



2020 Second Quarter Groundwater Monitoring Report

April – June 2020

Claremont Polychemical Corporation Site

505 Winding Road

150 Winding Road (Groundwater Treatment Facility)

Old Bethpage, Nassau County, New York 11804

Contract/WA No. D0076025-28; Site No. 130015

Prepared for:

New York State

Department of Environmental Conservation

Division of Environmental Remediation

625 Broadway Albany, New York 12233

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**Department of
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Attachment A1: Summary of Emerging Contaminant Results – Second Quarter 2020 Groundwater Samples

Attachment B: Synoptic Water Level Data

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1 Introduction

This quarterly groundwater monitoring report prepared by Henningson, Durham & Richardson Architecture and Engineering, P.C. (HDR) presents groundwater sampling analytical results for the second quarter (April through June) of 2020 and supporting information on the history, groundwater extraction and treatment (GWE&T) system configuration and hydrogeologic conditions at the Claremont Polychemical Corporation Site (NYSDEC Site #130015); hereinafter referred to as CPC or the “Site” (Figure 1). The groundwater monitoring event was historically part of the on-going site management and long term monitoring (LTM) activities associated with Work Assignment #28 under contract D007625-28. In February 2020 the quarterly collection of groundwater samples and the preparation of this deliverable were transferred to WA#43 and includes the following:

- Brief overview of historical Site activities;
- Discussion of the on-site GWE&T system including discharge monitoring;
- Hydrological data;
- Brief description of the field activities;
- Analytical results of monitoring well sampling, specifically those for chlorinated volatile organic compounds (VOCs) including trends and plume evaluation;
- Analytical results of the six monitoring wells installed in the downgradient investigation for VOCs, and emerging contaminants including per- and polyfluoroylalkyl substances (PFAS) and 1,4-dioxane; and
- Conclusions and Recommendations.

2 Site Background

2.1 Site History

Claremont Polychemical Corporation, a former manufacturer of pigments for plastics and inks, coated metal flakes, and vinyl stabilizers, operated at the Site from 1966 to 1980. According to the “Second Five-Year Review Report for Claremont Polychemical Corporation” prepared by the Environmental Protection Agency (EPA), dated March 2014, during its operation, CPC disposed of liquid waste in three leaching basins and deposited solid wastes and treatment sludges in drums or in aboveground metal tanks. The principal wastes generated were organic solvents, resins, and wash wastes (mineral spirits). A solvent recovery system (steam distillation), two pigment dust collectors and a sump were located inside the Process Building. Five concrete treatment basins, each with a capacity of 5,000 gallons which contained sediments and water, were to the west of the building. Six aboveground tanks, three of which contained wastes, were located east of the

building. Other features included an underground tank farm, construction and demolition debris, dry wells and a water supply well (EPA 2014).

In 1979, the Nassau County Department of Health (NCDH) found 2,000 to 3,000 drums of inks, resins, and organic solvents throughout the Site during a series of inspections. Inspectors identified releases associated with damaged or mishandled drums in several areas including one larger release located east of the Process Building (referred to as the "spill area"). CPC sorted and removed the drums in 1980 (EPA 2014). In October 1980, the New York State Department of Environmental Conservation (NYSDEC) ordered CPC to commence clean-up activities at the Site. CPC did not perform the clean-up activities required by NYSDEC and CPC ceased operations at the Site in 1980 (EPA 2014). EPA proposed the Site for listing on the National Priorities List (NPL) in October 1984 (because of CPC's refusal to perform the clean-up) and CPC was subsequently listed on the NPL as a Superfund site in June 1986.

A Remedial Investigation Feasibility Study (RI/FS) was initiated in March 1988 under the oversight of the EPA. Surface and subsurface soil, groundwater, underground storage tanks, and the Process Building were sampled as part of the RI. The RI/FS reports were released to the public in August 1990. The RI/FS findings indicated that on-site soils contaminated with tetrachloroethylene (PCE), located in the former "spill area", constituted a potential threat to groundwater resources. The spill area is adjacent to and east of the former Process Building. Other VOCs including 2-butanone, toluene, xylene, 1,2-dichloroethene (DCE), trichloroethene (TCE), 1,1,1-trichloroethane (TCA), ethylbenzene, 1,2-dichloroethane (DCA), methylene chloride, and vinyl chloride were detected in groundwater at concentrations exceeding federal and state standards. EPA issued two Records of Decision (RODs) signed in September 1989 and September 1990 and two Explanations of Significant Differences (ESDs) signed in September 2000 and April 2003 since completion of the RI/FS. The operable units (OUs) addressed by the RODs and ESDs are described in Table 1.

Table 1 – CPC Operable Units

Operable Unit	Description	Remedy
OU-1	Treatment and removal of wastes in 14 underground storage tanks	14 USTs and contents removed. Achieved cleanup levels allowing for unlimited use and unrestricted exposure.
OU-2	Wastes stabilized during the Sept. 1988 removal action	Testing, consolidation, treatment, and disposal of wastes in containers and basins performed. Achieved unlimited use and unrestricted exposure, later changed to commercial/light industrial because of remaining contamination below the building. 2003 ESD added additional remedial actions for OU-2 under the former Process Building including an SVE system and using the building's concrete slab as a cap for cadmium contaminated soil.

Operable Unit	Description	Remedy
OU-3	Soil contaminated with PCE at the “spill area”	Approximately 8,800 tons of PCE contaminated soils excavated, treated and backfilled on Site. Achieved cleanup levels allowing for unlimited use and unrestricted exposure.
OU-4	Contaminated groundwater on the CPC property	Extraction and treatment of groundwater via metals precipitation, air stripping and carbon adsorption. On-site reinjection.
OU-5	Contaminated groundwater off of the CPC property.	Extraction and treatment of groundwater via air stripping and off-site reinjection using the Old Bethpage Landfill treatment system extraction wells south-southeast of the CPC Site.
OU-6	Decontamination of the former Process Building	Vacuuming and dusting surfaces, asbestos abatement, pressure washing walls and interior surfaces. Achieved cleanup levels allowing for unlimited use and unrestricted exposure.

A GWE&T system was installed on-site by the EPA and Army Corps of Engineers (ACOE) to hydraulically contain VOCs in groundwater as the OU-4 remedy. GWE&T system operation began in February 2000, reportedly pumping and treating over 400 gallons per day (gpd). SAIC Inc. (SAIC) operated and maintained the GWE&T system, collected plant effluent samples and performed quarterly groundwater sampling at 41 wells from 2000 to May 2011. In May 2011, the project was transferred from the ACOE/EPA to the NYSDEC. HRP Associates, Inc. (HRP) performed the same scope of work as SAIC under contract to NYSDEC from May 2011 to August 2015. HDR, also under contract to NYSDEC, took over HRP’s scope of work on September 1, 2015.

EPA issued an Explanation of Significant Differences (ESD) on September 29, 2000 that the Old Bethpage Landfill’s (OBL) GWE&T was inadvertently capturing the CPC OU-5 off-site groundwater plume; therefore the OBL GWE&T would be used to capture the off-site plume instead of constructing a new treatment facility. At that time the Town of Oyster Bay owned and operated the OBL GWE&T (USEPA 2000).

The Town of Oyster Bay operated the OBL GWE&T under a Municipal Response Action Reimbursement Agreement for treating the contaminated groundwater associated with CPC OU-5 from January 1997 through January 2007, followed by a State Assistance Contract (SAC No. C303223) from January 2007 through 2017. The NYSDEC terminated the SAC with the Town of Oyster Bay in August 2016 in a Site Transfer Agreement that outlined the schedule, terms, and responsibilities of the transfer (NYSDEC 2016).

NYSDEC’s Division of Environmental Remediation (DER) issued HDR Work Assignment (WA# 28) under contract D007625 for CPC OU-5. The purpose of the assignment was to transfer operations, maintenance, and monitoring of the OBL/CPC OU-5 GWE&T from Town of Oyster Bay’s consultant Lockwood, Kessler & Barlett, Inc. (LKB) to HDR. In October 2016, the OU-4 GWE&T was shut down, and HDR took over the operation of the OBL/OU-5 GWE&T. At that time, NYSDEC had also given

the Town of Oyster Bay permission to discontinue treatment for the OBL plume which involved shutting down recovery wells RW-1 and RW-2. HDR continued operations, maintenance and monitoring activities (collectively Site Management or SM) for CPC OU-5 consisting of former OBL GWE&T recovery wells RW-3, RW-4 and RW-5 for the period October 1, 2016 through February 28, 2018. Amendment #1 was approved April 16, 2018 for HDR to extend the operations and maintenance of the treatment facility through February 28, 2019, and Amendment #2 was approved on April 11, 2019 further extending the period of performance through February 28, 2020. NYSDEC approved Amendment #3 on February 13, 2020, extending the operations and maintenance of the Claremont OU5 facility through February 28, 2022. The monitoring and reporting task including LTM with quarterly collection of groundwater samples was transferred to WA#43 through February 28, 2022. This task includes the field efforts, coordination, oversight, and reporting for eight quarterly sampling events, with the addition of the six downgradient monitoring wells into the sampling network.

In 2018 an investigation downgradient from the Claremont Polychemical Site was performed as part of the NYSDEC Contract D007625, Work Assignment #43. This RI was conducted to further delineate the extent of off-site VOC contamination in the underlying aquifers and to evaluate the potential for contamination to reach downgradient public supply wells. The investigation involved installation of six vertical profile borings (VPBs) with push ahead groundwater sampling up to 450 ft. below ground surface (bgs), and installation and sampling of six permanent monitoring wells. The RI field activities were conducted in two phases from July 2018 through November 2018 for the installation of the first four VPBs south southeast of the CPC Site, and December 2019 through January 2020 for two VPBs to the south southwest.

All groundwater samples were analyzed for Target Compound List (TCL) VOCs by EPA method 8260C; 1,4-Dioxane by EPA Method 8270C SIM; Perfluorooctane sulfonic acid (PFOS), Perfluorooctanoic acid (PFOA), and 19 other perfluorinated compounds by modified EPA method 537. Groundwater samples collected during the RI contained elevated concentrations of VOCs and the emerging contaminants PFOS, PFOA, and 1,4-dioxane. Refer to the Final Remedial Investigation Report Claremont Polychemical RI/FS Offsite Groundwater Plume (March 2019) for additional details. The six monitoring wells associated with the RI were added to the Claremont OU5 well program in March 2020.

2.2 Location

The CPC site is located on a 9.5-acre parcel in an industrial section of Old Bethpage, Nassau County, New York (Figure 1). The former 35,000 square foot Process Building, demolished in 2012, was the only building historically on the property. The concrete slab from this building remains. The 5,200 square foot GWE&T system building was constructed as part of the OU-4 remedy. The OU-4 GWE&T system was shut down on October 1, 2016 and has not been in operation since that time.

The OU-5 GWE&T system is located across the street at 150 Winding Road within the Town of Oyster Bay Solid Waste Disposal Complex (OBSWDC). The OU-5 GWE&T system includes a groundwater recovery system, water conveyance system, discharge system, monitoring wells, air

stripper, and a 3,100 square foot facility for monitoring and controlling the system. The treated effluent discharges to Recharge Basin No. 1 located west of the OBL. Secondary discharge is directed to Recharge Basin No. 33 west of the Bethpage State Park Black Course for golf course irrigation in the summer (Figure 2). The five extraction/recovery well pump houses (RW-1, RW-2, RW-3, RW-4 and RW-5) are located on the Bethpage Black Course (Figure 2).

The CPC Site lies approximately 800 feet west of the border between Nassau and Suffolk Counties and is accessed via Winding Road on the property's western border. Adjacent properties include (Figure 1):

- South and Southeast – Bethpage State Park and golf course;
- East – State University of New York (SUNY) - Farmingdale Campus;
- West – OBSWDC and OU-5 GWE&T; and
- North – Commercial and Light Industrial.

The OBSWDC includes the closed OBL, solid waste transfer operations and the OU-5 GWE&T system currently operated by HDR under contract to NYSDEC. The Nassau County Fireman's Training Center (FTC), which has also contributed to soil and groundwater contamination in the area, is located approximately 500 feet south of the OBL portion of the OBSWDC. FTC had a GWE&T system that ceased operations in 2013 having achieved the cleanup objectives. The closest residences are approximately one-half mile from the Site, immediately west of the OBL. The nearest public supply well is located 3,500 feet northwest of the Site.

2.3 Site Hydrogeological Setting

The CPC site is underlain primarily by sand with interbedded, discontinuous silt and lignitic clay lenses. Upper glacial aquifer deposits that are observed are mostly absent in the area, rather the Magothy Formation is the uppermost geologic unit with a thickness of approximately 750 feet. The Raritan clay below acts as a barrier between the Magothy and Lloyd aquifers.

The "Claremont Polychemical Superfund Site Long-Term Groundwater Monitoring Old Bethpage, New York" report dated December 2001 prepared by SAIC indicated historical gradients ranging from 0.001-0.002 feet/foot and horizontal flow velocities of 0.43 feet/day or 157 feet/year (Ebasco, 1990). Historically, groundwater contour maps produced from wells screened in both the upper glacial aquifer and the deeper Magothy aquifer depict a south-southeast flow direction across the site. The recent CPC contour maps are generally consistent with previous maps produced from the CPC monitoring well network and from investigations by others. The current hydrogeologic conditions and groundwater contour mapping (Figures 3, 4 and 5) are discussed in Section 4.1

3 Groundwater Extraction and Treatment System

A description of the GWE&T system and a review of its contaminant recovery and hydraulic control effectiveness are provided below.

3.1 Groundwater Extraction and Treatment System Description

The OU-5 GWE&T system was originally designed to capture and treat organic contaminants associated with the contaminated groundwater plume identified as a result of the disposal of hazardous substances at the Old Bethpage Landfill site (NYDEC Site No. 130001). The system consists of groundwater recovery through three extraction wells, water conveyance, treatment via an air stripper and discharge to recharge basins. Each of the system components are discussed below.

GWE&T System Extraction Wells

The groundwater collection system originally consisted of five extraction wells known as RW-1, RW-2, RW-3, RW-4 and RW-5 approximately 800 feet apart located in Bethpage State Park Black Golf Course south of the CPC site (Figure 2). The recovery wells were designed with the total maximum pumping capacity of 1.76 million gpd and a designed flow of 1.5 million gpd to the treatment system (LKB, 1993). Table 2 provides extraction well screen intervals and total depths.

Table 2 – Extraction Well Construction Details

Well	Total Depth (ft)	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
RW-1*	280	185	265
RW-2*	290	230	271
RW-3	275	163	255
RW-4	270	147	250
RW-5	283	153	263

*RW-1 and RW-2 captured the OBL plume which has been remediated. These wells are no longer online or operated for purposes of groundwater remediation.

Recovery wells RW-1 and RW-2 were petitioned to be discontinued by the Town of Oyster Bay prior to the transition to HDR operating the OU-5 GWE&T (Town of Oyster Bay, 2016). These recovery wells historically had non-detectable or very low values for total VOCs, and did not capture the CPC off-site plume. The individual VOC results were lower than their Consent Decree and Class GA standards as stated in the LKB Quarterly Remedial Action Report dated June 2016. On October 2, 2016 at the direction of the NYSDEC, RW-1 and RW-2 were taken off-line.

Prior to October 2017, the system's average influent flow rate was 628 gallons per minute (gpm), or 904,396 gpd, and the average effluent flow rate was 624 gpm, or 899,233 gpd. In October 2017, pump failures stemming from a possible power surge resulted in substantial system downtime

and, thus, decreased average flow rates for influent (539 gpm, or 775,450 gpd) and effluent (532 gpm, or 765,700 gpd). The suspected power surge also caused process control issues that precluded automatic operation of the system. As such, the system was only run manually and only during working hours from November 2017 through July 2018. The restricted operation of the system in manual mode, along with the process alarms and interlock gauges not functioning required oversight of the facility while online. In early July, NYSDEC instructed HDR to add a second shift operator to accommodate NYS Parks, Recreation and Historic Preservation (Parks) request for additional irrigation water for the golf course. Recovery wells RW-1 and RW-2 were brought on-line to increase the water level in Basin 33 from which Parks obtains its irrigation water. On September 6, 2018, the control system was fully functional and RW-1 and RW-2 were taken off-line.

In September 2018, the process control system, controls and alarm system became fully functional which allowed the treatment system to operate without onsite staff supervision. The recovery wells currently run in automatic mode with remote start up, and the process pumps are operated in fully automatic mode.

On December 31, 2019 RW-4 tripped offline and diagnostics run confirm the motor and pump will need replacement. The pump and motor for RW-4 were replaced April 7, 2020 and RW-4 is again fully functional. Refer to the Monthly O&M reports for April through June 2020 for details on the status of GWE&T system upgrades, issues encountered, and impacts on system operations and performance. Average system flow rates on days during the second quarter of 2020 were 703 gpm in April, 714 gpm in May, and 674 gpm in June. Under current conditions, the PLC and the control system are stable and fully functional. Flows from the individual recovery wells are remotely read, transmitted, and totalized. In April, a Hi-Hi level alarm was triggered when pressure filter pump 3 (PFP3) failed; the plant was down for a total of 285 minutes. In May, the system was shut down for 220 minutes for planned maintenance tasks. In June, the system was shut down for 3,333 minutes for a Hi-Hi level alarm condition and an air stripper blower shut down. Refer to the April, May and June Monthly Report of the Operations and Maintenance Activities for further details.

GWE&T System Path of Remediation

Groundwater is pumped from three extraction wells; designated RW-3, RW-4 and RW-5, installed in 1992 at what was then the leading edge of the off-site VOC plume from the OBL. The combined flow from the extraction wells is directed through common conveyance piping to the air stripper wet-well. A triplex pump arrangement delivers the collected groundwater into the top of the air stripper, which contains packing media. As the groundwater passes through and saturates the packing, it contacts air that is directed from the bottom of the air stripper via the blower. Dissolved VOCs pass from the liquid phase (groundwater) into the gas phase (air), and exit the stripper through a stack. Non-volatile organic compounds and inorganic contaminants, if any, are not removed by the treatment system.

The effluent is directed into a receiving wet-well, where another triplex pump arrangement delivers it to two recharge basins. Recharge Basin No. 1 contains a system of eight diffusion wells

and is located upgradient of the OBL. Recharge Basin No. 33 receives effluent in the summer that is used beneficially for watering the golf course.

The GWE&T system is staffed by a plant manager/operator working 40-hour weeks, and an autodialer (telemetry unit) is installed to contact the plant manager in case of plant alarms. Typical response time is 30 minutes. The plant manager can monitor the plant remotely from the FactoryTalk View Site Edition Client control system and make adjustments to the system operations.

GWE&T System Operating Permits

Water Permit

The OU-5 GWE&T operates under a State Pollutant Discharge Elimination System (SPDES) permit equivalency dated October 24, 2012 which was valid until May 11, 2016. A permit equivalency renewal application was submitted to the NYSDEC Bureau of Water Permits on March 30, 2016, and is pending approval. Effluent Limitations and Monitoring Requirements outlined in the permit are enforced by the NYSDEC Division of Environmental Remediation, Remedial Bureau E.

Air Permit

An air permit is not required for the GWE&T system operation since 6 NYCRR Part 375-1.7 states that “no permit is required when the substantive compliance is achieved as indicated by the NYSDEC approval of the workplan.” Emissions from the air stripper have historically been negligible and are compliant with air guideline concentrations.

3.2 Groundwater Extraction and Treatment System Performance Evaluation

3.2.1 Flow Rate

Since startup, the OU-4 GWE&T system treated more than approximately 2.41 billion gallons of groundwater associated with the CPC site until operation was suspended and transitioned to the OU-5 plant. The OU-5 GWE&T system historically operated at a rate of approximately one million gpd. During the second quarter of 2020, the system processed 89.7 million gallons at an average daily flow rate of 1,006,567 gpd for April, 1,022,518 gpd for May, and 894,560 gpd for June. Daily flow readings are provided in the O&M reports submitted monthly to NYSDEC (refer to the June 2020 O&M report for the most recent data). A summary of the flow in each recovery well is included in Table 3.

