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IN SITU BIOREMEDIATION PROGRAM
JANUARY THROUGH MARCH 2019 PROGRESS UPDATE
FORMER 901/902 THOMPSON PLACE
SUNNYVALE, CALIFORNIA

by
Haley & Aldrich, Inc.
Oakland, California

for
Advanced Micro Devices, Inc.
Austin, Texas

File No. 127819-004
April 2019





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18 April 2019
File No. 127819-004

United States Environmental Protection Agency, Region 9
75 Hawthorne Street (SFD-7-1)
San Francisco, California 94105

Attention: Melanie Morash

Subject: In Situ Bioremediation Program
January through March 2019 Progress Update
Former 901/902 Thompson Place
Sunnyvale, California

Dear Ms. Morash:

Haley & Aldrich, Inc. (Haley & Aldrich) has prepared this In Situ Bioremediation (ISB) Program Progress Update on behalf of Advanced Micro Devices, Inc. (AMD) for the January through March 2019 period (first quarter of 2019; Q1 2019) at the former 901/902 Thompson Place site in Sunnyvale, California (the Site). This update summarizes the status of the ISB program and the results of the Q1 2019 performance monitoring event.

Background

The Site history, hydrogeology, and current environmental conditions are described in greater detail in the "Combined 2018 Annual Groundwater Monitoring Report and Annual In Situ Bioremediation Program Report"¹, and are summarized below.

AMD designed and fabricated semiconductor devices at the Site between 1969 and 1992. The facility was vacated by AMD in 1992 and remained vacant until the property was sold and redeveloped as a self-storage facility in 2007.

The primary chemicals of concern (COCs) detected at the Site at concentrations above cleanup goals are trichloroethene (TCE), cis-1,2-dichloroethene (cDCE), and vinyl chloride (VC). Both cDCE and VC are interim breakdown products of TCE as it degrades to ethene. Ethene can be further transformed to ethane; ethene and ethane are environmentally benign. The primary on-Site source of TCE impacts to

¹ Haley & Aldrich, Inc., 2019. Combined 2018 Annual Groundwater Monitoring Report and Annual In Situ Bioremediation Program Report, Former 901/902 Thompson Place, Sunnyvale, California, 28 January.

groundwater beneath the Site is attributed to leaks from the former acid neutralization system tanks (the tanks were removed in 1983 and 1984)².

The Site was added to the National Priorities List in June 1986, and the United States Environmental Protection Agency (EPA) issued a Record of Decision (ROD) on 11 September 1991. The Site was previously regulated under Site Cleanup Requirements Order Number 91-102, issued on 19 June 1991 by the California Regional Water Quality Control Board, San Francisco Bay Region (Water Board). The lead agency role was transferred from the Water Board to the EPA as described in a letter from EPA to AMD, Northrop Grumman, and Philips Semiconductors dated 7 August 2014. The ROD specifies groundwater extraction and treatment as the remedial alternative to be used for the Site. The groundwater extraction and treatment system began operating in 1983 and continued until December 2002, when it was discontinued with Water Board approval to allow for the ISB pilot test. Based on the success of the pilot test, a full-scale ISB program was initiated in 2005 with Water Board approval.

In 2011, AMD submitted a Focused Feasibility Study³ (FFS) to the Water Board and EPA to evaluate potential revised cleanup plans. As described in the FFS, the proposed remedy for the Site is ISB with monitored natural attenuation and institutional controls. The EPA reviewed the FFS and provided comments to AMD via the Water Board in June 2013. Haley & Aldrich incorporated the comments and submitted a Revised FFS⁴ on behalf of AMD in September 2013.

OVERVIEW OF THE ISB SYSTEM

The ISB system was designed to increase the organic carbon content of the groundwater system, thereby enhancing anaerobic microbiological activity and promoting in situ biodegradation of COCs to environmentally benign end-products (primarily chloride, ethene, and ethane). The primary components of the ISB system include:

- **Ex situ COC Removal:** During ISB operation, groundwater pumped from the extraction well(s) in the former source area is treated with granular activated carbon (GAC) to remove COCs before the groundwater is reinjected into the subsurface.
- **Substrate Delivery System:** Substrate delivery is performed by introducing a dissolved organic substrate (a nutrient-enriched 30 percent potassium lactate solution and a 60 percent sodium lactate solution were used in 2018; molasses and an emulsified vegetable oil solution were previously used) to the subsurface and distributed by a network of groundwater circulation wells.
- **In situ Biodegradation of COCs:** In situ treatment processes are promoted by adding substrate to the extracted groundwater using the delivery system described above. The addition of substrate to groundwater containing TCE and cDCE has proven to be an effective in situ

² Arcadis, 2001. Five-Year Report, Advanced Micro Devices, Inc. 901/902 Thompson Place Facility, Sunnyvale, California, 19 June.

³ AMEC, 2011. Focused Feasibility Study, Former 901/902 Thompson Place, Sunnyvale, California, 18 May.

⁴ Haley & Aldrich, Inc., 2013. Revised Focused Feasibility Study, Former 901/902 Thompson Place, Sunnyvale, California, 30 September.

remedial strategy at this Site, as demonstrated in the pilot test conducted from 2002 to 2004⁵ and in the full-scale ISB system.

Figure 1 shows the layout of the ISB system. Table 1 summarizes the construction details of the ISB program wells.

Operation of the ISB system began in December 2005 and proceeded until May 2008. At this time, it was determined that sufficient organic carbon was delivered to the subsurface to sustain the passive bioremediation of COCs. Performance monitoring was therefore used to assess passive degradation when the system was not in operation. Monitoring results collected in 2011 indicated that although intrinsic bioremediation was still occurring, the organic carbon substrate was depleted in some wells. At this time, COC concentrations were much lower than pre-ISB conditions, but were beginning to trend upwards due to the loss of organic carbon. Since November 2011, additional organic carbon substrate has been delivered to groundwater by operating the ISB system on a periodic basis, coupled with quarterly performance monitoring.

Q1 2019 ISB Progress Update

The following sections describe the tasks completed in Q1 2019 related to the ISB program.

ORGANIC CARBON AMENDMENT AND GROUNDWATER RECIRCULATION

No organic carbon substrate amendment or groundwater circulation occurred during the Q1 2019 reporting period. The latest round of substrate amendment (using potassium lactate and sodium lactate) and groundwater circulation was completed in June 2018⁶.

QUARTERLY PERFORMANCE MONITORING

A quarterly performance monitoring event was conducted at the Site on 6 February 2019 by Blaine Tech Services, Inc., on behalf of AMD. As described in Table 2, water levels were measured in 16 ISB monitoring wells, while groundwater samples were collected from 12 ISB monitoring wells. In 2018, the integrity of well 16-D was found to be compromised due to a suspected break in the casing⁷. With EPA approval, this well was removed from the monitoring program, and well DW-7 (located approximately 10 feet away and screened at a similar depth interval as 16-D) was added to the monitoring program in its place. Haley & Aldrich will decommission 16-D in 2019 and provide a memorandum documenting the proper decommissioning to EPA within 30 days of decommissioning.

⁵ Geomatrix Consultants, Inc., 2004. Enhanced In Situ Bioremediation Pilot Study Program, 901/902 Thompson Place Facility, Sunnyvale, California, 16 September.

⁶ Haley & Aldrich, Inc., 2018. In Situ Bioremediation Program April through June 2018 Progress Update, Former 901/902 Thompson Place, Sunnyvale, California, 26 July.

⁷ Haley & Aldrich, Inc., 2018. Response to Comments on: In Situ Bioremediation Program, April through June 2018 Progress Update, Former 901/902 Thompson Place, Sunnyvale, California, 31 August.

Groundwater samples were collected using low-flow sampling methods, where the pump intake was set at the approximate midpoint of the screened interval at each respective well. Most wells were purged at a rate of approximately 500 milliliters per minute or less using dedicated polytetrafluoroethylene (PTFE; Teflon®)-lined tubing and a bladder pump. The following wells however were purged with a peristaltic pump prior to sample collection:

- DW-1 and DW-2 because the well lids are bolted in place and the sounder port is not large enough to insert a bladder pump; and
- PMW-2-1 and PMW-2-3 because the small diameter of the well (3/8-inch) does not allow for insertion of a bladder pump.

For the four wells purged using a peristaltic pump, an inertial pump (i.e., check valve tubing pump) was subsequently used to collect groundwater samples.

Prior to sample collection, all wells were purged until water quality parameters (including temperature, pH, electrical conductivity, and oxidation-reduction potential) stabilized. Once parameters stabilized, groundwater samples were collected directly into laboratory-provided sampling vials. All vials were labeled, sealed in plastic bags and placed in an ice-cooled chest pending shipment to the analytical laboratory under standard chain of custody procedures. Excess purged groundwater was transported to the treatment system located at the AMD 915 DeGuigne Drive site to be treated with GAC prior to discharging to the storm drain under an existing National Pollutant Discharge Elimination System permit.

Groundwater samples were analyzed by TestAmerica Laboratories, Inc., for chlorinated volatile organic compounds (VOCs) using EPA Method 8260B and total organic carbon (TOC) using Standard Method 5310B. Samples were also analyzed by Pace Analytical Energy Services, LLC, for dissolved hydrocarbon gases (ethene, ethane, and methane) using Method AM20GAX.

Groundwater elevation data are presented in Table 3, water quality parameters measured during purging and sampling are provided in Table 4, and laboratory analytical results are reported in Table 5. Field sampling data sheets are included as Appendix A, laboratory analytical reports are included as Appendix B, and concentration trend plots are included as Appendix C. The results of the quarterly performance monitoring event on 6 February 2019 are discussed below.

Performance Monitoring Results

The results of the Q1 2019 performance monitoring event are summarized below. At EPA's request, injection wells used to amend the subsurface with substrate (i.e., DW-1 and DW-2) are not included in the discussion of performance monitoring results.

- Groundwater elevations (Table 3) were generally higher than recent historical elevations measured during the quarterly monitoring events due greater than normal precipitation this winter.

- The groundwater pH (Table 4) ranged from 6.48 to 7.48, which is within the near neutral pH range favorable for reductive dechlorination of TCE, cDCE and VC. Negative ORP measurements and the presence of methane in many wells also indicate favorable geochemical conditions that promote reductive dechlorination.
- Table 5 presents analytical data collected over the last year, including the most recent (Q1 2019) results. In general, concentrations in February 2019 were consistent with or lower than recent historical results.
- Groundwater samples from five of the performance monitoring wells (28-MW, PMW-2-1, X2A, X1B, and 16-S) were non-detect for TCE or had concentrations at or below the cleanup goal of 5 micrograms per liter ($\mu\text{g/L}$). Three of the samples (23-D, 28-MW, and 16-S) were either non-detect for cDCE, or reported a concentration at or below the cleanup goal of 6 $\mu\text{g/L}$. Two wells (23-D and X2B1) were either non-detect for VC, or reported a concentration at or below the cleanup goal of 0.5 $\mu\text{g/L}$.
- Wells 23-S and 23-D continue to have concentrations of TCE and/or cDCE above the cleanup goal. Wells 23-S and 23-D are located outside of the ISB treatment area and have not been used for injection or extraction.
- Well chambers PMW-2-1 and PMW-2-3 have concentrations of TCE and/or its breakdown products above cleanup goals. The sampling ports for these multi-level wells are screened in finer-grained depth intervals, and substrate may not be able to be delivered to these locations. However, concentrations of TCE's breakdown products, including ethene, and the presence of methane indicate that natural (i.e., unenhanced) reductive dechlorination is continuing at these locations.
- For the other ISB wells with COC concentrations above the cleanup goal (e.g., 23-S, 28-MW, X2B1, X2A, X1B, 16-S, and DW-7), TOC concentrations are generally low (less than 10 mg/L). This suggests that additional substrate is required to sustain reductive dechlorination.
- Higher proportions of breakdown products cDCE, VC, and ethene relative to TCE indicate that reductive processes are occurring at many locations. The complete breakdown of TCE to ethene indicates that native microbes are capable of complete dechlorination (i.e., no bioaugmentation is needed).

Summary

The results of quarterly groundwater monitoring conducted in February 2019 support the conclusion that ISB continues to treat COCs in groundwater. Low organic carbon concentrations may be limiting the dechlorination rate of target COCs in some areas. Additional groundwater circulation and substrate amendment is scheduled for the second quarter of 2019. The results of this groundwater circulation and substrate amendment event will be used to evaluate whether more frequent substrate amendment is warranted.

Please contact any of the undersigned if you have any questions or need further information.

18 April 2019

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Sincerely yours,
HALEY & ALDRICH, INC.



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Enclosures:

- Table 1 – Existing ISB Well Construction Details
- Table 2 – ISB Monitoring Program
- Table 3 – Water Level Elevations – First Quarter 2019
- Table 4 – Water Quality Parameters – First Quarter 2019
- Table 5 – Analytical Results for Groundwater Samples
- Figure 1 – Layout of the In Situ Bioremediation Program
- Appendix A – Field Sampling Data Sheets
- Appendix B – Analytical Laboratory Reports
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c: Advanced Micro Devices, Inc.; Attn: Ms. Heather O’Cleirigh

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TABLES

TABLE 1**EXISTING ISB WELL CONSTRUCTION DETAILS¹**

FORMER 901/902 THOMPSON FACILITY

SUNNYVALE, CALIFORNIA

Well ID	Screen Interval (ft bgs)	Borehole Diameter (inches)	Well Diameter (inches)
A-Zone Wells			
16-S	9 - 16	8	4
23-S	9.0 - 16.0	8	4
28-MW	10.0 - 16.3	8.25	2
DW-2	10.0 - 14.0	NA	12
X2A	10.0 - 19.9	8.25	2
ISB1AR	10.0 - 24.4	8.25	2
ISB2AR	15.1 - 19.6	8.25	2
B1-Zone Wells			
23-D	40 - 50	8	4
DW-1	32 - 40	NA	12
DW-7	35 - 45	NA	6
X1B	25.4 - 30.2	8.25	2
X2B1	26.5 - 36.5	8.25	2
PMW-1-1 ²	26.0 - 27.4	5.5	1.1
PMW-1-2 ²	31.0 - 32.4	5.5	1.1
PMW-1-3 ²	35.9 - 38.5	5.5	1.1
PMW-2-1 ²	26.7 - 28.1	5.5	1.1
PMW-2-2 ²	36.7 - 38.1	5.5	1.1
ISB2BR ³	31.4 - 39.6	8.25	2
ISB3BR	25.7 - 43.3	8.25	2
B2-Zone Wells			
DW-8	45 - 65	NA	NA
PMW-2-3 ²	45.5 - 48.2	5.5	1.1
ISB1BR	31.0 - 44.5	8.25	2

Notes:

ft bgs = feet below ground surface

NA = not available

¹ Wells X1B, X2A, X2B1, multi-level wells PMW-1 and PMW-2, ISB1AR, ISB1BR, ISB2AR, ISB2BR, and ISB3BR were installed for use in the ISB program. The remaining ISB program wells were previously installed as part of the ongoing groundwater monitoring activities for the former groundwater system for the site.

² The diameter of each PMW well is 1.1 inches; the diameter of each individual PMW well chamber is approximately 3/8 inch.

³ Well ISB2BR is angled at approximately 30 degrees from vertical running beneath the building. The true depth of the screen interval is 31.4 to 39.6 ft bgs.

TABLE 2**ISB MONITORING PROGRAM¹**

FORMER 901/902 THOMPSON PLACE FACILITY

SUNNYVALE, CALIFORNIA

Well ID	Water Levels	Sampling ¹
A-Zone Wells		
16-S	Quarterly	Quarterly
23-S	Quarterly	Quarterly
28-MW	Quarterly	Quarterly
DW-2	Quarterly	Quarterly
X2A	Quarterly	Quarterly
ISB1AR	--	--
ISB2AR	--	--
B1-Zone Wells		
23-D	Quarterly	Quarterly
DW-1	Quarterly	Quarterly
DW-7	Quarterly	Quarterly
PMW-1-1	Quarterly	--
PMW-1-2	Quarterly	--
PMW-1-3	Quarterly	--
PMW-2-1	Quarterly	Quarterly
PMW-2-2	Quarterly	--
X1B	Quarterly	Quarterly
X2B1	Quarterly	Quarterly
ISB2BR	--	--
ISB3BR	--	--
B2-Zone Wells		
DW-8	--	--
PMW-2-3	Quarterly	Quarterly
ISB1BR	--	--

Notes:

-- = indicates that well was not included in monitoring plan

ISB = in situ bioremediation

¹ Samples are analyzed for volatile organic compounds (VOCs) by EPA Method 8260B, total organic carbon by EPA Method 415.2, and ethene, methane, ethane by Method AM20GAX.

TABLE 3
WATER LEVEL ELEVATIONS - FIRST QUARTER 2019
 FORMER 901/902 THOMPSON PLACE FACILITY
 SUNNYVALE, CALIFORNIA

Well Name	Date	Location Coordinates ¹		Screen Interval (feet bgs)	Measuring Point Elevation ² (feet NAVD88)	Water Level Depth (feet btoc)	Water Level Elevation (feet NAVD88)
		Latitude	Longitude				
A-Zone Wells							
16-S	2/6/2019	37.383028	-122.009494	9 - 16	47.70	8.81	38.89
23-S	2/6/2019	37.3829232	-122.009706	9 - 16	47.03	7.40	39.63
28-MW	2/6/2019	37.3829478	-122.009526	10.0 - 16.3	47.42	8.05	39.37
DW-2	2/6/2019	37.3829037	-122.009591	10 - 14	46.45	6.61	39.84
X2A	2/6/2019	37.3829821	-122.009629	10.0 - 19.9	47.08	7.40	39.68
B1-Zone Wells							
23-D	2/6/2019	37.3829332	-122.009716	40 - 50	47.04	3.84	43.20
DW-1	2/6/2019	37.3828903	-122.00959	32 - 40	46.91	6.46	40.45
DW-7	2/6/2019	37.3830608	-122.00954	35 - 45	46.11	4.83	41.28
X1B	2/6/2019	37.3829772	-122.009539	25.4 - 30.2	47.18	7.23	39.95
X2B1	2/6/2019	37.3829824	-122.00964	26.5 - 36.5	46.83	6.53	40.30
PMW-1-1	2/6/2019	37.3829419	-122.009538	26.0 - 27.4	47.45	7.57	39.88
PMW-1-2	2/6/2019	37.3829419	-122.009538	31.0 - 32.4	47.45	6.91	40.54
PMW-1-3	2/6/2019	37.3829419	-122.009538	35.9 - 38.5	47.45	6.16	41.29
PMW-2-1	2/6/2019	37.382956	-122.009634	26.7 - 28.1	47.26	7.00	40.26
PMW-2-2	2/6/2019	37.382956	-122.009634	36.7 - 38.1	47.26	5.39	41.87
B2-Zone Wells							
PMW-2-3	2/6/2019	37.382956	-122.009634	45.5 - 48.2	47.26	4.44	42.82

Notes:

feet bgs = feet below ground surface

feet btoc = feet below top of well casing

feet NAVD88 = feet relative to the North American Vertical Datum of 1988.

¹. Well locations were surveyed by Silicon Valley Land Surveying, Inc. (SVLS) on 16 November 2006. Wells were resurveyed by SVLS on 10 to 11 September 2007 after site redevelopment. Horizontal coordinates are referenced to the North American Datum of 1983 (NAD83).

². Top of casing elevations for a subset of wells was altered during repairs made on 7 to 8 August 2007 in response to site redevelopment.

TABLE 4
WATER QUALITY PARAMETERS - FIRST QUARTER 2019
 FORMER 901/902 THOMPSON PLACE FACILITY
 SUNNYVALE, CALIFORNIA

Well ID	Date	Temp (°C)	pH	Spec. Cond. (μS/cm)	ORP (mV)	DO (mg/L)	Turbidity (NTUs)
A-Zone Wells							
16-S	2/6/2019	13.4	6.75	1529	-89.9	0.28	17
23-S	2/6/2019	10.9	6.48	1290	105.3	0.37	10
28-MW	2/6/2019	17.4	6.75	1471	-107.9	0.07	2
DW-2	2/6/2019	12.1	7.92	2435	138.7	0.48	8
X2A	2/6/2019	12.6	6.50	2005	-127.4	0.03	9
B1-Zone Wells							
23-D	2/6/2019	13.3	6.81	987	63.5	0.25	5
DW-1	2/6/2019	14.6	6.93	3082	-208.2	0.10	8
DW-7	2/6/2019	15.2	7.48	952	-62.5	0.11	13
X1B	2/6/2019	17.2	6.95	1062	-28.2	0.04	6
X2B1	2/6/2019	13.3	6.77	1015	-15.1	0.00	17
PMW-2-1	2/6/2019	13.9	6.59	1527	-135.6	0.30	46
B2-Zone Wells							
PMW-2-3	2/6/2019	14.3	6.71	992	-111.4	0.00	4

Notes:

μS/cm = microSiemens per centimeter
 mg/L = milligrams per liter
 mV = millivolts
 NTUs = nephelometric turbidity units
 °C = degrees Celsius
 DO = dissolved oxygen
 ORP = oxidation-reduction potential
 Spec. Cond. = specific conductivity
 Temp = temperature

Sample ID	Sample Date	micrograms per liter (µg/L)								micromoles per liter (µM)	%	µg/L	milligrams per liter (mg/L)
		TCE EPA 8260B	cDCE EPA 8260B	tDCE EPA 8260B	1,1-DCE EPA 8260B	VC EPA 8260B	Ethene AM20GAX	Ethane AM20GAX	TVOC EPA 8260B	Total Ethenes	Mole Fraction Ethene & Ethane	Methane AM20GAX	TOC EPA 415.2
A-Zone Wells													
16-S	02/05/2018	< 0.50	2.1	< 0.50	< 0.50	19	2.1	6.2	36	0.61	46%	6,500	4.3
	06/15/2018	< 0.50	7.9	2.4	< 0.50	45	12	14	75	1.7	52%	8,900	3.0
	08/21/2018	< 0.50	3.5	0.64	< 0.50	23	2.7	6.3	49	0.7	43%	6,000	4.3
	10/09/2018	< 0.50	3.0	< 0.50	< 0.50	29	2.0 J-	3.7 J-	54	0.7	28%	5,300 J-	3.9
	02/06/2019	< 0.50	2.7	< 0.50	< 0.50	29	3.2	10	49	0.9	48%	7,500	3.3
23-S	02/05/2018	40	83	5.2	0.70	9.3	0.99	0.12	157	1.4	2.8%	78	2.3
	06/15/2018	40	48	4.4	< 0.50	0.91	0.088 J ³	0.11	112	0.87	0.78%	39	1.4
	08/21/2018	43	62	7.7	1.0	0.98	0.040 J	2.7	139	1.16	7.8%	1,300	1.8
	10/09/2018	38 J	42	4.4	0.75	0.60	0.033 J	0.70	107	0.81	3.0%	240	1.8
	02/06/2019	37	52	4.5	0.81	3.2	0.22	0.12	114	0.94	1.3%	52	2.3
28-MW	02/05/2018	< 0.50	3.5	< 0.50	< 0.50	34	2.8	0.79	55	0.71	18%	1,500	2.9
	06/15/2018	1.2 J-	74 J	4.7 J-	< 0.50 R	32 J	42	25	131	3.7	64%	18,000	4.3
	08/21/2018	< 0.50	0.65	< 0.50	< 0.50	8.5	2.7	12	28	0.6	78%	15,000	4.4
	10/09/2018	< 0.50	0.71	< 0.50	< 0.50	14	1.2 J-	9.2 J-	33	0.6	60%	8,300 J-	3.8
	02/06/2019	< 0.50	5.1	< 0.50	< 0.50	47	7.0	5.0	70	1.2	34%	5,700	3.1
DW-2	02/05/2018	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.033 J	2.2	0.0	0.074	100%	4,600	8.6
	06/15/2018	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.26	0.13	0.0	0.014	100%	11,000	160
	08/21/2018	< 0.50 R	< 0.50 R	< 0.50 R	< 0.50 R	< 0.50 R	0.044 J	0.033 J	0.0	0.003	100%	7,500	27
	10/09/2018	< 0.50 R	< 0.50 R	< 0.50 R	< 0.50 R	< 0.50 R	0.042 J-	0.038 J-	0.0	0.003	100%	11,000 J-	23
	02/06/2019	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	0.036 J	0.011 J	0.0	0.002	100%	1,100	1.8
X2A	02/05/2018	< 5.0	9.7	< 5.0	< 5.0	770	66	6.6	817	15	17%	4,400	3.2
	06/15/2018	< 5.0 R	85 J-	< 5.0 R	< 5.0 R	320 J-	180	11	432	13	53%	8,800	11
	08/21/2018	< 5.0	85	< 5.0	< 5.0	640	120	12	761	16	30%	8,300	3.3
	10/09/2018	< 5.0	49	< 5.0	< 5.0	980	50 J-	5.5 J-	1,065	18	11%	3,100 J-	4.4
	02/06/2019	< 5.0	53	< 5.0	< 5.0	720	82	9.3	805	15	21%	6,200	2.7
B1-Zone Wells													
23-D	02/05/2018	290 / 280 ⁵	3.6 / 4.3	< 2.5 / < 2.5	< 2.5 / < 2.5	< 2.5 / < 2.5	0.041 J	< 0.10	296 / 284	2.3	0.06%	0.23 J	< 1.0 / < 1.0
	06/15/2018	320 J- ⁴ / 310	4.1 J- / 3.9	< 2.5 J / < 2.5	< 2.5 J / < 2.5	< 2.5 J / < 2.5	0.037 J	< 0.10	327 / 316	2.5	0.05%	0.32 J	< 1.0 / < 1.0
	08/21/2018	320 J- / 320	< 2.5 R / 4.5 J	< 2.5 J / < 2.5	< 2.5 J / < 2.5	< 2.5 J / < 2.5	0.048 J	0.0070 J	324 / 328	2.5	0.08%	0.29 J	< 1.0 / < 1.0
	10/09/2018	290 J- / 290 J-	3.7 J- / 3.2 J-	< 2.5 J / < 2.5 J	< 2.5 J / < 2.5 J	< 2.5 J / < 2.5 J	0.036 J	< 0.10	296	2.2	0.06%	0.25 J	< 1.0 / < 1.0
	02/06/2019	230 / 230	3.5 / 3.4	< 2.5 / < 2.5	< 2.5 / < 2.5	< 2.5 / < 2.5	0.034 J	0.0074 J	234	1.8	0.08%	0.26 J	< 1.0 / < 1.0
DW-1	02/05/2018	< 0.50	< 0.50	1.8	< 0.50	3.0	0.55	49	4.8	1.7	96%	10,000	4.6
	06/15/2018	< 0.50 R ⁶	0.77 J-	< 0.50 R	< 0.50 R	5.0 J-	13 J-	12 J-	5.8	0.95	91%	11,000 J-	650
	08/21/2018	< 0.50 R	< 0.50 R	3.5 J-	< 0.50 R	1.1 J-	0.60	36	4.6	1.27	96%	17,000	4.6
	10/10/2018	< 0.50 R	0.78 J-	3.2 J-	< 0.50 J	1.5 J-	0.76 J-	41 J-	6.8	1.46	96%	13,000 J-	4.7
	02/06/2019	< 0.50	8.0	1.7	< 0.50	52	46	350	62	14	93%	19,000	8.1

Sample ID	Sample Date	micrograms per liter (µg/L)								micromoles per liter (µM)	%	µg/L	milligrams per liter (mg/L)
		TCE EPA 8260B	cDCE EPA 8260B	tDCE EPA 8260B	1,1-DCE EPA 8260B	VC EPA 8260B	Ethene AM20GAX	Ethane AM20GAX	TVOC EPA 8260B	Total Ethenes	Mole Fraction Ethene & Ethane	Methane AM20GAX	TOC EPA 415.2
DW-7	02/05/2018	6.1	140	1.8	0.60	15	0.13	0.16	164	1.8	0.56%	2.7	< 1.0
	06/15/2018	58	160	3.0	0.63	3.3	0.060 J	0.12	227	2.2	0.28%	36	< 1.0
	08/21/2018	70	150	2.2	0.81	5.1	0.064 J	0.12	231	2.2	0.29%	52	< 1.0
	10/09/2018	69	130	2.0	0.72	4.3	0.077 J	0.072 J	208	2.0	0.26%	11	< 1.0
	02/06/2019	60	130	1.1	0.54	1.5	0.017 J	0.065 J	194	1.8	0.15%	2.1	< 1.0
PMW-2-1	02/05/2018	< 50	6,100	< 50	< 50	540	100	15	6,640	76	5.4%	7,600	1.7
	06/15/2018	< 50	5,200	<50	< 50	330	85	21	5,530	63	6.0%	12,000	1.3
	08/21/2018	< 50	4,600	< 50	< 50	350	120	23	4,950	58	8.7%	12,000	1.5
	10/09/2018	< 50 J	4,800 J-	< 50 J	< 50 J	430 J-	72	9.5	5,230	59	4.9%	4,300	1.5
	02/06/2019	< 50	5,200	< 50	< 50	430	170	20	5,630	67	10%	7,300	1.4
X1B	02/05/2018	< 10	430	11	< 10	270	2.5	2.7	711	9.0	2.0%	500	< 1.0
	06/15/2018	21 J-	950 J-	20 J-	< 10 R	90 J-	25	12	1,081	13	10%	7,000	< 1.0
	08/21/2018	< 10	360	12	< 10	170	2.8	4.7	542	7	3.8%	1,200	< 1.0
	10/09/2018	< 10	300	< 10	< 10	140	2.0	3.6	440	6	3.5%	470	< 1.0
	02/06/2019	< 10	450	< 10	< 10	98	1.2	3.9	548	6	2.7%	290	< 1.0
X2B1	02/05/2018	< 25	1,100	< 25	< 25	250	5.8	40	1,350	17	9.1%	5,700	< 1.0
	06/15/2018	88	230	< 5.0	< 5.0	12	1.7	3.2	330	3.4	4.9%	380	< 1.0
	08/21/2018	170	230	< 5.0	< 5.0	25	1.3	4.5	425	4.3	4.6%	390	< 1.0
	10/10/2018	150 J-	110 J-	< 2.5 J	< 2.5 R	7.8 J-	0.49	3.6	268	2.5	5.4%	250	< 1.0
	02/06/2019	170	100	< 2.5	< 2.5	< 2.5	0.13	3.6	273	2.4	5.1%	220	< 1.0
B2-Zone Wells													
PMW-2-3	02/05/2018	250	130	4.9	< 2.5	100	13	0.67	488	5.4	9.0%	340	< 1.0
	06/15/2018	240 J-	55 J-	< 2.5 R	< 2.5 J	9.4 J-	1.3	0.062 J	307	2.6	1.9%	14	< 1.0
	08/21/2018	230	53	< 2.5	< 2.5	9.9	1.2	0.046 J	296	2.5	1.8%	9.5	< 1.0
	10/09/2018	270 J-	75 J-	< 5.0 R	< 5.0 J	11 J-	0.99	0.095 J	356	3.0	1.3%	3.7	< 1.0
	02/06/2019	250	49	< 5.0	< 5.0	8.3	1.2	0.043 J	307	2.6	1.7%	13	< 1.0

Notes:

< = compound not detected above indicated laboratory reporting limit

1,1-DCE = 1,1-dichloroethene

cDCE = cis-1,2-dichloroethene

TCE = trichloroethene

tDCE = trans-1,2-dichloroethene

TOC = total organic carbon

VC = vinyl chloride

¹ Samples were collected by Blaine Tech Services, Inc., of San Jose, California, and submitted to TestAmerica Laboratories, Inc., of Pleasanton, California, for VOC and TOC analyses. Ethene, ethane, and methane were analyzed by Pace Analytical Energy Services, LLC, of Pittsburgh, Pennsylvania.

