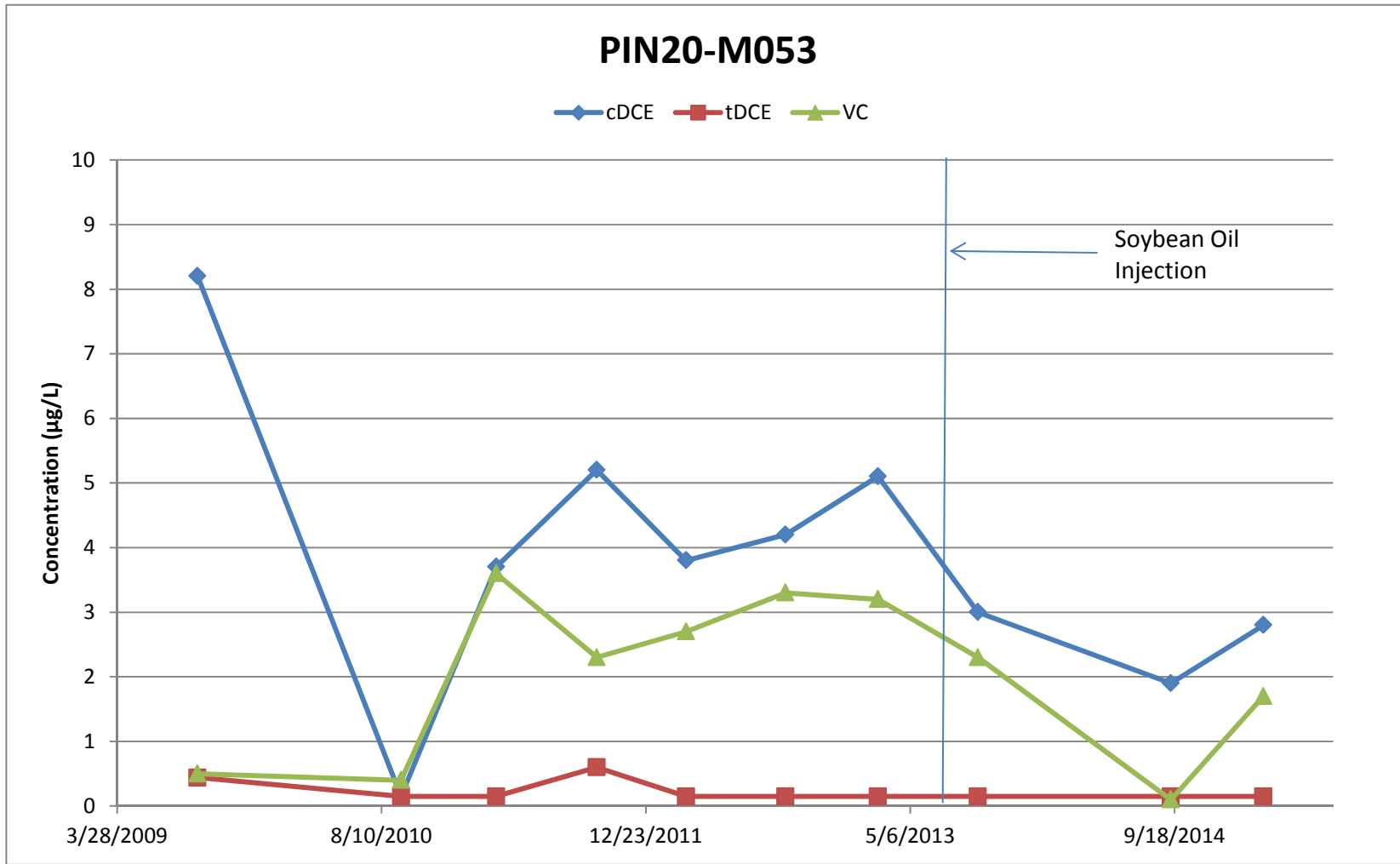


Figure 9. cDCE, tDCE, and VC in Well PIN20-M053, 2009–2015

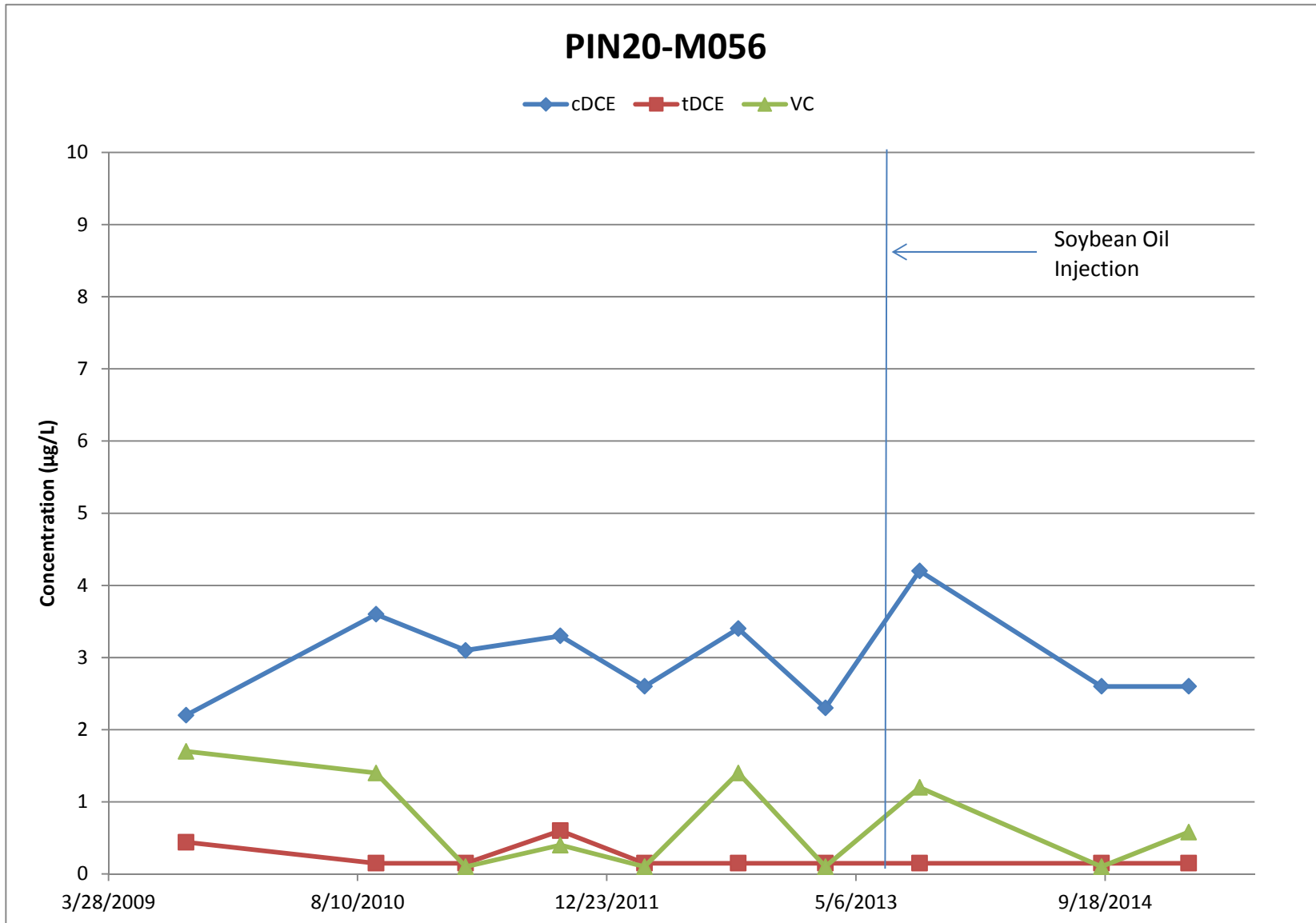


Figure 10. cDCE, tDCE, and VC in Well PIN20-M056, 2009–2015

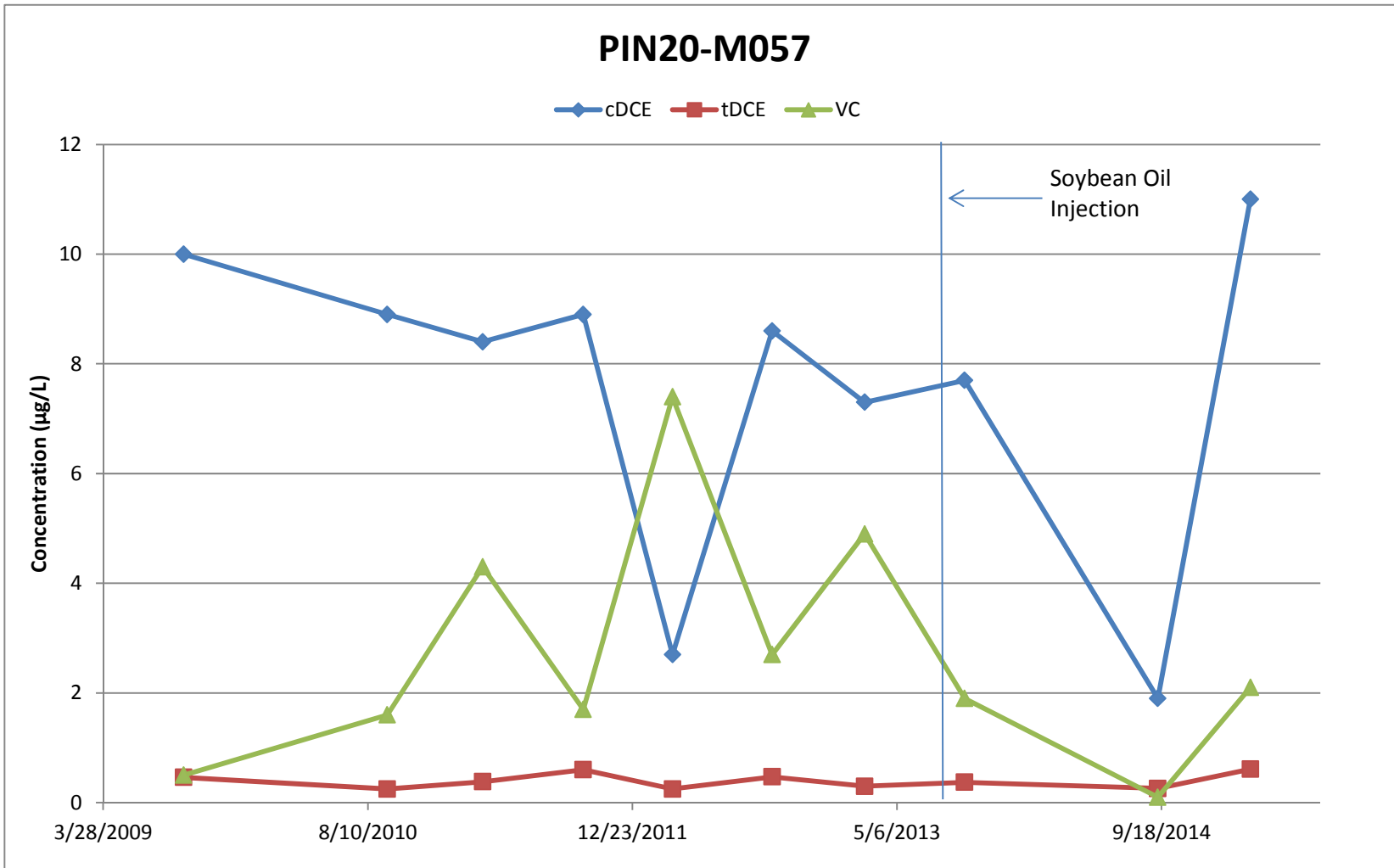


Figure 11. cDCE, tDCE, and VC in Well PIN20-M057, 2009–2015

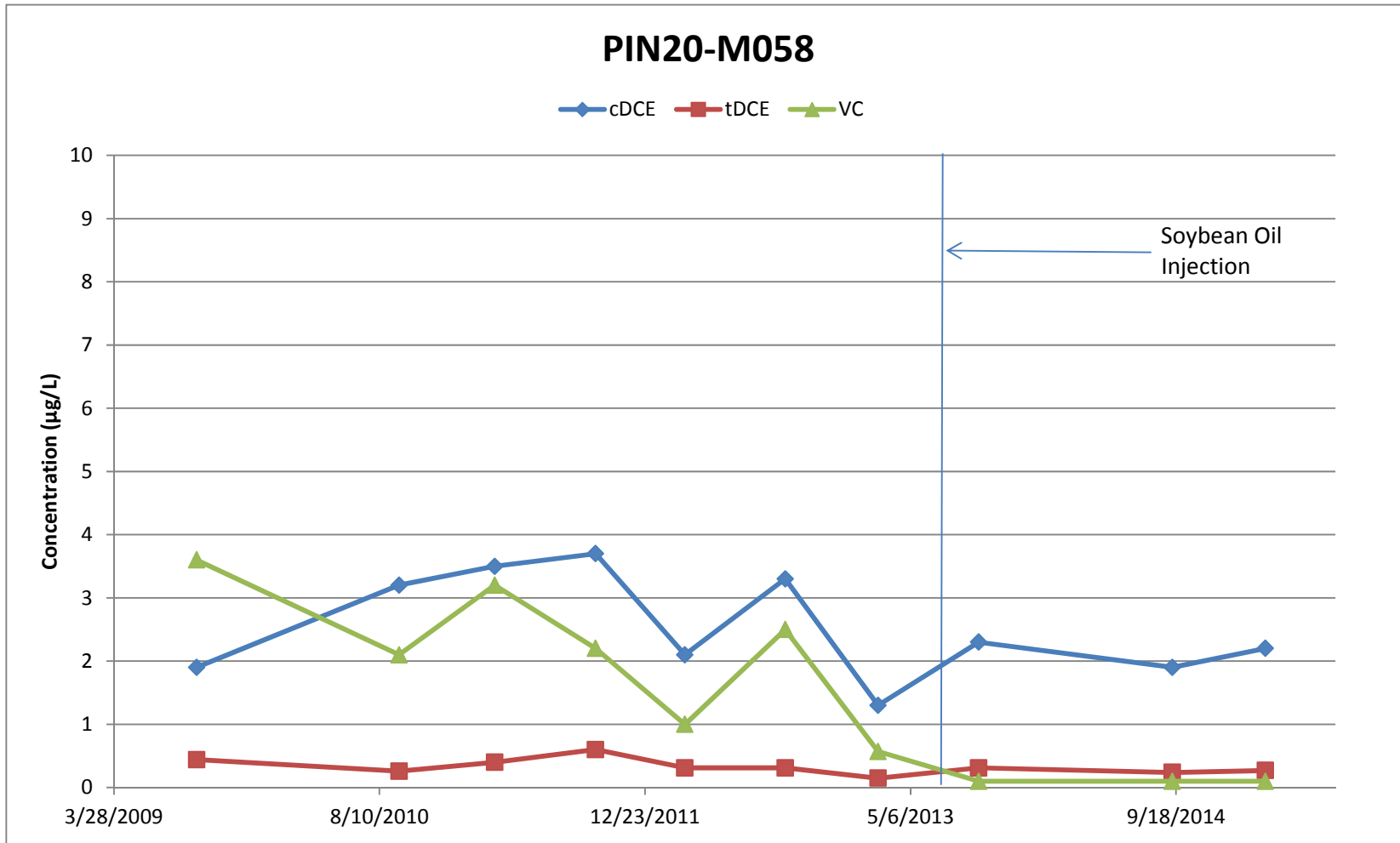


Figure 12. cDCE, tDCE, and VC in Well PIN20-M058, 2009–2015

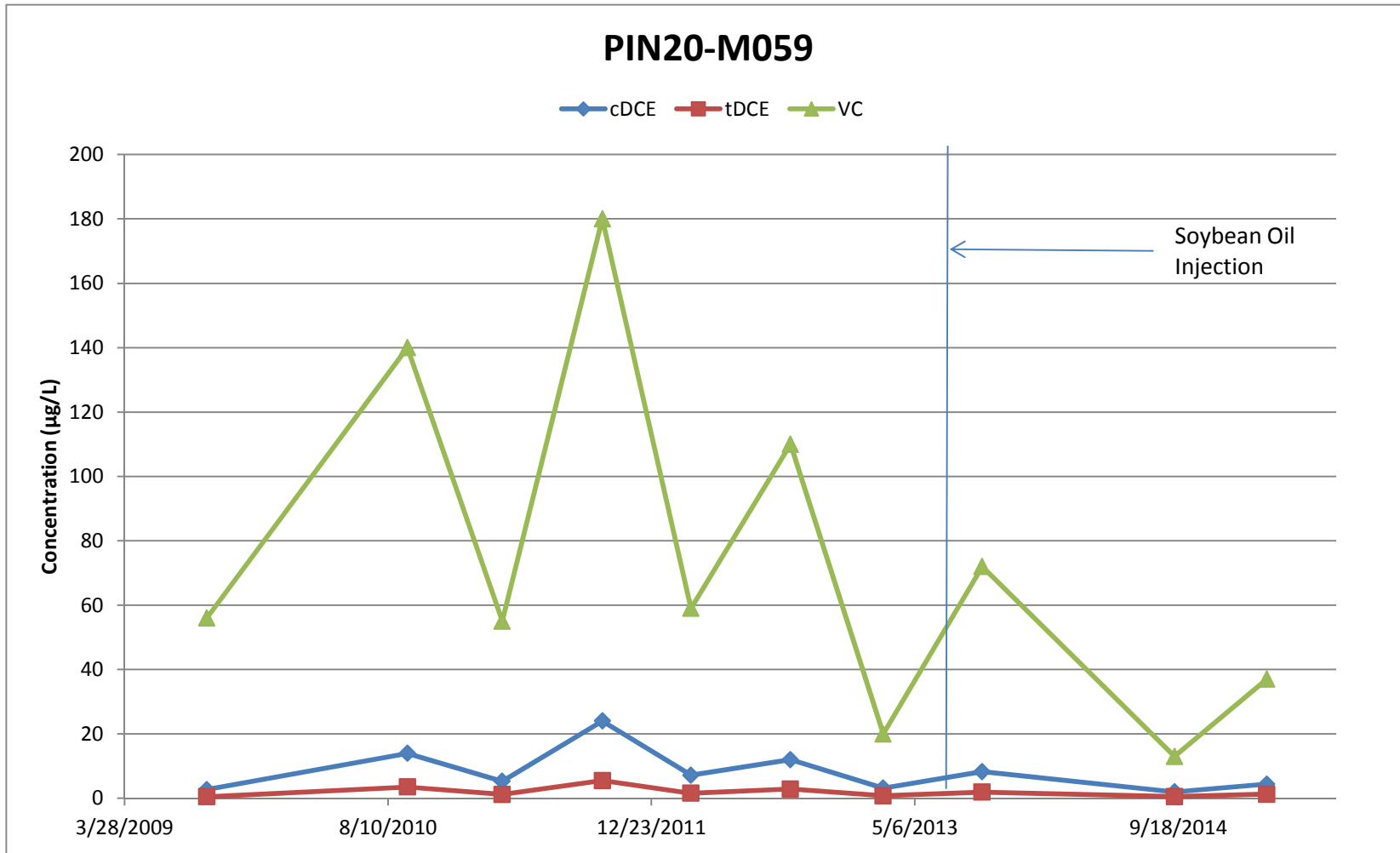


Figure 13. cDCE, tDCE, and VC in Well PIN20-M059, 2009–2015

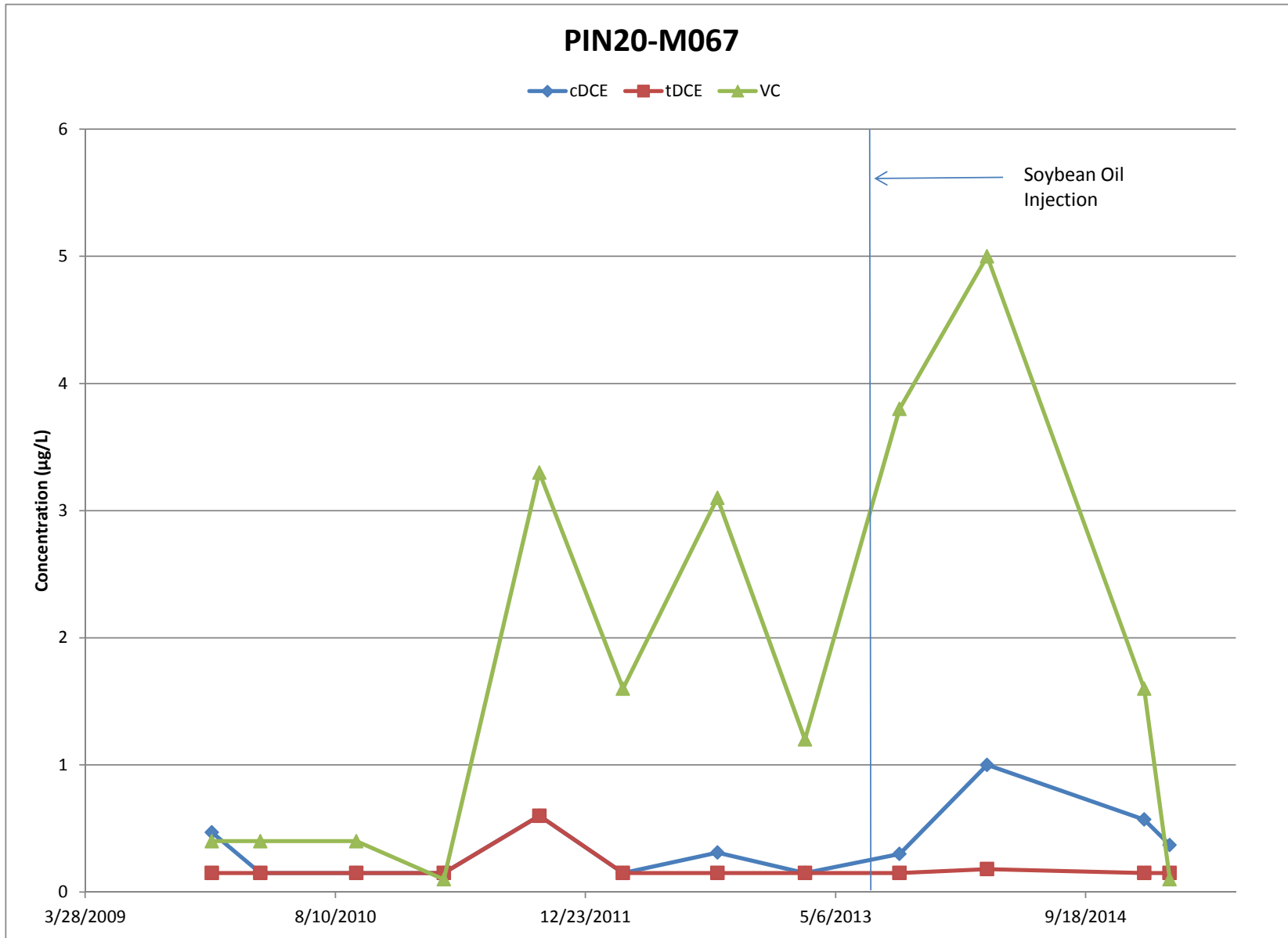


