LMS/PIN/N02083

Pinellas County, Florida, Site Environmental Restoration Project

Semiannual Progress Report for the 4.5 Acre Site

December 2015 Through May 2016

June 2016

U.S. DEPARTMENT OF ENERGY | Legacy Management

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Appendix A Laboratory Reports, March 2016 Semiannual Monitoring

Abbreviations

cDCE	*cis*-1,2-dichloroethene
COPC	contaminant of potential concern
CTL	cleanup target level
DOE	U.S. Department of Energy
FAC	*Florida Administrative Code*
FDEP	Florida Department of Environmental Protection
IRA	Interim Remedial Action
LDA	large-diameter auger
µg/L	micrograms per liter
RPD	relative percent difference
STAR Center	Young - Rainey Science, Technology, and Research Center
TCE	trichloroethene
tDCE	*trans*-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.

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. A total of 221 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 contaminant of potential concern (COPC) detections in the site interior. Current closure monitoring wells are listed in Table 1.

This document is the semiannual progress report for the 4.5 Acre Site for December 2015 through May 2016, 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 2015 through May 2016 period:

- Conducted an interim sampling event at five monitoring wells on January 12 to collect biogeochemical data to supplement a performance review of enhanced bioremediation.
- Conducted semiannual sampling, which consisted of collecting groundwater samples for VOCs analysis from 11 monitoring wells on March 3 and measuring water levels in all accessible wells on March 2.
- 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 2, 2016. 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 2016, the flow patterns in both the shallow and deep surficial aquifers (Figures 3 and 4) generally indicate radial flow from the center of the site, with flow to the northwest in the northern part of the site, to the west-southwest on the west side of the site, and also a component of flow toward the southeast in the southern part of the site. The average hydraulic gradient 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

During the routine monitoring event in March 2016, groundwater samples for VOCs analysis were collected from the 11 monitoring wells listed in Table 1. 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.

An interim sampling event was conducted at five monitoring wells on January 12, 2016, to collect biogeochemical data to supplement a performance review of enhanced bioremediation (see Section 3). These samples were analyzed by Microbial Insights of Knoxville, Tennessee, and TestAmerica Denver.

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 January and March 2016 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.

2.3 Groundwater Analytical Results

Table 5 presents individual COPC concentrations 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 2016. 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. The laboratory report for samples collected in March 2016 is provided in Appendix A. The results from the interim sampling event in January 2016 are presented in Tables 5–7.

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 2016 are listed in Table 8. 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 1 duplicate for every 20 or fewer samples. During the March 2016 event, 11 samples were collected and 1 duplicate sample was collected, so this criterion was met.

A data validation software module for identifying and tracking anomalous groundwater data 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. The goal of bioinjection at the 4.5 Acre Site is to decrease contaminant concentrations to maximum contaminant levels along the west and southwest property boundaries (to meet risk–based corrective action requirements) and to minimize the extent of the plume in the interior of the site.

As can be seen in the trend plots, contaminant concentrations generally decreased following the emulsified soybean oil injection events in 2010 and 2013, but are not approaching the remediation goals at all locations. A review of site data, including the supplemental geochemical and microorganism data collected in January 2016, suggested that two main factors have limited the effectiveness at reaching the desired contaminant concentration goals.

The first factor is elevated sulfate concentrations (Table 6). Sulfate reduction must occur to reach the optimum conditions for contaminant biodegradation, and the elevated sulfate concentrations suggest that an insufficient amount of emulsified soybean oil was injected to decrease the concentrations. The second factor limiting contaminant biodegradation is lack of contact of the injected emulsified soybean oil with the contaminants. This most likely is a result of preferential flow during the injections and the limitations imposed on the maximum volume of injectate by the aquifer characteristics.

The solution to these issues is to focus the injection intervals on the highest contaminant concentrations and to inject at additional locations. DOE plans to implement these solutions during another emulsified soybean oil injection event at the site in July and August 2016.

4.0 Upcoming Tasks

The following tasks are planned for the June through November 2016 period:

- Two monitoring wells (PIN20-M023 and -M024) that are no longer needed will be abandoned in June.
- Emulsified soybean oil and the microorganism *Dehalococcoides mccartyi* will be injected using temporary injection points in summer or fall.
- Sampling of the 11 monitoring wells will be conducted in September.

5.0 References

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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 Navarro Research and Engineering, Inc., for the U.S. Department of Energy Office of Legacy Management.