Table 3 – Recovery Well Flow Summary for Second Quarter 2020

Location	April Total Flow (gallons)	May Total Flow (gallons)	June Total Flow (gallons)
RW-1*	12,969	1,792	1,332
RW-2*	2,904	6,075	1,225

Location	April Total Flow (gallons)	May Total Flow (gallons)	June Total Flow (gallons)
RW-3	11,758,000	11,235,000	9,747,000
RW-4	8,968,000	11,978,000	9,937,000
RW-5	9,797,000	9,121,000	7,882,000
Total Influent	31,278,000	32,835,000	27,790,000
Total Effluent	31,198,000	31,698,043	26,836,803
*Recovery wells RW-1 and RW-2 were taken offline at the conclusion of the Remedial System Optimization evaluation. Flows associated with RW-1 and RW-2 are from monthly operational tests.			

The volume of treated water discharged by the GWE&T system to the recharge basins is determined daily from readings of the magnetic flow meter on the plant effluent line. The difference between the total influent and total effluent is due to a calibration error in the existing flow meters. The recharge basins are designed to receive 1.5 million gpd of effluent. During April, 2020, the treated water was directed to Basin No. 1, but the valve influent to Basin No. 33 was partially opened. During May and June of 2020, the treated water was directed to Basin No. 33. Effluent was discharged at an average volume of 974,548 gpd during the second quarter of 2020.

3.2.2 Groundwater Extraction and Treatment System Contaminant Removal

To quantify the treatment system contaminant removal rate, HDR reviewed available GWE&T system influent and effluent analytical results from monthly operation and maintenance records. The OU-4 GWE&T system removed 947 kg cumulatively (combined mass of TCE, PCE and 1,1-DCE) from 2002 until October 2016, when it was taken offline. Most of the mass removed by the OU-4 GWE&T system was TCE (749 kilograms or 1,651 pounds) and PCE (170 kilograms or 375 pounds). Since October 1, 2016, when HDR took over operations of the OU-5 GWE&T system, approximately 360.92 kilograms (795.69 pounds) of TCE and 44.35 kilograms (97.78 pounds) of PCE have been removed by the OU-5 system. The previous OU-5 operator (prior to October 1, 2016) did not calculate VOC load, or track the contaminants of concern cumulatively over time. The LKB reports provided to HDR did not include historical data for daily flow rates.

Table 4 – VOC Mass Removed per Quarter for the Latest Five Quarters (kg)

Facility	Quarter 2 2019	Quarter 3 2019	Quarter 4 2019	Quarter 1 2020	Quarter 2 2020	Cumulative Totals (Sum of TCE, PCE and 1,1-DCE)
OU-4 GWE&T	offline	offline	offline	offline	offline	947 (2002-2016)
OU-5 GWE&T	32.5	36.95	49.64	8.35	30.72	412.72 (10/1/2016 to present)

3.2.3 Groundwater Extraction and Treatment System Discharge Monitoring

System effluent samples are collected quarterly for the following analyses: VOCs, semi-volatiles (BNA), metals, total dissolved solids (TDS), total Kjeldahl nitrogen (TKN), cyanide, and anions. Effluent data for select VOC compounds (PCE, TCE, and 1,1-DCE) and semi-volatiles (BNA) are analyzed to evaluate compliance with effluent discharge limits. Figure 6 shows that effluent concentrations for the main contaminants, PCE and TCE, were below permissible discharge limits of 5 µg/L at the OU-5 GWE&T system during the second quarter of 2020. In addition, the effluent concentration of iron (not detected) and manganese (148 µg/L) were both under the permissible levels of 600 µg/L in the second quarter of 2020. System effluent pH through the second quarter remained above or equal to the 6.50 minimum requirement with average readings of 6.65 in April, 6.8 in May, and 6.8 in June. Refer to the June Monthly O&M report for additional information on remediation system performance and daily operations.

4 Groundwater Monitoring Program

A network of 54 monitoring wells is used to monitor the groundwater quality and effectiveness of the GWE&T system (Figure 2). On June 15th through 19th, 2020, HDR sampled 48 of the 49 CPC monitoring well network wells (no sample was collected at MW-6A due to insufficient water to collect a sample). The groundwater monitoring program includes wells both on the CPC property (OU-4) and off the CPC property (OU-5). OU-4 monitoring wells sampled were DW-1, DW-2, EW-5, EW-7C, EW-7D, SW-1 and WT-01. OU-5 wells sampled were BP-3A, BP-3B, BP-3C, EW-1A, EW-1B, EW-1C, EW-2A, EW-2B, EW-2C, EW-2D, EW-4A, EW-4B, EW-4C, EW-4D, EW-11D, EW-12D, EW-14D, LF-1, M-30B-R, MW-5B, MW-6B, MW-6C, MW-6D, MW-6E, MW-6F, MW-7B-R, MW-8A, MW-8B, MW-8C, MW-9B, MW-9C, MW-10D, MW-11A, MW-11B, and OBS-1. Following approval from the NYSDEC on August 21, 2019, an additional six wells were sampled from the western extent of the study area. These wells were BP-5B, BP-5C, BP-12B, BP-12C, BP-13B, and BP-13C. In February 2020 under WA#43 six downgradient VPB monitoring wells were added to the quarterly monitoring and include MW-CPC-36, MW-CPC-37, MW-CPC-38, MW-CPC-39, MW-CPC-40, and MW-CPC-41 (Figure 2). A description of the groundwater sampling event and results is provided below.

4.1 Hydrological Data

Sixteen wells were added to the CPC monitoring program as a result of the transition on October 1, 2016 to the OU-5 GWE&T system (Figure 2). In addition to the sixteen CPC monitoring wells, the second quarter 2020 synoptic water level round conducted on June 10, 2020 also included six new wells installed as part of the NYSDEC WA#43 Claremont RI/FS to the south, and 6 existing wells not previously included. These wells are BP-5B, BP-5C, BP-12B, BP-12C, BP-13B, and BP-13C (Attachment B).

The average water table elevation across the OU-5 site is 63.85 feet (vertical datum NAVD88). Depths to groundwater (DTW) in June 2020 ranged from 18.06 feet (well MW-40) to 100.09 feet (well EW-11D) below ground surface (bgs) (see Attachment B). Potentiometric surface elevations



at each well were calculated for each well by subtracting the DTW from the top of casing elevation. HDR plotted the water level elevations and sketched the water table contours of the upper Magothy and the potentiometric surface in the middle and lower Magothy aquifers. These data show the groundwater flow direction is predominantly south-southeast at the water table (Figure 3), middle Magothy (Figure 4) and in the lower Magothy (Figure 5). The potentiometric surface contours in the middle Magothy depict notable pumping influence near and immediately down gradient from the OU5 recovery wells, RW-3 through RW-5. Overall, groundwater elevations and inferred groundwater flow direction based on groundwater elevation contours were consistent with previous data. There is a south-southwest component to groundwater flow within the deeper Magothy aquifer in the area of BP-13, and recently installed wells MW-CPC-40 and MW-CPC-41. In addition horizontal gradients increase in the in the area of recently installed monitoring wells MW-CPC-36 through MW-CPC-41, ranging from 0.003-0.004 feet/foot.

4.2 Groundwater Sample Collection

The monitoring well groundwater samples were collected on June 15-19th, 2020. The groundwater samples were collected using passive diffusion bags (PDBs) inserted at mid-point in the screens in each monitoring well. Each PDB bag was retrieved, pierced with a decontaminated sharp object and the water inside was collected in VOC vials with septum caps, and preserved with hydrochloric acid (HCl). The VOC vials are labeled, recorded on a chain of custody, and placed in a cooler with ice.

Groundwater samples from the newly installed CPC wells were collected using the low-flow sampling method "USEPA Low Stress (Low Flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from monitoring Wells dated January 19, 2010". The intake of the Geo-Tech PFC free portable bladder pump was installed at the mid-point in the screens, or biased to a high concentration value observed during the VPB sampling. Monitoring wells were purged until low-flow parameters (turbidity, dissolved oxygen, specific conductivity, temperature, pH, and oxidation/reduction potential) stabilized in accordance with EPA's low flow method. Low flow sampling logs, chains of custody (COC), and PFC daily checklists are provided in Attachment D. A list of wells sampled and analytical results are presented in Table 5, and Attachments A and A1.

Sixty two samples (including four field duplicates and four trip blanks) were submitted to Test America Laboratory, of Edison, New Jersey, an NYSDOH ELAP-approved laboratory (#12028), to be analyzed for VOCs via EPA Method 8260. Seven samples (including one field duplicate) were additionally analyzed for PFAS by modified EPA modified Method 537 and 1,4-dioxane by method 8270D SIM.

4.3 Groundwater Analytical Results

4.3.1 Groundwater VOC Analytical Results

Second quarter 2020 groundwater sampling VOC exceedances are summarized on Table 5 and are plotted in trend charts in Figures 7 through 28; treatment system effluent and influent water

sampling results are shown in trend charts in Figures 6 and 29. The six downgradient MW-CPC monitoring well VOC exceedances are summarized in Figure 37. In addition to the results below, acetone was detected in 44 samples and 4 QC samples, though no acetone concentrations exceeded the GWQS of 50 µg/L. Although acetone is a common laboratory contaminant, its continued detections in the quarterly samples tend towards it being a contaminant of concern rather than a laboratory contaminant.

Table 5 – Monitoring Well VOC Exceedances –Second Quarter 2020

Well	PCE	TCE	cis-1,2-DCE	1,1-DCA	1,2-DCA	VC	Benzene	Chlorobenzene
MW-CPC-36	<u>29</u>	4.2	<u>65</u>	1.1	<u>2.3</u>	0.97 J	<u>34</u>	ND
MW-CPC-38	ND	ND	4.1	1.2	ND	0.83 J	<u>1.6</u>	ND
MW-CPC-40	ND	1.4	ND	<u>5.7</u>	ND	ND	<u>2.9</u>	ND
MW-CPC-41	<u>7.9</u>	0.43 J	0.58 J	ND	ND	ND	ND	ND
BP-3B	<u>30</u>	2.6	<u>15</u>	2	ND	ND	ND	ND
BP-3C	<u>80</u>	<u>6.1</u>	<u>36</u>	<u>6</u>	0.43 J	2	0.78 J	ND
DW-1	4.6	1.6	<u>16</u>	ND	ND	ND	ND	ND
EW-04A	<u>44</u>	<u>7.4</u>	<u>120</u>	ND	ND	ND	ND	ND
EW-04C	4.4	<u>34</u>	0.84 J	ND	ND	ND	ND	ND
EW-07C	<u>15</u>	<u>190</u>	3.6	ND	ND	ND	ND	ND
EW-11D	4.5	<u>30</u>	1.7	ND	ND	ND	ND	ND
EW-12D	<u>17</u>	<u>290</u>	<u>6.1</u>	0.73 J	ND	ND	ND	ND
EW-14D	1.2	<u>30</u>	0.42 J	ND	0.54 J	ND	ND	ND
MW-06B	ND	ND	ND	ND	ND	ND	<u>2.9</u>	<u>8.1</u>
MW-06D	ND	ND	ND	ND	ND	0.27 J	<u>1</u>	0.46 J
MW-06E	ND	ND	ND	ND	ND	ND	0.59 J	<u>7</u>
MW-11A	4	3.7	<u>30</u>	2.6	ND	ND	ND	ND
MW-11B	1.3	<u>5.2</u>	<u>47</u>	<u>20</u>	<u>1.2</u>	<u>4.1</u>	0.88 J	ND
MW-7B-R	3	<u>110</u>	4.2	ND	ND	ND	ND	ND
SW-1	<u>310</u>	<u>24</u>	<u>15</u>	ND	ND	ND	ND	ND

Results units are µg/L. Bold, underlined, italicized results are exceedances of the NYSDEC Part 703 Class GA criteria. See Attachment A for complete analytical results and comparison criteria. PCE – tetrachloroethylene; TCE – trichloroethylene; cis-1,2-DCE – cis-1,2-dichloroethylene; 1,1-DCA – 1,1-dichloroethane; 1,2-DCA – 1,2-dichloroethane; VC – vinyl chloride; ND – not detected; J – estimated value.

4.3.2 Groundwater Emerging Contaminant Results

In the second quarter of 2020, the six downgradient VPB monitoring wells (Figure 2) were analyzed for the emerging contaminant 1,4-Dioxane. In addition, the six new downgradient wells were analyzed for the PFAS group of contaminants. Groundwater results for 1,4-Dioxane and the perfluorinated compounds Perfluorooctance sulfonamide (PFOS) and Perfluorooctanoic acid (PFOA) were compared to the New York State Drinking Water Quality Council recommended Maximum Contaminant Levels (MCL) of 1 part per billion (ppb) and 10 parts per trillion (ppt), respectively. The sum of PFOA and PFOS is compared to the applicable EPA Health Advisory Level of 70 ppt. Total PFAS is compared to the New York State Drinking Water Quality Council

recommended Maximum Contaminant Levels (MCL) of 500 parts per trillion (ppt). Exceedances of the NYSDEC 1,4-Dioxane MCLs and PFAS Guidelines are summarized in Table 6 and shown on Figures 35 and 36. There were no exceedances for perfluorinated compounds in MW-CPC-39.

Table 6 - Monitoring Well Emerging Contaminant Exceedances - Second Quarter 2020

Well	1,4-D	PFNA	PFOS	PFOA	PFOA+PFOS	Total PFAS
MW-CPC-36	<u>4.3</u>	<u>321</u>	<u>154</u>	<u>139</u>	<u>293</u>	946.72
MW-CPC-36 (DUP)	<u>4.4</u>	<u>366</u>	<u>151</u>	<u>134</u>	<u>285</u>	980.86
MW-CPC-37	<u>6.4</u>	0.94 J	11	28.2	39.2	77.34
MW-CPC-38	<u>6.7</u>	ND	0.72 J	ND	0.72 J	65.61
MW-CPC-40	<u>2.1</u>	ND	ND	ND	ND	117.59
MW-CPC-41	<u>2.6</u>	70	22.2	30.5	52.7	284.59

Results units are ng/L. Bold, underlined, italicized results are exceedances of the NYSDEC Part 703 Class GA criteria. See Attachment A for complete analytical results and comparison criteria. 1,4-D – 1,4-Dioxane; PFNA - Perfluorononanoic acid; PFOS - Perfluorooctanesulfonic acid; PFOA - Perfluorooctanoic acid; PFOA+PFOS – sum of PFOA and PFOS; Total PFAS – sum of all detected Per- and polyfluoroalkyl substances; ND – not detected; J – estimated value.

4.3.3 Evaluation of Plumes

Figures 30 and 31 depict the horizontal plume location with isoconcentration lines in plan view for PCE and TCE. The groundwater contamination distribution was further evaluated by creating sample location pie chart figures for the contaminants PCE, TCE, 1,1-Dichloroethene, trans-1,2-Dichloroethene, cis-1,2-Dichloroethylene, and vinyl chloride in cross section (Figures 32 and 33) and plan view (Figure 34). The horizontal and vertical distribution of PCE and TCE continues to demonstrate a shallow PCE plume comingled with a deeper TCE plume.

OU-4 on-site plume. This plume originates on the CPC site with the highest PCE concentrations historically measured at well SW-1, a water table well. Currently, the on-site plume is predominantly PCE with concentrations an order of magnitude greater than those of TCE. In 2015, PCE showed an increasing trend in well SW-1, with spikes in the second quarter (210 µg/L) and in the fourth (190 µg/L). However in 2016, the PCE concentration steadily decreased from 150 µg/L during the first quarter down to 30 µg/L in the fourth. SW-1 was not sampled between the fourth quarter of 2016 and the second quarter of 2019, due to it becoming dry and subsequent low water levels. The PDB bag in SW-1, which was in the well since the fourth quarter of 2016, was submerged in the first and second quarter of 2019, due to an increase in the water level. It was subsequently sampled in the second quarter of 2019. The PCE concentration in SW-1 was the highest of the on-site wells, with a concentration of 180 µg/L. This is similar to concentrations collected in 2015 and the first quarter of 2016, prior to the well becoming dry. PCE concentration in SW-1 was consistently high for the third and fourth quarter of 2019, with a concentration of 200 and 190 µg/L, respectively. In the first quarter of 2020, PCE concentration increased to 260 µg/L and in the second quarter of 2020, it has again increased to 310 µg/L. At well EW-4C, PCE was the dominant contaminant of concern observed until concentrations decreased from 110 µg/L in the first quarter of 2017 to 34 µg/L in the third quarter of 2017 (Figure 13). PCE concentration has continued to decrease and is now 4.4 µg/L in the second quarter of 2020. TCE at EW-4C has been the dominant contaminant of concern since the third quarter of 2017 through the first quarter of

2020, where concentrations have ranged from 24 µg/L to 52 µg/L. TCE at EW-4C was detected at 34 µg/L during this second quarter of 2020.

Off-site plume upgradient of CPC site. This plume contains VOCs from upgradient sources such as Former Aluminum Louvre (FAL) and is detected as far upgradient as the EW-7-series well cluster and stretches to the southeast into OU5 as far as well MW-7B-R. The FAL (OU-1) and off-site (OU-2) investigations were completed in 2015, with the most recent Record of Decision (ROD) for OU-2 issued in March 2019. Groundwater containing VOCs, primarily TCE, migrated from FAL to beneath the Bethpage State Park Black Golf Course. The source area at FAL is at the east side of the facility and a large storm water recharge basin at Winding Road and Old Bethpage-Sweethollow Road is thought to influence shallow groundwater flow direction beneath FAL in an easterly direction. The FAL plume contains TCE, PCE, and 1,1,1-TCA and flows south-southeast after it moves off-site. When it reaches the CPC site, the FAL plume is found to the east of the CPC source areas. The plume is predominantly TCE, with TCE concentrations typically an order of magnitude greater than those of PCE in EW-7C (Figure 15). TCE-dominant wells include: EW-7C, EW-4C, EW-12D, EW-14D, and MW-7B-R. The overall trend in TCE concentrations since 2011 has been decreasing in the EW-7 well cluster (Figure 15 and 16). EW-7C, EW-12D, and MW-7B-R have the highest TCE concentration compared to other wells, with concentrations at 190 µg/L, 290 µg/L, and 110 µg/L respectively in the second quarter of 2020. MW-7B-R TCE concentrations have been generally trending downward since the OU-4 plant was shut down (Figure 25).

The selected remedy for FAL (OU-1) and off-site (OU-2) outlined in the March 2019 ROD includes enhanced bioremediation, vapor mitigation, and various institutional controls.

Well EW-14D. Groundwater contamination at EW-14D is high in TCE, similar to the off-site, upgradient plume). The PCE concentration is below the criterion of 5 µg/L. Well EW-14D has the greatest variability in TCE concentrations. In the first quarter of 2018, concentrations decreased to 29 µg/L (from 250 µg/L in the fourth quarter of 2017), increased to 59 µg/L in the second quarter, increased to 100 µg/L in the third quarter, and then decreased to 45 µg/L in the fourth quarter of 2018. The TCE concentration in each of the four quarters of 2019 were 32, 19, 24, and 36 µg/L, respectively. TCE concentration was 19 µg/L in the first quarter of 2020 and is now 30 µg/L in the second quarter of 2020 (Figure 19).