Figure 14. cDCE, tDCE, and VC in Well PIN20-M067, 2009–2015

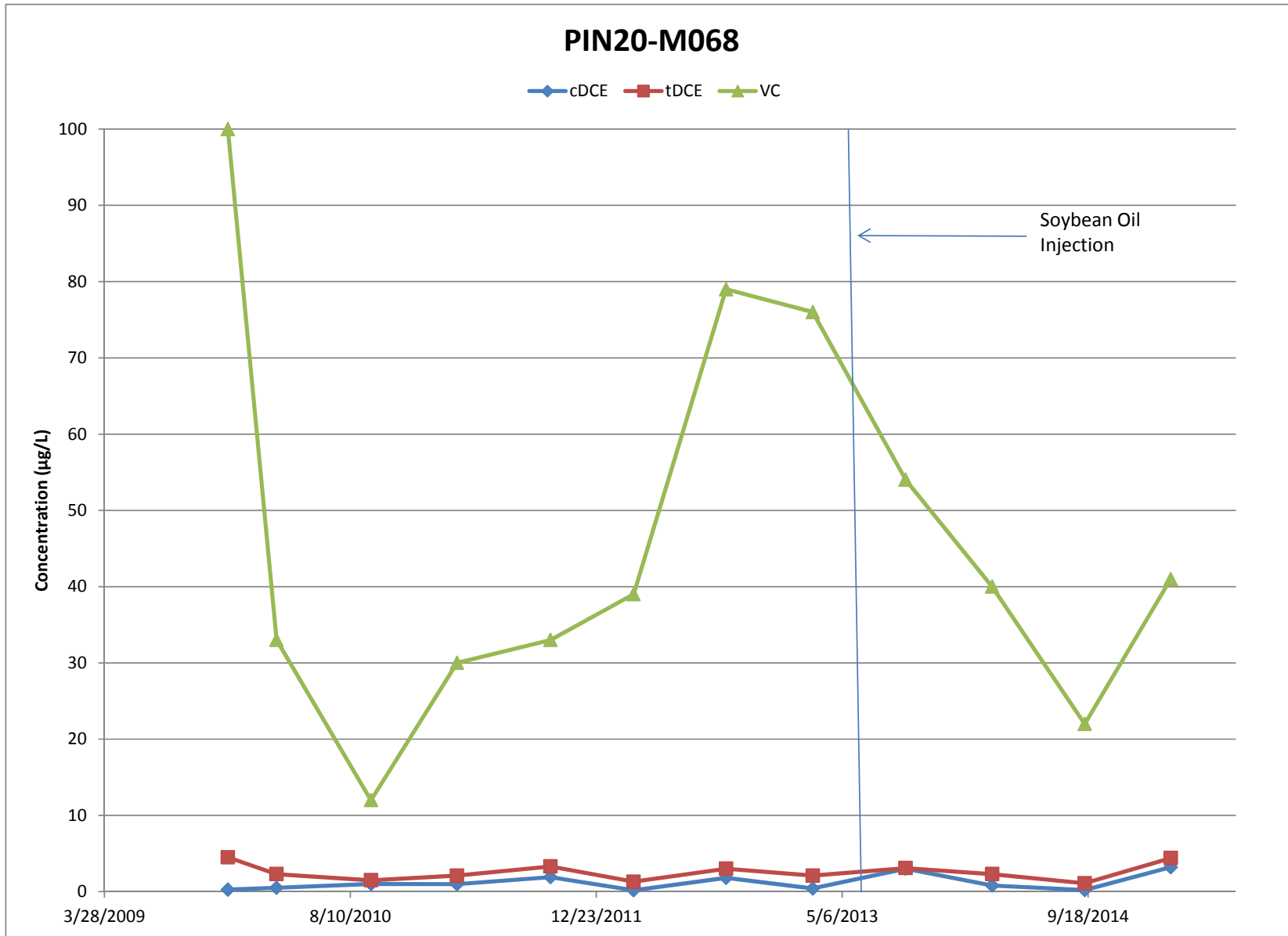


Figure 15. cDCE, tDCE, and VC in Well PIN20-M068, 2009–2015

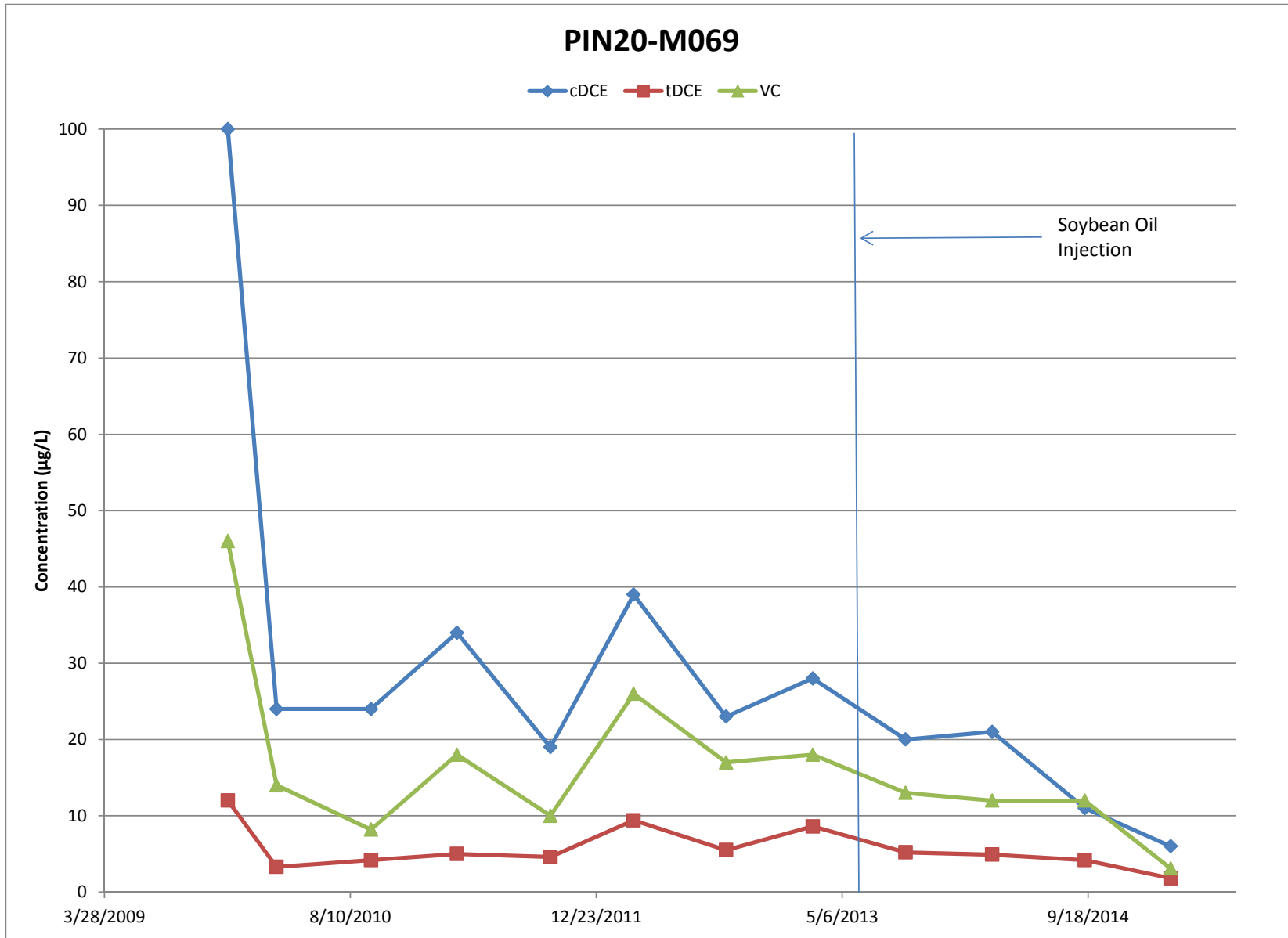


Figure 16. cDCE, tDCE, and VC in Well PIN20-M069, 2009–2015

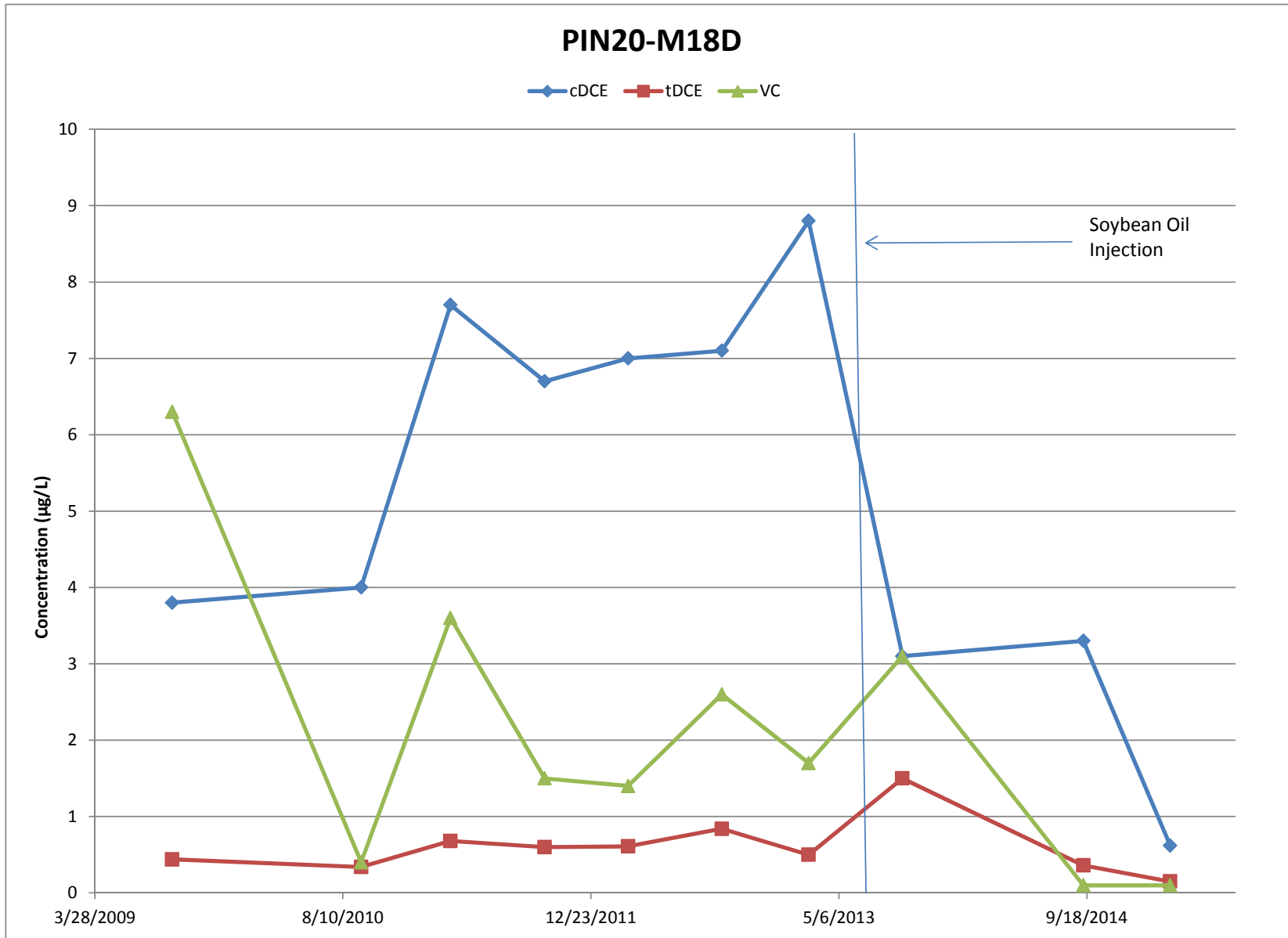


Figure 17. cDCE, tDCE, and VC in Well PIN20-M18D, 2009–2015

Table 1. Current Monitoring Wells

Current Monitoring Wells
PIN20-M001
PIN20-M015
PIN20-M053
PIN20-M056
PIN20-M057
PIN20-M058
PIN20-M059
PIN20-M067
PIN20-M068
PIN20-M069
PIN20-M18D