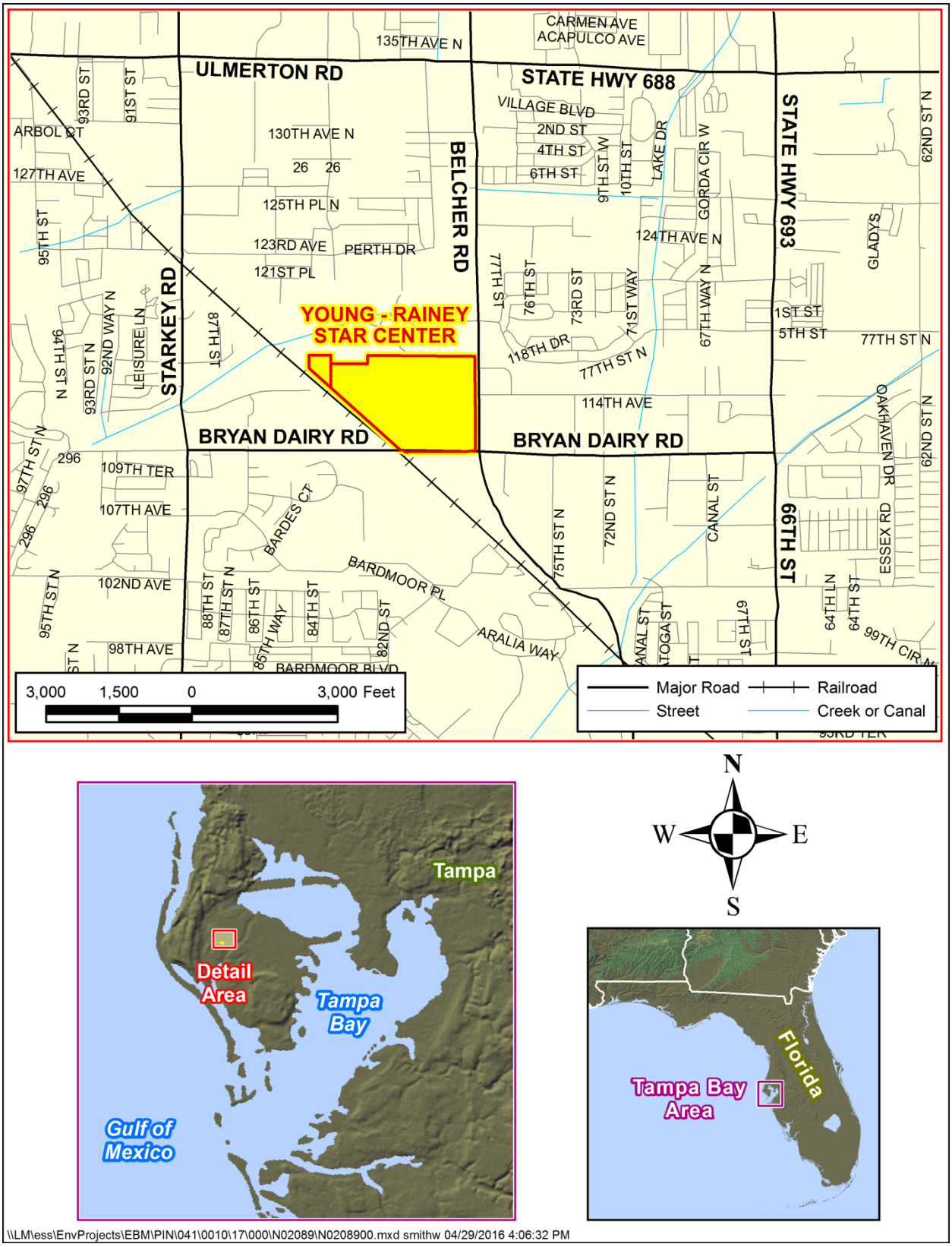

Figure 1. Young - Rainey STAR Center Location

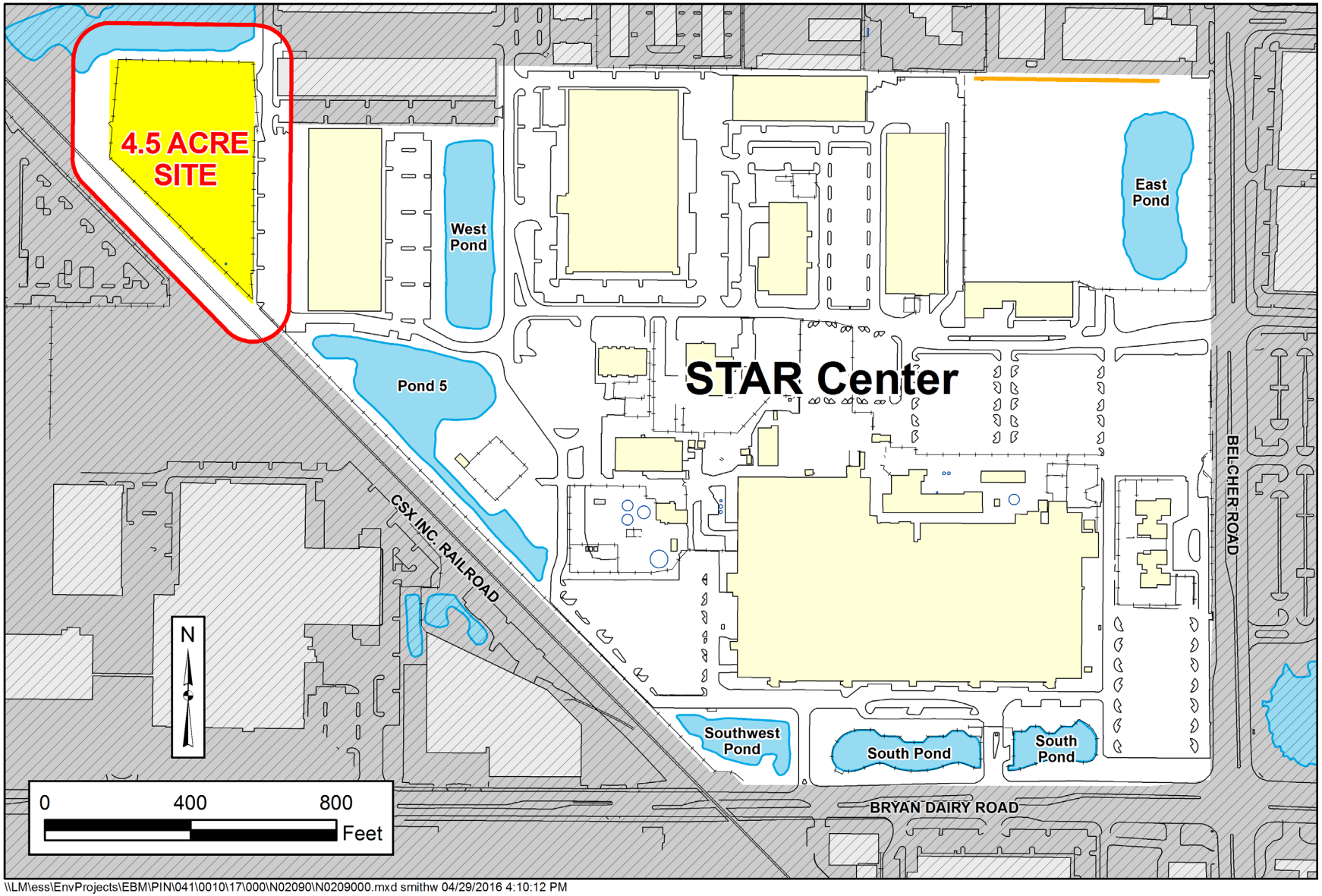

Figure 2. 4.5 Acre Site Location

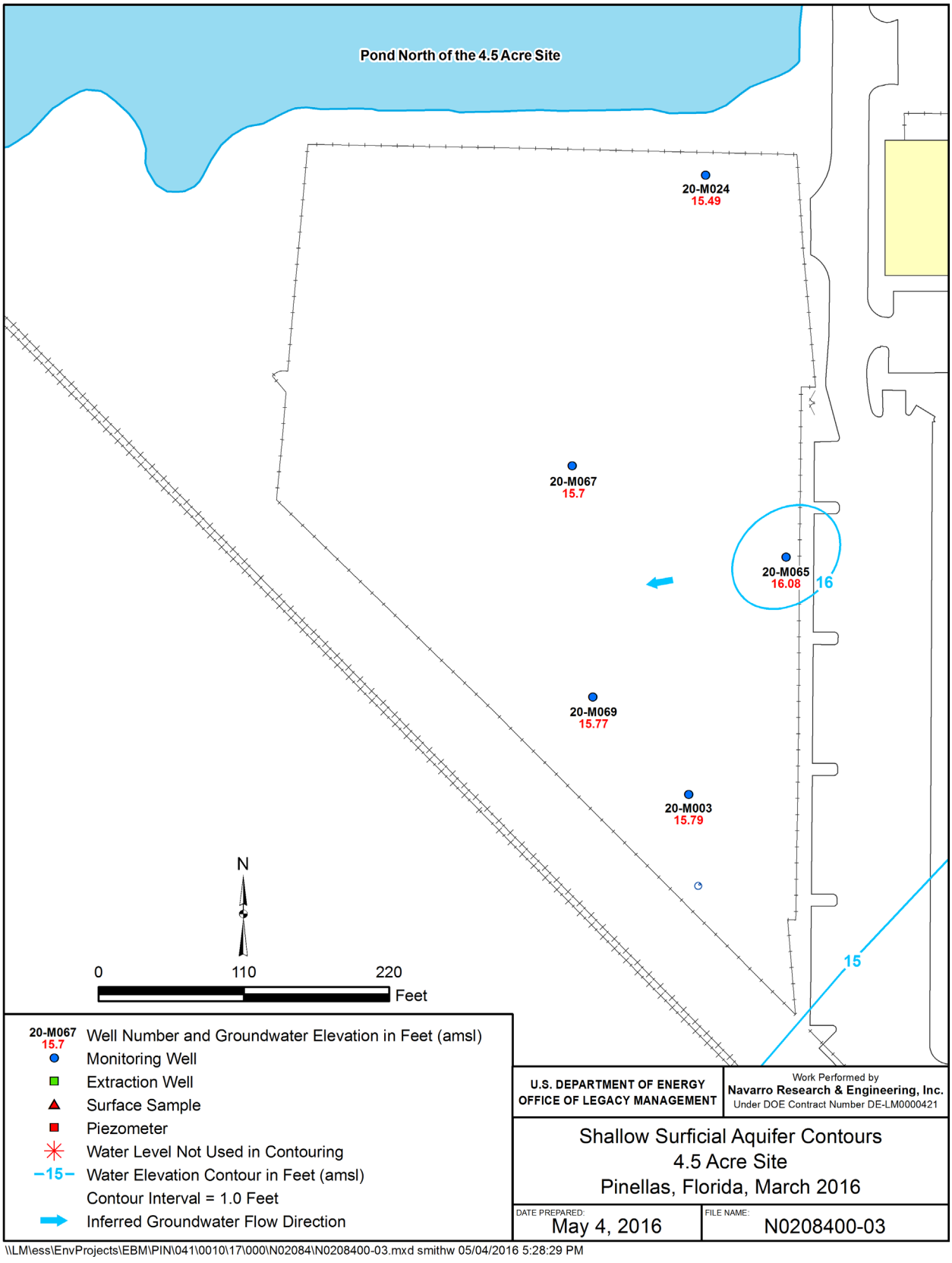

Figure 3. Shallow Surficial Aquifer Flow, March 2016

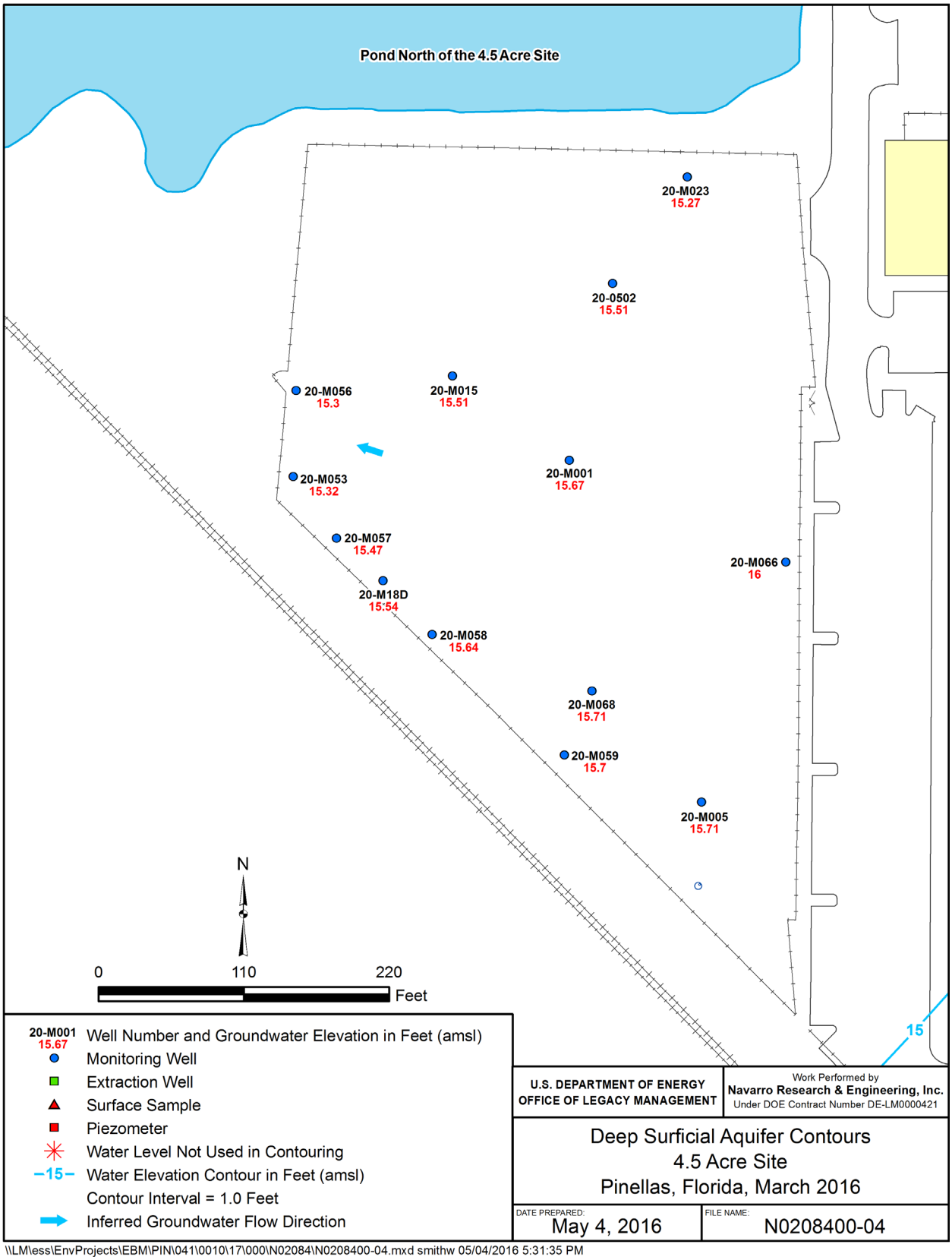

Figure 4. Deep Surficial Aquifer Flow, March 2016

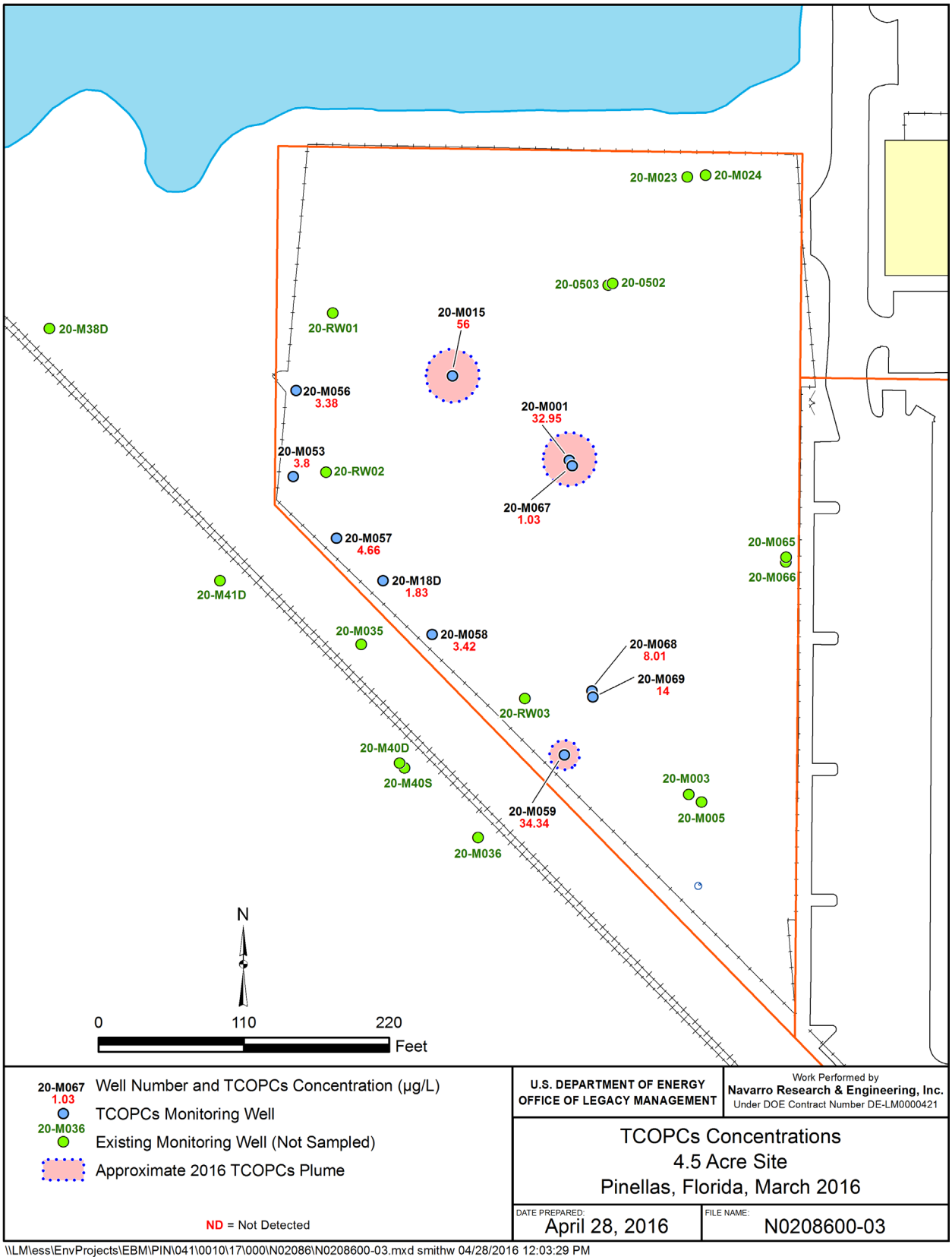

Figure 5. Total COPCs Concentrations, March 2016