² For clarity, this table presents the results for TCE and daughter products for the previous year of data; historical analytical results are depicted in the concentration trends provided as Attachment C. For a full list of volatile organic compounds analyzed, please see the laboratory analytical report provided as Attachment B.

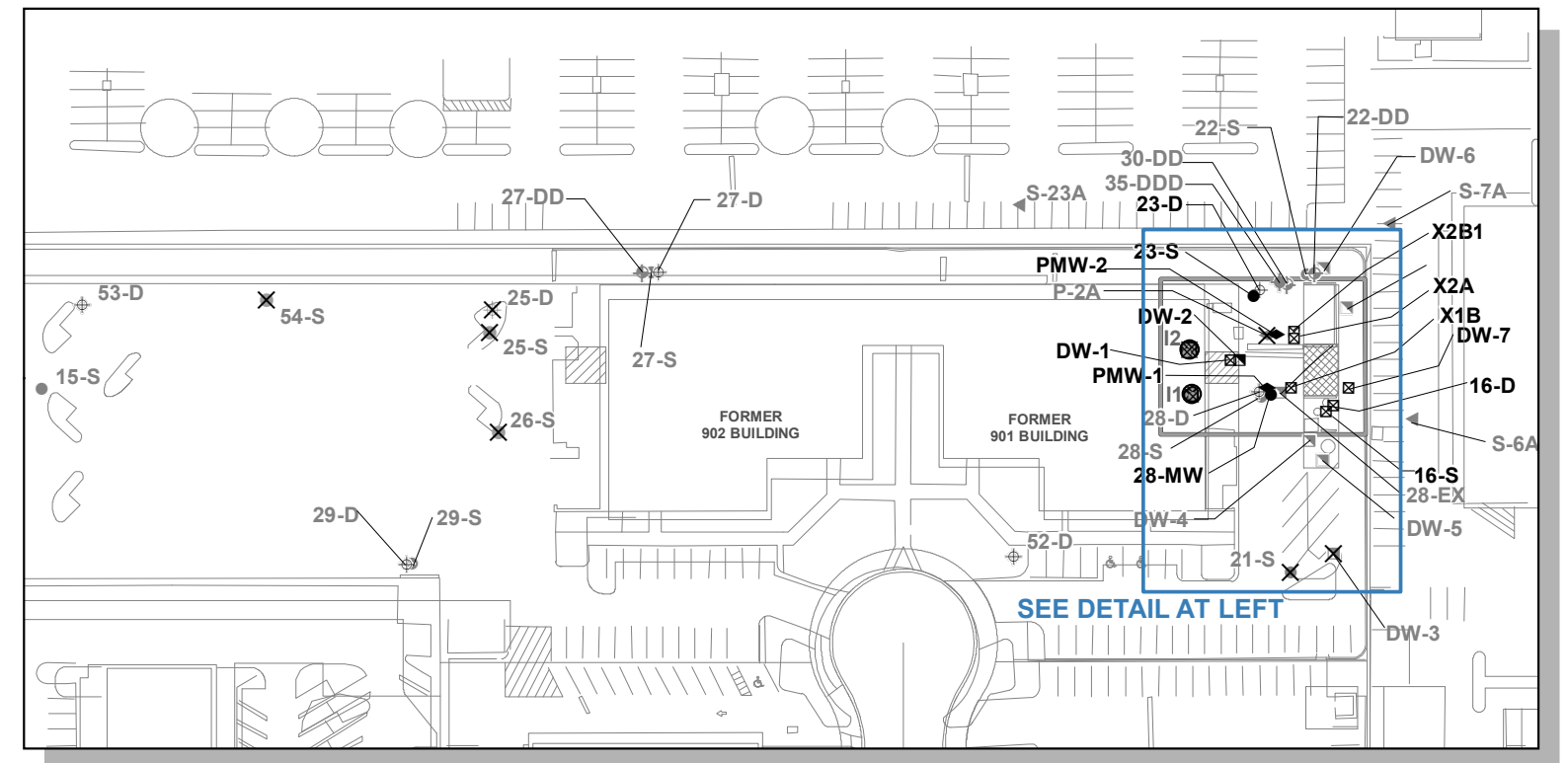
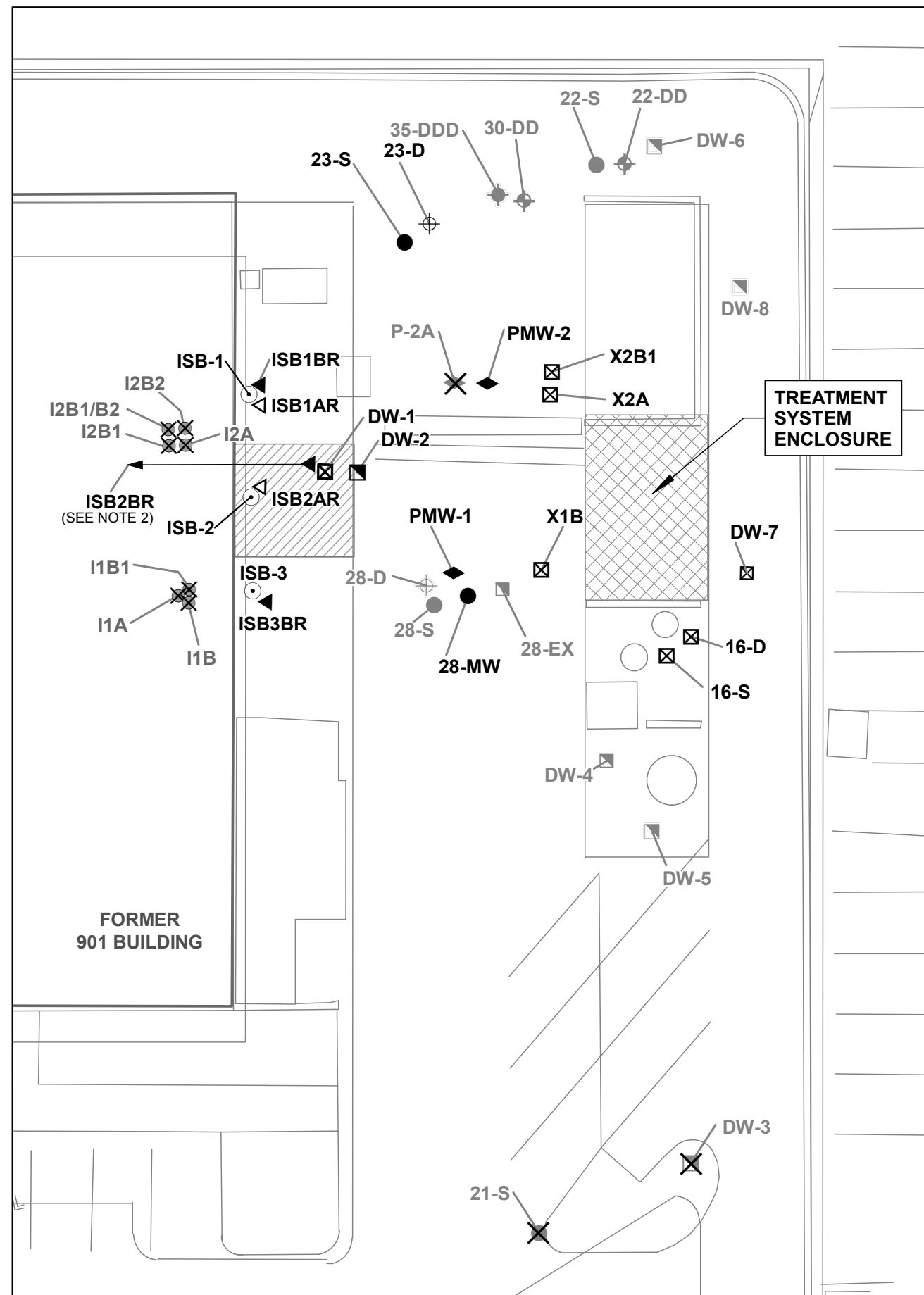
³ "J" indicates that the associated numerical value is the approximate concentration of the analyte in the sample.

⁴ "J-" indicates that the associated numerical value is the approximate concentration of the analyte in the sample, biased low.

⁵ Multiple results indicate primary / duplicate results.

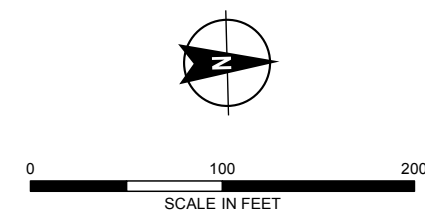
⁶ "R" indicates the concentration is rejected as unusable.

FIGURES



- | | | | |
|---|-------------------------|---|---|
|  | EXTRACTION WELL |  | PERFORMANCE MONITORING WELL
(PMW-1, PMW-1, P-2A) |
|  | A-ZONE MONITORING WELL |  | IN SITU BIOREMEDIATION
EXTRACTION WELL |
|  | B1-ZONE MONITORING WELL |  | SOIL BORING AND DEPTH-DISCRETE
GROUNDWATER SAMPLING LOCATION |
|  | B2-ZONE MONITORING WELL |  | FORMER BUILDING BOUNDARIES |
|  | B3-ZONE MONITORING WELL |  | FORMER POINT SOURCE LOCATION
(NEUTRALIZATION AND STORAGE
TANKS) |
|  | A-ZONE INJECTION WELL | | |
|  | B-ZONE INJECTION WELL | | |
|  | DESTROYED WELL | | |

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. INJECTION WELL ISB2BR INSTALLED AT 30° FROM VERTICAL, WITH A BEARING TO THE SOUTH.
3. BASE MAP SOURCE: AMD



**HALEY
ALDRICH**

FORMER 901/902 THOMPSON PLACE
SUNNYVALE, CALIFORNIA

LAYOUT OF THE IN SITU BIOREMEDIATION PROGRAM

SEPTEMBER 2018

FIGURE 1

APPENDIX A

Field Sampling Data Sheets

WELL GAUGING SHEET

Project # 190206DH-1 Date 2/6/19 Client Haley & AldrichSite: 901 Thompson Place - Sunnyvale, CA Page: 1 OF 1

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	Notes
16-S	0814	4					8.81	16.80	TOC	
23-S	0824	4					7.40	16.40	TOC	7.46 @ 1355
23-D	0826	4					3.84	44.59	TOC	
28-MW	0757	2					8.05	16.52	TOC	
DW-1	0829	12					6.46	38.31	TOC	
DW-2	0832	12					6.61	12.50	TOC	
DW-7	0820	6					4.83	44.30	TOC	
PMW-1-1	0806	3/8					7.57	26.31	TOC	
PMW-1-2	0808	3/8					6.91	32.03	TOC	
PMW-1-3	0810	3/8					6.16	37.11	TOC	
PMW-2-1	0746	3/8					7.00	27.47	TOC	
PMW-2-2	0748	3/8					5.39	37.38	TOC	
PMW-2-3	0750	3/8					4.44	48.22	TOC	
X1B	0755	2					7.23	29.36	TOC	
X2A	0807	2					7.40	20.34	TOC	
X2B1	0805	2					6.53	36.73	TOC	

WELLHEAD INSPECTION CHECKLIST

Page: 1 of 1

Date: 2/6/19 Client: Haley & Aldrich

Project Name/Site Address: 901 Thompson Place - Sunnyvale, CA

Job #: 190200DH-1 Technician(s): DH, TN

Well ID	Well Inspected - No Corrective Action Required	Water Bailed From Wellbox	Wellbox Components Cleaned	Debris Removed From Wellbox	Cap Replaced	Lock Replaced	Other Action Taken (explain below)	Well Not Inspected (explain below)
16-S	×							
23-S	×							
23-D	×							
28-MW	×							
DW-1	×							
DW-2	×							
DW-7	×							
PMW-1-1	×							
PMW-1-2	×							
PMW-1-3	×							
PMW-2-1	×							
PMW-2-2	×							
PMW-2-3	×							
X1B	×						×	
X2A	×							
X2B1	×							

NOTES: x1B = 1/2 tabs broken

LOW FLOW WELL MONITORING DATA SHEET

Project #: 190206DH-1	Client: Haley & Aldrich @ 901 Thompson Place Site
Sampler: DH	Start Date: 2/6/19
Well I.D.: 16-S	Well Diameter (inch): 4
Total Well Depth: 16.81	Depth to Water Pre: 8.81 Post: 8.81
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: TOC	Flow Cell Type: YSI ProDSS

Purge Method: Bladder Pump

Sampling Method: Dedicated Tubing

Screen Interval: 9'-16'

Start Purge: 1025

Flow Rate: 200 mL/min

Pump Depth: 12.5'

Time	Temp. (°C)	pH	Cond. (µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (mL)	DTW / Observations
1028	13.9	6.77	1534	19	0.66	-84.7	600	8.81
1031	13.7	6.76	1534	17	0.42	-88.9	1200	8.81
1034	13.5	6.75	1533	16	0.30	-90.5	1800	8.81
1037	13.3	6.75	1528	18	0.28	-89.4	2400	8.81
1040	13.4	6.75	1529	17	0.28	-89.4	3000	8.81

Did well dewater? Yes ☒ No ☐ Amount actually evacuated: 3000 ml

Sampling Time: 1043 Sampling Date: 2/6/19

Sample I.D.: 16-S Laboratory: Test America / PACE

Analyzed for: SEE COC

Blank I.D.: @ Time Duplicate I.D.: @ Time

Analyzed for: SEE COC

LOW FLOW WELL MONITORING DATA SHEET

Project #: 190206 DH-1	Client: Haley & Aldrich @ 901 Thompson Place Site
Sampler: TW	Start Date: 2/6/19
Well I.D.: 23-S	Well Diameter (inch): 4
Total Well Depth: 16.40	Depth to Water Pre: 7.40 Post: 7.62
Depth to Free Product: /	Thickness of Free Product (feet): /
Referenced to: TOC	Flow Cell Type: YSI Pro Plus

Purge Method: Bladder Pump

Sampling Method: Dedicated New Tubing

Screen Interval: 9-16

Start Purge: 0924

Flow Rate: 200 mL/min

Pump Depth: 11

Time	Temp. (°C)	pH	Cond. (µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (mL)	DTW / Observations
0927	9.4	6.60	1357	14	0.35	226.7	600	7.40
0930	9.7	6.55	1296	10	0.31	207.0	1200	7.45
0933	10.0	6.50	1293	10	0.61	169.2	1800	7.48
0936	10.0	6.49	1293	9	1.59	136.0	2400	7.52
0939	10.9	6.51	1290	12	0.70	115.4	3000	7.55
0942	10.9	6.50	1291	10	0.48	108.9	3600	7.59
0945	10.9	6.48	1290	10	0.37	105.3	4200	7.62

Did well dewater? Yes ☒ No ☐ Amount actually evacuated: 4200 ml

Sampling Time: 0950 Sampling Date: 2/6/19

Sample I.D.: 23-S Laboratory: Test America / PACE

Analyzed for: SEE COC

Blank I.D.: @ Time Duplicate I.D.: @ Time

Analyzed for: SEE COC

LOW FLOW WELL MONITORING DATA SHEET

Project #: 190206DH-1	Client: Haley & Aldrich @ 901 Thompson Place Site
Sampler: TN	Start Date: 2/6/19
Well I.D.: 23-D	Well Diameter (inch): 4
Total Well Depth: 44.5'	Depth to Water Pre: 3.84 Post: 4.21
Depth to Free Product: /	Thickness of Free Product (feet): /
Referenced to: TOC	Flow Cell Type: YSI R2 Plus

Purge Method: Bladder Pump
Sampling Method: Dedicated tubing Screen Interval: 40-50
Start Purge: 1334 **Flow Rate:** 200 mL/min **Pump Depth:** 45

Time	Temp. (°C)	pH	Cond. (µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (mL)	DTW / Observations
1337	11.8	6.93	961	8	0.66	38.5	600	3.86
1340	13.3	6.99	988	11	0.20	50.7	1200	3.89
1343	13.2	6.85	988	8	0.13	55.0	1800	3.91
1346	13.2	6.82	988	11	0.14	56.3	2400	3.96
1349	13.0	6.81	987	14	0.15	67.4	3000	4.01
1352	13.0	6.80	988	4	0.16	73.7	3600	4.09
1355	13.1	6.81	987	4	0.19	75.2	4200	4.14
1358	13.3	6.81	987	5	0.25	63.5	4800	4.21

Did well dewater? Yes (No) Amount actually evacuated: 4800 ml

Sampling Time: 1400 Sampling Date: 2/6/19

Sample I.D.: 23-D Laboratory: Test America / PACE

Analyzed for: SEE COC

Blank I.D.: @ Time Duplicate I.D.: @ Time DUP-1 1405

Analyzed for: SEE COC

LOW FLOW WELL MONITORING DATA SHEET

Project #: 190206DA-1	Client: Haley & Aldrich @ 901 Thompson Place Site
Sampler: DH	Start Date: 2/6/19
Well I.D.: 28-MW	Well Diameter (inch): 2
Total Well Depth: 16.56	Depth to Water Pre: 8.05 Post: 8.12
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: TOC	Flow Cell Type: YSI 90 DSS

Purge Method: Bladder Pump
Sampling Method: Dedicated tubing **Screen Interval:** 10' - 16.3'
Start Purge: 1129 **Flow Rate:** 200ml/min **Pump Depth:** 13.0'

Time	Temp. (°C)	pH	Cond. (µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (mL)	DTW / Observations
1132	17.1	6.78	1490	2	0.50	-86.2	600	8.12
1135	17.4	6.76	1483	3	0.25	-93.2	1200	8.12
1138	17.2	6.75	1482	2	0.16	-99.1	1800	8.12
1141	17.4	6.75	1467	2	0.12	-101.8	2400	8.12
1144	17.3	6.75	1469	2	0.10	-104.1	3000	8.12
1147	17.3	6.75	1472	2	0.07	-106.8	3600	8.12
1150	17.4	6.75	1473	2	0.07	-107.1	4200	8.12
1153	17.4	6.75	1471	2	0.07	-107.9	4800	8.12

Did well dewater? Yes ☒ No ☐		Amount actually evacuated: 4800 ml	
Sampling Time: 1155		Sampling Date: 2/6/19	
Sample I.D.: 28-MW		Laboratory: Test America / PACE	
Analyzed for: SEE COC			
Blank I.D.: @ Time		Duplicate I.D.: @ Time	
MS/MSD			
Analyzed for: SEE COC			

LOW FLOW WELL MONITORING DATA SHEET

Project #: <u>190200 DH-1</u>	Client: <u>Haley & Aldrich @ 901 Thompson Place Site</u>
Sampler: <u>DH</u>	Start Date: <u>2/6/19</u>
Well I.D.: <u>DW-1</u>	Well Diameter (inch): <u>12</u>
Total Well Depth: <u>38.31</u>	Depth to Water Pre: <u>6.46</u> Post: <u>6.46</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>TOC</u>	Flow Cell Type: <u>YSI Pro DSS</u>

Purge Method: Peristaltic Pump

Sampling Method: Dedicated Tubing + SS CHECK VALVE

Screen Interval: 32-40

Start Purge: 0949

Flow Rate: 240 mL/min

Pump Depth: 36.0'

Time	Temp. (°C)	pH	Cond. (µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (mL)	DTW / Observations
0952	13.8	6.97	3006	10	0.46	-154.5	600	sulfur odor 6.46
0955	14.3	6.95	3043	11	0.23	-183.4	1200	
0958	14.6	6.93	3076	10	0.14	-201.3	1800	
1001	14.5	6.93	3082	8	0.11	-207.9	2400	
1004	14.6	6.93	3083	9	0.10	-207.4	3000	
1007	14.6	6.93	3082	8	0.10	-208.2	3600	↓ ↓
* TUBING DISCONNECTED FROM PERI PUMP AND HAND CHECKED TO COLLECT VOC SAMPLES								

Did well dewater? Yes (No) Amount actually evacuated: 3600 ml

Sampling Time: 1010

Sampling Date: 2/6/19

Sample I.D.: DW-1

Laboratory: Test America / PACE

Analyzed for: SEE COC

Blank I.D.: @ Time

Duplicate I.D.: @ Time

Analyzed for: SEE COC

LOW FLOW WELL MONITORING DATA SHEET

Project #: 19026DH-1	Client: Haley & Aldrich @ 901 Thompson Place Site
Sampler: DH	Start Date: 2/6/19
Well I.D.: DW-2	Well Diameter (inch): 12
Total Well Depth: 12.50	Depth to Water Pre: 6.61 Post: 6.61
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: TOC	Flow Cell Type: YSI PRO DC

Purge Method:

peristaltic pump

Sampling Method:

Decontaminated Tubing + SS CHECK VALVE

Screen Interval: 10-14

Start Purge: 0913

Flow Rate: 200 mL/min

Pump Depth: 12.0

Time	Temp. (°C)	pH	Cond. (µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (mL)	DTW / Observations
0916	12.1	7.96	2480	11	1.17	144.5	600	6.61
0919	12.1	7.93	2433	8	0.55	140.8	1200	6.61
0922	12.1	7.91	2431	8	0.50	140.1	1800	6.61
0925	12.1	7.92	2437	8	0.44	139.1	2400	6.61
0928	12.1	7.92	2435	8	0.48	138.7	3000	6.61
* TUBING DISCONNECTED FROM PERI PUMP AND HAND CHECKED TO COLLECT VOC SAMPLES.								