Table 2. Groundwater Elevation Data at the 4.5 Acre Site, March 2015

Location	Measurement		Water Depth (ft bls)	Groundwater Elevation (ft amsl)
	Date	Time		
PIN20				
0502	3/4/2015	10:21	0.77	16.63
0503	3/4/2015	08:40	0.83	16.57
M001	3/4/2015	10:11	0.64	16.96
M003	3/4/2015	09:51	0.86	17.04
M005	3/4/2015	10:00	1.86	16.44
M015	3/4/2015	08:49	1.65	16.74
M023	3/4/2015	08:36	3.29	16.18
M024	3/4/2015	08:40	1.31	16.49
M053	3/4/2015	09:07	0.86	16.34
M056	3/4/2015	09:00	0.59	16.51
M057	3/4/2015	09:11	1.47	16.43
M058	3/4/2015	09:20	1.05	16.65
M059	3/4/2015	09:23	1.19	16.61
M065	3/4/2015	09:54	1.06	17.34
M066	3/4/2015	10:00	1.01	17.19
M067	3/4/2015	10:01	1.72	16.98
M068	3/4/2015	09:24	1.20	16.95
M069	3/4/2015	09:35	0.90	17.10
M18D	3/4/2015	09:14	1.37	16.33
RW01	3/4/2015	08:55	1.58	16.02
RW02	3/4/2015	09:05	0.53	16.57
RW03	3/4/2015	09:23	1.36	16.24

Abbreviations:

ft amsl = feet above mean sea level

ft bls = feet below land surface

Table 3. Surface Water Elevations at the 4.5 Acre Site, March 2015

Location	Measurement		Surface Water Elevation (ft amsl)
	Date	Time	
PIN01	Pond 5		
P501	3/4/2015	11:45	14.00
P502	3/4/2015	12:06	14.06
PIN02	West Pond		
W005	3/4/2015	12:08	14.00
PIN20	Pond North of the 4.5 Acre Site		
BP01	-	-	-

Abbreviations:

ft amsl = feet above mean sea level

- = not measured

Table 4. Field Measurements of Samples Collected at the 4.5 Acre Site, March 2015

Location	Screen Depth (ft bls)	Sample Date	Temperature (°C)	Specific Conductance (µmho/cm) ^a	Turbidity (NTU)	pH	Oxidation Reduction Potential (mV)	Dissolved Oxygen (mg/L)
PIN20								
M001	20–25	1/13/2015	–	–	11	–	–	–
M001	20–25	3/6/2015	–	–	18	–	–	–
M015	20.8–25.8	1/13/2015	24.1	1,530	2	6.60	–68	0.2
M015	20.8–25.8	3/5/2015	21.8	1,439	5	6.66	22	0.6
M053	20–30	3/5/2015	–	–	7	–	–	–
M056	19–29	3/5/2015	–	–	19	–	–	–
M057	20–30	3/5/2015	–	–	15	–	–	–
M058	18–28	3/5/2015	–	–	8	–	–	–
M059	19–29	3/5/2015	–	–	16	–	–	–
M067	10–20	1/13/2015	–	–	11	–	–	–
M067	10–20	3/5/2015	–	–	9	–	–	–
M068	20–30	3/5/2015	–	–	274	–	–	–
M069	10–20	3/5/2015	24.5	2,016	5	6.51	–107	0.5
M18D	20–30	3/5/2015	–	–	45	–	–	–

Notes:

^a Temperature corrected to 25 °C

Abbreviations:

– = not measured
 ft bls = feet below land surface
 µmho/cm = micromhos per centimeter
 mg/L = milligrams/liter
 mV = millivolts
 NTU = nephelometric turbidity units

Table 5. COPC Concentrations from Current Closure Monitoring Wells
Since August 2009 ($\mu\text{g/L}$)^a

Location (all IDs start with "PIN20-")	Screen Depth (ft bls)	Date Sampled	TCE	cDCE	tDCE	VC	Benzene	TCOPCs
Cleanup Target Level^b			30	700	1,000	10	10	
M001	20–25	8/31/2009	<0.5	250	43	2,300	1.4	2,594.4
		12/3/2009	<0.16	200	30	2,100	2	2,332
		3/13/2010	<0.64	190	22	930	1.4J	1,143.4
		9/16/2010	<0.32	5.1	6.1	75	1.2J	87.4
		3/15/2011	<0.16	0.67J	2	12	0.92J	15.59
		9/22/2011	<0.64	<0.6	4.6	60J	<0.64	64.6
		3/7/2012	<0.16	0.24J	3.1	35J	1.1	39.44
		9/12/2012	<0.16	<0.15	3	37	0.91J	40.91
		3/6/2013	<0.16	0.24J	3.1	28	1	32.34
		9/11/2013	<0.16	0.49J	2	25	1	28.49
		3/5/2014	<0.16	0.26J	1.9	20	0.73J	22.89
		1/13/2015	<0.16	0.17J	1.5	8.7	0.45J	10.82
		3/6/2015	<0.16	0.52J	1.7	24	0.61J	26.83
M015	20.8–25.8	8/31/2009	<0.5	<0.65	<0.44	0.6J	<0.5	0.6
		12/2/2009	<0.16	1.7	<0.15	4.9	<0.16	6.6
		3/11/2010	<0.16	2.5	<0.15	5.5	<0.16	8
		9/15/2010	<0.16	1.5	<0.15	5.3	<0.16	6.8
		3/10/2011	<0.16	3.2	<0.15	6.3	<0.16	9.5
		9/22/2011	<0.64	2.7J	<0.6	7.8	<0.64	10.5
		3/7/2012	<0.16	8.6	<0.15	16	<0.16	24.6
		9/12/2012	<0.16	5.1	<0.15	10	<0.16	15.1
		3/6/2013	<0.16	12	<0.15	17	<0.16	29
		9/12/2013	<0.16	3.8	<0.15	6.1	<0.16	9.9
		3/5/2014	<0.16	8.8	<0.15	8.2	<0.16	17
		1/13/2015	<0.16	12	<0.15	21	<0.16	33
		3/5/2015	<0.16	6.3	<0.15	2	<0.16	8.3
M053	20–30	8/27/2009	<0.5	8.2	<0.44	<0.5	<0.5	8.2
		9/16/2010	<0.16	<0.15	<0.15	<0.4	<0.16	ND
		3/15/2011	<0.16	3.7	<0.15	3.6	<0.16	7.3
		9/21/2011	<0.64	5.2	<0.6	2.3J	<0.64	7.5
		3/8/2012	<0.16	3.8	<0.15	2.7	<0.16	6.5
		9/12/2012	<0.16	4.2	<0.15	3.3	<0.16	7.5
		3/6/2013	<0.16	5.1	<0.15	3.2	<0.16	8.3
		9/11/2013	<0.16	3	<0.15	2.3	<0.16	5.3
		9/11/2014	<0.16	1.9	<0.15	<0.1	<0.16	1.9
3/5/2015	<0.16	2.8	<0.15	1.7	<0.16	4.5		

Table 5 (continued). COPC Concentrations from Current Closure Monitoring Wells Since August 2009 (µg/L)^a

Location (all IDs start with "PIN20-")	Screen Depth (ft bis)	Date Sampled	TCE	cDCE	tDCE	VC	Benzene	TCOPCs
Cleanup Target Level^b			30	700	1,000	10	10	
M056	19–29	8/31/2009	<0.5	2.2	<0.44	1.7	<0.5	3.9
		9/16/2010	<0.16	3.6	<0.15	1.4	<0.16	5
		3/15/2011	<0.16	3.1	<0.15	<0.1	<0.16	3.1
		9/21/2011	<0.64	3.3J	<0.6	<0.4	<0.64	3.3
		3/8/2012	<0.16	2.6	<0.15	<0.1	<0.16	2.6
		9/12/2012	<0.16	3.4	<0.15	1.4	<0.16	4.8
		3/6/2013	<0.16	2.3	<0.15	<0.1	<0.16	2.3
		9/11/2013	<0.16	4.2	<0.15	1.2	<0.16	5.4
		9/11/2014	<0.16	2.6	<0.15	<0.1	<0.16	2.6
		3/5/2015	<0.16	2.6	<0.15	0.58J	<0.16	3.18
M057	20–30	8/27/2009	<0.5	10	0.46J	<0.5	<0.5	10.46
		9/16/2010	<0.16	8.9	0.25J	1.6	<0.16	10.75
		3/15/2011	<0.16	8.4	0.38J	4.3	<0.16	13.08
		9/21/2011	<0.64	8.9	<0.6	1.7J	<0.64	10.6
		3/8/2012	<0.16	2.7	0.25J	7.4	<0.16	10.35
		9/12/2012	<0.16	8.6	0.47J	2.7	<0.16	11.77
		3/6/2013	<0.16	7.3	0.3J	4.9	<0.16	12.5
		9/11/2013	<0.16	7.7	0.37J	1.9	<0.16	9.97
		9/11/2014	<0.16	1.9	0.26J	<0.1	<0.16	2.16
		3/5/2015	<0.16	11	0.61J	2.1	<0.16	13.71
M058	18–28	8/31/2009	<0.5	1.9	<0.44	3.6	<0.5	5.5
		9/16/2010	<0.16	3.2	0.26J	2.1	<0.16	5.56
		3/15/2011	<0.16	3.5	0.4J	3.2	<0.16	7.1
		9/21/2011	<0.64	3.7J	<0.6	2.2J	<0.64	5.9
		3/7/2012	<0.16	2.1	0.31J	1	<0.16	3.41
		9/12/2012	<0.16	3.3	0.31J	2.5	<0.16	6.11
		3/6/2013	<0.16	1.3	<0.15	0.57J	<0.16	1.87
		9/11/2013	<0.16	2.3	0.31J	<0.1	<0.16	2.61
		9/11/2014	<0.16	1.9	0.24J	<0.1	<0.16	2.14
		3/5/2015	<0.16	2.2	0.27J	<0.1	<0.16	2.47

Table 5 (continued). COPC Concentrations from Current Closure Monitoring Wells Since August 2009 (µg/L)^a

Location (all IDs start with "PIN20-")	Screen Depth (ft bis)	Date Sampled	TCE	cDCE	tDCE	VC	Benzene	TCOPCs
Cleanup Target Level^b			30	700	1,000	10	10	
M059	19–29	8/31/2009	<0.5	2.7	0.48J	56	<0.5	59.18
		9/16/2010	<0.64	14	3.5J	140	<0.64	157.5
		3/15/2011	<0.16	5.3	1.2	55	<0.16	61.5
		9/21/2011	<0.64	24	5.5	180	<0.64	209.5
		3/7/2012	<0.16	7.2	1.6	59	<0.16	67.8
		9/12/2012	<0.16	12	2.9	110	0.27J	125.17
		3/7/2013	<0.16	3.2	0.79J	20	0.18J	24.17
		9/11/2013	<0.16	8.3	1.9	72	0.21J	82.41
		9/11/2014	<0.16	2	0.52J	13	0.22J	15.74
		3/5/2015	<0.16	4.4	1.3	37	0.26J	42.96
M067	10–20	12/6/2009	<0.16	0.47J	<0.15	<0.4	<0.16	0.47
		3/13/2010	<0.16	<0.15	<0.15	<0.4	<0.16	ND
		9/21/2010	<0.16	<0.15	<0.15	<0.4	<0.16	ND
		3/15/2011	<0.16	<0.15	<0.15	<0.1	<0.16	ND
		9/22/2011	<0.64	<0.6	<0.6	3.3J	<0.64	3.3
		3/7/2012	<0.16	<0.15	<0.15	1.6	<0.16	1.6
		9/12/2012	<0.16	0.31J	<0.15	3.1	<0.16	3.41
		3/6/2013	<0.16	<0.15	<0.15	1.2	<0.16	1.2
		9/11/2013	<0.16	0.3J	<0.15	3.8	<0.16	4.1
		3/5/2014	<0.16	1	0.18J	5	<0.16	6.18
		1/13/2015	<0.16	0.57J	<0.15	1.6	<0.16	2.17
				3/5/2015	<0.16	0.37J	<0.15	<0.1
M068	20–30	12/4/2009	0.27J	0.26J	4.5	100	0.26J	105.29
		3/13/2010	0.59J	0.5J	2.3	33	<0.16	36.39
		9/21/2010	0.89J	1	1.5	12	<0.16	15.39
		3/15/2011	0.9J	0.98J	2.1	30	<0.16	33.98
		9/21/2011	1.3J	1.9J	3.3J	33	<0.64	39.5
		3/8/2012	<0.16	0.18J	1.3	39	0.28J	40.76
		9/12/2012	0.67J	1.8	3	79	0.27J	84.74
		3/7/2013	<0.16	0.41J	2.1	76	<0.16	78.51
		9/12/2013	0.59J	3	3.1	54	0.26J	60.95
		3/7/2014	<0.16	0.8J	2.3	40	0.37J	43.47
		9/11/2014	<0.16	0.2J	1.1	22	0.36J	23.66
		3/5/2015	<0.16	3.2	4.4	41	0.25J	48.85

Table 5 (continued). COPC Concentrations from Current Closure Monitoring Wells Since August 2009 (µg/L)^a

Location (all IDs start with "PIN20-")	Screen Depth (ft bls)	Date Sampled	TCE	cDCE	tDCE	VC	Benzene	TCOPCs
Cleanup Target Level^b			30	700	1,000	10	10	
M069	10-20	12/4/2009	9.3	100	12	46	<0.16	167.3
		3/13/2010	2	24	3.3	14	<0.16	43.3
		9/21/2010	1.6	24	4.2	8.2	<0.16	38
		3/15/2011	2.7	34	5	18	<0.16	59.7
		9/21/2011	<0.64	19	4.6	10	<0.64	33.6
		3/8/2012	1.1	39	9.4	26	<0.16	75.5
		9/12/2012	0.18J	23	5.5	17	<0.16	45.68
		3/7/2013	<0.16	28	8.6	18	<0.16	54.6
		9/12/2013	<0.16	20	5.2	13	<0.16	38.2
		3/7/2014	<0.16	21	4.9	12	<0.16	37.9
		9/11/2014	<0.16	11	4.2	12	<0.16	27.2
		3/5/2015	<0.16	6	1.8	3.1	<0.16	10.9
M18D	20-30	8/31/2009	<0.5	3.8	<0.44	6.3	<0.5	10.1
		9/16/2010	<0.16	4	0.34J	<0.4	<0.16	4.34
		3/15/2011	<0.16	7.7	0.68J	3.6	<0.16	11.98
		9/21/2011	<0.64	6.7	<0.6	1.5J	<0.64	8.2
		3/7/2012	<0.16	7	0.61J	1.4	<0.16	9.01
		9/12/2012	<0.16	7.1J	0.84J	2.6J	<0.16	10.54
		3/6/2013	<0.16	8.8	0.5J	1.7	<0.16	11
		9/11/2013	<1.6	3.1J	<1.5	<3.1J	<1.6	3.1
		9/11/2014	<0.16	3.3	0.36J	<0.1	<0.16	3.66
		3/5/2015	<0.16	0.62J	<0.15	<0.1	<0.16	0.62

Notes:

^a "<" values are method detection limits.