Southern Area. This location is centered on the BP-3 series wells far south of the CPC site and downgradient of the extraction wells (Figures 20 through 22). The PCE concentrations at BP-3B and BP-3C are historically higher than those for TCE; BP-3B had a PCE concentration of 30 µg/L compared to a TCE concentration of 2.6 µg/L in the second quarter of 2020; BP-3C had a PCE concentration of 80 µg/L compared to a TCE concentration of 6.1 µg/L in the second quarter of 2020. However the TCE concentrations in BP-3A are typically higher than the PCE concentrations. PCE and TCE concentrations in BP-3A during the second quarter of 2020 were not detected with a reporting limit of 1 µg/L for both. The source(s) of the PCE groundwater contamination at the BP-3 series wells is unknown.

Cross Sections. Two cross section figures depict the contaminants of concern along two transects (Figures 32 and 33). Cross section A-A' (Figure 32) begins at DW-1 and continues along the direction of groundwater flow (south-southeast) to the BP-3 series wells. The PCE-dominant plume is at a higher elevation than the TCE-dominant plume in the vicinity of the CPC site and

moves south-southeast to well MW-08A. PCE is detected deeper in the BP-3-series wells, which are the farthest downgradient wells from the CPC site.

Cross section B-B' (Figure 33) begins east of A-A' at the EW-7-series wells and continues along the direction of groundwater flow to well MW-7B-R. PCE concentrations observed in wells in this cross section are below the 5 µg/L standard in the EW-2 series wells and at wells DW-2, EW-5, EW-4B, EW-4C, EW-4D, EW-7D, and MW-7B-R. TCE concentrations observed in wells in this cross section are below the 5 µg/L standard in the EW-2 series wells and at wells DW-2, EW-4B, EW-4D, EW-5, and EW-7D.

4.3.4 Comparison to Historical Groundwater Quality

Figures 7 through 29 illustrate the historical trends for VOC concentrations in multiple wells. Table 6 summarizes the concentration trends of PCE and TCE in each of the wells.

Table 7 – PCE and TCE Concentration Trends in Select Monitoring Wells

Well	Screen Depth	Location	PCE Trend	TCE Trend	Figure
CPC Plume Wells					
DW-1	93-98	South-southwest of CPC	Increasing	Slightly decreasing	Figure 7
SW-1	65-70	South-southwest of CPC	Increasing	Slightly increasing	Figure 8
EW-1A	65-75	Southwest of CPC	Slightly decreasing	Slightly decreasing	Figure 9
EW-5	165-175	South-southeast of CPC	Slightly increasing	Decreasing	Figure 10
Off-Site Plume(s) Wells					
EW-4A	100-115	East of CPC	Increasing	Increasing	Figure 11
EW-4B	120-130	East of CPC	Slightly decreasing	Slightly decreasing	Figure 12
EW-4C	145-155	East of CPC	Slightly increasing	Slightly decreasing	Figure 13
EW-4D	285-295	East of CPC	Decreasing	Decreasing	Figure 14
EW-7C	189-199	Upgradient, North of CPC	Decreasing	Decreasing	Figure 15
EW-7D	273-283	Upgradient, North of CPC	Decreasing	Decreasing	Figure 16
MW-10D	346-351	Southeast of CPC	Decreasing	Decreasing	Figure 17
EW-12D	209-219	East of CPC	Increasing	Increasing	Figure 18
EW-14D	185-195	Southeast of CPC	Slightly decreasing	Decreasing	Figure 19
BP-3A	54-74	South-southeast of CPC	Slightly decreasing	Slightly decreasing	Figure 20

Well	Screen Depth	Location	PCE Trend	TCE Trend	Figure
BP-3B	215-235	South-southeast of CPC	Increasing	Increasing	Figure 21
BP-3C	280-300	South-southeast of CPC	Increasing	Slightly decreasing	Figure 22
MW-11A	140-145	South-southeast of CPC	Increasing	Increasing	Figure 23
MW-11B	240-245	South-southeast of CPC	Slightly increasing	Slightly increasing	Figure 24
MW-7B-R	230-235	South-southeast of CPC	Decreasing	Decreasing	Figure 25
Extraction Wells and Plant Influent					
RW-3	163-255	Extraction well south-southeast of CPC	Decreasing	Decreasing	Figure 26
RW-4	147-250	Extraction well south-southeast of CPC	Decreasing	Decreasing	Figure 27
RW-5	153-263	Extraction well south-southeast of CPC	Decreasing	Decreasing	Figure 28
OU5 Plant Influent	NA	Plant influent	Slightly decreasing	Increasing	Figure 29

Decreasing trends indicate mass removal from groundwater in the area around the well. Increasing and stable trends indicate partial capture and/or additional source(s) contributing to groundwater contamination in the area of the well.

5 Conclusions and Recommendations

5.1 Conclusions

The second quarter 2020 groundwater monitoring event at the CPC site covered both the on-site plume (OU-4) and off-site plume (OU-5), as well as the downgradient area covered by the newly added VPB monitoring wells. Analysis of the data has resulted in the following conclusions:

- A groundwater plume of VOCs, primarily PCE, originates proximate to the former Process Building (on-site plume). Recent data obtained from OU-4 monitoring well SW-1, which had been dry for an extended period of time, indicates localized PCE concentrations are similar to those prior to the cessation of OU-4 pumping. The recently completed Remedial System Optimization (RSO) report for the OU-5 GWE&T concluded that the combined capture zone of recovery wells RW-3, RW-4 and RW-5 captures the estimated width of the OU-4 plume migrating directly south from the CPC Site.



- An off-site, upgradient plume consisting mostly of TCE originates to the north or northwest of the former CPC site. The TCE contamination was only partially captured by the CPC OU-4 GWE&T system. Similarly, the combined capture zone of OU-5 recovery wells RW-3, RW-4 and RW-5 is not sufficient to capture the upgradient TCE plume, only extending about 200 feet to the east of RW-4, the eastern-most recovery well.
- 30.72 kilograms (67.73 pounds) of total VOCs were removed during the second quarter of 2020 via operation of the OU-5 GWE&T system. This removal rate is in line with the four quarters of 2018 and the four quarters of 2019 (38.75 kg, or 85.43 pounds, 32.54 kg, or 71.74 pounds, and 36.95 kg, or 81.46 pounds, 49.6 kg, or 109.4 pounds respectively). In the first quarter of 2020, 8.35 kg (18.41 pounds) of total VOCs were removed. The OU-5 GWE&T system influent concentration of TCE decreased from 140 µg/L to 27 µg/L between the fourth quarter of 2019 and the first quarter of 2020 and then increased to 77 µg/L in the second quarter of 2020.
- Contaminant concentrations in effluent groundwater samples collected during the reporting period met discharge limits.
- The results from the second quarter 2020 groundwater sampling event show the following VOC compounds detected above the NYSDEC Part 703 Class GA groundwater criteria: PCE, TCE, cis-1,2-DCE, Vinyl Chloride, 1,1-DCA, 1,2-DCA, Benzene, Chlorobenzene, and Dichlorodifluoromethane.
- In BP-3C, PCE concentrations increased from 60 µg/L to 65 µg/L to 150 µg/L in the first through third quarters of 2018. In the fourth quarter of 2018, PCE decreased to 89 µg/L and further decreased to 61 µg/L in the first quarter of 2019. PCE concentrations increased to 91 µg/L in the second quarter of 2019. PCE concentrations have continued to fluctuate in BP-3C, with concentrations decreasing from 91 µg/L in the second quarter, 64 µg/L in the third quarter of 2019, and 63 µg/L in the fourth quarter of 2019. In the first quarter of 2020, PCE concentration was 54 µg/L, and then increased to 80 µg/L in the second quarter of 2020. The individual capture zones of RW-3, RW-4, and RW-5 connect, making it seem unlikely that VOCs could migrate further south to the BP-3 series monitoring wells. However, given the vertical anisotropy resulting from the presence of clay beds, and limited recovery well influence on the deep zone potentiometric surface, it is possible that the mass is migrating beneath the vertical limits of the combined capture zone. The current operation of the OU-5 recovery wells is not capable of capturing groundwater contamination around the BP-3 series wells.
- For monitoring well EW-12D, PCE concentration has fluctuated from 12 µg/L to 30 µg/L throughout the four quarters of 2018 and the four quarters of 2019. PCE concentration was 14 µg/L in the first quarter of 2020 and 17 µg/L in the second quarter of 2020. Cis-1,2-DCE concentrations were stable throughout all quarters of 2018, as well as all four quarters of 2019 at 5.1 µg/L, 4.5 µg/L, 5.2 µg/L, and 5.7 µg/L, respectively. Cis-1,2-DCE concentrations remained steady at 5.7 µg/L in the first quarter of 2020 and 6.1 µg/L in the second quarter of 2020. 1,1,1-TCA concentrations were stable below the NYSDEC 703 Class GA value of 5 µg/L throughout all quarters of 2018 and 2019 and into the first quarter of 2020, with concentrations ranging from 0.94 to 4.5 µg/L. In the second quarter of 2020, the 1,1,1-TCA

concentration is at 0.83 J µg/L. TCE concentrations have fluctuated significantly during all four quarters of 2018 and 2019 and the first quarter of 2020, ranging from 110 to 290 µg/L. In the second quarter of 2020, TCE concentration is 290 µg/L.

- The highest TCE concentration in monitoring well MW-7B-R since October 2016 when treatment transitioned from the OU-4 facility to the OU-5 facility was 900 µg/L in the first quarter of 2017. The concentration decreased during each successive quarter of 2017, and fluctuated throughout the four quarters of 2018 from 170 µg/L in the first quarter, 270 µg/L in the second quarter, 390 µg/L in the third quarter, to 240 µg/L in the fourth quarter. The TCE concentration was consistent in the first and second quarter of 2019 at 170 µg/L, decreased to 140 µg/L in the third quarter of 2019, and further decreased to 120 µg/L in the fourth quarter of 2019. In the first quarter of 2020, TCE concentrations decreased to 82 µg/L and then increased to 110 µg/L in the second quarter of 2020.
- The groundwater flow at the site remains predominately south-southeast with no regionally significant changes observed in flow direction during and since operation of the OU-4 GWE&T system.
- The results from the first quarter 2020 groundwater sampling event show 1,4-Dioxane was detected above the New York State Drinking Water Quality Council recommended Maximum Contaminant Levels at five of the downgradient VPB monitoring wells: MW-CPC-36, MW-CPC-37, MW-CPC-38, MW-CPC-40, and MW-CPC-41. The highest result values in the second round are MW-CPC-38 (6.7 µg/L) and MW-CPC-37 (6.4 µg/L); directly upgradient from a public water supply well (PWS).
- The results from the second quarter 2020 groundwater sampling event show the following PFAS compounds detected above the New York State Drinking Water Quality Council recommended Maximum Contaminant Levels or the EPA Health Advisory Levels: Perfluorononanoic acid (PFNA), Sodium 1H,1H,2H,2H-Perfluorooctane Sulfonate (6:2), Perfluorooctanoic acid (PFOA), Perfluorooctanesulfonic acid (PFOS), Total PFOA & PFOS, and Total PFAS. There were exceedances at four wells: MW-CPC-36, MW-CPC-37, MW-CPC-40, and MW-CPC-41. The highest levels of all exceedances were at MW-CPC-36, with Perfluorononanoic acid (PFNA) detected at 321 ng/L and 366 ng/L in the duplicate, Perfluorooctanoic acid (PFOA) detected at 139 ng/L, Perfluorooctanesulfonic acid (PFOS) detected at 154 ng/L, Total PFOA & PFOS detected at 293 ng/L, and Total PFAS detected at 946.72 ng/L and 980.86 ng/L in the duplicate.

5.2 Recommendations

- Recondition recovery wells RW-3, RW-4 and RW-5 to improve performance and well efficiency which may increase contaminant mass removed.
- Evaluate defective, non-functioning, and critical components of the conveyance and treatment system to confirm the capacity of the piping system, condition of conveyance vaults, adequacy of treatment and recharge, and potential modifications necessary. Perform repairs to components adversely affecting current capacity and treatment (e.g. replacing defective air inlets on conveyance line).



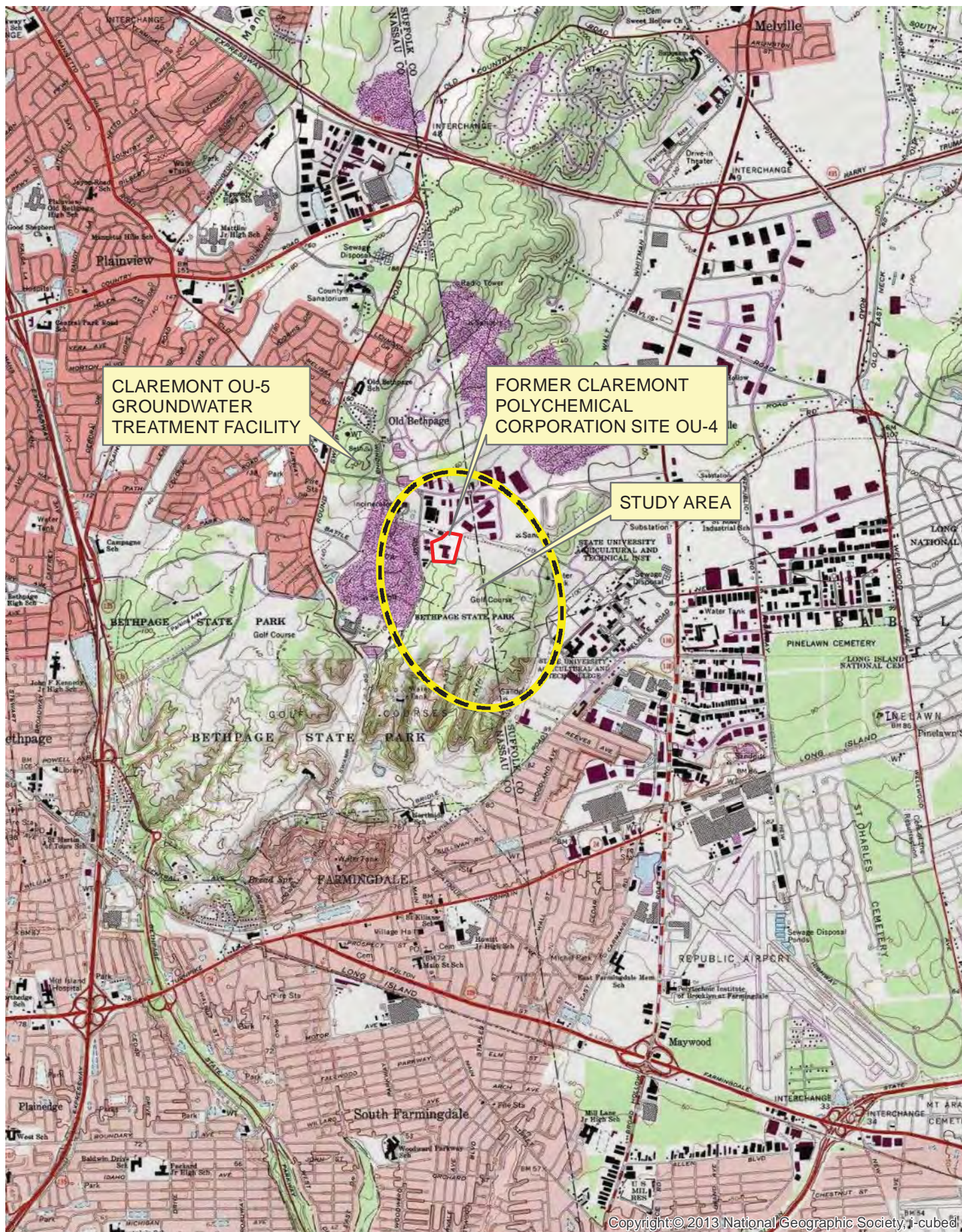
- Determine vertical extent of TVOC contamination and depth of clay units at the location of the recovery wells and horizontal and vertical extent of the plume to the east by installing vertical profile borings (VPB) between RW-3 and RW-4 and east of monitoring well EW-14D.
- Based on the findings of the VPB investigation, upgrade and/or expand the system with additional extraction wells. Upgrade via installation of new pumps/motors in one or more of the existing recovery wells to increase pumping capacity and extend capture to the east. Install one or two new extraction wells screened deeper and further east.
- Recovery wells RW-1 and RW-2 should remain offline.

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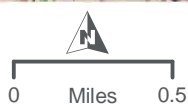
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US Environmental Protection Agency. "Second Five-Year Review Report for the Claremont Polychemical Corporation Superfund Site." New York, NY, 2014.

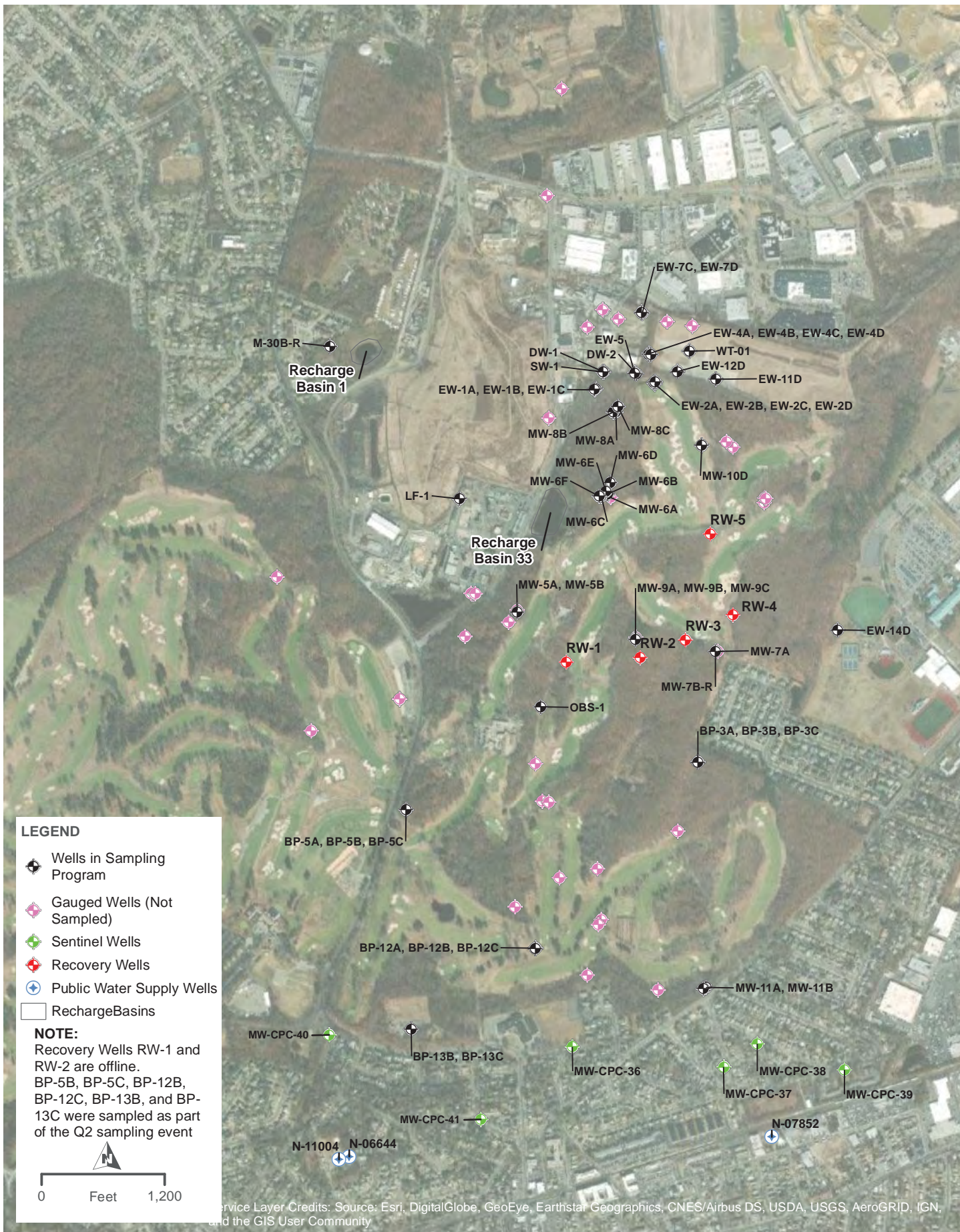


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SITE LOCATION
CLAREMONT POLYCHEMICAL CORPORATION

FIGURE 1



WELLS SAMPLED CLAREMONT POLYCHEMICAL CORPORATION

FIGURE 2

LEGEND

- Claremont Monitoring Wells
- Nassau County DPW Monitoring Wells
- Recovery Wells
- Public Water Supply Wells
- Water Level Elevation Contour
- Dashed where Inferred
- Depression
- Groundwater Flow Direction