Did well dewater? Yes ☒ No ☐ Amount actually evacuated: 3000 ml

Sampling Time: 0930

Sampling Date: 2/6/19

Sample I.D.: DW-2

Laboratory: **Test America / PACE**

Analyzed for: **SEE COC**

Blank I.D.: TB-1 @ Time 0730

Duplicate I.D.: @ Time

Analyzed for: **SEE COC**

LOW FLOW WELL MONITORING DATA SHEET

Project #: 190204 DH-1	Client: Haley & Aldrich @ 901 Thompson Place Site
Sampler: DH	Start Date: 2/6/19
Well I.D.: DW-7	Well Diameter (inch): 6
Total Well Depth: 44.30	Depth to Water Pre: 4.83 Post: 4.83
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: TOC	Flow Cell Type: YSI RO DSS

Purge Method: Bladder pump

Sampling Method: Dedicated tubing

Screen Interval: 35-45

Start Purge: 1306

Flow Rate: 200 mL/min

Pump Depth: 40.0'

Time	Temp. (°C)	pH	Cond. (µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (mL)	DTW / Observations
1309	15.2	7.50	947	19	0.45	-57.8	600	4.83
1312	14.4	7.49	940	18	0.31	-53.6	1200	4.83
1315	14.7	7.48	952	20	0.21	-57.0	1800	4.83
1318	15.0	7.48	950	14	0.16	-59.5	2400	4.83
1321	15.1	7.48	949	18	0.13	-61.6	3000	4.83
1324	15.2	7.48	951	13	0.11	-62.4	3600	4.83
1327	15.1	7.48	950	14	0.11	-62.6	4200	4.83
1330	15.2	7.48	952	13	0.11	-62.5	4800	4.83

Did well dewater? Yes ☒ No ☐ Amount actually evacuated: 4800 ml

Sampling Time: 1333 Sampling Date: 2/6/19

Sample I.D.: DW-7 Laboratory: Test America / PACE

Analyzed for: SEE COC

Blank I.D.: @ Time Duplicate I.D.: @ Time

Analyzed for: SEE COC

LOW FLOW WELL MONITORING DATA SHEET

Project #:	1902060H-1	Client:	Haley & Aldrich @ 901 Thompson Place Site
Sampler:	TN	Start Date:	2/6/19
Well I.D.:	PMW-2-1	Well Diameter (inch):	1/4 inch CMT
Total Well Depth:	27.47	Depth to Water	Pre: 9.95 Post: 9.96
Depth to Free Product:	✓	Thickness of Free Product (feet):	✓
Referenced to:	TOC	Flow Cell Type:	YSI R ₂ Plus

Purge Method: Resistatic Pumping

Sampling Method: ^{TEFLON} Neph Tubing + SS CHECK VALVE

Screen Interval: 26.7 - 28.1 A

Start Purge: 1100

Flow Rate: 100 mL/min

Pump Depth: 27 ft

[illegible]

Did well dewater? Yes ☒ No ☐ Amount actually evacuated: 1800 ml

Sampling Time: 1120 Sampling Date: 2/6/19

Sample I.D.: PMW-2-1 Laboratory: Test America / PACE

Analyzed for:	SEE COC
---------------	---------

Blank I.D.: @ Time Duplicate I.D.: @ Time

Analyzed for:	SEE COC
---------------	---------

LOW FLOW WELL MONITORING DATA SHEET

Project #:	190206DH-1	Client:	Haley & Aldrich @ 901 Thompson Place Site
Sampler:	TN	Start Date:	2/6/19
Well I.D.:	PMW-2-3	Well Diameter (inch):	1/4 CMT
Total Well Depth:	48.22	Depth to Water	Pre: 4.44 Post: 4.46
Depth to Free Product:	✓	Thickness of Free Product (feet):	✓
Referenced to:	TOC	Flow Cell Type:	YSI Pro Plus

Purge Method:

Peristaltic Pump

Sampling Method:

TEFLON
New Tubing + SS CHECK VALVE

Screen Interval: 455 - 48.2 ft

Start Purge: 1134

Flow Rate: 100 mL/min

Pump Depth: 47 ft

Time	Temp. (°C)	pH	Cond. (µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (mL)	DTW / Observations
1137	13.2	6.92	594.7	16	0.33	-188.1	300	Order 4.44
1140	13.9	6.88	971	9	0.00	-156.1	600	4.44
1143	14.0	6.81	986	4	0.00	-136.2	900	4.44
1146	13.9	6.76	988	10	0.00	-127.5	1200	4.45
1149	14.2	6.75	989	7	0.00	-118.6	1500	4.45
1152	14.3	6.73	990	4	0.00	-112.8	1800	4.45
1155	14.3	6.73	989	8	0.00	-113.6	2100	4.46
1158	14.3	6.71	992	4	0.00	-111.4	2400	4.46
* TUBING DISCONNECTED FROM PERI PUMP AND HAND CHECKED TO								
COLLECT VOL SAMPLES								

Did well dewater? Yes ☒ No ☐ Amount actually evacuated: 2400 ml

Sampling Time: 1205 Sampling Date: 2/6/19

Sample I.D.: PMW-2-3 Laboratory: Test America / PACE

Analyzed for: SEE COC

Blank I.D.: @ Time Duplicate I.D.: @ Time

Analyzed for: SEE COC

LOW FLOW WELL MONITORING DATA SHEET

Project #: 190206DH-1	Client: Haley & Aldrich @ 901 Thompson Place Site
Sampler: DH	Start Date: 2/6/19
Well I.D.: x13	Well Diameter (inch): 2
Total Well Depth: 29.36	Depth to Water Pre: 7.23 Post: 7.30
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: TOC	Flow Cell Type: YSI Pro DSS

Purge Method:

Bladder pump

Sampling Method:

Dedicated Tapping

Screen Interval: 25.4 - 30.2'

Start Purge: 1216

Flow Rate: 200 mL/min

Pump Depth: 28.0'

Time	Temp. (°C)	pH	Cond. (µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (mL)	DTW / Observations
1219	16.8	6.96	1066	10	0.49	-3.8	600	7.30
1222	16.7	6.95	1064	8	0.28	-5.4	1200	7.30
1225	17.1	6.95	1062	7	0.17	-16.7	1800	7.30
1228	17.1	6.95	1061	7	0.09	-25.8	2400	7.30
1231	17.4	6.95	1063	6	0.04	-27.6	3000	7.30
1234	17.2	6.95	1063	6	0.04	-27.1	3600	7.30
1237	17.2	6.95	1062	6	0.04	-28.2	4200	7.30

Did well dewater? Yes ☒ No ☐ Amount actually evacuated: 4200 ml

Sampling Time: 1240 Sampling Date: 2/6/19

Sample I.D.: x13 Laboratory: Test America / PACE

Analyzed for: SEE COC

Blank I.D.: @ Time Duplicate I.D.: @ Time

Analyzed for: SEE COC

LOW FLOW WELL MONITORING DATA SHEET

Project #: 190206NH-1	Client: Haley & Aldrich @ 901 Thompson Place Site
Sampler: TN	Start Date: 2/6/19
Well I.D.: X2A	Well Diameter (inch): 2
Total Well Depth: 20.34	Depth to Water Pre: 7.40 Post: 7.64
Depth to Free Product: /	Thickness of Free Product (feet): /
Referenced to: TOC	Flow Cell Type: YSI Pro Plus

Purge Method:

Bladder Pump

Sampling Method:

① New Dedicated Tubing

Screen Interval: 10-20

Start Purge: 1009

Flow Rate: 200 ml/min

Pump Depth: 15

Time	Temp. (°C)	pH	Cond. (µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (mL)	DTW / Observations
1012	11.7	6.62	1792	10	5.01	-98.4	600	order 7.40
1015	11.8	6.55	1876	10	0.33	-112.0	1200	7.40
1018	12.4	6.58	1956	9	0.11	-116.7	1800	7.45
1021	12.5	6.56	2012	10	0.07	-121.0	2400	7.51
1024	12.5	6.52	2009	8	0.11	-126.1	3000	7.58
1027	12.6	6.50	2005	9	0.03	-127.4	3600	7.64

Did well dewater? Yes ① No Amount actually evacuated: 3600 ml

Sampling Time: 1035

Sampling Date: 2/6/19

Sample I.D.: X2A

Laboratory: Test America / PACE

Analyzed for: SEE COC

Blank I.D.: @ Time

Duplicate I.D.: @ Time

Analyzed for: SEE COC

LOW FLOW WELL MONITORING DATA SHEET

Project #: 190206 DH-1	Client: Haley & Aldrich @ 901 Thompson Place Site
Sampler: TN	Start Date: 2/6/19
Well I.D.: X2B1	Well Diameter (inch): 2
Total Well Depth: 36.73	Depth to Water Pre: 6.53 Post: 6.81
Depth to Free Product: ✓	Thickness of Free Product (feet): ✓
Referenced to: TOC	Flow Cell Type: YSI Pro Plus

Purge Method: Bladder Pump

Sampling Method: Dedicated Tubing

Screen Interval: 26.5 - 36.5

Start Purge: 1250

Flow Rate: 200 mL/min

Pump Depth: 31 ft

Time	Temp. (°C)	pH	Cond. (µS)	Turbidity (NTUs)	D.O. (mg/L)	ORP (mV)	Water Removed (mL)	DTW / Observations
1253	12.9	7.04	974	20	0.21	-11.6	600	6.53
1256	13.3	7.00	1016	22	0.00	-9.5	1200	6.57
1259	13.1	6.85	1017	16	0.00	-9.0	1800	6.62
1302	13.1	6.80	1016	18	0.00	-12.6	2400	6.70
1305	13.4	6.79	1015	17	0.00	-14.3	3000	6.73
1308	13.3	6.77	1015	17	0.00	-15.1	3600	6.81

Did well dewater? Yes ☒ No ☐ Amount actually evacuated: 3600 ml

Sampling Time: 1310 Sampling Date: 2/6/19

Sample I.D.: X2B1 Laboratory: Test America / PACE

Analyzed for: SEE COC

Blank I.D.: @ Time Duplicate I.D.: @ Time

Analyzed for: SEE COC

TestAmerica Pleasanton

1220 Quarry Lane

Pleasanton, CA 94566-4756

phone 925.484.1919 fax 925.600.3002

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmericaTestAmerica
THE LEADER IN ENVIRONMENTAL TESTINGRegulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica Laboratories, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

Client Contact		H&A Project Manager: Mike Calhoun		H&A Site Contact: Mike Calhoun		Date:		COC No:		
Haley & Aldrich		Tel/Fax: 510-879-4554		Lab Contact: Micah Smith		Carrier:		1 of 2 COCs		
1956 Webster Street, Suite 300		Analysis Turnaround Time		Filtered Sample (Y/N) Perform MS / MSD (Y/N) VOCs (modified list) - EPA 8260 TOC - SM5310				Sampler: For Lab Use Only: Walk-in Client: Lab Sampling: Job / SDG No.:		
Oakland, CA 94612		☐ CALENDAR DAYS ☒ WORKING DAYS								
510-879-4554 Phone		TAT if different from Below _____								
510-879-4579 FAX		☒ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day								
H&A Project Number : 127819										
Site: Former 901/902 Thompson Place										
H&A P O # 127819-004 SID 3										
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Sample Specific Notes:			
DW-2		2/6/19	0930		W	4	N X X			
16-S			1043		W	4	X X			
23-S			0950		W	4	X X			
28-MW			1155		W	10	X X			
X2A			1035		W	4	X X			
PMW-2-1			1120		W	4	X X			
PMW-2-3			1205		W	4	X X			
X1B			1240		W	4	X X			
X2B1			1310		W	4	X X			
DW-1			1010		W	4	X X			
DW-7			1333		W	4	X X			
23-D			1400		W	4	X X			
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other										
Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown						Sample Disposal ☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months				
Special Instructions/QC Requirements & Comments:										
PLEASE NOTE: project-specific list of VOCs (8010 list plus Freon 113 and 1,2,4-trichlorobenzene) ***ANALYZE FOR VOCs WITHIN SEVEN DAYS OF SAMPLE COLLECTION***										
Custody Seals Intact: ☐ Yes ☐ No		Custody Seal No.:		Cooler Temp. (°C): Obs'd: _____		Corr'd: _____		Therm ID No.:		
Relinquished by: [Signature]		Company: [Signature]		Date/Time: 2/6/19 1545		Received by: [Signature]		Company: BTS Sample Custodian		
Relinquished by: [Signature] (BTS)		Company: BTS		Date/Time: 2/2/19 1340		Received by: [Signature]		Company: [Signature]		
Relinquished by: [Signature]		Company: [Signature]		Date/Time: [Signature]		Received in Laboratory by: [Signature]		Company: [Signature]		

1220 Quarry Lane

Pleasanton, CA 94566-4756
phone 925.484.1919 fax 925.600.3002

Chain of Custody Record for
Haley & Aldrich, Inc. Blanket Service Agreement #2019-22-TestAmerica

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

TestAmerica's services under this CoC shall be performed in accordance with the T&Cs within Blanket Service Agreement# 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories Inc.

[illegible]

Section A

Required Client Information:

Company: Haley & Aldrich, Inc.

Address: 1956 Webster Street, Suite 300
Oakland, CA 94612

Email To: mcalhoun@haleyaldrich.com

Phone: 510-879-4554 Fax:

Requested Due Date/TAT: Standard TAT

Section B

Required Project Information:

Report To: mcalhoun@haleyaldrich.com

Copy To: mzlotoff@haleyaldrich.com, vgodard@haleyaldrich.com

BSA #: 2019-22-Pace

H&A Client Name: Former 901/902 Thompson Place

H&A Project #: 127819-004 SID 3

Section C

Invoice Information:

Attention: ap@haleyaldrich.com

Company Name: Haley & Aldrich

Address: use email address above

Pace Quote

Reference:

Pace Project

Manager:

Pace Profile #:

X	220 William Pitt Way, Pittsburgh, PA 15238 (Pace Energy)
	1700 Elm Street SE - Minneapolis, MN 55414
	7726 Moller Road - Indianapolis, IN 46268
REGULATORY AGENCY	
☐ NPDES	☐ GROUND WATER DRINKING WATER
☐ UST	☐ RCRA
Site Location	
STATE:	

Pace's services under this Chain of Custody shall be performed in accordance with terms and conditions within Blanket Service Agreement #2019-22-Pace by and between Haley & Aldrich, Inc., its subsidiaries and affiliates and Pace Analytical Services, Inc.

ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE	MATERIAL CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives										Analysis Test	Requested Analysis Filtered (Y/N)										Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.		
					Collection Info		Sample Depth				Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other	Analysis Test	Ethene, ethane, methane-AM20GAX															
					DATE	TIME	Depth (Circle: feet or inches)	Depth (Circle: feet or inches)																											
1	DW-2		WT		2/6/19	0930				3																									
2	10-S		WT			1043				3																									
3	23-S		WT			0950				3																									
4	28-MW		WT			1155				3																									
5	X2A		WT			1035				3																									
6	PMW-2-1		WT			1120				3																									
7	PMW-2-3		WT			1205				3																									
8	X1B		WT			1240				3																									
9	X2B1		WT			1300				3																									
10	DW-1		WT			1010				3																									
11	DW-7		WT			1333				3																									
12	23-D		WT			1400				3																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	David Vasquez-Hen (BTS)	2/6/19	1530	David Vasquez-Hen (Sample Custodian)	2/6/19	1530	
	David Vasquez-Hen (BTS)	2/7/19	1320				

SAMPLER NAME AND SIGNATURE		Temp in °C	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	David Vasquez-Hen			
SIGNATURE of SAMPLER:	David Vasquez-Hen			
DATE Signed (MM/DD/YY): 02/06/19				

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME: Haley & Aldrich @ 901 Thompson Place - Sunnyvale, CA					PROJECT NUMBER: 190206 DH-1		
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP. (°C)	Standard Lot# / Exp. Date /
YSI Pro DSS	4350	2/10/19	pH 7.0, 10.0, 4.0	7.00, 10.00, 4.00	Y	14.6	55760 07/19 55830 07/19 55196 05/19
↓	↓	↓	COND 3900MS ORP 244.0	3900MS 244.2	Y	14.1	50341 07/20 101818 12/19
↓	↓	↓	DO 100.0%	100.4%	Y	13.1	—
Hach 2100Q Turbidimeter	160906052685		10, 20, 100, 800	10, 20, 100, 800	Y	—	
YSI Pro DSS	4350	1/4/20	pH 7.0 10.0 4.0	7.01 10.02 4.00	Y	16.1	55760 07/19 55830 07/19 55196 05/19
↓	↓	↓	COND 3900MS ORP 237.5	3904 MS 238.1	Y	17.0	50341 07/20 101818 12/19
↓	↓	↓	DO 100.0%	101.1	Y	19.1	—

TEST EQUIPMENT CALIBRATION LOG

TN

PROJECT NAME: Haley & Aldrich @ 901 Thompson Place - Sunnyvale, CA					PROJECT NUMBER: 190206DH-1		
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP. (°C)	Standard Lot# / Exp. Date /
YSI ProPlus	13E102999	2/6/19 0836	PH 7	6.90	✓	5.5	#55760 7/19
			10	9.47	✓	6.0	#55421 5/19
			4	3.94	✓	5.0	#55196 5/19
			mV	257	✓	6.5	#691918 11/19
			MS 3900	4100	✓	7.2	#56341 7/20
						6.5	
Turbidimeter	960700011242		10, 20, 100, 800	10, 20, 100, 800			
YSI ProPlus	13E102999	2/6/19 1435	PH 7 10 4	7.10 9.84 3.92	✓ ✓ ✓	12.3 " "	" " "
			mV	250	✓	13.4	" "
			MS 3900	3893	✓	12.9	" "
Turbidimeter	960700011242		10, 20, 100, 800	10, 20, 100, 800	✓		

APPENDIX B

Analytical Laboratory Reports

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Pleasanton

1220 Quarry Lane

Pleasanton, CA 94566

Tel: (925)484-1919

TestAmerica Job ID: 720-91240-1

Client Project/Site: 901/902 Thompson Place-Advanced Micro

For:

Haley & Aldrich, Inc.

1956 Webster Street

Suite 300

Oakland, California 94612

Attn: Michael Calhoun



Authorized for release by:

2/21/2019 5:05:26 PM

Micah Smith, Project Manager II

(925)484-1919

micah.smith@testamericainc.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Job ID: 720-91240-1

Laboratory: TestAmerica Pleasanton

Narrative

Job Narrative 720-91240-1

Comments

No additional comments.

Receipt

The samples were received on 2/7/2019 4:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.4° C.

GC/MS VOA

Method(s) 8260B: The following sample(s) were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was outside the required criteria when verified by the laboratory, and corrective action was not possible: DW-2 (720-91240-1) and DW-1 (720-91240-10). The sample was analyzed within 7 days per EPA recommendation.

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

General Chemistry

Method(s) SM 5310B: The reference method SM5310B requires samples to be preserved to a pH<2. The following sample was received with insufficient preservation at a pH>2: DW-1 (720-91240-10). The pH of the samples was adjusted to the appropriate pH<2 using hydrochloric acid 1;1 in the laboratory prior to analysis.

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

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Client Sample ID: DW-2

Lab Sample ID: 720-91240-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	1.8		1.0		mg/L	1		SM 5310B	Total/NA

Client Sample ID: 16-S

Lab Sample ID: 720-91240-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	29		0.50		ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	2.7		0.50		ug/L	1		8260B	Total/NA
Chlorobenzene	8.5		0.50		ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	1.1		0.50		ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	7.6		0.50		ug/L	1		8260B	Total/NA
Total Organic Carbon	3.3		1.0		mg/L	1		SM 5310B	Total/NA

Client Sample ID: 23-S

Lab Sample ID: 720-91240-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	0.81		0.50		ug/L	1		8260B	Total/NA
Vinyl chloride	3.2		0.50		ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	4.5		0.50		ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	52		0.50		ug/L	1		8260B	Total/NA
Trichloroethene	37		0.50		ug/L	1		8260B	Total/NA
Tetrachloroethene	0.89		0.50		ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	0.57		0.50		ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	15		0.50		ug/L	1		8260B	Total/NA
Total Organic Carbon	2.3		1.0		mg/L	1		SM 5310B	Total/NA

Client Sample ID: 28-MW

Lab Sample ID: 720-91240-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	47		0.50		ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	5.1		0.50		ug/L	1		8260B	Total/NA
Chlorobenzene	9.0		0.50		ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	0.53		0.50		ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	8.5		0.50		ug/L	1		8260B	Total/NA
Total Organic Carbon	3.1		1.0		mg/L	1		SM 5310B	Total/NA

Client Sample ID: X2A

Lab Sample ID: 720-91240-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	720		5.0		ug/L	10		8260B	Total/NA
cis-1,2-Dichloroethene	53		5.0		ug/L	10		8260B	Total/NA
Chlorobenzene	14		5.0		ug/L	10		8260B	Total/NA
1,2-Dichlorobenzene	18		5.0		ug/L	10		8260B	Total/NA
Total Organic Carbon	2.7		1.0		mg/L	1		SM 5310B	Total/NA

Client Sample ID: PMW-2-1

Lab Sample ID: 720-91240-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	430		50		ug/L	100		8260B	Total/NA
cis-1,2-Dichloroethene	5200		50		ug/L	100		8260B	Total/NA
Total Organic Carbon	1.4		1.0		mg/L	1		SM 5310B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pleasanton

Detection Summary

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Client Sample ID: PMW-2-3

Lab Sample ID: 720-91240-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	8.3		5.0		ug/L	10		8260B	Total/NA
cis-1,2-Dichloroethene	49		5.0		ug/L	10		8260B	Total/NA
Trichloroethene	250		5.0		ug/L	10		8260B	Total/NA

Client Sample ID: X1B

Lab Sample ID: 720-91240-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	98		10		ug/L	20		8260B	Total/NA
cis-1,2-Dichloroethene	450		10		ug/L	20		8260B	Total/NA

Client Sample ID: X2B1

Lab Sample ID: 720-91240-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	100		2.5		ug/L	5		8260B	Total/NA
Trichloroethene	170		2.5		ug/L	5		8260B	Total/NA
1,1,2-Trichloro-1,2,2-trifluoroethane	2.7		2.5		ug/L	5		8260B	Total/NA

Client Sample ID: DW-1

Lab Sample ID: 720-91240-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	52		0.50		ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	1.7		0.50		ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	8.0		0.50		ug/L	1		8260B	Total/NA
Total Organic Carbon	8.1		1.0		mg/L	1		SM 5310B	Total/NA

Client Sample ID: DW-7

Lab Sample ID: 720-91240-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	0.54		0.50		ug/L	1		8260B	Total/NA
Vinyl chloride	1.5		0.50		ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	1.1		0.50		ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	130		0.50		ug/L	1		8260B	Total/NA
Trichloroethene	60		0.50		ug/L	1		8260B	Total/NA
1,1,2-Trichloro-1,2,2-trifluoroethane	1.1		0.50		ug/L	1		8260B	Total/NA

Client Sample ID: 23-D

Lab Sample ID: 720-91240-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	3.5		2.5		ug/L	5		8260B	Total/NA
Trichloroethene	230		2.5		ug/L	5		8260B	Total/NA

Client Sample ID: TB-1

Lab Sample ID: 720-91240-13

No Detections.

Client Sample ID: DUP-1

Lab Sample ID: 720-91240-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	3.4		2.5		ug/L	5		8260B	Total/NA
Trichloroethene	230		2.5		ug/L	5		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pleasanton

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Client Sample ID: DW-2

Date Collected: 02/06/19 09:30

Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-1

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50		ug/L			02/08/19 23:12	1
1,1-Dichloroethane	ND		0.50		ug/L			02/08/19 23:12	1
Dichlorodifluoromethane	ND		0.50		ug/L			02/08/19 23:12	1
Vinyl chloride	ND		0.50		ug/L			02/08/19 23:12	1
Chloroethane	ND		1.0		ug/L			02/08/19 23:12	1
Trichlorofluoromethane	ND		1.0		ug/L			02/08/19 23:12	1
Methylene Chloride	ND		5.0		ug/L			02/08/19 23:12	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			02/08/19 23:12	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			02/08/19 23:12	1
Chloroform	ND		1.0		ug/L			02/08/19 23:12	1
1,1,1-Trichloroethane	ND		0.50		ug/L			02/08/19 23:12	1
Carbon tetrachloride	ND		0.50		ug/L			02/08/19 23:12	1
1,2-Dichloroethane	ND		0.50		ug/L			02/08/19 23:12	1
Trichloroethene	ND		0.50		ug/L			02/08/19 23:12	1
1,2-Dichloropropane	ND		0.50		ug/L			02/08/19 23:12	1
Dichlorobromomethane	ND		0.50		ug/L			02/08/19 23:12	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			02/08/19 23:12	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			02/08/19 23:12	1
1,1,2-Trichloroethane	ND		0.50		ug/L			02/08/19 23:12	1
Tetrachloroethene	ND		0.50		ug/L			02/08/19 23:12	1
Chlorodibromomethane	ND		0.50		ug/L			02/08/19 23:12	1
Chlorobenzene	ND		0.50		ug/L			02/08/19 23:12	1
Bromoform	ND		1.0		ug/L			02/08/19 23:12	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			02/08/19 23:12	1
1,3-Dichlorobenzene	ND		0.50		ug/L			02/08/19 23:12	1
1,4-Dichlorobenzene	ND		0.50		ug/L			02/08/19 23:12	1
1,2-Dichlorobenzene	ND		0.50		ug/L			02/08/19 23:12	1
Chloromethane	ND		1.0		ug/L			02/08/19 23:12	1
Bromomethane	ND		1.0		ug/L			02/08/19 23:12	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50		ug/L			02/08/19 23:12	1
EDB	ND		0.50		ug/L			02/08/19 23:12	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			02/08/19 23:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		70 - 130		02/08/19 23:12	1
4-Bromofluorobenzene	104		67 - 130		02/08/19 23:12	1
1,2-Dichloroethane-d4 (Surr)	99		72 - 130		02/08/19 23:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.8		1.0		mg/L			02/18/19 00:19	1

TestAmerica Pleasanton

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Client Sample ID: 16-S

Date Collected: 02/06/19 10:43

Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-2

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50		ug/L			02/08/19 23:39	1
1,1-Dichloroethane	ND		0.50		ug/L			02/08/19 23:39	1
Dichlorodifluoromethane	ND		0.50		ug/L			02/08/19 23:39	1
Vinyl chloride	29		0.50		ug/L			02/08/19 23:39	1
Chloroethane	ND		1.0		ug/L			02/08/19 23:39	1
Trichlorofluoromethane	ND		1.0		ug/L			02/08/19 23:39	1
Methylene Chloride	ND		5.0		ug/L			02/08/19 23:39	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			02/08/19 23:39	1
cis-1,2-Dichloroethene	2.7		0.50		ug/L			02/08/19 23:39	1
Chloroform	ND		1.0		ug/L			02/08/19 23:39	1
1,1,1-Trichloroethane	ND		0.50		ug/L			02/08/19 23:39	1
Carbon tetrachloride	ND		0.50		ug/L			02/08/19 23:39	1
1,2-Dichloroethane	ND		0.50		ug/L			02/08/19 23:39	1
Trichloroethene	ND		0.50		ug/L			02/08/19 23:39	1
1,2-Dichloropropane	ND		0.50		ug/L			02/08/19 23:39	1
Dichlorobromomethane	ND		0.50		ug/L			02/08/19 23:39	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			02/08/19 23:39	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			02/08/19 23:39	1
1,1,2-Trichloroethane	ND		0.50		ug/L			02/08/19 23:39	1
Tetrachloroethene	ND		0.50		ug/L			02/08/19 23:39	1
Chlorodibromomethane	ND		0.50		ug/L			02/08/19 23:39	1
Chlorobenzene	8.5		0.50		ug/L			02/08/19 23:39	1
Bromoform	ND		1.0		ug/L			02/08/19 23:39	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			02/08/19 23:39	1
1,3-Dichlorobenzene	ND		0.50		ug/L			02/08/19 23:39	1
1,4-Dichlorobenzene	1.1		0.50		ug/L			02/08/19 23:39	1
1,2-Dichlorobenzene	7.6		0.50		ug/L			02/08/19 23:39	1
Chloromethane	ND		1.0		ug/L			02/08/19 23:39	1
Bromomethane	ND		1.0		ug/L			02/08/19 23:39	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50		ug/L			02/08/19 23:39	1
EDB	ND		0.50		ug/L			02/08/19 23:39	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			02/08/19 23:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		70 - 130		02/08/19 23:39	1
4-Bromofluorobenzene	101		67 - 130		02/08/19 23:39	1
1,2-Dichloroethane-d4 (Surr)	101		72 - 130		02/08/19 23:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.3		1.0		mg/L			02/18/19 00:36	1

TestAmerica Pleasanton

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Client Sample ID: 23-S

Date Collected: 02/06/19 09:50

Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-3

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.81		0.50		ug/L			02/09/19 00:05	1
1,1-Dichloroethane	ND		0.50		ug/L			02/09/19 00:05	1
Dichlorodifluoromethane	ND		0.50		ug/L			02/09/19 00:05	1
Vinyl chloride	3.2		0.50		ug/L			02/09/19 00:05	1
Chloroethane	ND		1.0		ug/L			02/09/19 00:05	1
Trichlorofluoromethane	ND		1.0		ug/L			02/09/19 00:05	1
Methylene Chloride	ND		5.0		ug/L			02/09/19 00:05	1
trans-1,2-Dichloroethene	4.5		0.50		ug/L			02/09/19 00:05	1
cis-1,2-Dichloroethene	52		0.50		ug/L			02/09/19 00:05	1
Chloroform	ND		1.0		ug/L			02/09/19 00:05	1
1,1,1-Trichloroethane	ND		0.50		ug/L			02/09/19 00:05	1
Carbon tetrachloride	ND		0.50		ug/L			02/09/19 00:05	1
1,2-Dichloroethane	ND		0.50		ug/L			02/09/19 00:05	1
Trichloroethene	37		0.50		ug/L			02/09/19 00:05	1
1,2-Dichloropropane	ND		0.50		ug/L			02/09/19 00:05	1
Dichlorobromomethane	ND		0.50		ug/L			02/09/19 00:05	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			02/09/19 00:05	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			02/09/19 00:05	1
1,1,2-Trichloroethane	ND		0.50		ug/L			02/09/19 00:05	1
Tetrachloroethene	0.89		0.50		ug/L			02/09/19 00:05	1
Chlorodibromomethane	ND		0.50		ug/L			02/09/19 00:05	1
Chlorobenzene	ND		0.50		ug/L			02/09/19 00:05	1
Bromoform	ND		1.0		ug/L			02/09/19 00:05	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			02/09/19 00:05	1
1,3-Dichlorobenzene	ND		0.50		ug/L			02/09/19 00:05	1
1,4-Dichlorobenzene	0.57		0.50		ug/L			02/09/19 00:05	1
1,2-Dichlorobenzene	15		0.50		ug/L			02/09/19 00:05	1
Chloromethane	ND		1.0		ug/L			02/09/19 00:05	1
Bromomethane	ND		1.0		ug/L			02/09/19 00:05	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50		ug/L			02/09/19 00:05	1
EDB	ND		0.50		ug/L			02/09/19 00:05	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			02/09/19 00:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		70 - 130		02/09/19 00:05	1
4-Bromofluorobenzene	102		67 - 130		02/09/19 00:05	1
1,2-Dichloroethane-d4 (Surr)	104		72 - 130		02/09/19 00:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.3		1.0		mg/L			02/18/19 00:54	1