^b The offsite CTL is a factor of 10 lower than the listed onsite (poor water quality) CTL.

Abbreviations:

µg/L = micrograms per liter

ft bls = feet below land surface

TCOPCs = total COPCs

J = estimated value

ND = not detected

Table 6. Relative Percent Difference for Duplicate Samples, March 2015 (reported in µg/L)

Sample ID	Duplicate ID	Analyte	Result	Duplicate Result	MDL	RPD
PIN20-M059	PIN20-2456	Benzene	0.26J	0.27J	0.16	
PIN20-M059	PIN20-2456	<i>cis</i> -1,2-Dichloroethene	4.4	4.3	0.15	2.3
PIN20-M059	PIN20-2456	<i>trans</i> -1,2-Dichloroethene	1.3	1.4	0.15	7.4
PIN20-M059	PIN20-2456	Vinyl Chloride	37	42	0.10	12.7

Abbreviations:

J = estimated value

MDL = method detection limit

µg/L = micrograms per liter

RPD = relative percent difference

Appendix A

Laboratory Reports

March 2015 Semiannual Monitoring

ANALYTICAL REPORT

Job Number: 280-66327-1

SDG Number: 15026801

Job Description: PINELLAS MONITORING

For:

S.M. Stoller Corporation
2597 Legacy Way
Grand Junction, CO 81503
Attention: Mr. Steve Donovan



Approved for release.
DiLea R Bindel
Project Manager I
3/20/2015 1:43 PM

DiLea R Bindel, Project Manager I
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03/20/2015

The test results in this report relate only to the samples in this report and meet all requirements of NELAP, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

TestAmerica Laboratories, Inc.

TestAmerica Denver 4955 Yarrow Street, Arvada, CO 80002
Tel (303) 736-0100 Fax (303) 431-7171 www.testamericainc.com



Pages have been deleted from this laboratory report file to reduce file size. The deleted pages contain raw data and instrument calibrations. If the full laboratory report is needed, contact Scott.Surovchak@lm.doe.gov

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CASE NARRATIVE

Client: S.M. Stoller Corporation

Project: PINELLAS MONITORING - 15026801

Report Number: 280-66327-1

With exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. All laboratory quality control samples analyzed in conjunction with the samples in this project were within established control limits, with any exceptions noted. Calculations are performed before rounding to avoid round-off errors in calculated results.

This report includes reporting limits (RLs) less than TestAmerica Denver's practical quantitation limits. These reporting limits are being used specifically at the client's request to meet the needs of this project. Please note that data are not normally reported to these levels without qualification, since they are inherently less reliable and potentially less defensible than required by the current NELAC standards.

Results between the method detection limit (MDL) and reporting limit (RL) are flagged with a "J" qualifier to indicate an estimated value. These results are statistically less reliable than results greater than or equal to the RL and should be considered a qualitative value.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 3/10/2015 1:10 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.5° C.

GC/MS VOLATILES - SW846 8260B

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DATA REPORTING QUALIFIERS

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Lab Section	Qualifier	Description
GC/MS VOA	U	Indicates the analyte was analyzed for but not detected.
	4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

SAMPLE SUMMARY

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
280-66327-1	PIN20-2456	Water	03/05/2015 1200	03/10/2015 1310
280-66327-1MS	PIN20-2456	Water	03/05/2015 1200	03/10/2015 1310
280-66327-1MSD	PIN20-2456	Water	03/05/2015 1200	03/10/2015 1310
280-66327-2	PIN99-2522	Water	03/05/2015 0827	03/10/2015 1310
280-66327-3	PIN20-M001	Water	03/06/2015 0850	03/10/2015 1310
280-66327-4	PIN20-M015	Water	03/05/2015 0915	03/10/2015 1310
280-66327-5	PIN20-M053	Water	03/05/2015 1035	03/10/2015 1310
280-66327-6	PIN20-M056	Water	03/05/2015 0950	03/10/2015 1310
280-66327-7	PIN20-M057	Water	03/05/2015 1105	03/10/2015 1310
280-66327-8	PIN20-M058	Water	03/05/2015 1325	03/10/2015 1310
280-66327-9	PIN20-M059	Water	03/05/2015 1345	03/10/2015 1310
280-66327-10	PIN20-M067	Water	03/05/2015 1530	03/10/2015 1310
280-66327-11	PIN20-M068	Water	03/05/2015 1415	03/10/2015 1310
280-66327-12	PIN20-M069	Water	03/05/2015 1450	03/10/2015 1310
280-66327-13	PIN20-M18D	Water	03/05/2015 1145	03/10/2015 1310

EXECUTIVE SUMMARY - Detections

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Lab Sample ID	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
280-66327-1	PIN20-2456					
Benzene		0.27	J	1.0	ug/L	8260B
cis-1,2-Dichloroethene		4.3		1.0	ug/L	8260B
trans-1,2-Dichloroethene		1.4		1.0	ug/L	8260B
Vinyl chloride		42		1.0	ug/L	8260B
280-66327-3	PIN20-M001					
Benzene		0.61	J	1.0	ug/L	8260B
cis-1,2-Dichloroethene		0.52	J	1.0	ug/L	8260B
trans-1,2-Dichloroethene		1.7		1.0	ug/L	8260B
1,1-Dichloropropene		0.58	J	1.0	ug/L	8260B
Vinyl chloride		24		1.0	ug/L	8260B
280-66327-4	PIN20-M015					
cis-1,2-Dichloroethene		6.3		1.0	ug/L	8260B
Vinyl chloride		2.0		1.0	ug/L	8260B
280-66327-5	PIN20-M053					
cis-1,2-Dichloroethene		2.8		1.0	ug/L	8260B
Vinyl chloride		1.7		1.0	ug/L	8260B
280-66327-6	PIN20-M056					
cis-1,2-Dichloroethene		2.6		1.0	ug/L	8260B
Vinyl chloride		0.58	J	1.0	ug/L	8260B
280-66327-7	PIN20-M057					
cis-1,2-Dichloroethene		11		1.0	ug/L	8260B
trans-1,2-Dichloroethene		0.61	J	1.0	ug/L	8260B
Vinyl chloride		2.1		1.0	ug/L	8260B
280-66327-8	PIN20-M058					
cis-1,2-Dichloroethene		2.2		1.0	ug/L	8260B
trans-1,2-Dichloroethene		0.27	J	1.0	ug/L	8260B
Toluene		0.25	J	1.0	ug/L	8260B

EXECUTIVE SUMMARY - Detections

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Lab Sample ID	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
280-66327-9	PIN20-M059					
Benzene		0.26	J	1.0	ug/L	8260B
cis-1,2-Dichloroethene		4.4		1.0	ug/L	8260B
trans-1,2-Dichloroethene		1.3		1.0	ug/L	8260B
Vinyl chloride		37		1.0	ug/L	8260B
280-66327-10	PIN20-M067					
cis-1,2-Dichloroethene		0.37	J	1.0	ug/L	8260B
280-66327-11	PIN20-M068					
Benzene		0.25	J	1.0	ug/L	8260B
cis-1,2-Dichloroethene		3.2		1.0	ug/L	8260B
trans-1,2-Dichloroethene		4.4		1.0	ug/L	8260B
Vinyl chloride		41		1.0	ug/L	8260B
280-66327-12	PIN20-M069					
Acetone		4.9	J	10	ug/L	8260B
cis-1,2-Dichloroethene		6.0		1.0	ug/L	8260B
trans-1,2-Dichloroethene		1.8		1.0	ug/L	8260B
Vinyl chloride		3.1		1.0	ug/L	8260B
280-66327-13	PIN20-M18D					
cis-1,2-Dichloroethene		0.62	J	1.0	ug/L	8260B
Toluene		0.32	J	1.0	ug/L	8260B

METHOD SUMMARY

Client: S.M. Stoller Corporation

Job Number: 280-66327-1
Sdg Number: 15026801

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Volatile Organic Compounds (GC/MS)	TAL DEN	SW846 8260B	
Purge and Trap	TAL DEN		SW846 5030B

Lab References:

TAL DEN = TestAmerica Denver

Method References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Method	Analyst	Analyst ID
SW846 8260B	Lines, Jeremy N	JNL

Analytical Data

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Client Sample ID: PIN20-2456

Lab Sample ID: 280-66327-1

Date Sampled: 03/05/2015 1200

Client Matrix: Water

Date Received: 03/10/2015 1310

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-268250	Instrument ID:	VMS_MS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	MS9_0401.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/16/2015 2217			Final Weight/Volume:	20 mL
Prep Date:	03/16/2015 2217				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	1.9	U	1.9	10
Benzene	0.27	J	0.16	1.0
Bromobenzene	0.17	U	0.17	1.0
Bromochloromethane	0.10	U	0.10	1.0
Bromodichloromethane	0.17	U	0.17	1.0
Bromoform	0.19	U	0.19	1.0
Bromomethane	0.21	U	0.21	1.0
2-Butanone (MEK)	2.0	U	2.0	5.0
n-Butylbenzene	0.32	U	0.32	1.0
sec-Butylbenzene	0.17	U	0.17	1.0
tert-Butylbenzene	0.16	U	0.16	1.0
Carbon disulfide	0.45	U	0.45	1.0
Carbon tetrachloride	0.19	U	0.19	1.0
Chlorobenzene	0.17	U	0.17	1.0
Dibromochloromethane	0.17	U	0.17	1.0
Chloroethane	0.41	U	0.41	1.0
Chloroform	0.16	U	0.16	1.0
Chloromethane	0.30	U	0.30	1.0
2-Chlorotoluene	0.17	U	0.17	1.0
4-Chlorotoluene	0.21	U	0.21	1.0
1,2-Dibromo-3-Chloropropane	0.47	U	0.47	1.0
Dibromomethane	0.17	U	0.17	1.0
1,2-Dichlorobenzene	0.15	U	0.15	1.0
1,3-Dichlorobenzene	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.16	U	0.16	1.0
Dichlorodifluoromethane	0.31	U	0.31	1.0
1,1-Dichloroethane	0.22	U	0.22	1.0
1,2-Dichloroethane	0.13	U	0.13	1.0
cis-1,2-Dichloroethene	4.3		0.15	1.0
trans-1,2-Dichloroethene	1.4		0.15	1.0
1,1-Dichloroethene	0.23	U	0.23	1.0
1,2-Dichloropropane	0.18	U	0.18	1.0
1,3-Dichloropropane	0.22	U	0.22	1.0
2,2-Dichloropropane	0.18	U	0.18	1.0
cis-1,3-Dichloropropene	0.16	U	0.16	1.0
trans-1,3-Dichloropropene	0.19	U	0.19	1.0
1,1-Dichloropropene	0.19	U	0.19	1.0
Ethylbenzene	0.16	U	0.16	1.0
Hexachlorobutadiene	0.36	U	0.36	1.0
2-Hexanone	1.7	U	1.7	5.0
Isopropylbenzene	0.19	U	0.19	1.0
4-Isopropyltoluene	0.20	U	0.20	1.0
Methylene Chloride	0.32	U	0.32	1.0
4-Methyl-2-pentanone	0.98	U	0.98	5.0
Naphthalene	0.22	U	0.22	1.0
n-Propylbenzene	0.16	U	0.16	1.0

Analytical Data

Client: S.M. Stoller Corporation

Job Number: 280-66327-1
Sdg Number: 15026801

Client Sample ID: PIN20-2456

Lab Sample ID: 280-66327-1
Client Matrix: Water

Date Sampled: 03/05/2015 1200
Date Received: 03/10/2015 1310

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-268250	Instrument ID:	VMS_MS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	MS9_0401.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/16/2015 2217			Final Weight/Volume:	20 mL
Prep Date:	03/16/2015 2217				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Styrene	0.17	U	0.17	1.0
1,1,1,2-Tetrachloroethane	0.21	U	0.21	1.0
1,1,2,2-Tetrachloroethane	0.21	U	0.21	1.0
Tetrachloroethene	0.20	U	0.20	1.0
Toluene	0.17	U	0.17	1.0
1,2,3-Trichlorobenzene	0.21	U	0.21	1.0
1,2,4-Trichlorobenzene	0.21	U	0.21	1.0
1,1,1-Trichloroethane	0.16	U	0.16	1.0
1,1,2-Trichloroethane	0.27	U	0.27	1.0
Trichloroethene	0.16	U	0.16	1.0
Trichlorofluoromethane	0.29	U	0.29	1.0
1,2,3-Trichloropropane	0.33	U	0.33	1.0
1,2,4-Trimethylbenzene	0.15	U	0.15	1.0
1,3,5-Trimethylbenzene	0.16	U	0.16	1.0
Vinyl chloride	42		0.10	1.0
Xylenes, Total	0.19	U	0.19	1.0
1,2-Dibromoethane	0.18	U	0.18	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	96		70 - 127
Toluene-d8 (Surr)	109		80 - 125
4-Bromofluorobenzene (Surr)	103		78 - 120
Dibromofluoromethane (Surr)	103		77 - 120

Analytical Data

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Client Sample ID: PIN99-2522

Lab Sample ID: 280-66327-2

Date Sampled: 03/05/2015 0827

Client Matrix: Water

Date Received: 03/10/2015 1310

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-268250	Instrument ID:	VMS_MS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	MS9_0402.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/16/2015 2237			Final Weight/Volume:	20 mL
Prep Date:	03/16/2015 2237				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	1.9	U	1.9	10
Benzene	0.16	U	0.16	1.0
Bromobenzene	0.17	U	0.17	1.0
Bromochloromethane	0.10	U	0.10	1.0
Bromodichloromethane	0.17	U	0.17	1.0
Bromoform	0.19	U	0.19	1.0
Bromomethane	0.21	U	0.21	1.0
2-Butanone (MEK)	2.0	U	2.0	5.0
n-Butylbenzene	0.32	U	0.32	1.0
sec-Butylbenzene	0.17	U	0.17	1.0
tert-Butylbenzene	0.16	U	0.16	1.0
Carbon disulfide	0.45	U	0.45	1.0
Carbon tetrachloride	0.19	U	0.19	1.0
Chlorobenzene	0.17	U	0.17	1.0
Dibromochloromethane	0.17	U	0.17	1.0
Chloroethane	0.41	U	0.41	1.0
Chloroform	0.16	U	0.16	1.0
Chloromethane	0.30	U	0.30	1.0
2-Chlorotoluene	0.17	U	0.17	1.0
4-Chlorotoluene	0.21	U	0.21	1.0
1,2-Dibromo-3-Chloropropane	0.47	U	0.47	1.0
Dibromomethane	0.17	U	0.17	1.0
1,2-Dichlorobenzene	0.15	U	0.15	1.0
1,3-Dichlorobenzene	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.16	U	0.16	1.0
Dichlorodifluoromethane	0.31	U	0.31	1.0
1,1-Dichloroethane	0.22	U	0.22	1.0
1,2-Dichloroethane	0.13	U	0.13	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
trans-1,2-Dichloroethene	0.15	U	0.15	1.0
1,1-Dichloroethene	0.23	U	0.23	1.0
1,2-Dichloropropane	0.18	U	0.18	1.0
1,3-Dichloropropane	0.22	U	0.22	1.0
2,2-Dichloropropane	0.18	U	0.18	1.0
cis-1,3-Dichloropropene	0.16	U	0.16	1.0
trans-1,3-Dichloropropene	0.19	U	0.19	1.0
1,1-Dichloropropene	0.19	U	0.19	1.0
Ethylbenzene	0.16	U	0.16	1.0
Hexachlorobutadiene	0.36	U	0.36	1.0
2-Hexanone	1.7	U	1.7	5.0
Isopropylbenzene	0.19	U	0.19	1.0
4-Isopropyltoluene	0.20	U	0.20	1.0
Methylene Chloride	0.32	U	0.32	1.0
4-Methyl-2-pentanone	0.98	U	0.98	5.0
Naphthalene	0.22	U	0.22	1.0
n-Propylbenzene	0.16	U	0.16	1.0

Analytical Data

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Client Sample ID: PIN99-2522

Lab Sample ID: 280-66327-2

Date Sampled: 03/05/2015 0827

Client Matrix: Water

Date Received: 03/10/2015 1310

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-268250	Instrument ID:	VMS_MS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	MS9_0402.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/16/2015 2237			Final Weight/Volume:	20 mL
Prep Date:	03/16/2015 2237				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Styrene	0.17	U	0.17	1.0
1,1,1,2-Tetrachloroethane	0.21	U	0.21	1.0
1,1,2,2-Tetrachloroethane	0.21	U	0.21	1.0
Tetrachloroethene	0.20	U	0.20	1.0
Toluene	0.17	U	0.17	1.0
1,2,3-Trichlorobenzene	0.21	U	0.21	1.0
1,2,4-Trichlorobenzene	0.21	U	0.21	1.0
1,1,1-Trichloroethane	0.16	U	0.16	1.0
1,1,2-Trichloroethane	0.27	U	0.27	1.0
Trichloroethene	0.16	U	0.16	1.0
Trichlorofluoromethane	0.29	U	0.29	1.0
1,2,3-Trichloropropane	0.33	U	0.33	1.0
1,2,4-Trimethylbenzene	0.15	U	0.15	1.0
1,3,5-Trimethylbenzene	0.16	U	0.16	1.0
Vinyl chloride	0.10	U	0.10	1.0
Xylenes, Total	0.19	U	0.19	1.0
1,2-Dibromoethane	0.18	U	0.18	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	103		70 - 127
Toluene-d8 (Surr)	106		80 - 125
4-Bromofluorobenzene (Surr)	99		78 - 120
Dibromofluoromethane (Surr)	108		77 - 120