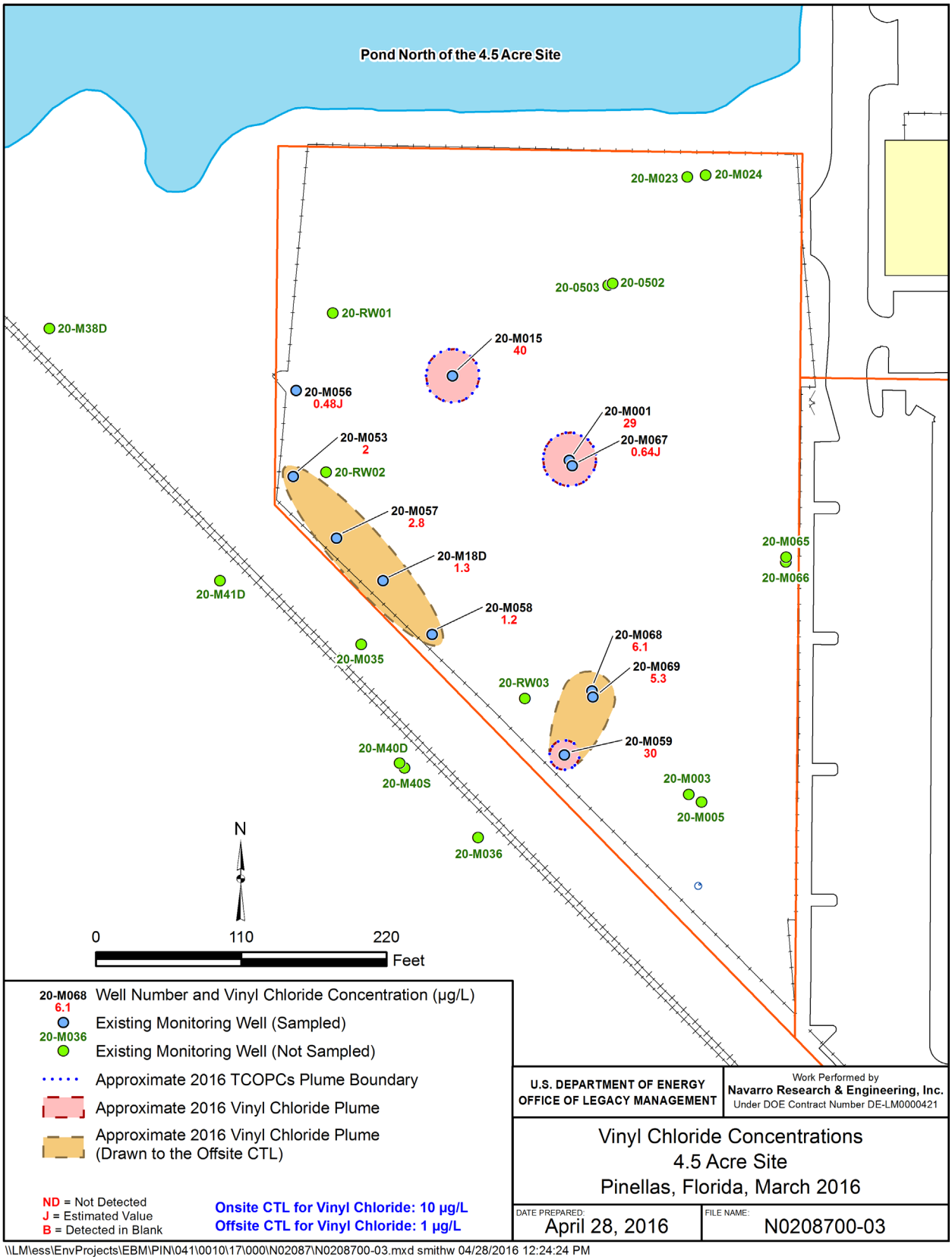

Figure 6. Vinyl Chloride Concentrations, March 2016

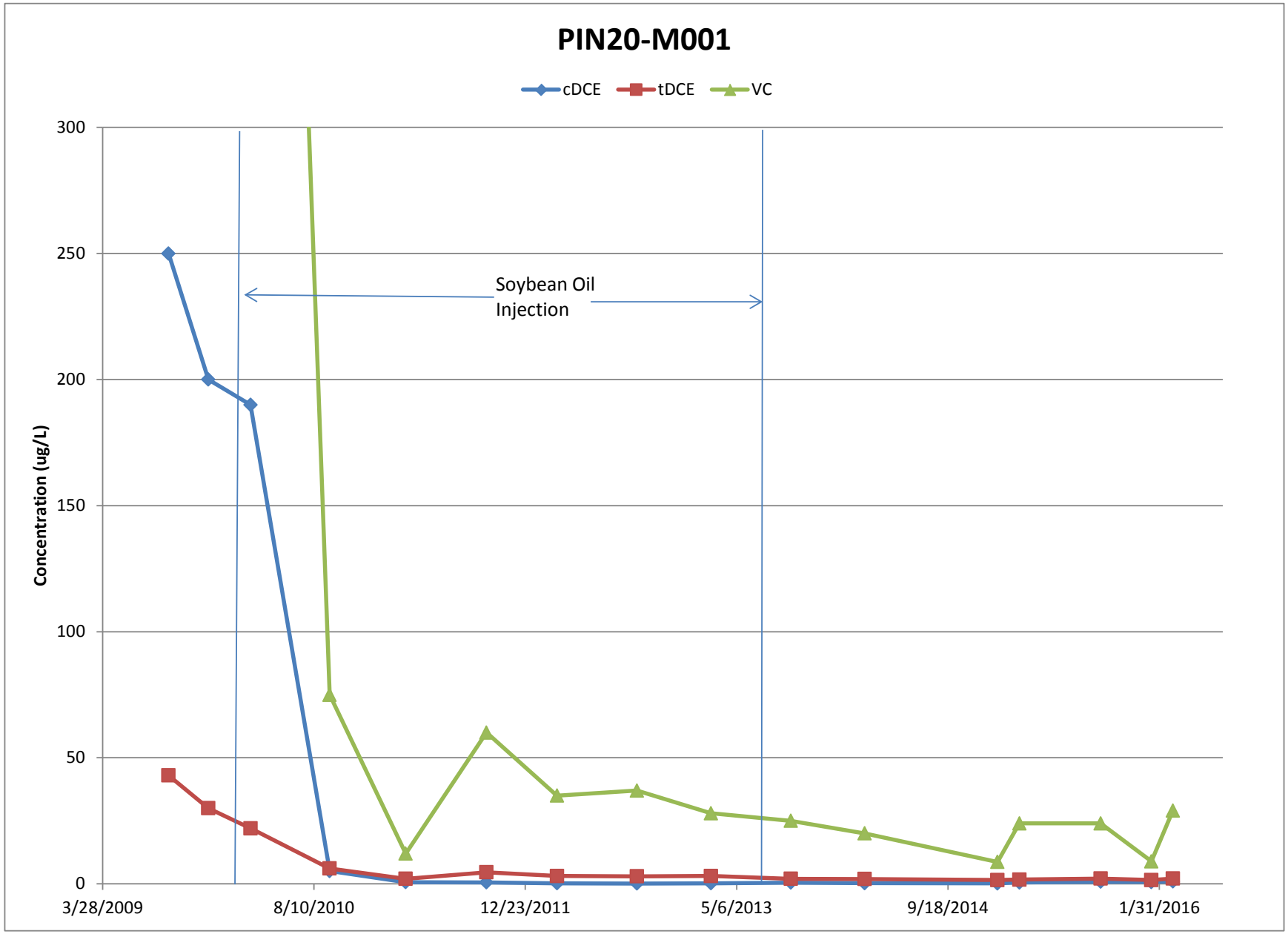

Figure 7. cDCE, tDCE, and VC in Well PIN20-M001, 2009–2016

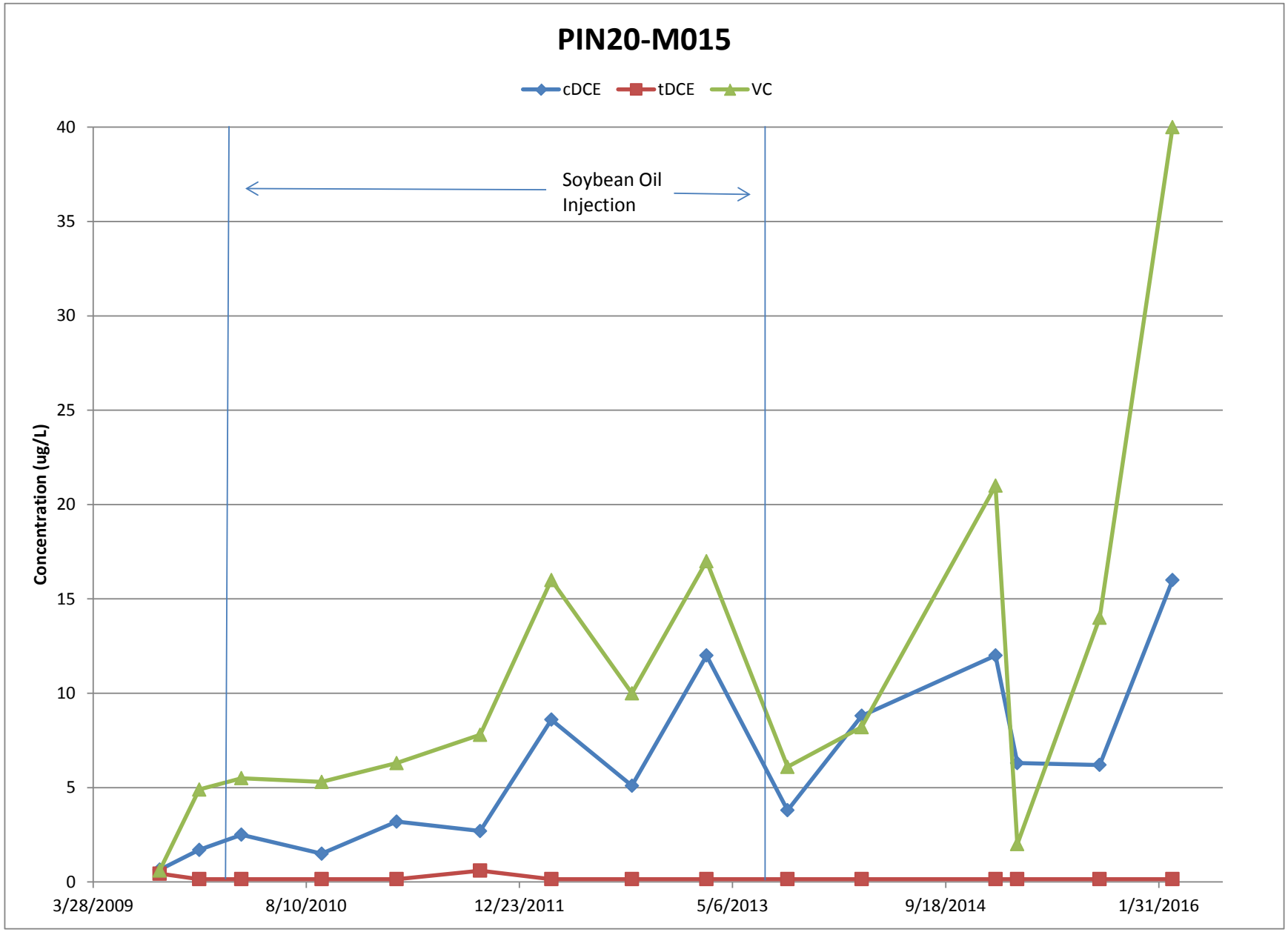

Figure 8. cDCE, tDCE, and VC in Well PIN20-M015, 2009–2016

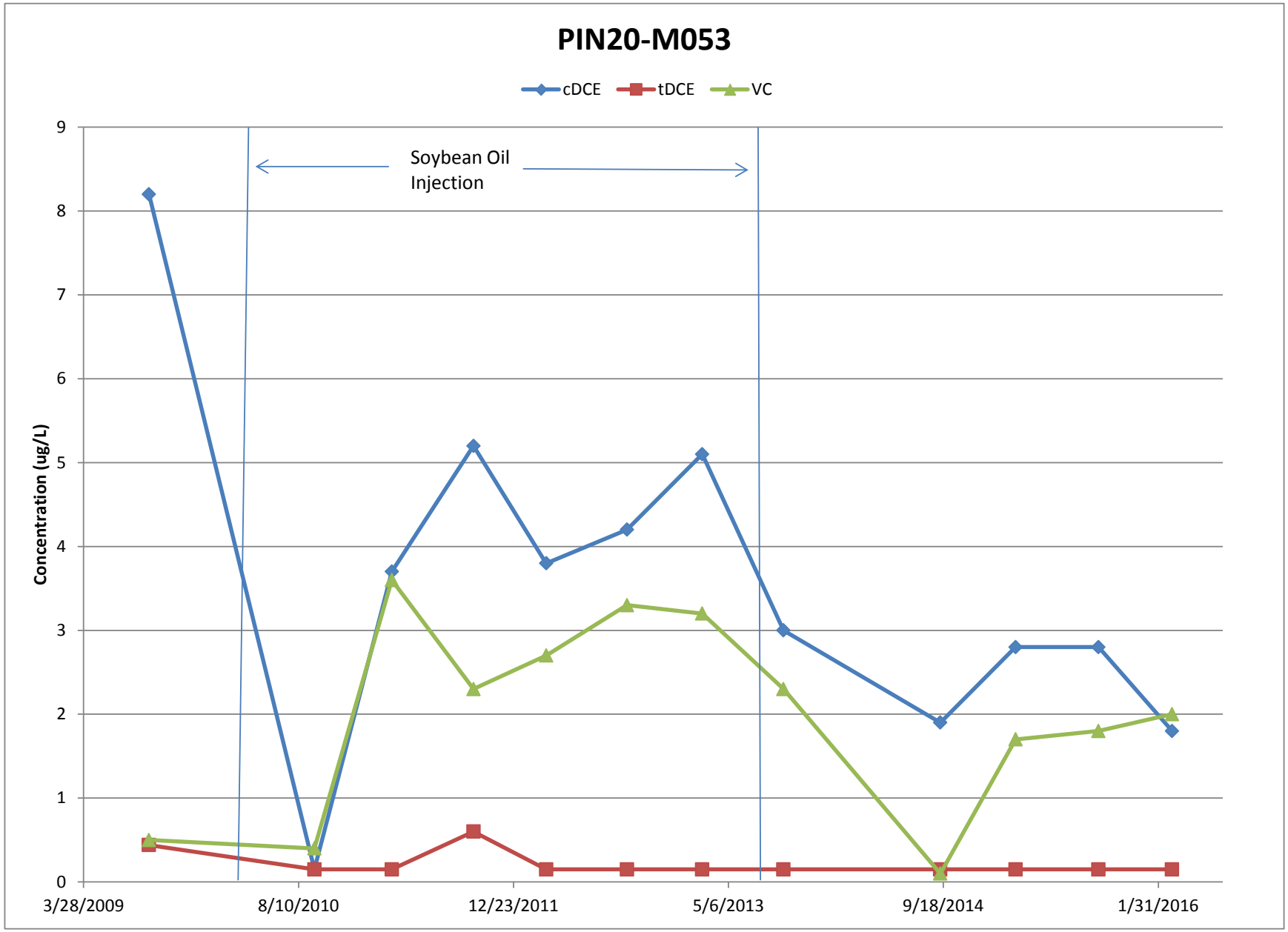

Figure 9. cDCE, tDCE, and VC in Well PIN20-M053, 2009–2016

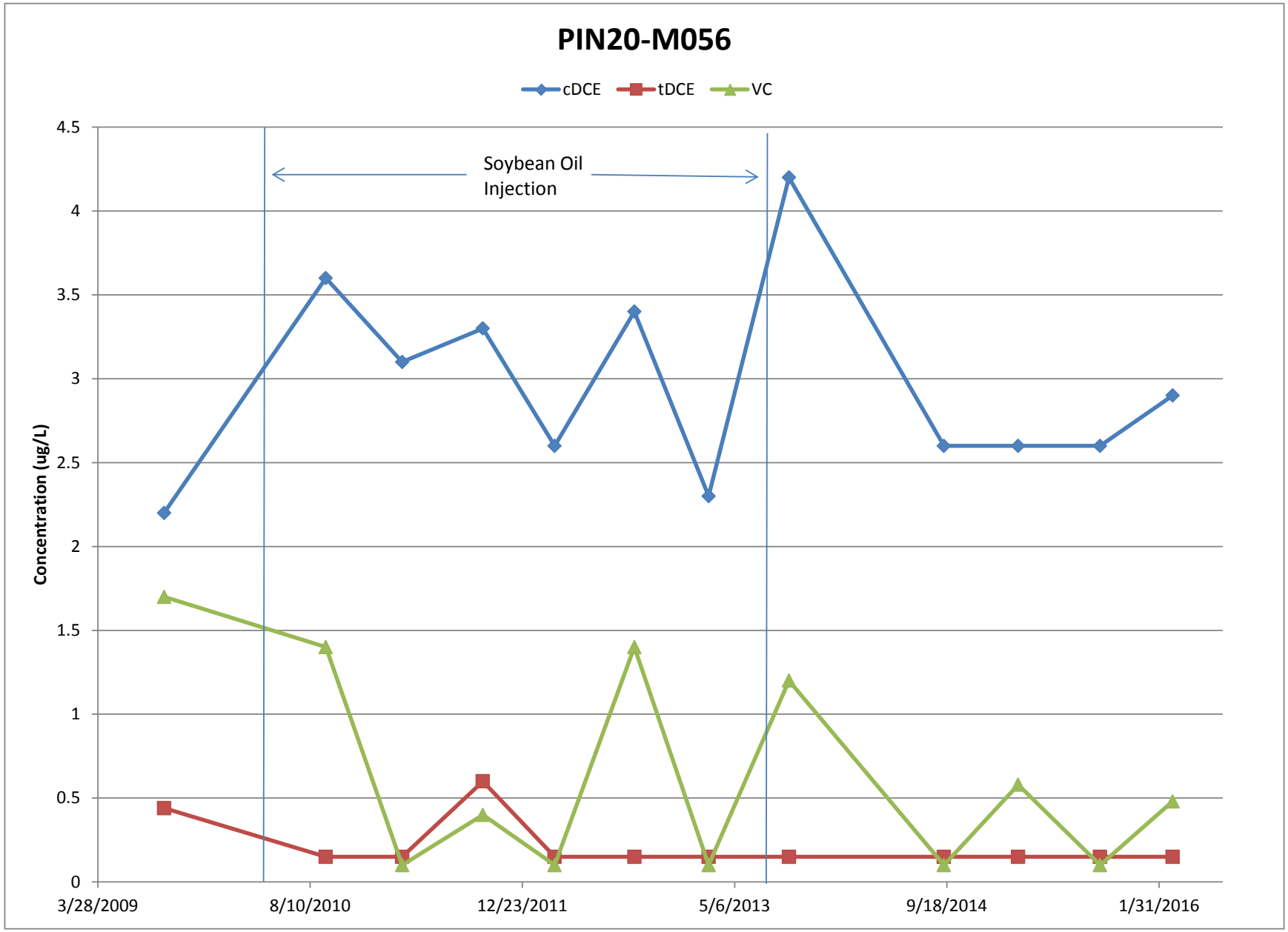