TestAmerica Pleasanton

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Client Sample ID: 28-MW

Date Collected: 02/06/19 11:55

Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-4

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50		ug/L			02/08/19 22:46	1
1,1-Dichloroethane	ND		0.50		ug/L			02/08/19 22:46	1
Dichlorodifluoromethane	ND		0.50		ug/L			02/08/19 22:46	1
Vinyl chloride	47		0.50		ug/L			02/08/19 22:46	1
Chloroethane	ND		1.0		ug/L			02/08/19 22:46	1
Trichlorofluoromethane	ND		1.0		ug/L			02/08/19 22:46	1
Methylene Chloride	ND		5.0		ug/L			02/08/19 22:46	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			02/08/19 22:46	1
cis-1,2-Dichloroethene	5.1		0.50		ug/L			02/08/19 22:46	1
Chloroform	ND		1.0		ug/L			02/08/19 22:46	1
1,1,1-Trichloroethane	ND		0.50		ug/L			02/08/19 22:46	1
Carbon tetrachloride	ND		0.50		ug/L			02/08/19 22:46	1
1,2-Dichloroethane	ND		0.50		ug/L			02/08/19 22:46	1
Trichloroethene	ND		0.50		ug/L			02/08/19 22:46	1
1,2-Dichloropropane	ND		0.50		ug/L			02/08/19 22:46	1
Dichlorobromomethane	ND		0.50		ug/L			02/08/19 22:46	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			02/08/19 22:46	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			02/08/19 22:46	1
1,1,2-Trichloroethane	ND		0.50		ug/L			02/08/19 22:46	1
Tetrachloroethene	ND		0.50		ug/L			02/08/19 22:46	1
Chlorodibromomethane	ND		0.50		ug/L			02/08/19 22:46	1
Chlorobenzene	9.0		0.50		ug/L			02/08/19 22:46	1
Bromoform	ND		1.0		ug/L			02/08/19 22:46	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			02/08/19 22:46	1
1,3-Dichlorobenzene	ND		0.50		ug/L			02/08/19 22:46	1
1,4-Dichlorobenzene	0.53		0.50		ug/L			02/08/19 22:46	1
1,2-Dichlorobenzene	8.5		0.50		ug/L			02/08/19 22:46	1
Chloromethane	ND		1.0		ug/L			02/08/19 22:46	1
Bromomethane	ND		1.0		ug/L			02/08/19 22:46	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50		ug/L			02/08/19 22:46	1
EDB	ND		0.50		ug/L			02/08/19 22:46	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			02/08/19 22:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		70 - 130		02/08/19 22:46	1
4-Bromofluorobenzene	102		67 - 130		02/08/19 22:46	1
1,2-Dichloroethane-d4 (Surr)	101		72 - 130		02/08/19 22:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.1		1.0		mg/L			02/19/19 01:28	1

TestAmerica Pleasanton

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Client Sample ID: X2A

Date Collected: 02/06/19 10:35

Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-5

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		5.0		ug/L			02/12/19 00:18	10
1,1-Dichloroethane	ND		5.0		ug/L			02/12/19 00:18	10
Dichlorodifluoromethane	ND		5.0		ug/L			02/12/19 00:18	10
Vinyl chloride	720		5.0		ug/L			02/12/19 00:18	10
Chloroethane	ND		10		ug/L			02/12/19 00:18	10
Trichlorofluoromethane	ND		10		ug/L			02/12/19 00:18	10
Methylene Chloride	ND		50		ug/L			02/12/19 00:18	10
trans-1,2-Dichloroethene	ND		5.0		ug/L			02/12/19 00:18	10
cis-1,2-Dichloroethene	53		5.0		ug/L			02/12/19 00:18	10
Chloroform	ND		10		ug/L			02/12/19 00:18	10
1,1,1-Trichloroethane	ND		5.0		ug/L			02/12/19 00:18	10
Carbon tetrachloride	ND		5.0		ug/L			02/12/19 00:18	10
1,2-Dichloroethane	ND		5.0		ug/L			02/12/19 00:18	10
Trichloroethene	ND		5.0		ug/L			02/12/19 00:18	10
1,2-Dichloropropane	ND		5.0		ug/L			02/12/19 00:18	10
Dichlorobromomethane	ND		5.0		ug/L			02/12/19 00:18	10
trans-1,3-Dichloropropene	ND		5.0		ug/L			02/12/19 00:18	10
cis-1,3-Dichloropropene	ND		5.0		ug/L			02/12/19 00:18	10
1,1,2-Trichloroethane	ND		5.0		ug/L			02/12/19 00:18	10
Tetrachloroethene	ND		5.0		ug/L			02/12/19 00:18	10
Chlorodibromomethane	ND		5.0		ug/L			02/12/19 00:18	10
Chlorobenzene	14		5.0		ug/L			02/12/19 00:18	10
Bromoform	ND		10		ug/L			02/12/19 00:18	10
1,1,2,2-Tetrachloroethane	ND		5.0		ug/L			02/12/19 00:18	10
1,3-Dichlorobenzene	ND		5.0		ug/L			02/12/19 00:18	10
1,4-Dichlorobenzene	ND		5.0		ug/L			02/12/19 00:18	10
1,2-Dichlorobenzene	18		5.0		ug/L			02/12/19 00:18	10
Chloromethane	ND		10		ug/L			02/12/19 00:18	10
Bromomethane	ND		10		ug/L			02/12/19 00:18	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0		ug/L			02/12/19 00:18	10
EDB	ND		5.0		ug/L			02/12/19 00:18	10
1,2,4-Trichlorobenzene	ND		10		ug/L			02/12/19 00:18	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		70 - 130		02/12/19 00:18	10
4-Bromofluorobenzene	103		67 - 130		02/12/19 00:18	10
1,2-Dichloroethane-d4 (Surr)	103		72 - 130		02/12/19 00:18	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.7		1.0		mg/L			02/18/19 02:03	1

TestAmerica Pleasanton

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Client Sample ID: PMW-2-1

Date Collected: 02/06/19 11:20

Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-6

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		50		ug/L			02/12/19 00:44	100
1,1-Dichloroethane	ND		50		ug/L			02/12/19 00:44	100
Dichlorodifluoromethane	ND		50		ug/L			02/12/19 00:44	100
Vinyl chloride	430		50		ug/L			02/12/19 00:44	100
Chloroethane	ND		100		ug/L			02/12/19 00:44	100
Trichlorofluoromethane	ND		100		ug/L			02/12/19 00:44	100
Methylene Chloride	ND		500		ug/L			02/12/19 00:44	100
trans-1,2-Dichloroethene	ND		50		ug/L			02/12/19 00:44	100
cis-1,2-Dichloroethene	5200		50		ug/L			02/12/19 00:44	100
Chloroform	ND		100		ug/L			02/12/19 00:44	100
1,1,1-Trichloroethane	ND		50		ug/L			02/12/19 00:44	100
Carbon tetrachloride	ND		50		ug/L			02/12/19 00:44	100
1,2-Dichloroethane	ND		50		ug/L			02/12/19 00:44	100
Trichloroethene	ND		50		ug/L			02/12/19 00:44	100
1,2-Dichloropropane	ND		50		ug/L			02/12/19 00:44	100
Dichlorobromomethane	ND		50		ug/L			02/12/19 00:44	100
trans-1,3-Dichloropropene	ND		50		ug/L			02/12/19 00:44	100
cis-1,3-Dichloropropene	ND		50		ug/L			02/12/19 00:44	100
1,1,2-Trichloroethane	ND		50		ug/L			02/12/19 00:44	100
Tetrachloroethene	ND		50		ug/L			02/12/19 00:44	100
Chlorodibromomethane	ND		50		ug/L			02/12/19 00:44	100
Chlorobenzene	ND		50		ug/L			02/12/19 00:44	100
Bromoform	ND		100		ug/L			02/12/19 00:44	100
1,1,2,2-Tetrachloroethane	ND		50		ug/L			02/12/19 00:44	100
1,3-Dichlorobenzene	ND		50		ug/L			02/12/19 00:44	100
1,4-Dichlorobenzene	ND		50		ug/L			02/12/19 00:44	100
1,2-Dichlorobenzene	ND		50		ug/L			02/12/19 00:44	100
Chloromethane	ND		100		ug/L			02/12/19 00:44	100
Bromomethane	ND		100		ug/L			02/12/19 00:44	100
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		50		ug/L			02/12/19 00:44	100
EDB	ND		50		ug/L			02/12/19 00:44	100
1,2,4-Trichlorobenzene	ND		100		ug/L			02/12/19 00:44	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		70 - 130		02/12/19 00:44	100
4-Bromofluorobenzene	104		67 - 130		02/12/19 00:44	100
1,2-Dichloroethane-d4 (Surr)	103		72 - 130		02/12/19 00:44	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.4		1.0		mg/L			02/18/19 02:20	1

TestAmerica Pleasanton

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Client Sample ID: PMW-2-3

Date Collected: 02/06/19 12:05

Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-7

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		5.0		ug/L			02/12/19 01:11	10
1,1-Dichloroethane	ND		5.0		ug/L			02/12/19 01:11	10
Dichlorodifluoromethane	ND		5.0		ug/L			02/12/19 01:11	10
Vinyl chloride	8.3		5.0		ug/L			02/12/19 01:11	10
Chloroethane	ND		10		ug/L			02/12/19 01:11	10
Trichlorofluoromethane	ND		10		ug/L			02/12/19 01:11	10
Methylene Chloride	ND		50		ug/L			02/12/19 01:11	10
trans-1,2-Dichloroethene	ND		5.0		ug/L			02/12/19 01:11	10
cis-1,2-Dichloroethene	49		5.0		ug/L			02/12/19 01:11	10
Chloroform	ND		10		ug/L			02/12/19 01:11	10
1,1,1-Trichloroethane	ND		5.0		ug/L			02/12/19 01:11	10
Carbon tetrachloride	ND		5.0		ug/L			02/12/19 01:11	10
1,2-Dichloroethane	ND		5.0		ug/L			02/12/19 01:11	10
Trichloroethene	250		5.0		ug/L			02/12/19 01:11	10
1,2-Dichloropropane	ND		5.0		ug/L			02/12/19 01:11	10
Dichlorobromomethane	ND		5.0		ug/L			02/12/19 01:11	10
trans-1,3-Dichloropropene	ND		5.0		ug/L			02/12/19 01:11	10
cis-1,3-Dichloropropene	ND		5.0		ug/L			02/12/19 01:11	10
1,1,2-Trichloroethane	ND		5.0		ug/L			02/12/19 01:11	10
Tetrachloroethene	ND		5.0		ug/L			02/12/19 01:11	10
Chlorodibromomethane	ND		5.0		ug/L			02/12/19 01:11	10
Chlorobenzene	ND		5.0		ug/L			02/12/19 01:11	10
Bromoform	ND		10		ug/L			02/12/19 01:11	10
1,1,2,2-Tetrachloroethane	ND		5.0		ug/L			02/12/19 01:11	10
1,3-Dichlorobenzene	ND		5.0		ug/L			02/12/19 01:11	10
1,4-Dichlorobenzene	ND		5.0		ug/L			02/12/19 01:11	10
1,2-Dichlorobenzene	ND		5.0		ug/L			02/12/19 01:11	10
Chloromethane	ND		10		ug/L			02/12/19 01:11	10
Bromomethane	ND		10		ug/L			02/12/19 01:11	10
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		5.0		ug/L			02/12/19 01:11	10
EDB	ND		5.0		ug/L			02/12/19 01:11	10
1,2,4-Trichlorobenzene	ND		10		ug/L			02/12/19 01:11	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		70 - 130		02/12/19 01:11	10
4-Bromofluorobenzene	104		67 - 130		02/12/19 01:11	10
1,2-Dichloroethane-d4 (Surr)	103		72 - 130		02/12/19 01:11	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0		mg/L			02/17/19 20:27	1

TestAmerica Pleasanton

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Client Sample ID: X1B

Date Collected: 02/06/19 12:40

Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-8

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		10		ug/L			02/12/19 01:37	20
1,1-Dichloroethane	ND		10		ug/L			02/12/19 01:37	20
Dichlorodifluoromethane	ND		10		ug/L			02/12/19 01:37	20
Vinyl chloride	98		10		ug/L			02/12/19 01:37	20
Chloroethane	ND		20		ug/L			02/12/19 01:37	20
Trichlorofluoromethane	ND		20		ug/L			02/12/19 01:37	20
Methylene Chloride	ND		100		ug/L			02/12/19 01:37	20
trans-1,2-Dichloroethene	ND		10		ug/L			02/12/19 01:37	20
cis-1,2-Dichloroethene	450		10		ug/L			02/12/19 01:37	20
Chloroform	ND		20		ug/L			02/12/19 01:37	20
1,1,1-Trichloroethane	ND		10		ug/L			02/12/19 01:37	20
Carbon tetrachloride	ND		10		ug/L			02/12/19 01:37	20
1,2-Dichloroethane	ND		10		ug/L			02/12/19 01:37	20
Trichloroethene	ND		10		ug/L			02/12/19 01:37	20
1,2-Dichloropropane	ND		10		ug/L			02/12/19 01:37	20
Dichlorobromomethane	ND		10		ug/L			02/12/19 01:37	20
trans-1,3-Dichloropropene	ND		10		ug/L			02/12/19 01:37	20
cis-1,3-Dichloropropene	ND		10		ug/L			02/12/19 01:37	20
1,1,2-Trichloroethane	ND		10		ug/L			02/12/19 01:37	20
Tetrachloroethene	ND		10		ug/L			02/12/19 01:37	20
Chlorodibromomethane	ND		10		ug/L			02/12/19 01:37	20
Chlorobenzene	ND		10		ug/L			02/12/19 01:37	20
Bromoform	ND		20		ug/L			02/12/19 01:37	20
1,1,2,2-Tetrachloroethane	ND		10		ug/L			02/12/19 01:37	20
1,3-Dichlorobenzene	ND		10		ug/L			02/12/19 01:37	20
1,4-Dichlorobenzene	ND		10		ug/L			02/12/19 01:37	20
1,2-Dichlorobenzene	ND		10		ug/L			02/12/19 01:37	20
Chloromethane	ND		20		ug/L			02/12/19 01:37	20
Bromomethane	ND		20		ug/L			02/12/19 01:37	20
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		10		ug/L			02/12/19 01:37	20
EDB	ND		10		ug/L			02/12/19 01:37	20
1,2,4-Trichlorobenzene	ND		20		ug/L			02/12/19 01:37	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		70 - 130		02/12/19 01:37	20
4-Bromofluorobenzene	103		67 - 130		02/12/19 01:37	20
1,2-Dichloroethane-d4 (Surr)	105		72 - 130		02/12/19 01:37	20

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0		mg/L			02/18/19 02:54	1

TestAmerica Pleasanton

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Client Sample ID: X2B1
Date Collected: 02/06/19 13:10
Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-9
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		2.5		ug/L			02/12/19 02:04	5
1,1-Dichloroethane	ND		2.5		ug/L			02/12/19 02:04	5
Dichlorodifluoromethane	ND		2.5		ug/L			02/12/19 02:04	5
Vinyl chloride	ND		2.5		ug/L			02/12/19 02:04	5
Chloroethane	ND		5.0		ug/L			02/12/19 02:04	5
Trichlorofluoromethane	ND		5.0		ug/L			02/12/19 02:04	5
Methylene Chloride	ND		25		ug/L			02/12/19 02:04	5
trans-1,2-Dichloroethene	ND		2.5		ug/L			02/12/19 02:04	5
cis-1,2-Dichloroethene	100		2.5		ug/L			02/12/19 02:04	5
Chloroform	ND		5.0		ug/L			02/12/19 02:04	5
1,1,1-Trichloroethane	ND		2.5		ug/L			02/12/19 02:04	5
Carbon tetrachloride	ND		2.5		ug/L			02/12/19 02:04	5
1,2-Dichloroethane	ND		2.5		ug/L			02/12/19 02:04	5
Trichloroethene	170		2.5		ug/L			02/12/19 02:04	5
1,2-Dichloropropane	ND		2.5		ug/L			02/12/19 02:04	5
Dichlorobromomethane	ND		2.5		ug/L			02/12/19 02:04	5
trans-1,3-Dichloropropene	ND		2.5		ug/L			02/12/19 02:04	5
cis-1,3-Dichloropropene	ND		2.5		ug/L			02/12/19 02:04	5
1,1,2-Trichloroethane	ND		2.5		ug/L			02/12/19 02:04	5
Tetrachloroethene	ND		2.5		ug/L			02/12/19 02:04	5
Chlorodibromomethane	ND		2.5		ug/L			02/12/19 02:04	5
Chlorobenzene	ND		2.5		ug/L			02/12/19 02:04	5
Bromoform	ND		5.0		ug/L			02/12/19 02:04	5
1,1,2,2-Tetrachloroethane	ND		2.5		ug/L			02/12/19 02:04	5
1,3-Dichlorobenzene	ND		2.5		ug/L			02/12/19 02:04	5
1,4-Dichlorobenzene	ND		2.5		ug/L			02/12/19 02:04	5
1,2-Dichlorobenzene	ND		2.5		ug/L			02/12/19 02:04	5
Chloromethane	ND		5.0		ug/L			02/12/19 02:04	5
Bromomethane	ND		5.0		ug/L			02/12/19 02:04	5
1,1,2-Trichloro-1,2,2-trifluoroethane	2.7		2.5		ug/L			02/12/19 02:04	5
EDB	ND		2.5		ug/L			02/12/19 02:04	5
1,2,4-Trichlorobenzene	ND		5.0		ug/L			02/12/19 02:04	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		70 - 130		02/12/19 02:04	5
4-Bromofluorobenzene	104		67 - 130		02/12/19 02:04	5
1,2-Dichloroethane-d4 (Surr)	105		72 - 130		02/12/19 02:04	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0		mg/L			02/18/19 04:23	1

TestAmerica Pleasanton

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Client Sample ID: DW-1
Date Collected: 02/06/19 10:10
Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-10
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50		ug/L			02/09/19 00:32	1
1,1-Dichloroethane	ND		0.50		ug/L			02/09/19 00:32	1
Dichlorodifluoromethane	ND		0.50		ug/L			02/09/19 00:32	1
Vinyl chloride	52		0.50		ug/L			02/09/19 00:32	1
Chloroethane	ND		1.0		ug/L			02/09/19 00:32	1
Trichlorofluoromethane	ND		1.0		ug/L			02/09/19 00:32	1
Methylene Chloride	ND		5.0		ug/L			02/09/19 00:32	1
trans-1,2-Dichloroethene	1.7		0.50		ug/L			02/09/19 00:32	1
cis-1,2-Dichloroethene	8.0		0.50		ug/L			02/09/19 00:32	1
Chloroform	ND		1.0		ug/L			02/09/19 00:32	1
1,1,1-Trichloroethane	ND		0.50		ug/L			02/09/19 00:32	1
Carbon tetrachloride	ND		0.50		ug/L			02/09/19 00:32	1
1,2-Dichloroethane	ND		0.50		ug/L			02/09/19 00:32	1
Trichloroethene	ND		0.50		ug/L			02/09/19 00:32	1
1,2-Dichloropropane	ND		0.50		ug/L			02/09/19 00:32	1
Dichlorobromomethane	ND		0.50		ug/L			02/09/19 00:32	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			02/09/19 00:32	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			02/09/19 00:32	1
1,1,2-Trichloroethane	ND		0.50		ug/L			02/09/19 00:32	1
Tetrachloroethene	ND		0.50		ug/L			02/09/19 00:32	1
Chlorodibromomethane	ND		0.50		ug/L			02/09/19 00:32	1
Chlorobenzene	ND		0.50		ug/L			02/09/19 00:32	1
Bromoform	ND		1.0		ug/L			02/09/19 00:32	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			02/09/19 00:32	1
1,3-Dichlorobenzene	ND		0.50		ug/L			02/09/19 00:32	1
1,4-Dichlorobenzene	ND		0.50		ug/L			02/09/19 00:32	1
1,2-Dichlorobenzene	ND		0.50		ug/L			02/09/19 00:32	1
Chloromethane	ND		1.0		ug/L			02/09/19 00:32	1
Bromomethane	ND		1.0		ug/L			02/09/19 00:32	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50		ug/L			02/09/19 00:32	1
EDB	ND		0.50		ug/L			02/09/19 00:32	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			02/09/19 00:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		70 - 130		02/09/19 00:32	1
4-Bromofluorobenzene	104		67 - 130		02/09/19 00:32	1
1,2-Dichloroethane-d4 (Surr)	100		72 - 130		02/09/19 00:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	8.1		1.0		mg/L			02/19/19 22:21	1

TestAmerica Pleasanton

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Client Sample ID: DW-7

Date Collected: 02/06/19 13:33

Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-11

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.54		0.50		ug/L			02/09/19 00:58	1
1,1-Dichloroethane	ND		0.50		ug/L			02/09/19 00:58	1
Dichlorodifluoromethane	ND		0.50		ug/L			02/09/19 00:58	1
Vinyl chloride	1.5		0.50		ug/L			02/09/19 00:58	1
Chloroethane	ND		1.0		ug/L			02/09/19 00:58	1
Trichlorofluoromethane	ND		1.0		ug/L			02/09/19 00:58	1
Methylene Chloride	ND		5.0		ug/L			02/09/19 00:58	1
trans-1,2-Dichloroethene	1.1		0.50		ug/L			02/09/19 00:58	1
cis-1,2-Dichloroethene	130		0.50		ug/L			02/09/19 00:58	1
Chloroform	ND		1.0		ug/L			02/09/19 00:58	1
1,1,1-Trichloroethane	ND		0.50		ug/L			02/09/19 00:58	1
Carbon tetrachloride	ND		0.50		ug/L			02/09/19 00:58	1
1,2-Dichloroethane	ND		0.50		ug/L			02/09/19 00:58	1
Trichloroethene	60		0.50		ug/L			02/09/19 00:58	1
1,2-Dichloropropane	ND		0.50		ug/L			02/09/19 00:58	1
Dichlorobromomethane	ND		0.50		ug/L			02/09/19 00:58	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			02/09/19 00:58	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			02/09/19 00:58	1
1,1,2-Trichloroethane	ND		0.50		ug/L			02/09/19 00:58	1
Tetrachloroethene	ND		0.50		ug/L			02/09/19 00:58	1
Chlorodibromomethane	ND		0.50		ug/L			02/09/19 00:58	1
Chlorobenzene	ND		0.50		ug/L			02/09/19 00:58	1
Bromoform	ND		1.0		ug/L			02/09/19 00:58	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			02/09/19 00:58	1
1,3-Dichlorobenzene	ND		0.50		ug/L			02/09/19 00:58	1
1,4-Dichlorobenzene	ND		0.50		ug/L			02/09/19 00:58	1
1,2-Dichlorobenzene	ND		0.50		ug/L			02/09/19 00:58	1
Chloromethane	ND		1.0		ug/L			02/09/19 00:58	1
Bromomethane	ND		1.0		ug/L			02/09/19 00:58	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.1		0.50		ug/L			02/09/19 00:58	1
EDB	ND		0.50		ug/L			02/09/19 00:58	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			02/09/19 00:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		70 - 130		02/09/19 00:58	1
4-Bromofluorobenzene	99		67 - 130		02/09/19 00:58	1
1,2-Dichloroethane-d4 (Surr)	101		72 - 130		02/09/19 00:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0		mg/L			02/18/19 04:57	1

TestAmerica Pleasanton

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Client Sample ID: 23-D

Date Collected: 02/06/19 14:00

Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-12

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		2.5		ug/L			02/12/19 02:30	5
1,1-Dichloroethane	ND		2.5		ug/L			02/12/19 02:30	5
Dichlorodifluoromethane	ND		2.5		ug/L			02/12/19 02:30	5
Vinyl chloride	ND		2.5		ug/L			02/12/19 02:30	5
Chloroethane	ND		5.0		ug/L			02/12/19 02:30	5
Trichlorofluoromethane	ND		5.0		ug/L			02/12/19 02:30	5
Methylene Chloride	ND		25		ug/L			02/12/19 02:30	5
trans-1,2-Dichloroethene	ND		2.5		ug/L			02/12/19 02:30	5
cis-1,2-Dichloroethene	3.5		2.5		ug/L			02/12/19 02:30	5
Chloroform	ND		5.0		ug/L			02/12/19 02:30	5
1,1,1-Trichloroethane	ND		2.5		ug/L			02/12/19 02:30	5
Carbon tetrachloride	ND		2.5		ug/L			02/12/19 02:30	5
1,2-Dichloroethane	ND		2.5		ug/L			02/12/19 02:30	5
Trichloroethene	230		2.5		ug/L			02/12/19 02:30	5
1,2-Dichloropropane	ND		2.5		ug/L			02/12/19 02:30	5
Dichlorobromomethane	ND		2.5		ug/L			02/12/19 02:30	5
trans-1,3-Dichloropropene	ND		2.5		ug/L			02/12/19 02:30	5
cis-1,3-Dichloropropene	ND		2.5		ug/L			02/12/19 02:30	5
1,1,2-Trichloroethane	ND		2.5		ug/L			02/12/19 02:30	5
Tetrachloroethene	ND		2.5		ug/L			02/12/19 02:30	5
Chlorodibromomethane	ND		2.5		ug/L			02/12/19 02:30	5
Chlorobenzene	ND		2.5		ug/L			02/12/19 02:30	5
Bromoform	ND		5.0		ug/L			02/12/19 02:30	5
1,1,2,2-Tetrachloroethane	ND		2.5		ug/L			02/12/19 02:30	5
1,3-Dichlorobenzene	ND		2.5		ug/L			02/12/19 02:30	5
1,4-Dichlorobenzene	ND		2.5		ug/L			02/12/19 02:30	5
1,2-Dichlorobenzene	ND		2.5		ug/L			02/12/19 02:30	5
Chloromethane	ND		5.0		ug/L			02/12/19 02:30	5
Bromomethane	ND		5.0		ug/L			02/12/19 02:30	5
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.5		ug/L			02/12/19 02:30	5
EDB	ND		2.5		ug/L			02/12/19 02:30	5
1,2,4-Trichlorobenzene	ND		5.0		ug/L			02/12/19 02:30	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		70 - 130		02/12/19 02:30	5
4-Bromofluorobenzene	104		67 - 130		02/12/19 02:30	5
1,2-Dichloroethane-d4 (Surr)	104		72 - 130		02/12/19 02:30	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0		mg/L			02/18/19 05:32	1

TestAmerica Pleasanton

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Client Sample ID: TB-1

Date Collected: 02/06/19 07:30

Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-13

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50		ug/L			02/08/19 22:20	1
1,1-Dichloroethane	ND		0.50		ug/L			02/08/19 22:20	1
Dichlorodifluoromethane	ND		0.50		ug/L			02/08/19 22:20	1
Vinyl chloride	ND		0.50		ug/L			02/08/19 22:20	1
Chloroethane	ND		1.0		ug/L			02/08/19 22:20	1
Trichlorofluoromethane	ND		1.0		ug/L			02/08/19 22:20	1
Methylene Chloride	ND		5.0		ug/L			02/08/19 22:20	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			02/08/19 22:20	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			02/08/19 22:20	1
Chloroform	ND		1.0		ug/L			02/08/19 22:20	1
1,1,1-Trichloroethane	ND		0.50		ug/L			02/08/19 22:20	1
Carbon tetrachloride	ND		0.50		ug/L			02/08/19 22:20	1
1,2-Dichloroethane	ND		0.50		ug/L			02/08/19 22:20	1
Trichloroethene	ND		0.50		ug/L			02/08/19 22:20	1
1,2-Dichloropropane	ND		0.50		ug/L			02/08/19 22:20	1
Dichlorobromomethane	ND		0.50		ug/L			02/08/19 22:20	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			02/08/19 22:20	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			02/08/19 22:20	1
1,1,2-Trichloroethane	ND		0.50		ug/L			02/08/19 22:20	1
Tetrachloroethene	ND		0.50		ug/L			02/08/19 22:20	1
Chlorodibromomethane	ND		0.50		ug/L			02/08/19 22:20	1
Chlorobenzene	ND		0.50		ug/L			02/08/19 22:20	1
Bromoform	ND		1.0		ug/L			02/08/19 22:20	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			02/08/19 22:20	1
1,3-Dichlorobenzene	ND		0.50		ug/L			02/08/19 22:20	1
1,4-Dichlorobenzene	ND		0.50		ug/L			02/08/19 22:20	1
1,2-Dichlorobenzene	ND		0.50		ug/L			02/08/19 22:20	1
Chloromethane	ND		1.0		ug/L			02/08/19 22:20	1
Bromomethane	ND		1.0		ug/L			02/08/19 22:20	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50		ug/L			02/08/19 22:20	1
EDB	ND		0.50		ug/L			02/08/19 22:20	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			02/08/19 22:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		70 - 130		02/08/19 22:20	1
4-Bromofluorobenzene	103		67 - 130		02/08/19 22:20	1
1,2-Dichloroethane-d4 (Surr)	100		72 - 130		02/08/19 22:20	1

TestAmerica Pleasanton

Client Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Client Sample ID: DUP-1