Analytical Data

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Client Sample ID: PIN20-M001

Lab Sample ID: 280-66327-3

Date Sampled: 03/06/2015 0850

Client Matrix: Water

Date Received: 03/10/2015 1310

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-268250	Instrument ID:	VMS_MS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	MS9_0405.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/16/2015 2338			Final Weight/Volume:	20 mL
Prep Date:	03/16/2015 2338				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	1.9	U	1.9	10
Benzene	0.61	J	0.16	1.0
Bromobenzene	0.17	U	0.17	1.0
Bromochloromethane	0.10	U	0.10	1.0
Bromodichloromethane	0.17	U	0.17	1.0
Bromoform	0.19	U	0.19	1.0
Bromomethane	0.21	U	0.21	1.0
2-Butanone (MEK)	2.0	U	2.0	5.0
n-Butylbenzene	0.32	U	0.32	1.0
sec-Butylbenzene	0.17	U	0.17	1.0
tert-Butylbenzene	0.16	U	0.16	1.0
Carbon disulfide	0.45	U	0.45	1.0
Carbon tetrachloride	0.19	U	0.19	1.0
Chlorobenzene	0.17	U	0.17	1.0
Dibromochloromethane	0.17	U	0.17	1.0
Chloroethane	0.41	U	0.41	1.0
Chloroform	0.16	U	0.16	1.0
Chloromethane	0.30	U	0.30	1.0
2-Chlorotoluene	0.17	U	0.17	1.0
4-Chlorotoluene	0.21	U	0.21	1.0
1,2-Dibromo-3-Chloropropane	0.47	U	0.47	1.0
Dibromomethane	0.17	U	0.17	1.0
1,2-Dichlorobenzene	0.15	U	0.15	1.0
1,3-Dichlorobenzene	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.16	U	0.16	1.0
Dichlorodifluoromethane	0.31	U	0.31	1.0
1,1-Dichloroethane	0.22	U	0.22	1.0
1,2-Dichloroethane	0.13	U	0.13	1.0
cis-1,2-Dichloroethene	0.52	J	0.15	1.0
trans-1,2-Dichloroethene	1.7		0.15	1.0
1,1-Dichloroethene	0.23	U	0.23	1.0
1,2-Dichloropropane	0.18	U	0.18	1.0
1,3-Dichloropropane	0.22	U	0.22	1.0
2,2-Dichloropropane	0.18	U	0.18	1.0
cis-1,3-Dichloropropene	0.16	U	0.16	1.0
trans-1,3-Dichloropropene	0.19	U	0.19	1.0
1,1-Dichloropropene	0.58	J	0.19	1.0
Ethylbenzene	0.16	U	0.16	1.0
Hexachlorobutadiene	0.36	U	0.36	1.0
2-Hexanone	1.7	U	1.7	5.0
Isopropylbenzene	0.19	U	0.19	1.0
4-Isopropyltoluene	0.20	U	0.20	1.0
Methylene Chloride	0.32	U	0.32	1.0
4-Methyl-2-pentanone	0.98	U	0.98	5.0
Naphthalene	0.22	U	0.22	1.0
n-Propylbenzene	0.16	U	0.16	1.0

Analytical Data

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Client Sample ID: PIN20-M001

Lab Sample ID: 280-66327-3

Date Sampled: 03/06/2015 0850

Client Matrix: Water

Date Received: 03/10/2015 1310

8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-268250	Instrument ID: VMS_MS9
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS9_0405.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 03/16/2015 2338		Final Weight/Volume: 20 mL
Prep Date: 03/16/2015 2338		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Styrene	0.17	U	0.17	1.0
1,1,1,2-Tetrachloroethane	0.21	U	0.21	1.0
1,1,2,2-Tetrachloroethane	0.21	U	0.21	1.0
Tetrachloroethene	0.20	U	0.20	1.0
Toluene	0.17	U	0.17	1.0
1,2,3-Trichlorobenzene	0.21	U	0.21	1.0
1,2,4-Trichlorobenzene	0.21	U	0.21	1.0
1,1,1-Trichloroethane	0.16	U	0.16	1.0
1,1,2-Trichloroethane	0.27	U	0.27	1.0
Trichloroethene	0.16	U	0.16	1.0
Trichlorofluoromethane	0.29	U	0.29	1.0
1,2,3-Trichloropropane	0.33	U	0.33	1.0
1,2,4-Trimethylbenzene	0.15	U	0.15	1.0
1,3,5-Trimethylbenzene	0.16	U	0.16	1.0
Vinyl chloride	24		0.10	1.0
Xylenes, Total	0.19	U	0.19	1.0
1,2-Dibromoethane	0.18	U	0.18	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	110		70 - 127
Toluene-d8 (Surr)	103		80 - 125
4-Bromofluorobenzene (Surr)	96		78 - 120
Dibromofluoromethane (Surr)	109		77 - 120

Analytical Data

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Client Sample ID: PIN20-M015

Lab Sample ID: 280-66327-4

Date Sampled: 03/05/2015 0915

Client Matrix: Water

Date Received: 03/10/2015 1310

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-268250	Instrument ID:	VMS_MS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	MS9_0406.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/16/2015 2358			Final Weight/Volume:	20 mL
Prep Date:	03/16/2015 2358				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	1.9	U	1.9	10
Benzene	0.16	U	0.16	1.0
Bromobenzene	0.17	U	0.17	1.0
Bromochloromethane	0.10	U	0.10	1.0
Bromodichloromethane	0.17	U	0.17	1.0
Bromoform	0.19	U	0.19	1.0
Bromomethane	0.21	U	0.21	1.0
2-Butanone (MEK)	2.0	U	2.0	5.0
n-Butylbenzene	0.32	U	0.32	1.0
sec-Butylbenzene	0.17	U	0.17	1.0
tert-Butylbenzene	0.16	U	0.16	1.0
Carbon disulfide	0.45	U	0.45	1.0
Carbon tetrachloride	0.19	U	0.19	1.0
Chlorobenzene	0.17	U	0.17	1.0
Dibromochloromethane	0.17	U	0.17	1.0
Chloroethane	0.41	U	0.41	1.0
Chloroform	0.16	U	0.16	1.0
Chloromethane	0.30	U	0.30	1.0
2-Chlorotoluene	0.17	U	0.17	1.0
4-Chlorotoluene	0.21	U	0.21	1.0
1,2-Dibromo-3-Chloropropane	0.47	U	0.47	1.0
Dibromomethane	0.17	U	0.17	1.0
1,2-Dichlorobenzene	0.15	U	0.15	1.0
1,3-Dichlorobenzene	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.16	U	0.16	1.0
Dichlorodifluoromethane	0.31	U	0.31	1.0
1,1-Dichloroethane	0.22	U	0.22	1.0
1,2-Dichloroethane	0.13	U	0.13	1.0
cis-1,2-Dichloroethene	6.3		0.15	1.0
trans-1,2-Dichloroethene	0.15	U	0.15	1.0
1,1-Dichloroethene	0.23	U	0.23	1.0
1,2-Dichloropropane	0.18	U	0.18	1.0
1,3-Dichloropropane	0.22	U	0.22	1.0
2,2-Dichloropropane	0.18	U	0.18	1.0
cis-1,3-Dichloropropene	0.16	U	0.16	1.0
trans-1,3-Dichloropropene	0.19	U	0.19	1.0
1,1-Dichloropropene	0.19	U	0.19	1.0
Ethylbenzene	0.16	U	0.16	1.0
Hexachlorobutadiene	0.36	U	0.36	1.0
2-Hexanone	1.7	U	1.7	5.0
Isopropylbenzene	0.19	U	0.19	1.0
4-Isopropyltoluene	0.20	U	0.20	1.0
Methylene Chloride	0.32	U	0.32	1.0
4-Methyl-2-pentanone	0.98	U	0.98	5.0
Naphthalene	0.22	U	0.22	1.0
n-Propylbenzene	0.16	U	0.16	1.0

Analytical Data

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Client Sample ID: PIN20-M015

Lab Sample ID: 280-66327-4

Date Sampled: 03/05/2015 0915

Client Matrix: Water

Date Received: 03/10/2015 1310

8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-268250	Instrument ID: VMS_MS9
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS9_0406.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 03/16/2015 2358		Final Weight/Volume: 20 mL
Prep Date: 03/16/2015 2358		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Styrene	0.17	U	0.17	1.0
1,1,1,2-Tetrachloroethane	0.21	U	0.21	1.0
1,1,2,2-Tetrachloroethane	0.21	U	0.21	1.0
Tetrachloroethene	0.20	U	0.20	1.0
Toluene	0.17	U	0.17	1.0
1,2,3-Trichlorobenzene	0.21	U	0.21	1.0
1,2,4-Trichlorobenzene	0.21	U	0.21	1.0
1,1,1-Trichloroethane	0.16	U	0.16	1.0
1,1,2-Trichloroethane	0.27	U	0.27	1.0
Trichloroethene	0.16	U	0.16	1.0
Trichlorofluoromethane	0.29	U	0.29	1.0
1,2,3-Trichloropropane	0.33	U	0.33	1.0
1,2,4-Trimethylbenzene	0.15	U	0.15	1.0
1,3,5-Trimethylbenzene	0.16	U	0.16	1.0
Vinyl chloride	2.0		0.10	1.0
Xylenes, Total	0.19	U	0.19	1.0
1,2-Dibromoethane	0.18	U	0.18	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	111		70 - 127
Toluene-d8 (Surr)	102		80 - 125
4-Bromofluorobenzene (Surr)	95		78 - 120
Dibromofluoromethane (Surr)	111		77 - 120

Analytical Data

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Client Sample ID: PIN20-M053

Lab Sample ID: 280-66327-5

Date Sampled: 03/05/2015 1035

Client Matrix: Water

Date Received: 03/10/2015 1310

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-268250	Instrument ID:	VMS_MS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	MS9_0407.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/17/2015 0018			Final Weight/Volume:	20 mL
Prep Date:	03/17/2015 0018				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	1.9	U	1.9	10
Benzene	0.16	U	0.16	1.0
Bromobenzene	0.17	U	0.17	1.0
Bromochloromethane	0.10	U	0.10	1.0
Bromodichloromethane	0.17	U	0.17	1.0
Bromoform	0.19	U	0.19	1.0
Bromomethane	0.21	U	0.21	1.0
2-Butanone (MEK)	2.0	U	2.0	5.0
n-Butylbenzene	0.32	U	0.32	1.0
sec-Butylbenzene	0.17	U	0.17	1.0
tert-Butylbenzene	0.16	U	0.16	1.0
Carbon disulfide	0.45	U	0.45	1.0
Carbon tetrachloride	0.19	U	0.19	1.0
Chlorobenzene	0.17	U	0.17	1.0
Dibromochloromethane	0.17	U	0.17	1.0
Chloroethane	0.41	U	0.41	1.0
Chloroform	0.16	U	0.16	1.0
Chloromethane	0.30	U	0.30	1.0
2-Chlorotoluene	0.17	U	0.17	1.0
4-Chlorotoluene	0.21	U	0.21	1.0
1,2-Dibromo-3-Chloropropane	0.47	U	0.47	1.0
Dibromomethane	0.17	U	0.17	1.0
1,2-Dichlorobenzene	0.15	U	0.15	1.0
1,3-Dichlorobenzene	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.16	U	0.16	1.0
Dichlorodifluoromethane	0.31	U	0.31	1.0
1,1-Dichloroethane	0.22	U	0.22	1.0
1,2-Dichloroethane	0.13	U	0.13	1.0
cis-1,2-Dichloroethene	2.8		0.15	1.0
trans-1,2-Dichloroethene	0.15	U	0.15	1.0
1,1-Dichloroethene	0.23	U	0.23	1.0
1,2-Dichloropropane	0.18	U	0.18	1.0
1,3-Dichloropropane	0.22	U	0.22	1.0
2,2-Dichloropropane	0.18	U	0.18	1.0
cis-1,3-Dichloropropene	0.16	U	0.16	1.0
trans-1,3-Dichloropropene	0.19	U	0.19	1.0
1,1-Dichloropropene	0.19	U	0.19	1.0
Ethylbenzene	0.16	U	0.16	1.0
Hexachlorobutadiene	0.36	U	0.36	1.0
2-Hexanone	1.7	U	1.7	5.0
Isopropylbenzene	0.19	U	0.19	1.0
4-Isopropyltoluene	0.20	U	0.20	1.0
Methylene Chloride	0.32	U	0.32	1.0
4-Methyl-2-pentanone	0.98	U	0.98	5.0
Naphthalene	0.22	U	0.22	1.0
n-Propylbenzene	0.16	U	0.16	1.0

Analytical Data

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Client Sample ID: PIN20-M053

Lab Sample ID: 280-66327-5

Date Sampled: 03/05/2015 1035

Client Matrix: Water

Date Received: 03/10/2015 1310

8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-268250	Instrument ID: VMS_MS9
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS9_0407.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 03/17/2015 0018		Final Weight/Volume: 20 mL
Prep Date: 03/17/2015 0018		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Styrene	0.17	U	0.17	1.0
1,1,1,2-Tetrachloroethane	0.21	U	0.21	1.0
1,1,2,2-Tetrachloroethane	0.21	U	0.21	1.0
Tetrachloroethene	0.20	U	0.20	1.0
Toluene	0.17	U	0.17	1.0
1,2,3-Trichlorobenzene	0.21	U	0.21	1.0
1,2,4-Trichlorobenzene	0.21	U	0.21	1.0
1,1,1-Trichloroethane	0.16	U	0.16	1.0
1,1,2-Trichloroethane	0.27	U	0.27	1.0
Trichloroethene	0.16	U	0.16	1.0
Trichlorofluoromethane	0.29	U	0.29	1.0
1,2,3-Trichloropropane	0.33	U	0.33	1.0
1,2,4-Trimethylbenzene	0.15	U	0.15	1.0
1,3,5-Trimethylbenzene	0.16	U	0.16	1.0
Vinyl chloride	1.7		0.10	1.0
Xylenes, Total	0.19	U	0.19	1.0
1,2-Dibromoethane	0.18	U	0.18	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	114		70 - 127
Toluene-d8 (Surr)	101		80 - 125
4-Bromofluorobenzene (Surr)	98		78 - 120
Dibromofluoromethane (Surr)	113		77 - 120

Analytical Data

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Client Sample ID: PIN20-M056

Lab Sample ID: 280-66327-6

Date Sampled: 03/05/2015 0950

Client Matrix: Water

Date Received: 03/10/2015 1310

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-268250	Instrument ID:	VMS_MS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	MS9_0408.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/17/2015 0038			Final Weight/Volume:	20 mL
Prep Date:	03/17/2015 0038				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	1.9	U	1.9	10
Benzene	0.16	U	0.16	1.0
Bromobenzene	0.17	U	0.17	1.0
Bromochloromethane	0.10	U	0.10	1.0
Bromodichloromethane	0.17	U	0.17	1.0
Bromoform	0.19	U	0.19	1.0
Bromomethane	0.21	U	0.21	1.0
2-Butanone (MEK)	2.0	U	2.0	5.0
n-Butylbenzene	0.32	U	0.32	1.0
sec-Butylbenzene	0.17	U	0.17	1.0
tert-Butylbenzene	0.16	U	0.16	1.0
Carbon disulfide	0.45	U	0.45	1.0
Carbon tetrachloride	0.19	U	0.19	1.0
Chlorobenzene	0.17	U	0.17	1.0
Dibromochloromethane	0.17	U	0.17	1.0
Chloroethane	0.41	U	0.41	1.0
Chloroform	0.16	U	0.16	1.0
Chloromethane	0.30	U	0.30	1.0
2-Chlorotoluene	0.17	U	0.17	1.0
4-Chlorotoluene	0.21	U	0.21	1.0
1,2-Dibromo-3-Chloropropane	0.47	U	0.47	1.0
Dibromomethane	0.17	U	0.17	1.0
1,2-Dichlorobenzene	0.15	U	0.15	1.0
1,3-Dichlorobenzene	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.16	U	0.16	1.0
Dichlorodifluoromethane	0.31	U	0.31	1.0
1,1-Dichloroethane	0.22	U	0.22	1.0
1,2-Dichloroethane	0.13	U	0.13	1.0
cis-1,2-Dichloroethene	2.6		0.15	1.0
trans-1,2-Dichloroethene	0.15	U	0.15	1.0
1,1-Dichloroethene	0.23	U	0.23	1.0
1,2-Dichloropropane	0.18	U	0.18	1.0
1,3-Dichloropropane	0.22	U	0.22	1.0
2,2-Dichloropropane	0.18	U	0.18	1.0
cis-1,3-Dichloropropene	0.16	U	0.16	1.0
trans-1,3-Dichloropropene	0.19	U	0.19	1.0
1,1-Dichloropropene	0.19	U	0.19	1.0
Ethylbenzene	0.16	U	0.16	1.0
Hexachlorobutadiene	0.36	U	0.36	1.0
2-Hexanone	1.7	U	1.7	5.0
Isopropylbenzene	0.19	U	0.19	1.0
4-Isopropyltoluene	0.20	U	0.20	1.0
Methylene Chloride	0.32	U	0.32	1.0
4-Methyl-2-pentanone	0.98	U	0.98	5.0
Naphthalene	0.22	U	0.22	1.0
n-Propylbenzene	0.16	U	0.16	1.0