Figure 10. cDCE, tDCE, and VC in Well PIN20-M056, 2009–2016

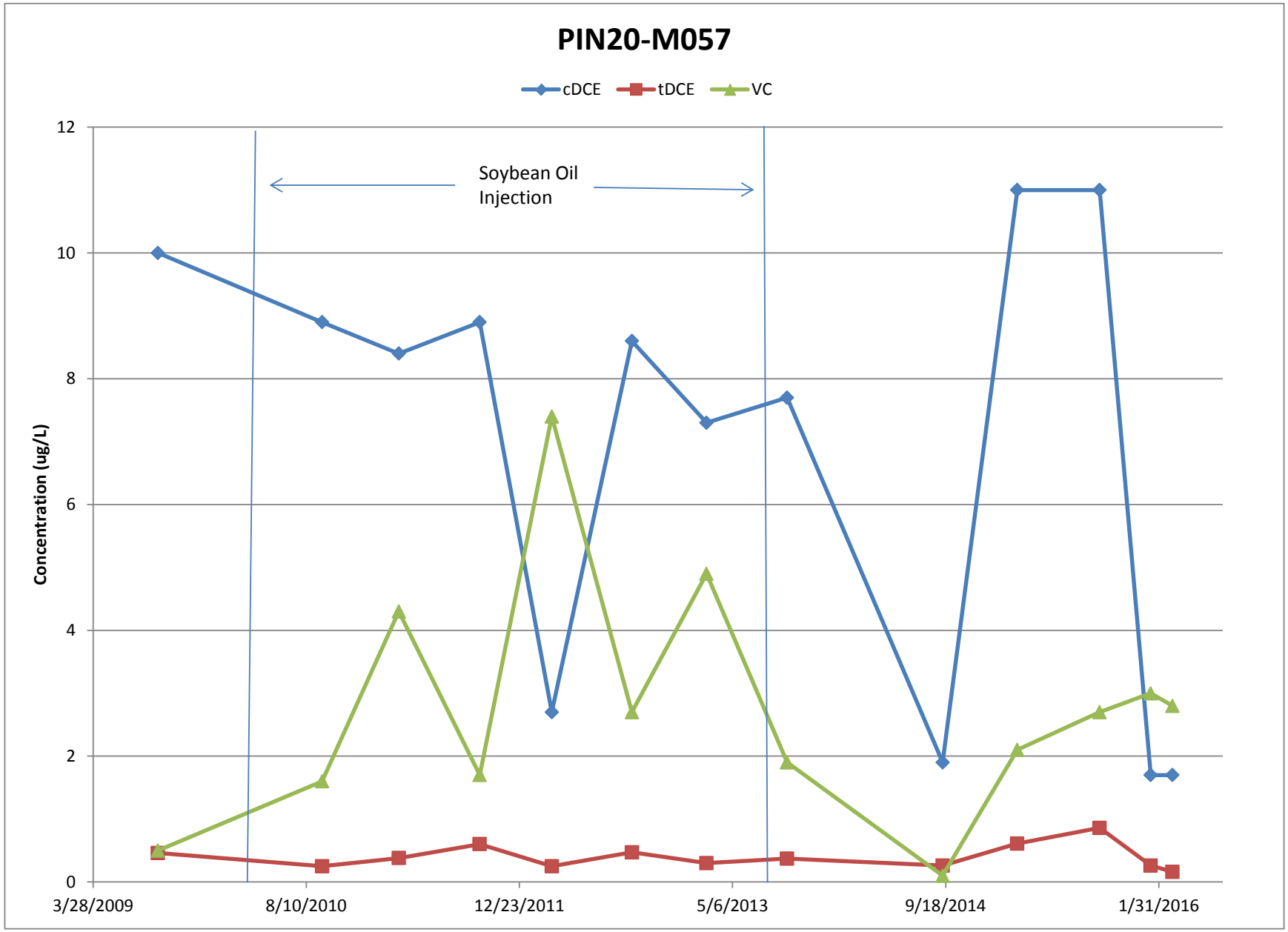

Figure 11. cDCE, tDCE, and VC in Well PIN20-M057, 2009–2016

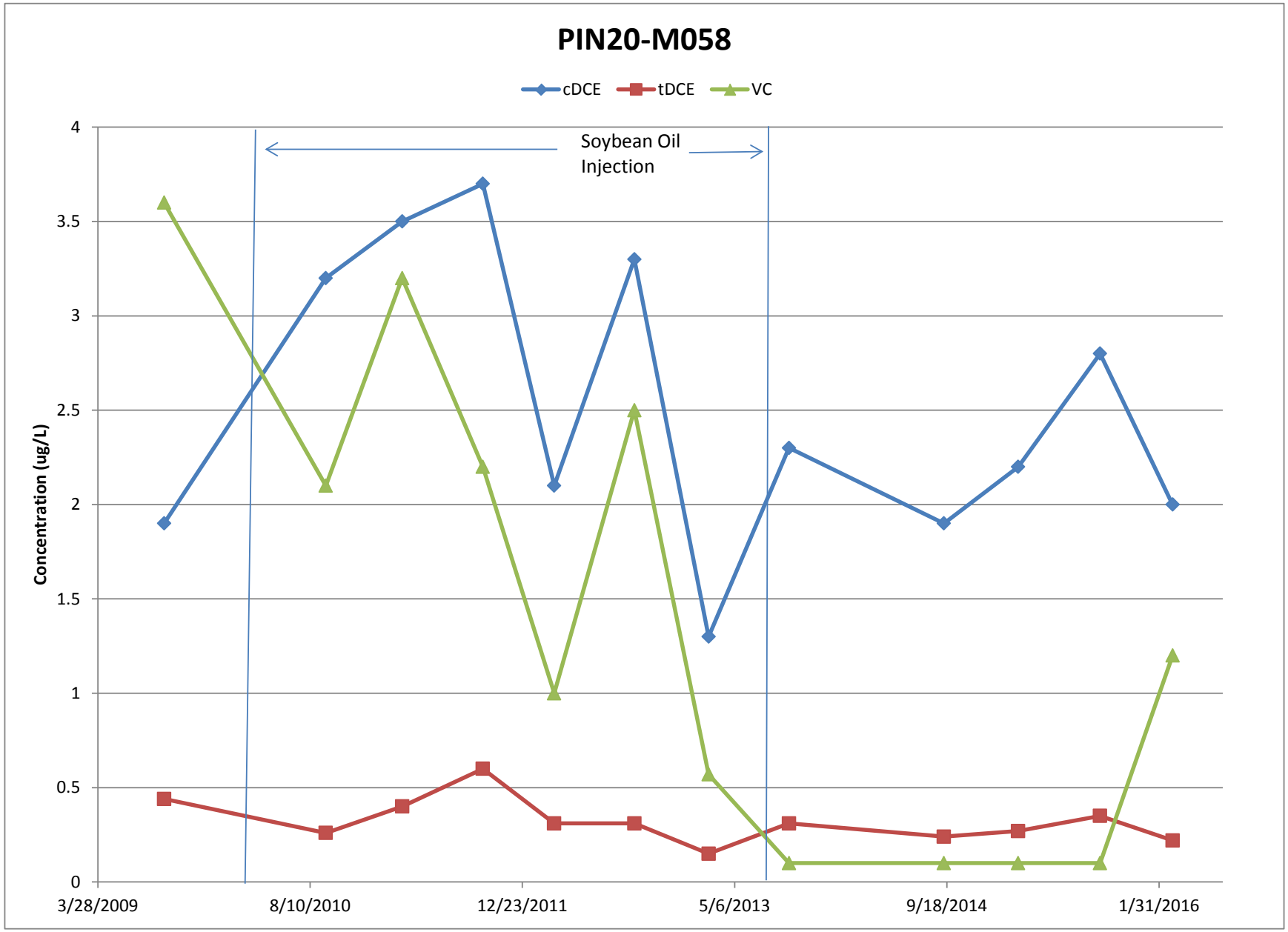

Figure 12. cDCE, tDCE, and VC in Well PIN20-M058, 2009–2016

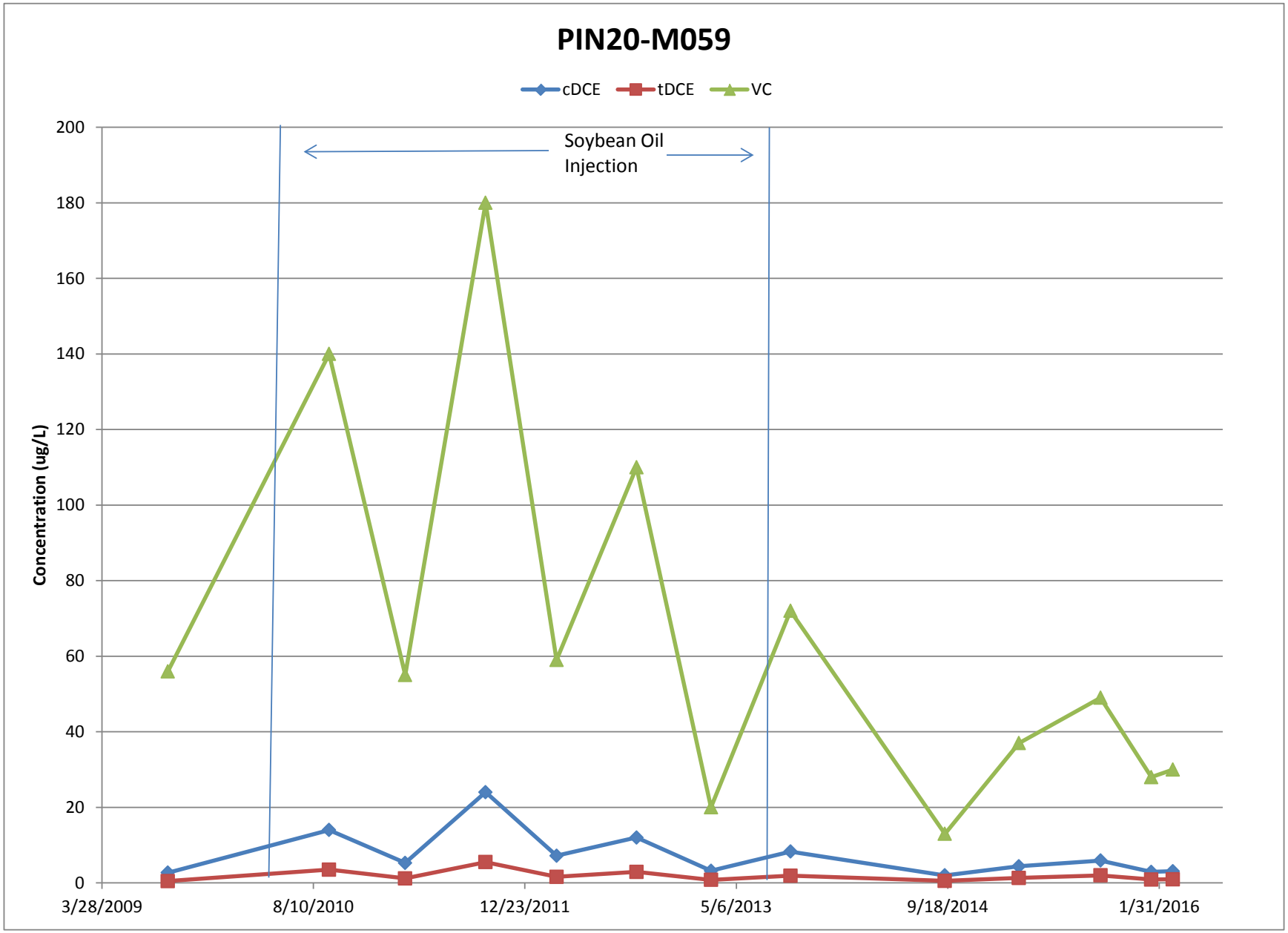

Figure 13. cDCE, tDCE, and VC in Well PIN20-M059, 2009–2016

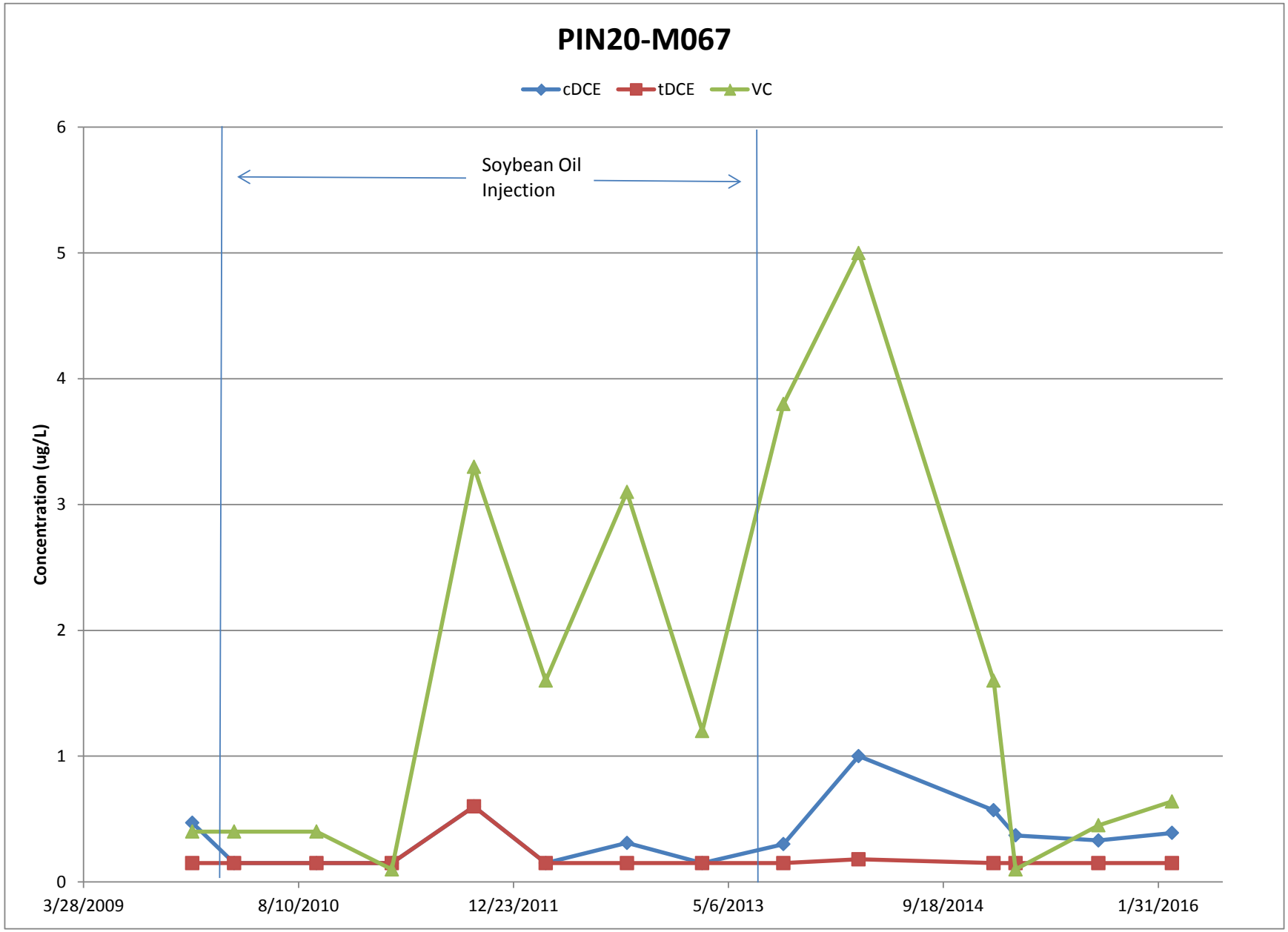