Date Collected: 02/06/19 14:05

Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-14

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		2.5		ug/L			02/12/19 02:57	5
1,1-Dichloroethane	ND		2.5		ug/L			02/12/19 02:57	5
Dichlorodifluoromethane	ND		2.5		ug/L			02/12/19 02:57	5
Vinyl chloride	ND		2.5		ug/L			02/12/19 02:57	5
Chloroethane	ND		5.0		ug/L			02/12/19 02:57	5
Trichlorofluoromethane	ND		5.0		ug/L			02/12/19 02:57	5
Methylene Chloride	ND		25		ug/L			02/12/19 02:57	5
trans-1,2-Dichloroethene	ND		2.5		ug/L			02/12/19 02:57	5
cis-1,2-Dichloroethene	3.4		2.5		ug/L			02/12/19 02:57	5
Chloroform	ND		5.0		ug/L			02/12/19 02:57	5
1,1,1-Trichloroethane	ND		2.5		ug/L			02/12/19 02:57	5
Carbon tetrachloride	ND		2.5		ug/L			02/12/19 02:57	5
1,2-Dichloroethane	ND		2.5		ug/L			02/12/19 02:57	5
Trichloroethene	230		2.5		ug/L			02/12/19 02:57	5
1,2-Dichloropropane	ND		2.5		ug/L			02/12/19 02:57	5
Dichlorobromomethane	ND		2.5		ug/L			02/12/19 02:57	5
trans-1,3-Dichloropropene	ND		2.5		ug/L			02/12/19 02:57	5
cis-1,3-Dichloropropene	ND		2.5		ug/L			02/12/19 02:57	5
1,1,2-Trichloroethane	ND		2.5		ug/L			02/12/19 02:57	5
Tetrachloroethene	ND		2.5		ug/L			02/12/19 02:57	5
Chlorodibromomethane	ND		2.5		ug/L			02/12/19 02:57	5
Chlorobenzene	ND		2.5		ug/L			02/12/19 02:57	5
Bromoform	ND		5.0		ug/L			02/12/19 02:57	5
1,1,2,2-Tetrachloroethane	ND		2.5		ug/L			02/12/19 02:57	5
1,3-Dichlorobenzene	ND		2.5		ug/L			02/12/19 02:57	5
1,4-Dichlorobenzene	ND		2.5		ug/L			02/12/19 02:57	5
1,2-Dichlorobenzene	ND		2.5		ug/L			02/12/19 02:57	5
Chloromethane	ND		5.0		ug/L			02/12/19 02:57	5
Bromomethane	ND		5.0		ug/L			02/12/19 02:57	5
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		2.5		ug/L			02/12/19 02:57	5
EDB	ND		2.5		ug/L			02/12/19 02:57	5
1,2,4-Trichlorobenzene	ND		5.0		ug/L			02/12/19 02:57	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		70 - 130		02/12/19 02:57	5
4-Bromofluorobenzene	105		67 - 130		02/12/19 02:57	5
1,2-Dichloroethane-d4 (Surr)	105		72 - 130		02/12/19 02:57	5

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0		mg/L			02/20/19 05:27	1

TestAmerica Pleasanton

Surrogate Summary

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		TOL (70-130)	BFB (67-130)	DCA (72-130)
720-91240-1	DW-2	100	104	99
720-91240-2	16-S	101	101	101
720-91240-3	23-S	99	102	104
720-91240-4	28-MW	101	102	101
720-91240-4 MS	28-MW	106	106	98
720-91240-4 MSD	28-MW	107	106	100
720-91240-5	X2A	102	103	103
720-91240-6	PMW-2-1	100	104	103
720-91240-7	PMW-2-3	100	104	103
720-91240-8	X1B	102	103	105
720-91240-9	X2B1	101	104	105
720-91240-10	DW-1	101	104	100
720-91240-11	DW-7	101	99	101
720-91240-12	23-D	102	104	104
720-91240-13	TB-1	100	103	100
720-91240-14	DUP-1	99	105	105
LCS 720-260074/5	Lab Control Sample	107	106	101
LCS 720-260159/5	Lab Control Sample	108	103	102
LCSD 720-260074/6	Lab Control Sample Dup	107	107	104
LCSD 720-260159/6	Lab Control Sample Dup	106	104	102
MB 720-260074/4	Method Blank	100	102	105
MB 720-260159/4	Method Blank	102	104	103

Surrogate Legend

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene

DCA = 1,2-Dichloroethane-d4 (Surr)

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 720-260074/4

Matrix: Water

Analysis Batch: 260074

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50		ug/L			02/08/19 18:21	1
1,1-Dichloroethane	ND		0.50		ug/L			02/08/19 18:21	1
Dichlorodifluoromethane	ND		0.50		ug/L			02/08/19 18:21	1
Vinyl chloride	ND		0.50		ug/L			02/08/19 18:21	1
Chloroethane	ND		1.0		ug/L			02/08/19 18:21	1
Trichlorofluoromethane	ND		1.0		ug/L			02/08/19 18:21	1
Methylene Chloride	ND		5.0		ug/L			02/08/19 18:21	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			02/08/19 18:21	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			02/08/19 18:21	1
Chloroform	ND		1.0		ug/L			02/08/19 18:21	1
1,1,1-Trichloroethane	ND		0.50		ug/L			02/08/19 18:21	1
Carbon tetrachloride	ND		0.50		ug/L			02/08/19 18:21	1
1,2-Dichloroethane	ND		0.50		ug/L			02/08/19 18:21	1
Trichloroethene	ND		0.50		ug/L			02/08/19 18:21	1
1,2-Dichloropropane	ND		0.50		ug/L			02/08/19 18:21	1
Dichlorobromomethane	ND		0.50		ug/L			02/08/19 18:21	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			02/08/19 18:21	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			02/08/19 18:21	1
1,1,2-Trichloroethane	ND		0.50		ug/L			02/08/19 18:21	1
Tetrachloroethene	ND		0.50		ug/L			02/08/19 18:21	1
Chlorodibromomethane	ND		0.50		ug/L			02/08/19 18:21	1
Chlorobenzene	ND		0.50		ug/L			02/08/19 18:21	1
Bromoform	ND		1.0		ug/L			02/08/19 18:21	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			02/08/19 18:21	1
1,3-Dichlorobenzene	ND		0.50		ug/L			02/08/19 18:21	1
1,4-Dichlorobenzene	ND		0.50		ug/L			02/08/19 18:21	1
1,2-Dichlorobenzene	ND		0.50		ug/L			02/08/19 18:21	1
Chloromethane	ND		1.0		ug/L			02/08/19 18:21	1
Bromomethane	ND		1.0		ug/L			02/08/19 18:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50		ug/L			02/08/19 18:21	1
EDB	ND		0.50		ug/L			02/08/19 18:21	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			02/08/19 18:21	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		70 - 130		02/08/19 18:21	1
4-Bromofluorobenzene	102		67 - 130		02/08/19 18:21	1
1,2-Dichloroethane-d4 (Surr)	105		72 - 130		02/08/19 18:21	1

Lab Sample ID: LCS 720-260074/5

Matrix: Water

Analysis Batch: 260074

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	25.0	22.4		ug/L		90	69 - 119
1,1-Dichloroethane	25.0	24.8		ug/L		99	77 - 119
Dichlorodifluoromethane	25.0	27.2		ug/L		109	21 - 150
Vinyl chloride	25.0	26.9		ug/L		108	58 - 138
Chloroethane	25.0	26.8		ug/L		107	70 - 131

TestAmerica Pleasanton

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 720-260074/5

Matrix: Water

Analysis Batch: 260074

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	25.0	26.1		ug/L		104	75 - 141
Methylene Chloride	25.0	23.9		ug/L		96	75 - 117
trans-1,2-Dichloroethene	25.0	24.2		ug/L		97	79 - 117
cis-1,2-Dichloroethene	25.0	24.7		ug/L		99	77 - 117
Chloroform	25.0	24.7		ug/L		99	82 - 119
1,1,1-Trichloroethane	25.0	24.1		ug/L		97	74 - 130
Carbon tetrachloride	25.0	23.8		ug/L		95	72 - 142
1,2-Dichloroethane	25.0	24.6		ug/L		98	73 - 122
Trichloroethene	25.0	24.1		ug/L		96	80 - 123
1,2-Dichloropropane	25.0	26.2		ug/L		105	79 - 119
Dichlorobromomethane	25.0	25.5		ug/L		102	81 - 130
trans-1,3-Dichloropropene	25.0	25.1		ug/L		101	76 - 122
cis-1,3-Dichloropropene	25.0	26.8		ug/L		107	82 - 119
1,1,2-Trichloroethane	25.0	25.6		ug/L		102	80 - 117
Tetrachloroethene	25.0	24.6		ug/L		98	81 - 130
Chlorodibromomethane	25.0	25.3		ug/L		101	77 - 133
Chlorobenzene	25.0	24.8		ug/L		99	76 - 116
Bromoform	25.0	23.7		ug/L		95	75 - 127
1,1,2,2-Tetrachloroethane	25.0	23.5		ug/L		94	70 - 115
1,3-Dichlorobenzene	25.0	24.5		ug/L		98	76 - 116
1,4-Dichlorobenzene	25.0	24.0		ug/L		96	76 - 116
1,2-Dichlorobenzene	25.0	24.6		ug/L		98	77 - 117
Chloromethane	25.0	28.3		ug/L		113	49 - 134
Bromomethane	25.0	26.2		ug/L		105	70 - 132
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	21.8		ug/L		87	70 - 133
EDB	25.0	24.1		ug/L		96	80 - 121
1,2,4-Trichlorobenzene	25.0	25.6		ug/L		102	78 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	107		70 - 130
4-Bromofluorobenzene	106		67 - 130
1,2-Dichloroethane-d4 (Surr)	101		72 - 130

Lab Sample ID: LCSD 720-260074/6

Matrix: Water

Analysis Batch: 260074

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	25.0	22.4		ug/L		90	69 - 119	0	20
1,1-Dichloroethane	25.0	25.0		ug/L		100	77 - 119	1	20
Dichlorodifluoromethane	25.0	27.2		ug/L		109	21 - 150	0	20
Vinyl chloride	25.0	27.2		ug/L		109	58 - 138	1	20
Chloroethane	25.0	26.7		ug/L		107	70 - 131	0	20
Trichlorofluoromethane	25.0	26.1		ug/L		104	75 - 141	0	20
Methylene Chloride	25.0	24.0		ug/L		96	75 - 117	0	20
trans-1,2-Dichloroethene	25.0	24.4		ug/L		98	79 - 117	1	20
cis-1,2-Dichloroethene	25.0	24.9		ug/L		100	77 - 117	1	20

TestAmerica Pleasanton

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 720-260074/6

Matrix: Water

Analysis Batch: 260074

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloroform	25.0	24.6		ug/L		99	82 - 119	0	20
1,1,1-Trichloroethane	25.0	24.3		ug/L		97	74 - 130	1	20
Carbon tetrachloride	25.0	23.9		ug/L		95	72 - 142	0	20
1,2-Dichloroethane	25.0	25.1		ug/L		101	73 - 122	2	20
Trichloroethene	25.0	24.0		ug/L		96	80 - 123	0	20
1,2-Dichloropropane	25.0	26.3		ug/L		105	79 - 119	0	20
Dichlorobromomethane	25.0	25.8		ug/L		103	81 - 130	1	20
trans-1,3-Dichloropropene	25.0	25.4		ug/L		102	76 - 122	1	20
cis-1,3-Dichloropropene	25.0	27.2		ug/L		109	82 - 119	1	20
1,1,2-Trichloroethane	25.0	25.9		ug/L		104	80 - 117	1	20
Tetrachloroethene	25.0	24.7		ug/L		99	81 - 130	0	20
Chlorodibromomethane	25.0	25.8		ug/L		103	77 - 133	2	20
Chlorobenzene	25.0	24.8		ug/L		99	76 - 116	0	20
Bromoform	25.0	25.2		ug/L		101	75 - 127	6	20
1,1,2,2-Tetrachloroethane	25.0	25.2		ug/L		101	70 - 115	7	20
1,3-Dichlorobenzene	25.0	24.8		ug/L		99	76 - 116	1	20
1,4-Dichlorobenzene	25.0	24.4		ug/L		98	76 - 116	2	20
1,2-Dichlorobenzene	25.0	25.1		ug/L		100	77 - 117	2	20
Chloromethane	25.0	28.8		ug/L		115	49 - 134	2	20
Bromomethane	25.0	26.4		ug/L		105	70 - 132	1	20
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	22.1		ug/L		88	70 - 133	1	20
EDB	25.0	24.5		ug/L		98	80 - 121	1	20
1,2,4-Trichlorobenzene	25.0	26.7		ug/L		107	78 - 120	4	20

Surrogate	%Recovery	LCSD Qualifier	LCSD Limits
Toluene-d8 (Surr)	107		70 - 130
4-Bromofluorobenzene	107		67 - 130
1,2-Dichloroethane-d4 (Surr)	104		72 - 130

Lab Sample ID: 720-91240-4 MS

Matrix: Water

Analysis Batch: 260074

Client Sample ID: 28-MW

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	ND		25.0	21.3		ug/L		85	60 - 140
1,1-Dichloroethane	ND		25.0	25.0		ug/L		99	60 - 140
Dichlorodifluoromethane	ND		25.0	27.5		ug/L		110	38 - 140
Vinyl chloride	47		25.0	73.2		ug/L		104	58 - 140
Chloroethane	ND		25.0	26.7		ug/L		106	51 - 140
Trichlorofluoromethane	ND		25.0	26.0		ug/L		104	60 - 140
Methylene Chloride	ND		25.0	22.5		ug/L		90	40 - 140
trans-1,2-Dichloroethene	ND		25.0	24.3		ug/L		96	60 - 140
cis-1,2-Dichloroethene	5.1		25.0	29.5		ug/L		98	60 - 140
Chloroform	ND		25.0	24.5		ug/L		98	60 - 140
1,1,1-Trichloroethane	ND		25.0	24.1		ug/L		97	60 - 140
Carbon tetrachloride	ND		25.0	23.8		ug/L		95	60 - 140
1,2-Dichloroethane	ND		25.0	24.0		ug/L		96	60 - 140

TestAmerica Pleasanton

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 720-91240-4 MS

Matrix: Water

Analysis Batch: 260074

Client Sample ID: 28-MW

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichloroethene	ND		25.0	24.0		ug/L		96	60 - 140
1,2-Dichloropropane	ND		25.0	25.9		ug/L		103	60 - 140
Dichlorobromomethane	ND		25.0	25.3		ug/L		101	60 - 140
trans-1,3-Dichloropropene	ND		25.0	24.6		ug/L		98	60 - 140
cis-1,3-Dichloropropene	ND		25.0	26.7		ug/L		107	60 - 140
1,1,2-Trichloroethane	ND		25.0	24.8		ug/L		99	60 - 140
Tetrachloroethene	ND		25.0	24.8		ug/L		99	60 - 140
Chlorodibromomethane	ND		25.0	24.7		ug/L		99	60 - 140
Chlorobenzene	9.0		25.0	33.4		ug/L		98	60 - 140
Bromoform	ND		25.0	23.2		ug/L		93	56 - 140
1,1,2,2-Tetrachloroethane	ND		25.0	22.9		ug/L		92	60 - 140
1,3-Dichlorobenzene	ND		25.0	25.4		ug/L		101	60 - 140
1,4-Dichlorobenzene	0.53		25.0	25.1		ug/L		98	60 - 140
1,2-Dichlorobenzene	8.5		25.0	33.2		ug/L		99	60 - 140
Chloromethane	ND		25.0	27.8		ug/L		111	52 - 140
Bromomethane	ND		25.0	25.8		ug/L		103	23 - 140
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		25.0	21.4		ug/L		86	60 - 140
EDB	ND		25.0	22.9		ug/L		92	60 - 140
1,2,4-Trichlorobenzene	ND		25.0	26.5		ug/L		106	60 - 140

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	106		70 - 130
4-Bromofluorobenzene	106		67 - 130
1,2-Dichloroethane-d4 (Surr)	98		72 - 130

Lab Sample ID: 720-91240-4 MSD

Matrix: Water

Analysis Batch: 260074

Client Sample ID: 28-MW

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	ND		25.0	20.5		ug/L		82	60 - 140	4	20
1,1-Dichloroethane	ND		25.0	24.5		ug/L		96	60 - 140	2	20
Dichlorodifluoromethane	ND		25.0	26.0		ug/L		104	38 - 140	6	20
Vinyl chloride	47		25.0	69.3		ug/L		88	58 - 140	6	20
Chloroethane	ND		25.0	25.7		ug/L		102	51 - 140	4	20
Trichlorofluoromethane	ND		25.0	25.2		ug/L		101	60 - 140	3	20
Methylene Chloride	ND		25.0	22.7		ug/L		91	40 - 140	1	20
trans-1,2-Dichloroethene	ND		25.0	23.8		ug/L		94	60 - 140	2	20
cis-1,2-Dichloroethene	5.1		25.0	29.0		ug/L		96	60 - 140	2	20
Chloroform	ND		25.0	24.2		ug/L		97	60 - 140	1	20
1,1,1-Trichloroethane	ND		25.0	23.6		ug/L		94	60 - 140	2	20
Carbon tetrachloride	ND		25.0	23.1		ug/L		93	60 - 140	3	20
1,2-Dichloroethane	ND		25.0	24.5		ug/L		98	60 - 140	2	20
Trichloroethene	ND		25.0	23.6		ug/L		95	60 - 140	2	20
1,2-Dichloropropane	ND		25.0	26.2		ug/L		105	60 - 140	1	20
Dichlorobromomethane	ND		25.0	25.5		ug/L		102	60 - 140	1	20
trans-1,3-Dichloropropene	ND		25.0	25.3		ug/L		101	60 - 140	3	20

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QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 720-91240-4 MSD

Matrix: Water

Analysis Batch: 260074

Client Sample ID: 28-MW

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
cis-1,3-Dichloropropene	ND		25.0	27.0		ug/L		108	60 - 140	1	20
1,1,2-Trichloroethane	ND		25.0	25.5		ug/L		102	60 - 140	3	20
Tetrachloroethene	ND		25.0	24.3		ug/L		97	60 - 140	2	20
Chlorodibromomethane	ND		25.0	25.3		ug/L		101	60 - 140	2	20
Chlorobenzene	9.0		25.0	33.2		ug/L		97	60 - 140	1	20
Bromoform	ND		25.0	24.1		ug/L		97	56 - 140	4	20
1,1,2,2-Tetrachloroethane	ND		25.0	23.8		ug/L		95	60 - 140	4	20
1,3-Dichlorobenzene	ND		25.0	25.1		ug/L		101	60 - 140	1	20
1,4-Dichlorobenzene	0.53		25.0	25.0		ug/L		98	60 - 140	1	20
1,2-Dichlorobenzene	8.5		25.0	33.2		ug/L		99	60 - 140	0	20
Chloromethane	ND		25.0	26.2		ug/L		105	52 - 140	6	20
Bromomethane	ND		25.0	24.9		ug/L		100	23 - 140	4	20
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		25.0	20.2		ug/L		81	60 - 140	6	20
EDB	ND		25.0	23.9		ug/L		96	60 - 140	4	20
1,2,4-Trichlorobenzene	ND		25.0	27.5		ug/L		110	60 - 140	3	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	107		70 - 130
4-Bromofluorobenzene	106		67 - 130
1,2-Dichloroethane-d4 (Surr)	100		72 - 130

Lab Sample ID: MB 720-260159/4

Matrix: Water

Analysis Batch: 260159

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		0.50		ug/L			02/11/19 18:33	1
1,1-Dichloroethane	ND		0.50		ug/L			02/11/19 18:33	1
Dichlorodifluoromethane	ND		0.50		ug/L			02/11/19 18:33	1
Vinyl chloride	ND		0.50		ug/L			02/11/19 18:33	1
Chloroethane	ND		1.0		ug/L			02/11/19 18:33	1
Trichlorofluoromethane	ND		1.0		ug/L			02/11/19 18:33	1
Methylene Chloride	ND		5.0		ug/L			02/11/19 18:33	1
trans-1,2-Dichloroethene	ND		0.50		ug/L			02/11/19 18:33	1
cis-1,2-Dichloroethene	ND		0.50		ug/L			02/11/19 18:33	1
Chloroform	ND		1.0		ug/L			02/11/19 18:33	1
1,1,1-Trichloroethane	ND		0.50		ug/L			02/11/19 18:33	1
Carbon tetrachloride	ND		0.50		ug/L			02/11/19 18:33	1
1,2-Dichloroethane	ND		0.50		ug/L			02/11/19 18:33	1
Trichloroethene	ND		0.50		ug/L			02/11/19 18:33	1
1,2-Dichloropropane	ND		0.50		ug/L			02/11/19 18:33	1
Dichlorobromomethane	ND		0.50		ug/L			02/11/19 18:33	1
trans-1,3-Dichloropropene	ND		0.50		ug/L			02/11/19 18:33	1
cis-1,3-Dichloropropene	ND		0.50		ug/L			02/11/19 18:33	1
1,1,2-Trichloroethane	ND		0.50		ug/L			02/11/19 18:33	1
Tetrachloroethene	ND		0.50		ug/L			02/11/19 18:33	1
Chlorodibromomethane	ND		0.50		ug/L			02/11/19 18:33	1

TestAmerica Pleasanton

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 720-260159/4

Matrix: Water

Analysis Batch: 260159

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	ND		0.50		ug/L			02/11/19 18:33	1
Bromoform	ND		1.0		ug/L			02/11/19 18:33	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			02/11/19 18:33	1
1,3-Dichlorobenzene	ND		0.50		ug/L			02/11/19 18:33	1
1,4-Dichlorobenzene	ND		0.50		ug/L			02/11/19 18:33	1
1,2-Dichlorobenzene	ND		0.50		ug/L			02/11/19 18:33	1
Chloromethane	ND		1.0		ug/L			02/11/19 18:33	1
Bromomethane	ND		1.0		ug/L			02/11/19 18:33	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.50		ug/L			02/11/19 18:33	1
EDB	ND		0.50		ug/L			02/11/19 18:33	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			02/11/19 18:33	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		70 - 130		02/11/19 18:33	1
4-Bromofluorobenzene	104		67 - 130		02/11/19 18:33	1
1,2-Dichloroethane-d4 (Surr)	103		72 - 130		02/11/19 18:33	1

Lab Sample ID: LCS 720-260159/5

Matrix: Water

Analysis Batch: 260159

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	25.0	21.5		ug/L		86	69 - 119
1,1-Dichloroethane	25.0	24.2		ug/L		97	77 - 119
Dichlorodifluoromethane	25.0	24.5		ug/L		98	21 - 150
Vinyl chloride	25.0	25.6		ug/L		102	58 - 138
Chloroethane	25.0	25.4		ug/L		102	70 - 131
Trichlorofluoromethane	25.0	26.5		ug/L		106	75 - 141
Methylene Chloride	25.0	23.4		ug/L		93	75 - 117
trans-1,2-Dichloroethene	25.0	23.8		ug/L		95	79 - 117
cis-1,2-Dichloroethene	25.0	24.0		ug/L		96	77 - 117
Chloroform	25.0	24.6		ug/L		98	82 - 119
1,1,1-Trichloroethane	25.0	25.0		ug/L		100	74 - 130
Carbon tetrachloride	25.0	24.9		ug/L		100	72 - 142
1,2-Dichloroethane	25.0	24.7		ug/L		99	73 - 122
Trichloroethene	25.0	24.5		ug/L		98	80 - 123
1,2-Dichloropropane	25.0	25.2		ug/L		101	79 - 119
Dichlorobromomethane	25.0	25.6		ug/L		102	81 - 130
trans-1,3-Dichloropropene	25.0	24.7		ug/L		99	76 - 122
cis-1,3-Dichloropropene	25.0	26.4		ug/L		105	82 - 119
1,1,2-Trichloroethane	25.0	24.4		ug/L		97	80 - 117
Tetrachloroethene	25.0	25.6		ug/L		102	81 - 130
Chlorodibromomethane	25.0	25.3		ug/L		101	77 - 133
Chlorobenzene	25.0	24.1		ug/L		96	76 - 116
Bromoform	25.0	23.6		ug/L		94	75 - 127
1,1,2,2-Tetrachloroethane	25.0	22.1		ug/L		88	70 - 115
1,3-Dichlorobenzene	25.0	24.5		ug/L		98	76 - 116
1,4-Dichlorobenzene	25.0	23.9		ug/L		96	76 - 116

TestAmerica Pleasanton

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 720-260159/5

Matrix: Water

Analysis Batch: 260159

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dichlorobenzene	25.0	24.2		ug/L		97	77 - 117
Chloromethane	25.0	25.6		ug/L		102	49 - 134
Bromomethane	25.0	25.7		ug/L		103	70 - 132
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	21.9		ug/L		88	70 - 133
EDB	25.0	23.2		ug/L		93	80 - 121
1,2,4-Trichlorobenzene	25.0	25.5		ug/L		102	78 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	108		70 - 130
4-Bromofluorobenzene	103		67 - 130
1,2-Dichloroethane-d4 (Surr)	102		72 - 130

Lab Sample ID: LCSD 720-260159/6

Matrix: Water

Analysis Batch: 260159

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	25.0	21.6		ug/L		86	69 - 119	0	20
1,1-Dichloroethane	25.0	24.0		ug/L		96	77 - 119	1	20
Dichlorodifluoromethane	25.0	24.9		ug/L		100	21 - 150	2	20
Vinyl chloride	25.0	25.6		ug/L		102	58 - 138	0	20
Chloroethane	25.0	25.5		ug/L		102	70 - 131	0	20
Trichlorofluoromethane	25.0	26.3		ug/L		105	75 - 141	1	20
Methylene Chloride	25.0	23.1		ug/L		93	75 - 117	1	20
trans-1,2-Dichloroethene	25.0	23.4		ug/L		94	79 - 117	2	20
cis-1,2-Dichloroethene	25.0	24.0		ug/L		96	77 - 117	0	20
Chloroform	25.0	24.3		ug/L		97	82 - 119	1	20
1,1,1-Trichloroethane	25.0	24.9		ug/L		100	74 - 130	0	20
Carbon tetrachloride	25.0	24.8		ug/L		99	72 - 142	0	20
1,2-Dichloroethane	25.0	24.7		ug/L		99	73 - 122	0	20
Trichloroethene	25.0	24.3		ug/L		97	80 - 123	1	20
1,2-Dichloropropane	25.0	25.2		ug/L		101	79 - 119	0	20
Dichlorobromomethane	25.0	25.4		ug/L		102	81 - 130	1	20
trans-1,3-Dichloropropene	25.0	24.7		ug/L		99	76 - 122	0	20
cis-1,3-Dichloropropene	25.0	26.4		ug/L		105	82 - 119	0	20
1,1,2-Trichloroethane	25.0	24.4		ug/L		98	80 - 117	0	20
Tetrachloroethene	25.0	25.2		ug/L		101	81 - 130	2	20
Chlorodibromomethane	25.0	25.2		ug/L		101	77 - 133	0	20
Chlorobenzene	25.0	24.3		ug/L		97	76 - 116	1	20
Bromoform	25.0	24.0		ug/L		96	75 - 127	2	20
1,1,2,2-Tetrachloroethane	25.0	22.8		ug/L		91	70 - 115	3	20
1,3-Dichlorobenzene	25.0	25.1		ug/L		100	76 - 116	3	20
1,4-Dichlorobenzene	25.0	24.2		ug/L		97	76 - 116	1	20
1,2-Dichlorobenzene	25.0	25.1		ug/L		100	77 - 117	3	20
Chloromethane	25.0	25.5		ug/L		102	49 - 134	0	20
Bromomethane	25.0	25.6		ug/L		102	70 - 132	0	20

TestAmerica Pleasanton

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 720-260159/6

Matrix: Water

Analysis Batch: 260159

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2-Trichloro-1,2,2-trifluoroethane	25.0	22.1		ug/L		88	70 - 133	1	20
EDB	25.0	23.2		ug/L		93	80 - 121	0	20
1,2,4-Trichlorobenzene	25.0	27.4		ug/L		110	78 - 120	7	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	106		70 - 130
4-Bromofluorobenzene	104		67 - 130
1,2-Dichloroethane-d4 (Surr)	102		72 - 130