All elevations given in ft (NAVD 88).
 ND - No data. Unable to obtain measurement.
 Depth to groundwater measurements
 completed 6/10/2020.
 * - Monitoring well was not used in contouring



0 1,000
 Feet



Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



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 Environmental
 Conservation

JUNE 2020 POTENTIOMETRIC SURFACE - UPPER MAGOTHY
 +78 TO +20 FT (NAVD88)
 CLAREMONT POLYCHEMICAL CORPORATION
 FIGURE 3

PATH: \\MAHRI-FILE\ACTIVE\PROJECTS\2021\CON\1058\99000000002759\207_2_GIS_MODEL\2_2_WORK_IN_PROGRESS\MAP_DOC\2020_02\20200707.MXD - USER: CMILLS - DATE: 7/10/2020

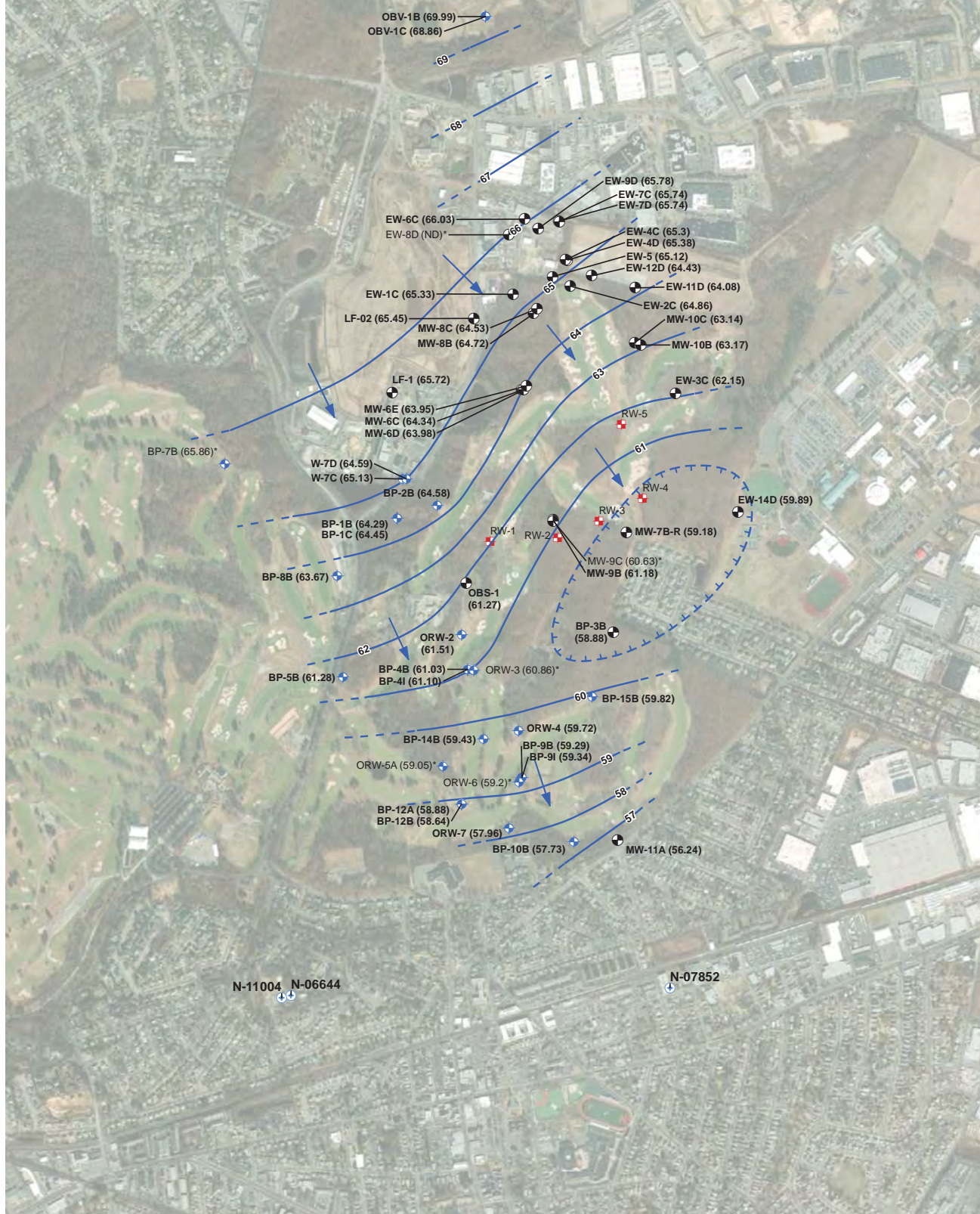
LEGEND

- Claremont Monitoring Wells
- Nassau County DPW Monitoring Wells
- Recovery Wells
- Public Water Supply Wells
- Water Level Elevation Contour
- Dashed where Inferred
- Depression
- Groundwater Flow Direction

All elevations given in ft (NAVD 88).
 ND - No data. Unable to obtain measurement.
 Depth to groundwater measurements
 completed 6/10/2020.
 * - Monitoring well was not used in contouring



0 1,000
 Feet



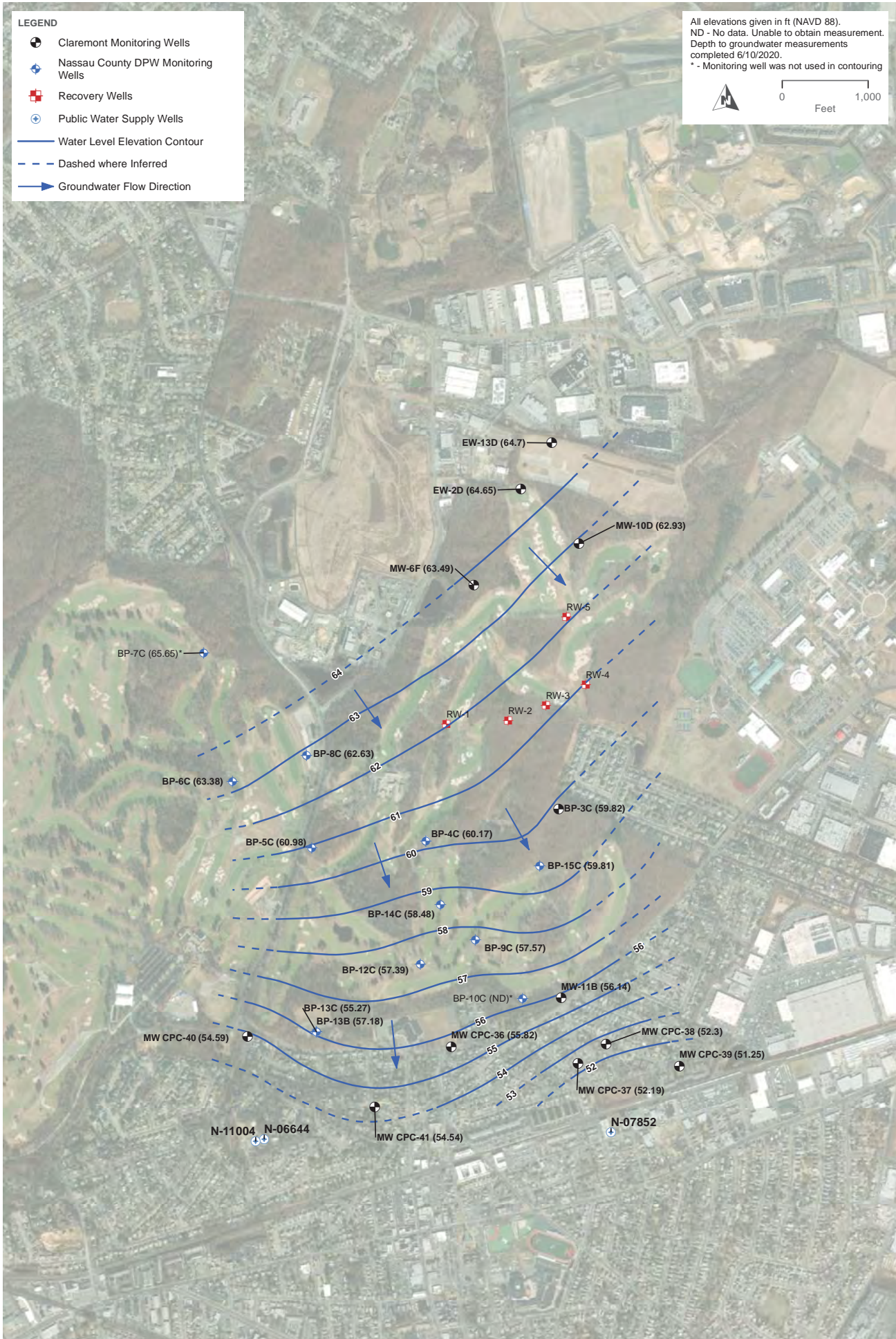
LEGEND

- Claremont Monitoring Wells
- Nassau County DPW Monitoring Wells
- Recovery Wells
- Public Water Supply Wells
- Water Level Elevation Contour
- Dashed where Inferred
- Groundwater Flow Direction

All elevations given in ft (NAVD 88).
 ND - No data. Unable to obtain measurement.
 Depth to groundwater measurements
 completed 6/10/2020.
 * - Monitoring well was not used in contouring



0 1,000
 Feet



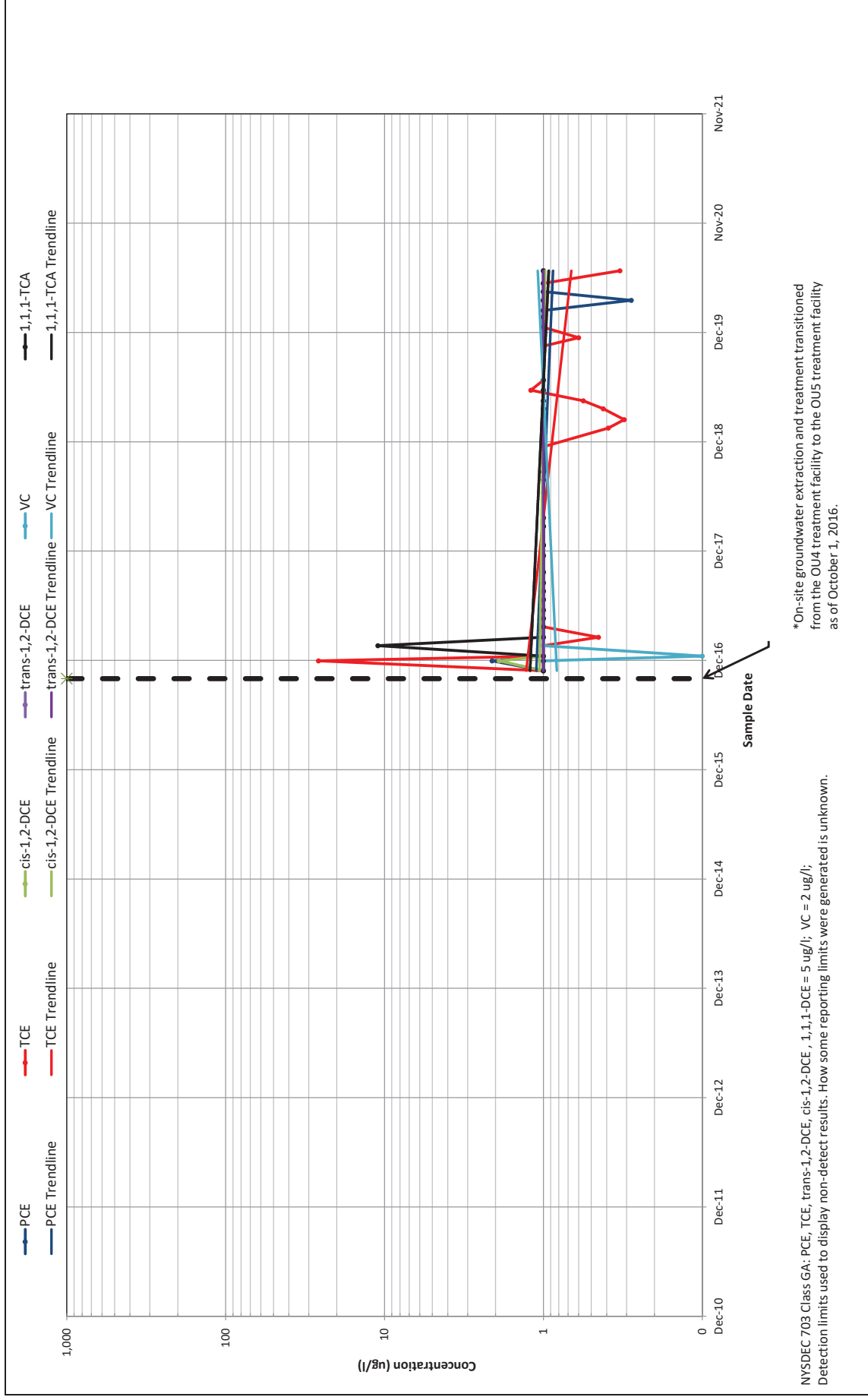
Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

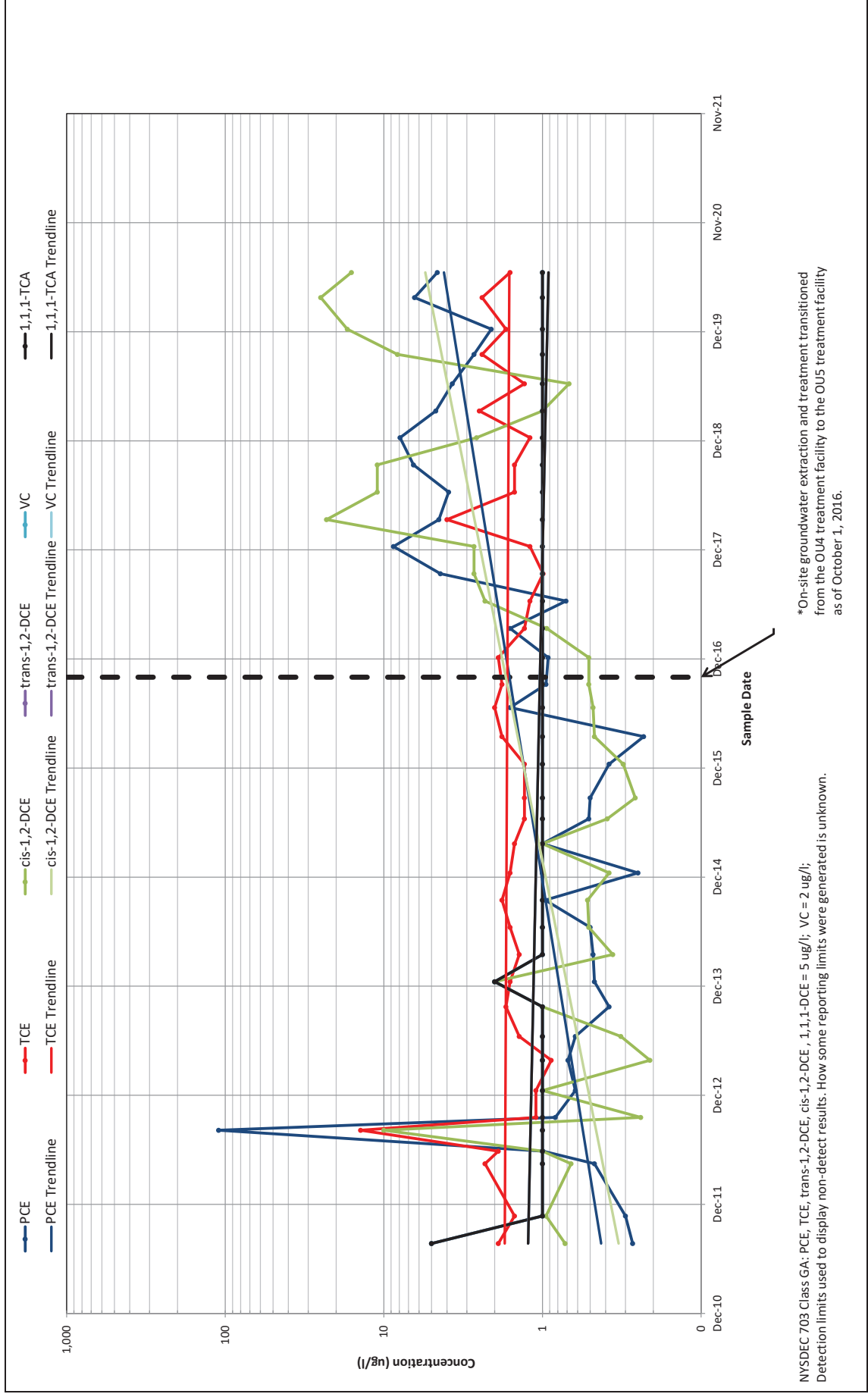


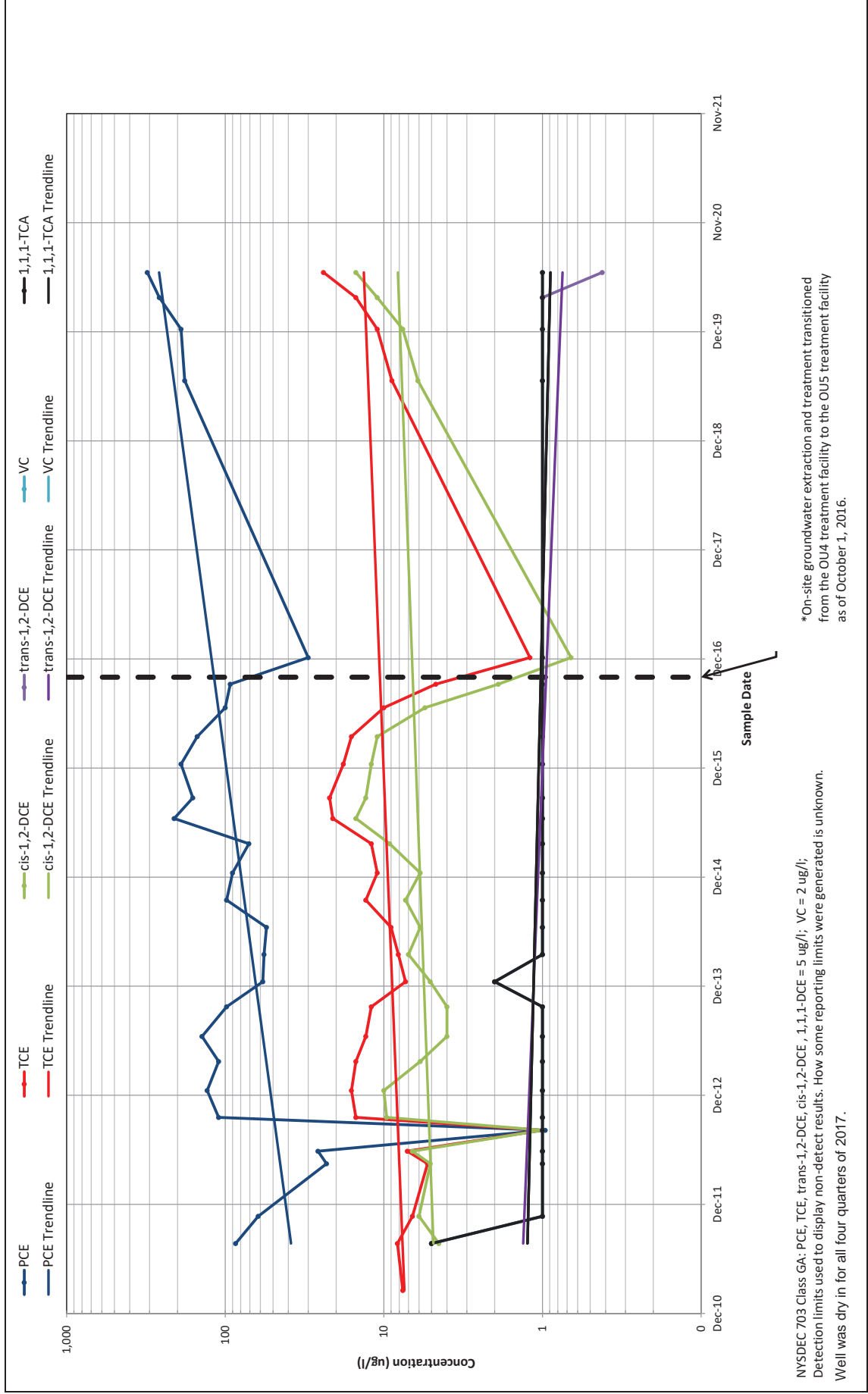
Department of
 Environmental
 Conservation