Analytical Data

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Client Sample ID: PIN20-M056

Lab Sample ID: 280-66327-6

Date Sampled: 03/05/2015 0950

Client Matrix: Water

Date Received: 03/10/2015 1310

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-268250	Instrument ID:	VMS_MS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	MS9_0408.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/17/2015 0038			Final Weight/Volume:	20 mL
Prep Date:	03/17/2015 0038				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Styrene	0.17	U	0.17	1.0
1,1,1,2-Tetrachloroethane	0.21	U	0.21	1.0
1,1,2,2-Tetrachloroethane	0.21	U	0.21	1.0
Tetrachloroethene	0.20	U	0.20	1.0
Toluene	0.17	U	0.17	1.0
1,2,3-Trichlorobenzene	0.21	U	0.21	1.0
1,2,4-Trichlorobenzene	0.21	U	0.21	1.0
1,1,1-Trichloroethane	0.16	U	0.16	1.0
1,1,2-Trichloroethane	0.27	U	0.27	1.0
Trichloroethene	0.16	U	0.16	1.0
Trichlorofluoromethane	0.29	U	0.29	1.0
1,2,3-Trichloropropane	0.33	U	0.33	1.0
1,2,4-Trimethylbenzene	0.15	U	0.15	1.0
1,3,5-Trimethylbenzene	0.16	U	0.16	1.0
Vinyl chloride	0.58	J	0.10	1.0
Xylenes, Total	0.19	U	0.19	1.0
1,2-Dibromoethane	0.18	U	0.18	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	113		70 - 127
Toluene-d8 (Surr)	104		80 - 125
4-Bromofluorobenzene (Surr)	98		78 - 120
Dibromofluoromethane (Surr)	113		77 - 120

Analytical Data

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Client Sample ID: PIN20-M057

Lab Sample ID: 280-66327-7

Date Sampled: 03/05/2015 1105

Client Matrix: Water

Date Received: 03/10/2015 1310

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-268250	Instrument ID:	VMS_MS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	MS9_0409.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/17/2015 0058			Final Weight/Volume:	20 mL
Prep Date:	03/17/2015 0058				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	1.9	U	1.9	10
Benzene	0.16	U	0.16	1.0
Bromobenzene	0.17	U	0.17	1.0
Bromochloromethane	0.10	U	0.10	1.0
Bromodichloromethane	0.17	U	0.17	1.0
Bromoform	0.19	U	0.19	1.0
Bromomethane	0.21	U	0.21	1.0
2-Butanone (MEK)	2.0	U	2.0	5.0
n-Butylbenzene	0.32	U	0.32	1.0
sec-Butylbenzene	0.17	U	0.17	1.0
tert-Butylbenzene	0.16	U	0.16	1.0
Carbon disulfide	0.45	U	0.45	1.0
Carbon tetrachloride	0.19	U	0.19	1.0
Chlorobenzene	0.17	U	0.17	1.0
Dibromochloromethane	0.17	U	0.17	1.0
Chloroethane	0.41	U	0.41	1.0
Chloroform	0.16	U	0.16	1.0
Chloromethane	0.30	U	0.30	1.0
2-Chlorotoluene	0.17	U	0.17	1.0
4-Chlorotoluene	0.21	U	0.21	1.0
1,2-Dibromo-3-Chloropropane	0.47	U	0.47	1.0
Dibromomethane	0.17	U	0.17	1.0
1,2-Dichlorobenzene	0.15	U	0.15	1.0
1,3-Dichlorobenzene	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.16	U	0.16	1.0
Dichlorodifluoromethane	0.31	U	0.31	1.0
1,1-Dichloroethane	0.22	U	0.22	1.0
1,2-Dichloroethane	0.13	U	0.13	1.0
cis-1,2-Dichloroethene	11		0.15	1.0
trans-1,2-Dichloroethene	0.61	J	0.15	1.0
1,1-Dichloroethene	0.23	U	0.23	1.0
1,2-Dichloropropane	0.18	U	0.18	1.0
1,3-Dichloropropane	0.22	U	0.22	1.0
2,2-Dichloropropane	0.18	U	0.18	1.0
cis-1,3-Dichloropropene	0.16	U	0.16	1.0
trans-1,3-Dichloropropene	0.19	U	0.19	1.0
1,1-Dichloropropene	0.19	U	0.19	1.0
Ethylbenzene	0.16	U	0.16	1.0
Hexachlorobutadiene	0.36	U	0.36	1.0
2-Hexanone	1.7	U	1.7	5.0
Isopropylbenzene	0.19	U	0.19	1.0
4-Isopropyltoluene	0.20	U	0.20	1.0
Methylene Chloride	0.32	U	0.32	1.0
4-Methyl-2-pentanone	0.98	U	0.98	5.0
Naphthalene	0.22	U	0.22	1.0
n-Propylbenzene	0.16	U	0.16	1.0

Analytical Data

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Client Sample ID: PIN20-M057

Lab Sample ID: 280-66327-7

Date Sampled: 03/05/2015 1105

Client Matrix: Water

Date Received: 03/10/2015 1310

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-268250	Instrument ID:	VMS_MS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	MS9_0409.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/17/2015 0058			Final Weight/Volume:	20 mL
Prep Date:	03/17/2015 0058				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Styrene	0.17	U	0.17	1.0
1,1,1,2-Tetrachloroethane	0.21	U	0.21	1.0
1,1,2,2-Tetrachloroethane	0.21	U	0.21	1.0
Tetrachloroethene	0.20	U	0.20	1.0
Toluene	0.17	U	0.17	1.0
1,2,3-Trichlorobenzene	0.21	U	0.21	1.0
1,2,4-Trichlorobenzene	0.21	U	0.21	1.0
1,1,1-Trichloroethane	0.16	U	0.16	1.0
1,1,2-Trichloroethane	0.27	U	0.27	1.0
Trichloroethene	0.16	U	0.16	1.0
Trichlorofluoromethane	0.29	U	0.29	1.0
1,2,3-Trichloropropane	0.33	U	0.33	1.0
1,2,4-Trimethylbenzene	0.15	U	0.15	1.0
1,3,5-Trimethylbenzene	0.16	U	0.16	1.0
Vinyl chloride	2.1		0.10	1.0
Xylenes, Total	0.19	U	0.19	1.0
1,2-Dibromoethane	0.18	U	0.18	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	110		70 - 127
Toluene-d8 (Surr)	106		80 - 125
4-Bromofluorobenzene (Surr)	94		78 - 120
Dibromofluoromethane (Surr)	108		77 - 120

Analytical Data

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Client Sample ID: PIN20-M058

Lab Sample ID: 280-66327-8

Date Sampled: 03/05/2015 1325

Client Matrix: Water

Date Received: 03/10/2015 1310

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-268250	Instrument ID:	VMS_MS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	MS9_0410.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/17/2015 0118			Final Weight/Volume:	20 mL
Prep Date:	03/17/2015 0118				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	1.9	U	1.9	10
Benzene	0.16	U	0.16	1.0
Bromobenzene	0.17	U	0.17	1.0
Bromochloromethane	0.10	U	0.10	1.0
Bromodichloromethane	0.17	U	0.17	1.0
Bromoform	0.19	U	0.19	1.0
Bromomethane	0.21	U	0.21	1.0
2-Butanone (MEK)	2.0	U	2.0	5.0
n-Butylbenzene	0.32	U	0.32	1.0
sec-Butylbenzene	0.17	U	0.17	1.0
tert-Butylbenzene	0.16	U	0.16	1.0
Carbon disulfide	0.45	U	0.45	1.0
Carbon tetrachloride	0.19	U	0.19	1.0
Chlorobenzene	0.17	U	0.17	1.0
Dibromochloromethane	0.17	U	0.17	1.0
Chloroethane	0.41	U	0.41	1.0
Chloroform	0.16	U	0.16	1.0
Chloromethane	0.30	U	0.30	1.0
2-Chlorotoluene	0.17	U	0.17	1.0
4-Chlorotoluene	0.21	U	0.21	1.0
1,2-Dibromo-3-Chloropropane	0.47	U	0.47	1.0
Dibromomethane	0.17	U	0.17	1.0
1,2-Dichlorobenzene	0.15	U	0.15	1.0
1,3-Dichlorobenzene	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.16	U	0.16	1.0
Dichlorodifluoromethane	0.31	U	0.31	1.0
1,1-Dichloroethane	0.22	U	0.22	1.0
1,2-Dichloroethane	0.13	U	0.13	1.0
cis-1,2-Dichloroethene	2.2		0.15	1.0
trans-1,2-Dichloroethene	0.27	J	0.15	1.0
1,1-Dichloroethene	0.23	U	0.23	1.0
1,2-Dichloropropane	0.18	U	0.18	1.0
1,3-Dichloropropane	0.22	U	0.22	1.0
2,2-Dichloropropane	0.18	U	0.18	1.0
cis-1,3-Dichloropropene	0.16	U	0.16	1.0
trans-1,3-Dichloropropene	0.19	U	0.19	1.0
1,1-Dichloropropene	0.19	U	0.19	1.0
Ethylbenzene	0.16	U	0.16	1.0
Hexachlorobutadiene	0.36	U	0.36	1.0
2-Hexanone	1.7	U	1.7	5.0
Isopropylbenzene	0.19	U	0.19	1.0
4-Isopropyltoluene	0.20	U	0.20	1.0
Methylene Chloride	0.32	U	0.32	1.0
4-Methyl-2-pentanone	0.98	U	0.98	5.0
Naphthalene	0.22	U	0.22	1.0
n-Propylbenzene	0.16	U	0.16	1.0

Analytical Data

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Client Sample ID: PIN20-M058

Lab Sample ID: 280-66327-8

Date Sampled: 03/05/2015 1325

Client Matrix: Water

Date Received: 03/10/2015 1310

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-268250	Instrument ID:	VMS_MS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	MS9_0410.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/17/2015 0118			Final Weight/Volume:	20 mL
Prep Date:	03/17/2015 0118				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Styrene	0.17	U	0.17	1.0
1,1,1,2-Tetrachloroethane	0.21	U	0.21	1.0
1,1,2,2-Tetrachloroethane	0.21	U	0.21	1.0
Tetrachloroethene	0.20	U	0.20	1.0
Toluene	0.25	J	0.17	1.0
1,2,3-Trichlorobenzene	0.21	U	0.21	1.0
1,2,4-Trichlorobenzene	0.21	U	0.21	1.0
1,1,1-Trichloroethane	0.16	U	0.16	1.0
1,1,2-Trichloroethane	0.27	U	0.27	1.0
Trichloroethene	0.16	U	0.16	1.0
Trichlorofluoromethane	0.29	U	0.29	1.0
1,2,3-Trichloropropane	0.33	U	0.33	1.0
1,2,4-Trimethylbenzene	0.15	U	0.15	1.0
1,3,5-Trimethylbenzene	0.16	U	0.16	1.0
Vinyl chloride	0.10	U	0.10	1.0
Xylenes, Total	0.19	U	0.19	1.0
1,2-Dibromoethane	0.18	U	0.18	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	111		70 - 127
Toluene-d8 (Surr)	105		80 - 125
4-Bromofluorobenzene (Surr)	95		78 - 120
Dibromofluoromethane (Surr)	116		77 - 120

Analytical Data

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Client Sample ID: PIN20-M059

Lab Sample ID: 280-66327-9

Date Sampled: 03/05/2015 1345

Client Matrix: Water

Date Received: 03/10/2015 1310

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-268250	Instrument ID:	VMS_MS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	MS9_0411.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/17/2015 0138			Final Weight/Volume:	20 mL
Prep Date:	03/17/2015 0138				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	1.9	U	1.9	10
Benzene	0.26	J	0.16	1.0
Bromobenzene	0.17	U	0.17	1.0
Bromochloromethane	0.10	U	0.10	1.0
Bromodichloromethane	0.17	U	0.17	1.0
Bromoform	0.19	U	0.19	1.0
Bromomethane	0.21	U	0.21	1.0
2-Butanone (MEK)	2.0	U	2.0	5.0
n-Butylbenzene	0.32	U	0.32	1.0
sec-Butylbenzene	0.17	U	0.17	1.0
tert-Butylbenzene	0.16	U	0.16	1.0
Carbon disulfide	0.45	U	0.45	1.0
Carbon tetrachloride	0.19	U	0.19	1.0
Chlorobenzene	0.17	U	0.17	1.0
Dibromochloromethane	0.17	U	0.17	1.0
Chloroethane	0.41	U	0.41	1.0
Chloroform	0.16	U	0.16	1.0
Chloromethane	0.30	U	0.30	1.0
2-Chlorotoluene	0.17	U	0.17	1.0
4-Chlorotoluene	0.21	U	0.21	1.0
1,2-Dibromo-3-Chloropropane	0.47	U	0.47	1.0
Dibromomethane	0.17	U	0.17	1.0
1,2-Dichlorobenzene	0.15	U	0.15	1.0
1,3-Dichlorobenzene	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.16	U	0.16	1.0
Dichlorodifluoromethane	0.31	U	0.31	1.0
1,1-Dichloroethane	0.22	U	0.22	1.0
1,2-Dichloroethane	0.13	U	0.13	1.0
cis-1,2-Dichloroethene	4.4		0.15	1.0
trans-1,2-Dichloroethene	1.3		0.15	1.0
1,1-Dichloroethene	0.23	U	0.23	1.0
1,2-Dichloropropane	0.18	U	0.18	1.0
1,3-Dichloropropane	0.22	U	0.22	1.0
2,2-Dichloropropane	0.18	U	0.18	1.0
cis-1,3-Dichloropropene	0.16	U	0.16	1.0
trans-1,3-Dichloropropene	0.19	U	0.19	1.0
1,1-Dichloropropene	0.19	U	0.19	1.0
Ethylbenzene	0.16	U	0.16	1.0
Hexachlorobutadiene	0.36	U	0.36	1.0
2-Hexanone	1.7	U	1.7	5.0
Isopropylbenzene	0.19	U	0.19	1.0
4-Isopropyltoluene	0.20	U	0.20	1.0
Methylene Chloride	0.32	U	0.32	1.0
4-Methyl-2-pentanone	0.98	U	0.98	5.0
Naphthalene	0.22	U	0.22	1.0
n-Propylbenzene	0.16	U	0.16	1.0

Analytical Data

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Client Sample ID: PIN20-M059

Lab Sample ID: 280-66327-9

Date Sampled: 03/05/2015 1345

Client Matrix: Water

Date Received: 03/10/2015 1310

8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-268250	Instrument ID: VMS_MS9
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS9_0411.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 03/17/2015 0138		Final Weight/Volume: 20 mL
Prep Date: 03/17/2015 0138		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Styrene	0.17	U	0.17	1.0
1,1,1,2-Tetrachloroethane	0.21	U	0.21	1.0
1,1,2,2-Tetrachloroethane	0.21	U	0.21	1.0
Tetrachloroethene	0.20	U	0.20	1.0
Toluene	0.17	U	0.17	1.0
1,2,3-Trichlorobenzene	0.21	U	0.21	1.0
1,2,4-Trichlorobenzene	0.21	U	0.21	1.0
1,1,1-Trichloroethane	0.16	U	0.16	1.0
1,1,2-Trichloroethane	0.27	U	0.27	1.0
Trichloroethene	0.16	U	0.16	1.0
Trichlorofluoromethane	0.29	U	0.29	1.0
1,2,3-Trichloropropane	0.33	U	0.33	1.0
1,2,4-Trimethylbenzene	0.15	U	0.15	1.0
1,3,5-Trimethylbenzene	0.16	U	0.16	1.0
Vinyl chloride	37		0.10	1.0
Xylenes, Total	0.19	U	0.19	1.0
1,2-Dibromoethane	0.18	U	0.18	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	110		70 - 127
Toluene-d8 (Surr)	105		80 - 125
4-Bromofluorobenzene (Surr)	97		78 - 120
Dibromofluoromethane (Surr)	113		77 - 120