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 440-529228/8

Matrix: Water

Analysis Batch: 529228

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0		mg/L			02/17/19 19:01	1

Lab Sample ID: LCS 440-529228/7

Matrix: Water

Analysis Batch: 529228

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	10.3		mg/L		103	85 - 115

Lab Sample ID: MB 440-529266/8

Matrix: Water

Analysis Batch: 529266

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0		mg/L			02/18/19 04:06	1

Lab Sample ID: LCS 440-529266/7

Matrix: Water

Analysis Batch: 529266

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	9.20		mg/L		92	85 - 115

Lab Sample ID: MB 440-529440/10

Matrix: Water

Analysis Batch: 529440

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0		mg/L			02/18/19 18:29	1

TestAmerica Pleasanton

QC Sample Results

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCS 440-529440/9

Matrix: Water

Analysis Batch: 529440

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	10.7		mg/L		107	85 - 115

Lab Sample ID: 720-91240-4 MS

Matrix: Water

Analysis Batch: 529440

Client Sample ID: 28-MW

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	3.1		4.00	6.96		mg/L		97	85 - 115

Lab Sample ID: 720-91240-4 MSD

Matrix: Water

Analysis Batch: 529440

Client Sample ID: 28-MW

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	3.1		4.00	7.19		mg/L		103	85 - 115	3	20

Lab Sample ID: MB 440-529784/8

Matrix: Water

Analysis Batch: 529784

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0		mg/L			02/19/19 22:04	1

Lab Sample ID: LCS 440-529784/7

Matrix: Water

Analysis Batch: 529784

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	9.97		mg/L		100	85 - 115

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

GC/MS VOA

Analysis Batch: 260074

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-91240-1	DW-2	Total/NA	Water	8260B	
720-91240-2	16-S	Total/NA	Water	8260B	
720-91240-3	23-S	Total/NA	Water	8260B	
720-91240-4	28-MW	Total/NA	Water	8260B	
720-91240-10	DW-1	Total/NA	Water	8260B	
720-91240-11	DW-7	Total/NA	Water	8260B	
720-91240-13	TB-1	Total/NA	Water	8260B	
MB 720-260074/4	Method Blank	Total/NA	Water	8260B	
LCS 720-260074/5	Lab Control Sample	Total/NA	Water	8260B	
LCSD 720-260074/6	Lab Control Sample Dup	Total/NA	Water	8260B	
720-91240-4 MS	28-MW	Total/NA	Water	8260B	
720-91240-4 MSD	28-MW	Total/NA	Water	8260B	

Analysis Batch: 260159

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-91240-5	X2A	Total/NA	Water	8260B	
720-91240-6	PMW-2-1	Total/NA	Water	8260B	
720-91240-7	PMW-2-3	Total/NA	Water	8260B	
720-91240-8	X1B	Total/NA	Water	8260B	
720-91240-9	X2B1	Total/NA	Water	8260B	
720-91240-12	23-D	Total/NA	Water	8260B	
720-91240-14	DUP-1	Total/NA	Water	8260B	
MB 720-260159/4	Method Blank	Total/NA	Water	8260B	
LCS 720-260159/5	Lab Control Sample	Total/NA	Water	8260B	
LCSD 720-260159/6	Lab Control Sample Dup	Total/NA	Water	8260B	

General Chemistry

Analysis Batch: 529228

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-91240-1	DW-2	Total/NA	Water	SM 5310B	
720-91240-2	16-S	Total/NA	Water	SM 5310B	
720-91240-3	23-S	Total/NA	Water	SM 5310B	
720-91240-5	X2A	Total/NA	Water	SM 5310B	
720-91240-6	PMW-2-1	Total/NA	Water	SM 5310B	
720-91240-7	PMW-2-3	Total/NA	Water	SM 5310B	
720-91240-8	X1B	Total/NA	Water	SM 5310B	
MB 440-529228/8	Method Blank	Total/NA	Water	SM 5310B	
LCS 440-529228/7	Lab Control Sample	Total/NA	Water	SM 5310B	

Analysis Batch: 529266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-91240-9	X2B1	Total/NA	Water	SM 5310B	
720-91240-11	DW-7	Total/NA	Water	SM 5310B	
720-91240-12	23-D	Total/NA	Water	SM 5310B	
MB 440-529266/8	Method Blank	Total/NA	Water	SM 5310B	
LCS 440-529266/7	Lab Control Sample	Total/NA	Water	SM 5310B	

TestAmerica Pleasanton

QC Association Summary

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

General Chemistry (Continued)

Analysis Batch: 529440

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-91240-4	28-MW	Total/NA	Water	SM 5310B	
MB 440-529440/10	Method Blank	Total/NA	Water	SM 5310B	
LCS 440-529440/9	Lab Control Sample	Total/NA	Water	SM 5310B	
720-91240-4 MS	28-MW	Total/NA	Water	SM 5310B	
720-91240-4 MSD	28-MW	Total/NA	Water	SM 5310B	

Analysis Batch: 529784

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-91240-10	DW-1	Total/NA	Water	SM 5310B	
720-91240-14	DUP-1	Total/NA	Water	SM 5310B	
MB 440-529784/8	Method Blank	Total/NA	Water	SM 5310B	
LCS 440-529784/7	Lab Control Sample	Total/NA	Water	SM 5310B	

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Client Sample ID: DW-2

Date Collected: 02/06/19 09:30

Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	260074	02/08/19 23:12	A1C	TAL PLS
Total/NA	Analysis	SM 5310B		1	529228	02/18/19 00:19	YZ	TAL IRV

Client Sample ID: 16-S

Date Collected: 02/06/19 10:43

Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	260074	02/08/19 23:39	A1C	TAL PLS
Total/NA	Analysis	SM 5310B		1	529228	02/18/19 00:36	YZ	TAL IRV

Client Sample ID: 23-S

Date Collected: 02/06/19 09:50

Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	260074	02/09/19 00:05	A1C	TAL PLS
Total/NA	Analysis	SM 5310B		1	529228	02/18/19 00:54	YZ	TAL IRV

Client Sample ID: 28-MW

Date Collected: 02/06/19 11:55

Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	260074	02/08/19 22:46	A1C	TAL PLS
Total/NA	Analysis	SM 5310B		1	529440	02/19/19 01:28	YZ	TAL IRV

Client Sample ID: X2A

Date Collected: 02/06/19 10:35

Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	260159	02/12/19 00:18	AJS	TAL PLS
Total/NA	Analysis	SM 5310B		1	529228	02/18/19 02:03	YZ	TAL IRV

Client Sample ID: PMW-2-1

Date Collected: 02/06/19 11:20

Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		100	260159	02/12/19 00:44	AJS	TAL PLS

TestAmerica Pleasanton

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Client Sample ID: PMW-2-1

Date Collected: 02/06/19 11:20

Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 5310B		1	529228	02/18/19 02:20	YZ	TAL IRV

Client Sample ID: PMW-2-3

Date Collected: 02/06/19 12:05

Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	260159	02/12/19 01:11	AJS	TAL PLS
Total/NA	Analysis	SM 5310B		1	529228	02/17/19 20:27	YZ	TAL IRV

Client Sample ID: X1B

Date Collected: 02/06/19 12:40

Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		20	260159	02/12/19 01:37	AJS	TAL PLS
Total/NA	Analysis	SM 5310B		1	529228	02/18/19 02:54	YZ	TAL IRV

Client Sample ID: X2B1

Date Collected: 02/06/19 13:10

Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	260159	02/12/19 02:04	AJS	TAL PLS
Total/NA	Analysis	SM 5310B		1	529266	02/18/19 04:23	YZ	TAL IRV

Client Sample ID: DW-1

Date Collected: 02/06/19 10:10

Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	260074	02/09/19 00:32	A1C	TAL PLS
Total/NA	Analysis	SM 5310B		1	529784	02/19/19 22:21	YZ	TAL IRV

Client Sample ID: DW-7

Date Collected: 02/06/19 13:33

Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-11

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	260074	02/09/19 00:58	A1C	TAL PLS
Total/NA	Analysis	SM 5310B		1	529266	02/18/19 04:57	YZ	TAL IRV

TestAmerica Pleasanton

Lab Chronicle

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Client Sample ID: 23-D

Date Collected: 02/06/19 14:00

Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-12

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	260159	02/12/19 02:30	AJS	TAL PLS
Total/NA	Analysis	SM 5310B		1	529266	02/18/19 05:32	YZ	TAL IRV

Client Sample ID: TB-1

Date Collected: 02/06/19 07:30

Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-13

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	260074	02/08/19 22:20	A1C	TAL PLS

Client Sample ID: DUP-1

Date Collected: 02/06/19 14:05

Date Received: 02/07/19 16:30

Lab Sample ID: 720-91240-14

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	260159	02/12/19 02:57	AJS	TAL PLS
Total/NA	Analysis	SM 5310B		1	529784	02/20/19 05:27	YZ	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

TestAmerica Pleasanton

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Laboratory: TestAmerica Pleasanton

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2496	01-31-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
USDA	Federal		P330-17-00380 12-11-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	1,1,1-Trichloroethane
8260B		Water	1,1,2,2-Tetrachloroethane
8260B		Water	1,1,2-Trichloro-1,2,2-trifluoroethane
8260B		Water	1,1,2-Trichloroethane
8260B		Water	1,1-Dichloroethane
8260B		Water	1,1-Dichloroethene
8260B		Water	1,2,4-Trichlorobenzene
8260B		Water	1,2-Dichlorobenzene
8260B		Water	1,2-Dichloroethane
8260B		Water	1,2-Dichloropropane
8260B		Water	1,3-Dichlorobenzene
8260B		Water	1,4-Dichlorobenzene
8260B		Water	Bromoform
8260B		Water	Bromomethane
8260B		Water	Carbon tetrachloride
8260B		Water	Chlorobenzene
8260B		Water	Chlorodibromomethane
8260B		Water	Chloroethane
8260B		Water	Chloroform
8260B		Water	Chloromethane
8260B		Water	cis-1,2-Dichloroethene
8260B		Water	cis-1,3-Dichloropropene
8260B		Water	Dichlorobromomethane
8260B		Water	Dichlorodifluoromethane
8260B		Water	EDB
8260B		Water	Methylene Chloride
8260B		Water	Tetrachloroethene
8260B		Water	trans-1,2-Dichloroethene
8260B		Water	trans-1,3-Dichloropropene
8260B		Water	Trichloroethene
8260B		Water	Trichlorofluoromethane
8260B		Water	Vinyl chloride

Laboratory: TestAmerica Irvine

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	CA01531	06-30-19
Arizona	State Program	9	AZ0671	10-14-19
California	LA Cty Sanitation Districts	9	10256	06-30-19

TestAmerica Pleasanton

Accreditation/Certification Summary

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Laboratory: TestAmerica Irvine (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	CA ELAP 2706	06-30-19
Guam	State Program	9	Cert. No. 19-005R	01-23-20
Hawaii	State Program	9	N/A	01-29-20
Kansas	NELAP	7	E-10420	07-31-19
Nevada	State Program	9	CA015312018-1	07-31-19
New Mexico	State Program	6	N/A	01-29-20
Oregon	NELAP	10	4028	01-29-20
US Fish & Wildlife	Federal		058448	07-31-19
USDA	Federal		P330-18-00214	07-09-21
Washington	State Program	10	C900	09-03-19

Method Summary

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PLS
SM 5310B	Organic Carbon, Total (TOC)	SM	TAL IRV
5030B	Purge and Trap	SW846	TAL PLS

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

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

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

Sample Summary

Client: Haley & Aldrich, Inc.
Project/Site: 901/902 Thompson Place-Advanced Micro

TestAmerica Job ID: 720-91240-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-91240-1	DW-2	Water	02/06/19 09:30	02/07/19 16:30
720-91240-2	16-S	Water	02/06/19 10:43	02/07/19 16:30
720-91240-3	23-S	Water	02/06/19 09:50	02/07/19 16:30
720-91240-4	28-MW	Water	02/06/19 11:55	02/07/19 16:30
720-91240-5	X2A	Water	02/06/19 10:35	02/07/19 16:30
720-91240-6	PMW-2-1	Water	02/06/19 11:20	02/07/19 16:30
720-91240-7	PMW-2-3	Water	02/06/19 12:05	02/07/19 16:30
720-91240-8	X1B	Water	02/06/19 12:40	02/07/19 16:30
720-91240-9	X2B1	Water	02/06/19 13:10	02/07/19 16:30
720-91240-10	DW-1	Water	02/06/19 10:10	02/07/19 16:30
720-91240-11	DW-7	Water	02/06/19 13:33	02/07/19 16:30
720-91240-12	23-D	Water	02/06/19 14:00	02/07/19 16:30
720-91240-13	TB-1	Water	02/06/19 07:30	02/07/19 16:30
720-91240-14	DUP-1	Water	02/06/19 14:05	02/07/19 16:30

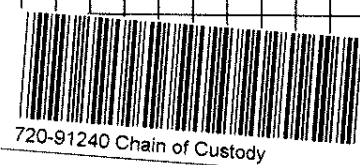
TestAmerica Pleasanton

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

TestAmerica Laboratories, Inc.

TestAmerica's services under this COC shall be performed in accordance with the T&A's written Blanket Service Agreement # 2019-22-TestAmerica by and between Haley & Aldrich, Inc., its subsidiaries and affiliates, and TestAmerica Laboratories, Inc.

Client Contact		H&A Project Manager: Mike Calhoun		H&A Site Contact: Mike Calhoun		Date:		COC No			
Haley & Aldrich		Tel/Fax: 510-879-4554		Lab Contact: Micah Smith		Carrier:		1 of 2 COCs			
1956 Webster Street, Suite 300		Analysis Turnaround Time						Sampler			
Oakland, CA 94612		☐ CALENDAR DAYS ☒ WORKING DAYS						For Lab Use Only:			
510-879-4554 Phone		TAT if different from Below _____						Walk-in Client			
510-879-4579 FAX		☒ 2 weeks						Lab Sampling			
H&A Project Number 127819		☐ 1 week									
Site: Former 901/902 Thompson Place		☐ 2 days						Job / SDG No			
H&A P O # 127819-004 SID 3		☒ 1 day									
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	VOCs (modified list) - EPA 8260	TOC - SM5310	Sample Specific Notes:
DW 2	2/6/19	1530	W	4	N	X					
W-5		1543	W	4							
23 S		2150	W	4							
28 MW		1125	W	10							
X22		1045	W	4							
PMW-2-1		1120	W	2							
PMW-2-3		1205	W	2							
X1B		1210	W	4							
X2B1		1310	W	2							
DW-1		1410	W	4							
DW-7		1335	W	2							
23-D		1700	W	2							
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown											
Sample Disposal ☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months											
Special Instructions/QC Requirements & Comments: PLEASE NOTE: project-specific list of VOCs (8010 list plus Freon 113 and 1,2,4-trichlorobenzene) ***ANALYZE FOR VOCs WITHIN SEVEN DAYS OF SAMPLE COLLECTION***											
Custody Seals Intact: ☐ Yes ☐ No		Custody Seal No		Cooler Temp (°C) Obs'd		Corr'd:		Therm ID No			
Relinquished by: [Signature]		Company: [Signature]		Date/Time: 2/6/19 1545		Received by: [Signature]		Company: [Signature]		Date/Time: 2/6/19 1545	
Relinquished by: [Signature] (BTS)		Company: [Signature]		Date/Time: 2/7/19 1340		Received by: [Signature]		Company: [Signature]		Date/Time: 2/7/19 1340	
Relinquished by: [Signature]		Company: [Signature]		Date/Time: 2/7/19 1630		Received in Laboratory by: [Signature]		Company: [Signature]		Date/Time: 2/7/19 1630	



720-91240 Chain of Custody

Pleasanton, CA 94566-4756
phone 925 484.1919 fax 925 600.3002

Regulatory Program: ☐ DW ☒ NPDES ☐ RCRA ☐ Other:

TestAmerica Laboratories, Inc.

TestAmerica's services under this MOU shall be performed in accordance with the TOLs within Plaintiff's Service Agreements # 2,194-22, TestAmerica by and between, Haley & Aldrich, Inc. and its subsidiaries and affiliates, and TestAmerica Laboratories, Inc.

[illegible]

Form No. CA-C-WI-045, Rev. 1.2, dated 1/8/2016

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Ver: 09/20/2016

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

[illegible]

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 720-91240-1

Login Number: 91240

List Source: TestAmerica Pleasanton

List Number: 1

Creator: Perry, Janae R

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 720-91240-1

Login Number: 91240

List Number: 2

Creator: Ornelas, Olga

List Source: TestAmerica Irvine

List Creation: 02/09/19 01:29 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	Received project as a subcontract.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Haley & Aldrich, Inc.

Job Number: 720-91240-1

Login Number: 91240

List Number: 3

Creator: Avila, Stephanie 1

List Source: TestAmerica Irvine

List Creation: 02/20/19 10:30 AM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

February 20, 2019

Mike Calhoun
Haley & Aldrich, Inc.
1956 Webster Street
Suite 300
Oakland, CA 94612

RE: Project: 127819-004 SID 3 Former 901/90
Pace Project No.: 10463971

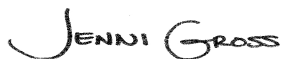
Dear Mike Calhoun:

Enclosed are the analytical results for sample(s) received by the laboratory on February 08, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

Some analyses have been subcontracted outside of the Pace Network. The subcontracted laboratory report has been attached.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Jennifer Gross
jennifer.gross@pacelabs.com
(206)957-2426
Project Manager

Enclosures

cc: Vanessa Godard, Haley & Aldrich
Michael Zlotoff, Haley & Aldrich, Inc.



REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 127819-004 SID 3 Former 901/90

Pace Project No.: 10463971

Lab ID	Sample ID	Matrix	Date Collected	Date Received
10463971001	DW-2	Water	02/06/19 09:30	02/08/19 11:30
10463971002	16-S	Water	02/06/19 10:43	02/08/19 11:30
10463971003	23-S	Water	02/06/19 09:50	02/08/19 11:30
10463971004	28-MW	Water	02/06/19 11:55	02/08/19 11:30
10463971005	X2A	Water	02/06/19 10:35	02/08/19 11:30
10463971006	PMW-2-1	Water	02/06/19 11:20	02/08/19 11:30
10463971007	PMW-2-3	Water	02/06/19 12:05	02/08/19 11:30
10463971008	X1B	Water	02/06/19 12:40	02/08/19 11:30
10463971009	X2B1	Water	02/06/19 13:10	02/08/19 11:30
10463971010	DW-1	Water	02/06/19 10:10	02/08/19 11:30
10463971011	DW-7	Water	02/06/19 13:33	02/08/19 11:30
10463971012	23-D	Water	02/06/19 14:00	02/08/19 11:30

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project:

Pace Project No.:

Method:

Description:

Client:

Date:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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Cooler Receipt Form

Client Name: Haley & Aldrich Project: Thompson Place Lab Work Order: 29440

A. Shipping/Container Information (circle appropriate response)

Courier: FedEx UPS USPS Client Other: _____ Air bill Present: Yes No

Tracking Number: 7744 1919 2997

Custody Seal on Cooler/Box Present: Yes No Seals Intact: Yes No

Cooler/Box Packing Material: Bubble Wrap Absorbent Foam Other: _____

Type of Ice: Wet Blue None Ice Intact: Yes Melted

Cooler Temperature: 2°C Radiation Screened: Yes No Chain of Custody Present: Yes No

Comments: _____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	☒			
Chain of Custody relinquished	☒			
Sampler Name & Signature on COC	☒			
Containers intact	☒			
Were samples in separate bags	☒			
Sample container labels match COC Sample name/date and time collected	☒			
Sufficient volume provided	☒			
PAES containers used	☒			
Are containers properly preserved for the requested testing? (as labeled)	☒			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			☒	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			☒	
Headspace present?		☒		

Comments: _____

Cooler contents examined/received by: LO Date: 2-8-19

Project Manager Review: Signature Date: 2-8-19



Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

February 20, 2019

Jennifer Gross
Pace Analytical Services, Inc.
1700 Elm St. SE
Suite 200
Minneapolis, MN 55414

RE: **10463971 / FRM. THOMPSON PLACE**

Pace Workorder: 29440

Dear Jennifer Gross:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, February 08, 2019. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Ruth Welsh".

Ruth Welsh 02/20/2019
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages 23

Report ID: 29440 - 1140541

Page 1 of 21



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Page 6 of 28

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	State of Virginia
Accreditation ID:	460201
Scope:	Non-Potable Water
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).



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SAMPLE SUMMARY

Workorder: 29440 10463971 / FRM. THOMPSON PLACE

Lab ID	Sample ID	Matrix	Date Collected	Date Received
294400001	DW-2	Water	2/6/2019 09:30	2/8/2019 11:30
294400002	16-S	Water	2/6/2019 10:43	2/8/2019 11:30
294400003	23-S	Water	2/6/2019 09:50	2/8/2019 11:30
294400004	28-MW	Water	2/6/2019 11:55	2/8/2019 11:30
294400005	X2A	Water	2/6/2019 10:35	2/8/2019 11:30
294400006	PMW-2-1	Water	2/6/2019 11:20	2/8/2019 11:30
294400007	PMW-2-3	Water	2/6/2019 12:05	2/8/2019 11:30
294400008	X1B	Water	2/6/2019 12:40	2/8/2019 11:30
294400009	X2B1	Water	2/6/2019 13:10	2/8/2019 11:30
294400010	DW-1	Water	2/6/2019 10:10	2/8/2019 11:30
294400011	DW-7	Water	2/6/2019 13:33	2/8/2019 11:30
294400012	23-D	Water	2/6/2019 14:00	2/8/2019 11:30



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PROJECT SUMMARY

Workorder: 29440 10463971 / FRM. THOMPSON PLACE

Workorder Comments

The container pH for samples 29440 (0001-0002, 0004-0005, 0009-0010) were measured as below the expected pH (< 10) for those samples preserved with trisodium phosphate, as assigned to PAES method AM20GAX.



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ANALYTICAL RESULTS

Workorder: 29440 10463971 / FRM. THOMPSON PLACE

Lab ID: **294400001**

Date Received: 2/8/2019 11:30

Matrix: Water

Sample ID: **DW-2**

Date Collected: 2/6/2019 09:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
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RISK - PAES

Analysis Desc: AM20GAX

Analytical Method: AM20GAX

Methane	1100	ug/l	0.50	0.014	1	2/11/2019 12:54	BW	n
Ethane	0.011J	ug/l	0.10	0.0070	1	2/11/2019 12:54	BW	n
Ethene	0.036J	ug/l	0.10	0.0050	1	2/11/2019 12:54	BW	n



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ANALYTICAL RESULTS

Workorder: 29440 10463971 / FRM. THOMPSON PLACE

Lab ID: **294400002**

Date Received: 2/8/2019 11:30

Matrix: Water

Sample ID: **16-S**

Date Collected: 2/6/2019 10:43

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
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RISK - PAES

Analysis Desc: AM20GAX

Analytical Method: AM20GAX

Methane	7500	ug/l	0.50	0.014	1	2/11/2019 13:08	BW	n
Ethane	10	ug/l	0.10	0.0070	1	2/11/2019 13:08	BW	n
Ethene	3.2	ug/l	0.10	0.0050	1	2/11/2019 13:08	BW	n



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ANALYTICAL RESULTS

Workorder: 29440 10463971 / FRM. THOMPSON PLACE

Lab ID: **294400003**

Date Received: 2/8/2019 11:30

Matrix: Water

Sample ID: **23-S**

Date Collected: 2/6/2019 09:50

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
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RISK - PAES

Analysis Desc: AM20GAX

Analytical Method: AM20GAX

Methane	52	ug/l	0.50	0.014	1	2/11/2019 13:21	BW	n
Ethane	0.12	ug/l	0.10	0.0070	1	2/11/2019 13:21	BW	n
Ethene	0.22	ug/l	0.10	0.0050	1	2/11/2019 13:21	BW	n



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ANALYTICAL RESULTS

Workorder: 29440 10463971 / FRM. THOMPSON PLACE

Lab ID: **294400004**

Date Received: 2/8/2019 11:30

Matrix: Water

Sample ID: **28-MW**

Date Collected: 2/6/2019 11:55

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
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RISK - PAES

Analysis Desc: AM20GAX

Analytical Method: AM20GAX

Methane	5700	ug/l	0.50	0.014	1	2/11/2019 13:33	BW	n
Ethane	5.0	ug/l	0.10	0.0070	1	2/11/2019 13:33	BW	n
Ethene	7.0	ug/l	0.10	0.0050	1	2/11/2019 13:33	BW	n



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ANALYTICAL RESULTS

Workorder: 29440 10463971 / FRM. THOMPSON PLACE

Lab ID: **294400005**

Date Received: 2/8/2019 11:30

Matrix: Water

Sample ID: **X2A**

Date Collected: 2/6/2019 10:35

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
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RISK - PAES

Analysis Desc: AM20GAX

Analytical Method: AM20GAX

Methane	6200	ug/l	0.50	0.014	1	2/11/2019 13:45	BW	n
Ethane	9.3	ug/l	0.10	0.0070	1	2/11/2019 13:45	BW	n
Ethene	82	ug/l	0.10	0.0050	1	2/11/2019 13:45	BW	n



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ANALYTICAL RESULTS

Workorder: 29440 10463971 / FRM. THOMPSON PLACE

Lab ID: **294400006**

Date Received: 2/8/2019 11:30

Matrix: Water

Sample ID: **PMW-2-1**

Date Collected: 2/6/2019 11:20

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
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RISK - PAES

Analysis Desc: AM20GAX

Analytical Method: AM20GAX

Methane	7300	ug/l	0.50	0.014	1	2/13/2019 10:55	BW	n
Ethane	20	ug/l	0.10	0.0070	1	2/13/2019 10:55	BW	n
Ethene	170	ug/l	0.10	0.0050	1	2/13/2019 10:55	BW	n



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ANALYTICAL RESULTS

Workorder: 29440 10463971 / FRM. THOMPSON PLACE

Lab ID: **294400007**

Date Received: 2/8/2019 11:30

Matrix: Water

Sample ID: **PMW-2-3**

Date Collected: 2/6/2019 12:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
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RISK - PAES

Analysis Desc: AM20GAX

Analytical Method: AM20GAX

Methane	13	ug/l	0.50	0.014	1	2/13/2019 12:04	BW	n
Ethane	0.043J	ug/l	0.10	0.0070	1	2/13/2019 12:04	BW	n
Ethene	1.2	ug/l	0.10	0.0050	1	2/13/2019 12:04	BW	n



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ANALYTICAL RESULTS

Workorder: 29440 10463971 / FRM. THOMPSON PLACE

Lab ID: **294400008**

Date Received: 2/8/2019 11:30

Matrix: Water

Sample ID: **X1B**

Date Collected: 2/6/2019 12:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
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RISK - PAES

Analysis Desc: AM20GAX

Analytical Method: AM20GAX

Methane	290	ug/l	0.50	0.014	1	2/13/2019 12:17	BW	n
Ethane	3.9	ug/l	0.10	0.0070	1	2/13/2019 12:17	BW	n
Ethene	1.2	ug/l	0.10	0.0050	1	2/13/2019 12:17	BW	n



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ANALYTICAL RESULTS

Workorder: 29440 10463971 / FRM. THOMPSON PLACE

Lab ID: **294400009**

Date Received: 2/8/2019 11:30

Matrix: Water

Sample ID: **X2B1**

Date Collected: 2/6/2019 13:10

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
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RISK - PAES

Analysis Desc: AM20GAX

Analytical Method: AM20GAX

Methane	220	ug/l	0.50	0.014	1	2/13/2019 12:33	BW	n
Ethane	3.6	ug/l	0.10	0.0070	1	2/13/2019 12:33	BW	n
Ethene	0.13	ug/l	0.10	0.0050	1	2/13/2019 12:33	BW	n



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ANALYTICAL RESULTS

Workorder: 29440 10463971 / FRM. THOMPSON PLACE

Lab ID: **294400010**

Date Received: 2/8/2019 11:30

Matrix: Water

Sample ID: **DW-1**

Date Collected: 2/6/2019 10:10

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
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RISK - PAES

Analysis Desc: AM20GAX

Analytical Method: AM20GAX

Methane	19000	ug/l	0.50	0.014	1	2/13/2019 12:48	BW	n
Ethane	350	ug/l	0.10	0.0070	1	2/13/2019 12:48	BW	n
Ethene	46	ug/l	0.10	0.0050	1	2/13/2019 12:48	BW	n