Figure 14. cDCE, tDCE, and VC in Well PIN20-M067, 2009–2016

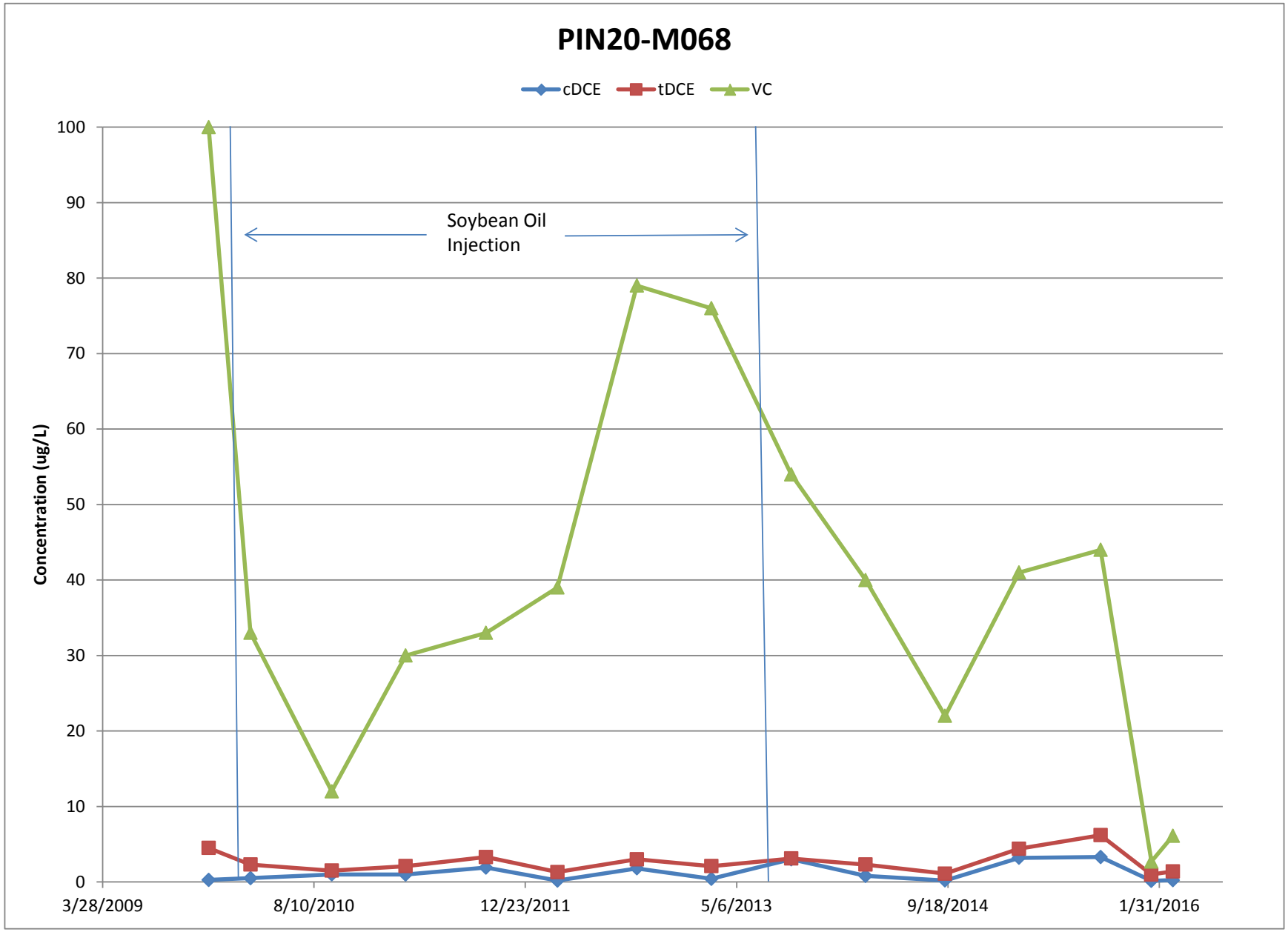

Figure 15. cDCE, tDCE, and VC in Well PIN20-M068, 2009–2016

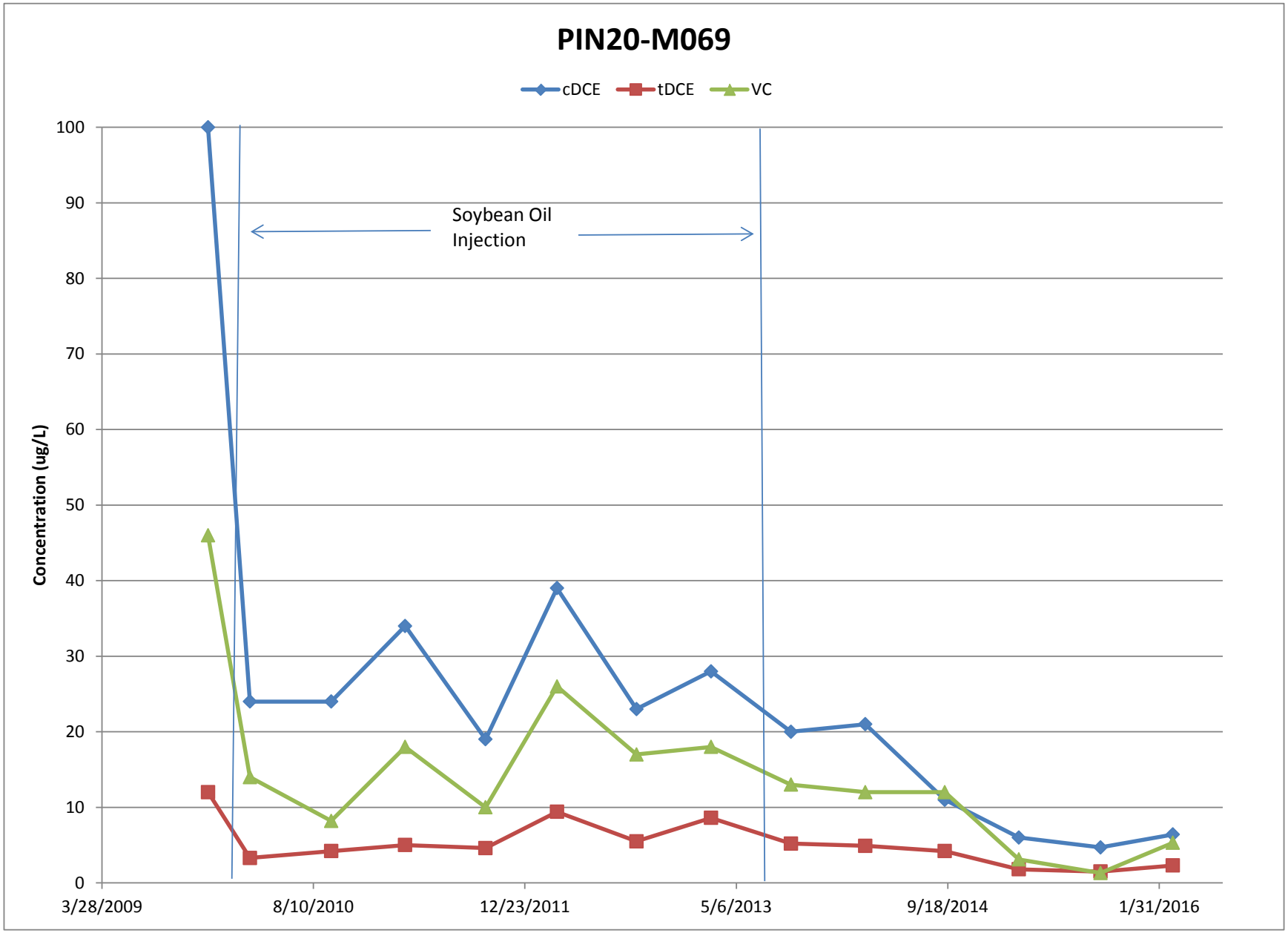

Figure 16. cDCE, tDCE, and VC in Well PIN20-M069, 2009–2016

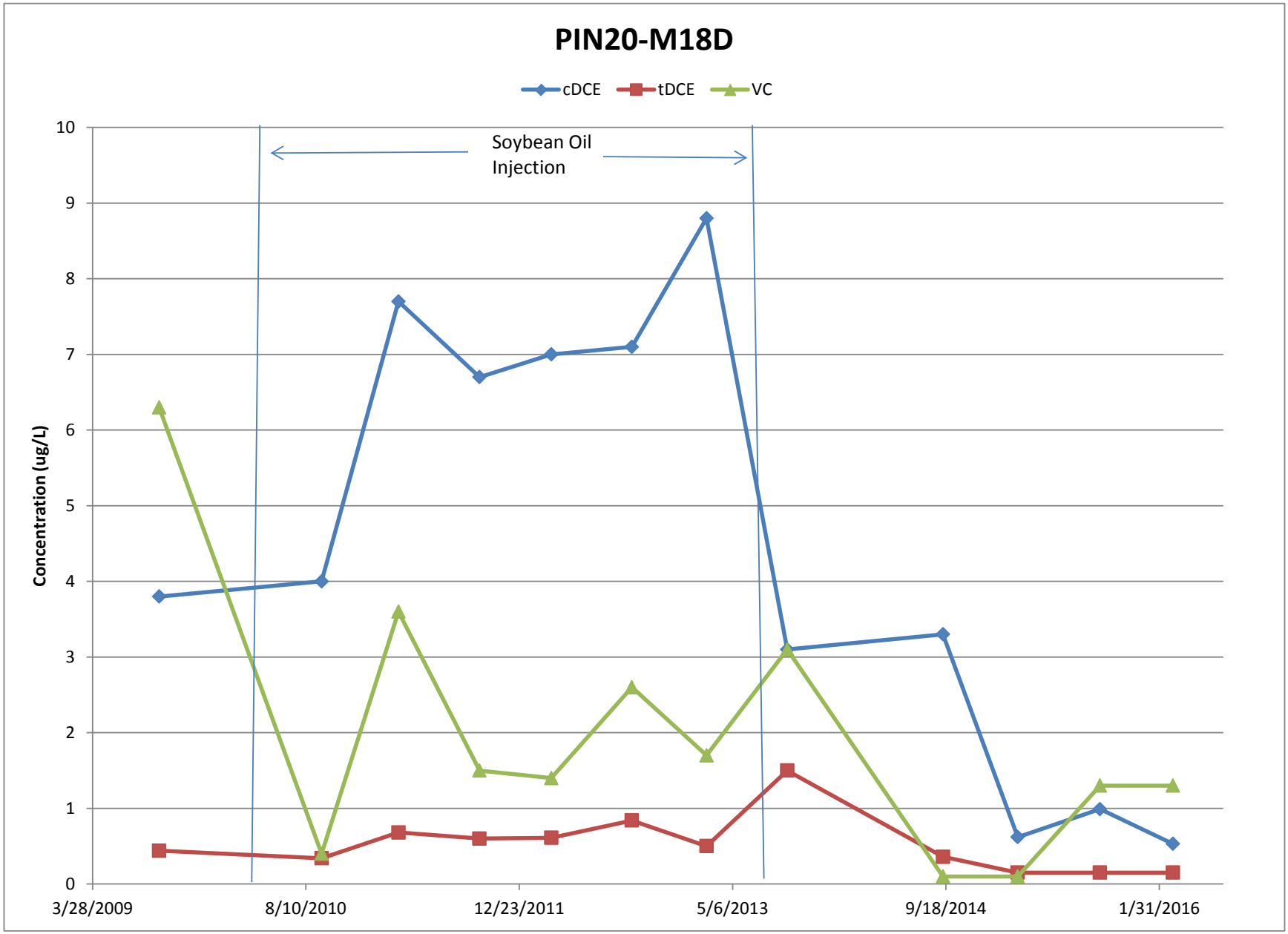

Figure 17. cDCE, tDCE, and VC in Well PIN20-M18D, 2009–2016

Table 1. Current Closure 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 2016