Analytical Data

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Client Sample ID: PIN20-M067

Lab Sample ID: 280-66327-10

Date Sampled: 03/05/2015 1530

Client Matrix: Water

Date Received: 03/10/2015 1310

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-268250	Instrument ID:	VMS_MS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	MS9_0412.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/17/2015 0158			Final Weight/Volume:	20 mL
Prep Date:	03/17/2015 0158				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	1.9	U	1.9	10
Benzene	0.16	U	0.16	1.0
Bromobenzene	0.17	U	0.17	1.0
Bromochloromethane	0.10	U	0.10	1.0
Bromodichloromethane	0.17	U	0.17	1.0
Bromoform	0.19	U	0.19	1.0
Bromomethane	0.21	U	0.21	1.0
2-Butanone (MEK)	2.0	U	2.0	5.0
n-Butylbenzene	0.32	U	0.32	1.0
sec-Butylbenzene	0.17	U	0.17	1.0
tert-Butylbenzene	0.16	U	0.16	1.0
Carbon disulfide	0.45	U	0.45	1.0
Carbon tetrachloride	0.19	U	0.19	1.0
Chlorobenzene	0.17	U	0.17	1.0
Dibromochloromethane	0.17	U	0.17	1.0
Chloroethane	0.41	U	0.41	1.0
Chloroform	0.16	U	0.16	1.0
Chloromethane	0.30	U	0.30	1.0
2-Chlorotoluene	0.17	U	0.17	1.0
4-Chlorotoluene	0.21	U	0.21	1.0
1,2-Dibromo-3-Chloropropane	0.47	U	0.47	1.0
Dibromomethane	0.17	U	0.17	1.0
1,2-Dichlorobenzene	0.15	U	0.15	1.0
1,3-Dichlorobenzene	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.16	U	0.16	1.0
Dichlorodifluoromethane	0.31	U	0.31	1.0
1,1-Dichloroethane	0.22	U	0.22	1.0
1,2-Dichloroethane	0.13	U	0.13	1.0
cis-1,2-Dichloroethene	0.37	J	0.15	1.0
trans-1,2-Dichloroethene	0.15	U	0.15	1.0
1,1-Dichloroethene	0.23	U	0.23	1.0
1,2-Dichloropropane	0.18	U	0.18	1.0
1,3-Dichloropropane	0.22	U	0.22	1.0
2,2-Dichloropropane	0.18	U	0.18	1.0
cis-1,3-Dichloropropene	0.16	U	0.16	1.0
trans-1,3-Dichloropropene	0.19	U	0.19	1.0
1,1-Dichloropropene	0.19	U	0.19	1.0
Ethylbenzene	0.16	U	0.16	1.0
Hexachlorobutadiene	0.36	U	0.36	1.0
2-Hexanone	1.7	U	1.7	5.0
Isopropylbenzene	0.19	U	0.19	1.0
4-Isopropyltoluene	0.20	U	0.20	1.0
Methylene Chloride	0.32	U	0.32	1.0
4-Methyl-2-pentanone	0.98	U	0.98	5.0
Naphthalene	0.22	U	0.22	1.0
n-Propylbenzene	0.16	U	0.16	1.0

Analytical Data

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Client Sample ID: PIN20-M067

Lab Sample ID: 280-66327-10

Date Sampled: 03/05/2015 1530

Client Matrix: Water

Date Received: 03/10/2015 1310

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-268250	Instrument ID:	VMS_MS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	MS9_0412.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/17/2015 0158			Final Weight/Volume:	20 mL
Prep Date:	03/17/2015 0158				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Styrene	0.17	U	0.17	1.0
1,1,1,2-Tetrachloroethane	0.21	U	0.21	1.0
1,1,2,2-Tetrachloroethane	0.21	U	0.21	1.0
Tetrachloroethene	0.20	U	0.20	1.0
Toluene	0.17	U	0.17	1.0
1,2,3-Trichlorobenzene	0.21	U	0.21	1.0
1,2,4-Trichlorobenzene	0.21	U	0.21	1.0
1,1,1-Trichloroethane	0.16	U	0.16	1.0
1,1,2-Trichloroethane	0.27	U	0.27	1.0
Trichloroethene	0.16	U	0.16	1.0
Trichlorofluoromethane	0.29	U	0.29	1.0
1,2,3-Trichloropropane	0.33	U	0.33	1.0
1,2,4-Trimethylbenzene	0.15	U	0.15	1.0
1,3,5-Trimethylbenzene	0.16	U	0.16	1.0
Vinyl chloride	0.10	U	0.10	1.0
Xylenes, Total	0.19	U	0.19	1.0
1,2-Dibromoethane	0.18	U	0.18	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	118		70 - 127
Toluene-d8 (Surr)	105		80 - 125
4-Bromofluorobenzene (Surr)	99		78 - 120
Dibromofluoromethane (Surr)	113		77 - 120

Analytical Data

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Client Sample ID: PIN20-M068

Lab Sample ID: 280-66327-11

Date Sampled: 03/05/2015 1415

Client Matrix: Water

Date Received: 03/10/2015 1310

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-268250	Instrument ID:	VMS_MS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	MS9_0413.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/17/2015 0217			Final Weight/Volume:	20 mL
Prep Date:	03/17/2015 0217				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	1.9	U	1.9	10
Benzene	0.25	J	0.16	1.0
Bromobenzene	0.17	U	0.17	1.0
Bromochloromethane	0.10	U	0.10	1.0
Bromodichloromethane	0.17	U	0.17	1.0
Bromoform	0.19	U	0.19	1.0
Bromomethane	0.21	U	0.21	1.0
2-Butanone (MEK)	2.0	U	2.0	5.0
n-Butylbenzene	0.32	U	0.32	1.0
sec-Butylbenzene	0.17	U	0.17	1.0
tert-Butylbenzene	0.16	U	0.16	1.0
Carbon disulfide	0.45	U	0.45	1.0
Carbon tetrachloride	0.19	U	0.19	1.0
Chlorobenzene	0.17	U	0.17	1.0
Dibromochloromethane	0.17	U	0.17	1.0
Chloroethane	0.41	U	0.41	1.0
Chloroform	0.16	U	0.16	1.0
Chloromethane	0.30	U	0.30	1.0
2-Chlorotoluene	0.17	U	0.17	1.0
4-Chlorotoluene	0.21	U	0.21	1.0
1,2-Dibromo-3-Chloropropane	0.47	U	0.47	1.0
Dibromomethane	0.17	U	0.17	1.0
1,2-Dichlorobenzene	0.15	U	0.15	1.0
1,3-Dichlorobenzene	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.16	U	0.16	1.0
Dichlorodifluoromethane	0.31	U	0.31	1.0
1,1-Dichloroethane	0.22	U	0.22	1.0
1,2-Dichloroethane	0.13	U	0.13	1.0
cis-1,2-Dichloroethene	3.2		0.15	1.0
trans-1,2-Dichloroethene	4.4		0.15	1.0
1,1-Dichloroethene	0.23	U	0.23	1.0
1,2-Dichloropropane	0.18	U	0.18	1.0
1,3-Dichloropropane	0.22	U	0.22	1.0
2,2-Dichloropropane	0.18	U	0.18	1.0
cis-1,3-Dichloropropene	0.16	U	0.16	1.0
trans-1,3-Dichloropropene	0.19	U	0.19	1.0
1,1-Dichloropropene	0.19	U	0.19	1.0
Ethylbenzene	0.16	U	0.16	1.0
Hexachlorobutadiene	0.36	U	0.36	1.0
2-Hexanone	1.7	U	1.7	5.0
Isopropylbenzene	0.19	U	0.19	1.0
4-Isopropyltoluene	0.20	U	0.20	1.0
Methylene Chloride	0.32	U	0.32	1.0
4-Methyl-2-pentanone	0.98	U	0.98	5.0
Naphthalene	0.22	U	0.22	1.0
n-Propylbenzene	0.16	U	0.16	1.0

Analytical Data

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Client Sample ID: PIN20-M068

Lab Sample ID: 280-66327-11

Date Sampled: 03/05/2015 1415

Client Matrix: Water

Date Received: 03/10/2015 1310

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-268250	Instrument ID:	VMS_MS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	MS9_0413.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/17/2015 0217			Final Weight/Volume:	20 mL
Prep Date:	03/17/2015 0217				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Styrene	0.17	U	0.17	1.0
1,1,1,2-Tetrachloroethane	0.21	U	0.21	1.0
1,1,2,2-Tetrachloroethane	0.21	U	0.21	1.0
Tetrachloroethene	0.20	U	0.20	1.0
Toluene	0.17	U	0.17	1.0
1,2,3-Trichlorobenzene	0.21	U	0.21	1.0
1,2,4-Trichlorobenzene	0.21	U	0.21	1.0
1,1,1-Trichloroethane	0.16	U	0.16	1.0
1,1,2-Trichloroethane	0.27	U	0.27	1.0
Trichloroethene	0.16	U	0.16	1.0
Trichlorofluoromethane	0.29	U	0.29	1.0
1,2,3-Trichloropropane	0.33	U	0.33	1.0
1,2,4-Trimethylbenzene	0.15	U	0.15	1.0
1,3,5-Trimethylbenzene	0.16	U	0.16	1.0
Vinyl chloride	41		0.10	1.0
Xylenes, Total	0.19	U	0.19	1.0
1,2-Dibromoethane	0.18	U	0.18	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	113		70 - 127
Toluene-d8 (Surr)	105		80 - 125
4-Bromofluorobenzene (Surr)	94		78 - 120
Dibromofluoromethane (Surr)	114		77 - 120

Analytical Data

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Client Sample ID: PIN20-M069

Lab Sample ID: 280-66327-12

Date Sampled: 03/05/2015 1450

Client Matrix: Water

Date Received: 03/10/2015 1310

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-268250	Instrument ID:	VMS_MS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	MS9_0414.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/17/2015 0238			Final Weight/Volume:	20 mL
Prep Date:	03/17/2015 0238				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	4.9	J	1.9	10
Benzene	0.16	U	0.16	1.0
Bromobenzene	0.17	U	0.17	1.0
Bromochloromethane	0.10	U	0.10	1.0
Bromodichloromethane	0.17	U	0.17	1.0
Bromoform	0.19	U	0.19	1.0
Bromomethane	0.21	U	0.21	1.0
2-Butanone (MEK)	2.0	U	2.0	5.0
n-Butylbenzene	0.32	U	0.32	1.0
sec-Butylbenzene	0.17	U	0.17	1.0
tert-Butylbenzene	0.16	U	0.16	1.0
Carbon disulfide	0.45	U	0.45	1.0
Carbon tetrachloride	0.19	U	0.19	1.0
Chlorobenzene	0.17	U	0.17	1.0
Dibromochloromethane	0.17	U	0.17	1.0
Chloroethane	0.41	U	0.41	1.0
Chloroform	0.16	U	0.16	1.0
Chloromethane	0.30	U	0.30	1.0
2-Chlorotoluene	0.17	U	0.17	1.0
4-Chlorotoluene	0.21	U	0.21	1.0
1,2-Dibromo-3-Chloropropane	0.47	U	0.47	1.0
Dibromomethane	0.17	U	0.17	1.0
1,2-Dichlorobenzene	0.15	U	0.15	1.0
1,3-Dichlorobenzene	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.16	U	0.16	1.0
Dichlorodifluoromethane	0.31	U	0.31	1.0
1,1-Dichloroethane	0.22	U	0.22	1.0
1,2-Dichloroethane	0.13	U	0.13	1.0
cis-1,2-Dichloroethene	6.0		0.15	1.0
trans-1,2-Dichloroethene	1.8		0.15	1.0
1,1-Dichloroethene	0.23	U	0.23	1.0
1,2-Dichloropropane	0.18	U	0.18	1.0
1,3-Dichloropropane	0.22	U	0.22	1.0
2,2-Dichloropropane	0.18	U	0.18	1.0
cis-1,3-Dichloropropene	0.16	U	0.16	1.0
trans-1,3-Dichloropropene	0.19	U	0.19	1.0
1,1-Dichloropropene	0.19	U	0.19	1.0
Ethylbenzene	0.16	U	0.16	1.0
Hexachlorobutadiene	0.36	U	0.36	1.0
2-Hexanone	1.7	U	1.7	5.0
Isopropylbenzene	0.19	U	0.19	1.0
4-Isopropyltoluene	0.20	U	0.20	1.0
Methylene Chloride	0.32	U	0.32	1.0
4-Methyl-2-pentanone	0.98	U	0.98	5.0
Naphthalene	0.22	U	0.22	1.0
n-Propylbenzene	0.16	U	0.16	1.0

Analytical Data

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Client Sample ID: PIN20-M069

Lab Sample ID: 280-66327-12

Date Sampled: 03/05/2015 1450

Client Matrix: Water

Date Received: 03/10/2015 1310

8260B Volatile Organic Compounds (GC/MS)

Analysis Method: 8260B	Analysis Batch: 280-268250	Instrument ID: VMS_MS9
Prep Method: 5030B	Prep Batch: N/A	Lab File ID: MS9_0414.D
Dilution: 1.0		Initial Weight/Volume: 20 mL
Analysis Date: 03/17/2015 0238		Final Weight/Volume: 20 mL
Prep Date: 03/17/2015 0238		

Analyte	Result (ug/L)	Qualifier	MDL	RL
Styrene	0.17	U	0.17	1.0
1,1,1,2-Tetrachloroethane	0.21	U	0.21	1.0
1,1,2,2-Tetrachloroethane	0.21	U	0.21	1.0
Tetrachloroethene	0.20	U	0.20	1.0
Toluene	0.17	U	0.17	1.0
1,2,3-Trichlorobenzene	0.21	U	0.21	1.0
1,2,4-Trichlorobenzene	0.21	U	0.21	1.0
1,1,1-Trichloroethane	0.16	U	0.16	1.0
1,1,2-Trichloroethane	0.27	U	0.27	1.0
Trichloroethene	0.16	U	0.16	1.0
Trichlorofluoromethane	0.29	U	0.29	1.0
1,2,3-Trichloropropane	0.33	U	0.33	1.0
1,2,4-Trimethylbenzene	0.15	U	0.15	1.0
1,3,5-Trimethylbenzene	0.16	U	0.16	1.0
Vinyl chloride	3.1		0.10	1.0
Xylenes, Total	0.19	U	0.19	1.0
1,2-Dibromoethane	0.18	U	0.18	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	114		70 - 127
Toluene-d8 (Surr)	103		80 - 125
4-Bromofluorobenzene (Surr)	96		78 - 120
Dibromofluoromethane (Surr)	115		77 - 120

Analytical Data

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Client Sample ID: PIN20-M18D

Lab Sample ID: 280-66327-13

Date Sampled: 03/05/2015 1145

Client Matrix: Water

Date Received: 03/10/2015 1310

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-268250	Instrument ID:	VMS_MS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	MS9_0415.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/17/2015 0257			Final Weight/Volume:	20 mL
Prep Date:	03/17/2015 0257				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	1.9	U	1.9	10
Benzene	0.16	U	0.16	1.0
Bromobenzene	0.17	U	0.17	1.0
Bromochloromethane	0.10	U	0.10	1.0
Bromodichloromethane	0.17	U	0.17	1.0
Bromoform	0.19	U	0.19	1.0
Bromomethane	0.21	U	0.21	1.0
2-Butanone (MEK)	2.0	U	2.0	5.0
n-Butylbenzene	0.32	U	0.32	1.0
sec-Butylbenzene	0.17	U	0.17	1.0
tert-Butylbenzene	0.16	U	0.16	1.0
Carbon disulfide	0.45	U	0.45	1.0
Carbon tetrachloride	0.19	U	0.19	1.0
Chlorobenzene	0.17	U	0.17	1.0
Dibromochloromethane	0.17	U	0.17	1.0
Chloroethane	0.41	U	0.41	1.0
Chloroform	0.16	U	0.16	1.0
Chloromethane	0.30	U	0.30	1.0
2-Chlorotoluene	0.17	U	0.17	1.0
4-Chlorotoluene	0.21	U	0.21	1.0
1,2-Dibromo-3-Chloropropane	0.47	U	0.47	1.0
Dibromomethane	0.17	U	0.17	1.0
1,2-Dichlorobenzene	0.15	U	0.15	1.0
1,3-Dichlorobenzene	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.16	U	0.16	1.0
Dichlorodifluoromethane	0.31	U	0.31	1.0
1,1-Dichloroethane	0.22	U	0.22	1.0
1,2-Dichloroethane	0.13	U	0.13	1.0
cis-1,2-Dichloroethene	0.62	J	0.15	1.0
trans-1,2-Dichloroethene	0.15	U	0.15	1.0
1,1-Dichloroethene	0.23	U	0.23	1.0
1,2-Dichloropropane	0.18	U	0.18	1.0
1,3-Dichloropropane	0.22	U	0.22	1.0
2,2-Dichloropropane	0.18	U	0.18	1.0
cis-1,3-Dichloropropene	0.16	U	0.16	1.0
trans-1,3-Dichloropropene	0.19	U	0.19	1.0
1,1-Dichloropropene	0.19	U	0.19	1.0
Ethylbenzene	0.16	U	0.16	1.0
Hexachlorobutadiene	0.36	U	0.36	1.0
2-Hexanone	1.7	U	1.7	5.0
Isopropylbenzene	0.19	U	0.19	1.0
4-Isopropyltoluene	0.20	U	0.20	1.0
Methylene Chloride	0.32	U	0.32	1.0
4-Methyl-2-pentanone	0.98	U	0.98	5.0
Naphthalene	0.22	U	0.22	1.0
n-Propylbenzene	0.16	U	0.16	1.0