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ANALYTICAL RESULTS

Workorder: 29440 10463971 / FRM. THOMPSON PLACE

Lab ID: **294400011**

Date Received: 2/8/2019 11:30

Matrix: Water

Sample ID: **DW-7**

Date Collected: 2/6/2019 13:33

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
------------	---------	-------	-----	-----	----	----------	----	------------

RISK - PAES

Analysis Desc: AM20GAX

Analytical Method: AM20GAX

Methane	2.1	ug/l	0.50	0.014	1	2/13/2019 13:01	BW	n
Ethane	0.065J	ug/l	0.10	0.0070	1	2/13/2019 13:01	BW	n
Ethene	0.017J	ug/l	0.10	0.0050	1	2/13/2019 13:01	BW	n



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ANALYTICAL RESULTS

Workorder: 29440 10463971 / FRM. THOMPSON PLACE

Lab ID: **294400012**

Date Received: 2/8/2019 11:30 Matrix: Water

Sample ID: **23-D**

Date Collected: 2/6/2019 14:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
------------	---------	-------	-----	-----	----	----------	----	------------

RISK - PAES

Analysis Desc: AM20GAX

Analytical Method: AM20GAX

Methane	0.26J	ug/l	0.50	0.014	1	2/13/2019 13:13	BW	n
Ethane	0.0074J	ug/l	0.10	0.0070	1	2/13/2019 13:13	BW	n
Ethene	0.034J	ug/l	0.10	0.0050	1	2/13/2019 13:13	BW	n



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ANALYTICAL RESULTS QUALIFIERS

Workorder: 29440 10463971 / FRM. THOMPSON PLACE

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quantitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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QUALITY CONTROL DATA

Workorder: 29440 10463971 / FRM. THOMPSON PLACE

QC Batch: DISG/7358 Analysis Method: AM20GAX
QC Batch Method: AM20GAX
Associated Lab Samples: 294400001, 294400002, 294400003, 294400004, 294400005

METHOD BLANK: 59692

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	0.50 U	0.50	n
Ethane	ug/l	0.10 U	0.10	n
Ethene	ug/l	0.10 U	0.10	n

LABORATORY CONTROL SAMPLE & LCSD: 59694 59696

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Methane	ug/l	750	740	720	99	97	80-120	2.1	20	n
Ethane	ug/l	38	40	39	107	104	80-120	2.6	20	n
Ethene	ug/l	35	38	37	109	105	80-120	3.3	20	n



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QUALITY CONTROL DATA

Workorder: 29440 10463971 / FRM. THOMPSON PLACE

QC Batch: DISG/7366 Analysis Method: AM20GAX
QC Batch Method: AM20GAX
Associated Lab Samples: 294400006, 294400007, 294400008, 294400009, 294400010, 294400011, 294400012

METHOD BLANK: 59750

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	0.50 U	0.50	n
Ethane	ug/l	0.10 U	0.10	n
Ethene	ug/l	0.10 U	0.10	n

LABORATORY CONTROL SAMPLE & LCSD: 59752 59754

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Methane	ug/l	750	740	730	99	97	80-120	1.4	20	n
Ethane	ug/l	38	40	40	105	106	80-120	1.1	20	n
Ethene	ug/l	35	38	38	106	107	80-120	0.43	20	n



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QUALITY CONTROL DATA QUALIFIERS

Workorder: 29440 10463971 / FRM. THOMPSON PLACE

QUALITY CONTROL PARAMETER QUALIFIERS

n The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 29440 10463971 / FRM. THOMPSON PLACE

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
294400001	DW-2			AM20GAX	DISG/7358
294400002	16-S			AM20GAX	DISG/7358
294400003	23-S			AM20GAX	DISG/7358
294400004	28-MW			AM20GAX	DISG/7358
294400005	X2A			AM20GAX	DISG/7358
294400006	PMW-2-1			AM20GAX	DISG/7366
294400007	PMW-2-3			AM20GAX	DISG/7366
294400008	X1B			AM20GAX	DISG/7366
294400009	X2B1			AM20GAX	DISG/7366
294400010	DW-1			AM20GAX	DISG/7366
294400011	DW-7			AM20GAX	DISG/7366
294400012	23-D			AM20GAX	DISG/7366



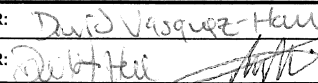
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Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company: Haley & Aldrich, Inc.		Report To: <u>mcalhoun@haleyaldrich.com</u>		Attention: <u>ap@haleyaldrich.com</u>	
Address: 1956 Webster Street, Suite 300		Copy To: <u>mzlotoff@haleyaldrich.com, vgodard@haleyaldrich.com</u>		Company Name: Haley & Aldrich	
Oakland, CA 94612				Address: use email address above	
Email To: <u>mcalhoun@haleyaldrich.com</u>		BSA #: 2019-22-Pace		Pace Quote Reference:	
Phone: 510-879-4554 Fax:		H&A Client Name: Former 901/902 Thompson Place		Pace Project Manager:	
Requested Due Date/TAT: Standard TAT		H&A Project #: 127819-004 SID 3		Pace Profile #:	
				REGULATORY AGENCY	
				☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER	
				☐ UST ☐ RCRA ☐	
				Site Location	
				STATE:	

Pace's services under this Chain of Custody shall be performed in accordance with terms and conditions within Blanket Service Agreement #2019-22-Pace by and between Haley & Aldrich, Inc., its subsidiaries and affiliates and Pace Analytical Services, Inc.

ITEM #	Section D Required Client Information	Matrix Codes MATRIX / CODE	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED				SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives								Analysis Test	Requested Analysis Filtered (Y/N)												Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
					Collection Info		Sample Depth				Unpreserved	H ₂ SO ₄	HNO ₃	HCl	NaOH	Na ₂ S ₂ O ₃	Methanol	Other Na ₂ PO ₄		Ethene, ethane, methane-AM20GAX																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										

SAMPLER NAME AND SIGNATURE		Temp in °C	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER: David Vasquez-Hen				
SIGNATURE of SAMPLER: 				
DATE Signed (MM/DD/YY): 02/06/19				



Cooler Receipt Form

Client Name: Haley & Aldrich Project: Thompson Place Lab Work Order: 29440

A. Shipping/Container Information (circle appropriate response)

Courier: FedEx UPS USPS Client Other: _____ Air bill Present: Yes No

Tracking Number: 7744 1919 2997

Custody Seal on Cooler/Box Present: Yes No Seals Intact: Yes No

Cooler/Box Packing Material: Bubble Wrap Absorbent Foam Other: _____

Type of Ice: Wet Blue None Ice Intact: Yes Melted

Cooler Temperature: 2°C Radiation Screened: Yes No Chain of Custody Present: Yes No

Comments: _____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	☒			
Chain of Custody relinquished	☒			
Sampler Name & Signature on COC	☒			
Containers intact	☒			
Were samples in separate bags	☒			
Sample container labels match COC	☒			
Sample name/date and time collected	☒			
Sufficient volume provided	☒			
PAES containers used	☒			
Are containers properly preserved for the requested testing? (as labeled)	☒			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			☒	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			☒	
Headspace present?		☒		

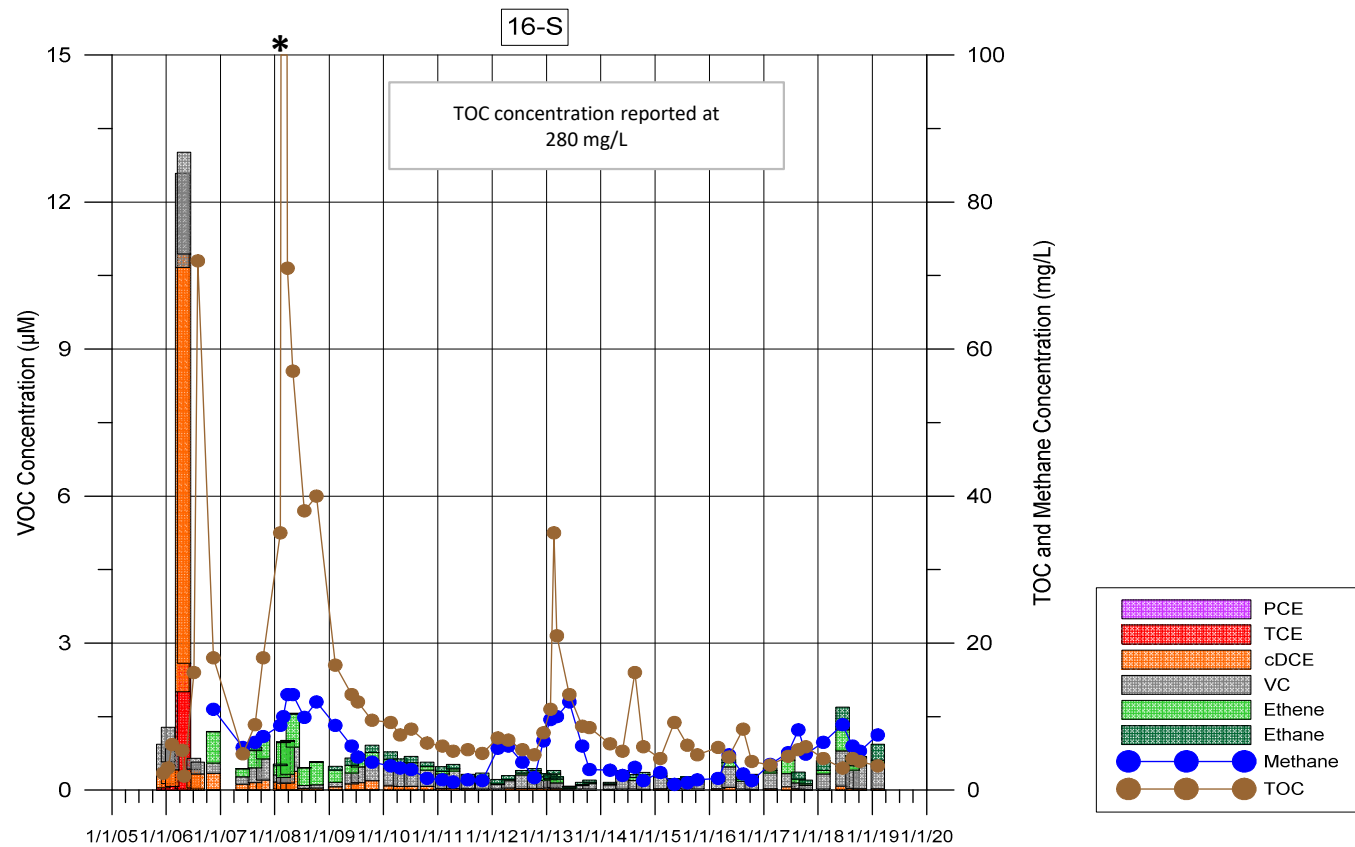
Comments: _____

Cooler contents examined/received by: LO Date: 2.8.19

Project Manager Review: SP Date: 2-8-19

APPENDIX C

Concentration Trend Plots

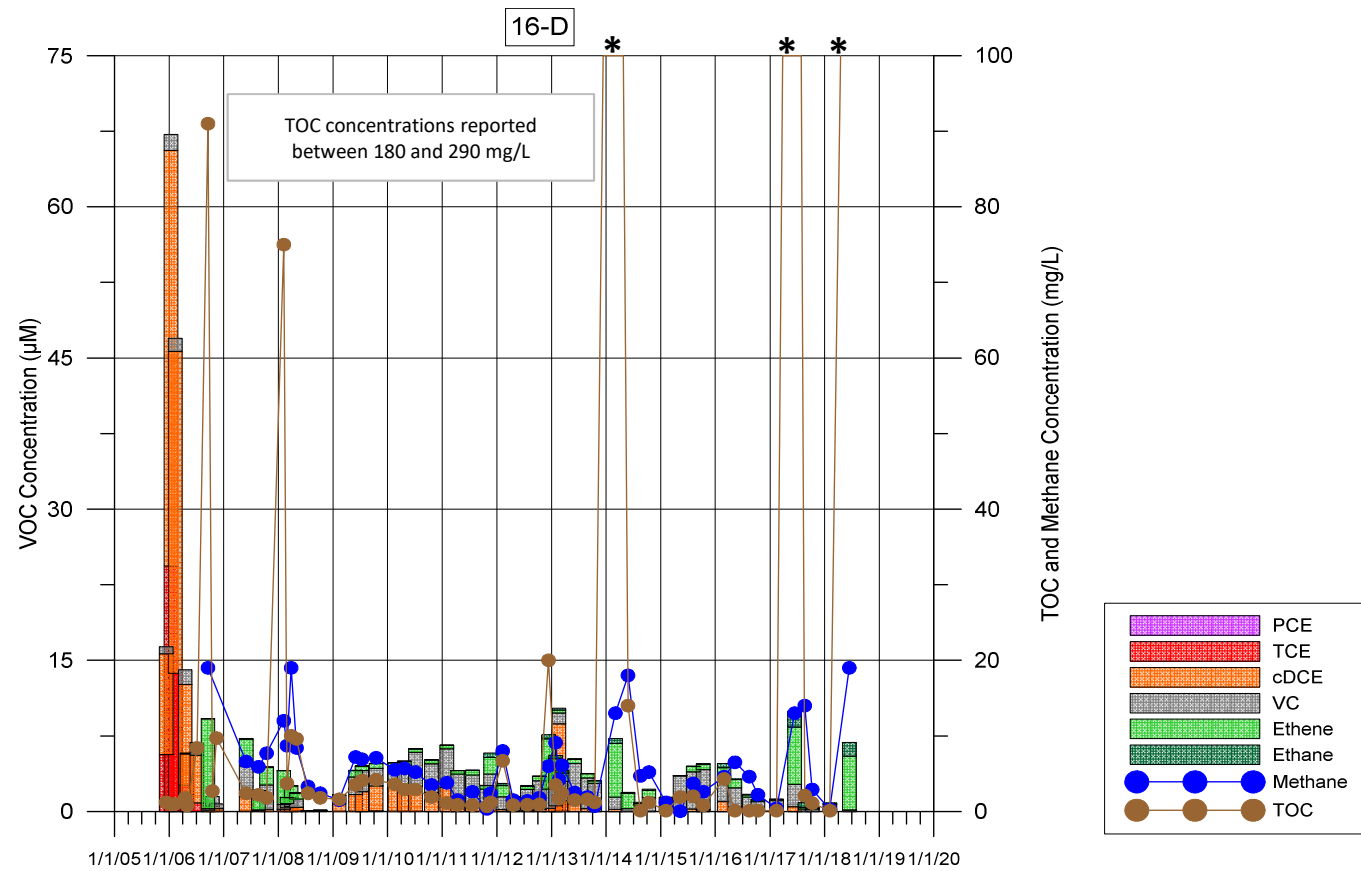


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SUNNYVALE, CALIFORNIA

CONCENTRATION TREND PLOT FOR WELL 16-S

APRIL 2019

FIGURE C-1

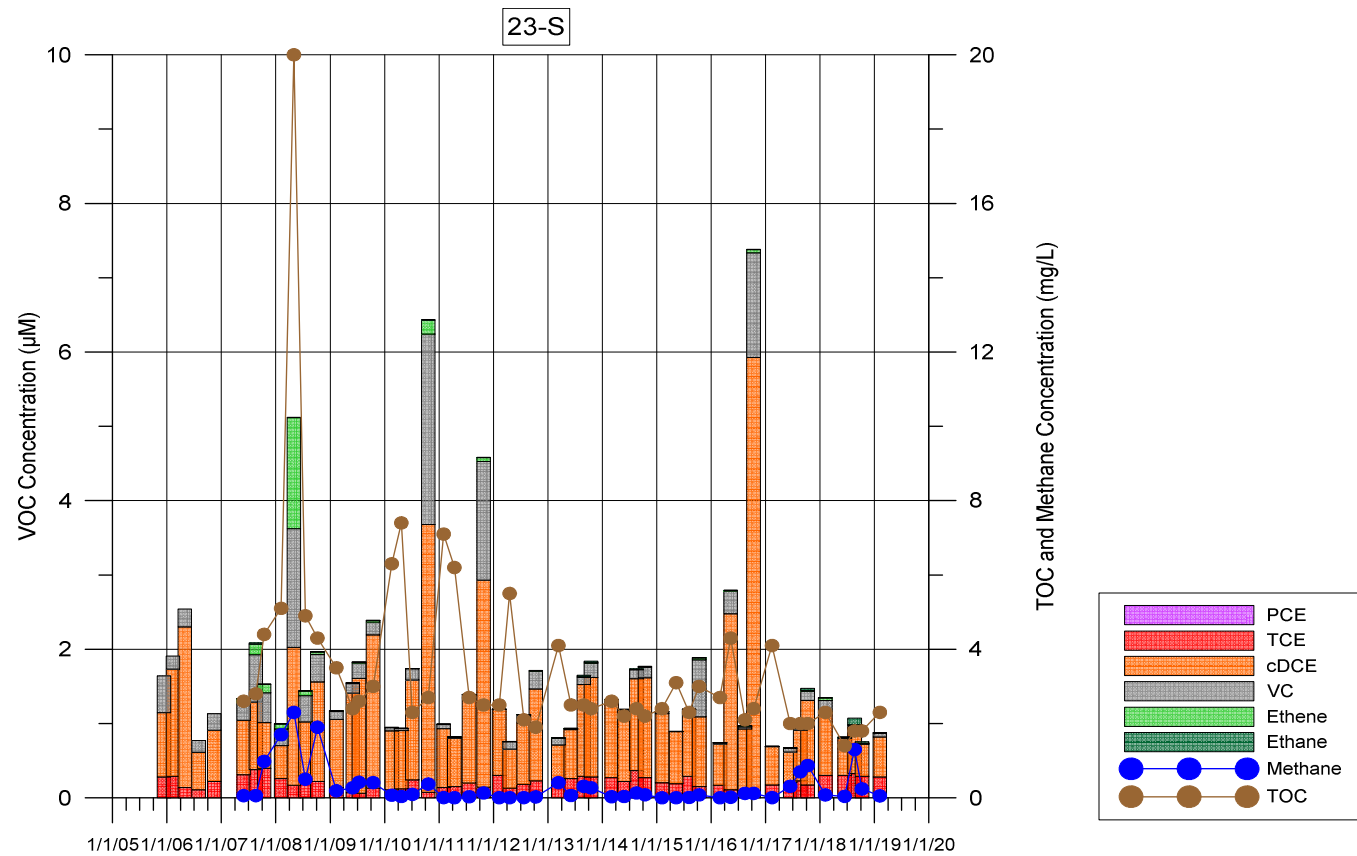


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CONCENTRATION TREND PLOT FOR WELL 16-D

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FIGURE C-2

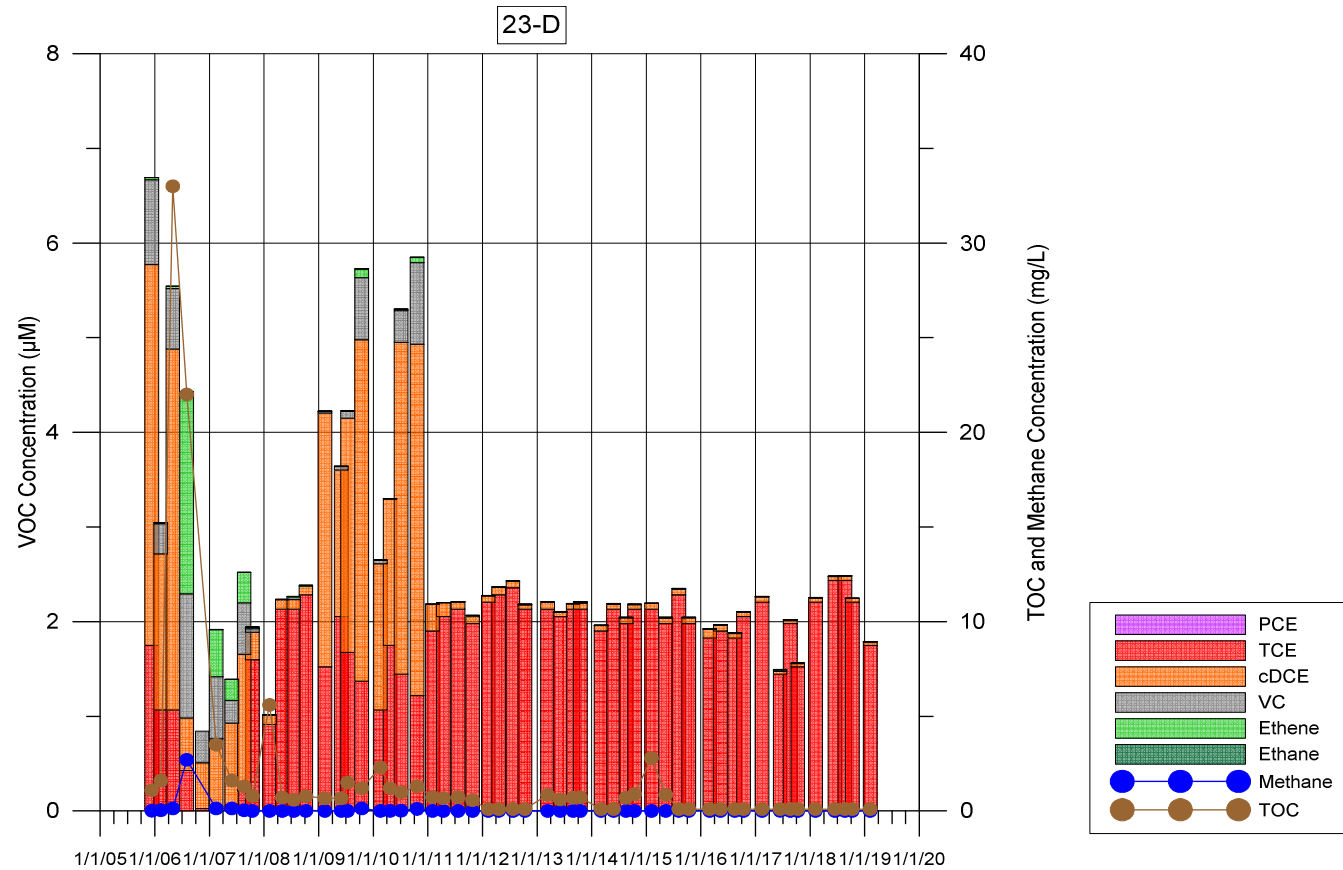


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CONCENTRATION TREND PLOT FOR WELL 23-S

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FIGURE C-3

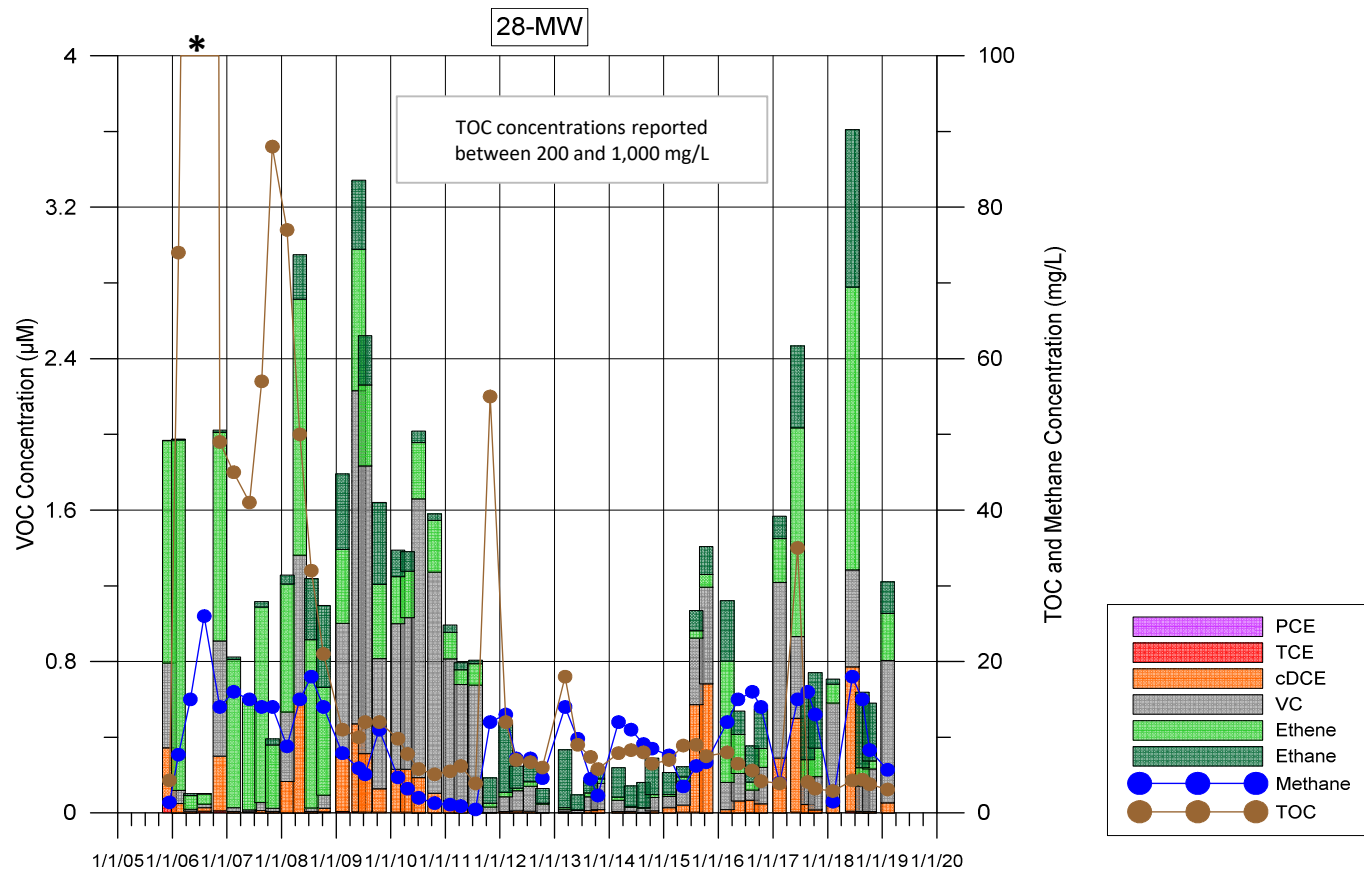


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CONCENTRATION TREND PLOT FOR WELL 23-D

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FIGURE C-4

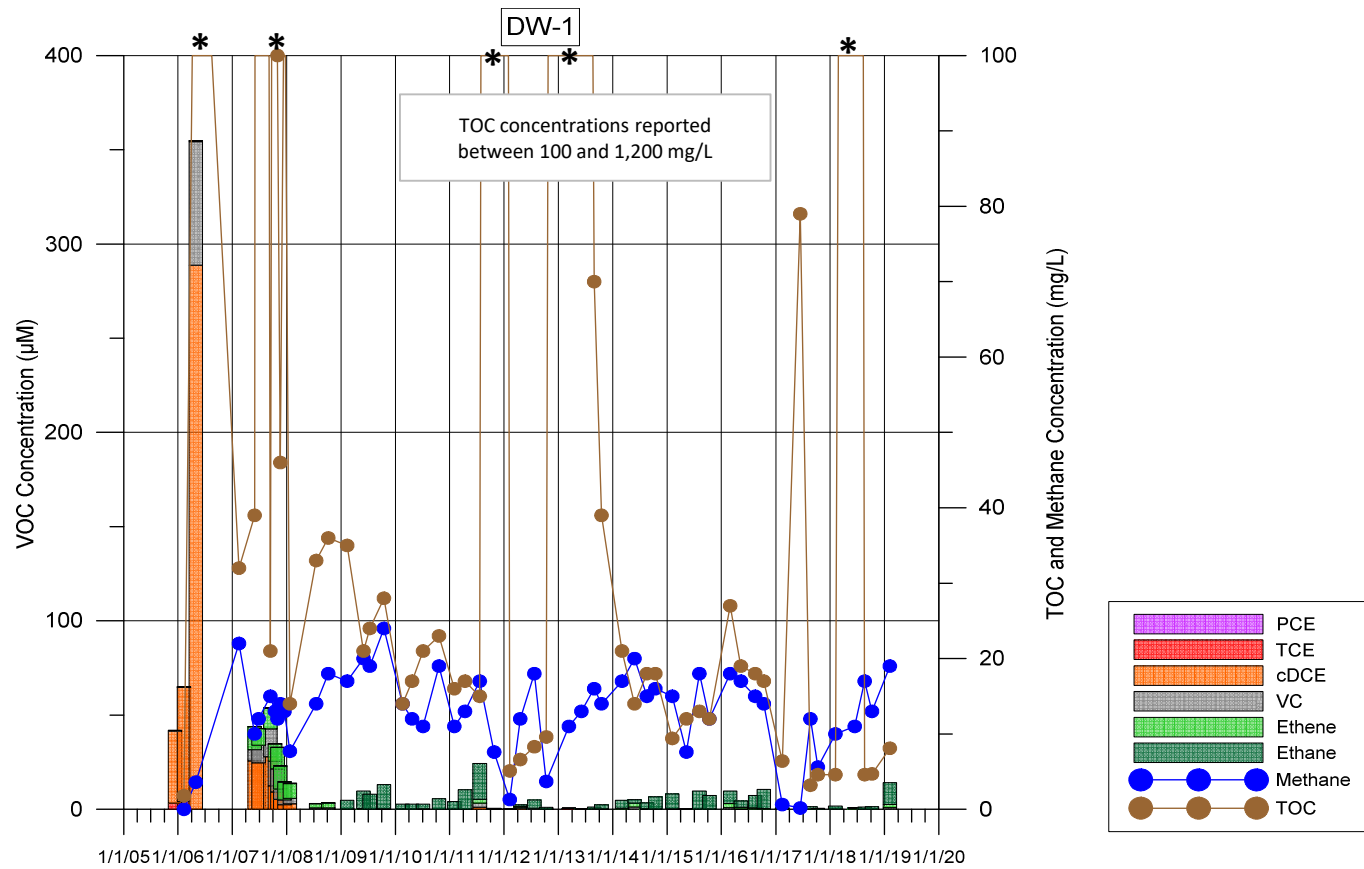


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CONCENTRATION TREND PLOT FOR WELL 28-MW