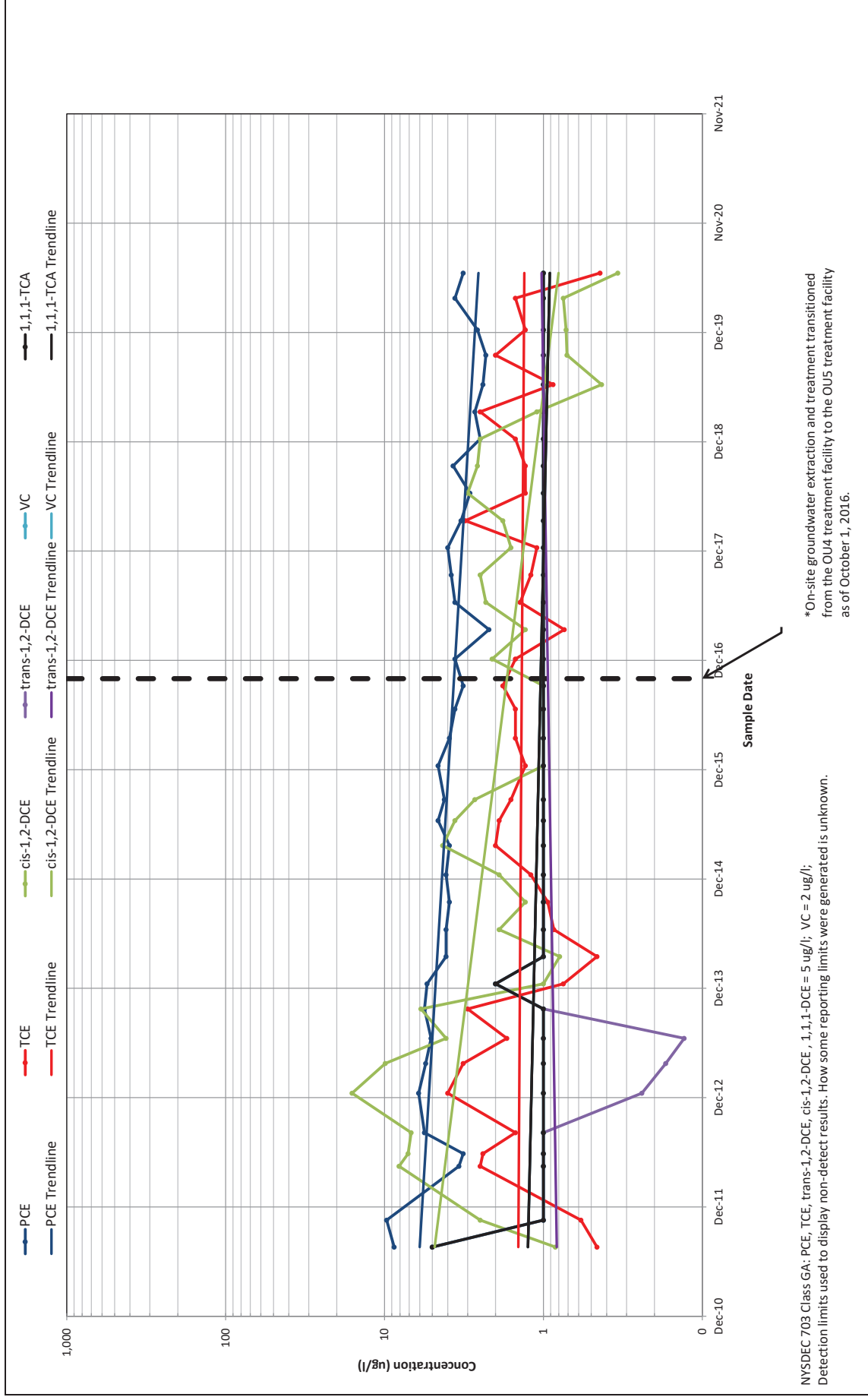
JUNE 2020 POTENTIOMETRIC SURFACE - LOWER MAGOTHY
 DEEPER THAN -131 (NAVD88)
 CLAREMONT POLYCHEMICAL CORPORATION
 FIGURE 5

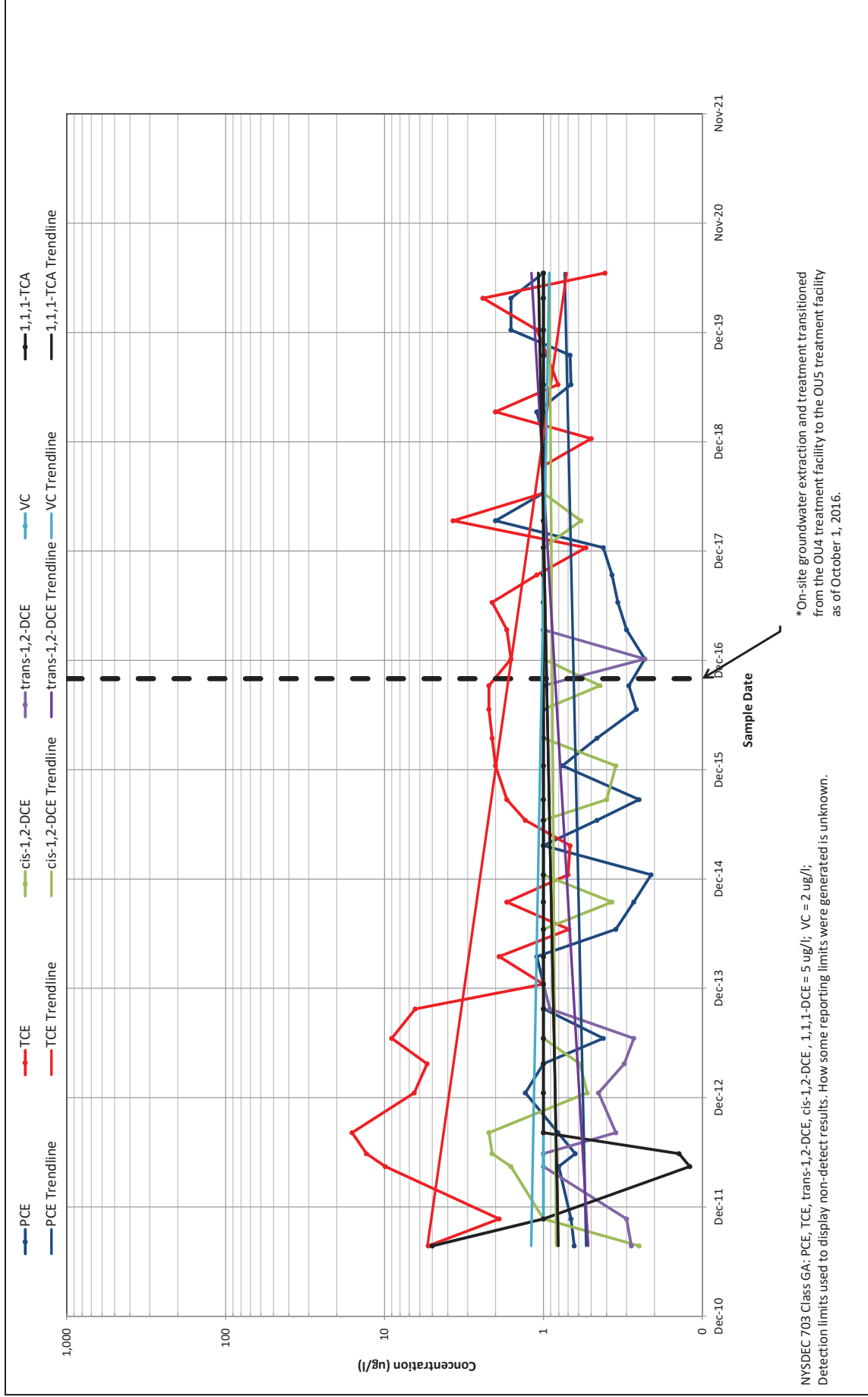
PATH: \\MAHRI-FILE\ACTIVE\PROJECTS\2023\15\CON\1058\90000000002759\27.5_GIS_MODEL\2_2_WORK_IN_PROGRESS\MAP_DOC\2020_02\FIG3_TO_5_GROUNDWATERCONTOURS_202002_20200707.MXD - USER: CMLLS - DATE: 7/10/2020