Location	Measurement		Water Depth (ft bls)	Groundwater Elevation (ft amsl)
	Date	Time		
PIN20				
0502	3/2/2016	08:39	1.89	15.51
0503	3/2/2016	08:45	1.90	15.50
M001	3/2/2016	08:46	1.93	15.67
M003	3/2/2016	09:37	2.11	15.79
M005	3/2/2016	13:50	2.59	15.71
M015	3/2/2016	08:54	2.88	15.51
M023	3/2/2016	08:38	4.20	15.27
M024	3/2/2016	08:06	2.31	15.49
M053	3/2/2016	09:08	1.88	15.32
M056	3/2/2016	09:03	1.80	15.30
M057	3/2/2016	09:10	2.43	15.47
M058	3/2/2016	09:20	2.06	15.64
M059	3/2/2016	09:33	2.10	15.70
M065	3/2/2016	09:52	2.32	16.08
M066	3/2/2016	09:44	2.20	16.00
M067	3/2/2016	08:50	3.00	15.70
M068	3/2/2016	09:31	2.44	15.71
M069	3/2/2016	09:23	2.23	15.77
M18D	3/2/2016	09:12	2.16	15.54

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 2016

Location	Measurement		Surface Water Elevation (ft amsl)
	Date	Time	
PIN01	**Pond 5**		
P501	3/2/2016	13:51	13.72
P502	3/2/2016	14:12	13.90
PIN02	**West Pond**		
W005	3/2/2016	14:15	14.14

Abbreviation:
ft amsl = feet above mean sea level

Table 4. Field Measurements of Samples Collected at the 4.5 Acre Site, March 2016

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	1/12/2016	22.17	1,244	4	6.14J	–86	0.7
M001	20–25	3/3/2016	–	–	16	–	–	–
M015	20.8–25.8	1/12/2016	22.65	1,748	1	7.09J	–53	0.9
M015	20.8–25.8	3/3/2016	23.34	1,704	4	6.82	–33	1.1
M053	20–30	3/3/2016	–	–	5	–	–	–
M056	19–29	3/3/2016	–	–	8	–	–	–
M057	20–30	1/12/2016	22.35	2,246	1	6.50J	–153	0.3
M057	20–30	3/3/2016	–	–	17	–	–	–
M058	18–28	3/3/2016	–	–	4	–	–	–
M059	19–29	1/12/2016	20.68	1,686	>1,000	6.64J	–78	0.6
M059	19–29	3/3/2016	22.63	1,549	17	6.85	–107	1.2
M067	10–20	3/3/2016	–	–	56	–	–	–
M068	20–30	1/12/2016	22.91	1,024	17	6.52J	–118	0.2
M068	20–30	3/3/2016	–	–	61	–	–	–
M069	10–20	3/3/2016	–	–	20	–	–	–
M18D	20–30	3/3/2016	–	–	5	–	–	–

Note:
[a] Temperature corrected to 25 °C.

Abbreviations:
– = not measured
ft bls = feet below land surface
J = estimated value
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 (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**	**1000**	**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
		9/14/2015	<0.16	0.84J	2.1	24	0.72J	27.66
		1/12/2016	<0.16	0.71J	1.5	8.9	0.72J	11.83
		3/3/2016	<0.16	0.96J	2.1	29	0.89J	32.95
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
		9/14/2015	<0.16	6.2	<0.15	14	<0.16	20.2
		1/12/2016	<0.16	18	<0.15	37	<0.16	55
		3/3/2016	<0.16	16	<0.15	40	<0.16	56

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**	**1000**	**10**	**10**	
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
		9/14/2015	<0.16	2.8	<0.15	1.8	<0.16	4.6
		3/3/2016	<0.16	1.8	<0.15	2	<0.16	3.8
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
		9/14/2015	<0.16	2.6	<0.15	<0.1	<0.16	2.6
		3/3/2016	<0.16	2.9	<0.15	0.48J	<0.16	3.38
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
		9/14/2015	<0.16	11J	0.86J	2.7J	<0.16	14.56
		1/12/2016	<0.16	1.7	0.26J	3	<0.16	4.96
		3/3/2016	<0.16	1.7	0.16J	2.8	<0.16	4.66

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**	**1000**	**10**	**10**	
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
		9/14/2015	<0.16	2.8	0.35J	<0.1	<0.16	3.15
		3/3/2016	<0.16	2	0.22J	1.2	<0.16	3.42
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
		9/14/2015	<0.16	5.9	2	49	0.29J	57.19
		1/12/2016	<0.16	2.9	0.88J	28	0.28J	32.06
		3/3/2016	<0.16	3.1	0.94J	30	0.3J	34.34
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	<0.16	0.37
		9/14/2015	<0.16	0.33J	<0.15	0.45J	<0.16	0.78
		3/3/2016	<0.16	0.39J	<0.15	0.64J	<0.16	1.03

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**	**1000**	**10**	**10**	
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
		9/14/2015	<0.16	3.3	6.2	44	0.26J	53.76
		1/12/2016	<0.16	<0.15	0.98J	2.7	0.29J	3.97
		3/3/2016	<0.16	0.23J	1.4	6.1	0.28J	8.01
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
		9/14/2015	<0.16	4.7	1.5	1.3	<0.16	7.5
		3/3/2016	<0.16	6.4	2.3	5.3	<0.16	14
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

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**	**1000**	**10**	**10**	
M18D (continued)	20–30	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
		9/14/2015	<0.16	0.99J	<0.15	1.3J	<0.16	2.29
		3/3/2016	<0.16	0.53J	<0.15	1.3	<0.16	1.83

Notes:
[a] The "<" values are method detection limits.
[b] The offsite CTL is a factor of 10 lower than the listed onsite (poor water quality) CTL.

Abbreviations:
ft bls = feet below land surface
J = estimated value
µg/L = micrograms per liter
ND = not detected
TCOPCs = total COPCs

Table 6. Supplemental Geochemical Data from January 2016

Location	Date Sampled	Methane (µg/L)	Ethane (µg/L)	Ethene (µg/L)	Nitrate (mg/L)	Ferrous Iron (mg/L)	Total Iron (mg/L)	Sulfate (mg/L)	Manganese (mg/L)	Total Organic Carbon (mg/L)	Alkalinity (mg/L)
PIN20											
M001	1/12/2016	26,000	<1.7	<1.2	<0.019	0.23	0.24	44	0.029	54	590B
M015	1/12/2016	400	12	<0.4	<0.019	4.6	7.4	690	0.031	53	300B
M057	1/12/2016	21,000	<1.1	<0.8	<0.019	0.0	0.0	480	0.0022J	32	790B
M059	1/12/2016	5,500	2.6J	<0.4	<0.019	2.6	3.4	510	0.019	38	370B
M068	1/12/2016	17,000	61	<0.8	<0.019	0.19	0.29	8.7	0.0092	56	430B

Abbreviations:
B = Result is between the instrument detection limit and the contract required detection limit.
J = estimated value
µg/L = micrograms per liter
mg/L = milligrams/liter

Table 7. Supplemental Microorganism Data from January 2016

Location	Date Sampled	BAV1 Vinyl Chloride Reductase (cells/liter)	*Dehalococcoides mccartyi* (cells/liter)	Vinyl Chloride Reductase (cells/liter)	tceA Reductase (cells/liter)
PIN20					
M001	1/12/2016	5.00×10^2	1.11×10^6	7.66×10^4	4.42×10^4
M015	1/12/2016	5.00×10^2	7.36×10^5	4.12×10^4	3.97×10^4
M057	1/12/2016	5.00×10^2	2.70×10^5	1.26×10^4	1.75×10^4
M059	1/12/2016	3.10×10^3	6.96×10^5	3.08×10^4	8.40×10^3
M068	1/12/2016	1.09×10^4	1.24×10^6	8.68×10^4	4.33×10^4

Table 8. Relative Percent Difference for Duplicate Samples, March 2016 (reported in µg/L)

Sample ID	Duplicate ID	Analyte	Result	Duplicate Result	MDL	RPD
PIN20-M059	PIN20-2456	cDCE	3.1	3.1	0.15	0
		tDCE	0.94J	1.0	0.15	6.2
		VC	30	30	0.10	0

Abbreviations:
J = estimated value
MDL = method detection limit
µg/L = micrograms per liter
RPD = relative percent difference

Appendix A

Laboratory Reports

March 2016 Semiannual Monitoring

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 280-80551-1

SDG Number: 16027654

Job Description: Pinellas Monitoring

For:
Navarro Research and Engineering, Inc
2597 Legacy Way
Grand Junction, CO 81503

Attention: Mr. Steve Donivan

Approved for release.
DiLea R Bindel
Project Manager I
3/22/2016 6:31 AM

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03/22/2016

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, 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.

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: Navarro Research and Engineering, Inc

Project: PINELLAS MONITORING - 16027654

Report Number: 280-80551-1

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 3/8/2016 9:40 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.6º C.

GC/MS VOLATILES - SW846 8260B

The LCS associated with batch 280-316867 exhibited a percent recovery outside the QC control limits, biased high, for Dichlorodifluoromethane. This is not a spike compound of interest. Therefore, data was not affected.

The LCS associated with batch 280-316991 exhibited a percent recovery outside the QC control limits, biased high, for 2-Hexanone. This is not a spike compound of interest. Therefore, data was not affected.

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

DATA REPORTING QUALIFIERS

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Lab Section	Qualifier	Description
GC/MS VOA		
	U	Indicates the analyte was analyzed for but not detected.
	*	LCS or LCSD is outside acceptance limits.
	F1	MS and/or MSD Recovery is outside acceptance limits.
	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.
	E	Result exceeded calibration range.
	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: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
280-80551-1	PIN20-2456	Water	03/03/2016 1450	03/08/2016 0940
280-80551-1MS	PIN20-2456	Water	03/03/2016 1450	03/08/2016 0940
280-80551-1MSD	PIN20-2456	Water	03/03/2016 1450	03/08/2016 0940
280-80551-2	PIN20-2522	Water	03/03/2016 0800	03/08/2016 0940
280-80551-3	PIN20-M001	Water	03/03/2016 0935	03/08/2016 0940
280-80551-4	PIN20-M015	Water	03/03/2016 1040	03/08/2016 0940
280-80551-5	PIN20-M053	Water	03/03/2016 1140	03/08/2016 0940
280-80551-6	PIN20-M056	Water	03/03/2016 1110	03/08/2016 0940
280-80551-7	PIN20-M057	Water	03/03/2016 1305	03/08/2016 0940
280-80551-8	PIN20-M058	Water	03/03/2016 1400	03/08/2016 0940
280-80551-9	PIN20-M059	Water	03/03/2016 1455	03/08/2016 0940
280-80551-10	PIN20-M067	Water	03/03/2016 1005	03/08/2016 0940
280-80551-11	PIN20-M068	Water	03/03/2016 1600	03/08/2016 0940
280-80551-12	PIN20-M069	Water	03/03/2016 1640	03/08/2016 0940
280-80551-13	PIN20-M18D	Water	03/03/2016 1330	03/08/2016 0940