Analytical Data

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Client Sample ID: PIN20-M18D

Lab Sample ID: 280-66327-13

Date Sampled: 03/05/2015 1145

Client Matrix: Water

Date Received: 03/10/2015 1310

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-268250	Instrument ID:	VMS_MS9
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	MS9_0415.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/17/2015 0257			Final Weight/Volume:	20 mL
Prep Date:	03/17/2015 0257				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Styrene	0.17	U	0.17	1.0
1,1,1,2-Tetrachloroethane	0.21	U	0.21	1.0
1,1,2,2-Tetrachloroethane	0.21	U	0.21	1.0
Tetrachloroethene	0.20	U	0.20	1.0
Toluene	0.32	J	0.17	1.0
1,2,3-Trichlorobenzene	0.21	U	0.21	1.0
1,2,4-Trichlorobenzene	0.21	U	0.21	1.0
1,1,1-Trichloroethane	0.16	U	0.16	1.0
1,1,2-Trichloroethane	0.27	U	0.27	1.0
Trichloroethene	0.16	U	0.16	1.0
Trichlorofluoromethane	0.29	U	0.29	1.0
1,2,3-Trichloropropane	0.33	U	0.33	1.0
1,2,4-Trimethylbenzene	0.15	U	0.15	1.0
1,3,5-Trimethylbenzene	0.16	U	0.16	1.0
Vinyl chloride	0.10	U	0.10	1.0
Xylenes, Total	0.19	U	0.19	1.0
1,2-Dibromoethane	0.18	U	0.18	1.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	113		70 - 127
Toluene-d8 (Surr)	102		80 - 125
4-Bromofluorobenzene (Surr)	97		78 - 120
Dibromofluoromethane (Surr)	115		77 - 120

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Surrogate Recovery Report

8260B Volatile Organic Compounds (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	DBFM %Rec	DCA %Rec	TOL %Rec	BFB %Rec
280-66327-1	PIN20-2456	103	96	109	103
280-66327-2	PIN99-2522	108	103	106	99
280-66327-3	PIN20-M001	109	110	103	96
280-66327-4	PIN20-M015	111	111	102	95
280-66327-5	PIN20-M053	113	114	101	98
280-66327-6	PIN20-M056	113	113	104	98
280-66327-7	PIN20-M057	108	110	106	94
280-66327-8	PIN20-M058	116	111	105	95
280-66327-9	PIN20-M059	113	110	105	97
280-66327-10	PIN20-M067	113	118	105	99
280-66327-11	PIN20-M068	114	113	105	94
280-66327-12	PIN20-M069	115	114	103	96
280-66327-13	PIN20-M18D	115	113	102	97
MB 280-268250/6		116	118	113	113
LCS 280-268250/4		109	112	107	105
280-66327-1 MS	PIN20-2456 MS	104	102	107	97
280-66327-1 MSD	PIN20-2456 MSD	104	104	101	95

Surrogate	Acceptance Limits
DBFM = Dibromofluoromethane (Surr)	77-120
DCA = 1,2-Dichloroethane-d4 (Surr)	70-127
TOL = Toluene-d8 (Surr)	80-125
BFB = 4-Bromofluorobenzene (Surr)	78-120

Quality Control Results

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

Method Blank - Batch: 280-268250

Method: 8260B

Preparation: 5030B

Lab Sample ID: MB 280-268250/6
 Client Matrix: Water
 Dilution: 1.0
 Analysis Date: 03/16/2015 2156
 Prep Date: 03/16/2015 2156
 Leach Date: N/A

Analysis Batch: 280-268250
 Prep Batch: N/A
 Leach Batch: N/A
 Units: ug/L

Instrument ID: VMS_MS9
 Lab File ID: MS9_0400.D
 Initial Weight/Volume: 20 mL
 Final Weight/Volume: 20 mL

Analyte	Result	Qual	MDL	RL
Acetone	1.9	U	1.9	10
Benzene	0.16	U	0.16	1.0
Bromobenzene	0.17	U	0.17	1.0
Bromochloromethane	0.10	U	0.10	1.0
Bromodichloromethane	0.17	U	0.17	1.0
Bromoform	0.19	U	0.19	1.0
Bromomethane	0.21	U	0.21	1.0
2-Butanone (MEK)	2.0	U	2.0	5.0
n-Butylbenzene	0.32	U	0.32	1.0
sec-Butylbenzene	0.17	U	0.17	1.0
tert-Butylbenzene	0.16	U	0.16	1.0
Carbon disulfide	0.45	U	0.45	1.0
Carbon tetrachloride	0.19	U	0.19	1.0
Chlorobenzene	0.17	U	0.17	1.0
Dibromochloromethane	0.17	U	0.17	1.0
Chloroethane	0.41	U	0.41	1.0
Chloroform	0.16	U	0.16	1.0
Chloromethane	0.30	U	0.30	1.0
2-Chlorotoluene	0.17	U	0.17	1.0
4-Chlorotoluene	0.21	U	0.21	1.0
1,2-Dibromo-3-Chloropropane	0.47	U	0.47	1.0
Dibromomethane	0.17	U	0.17	1.0
1,2-Dichlorobenzene	0.15	U	0.15	1.0
1,3-Dichlorobenzene	0.13	U	0.13	1.0
1,4-Dichlorobenzene	0.16	U	0.16	1.0
Dichlorodifluoromethane	0.31	U	0.31	1.0
1,1-Dichloroethane	0.22	U	0.22	1.0
1,2-Dichloroethane	0.13	U	0.13	1.0
cis-1,2-Dichloroethene	0.15	U	0.15	1.0
trans-1,2-Dichloroethene	0.15	U	0.15	1.0
1,1-Dichloroethene	0.23	U	0.23	1.0
1,2-Dichloropropane	0.18	U	0.18	1.0
1,3-Dichloropropane	0.22	U	0.22	1.0
2,2-Dichloropropane	0.18	U	0.18	1.0
cis-1,3-Dichloropropene	0.16	U	0.16	1.0
trans-1,3-Dichloropropene	0.19	U	0.19	1.0
1,1-Dichloropropene	0.19	U	0.19	1.0
Ethylbenzene	0.16	U	0.16	1.0
Hexachlorobutadiene	0.36	U	0.36	1.0
2-Hexanone	1.7	U	1.7	5.0
Isopropylbenzene	0.19	U	0.19	1.0
4-Isopropyltoluene	0.20	U	0.20	1.0
Methylene Chloride	0.32	U	0.32	1.0
4-Methyl-2-pentanone	0.98	U	0.98	5.0
Naphthalene	0.22	U	0.22	1.0

Quality Control Results

Client: S.M. Stoller Corporation

Job Number: 280-66327-1
Sdg Number: 15026801

Method Blank - Batch: 280-268250

**Method: 8260B
Preparation: 5030B**

Lab Sample ID: MB 280-268250/6
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/16/2015 2156
Prep Date: 03/16/2015 2156
Leach Date: N/A

Analysis Batch: 280-268250
Prep Batch: N/A
Leach Batch: N/A
Units: ug/L

Instrument ID: VMS_MS9
Lab File ID: MS9_0400.D
Initial Weight/Volume: 20 mL
Final Weight/Volume: 20 mL

Analyte	Result	Qual	MDL	RL
n-Propylbenzene	0.16	U	0.16	1.0
Styrene	0.17	U	0.17	1.0
1,1,1,2-Tetrachloroethane	0.21	U	0.21	1.0
1,1,2,2-Tetrachloroethane	0.21	U	0.21	1.0
Tetrachloroethene	0.20	U	0.20	1.0
Toluene	0.17	U	0.17	1.0
1,2,3-Trichlorobenzene	0.21	U	0.21	1.0
1,2,4-Trichlorobenzene	0.21	U	0.21	1.0
1,1,1-Trichloroethane	0.16	U	0.16	1.0
1,1,2-Trichloroethane	0.27	U	0.27	1.0
Trichloroethene	0.16	U	0.16	1.0
Trichlorofluoromethane	0.29	U	0.29	1.0
1,2,3-Trichloropropane	0.33	U	0.33	1.0
1,2,4-Trimethylbenzene	0.15	U	0.15	1.0
1,3,5-Trimethylbenzene	0.16	U	0.16	1.0
Vinyl chloride	0.10	U	0.10	1.0
Xylenes, Total	0.19	U	0.19	1.0
1,2-Dibromoethane	0.18	U	0.18	1.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	118	70 - 127
Toluene-d8 (Surr)	113	80 - 125
4-Bromofluorobenzene (Surr)	113	78 - 120
Dibromofluoromethane (Surr)	116	77 - 120

Quality Control Results

Client: S.M. Stoller Corporation

Job Number: 280-66327-1
Sdg Number: 15026801

Lab Control Sample - Batch: 280-268250

**Method: 8260B
Preparation: 5030B**

Lab Sample ID: LCS 280-268250/4	Analysis Batch: 280-268250	Instrument ID: VMS_MS9
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS9_0399.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 03/16/2015 2136	Units: ug/L	Final Weight/Volume: 20 mL
Prep Date: 03/16/2015 2136		
Leach Date: N/A		

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Benzene	5.00	5.16	103	65 - 135	
Bromodichloromethane	5.00	5.07	101	65 - 135	
Carbon tetrachloride	5.00	5.61	112	65 - 135	
Chlorobenzene	5.00	4.86	97	65 - 135	
Chloroform	5.00	5.25	105	65 - 135	
1,3-Dichlorobenzene	5.00	4.88	98	65 - 135	
1,1-Dichloroethane	5.00	5.29	106	65 - 135	
trans-1,2-Dichloroethene	5.00	5.03	101	65 - 135	
1,1-Dichloroethene	5.00	4.82	96	65 - 136	
1,2-Dichloropropane	5.00	5.01	100	64 - 135	
Ethylbenzene	5.00	4.98	100	65 - 135	
Methylene Chloride	5.00	4.86	97	54 - 141	
Tetrachloroethene	5.00	4.92	98	65 - 135	
Toluene	5.00	5.19	104	65 - 135	
1,1,1-Trichloroethane	5.00	5.45	109	65 - 135	
Trichloroethene	5.00	4.97	99	65 - 135	
Surrogate		% Rec		Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)		112		70 - 127	
Toluene-d8 (Surr)		107		80 - 125	
4-Bromofluorobenzene (Surr)		105		78 - 120	
Dibromofluoromethane (Surr)		109		77 - 120	

Quality Control Results

Client: S.M. Stoller Corporation

Job Number: 280-66327-1
Sdg Number: 15026801

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-268250**

**Method: 8260B
Preparation: 5030B**

MS Lab Sample ID: 280-66327-1	Analysis Batch: 280-268250	Instrument ID: VMS_MS9
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS9_0403.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 03/16/2015 2258		Final Weight/Volume: 20 mL
Prep Date: 03/16/2015 2258		5 mL
Leach Date: N/A		

MSD Lab Sample ID: 280-66327-1	Analysis Batch: 280-268250	Instrument ID: VMS_MS9
Client Matrix: Water	Prep Batch: N/A	Lab File ID: MS9_0404.D
Dilution: 1.0	Leach Batch: N/A	Initial Weight/Volume: 20 mL
Analysis Date: 03/16/2015 2318		Final Weight/Volume: 20 mL
Prep Date: 03/16/2015 2318		5 mL
Leach Date: N/A		

Analyte	% Rec.		Limit	RPD	RPD Limit	MS Qual	MSD Qual
	MS	MSD					
Benzene	101	98	65 - 135	3	20		
Bromodichloromethane	93	94	65 - 135	1	20		
Carbon tetrachloride	115	109	65 - 135	6	21		
Chlorobenzene	97	93	65 - 135	4	20		
Chloroform	102	101	65 - 135	1	20		
1,3-Dichlorobenzene	98	94	65 - 135	4	20		
1,1-Dichloroethane	103	102	65 - 135	1	21		
trans-1,2-Dichloroethene	99	98	65 - 135	1	24		
1,1-Dichloroethene	97	93	65 - 136	5	20		
1,2-Dichloropropane	92	95	64 - 135	3	20		
Ethylbenzene	99	93	65 - 135	7	20		
Methylene Chloride	84	84	54 - 141	0	26		
Tetrachloroethene	106	96	65 - 135	10	20		
Toluene	102	99	65 - 135	3	20		
1,1,1-Trichloroethane	112	107	65 - 135	5	20		
Trichloroethene	102	97	65 - 135	4	20		
Surrogate		MS % Rec	MSD % Rec			Acceptance Limits	
1,2-Dichloroethane-d4 (Surr)		102	104			70 - 127	
Toluene-d8 (Surr)		107	101			80 - 125	
4-Bromofluorobenzene (Surr)		97	95			78 - 120	
Dibromofluoromethane (Surr)		104	104			77 - 120	

Quality Control Results

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

**Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-268250**

**Method: 8260B
Preparation: 5030B**

MS Lab Sample ID: 280-66327-1 Units: ug/L
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/16/2015 2258
Prep Date: 03/16/2015 2258
Leach Date: N/A

MSD Lab Sample ID: 280-66327-1
Client Matrix: Water
Dilution: 1.0
Analysis Date: 03/16/2015 2318
Prep Date: 03/16/2015 2318
Leach Date: N/A

Analyte	Sample Result/Qual		MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Benzene	0.27	J	5.00	5.00	5.32	5.17
Bromodichloromethane	0.17	U	5.00	5.00	4.67	4.71
Carbon tetrachloride	0.19	U	5.00	5.00	5.75	5.44
Chlorobenzene	0.17	U	5.00	5.00	4.84	4.63
Chloroform	0.16	U	5.00	5.00	5.12	5.06
1,3-Dichlorobenzene	0.13	U	5.00	5.00	4.90	4.69
1,1-Dichloroethane	0.22	U	5.00	5.00	5.15	5.09
trans-1,2-Dichloroethene	1.4		5.00	5.00	6.35	6.31
1,1-Dichloroethene	0.23	U	5.00	5.00	4.87	4.63
1,2-Dichloropropane	0.18	U	5.00	5.00	4.60	4.76
Ethylbenzene	0.16	U	5.00	5.00	4.97	4.65
Methylene Chloride	0.32	U	5.00	5.00	4.21	4.20
Tetrachloroethene	0.20	U	5.00	5.00	5.29	4.80
Toluene	0.17	U	5.00	5.00	5.11	4.95
1,1,1-Trichloroethane	0.16	U	5.00	5.00	5.60	5.34
Trichloroethene	0.16	U	5.00	5.00	5.08	4.87

Quality Control Results

Client: S.M. Stoller Corporation

Job Number: 280-66327-1

Sdg Number: 15026801

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:280-268250					
LCS 280-268250/4	Lab Control Sample	T	Water	8260B	
MB 280-268250/6	Method Blank	T	Water	8260B	
280-66327-1	PIN20-2456	T	Water	8260B	
280-66327-1MS	Matrix Spike	T	Water	8260B	
280-66327-1MSD	Matrix Spike Duplicate	T	Water	8260B	
280-66327-2	PIN99-2522	T	Water	8260B	
280-66327-3	PIN20-M001	T	Water	8260B	
280-66327-4	PIN20-M015	T	Water	8260B	
280-66327-5	PIN20-M053	T	Water	8260B	
280-66327-6	PIN20-M056	T	Water	8260B	
280-66327-7	PIN20-M057	T	Water	8260B	
280-66327-8	PIN20-M058	T	Water	8260B	
280-66327-9	PIN20-M059	T	Water	8260B	
280-66327-10	PIN20-M067	T	Water	8260B	
280-66327-11	PIN20-M068	T	Water	8260B	
280-66327-12	PIN20-M069	T	Water	8260B	
280-66327-13	PIN20-M18D	T	Water	8260B	

Report Basis

T = Total