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FIGURE C-5

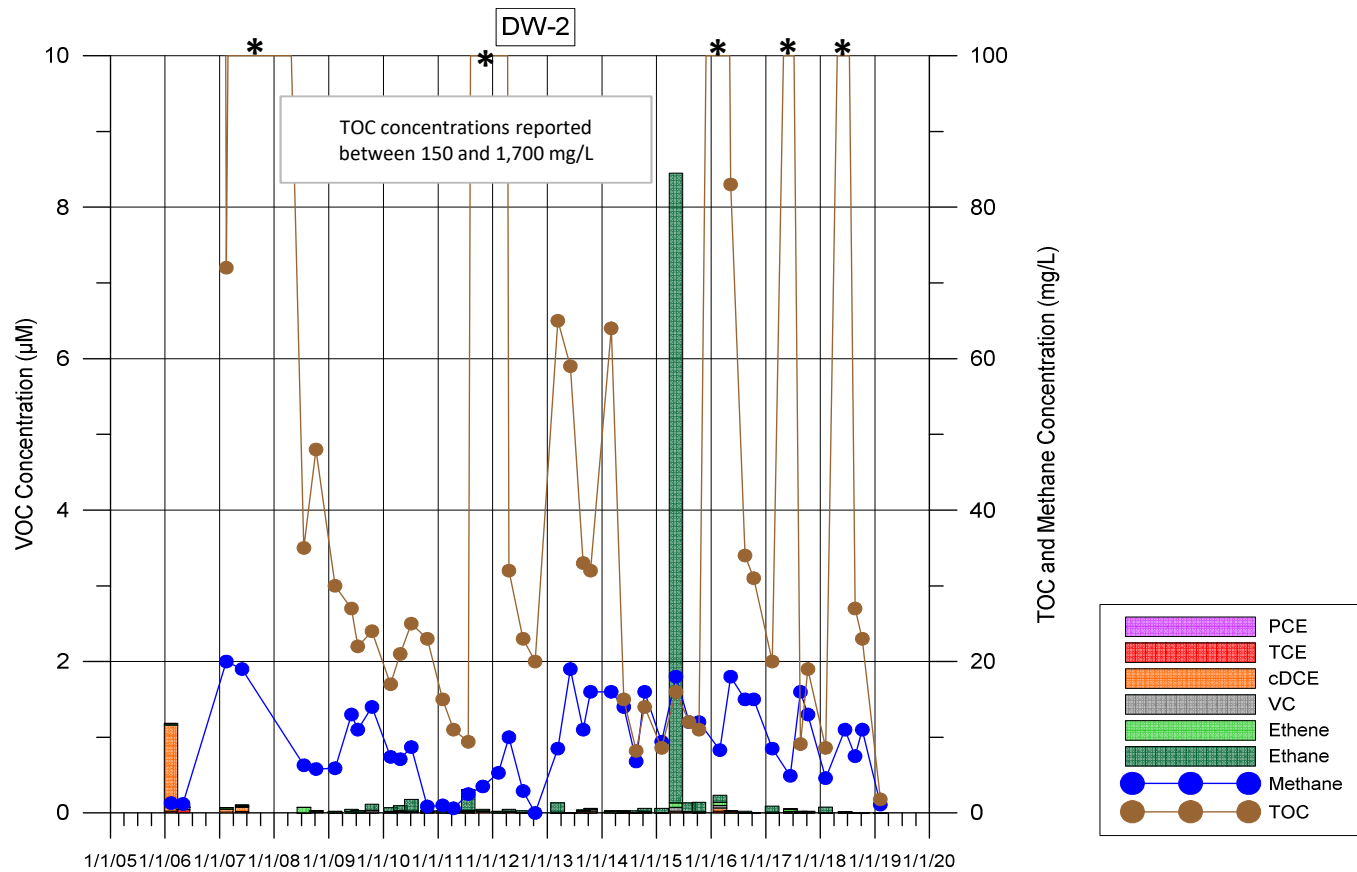


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CONCENTRATION TREND PLOT FOR WELL DW-1

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FIGURE C-6



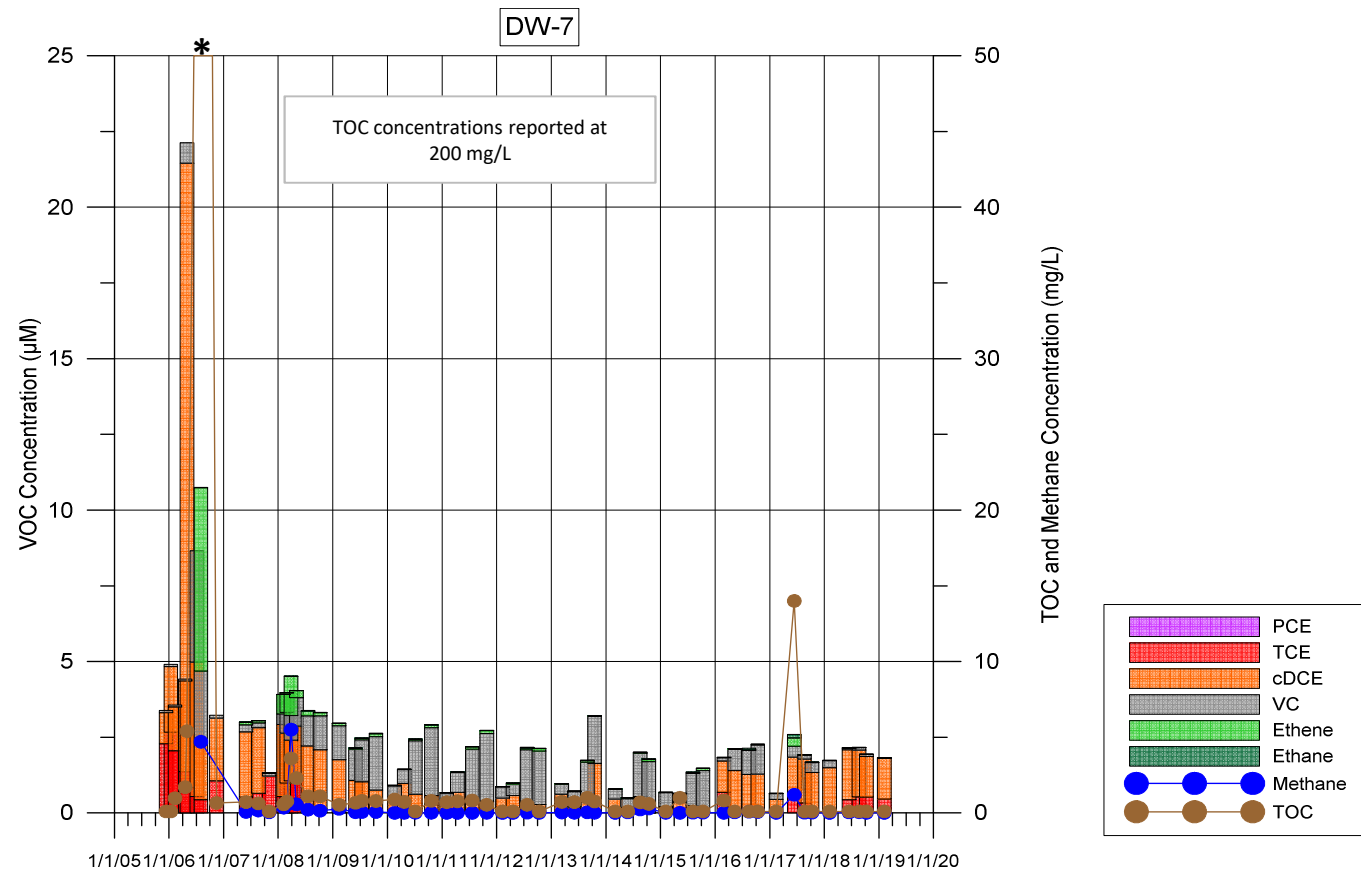
**HALEY
ALDRICH**

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CONCENTRATION TREND PLOT FOR WELL DW-2

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FIGURE C-7

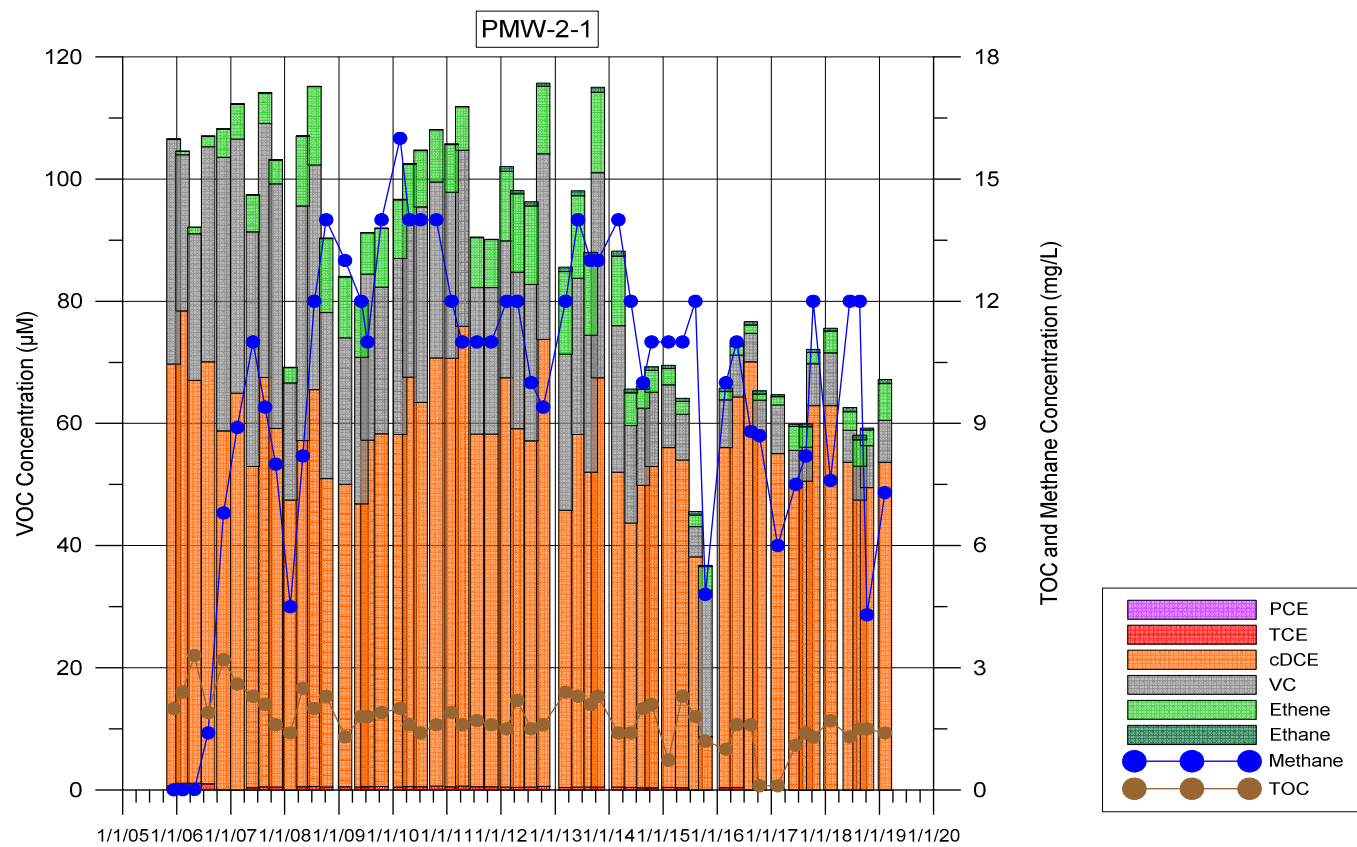


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CONCENTRATION TREND PLOT FOR WELL DW-7

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FIGURE C-8

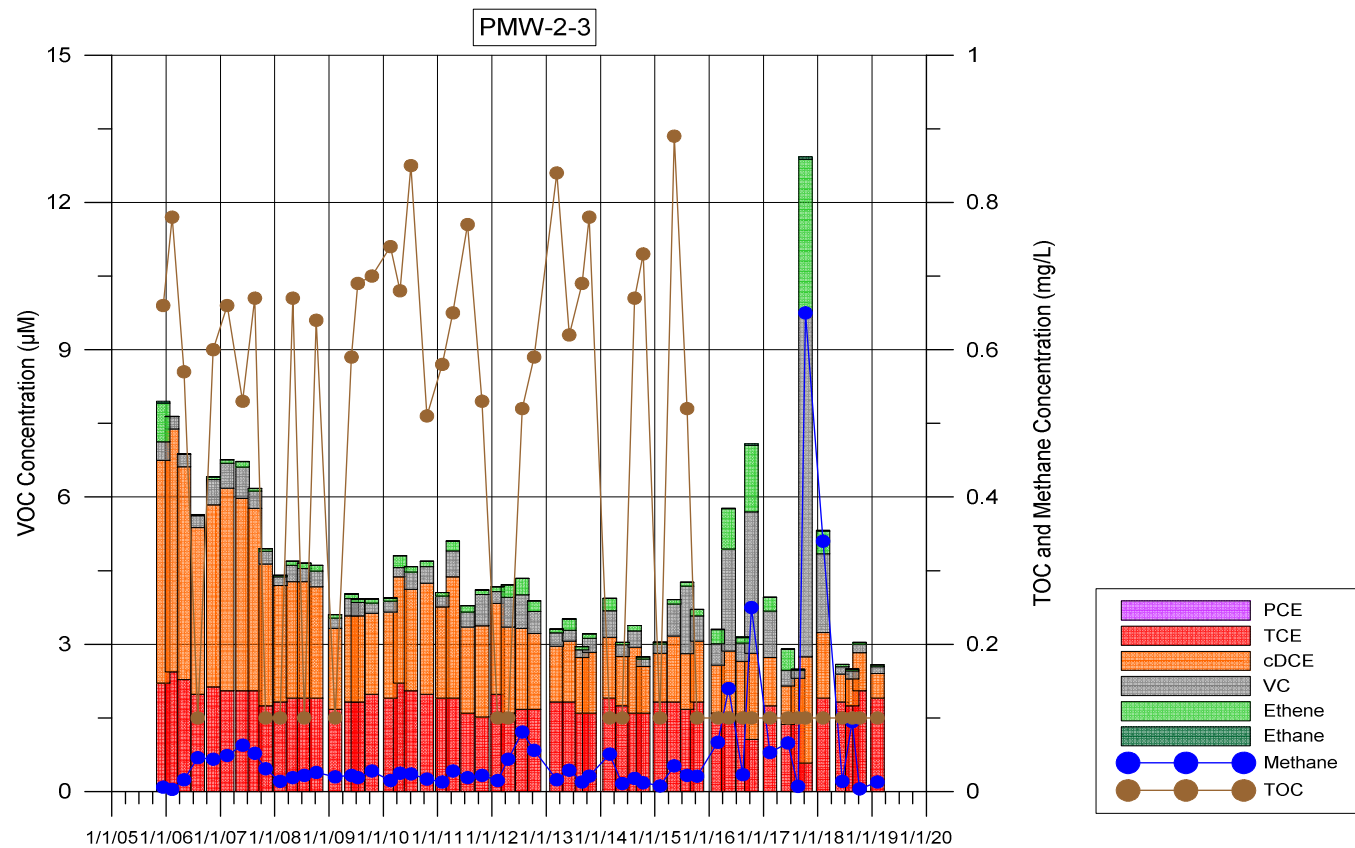


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CONCENTRATION TREND PLOT FOR WELL PMW-2-1

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FIGURE C-9

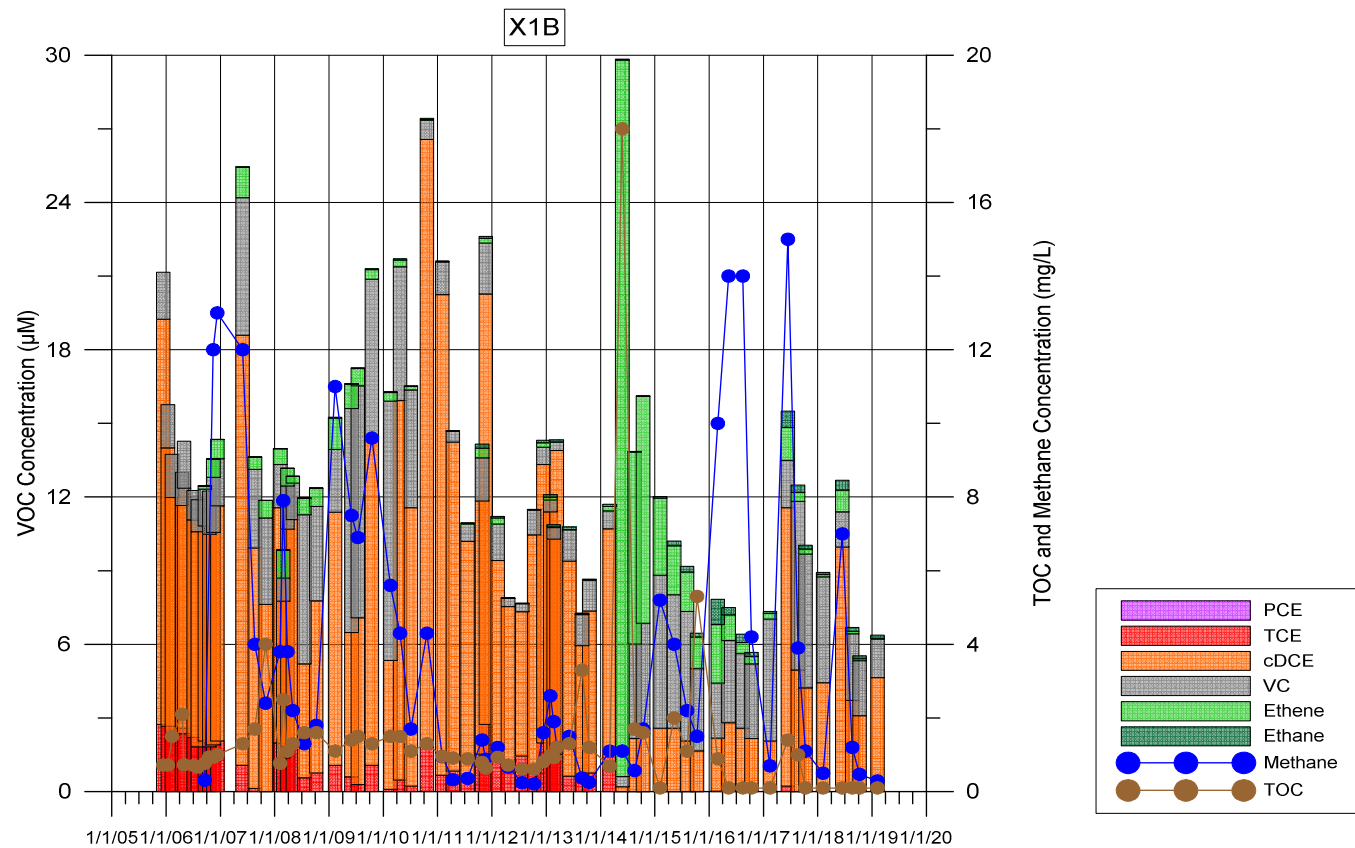


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CONCENTRATION TREND PLOT FOR WELL PMW-2-3

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FIGURE C-10

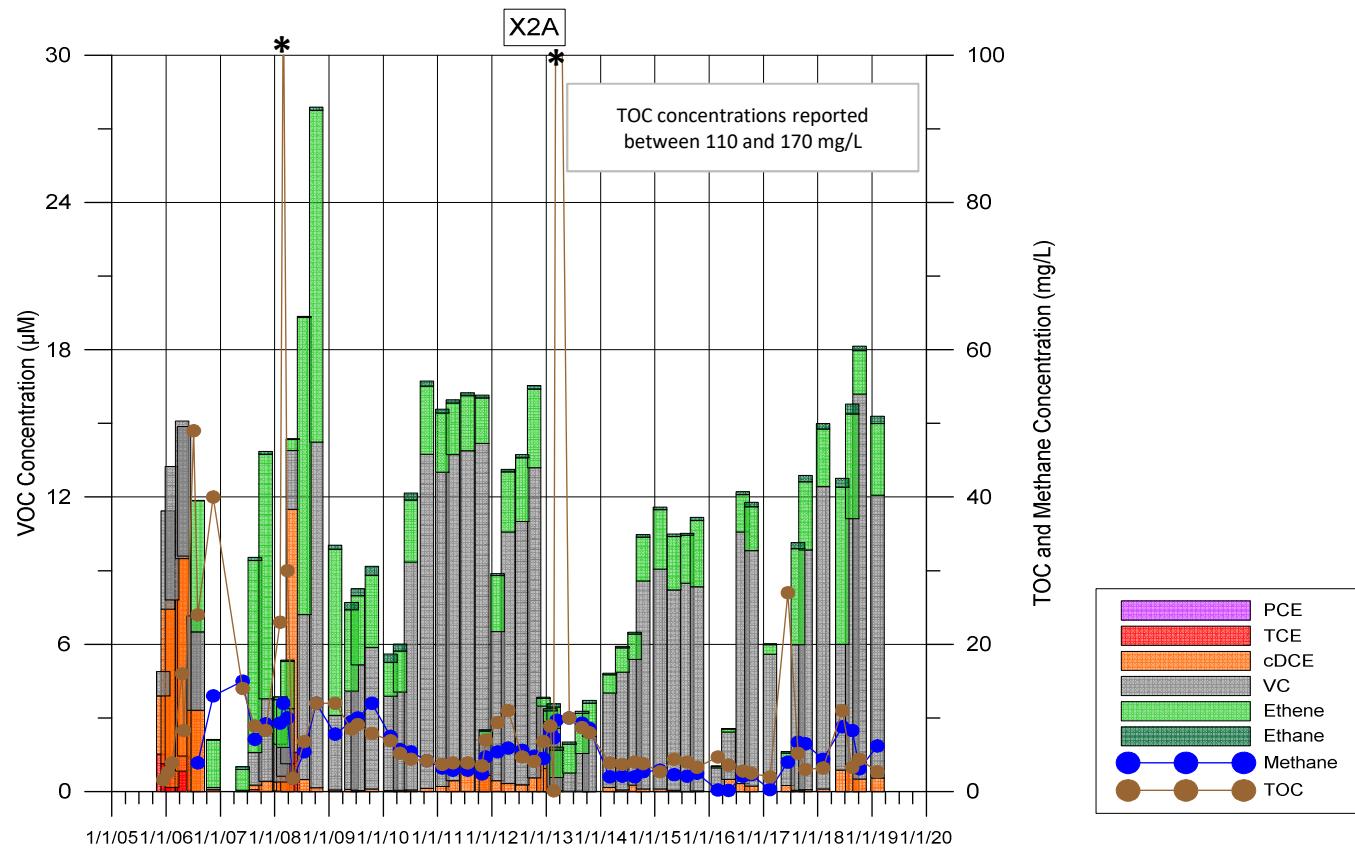


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CONCENTRATION TREND PLOT FOR WELL X1B

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FIGURE C-11

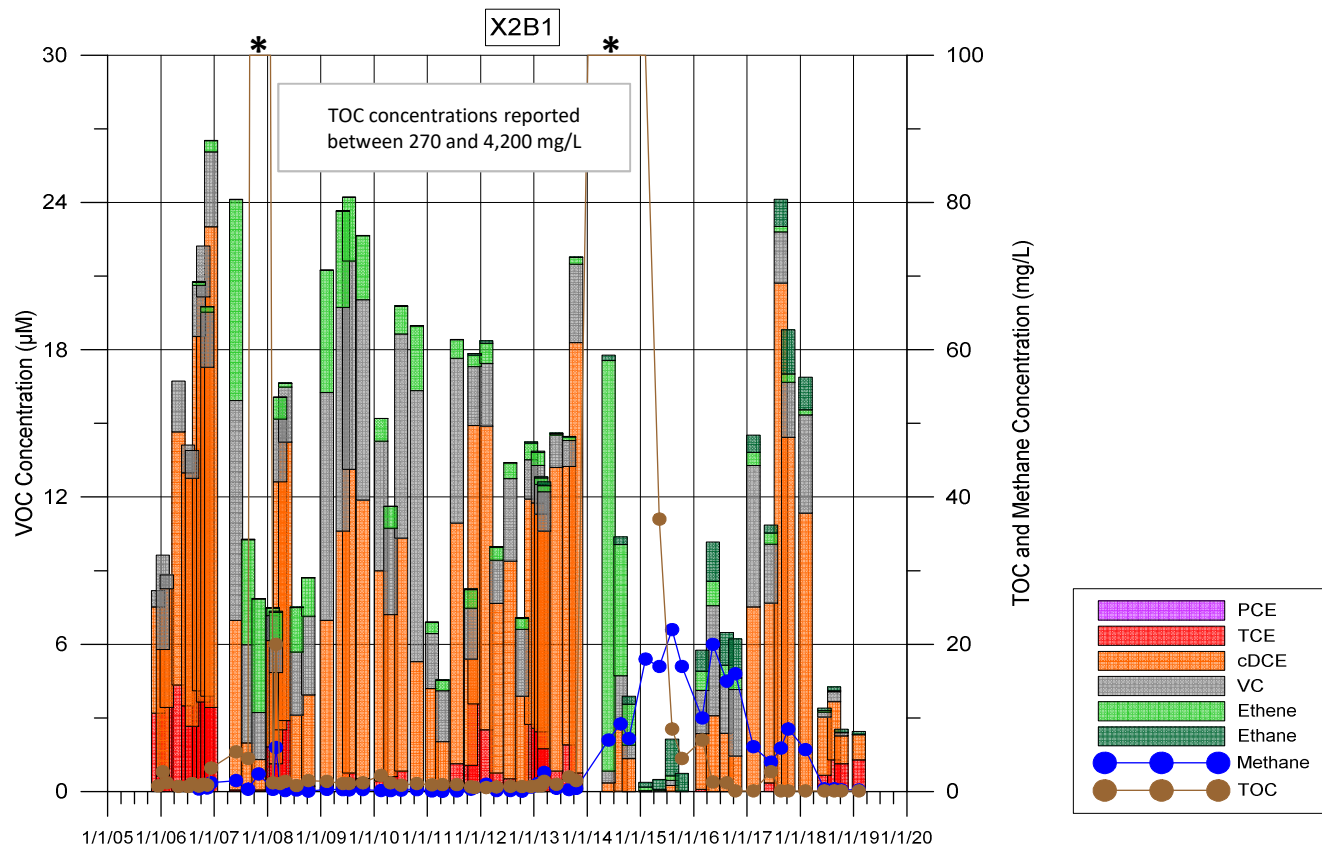


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CONCENTRATION TREND PLOT FOR WELL X2A

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FIGURE C-12



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CONCENTRATION TREND PLOT FOR WELL X2B1

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FIGURE C-13