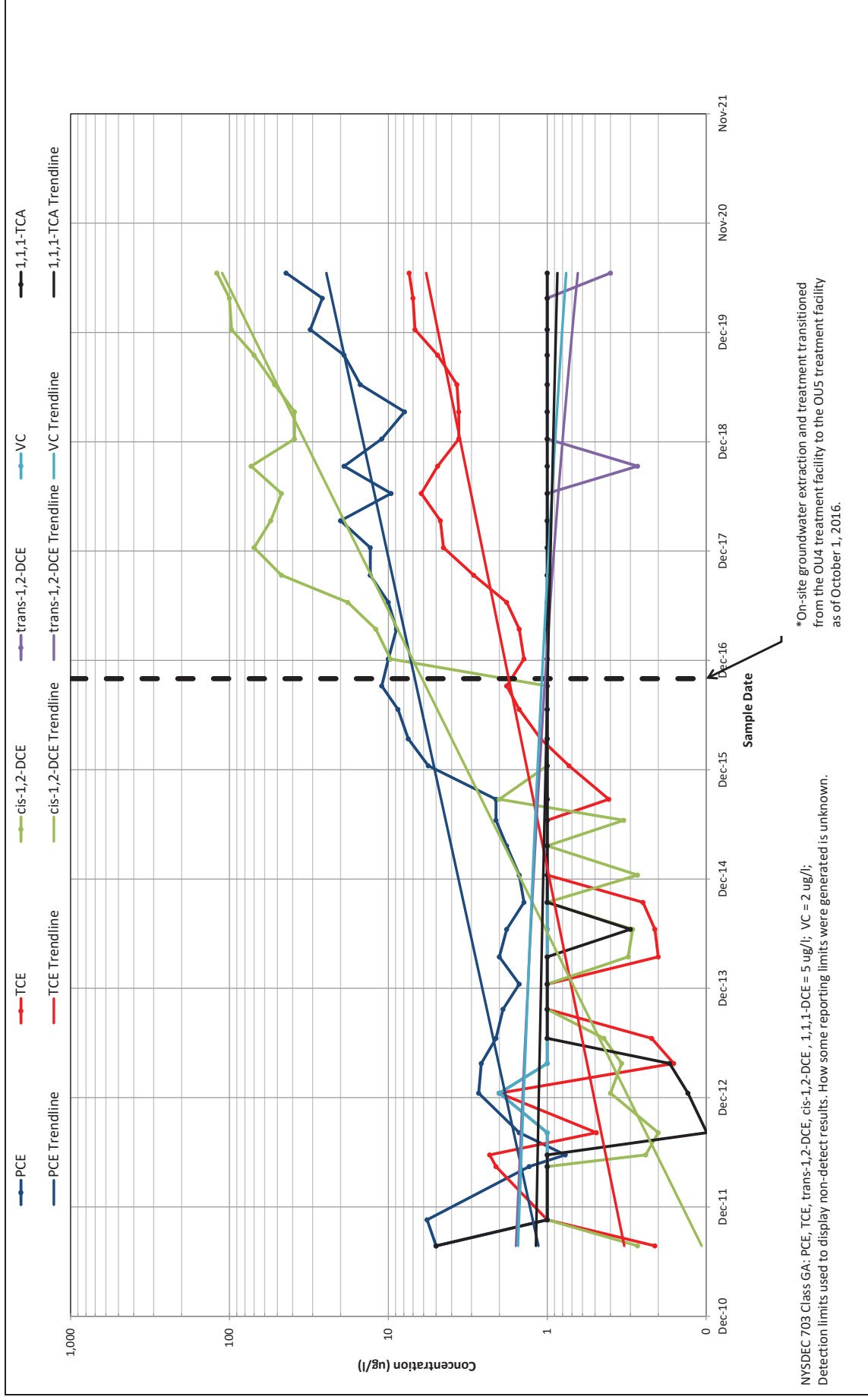


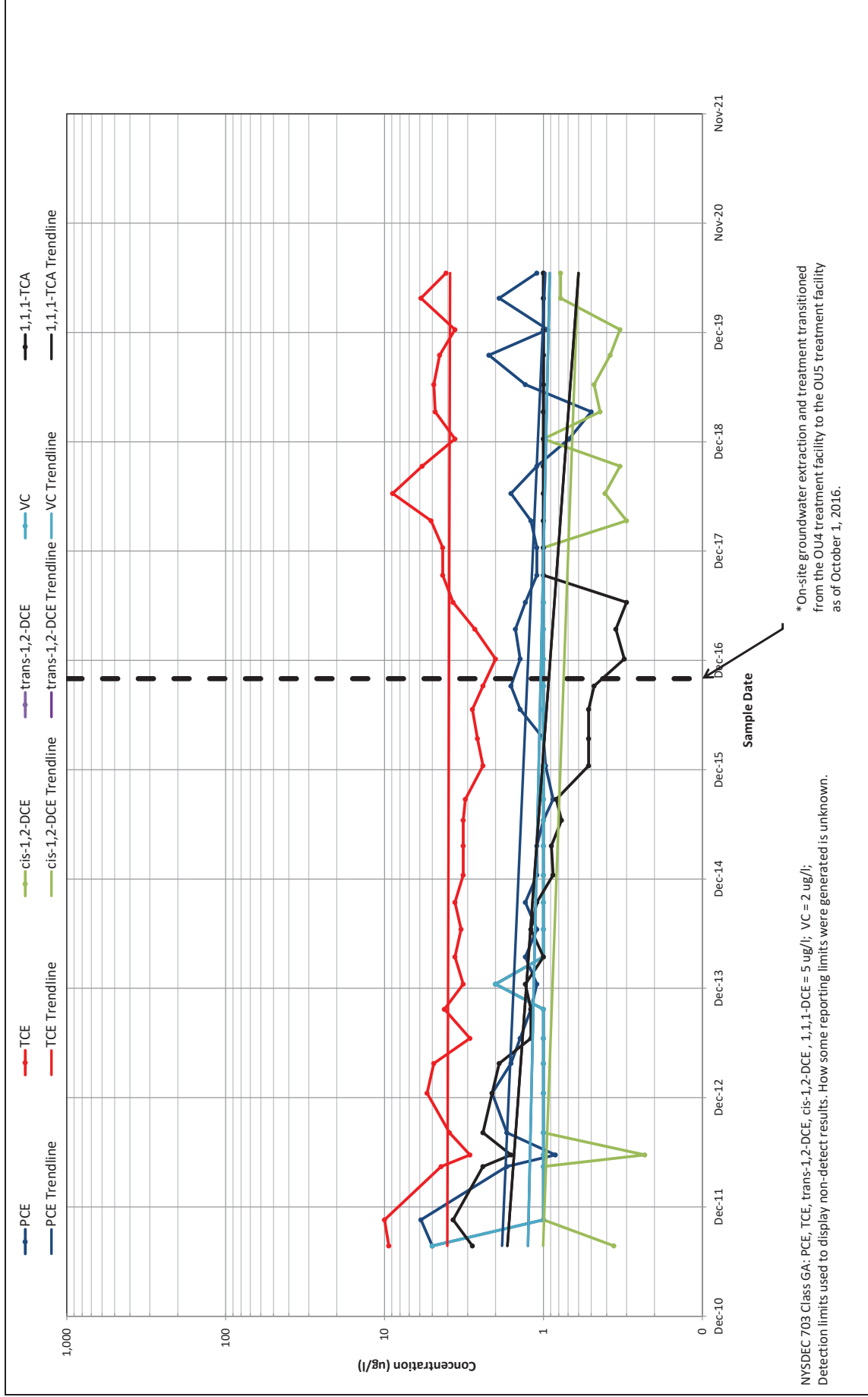


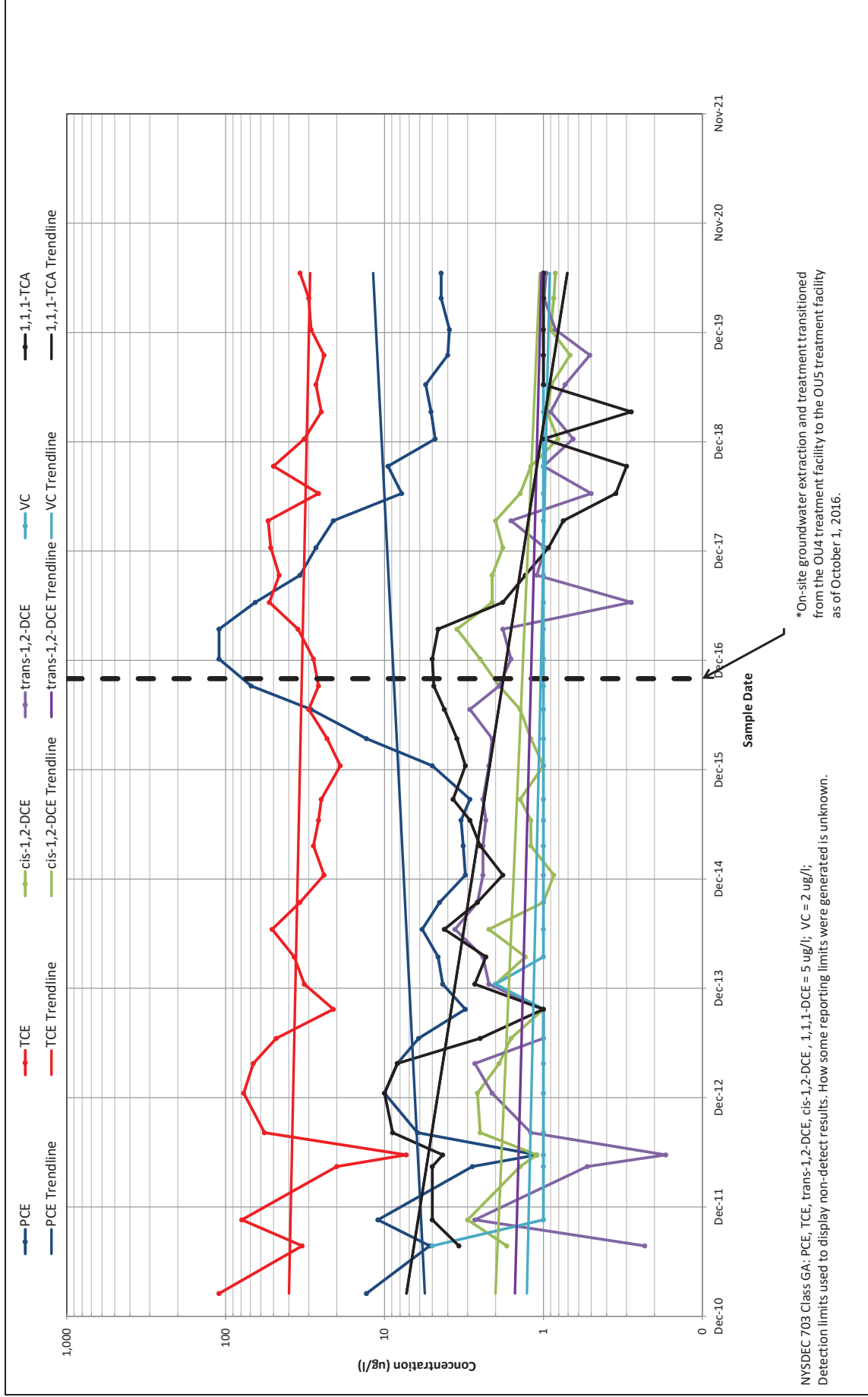


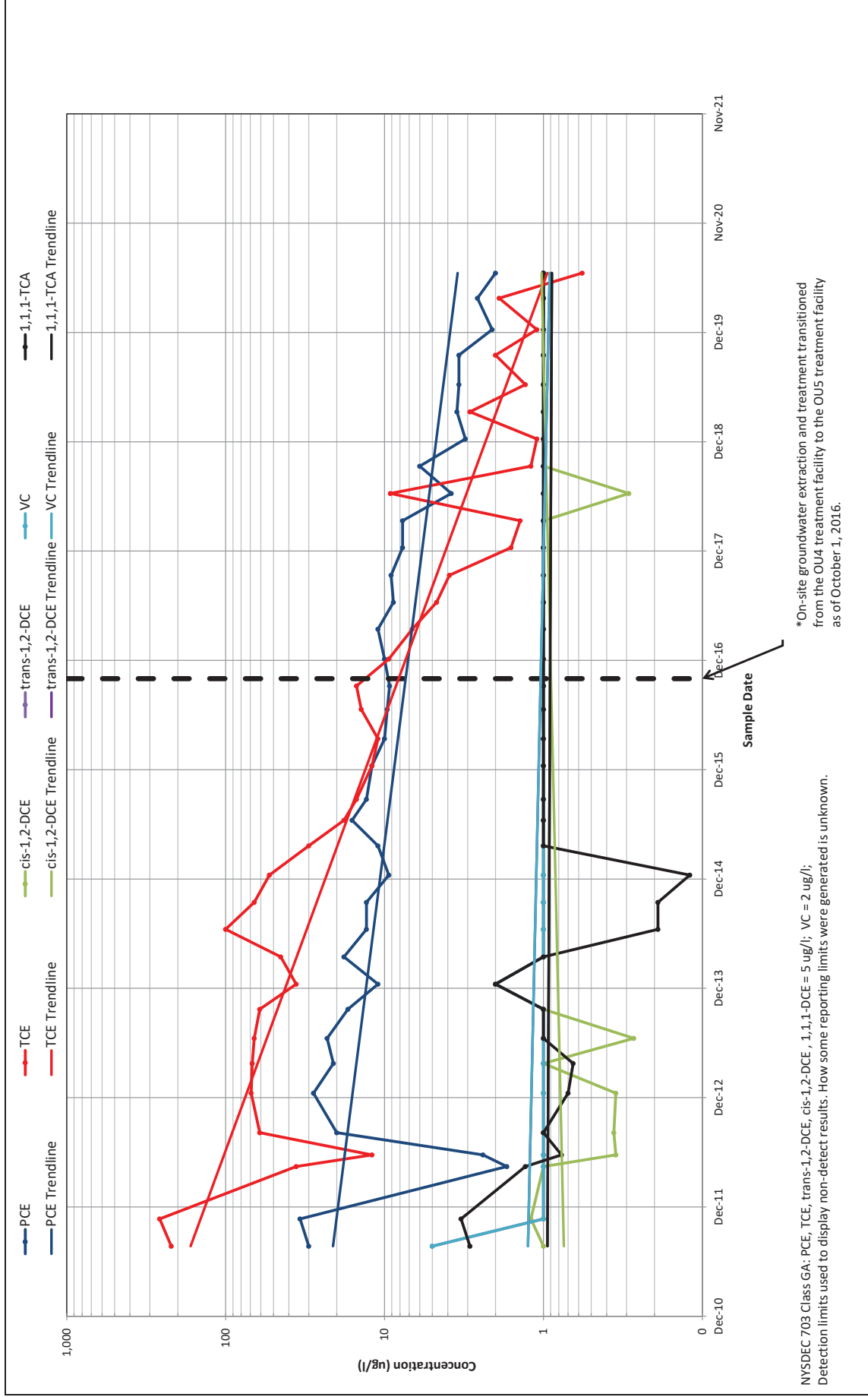


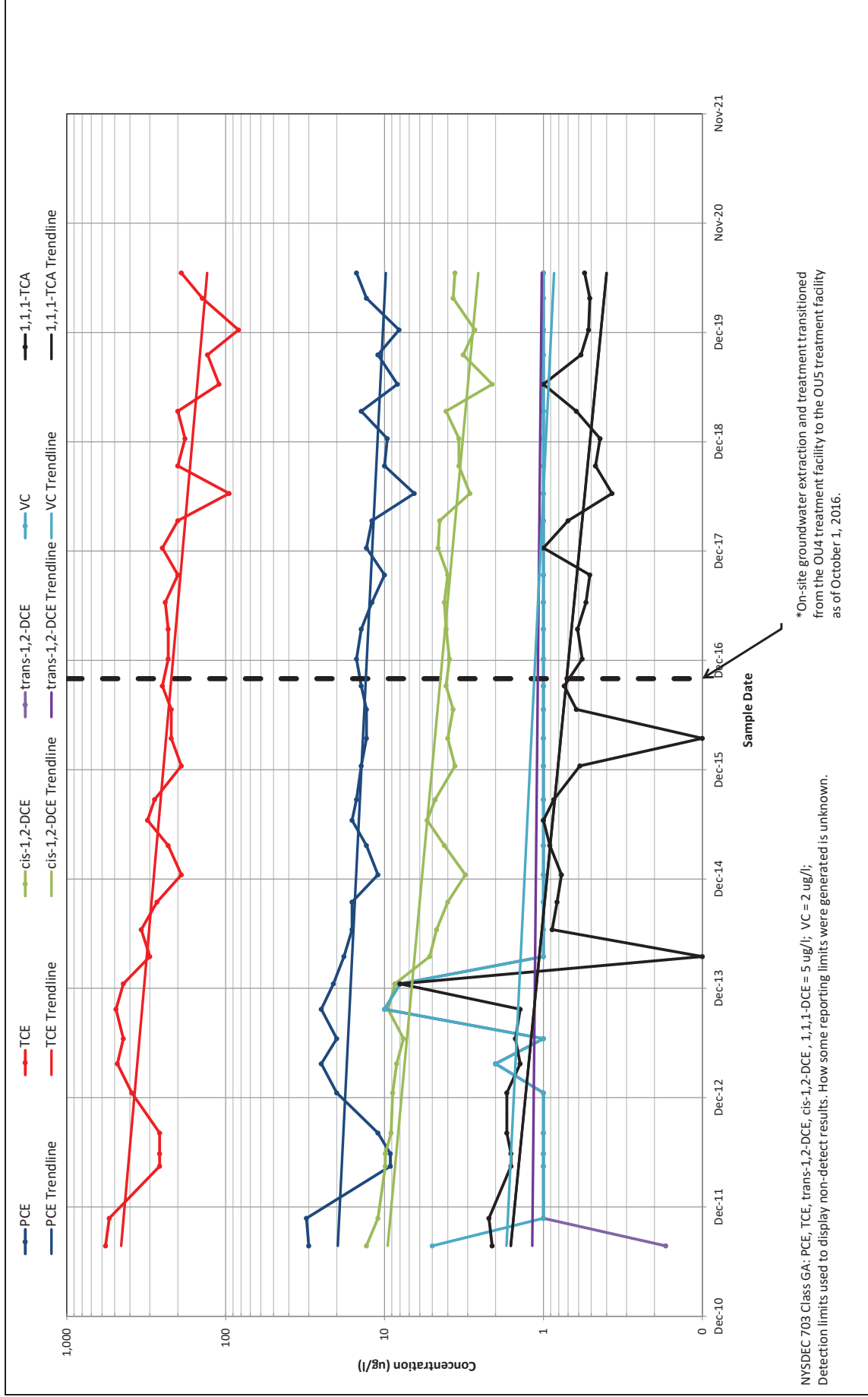








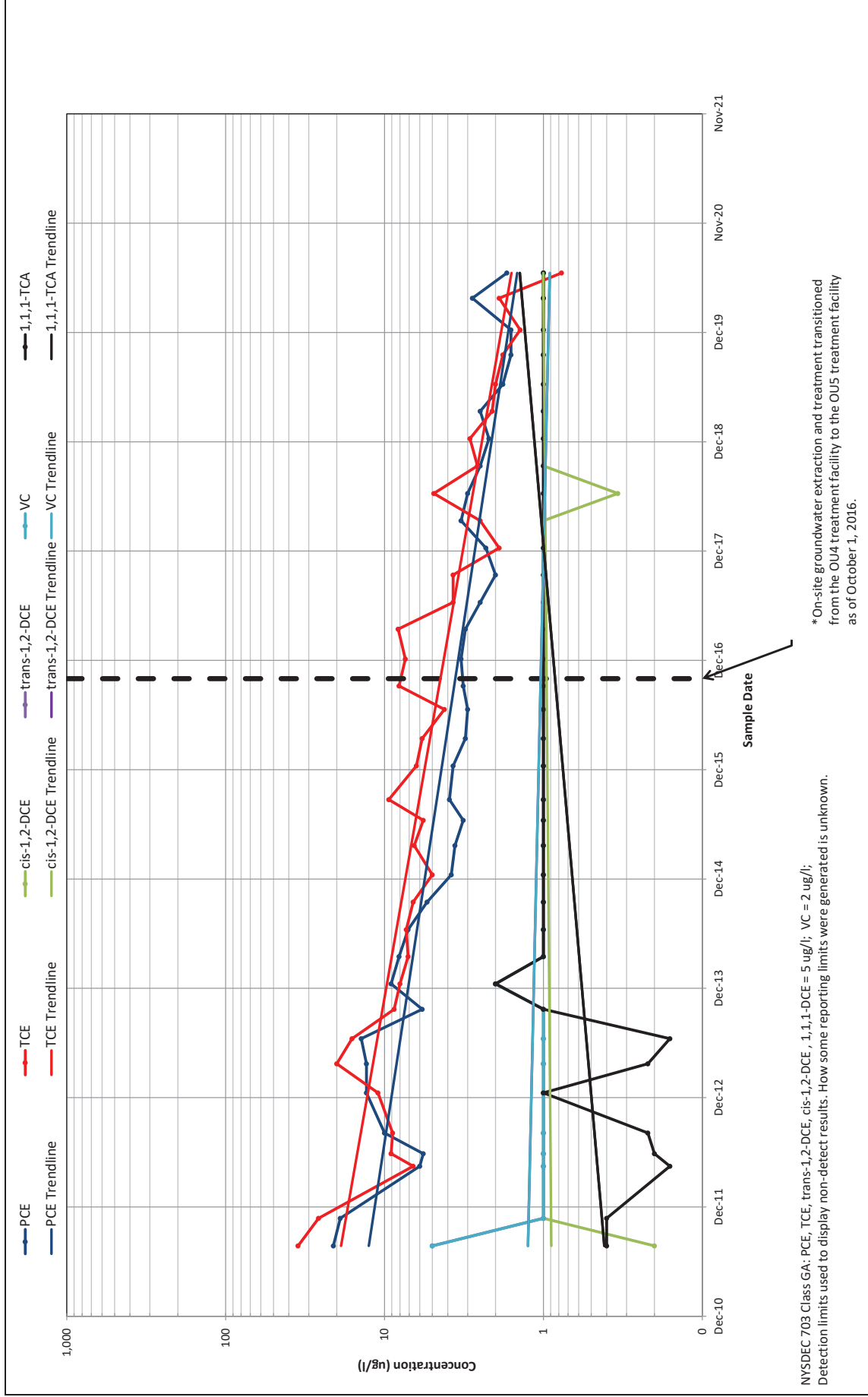




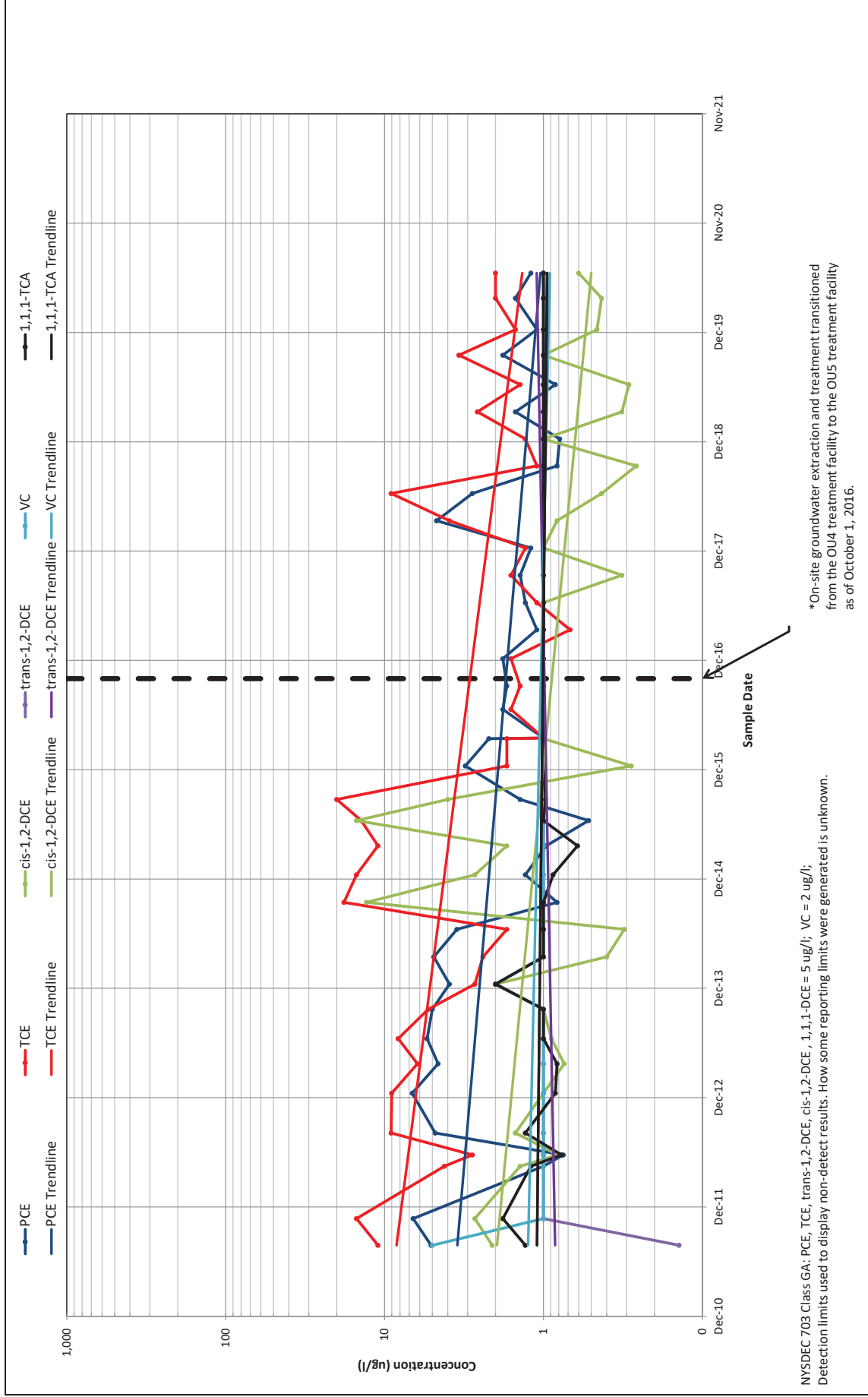
NYSDEC 703 Class GA: PCE, TCE, trans-1,2-DCE, cis-1,2-DCE, 1,1,1-DCE = 5 ug/l; VC = 2 ug/l;
 Detection limits used to display non-detect results. How some reporting limits were generated is unknown.