EXECUTIVE SUMMARY - Detections

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
280-80551-1	**PIN20-2456**					
Acetone		21		10	ug/L	8260B
Benzene		0.31	J	1.0	ug/L	8260B
cis-1,2-Dichloroethene		3.1		1.0	ug/L	8260B
trans-1,2-Dichloroethene		1.0		1.0	ug/L	8260B
1,2,4-Trichlorobenzene		0.37	J	1.0	ug/L	8260B
Vinyl chloride		30		1.0	ug/L	8260B
280-80551-2	**PIN20-2522**					
Acetone		8.9	J	10	ug/L	8260B
1,2,3-Trichlorobenzene		0.30	J	1.0	ug/L	8260B
1,2,4-Trichlorobenzene		0.35	J	1.0	ug/L	8260B
280-80551-3	**PIN20-M001**					
Acetone		3.2	J	10	ug/L	8260B
Benzene		0.89	J	1.0	ug/L	8260B
cis-1,2-Dichloroethene		0.96	J	1.0	ug/L	8260B
trans-1,2-Dichloroethene		2.1		1.0	ug/L	8260B
1,1-Dichloropropene		0.64	J	1.0	ug/L	8260B
Vinyl chloride		29		1.0	ug/L	8260B
280-80551-4	**PIN20-M015**					
Acetone		3.5	J	10	ug/L	8260B
cis-1,2-Dichloroethene		16		1.0	ug/L	8260B
1,2,3-Trichloropropane		2.4		1.0	ug/L	8260B
Vinyl chloride		40		1.0	ug/L	8260B
280-80551-5	**PIN20-M053**					
cis-1,2-Dichloroethene		1.8		1.0	ug/L	8260B
Vinyl chloride		2.0		1.0	ug/L	8260B
280-80551-6	**PIN20-M056**					
Acetone		3.1	J	10	ug/L	8260B
cis-1,2-Dichloroethene		2.9		1.0	ug/L	8260B
Vinyl chloride		0.48	J	1.0	ug/L	8260B
280-80551-7	**PIN20-M057**					
cis-1,2-Dichloroethene		1.7		1.0	ug/L	8260B
trans-1,2-Dichloroethene		0.16	J	1.0	ug/L	8260B
Vinyl chloride		2.8		1.0	ug/L	8260B

EXECUTIVE SUMMARY - Detections

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
280-80551-8	**PIN20-M058**					
Acetone		5.0	J	10	ug/L	8260B
cis-1,2-Dichloroethene		2.0		1.0	ug/L	8260B
trans-1,2-Dichloroethene		0.22	J	1.0	ug/L	8260B
Vinyl chloride		1.2		1.0	ug/L	8260B
280-80551-9	**PIN20-M059**					
Benzene		0.30	J	1.0	ug/L	8260B
cis-1,2-Dichloroethene		3.1		1.0	ug/L	8260B
trans-1,2-Dichloroethene		0.94	J	1.0	ug/L	8260B
Vinyl chloride		30		1.0	ug/L	8260B
280-80551-10	**PIN20-M067**					
cis-1,2-Dichloroethene		0.39	J	1.0	ug/L	8260B
Vinyl chloride		0.64	J	1.0	ug/L	8260B
280-80551-11	**PIN20-M068**					
Acetone		5.5	J	10	ug/L	8260B
Benzene		0.28	J	1.0	ug/L	8260B
cis-1,2-Dichloroethene		0.23	J	1.0	ug/L	8260B
trans-1,2-Dichloroethene		1.4		1.0	ug/L	8260B
Vinyl chloride		6.1		1.0	ug/L	8260B
280-80551-12	**PIN20-M069**					
Acetone		4.2	J	10	ug/L	8260B
cis-1,2-Dichloroethene		6.4		1.0	ug/L	8260B
trans-1,2-Dichloroethene		2.3		1.0	ug/L	8260B
Vinyl chloride		5.3		1.0	ug/L	8260B
280-80551-13	**PIN20-M18D**					
cis-1,2-Dichloroethene		0.53	J	1.0	ug/L	8260B
Vinyl chloride		1.3		1.0	ug/L	8260B

METHOD SUMMARY

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

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: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Method	Analyst	Analyst ID
SW846 8260B	Wickham, Tom A	TAW

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Client Sample ID: **PIN20-2456**

Lab Sample ID: 280-80551-1
Client Matrix: Water

Date Sampled: 03/03/2016 1450
Date Received: 03/08/2016 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	H2540.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 1152			Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 1152				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	21		1.9	10
Benzene	0.31	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	3.1		0.15	1.0
trans-1,2-Dichloroethene	1.0		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

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Client Sample ID: PIN20-2456

Lab Sample ID: 280-80551-1
Client Matrix: Water

Date Sampled: 03/03/2016 1450
Date Received: 03/08/2016 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	H2540.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 1152			Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 1152				

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	0.37	J	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 F1	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	30		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)	99		70 - 127
Toluene-d8 (Surr)	101		80 - 125
4-Bromofluorobenzene (Surr)	101		78 - 120
Dibromofluoromethane (Surr)	106		77 - 120

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Client Sample ID: **PIN20-2522**

Lab Sample ID: 280-80551-2
Client Matrix: Water

Date Sampled: 03/03/2016 0800
Date Received: 03/08/2016 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	H2543.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 1303			Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 1303				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	8.9	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	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

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Client Sample ID: PIN20-2522

Lab Sample ID: 280-80551-2
Client Matrix: Water

Date Sampled: 03/03/2016 0800
Date Received: 03/08/2016 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	H2543.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 1303			Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 1303				

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	0.30	J	0.21	1.0
1,2,4-Trichlorobenzene	0.35	J	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)	92		70 - 127
Toluene-d8 (Surr)	101		80 - 125
4-Bromofluorobenzene (Surr)	102		78 - 120
Dibromofluoromethane (Surr)	101		77 - 120

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Client Sample ID: **PIN20-M001**

Lab Sample ID: 280-80551-3
Client Matrix: Water

Date Sampled: 03/03/2016 0935
Date Received: 03/08/2016 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	H2544.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 1327			Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 1327				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	3.2	J	1.9	10
Benzene	0.89	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	0.96	J	0.15	1.0
trans-1,2-Dichloroethene	2.1		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	0.64	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

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Client Sample ID: **PIN20-M001**

Lab Sample ID: 280-80551-3
Client Matrix: Water

Date Sampled: 03/03/2016 0935
Date Received: 03/08/2016 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	H2544.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 1327			Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 1327				

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	29		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)	108		70 - 127
Toluene-d8 (Surr)	99		80 - 125
4-Bromofluorobenzene (Surr)	101		78 - 120
Dibromofluoromethane (Surr)	107		77 - 120

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Client Sample ID: PIN20-M015

Lab Sample ID: 280-80551-4
Client Matrix: Water

Date Sampled: 03/03/2016 1040
Date Received: 03/08/2016 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	H2545.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 1351			Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 1351				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	3.5	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	16		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

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Client Sample ID: PIN20-M015

Lab Sample ID: 280-80551-4
Client Matrix: Water

Date Sampled: 03/03/2016 1040
Date Received: 03/08/2016 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	H2545.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 1351			Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 1351				

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	2.4		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	40		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)	102		70 - 127
Toluene-d8 (Surr)	99		80 - 125
4-Bromofluorobenzene (Surr)	100		78 - 120
Dibromofluoromethane (Surr)	105		77 - 120

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Client Sample ID: **PIN20-M053**

Lab Sample ID: 280-80551-5
Client Matrix: Water

Date Sampled: 03/03/2016 1140
Date Received: 03/08/2016 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	H2546.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 1414			Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 1414				

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	1.8		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

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Client Sample ID: PIN20-M053

Lab Sample ID: 280-80551-5
Client Matrix: Water

Date Sampled: 03/03/2016 1140
Date Received: 03/08/2016 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	H2546.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 1414			Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 1414				

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)	101		70 - 127
Toluene-d8 (Surr)	99		80 - 125
4-Bromofluorobenzene (Surr)	101		78 - 120
Dibromofluoromethane (Surr)	106		77 - 120

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Client Sample ID: **PIN20-M056**

Lab Sample ID: 280-80551-6
Client Matrix: Water

Date Sampled: 03/03/2016 1110
Date Received: 03/08/2016 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	H2547.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 1438			Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 1438				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	3.1	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	2.9		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

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Client Sample ID: PIN20-M056

Lab Sample ID: 280-80551-6
Client Matrix: Water

Date Sampled: 03/03/2016 1110
Date Received: 03/08/2016 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	H2547.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 1438			Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 1438				

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	0.48	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)	103		70 - 127
Toluene-d8 (Surr)	99		80 - 125
4-Bromofluorobenzene (Surr)	101		78 - 120
Dibromofluoromethane (Surr)	106		77 - 120

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Client Sample ID: **PIN20-M057**

Lab Sample ID: 280-80551-7
Client Matrix: Water

Date Sampled: 03/03/2016 1305
Date Received: 03/08/2016 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	H2548.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 1502			Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 1502				

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	1.7		0.15	1.0
trans-1,2-Dichloroethene	0.16	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

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Client Sample ID: **PIN20-M057**

Lab Sample ID: 280-80551-7
Client Matrix: Water

Date Sampled: 03/03/2016 1305
Date Received: 03/08/2016 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	H2548.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 1502			Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 1502				

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	2.8		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)	100		70 - 127
Toluene-d8 (Surr)	96		80 - 125
4-Bromofluorobenzene (Surr)	101		78 - 120
Dibromofluoromethane (Surr)	103		77 - 120

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Client Sample ID: **PIN20-M058**

Lab Sample ID: 280-80551-8
Client Matrix: Water

Date Sampled: 03/03/2016 1400
Date Received: 03/08/2016 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	H2549.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 1525			Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 1525				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	5.0	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	2.0		0.15	1.0
trans-1,2-Dichloroethene	0.22	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

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Client Sample ID: **PIN20-M058**

Lab Sample ID: 280-80551-8
Client Matrix: Water

Date Sampled: 03/03/2016 1400
Date Received: 03/08/2016 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	H2549.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 1525			Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 1525				

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	1.2		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)	106		70 - 127
Toluene-d8 (Surr)	102		80 - 125
4-Bromofluorobenzene (Surr)	102		78 - 120
Dibromofluoromethane (Surr)	108		77 - 120

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Client Sample ID: **PIN20-M059**

Lab Sample ID: 280-80551-9
Client Matrix: Water

Date Sampled: 03/03/2016 1455
Date Received: 03/08/2016 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	H2550.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 1549			Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 1549				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	1.9	U	1.9	10
Benzene	0.30	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	3.1		0.15	1.0
trans-1,2-Dichloroethene	0.94	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

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Client Sample ID: **PIN20-M059**

Lab Sample ID: 280-80551-9
Client Matrix: Water

Date Sampled: 03/03/2016 1455
Date Received: 03/08/2016 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	H2550.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 1549			Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 1549				

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	30		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)	100		70 - 127
Toluene-d8 (Surr)	97		80 - 125
4-Bromofluorobenzene (Surr)	102		78 - 120
Dibromofluoromethane (Surr)	105		77 - 120

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Client Sample ID: **PIN20-M067**

Lab Sample ID: 280-80551-10
Client Matrix: Water

Date Sampled: 03/03/2016 1005
Date Received: 03/08/2016 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	H2551.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 1613			Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 1613				

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	0.39	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

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Client Sample ID: PIN20-M067

Lab Sample ID: 280-80551-10
Client Matrix: Water

Date Sampled: 03/03/2016 1005
Date Received: 03/08/2016 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	H2551.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 1613			Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 1613				

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	0.64	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)	99		70 - 127
Toluene-d8 (Surr)	102		80 - 125
4-Bromofluorobenzene (Surr)	108		78 - 120
Dibromofluoromethane (Surr)	106		77 - 120

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Client Sample ID: **PIN20-M068**

Lab Sample ID: 280-80551-11
Client Matrix: Water

Date Sampled: 03/03/2016 1600
Date Received: 03/08/2016 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	H2552.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 1637			Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 1637				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	5.5	J	1.9	10
Benzene	0.28	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	0.23	J	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

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Client Sample ID: **PIN20-M068**

Lab Sample ID: 280-80551-11
Client Matrix: Water

Date Sampled: 03/03/2016 1600
Date Received: 03/08/2016 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	H2552.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 1637			Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 1637				

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	6.1		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)	104		70 - 127
Toluene-d8 (Surr)	100		80 - 125
4-Bromofluorobenzene (Surr)	103		78 - 120
Dibromofluoromethane (Surr)	106		77 - 120

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Client Sample ID: **PIN20-M069**

Lab Sample ID: 280-80551-12
Client Matrix: Water

Date Sampled: 03/03/2016 1640
Date Received: 03/08/2016 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	H2553.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 1701			Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 1701				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Acetone	4.2	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	6.4		0.15	1.0
trans-1,2-Dichloroethene	2.3		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

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Client Sample ID: **PIN20-M069**

Lab Sample ID: 280-80551-12
Client Matrix: Water

Date Sampled: 03/03/2016 1640
Date Received: 03/08/2016 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	H2553.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 1701			Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 1701				

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	5.3		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)	97		70 - 127
Toluene-d8 (Surr)	97		80 - 125
4-Bromofluorobenzene (Surr)	100		78 - 120
Dibromofluoromethane (Surr)	102		77 - 120

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Client Sample ID: **PIN20-M18D**

Lab Sample ID: 280-80551-13
Client Matrix: Water

Date Sampled: 03/03/2016 1330
Date Received: 03/08/2016 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-316991	Instrument ID:	VMS_Q
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	Q5180.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/16/2016 1653			Final Weight/Volume:	20 mL
Prep Date:	03/16/2016 1653				

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	0.53	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

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Client Sample ID: PIN20-M18D

Lab Sample ID: 280-80551-13
Client Matrix: Water

Date Sampled: 03/03/2016 1330
Date Received: 03/08/2016 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-316991	Instrument ID:	VMS_Q
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	Q5180.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	03/16/2016 1653			Final Weight/Volume:	20 mL
Prep Date:	03/16/2016 1653				

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	1.3		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)	117		70 - 127
Toluene-d8 (Surr)	102		80 - 125
4-Bromofluorobenzene (Surr)	94		78 - 120
Dibromofluoromethane (Surr)	99		77 - 120