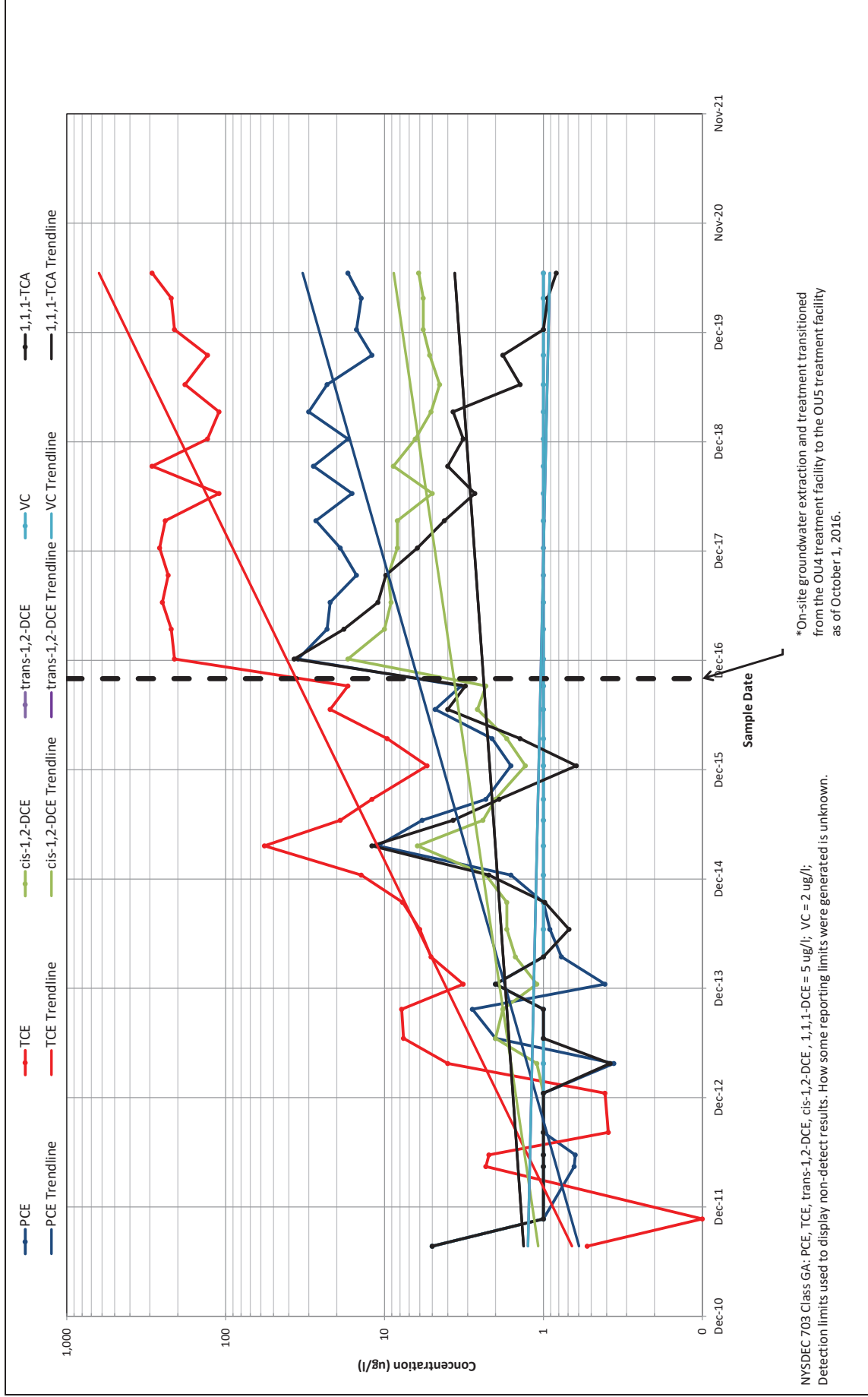


CHLORINATED VOC CONCENTRATIONS
WELL EW-7C
CLAREMONT POLYCHEMICAL CORPORATION OPERABLE UNIT 5
NYSDEC SITE #130015



CHLORINATED VOC CONCENTRATIONS
WELL EW-7D
CLAREMONT POLYCHEMICAL CORPORATION OPERABLE UNIT 5
NYSDEC SITE #130015

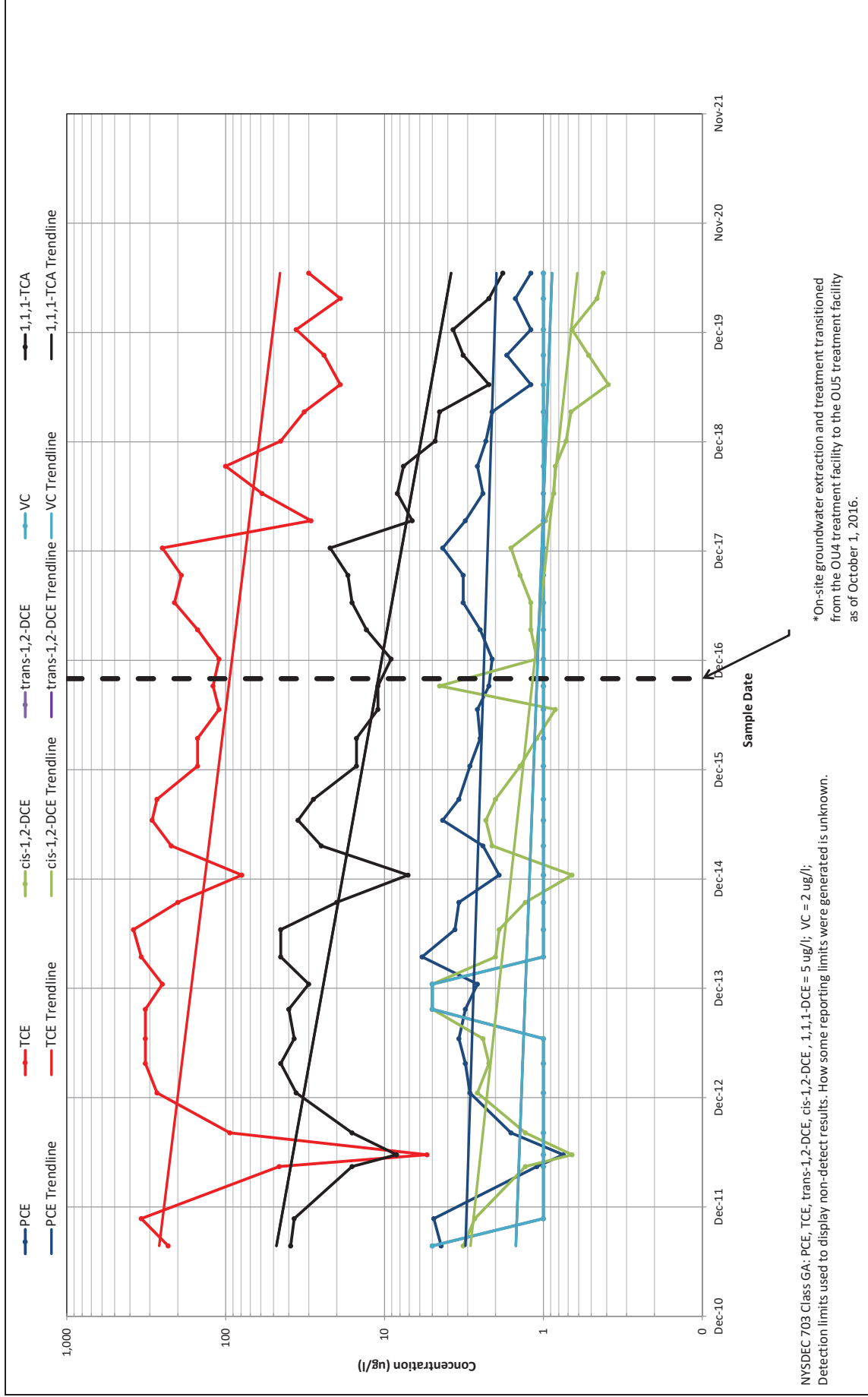


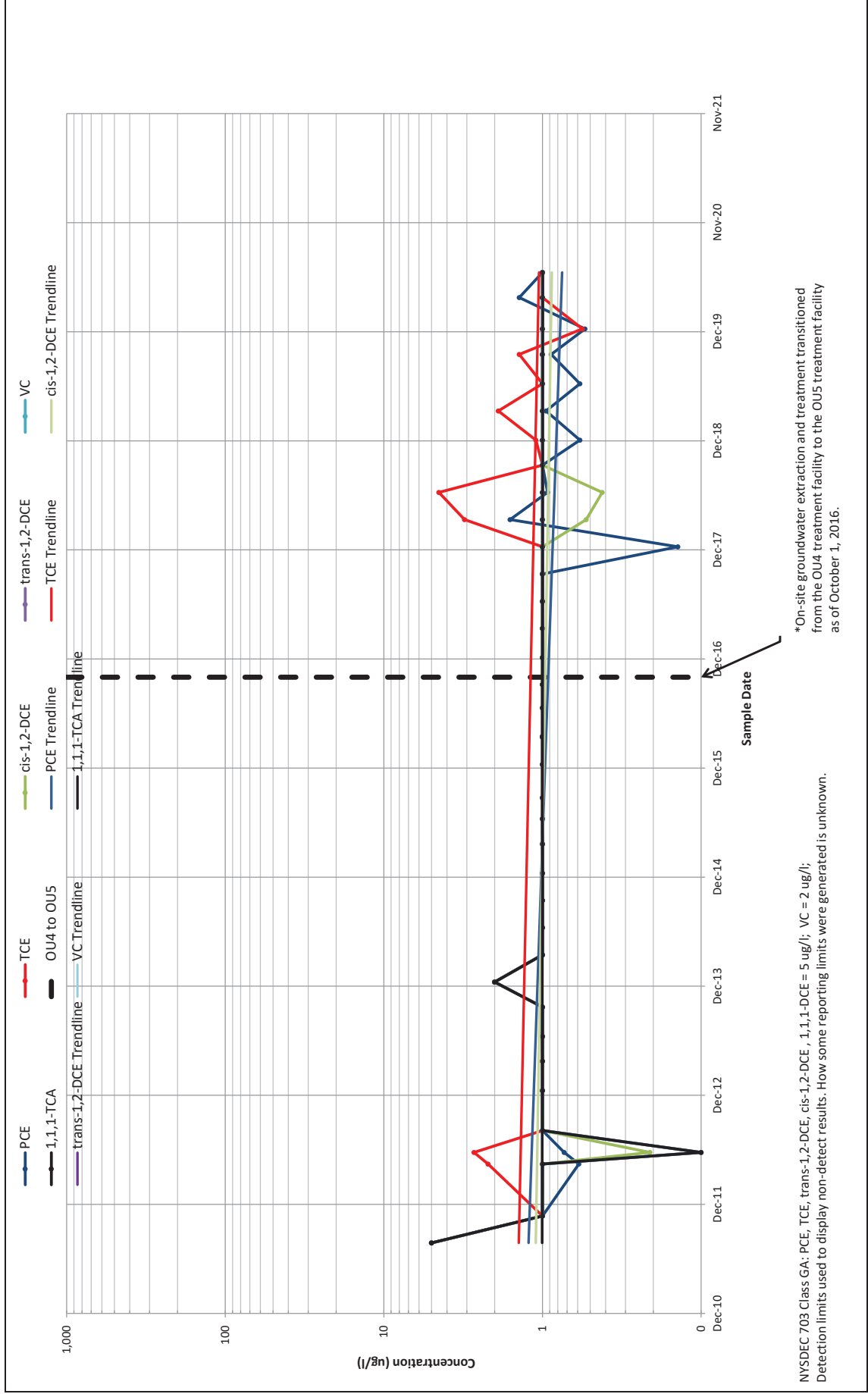


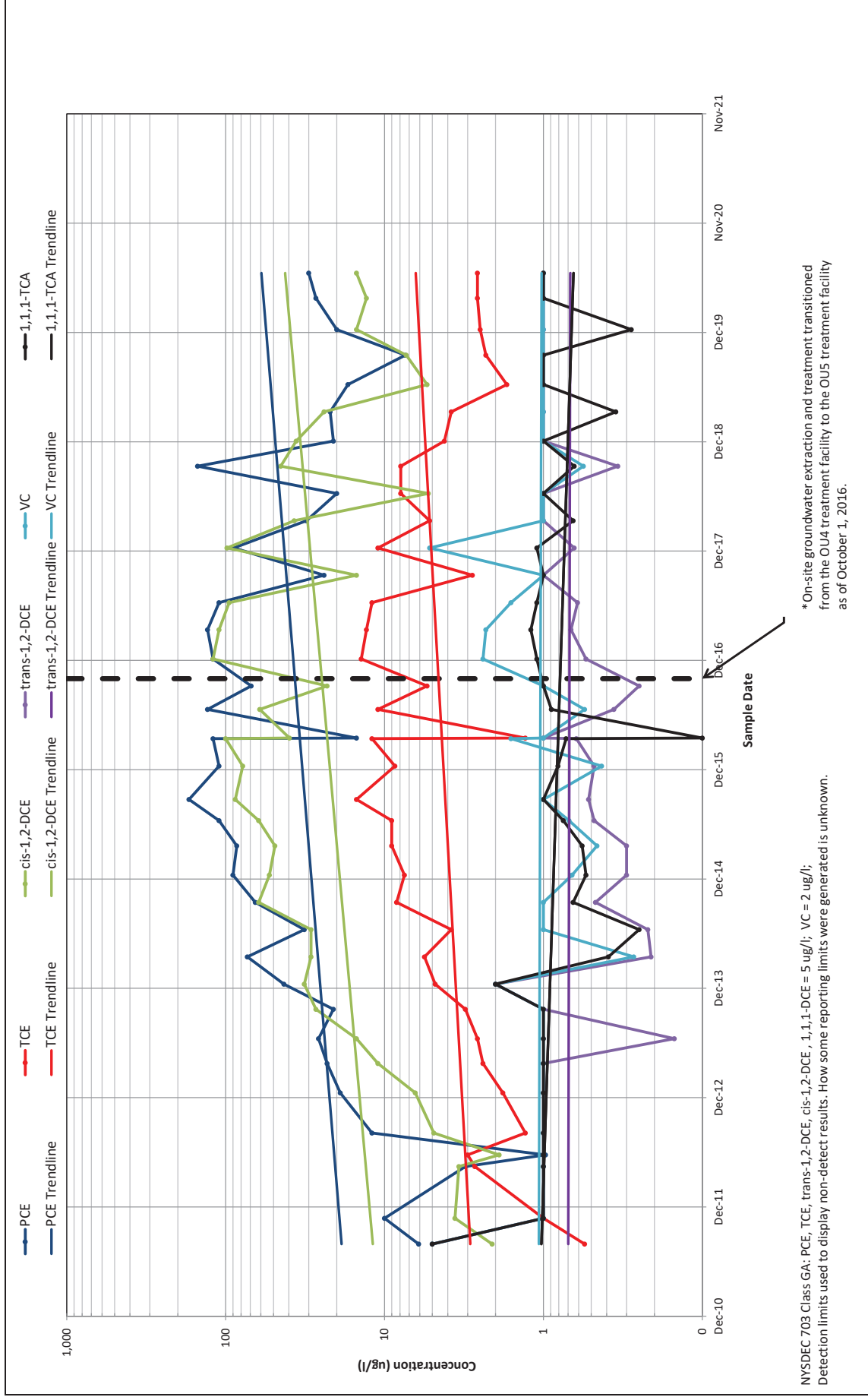
NYSDEC 703 Class GA: PCE, TCE, trans-1,2-DCE, cis-1,2-DCE, 1,1,1-DCE = 5 ug/l; VC = 2 ug/l;
 Detection limits used to display non-detect results. How some reporting limits were generated is unknown.