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

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
280-80551-1	PIN20-2456	106	99	101	101
280-80551-2	PIN20-2522	101	92	101	102
280-80551-3	PIN20-M001	107	108	99	101
280-80551-4	PIN20-M015	105	102	99	100
280-80551-5	PIN20-M053	106	101	99	101
280-80551-6	PIN20-M056	106	103	99	101
280-80551-7	PIN20-M057	103	100	96	101
280-80551-8	PIN20-M058	108	106	102	102
280-80551-9	PIN20-M059	105	100	97	102
280-80551-10	PIN20-M067	106	99	102	108
280-80551-11	PIN20-M068	106	104	100	103
280-80551-12	PIN20-M069	102	97	97	100
280-80551-13	PIN20-M18D	99	117	102	94
MB 280-316867/6		104	96	101	102
MB 280-316991/6		106	115	101	95
LCS 280-316867/4		102	94	113	98
LCS 280-316991/4		105	115	104	91
280-80551-1 MS	PIN20-2456 MS	101	102	105	104
280-80605-D-1 MS		104	122	108	87
280-80551-1 MSD	PIN20-2456 MSD	106	106	111	100
280-80605-D-1 MSD		106	122	109	86

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

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Method Blank - Batch: 280-316867

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 280-316867/6	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	H2532.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 0842	Units:	ug/L	Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 0842				
Leach Date:	N/A				

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

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Method Blank - Batch: 280-316867

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 280-316867/6	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	H2532.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 0842	Units:	ug/L	Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 0842				
Leach Date:	N/A				

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)	96	70 - 127
Toluene-d8 (Surr)	101	80 - 125
4-Bromofluorobenzene (Surr)	102	78 - 120
Dibromofluoromethane (Surr)	104	77 - 120

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Lab Control Sample - Batch: 280-316867

Method: 8260B
Preparation: 5030B

Lab Sample ID:	LCS 280-316867/4	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	H2530.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 0754	Units:	ug/L	Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 0754				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Benzene	5.00	4.96	99	65 - 135	
Bromodichloromethane	5.00	4.89	98	65 - 135	
Carbon tetrachloride	5.00	5.24	105	65 - 135	
Chlorobenzene	5.00	4.94	99	65 - 135	
Chloroform	5.00	5.06	101	65 - 135	
1,3-Dichlorobenzene	5.00	4.57	91	65 - 135	
1,1-Dichloroethane	5.00	4.86	97	65 - 135	
trans-1,2-Dichloroethene	5.00	5.03	101	65 - 135	
1,1-Dichloroethene	5.00	4.85	97	65 - 136	
1,2-Dichloropropane	5.00	5.16	103	64 - 135	
Ethylbenzene	5.00	4.90	98	65 - 135	
Methylene Chloride	5.00	4.24	85	54 - 141	
Tetrachloroethene	5.00	4.90	98	65 - 135	
Toluene	5.00	5.22	104	65 - 135	
1,1,1-Trichloroethane	5.00	5.14	103	65 - 135	
Trichloroethene	5.00	5.07	101	65 - 135	

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	94	70 - 127
Toluene-d8 (Surr)	113	80 - 125
4-Bromofluorobenzene (Surr)	98	78 - 120
Dibromofluoromethane (Surr)	102	77 - 120

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-316867

Method: 8260B
Preparation: 5030B

MS Lab Sample ID:	280-80551-1	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	H2541.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 1215			Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 1215				20 mL
Leach Date:	N/A				

MSD Lab Sample ID:	280-80551-1	Analysis Batch:	280-316867	Instrument ID:	VMS_H
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	H2542.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	03/15/2016 1239			Final Weight/Volume:	20 mL
Prep Date:	03/15/2016 1239				20 mL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Benzene	104	102	65 - 135	2	20		
Bromodichloromethane	102	104	65 - 135	2	20		
Carbon tetrachloride	105	105	65 - 135	1	21		
Chlorobenzene	96	99	65 - 135	3	20		
Chloroform	102	105	65 - 135	2	20		
1,3-Dichlorobenzene	95	94	65 - 135	2	20		
1,1-Dichloroethane	98	103	65 - 135	5	21		
trans-1,2-Dichloroethene	100	105	65 - 135	4	24		
1,1-Dichloroethene	95	97	65 - 136	2	20		
1,2-Dichloropropane	105	109	64 - 135	3	20		
Ethylbenzene	96	99	65 - 135	3	20		
Methylene Chloride	87	88	54 - 141	1	26		
Tetrachloroethene	93	96	65 - 135	2	20		
Toluene	104	106	65 - 135	3	20		
1,1,1-Trichloroethane	102	105	65 - 135	3	20		
Trichloroethene	103	104	65 - 135	1	20		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	102	106	70 - 127
Toluene-d8 (Surr)	105	111	80 - 125
4-Bromofluorobenzene (Surr)	104	100	78 - 120
Dibromofluoromethane (Surr)	101	106	77 - 120

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-316867

Method: 8260B
Preparation: 5030B

MS Lab Sample ID:	280-80551-1	Units: ug/L	MSD Lab Sample ID: 280-80551-1
Client Matrix:	Water		Client Matrix: Water
Dilution:	1.0		Dilution: 1.0
Analysis Date:	03/15/2016 1215		Analysis Date: 03/15/2016 1239
Prep Date:	03/15/2016 1215		Prep Date: 03/15/2016 1239
Leach Date:	N/A		Leach Date: N/A

Analyte	Sample Result/Qual		MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Benzene	0.31	J	5.00	5.00	5.51	5.43
Bromodichloromethane	0.17	U	5.00	5.00	5.08	5.20
Carbon tetrachloride	0.19	U	5.00	5.00	5.25	5.27
Chlorobenzene	0.17	U	5.00	5.00	4.78	4.94
Chloroform	0.16	U	5.00	5.00	5.11	5.23
1,3-Dichlorobenzene	0.13	U	5.00	5.00	4.76	4.68
1,1-Dichloroethane	0.22	U	5.00	5.00	4.89	5.15
trans-1,2-Dichloroethene	1.0		5.00	5.00	5.99	6.23
1,1-Dichloroethene	0.23	U	5.00	5.00	4.76	4.87
1,2-Dichloropropane	0.18	U	5.00	5.00	5.27	5.44
Ethylbenzene	0.16	U	5.00	5.00	4.80	4.93
Methylene Chloride	0.32	U	5.00	5.00	4.36	4.42
Tetrachloroethene	0.20	U	5.00	5.00	4.67	4.79
Toluene	0.17	U	5.00	5.00	5.18	5.32
1,1,1-Trichloroethane	0.16	U	5.00	5.00	5.11	5.24
Trichloroethene	0.16	U	5.00	5.00	5.13	5.18

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Method Blank - Batch: 280-316991

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 280-316991/6	Analysis Batch:	280-316991	Instrument ID:	VMS_Q
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	Q5157.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	03/16/2016 0835	Units:	ug/L	Final Weight/Volume:	20 mL
Prep Date:	03/16/2016 0835				
Leach Date:	N/A				

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

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Method Blank - Batch: 280-316991

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 280-316991/6	Analysis Batch:	280-316991	Instrument ID:	VMS_Q
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	Q5157.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	03/16/2016 0835	Units:	ug/L	Final Weight/Volume:	20 mL
Prep Date:	03/16/2016 0835				
Leach Date:	N/A				

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)	115	70 - 127
Toluene-d8 (Surr)	101	80 - 125
4-Bromofluorobenzene (Surr)	95	78 - 120
Dibromofluoromethane (Surr)	106	77 - 120

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Lab Control Sample - Batch: 280-316991

Method: 8260B
Preparation: 5030B

Lab Sample ID:	LCS 280-316991/4	Analysis Batch:	280-316991	Instrument ID:	VMS_Q
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	Q5156.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	03/16/2016 0814	Units:	ug/L	Final Weight/Volume:	20 mL
Prep Date:	03/16/2016 0814				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Benzene	5.00	4.75	95	65 - 135	
Bromodichloromethane	5.00	4.58	92	65 - 135	
Carbon tetrachloride	5.00	4.84	97	65 - 135	
Chlorobenzene	5.00	4.84	97	65 - 135	
Chloroform	5.00	5.07	101	65 - 135	
1,3-Dichlorobenzene	5.00	4.74	95	65 - 135	
1,1-Dichloroethane	5.00	4.92	98	65 - 135	
trans-1,2-Dichloroethene	5.00	4.57	91	65 - 135	
1,1-Dichloroethene	5.00	4.24	85	65 - 136	
1,2-Dichloropropane	5.00	5.08	102	64 - 135	
Ethylbenzene	5.00	4.83	97	65 - 135	
Methylene Chloride	5.00	4.57	91	54 - 141	
Tetrachloroethene	5.00	4.46	89	65 - 135	
Toluene	5.00	4.14	83	65 - 135	
1,1,1-Trichloroethane	5.00	4.77	95	65 - 135	
Trichloroethene	5.00	4.45	89	65 - 135	

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	115	70 - 127
Toluene-d8 (Surr)	104	80 - 125
4-Bromofluorobenzene (Surr)	91	78 - 120
Dibromofluoromethane (Surr)	105	77 - 120

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-316991

Method: 8260B
Preparation: 5030B

MS Lab Sample ID:	280-80605-D-1 MS	Analysis Batch:	280-316991	Instrument ID:	VMS_Q
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	Q5161.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	03/16/2016 1019			Final Weight/Volume:	20 mL
Prep Date:	03/16/2016 1019				20 mL
Leach Date:	N/A				

MSD Lab Sample ID:	280-80605-D-1 MSD	Analysis Batch:	280-316991	Instrument ID:	VMS_Q
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	Q5162.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	03/16/2016 1040			Final Weight/Volume:	20 mL
Prep Date:	03/16/2016 1040				20 mL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Benzene	97	98	65 - 135	1	20		
Bromodichloromethane	96	95	65 - 135	1	20		
Carbon tetrachloride	101	105	65 - 135	3	21		
Chlorobenzene	99	100	65 - 135	0	20		
Chloroform	104	106	65 - 135	1	20		
1,3-Dichlorobenzene	98	98	65 - 135	0	20		
1,1-Dichloroethane	102	103	65 - 135	1	21		
trans-1,2-Dichloroethene	92	95	65 - 135	2	24		
1,1-Dichloroethene	86	94	65 - 136	5	20		
1,2-Dichloropropane	106	107	64 - 135	1	20		
Ethylbenzene	102	103	65 - 135	1	20		
Methylene Chloride	94	96	54 - 141	2	26		
Tetrachloroethene	101	102	65 - 135	1	20		
Toluene	86	86	65 - 135	1	20		
1,1,1-Trichloroethane	99	102	65 - 135	3	20		
Trichloroethene	97	97	65 - 135	0	20		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	122	122	70 - 127
Toluene-d8 (Surr)	108	109	80 - 125
4-Bromofluorobenzene (Surr)	87	86	78 - 120
Dibromofluoromethane (Surr)	104	106	77 - 120

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-316991

Method: 8260B
Preparation: 5030B

MS Lab Sample ID:	280-80605-D-1 MS	Units: ug/L	
Client Matrix:	Water		
Dilution:	1.0		
Analysis Date:	03/16/2016 1019		
Prep Date:	03/16/2016 1019		
Leach Date:	N/A		

MSD Lab Sample ID:	280-80605-D-1 MSD
Client Matrix:	Water
Dilution:	1.0
Analysis Date:	03/16/2016 1040
Prep Date:	03/16/2016 1040
Leach Date:	N/A

Analyte	Sample Result/Qual		MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Benzene	1.1		5.00	5.00	5.91	5.97
Bromodichloromethane	0.17	U	5.00	5.00	4.81	4.74
Carbon tetrachloride	0.19	U	5.00	5.00	5.06	5.24
Chlorobenzene	0.17	U	5.00	5.00	4.97	4.98
Chloroform	0.16	U	5.00	5.00	5.22	5.29
1,3-Dichlorobenzene	0.13	U	5.00	5.00	4.90	4.90
1,1-Dichloroethane	0.29	J	5.00	5.00	5.39	5.44
trans-1,2-Dichloroethene	1.5		5.00	5.00	6.04	6.19
1,1-Dichloroethene	3.1		5.00	5.00	7.43	7.83
1,2-Dichloropropane	0.18	U	5.00	5.00	5.32	5.35
Ethylbenzene	0.16	U	5.00	5.00	5.10	5.17
Methylene Chloride	0.32	U	5.00	5.00	4.72	4.80
Tetrachloroethene	0.20	U	5.00	5.00	5.06	5.11
Toluene	0.17	U	5.00	5.00	4.28	4.31
1,1,1-Trichloroethane	0.16	U	5.00	5.00	4.93	5.10
Trichloroethene	0.16	U	5.00	5.00	4.84	4.84

Client: Navarro Research and Engineering, Inc

Job Number: 280-80551-1
Sdg Number: 16027654

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:280-316867					
LCS 280-316867/4	Lab Control Sample	T	Water	8260B	
MB 280-316867/6	Method Blank	T	Water	8260B	
280-80551-1	PIN20-2456	T	Water	8260B	
280-80551-1MS	Matrix Spike	T	Water	8260B	
280-80551-1MSD	Matrix Spike Duplicate	T	Water	8260B	
280-80551-2	PIN20-2522	T	Water	8260B	
280-80551-3	PIN20-M001	T	Water	8260B	
280-80551-4	PIN20-M015	T	Water	8260B	
280-80551-5	PIN20-M053	T	Water	8260B	
280-80551-6	PIN20-M056	T	Water	8260B	
280-80551-7	PIN20-M057	T	Water	8260B	
280-80551-8	PIN20-M058	T	Water	8260B	
280-80551-9	PIN20-M059	T	Water	8260B	
280-80551-10	PIN20-M067	T	Water	8260B	
280-80551-11	PIN20-M068	T	Water	8260B	
280-80551-12	PIN20-M069	T	Water	8260B	
Analysis Batch:280-316991					
LCS 280-316991/4	Lab Control Sample	T	Water	8260B	
MB 280-316991/6	Method Blank	T	Water	8260B	
280-80551-13	PIN20-M18D	T	Water	8260B	
280-80605-D-1 MS	Matrix Spike	T	Water	8260B	
280-80605-D-1 MSD	Matrix Spike Duplicate	T	Water	8260B	

Report Basis
T = Total