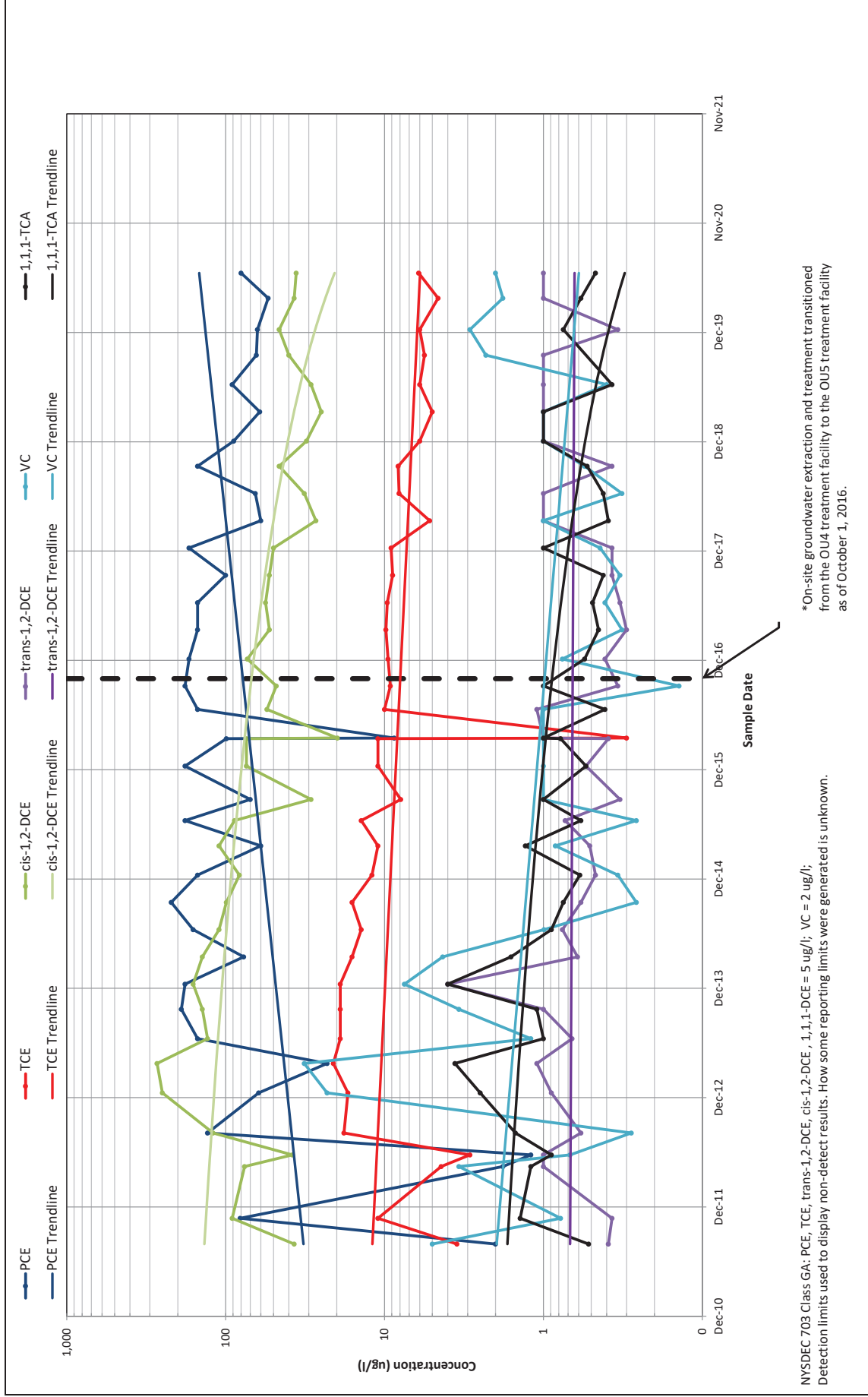


CHLORINATED VOC CONCENTRATIONS
WELL EW-12D
CLAREMONT POLYCHEMICAL CORPORATION OPERABLE UNIT 5
NYSDEC SITE #130015





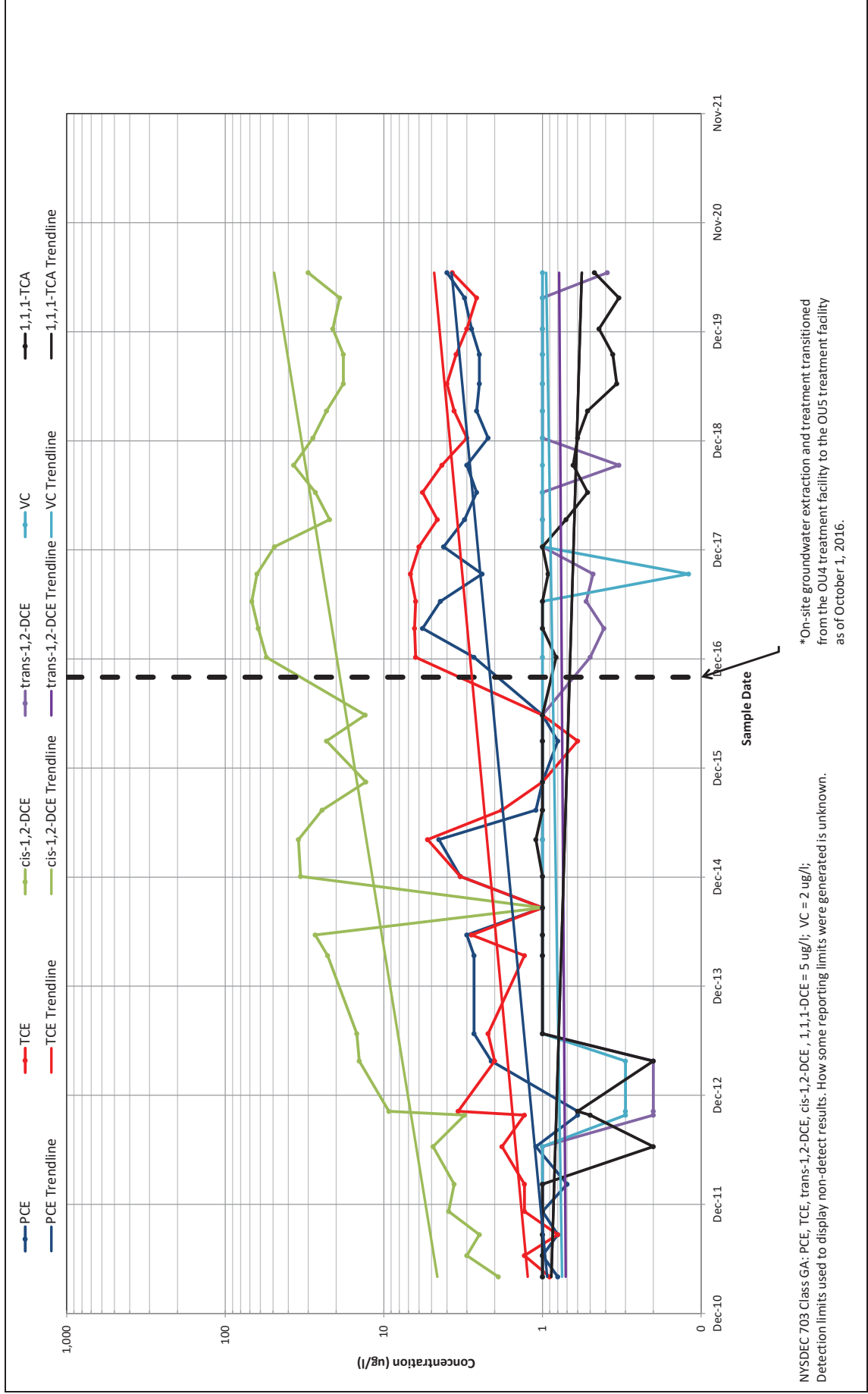


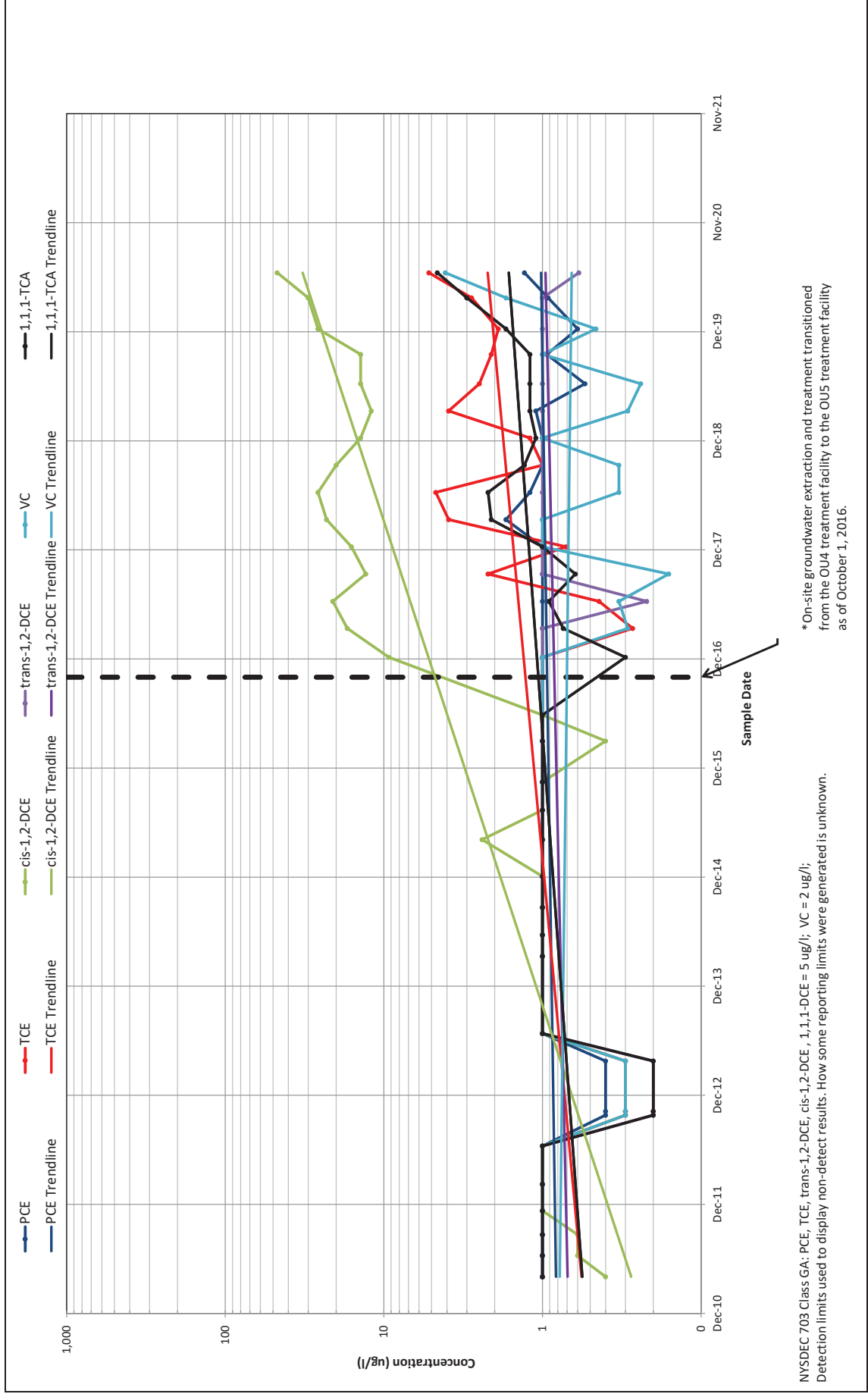


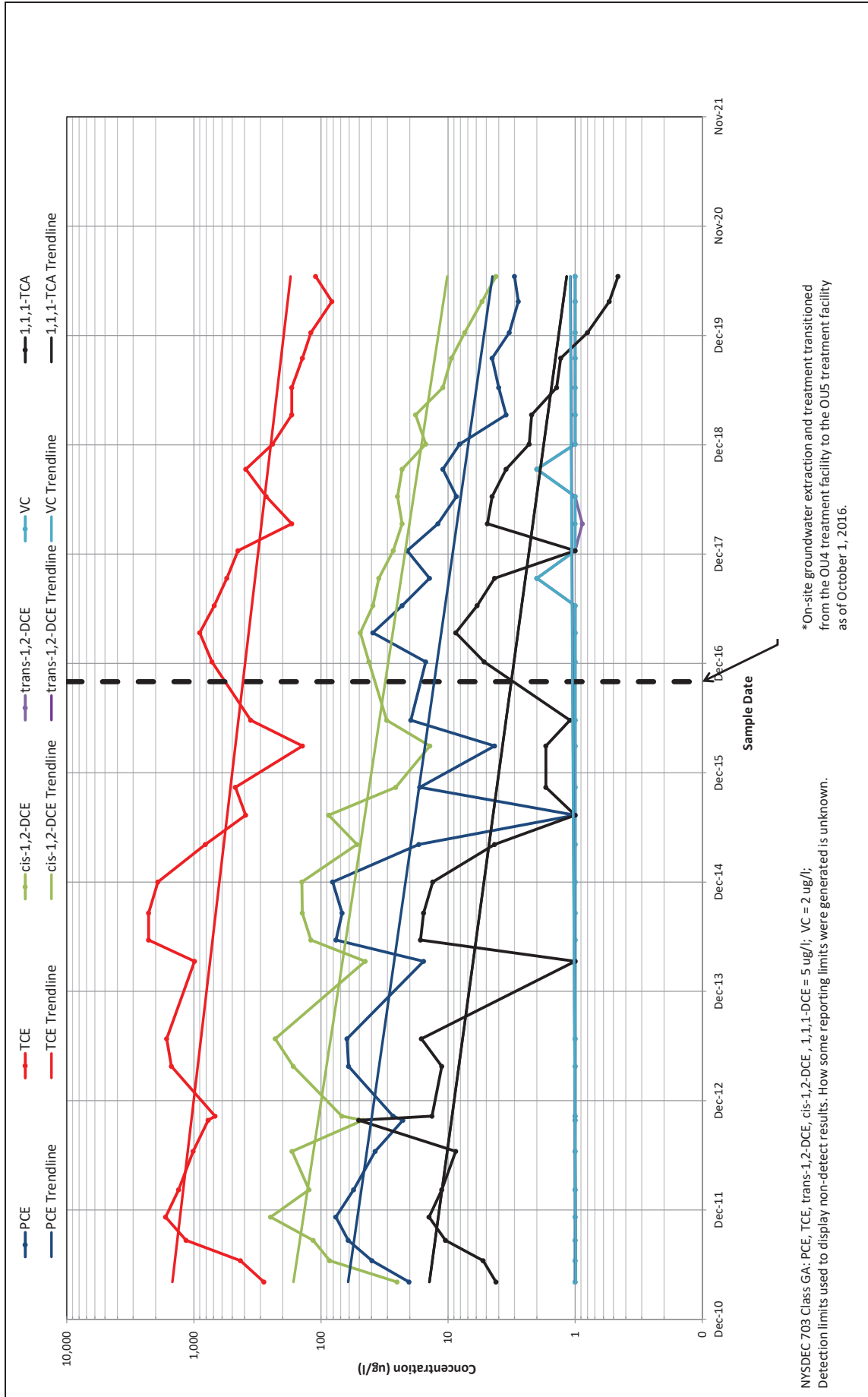
NYSDEC 703 Class GA: PCE, TCE, trans-1,2-DCE, cis-1,2-DCE, 1,1,1-DCE = 5 ug/l; VC = 2 ug/l;
 Detection limits used to display non-detect results. How some reporting limits were generated is unknown.



CHLORINATED VOC CONCENTRATIONS
WELL BP-3C
CLAREMONT POLYCHEMICAL CORPORATION OPERABLE UNIT 5
NYSDEC SITE #130015

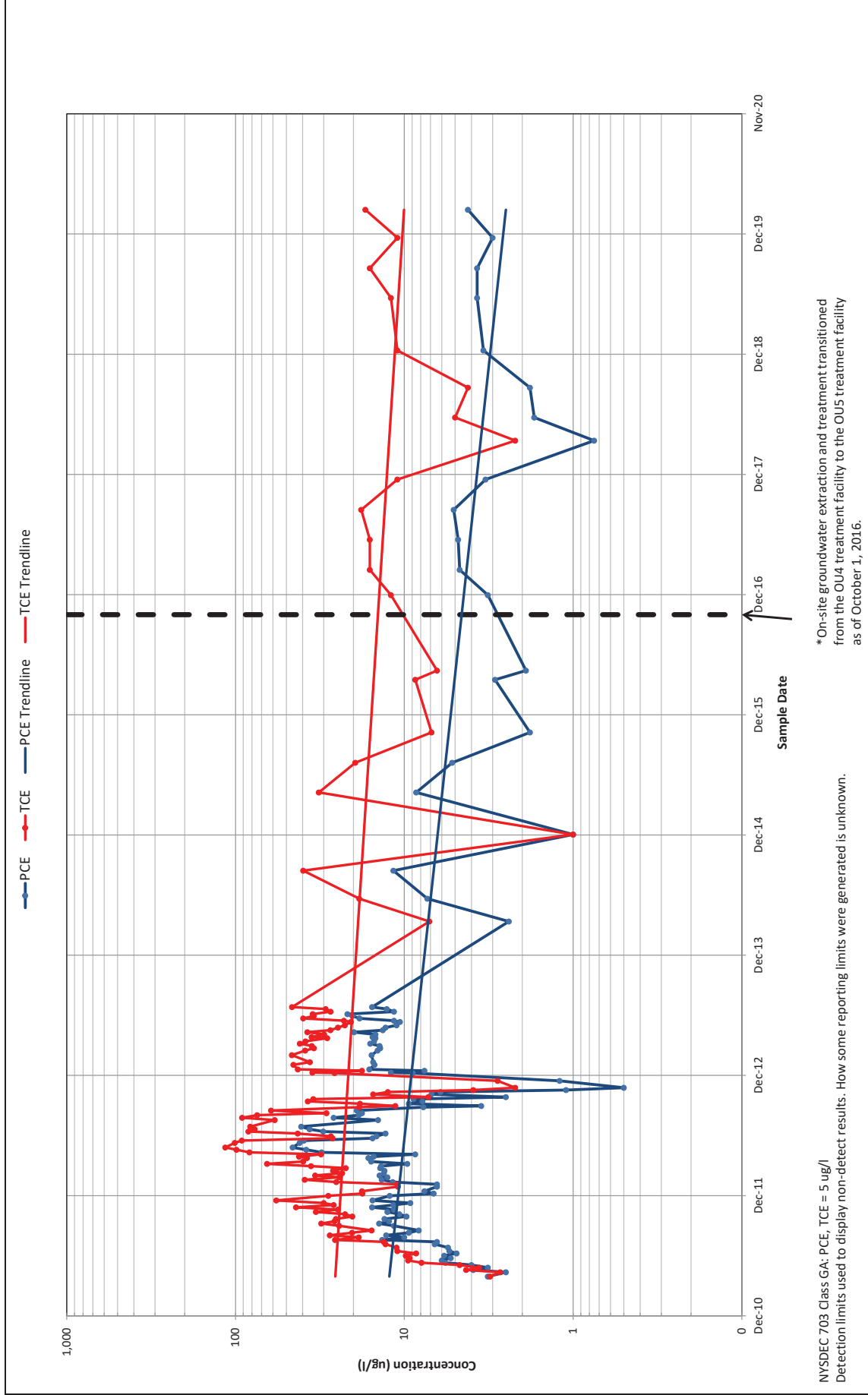


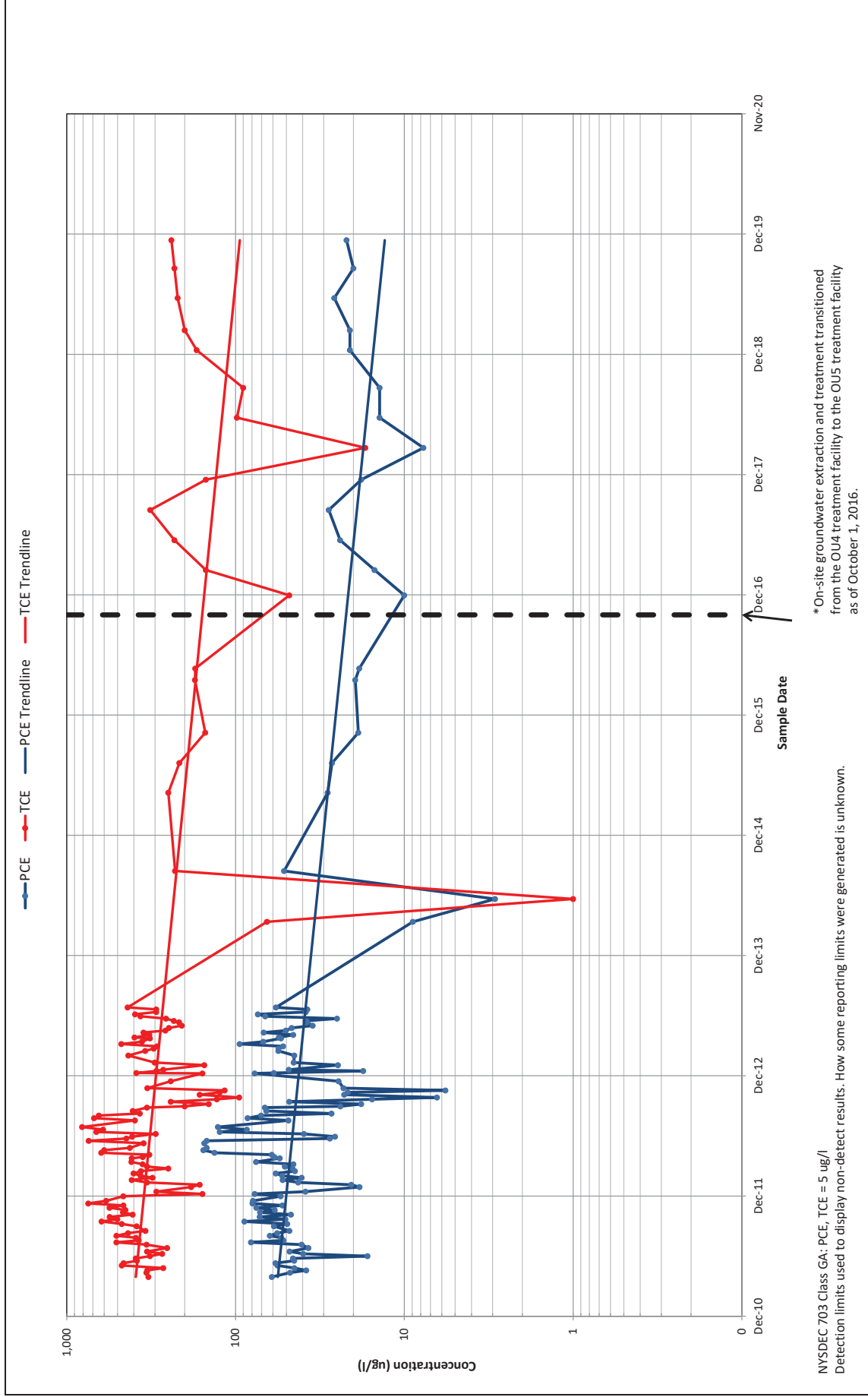


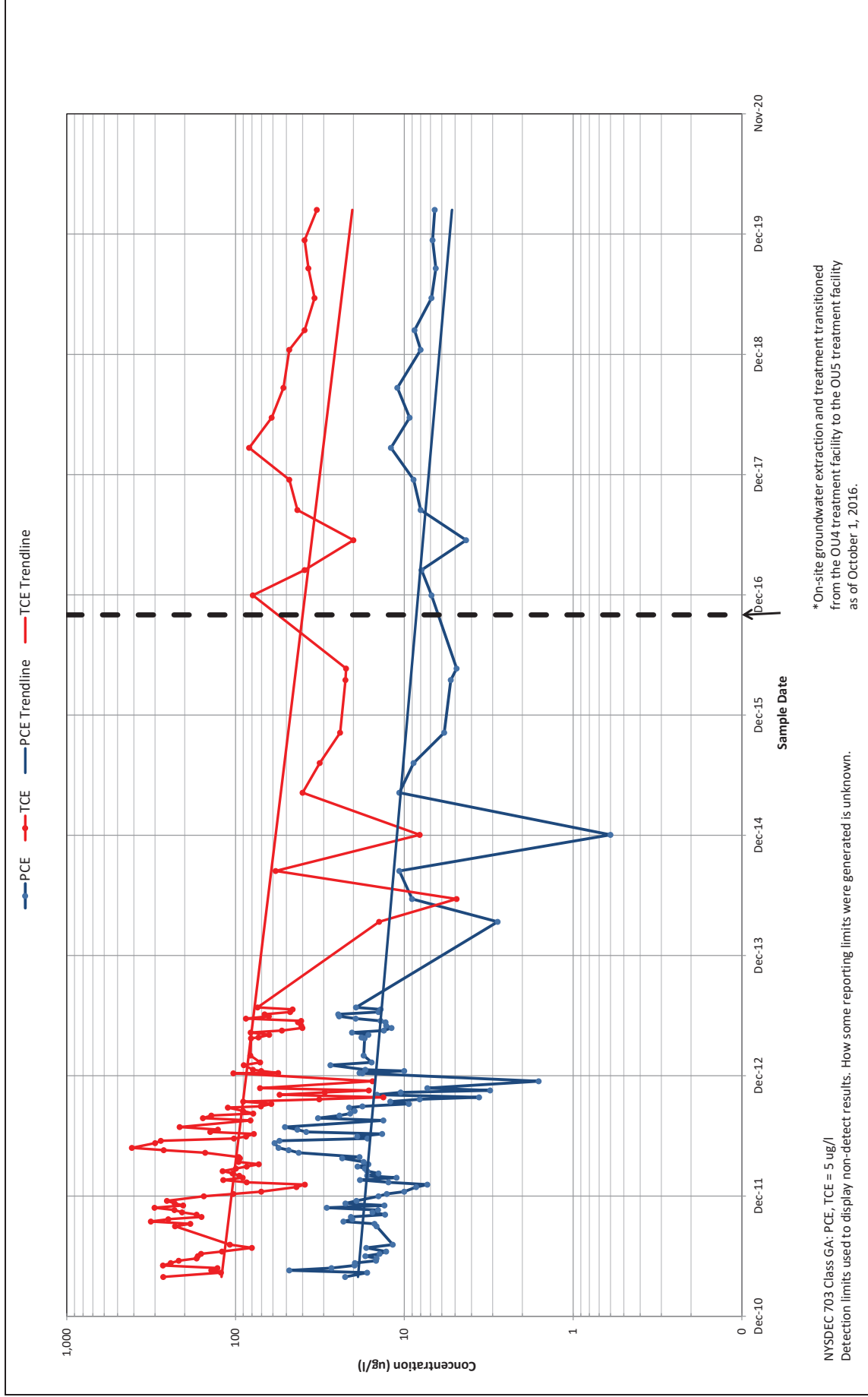


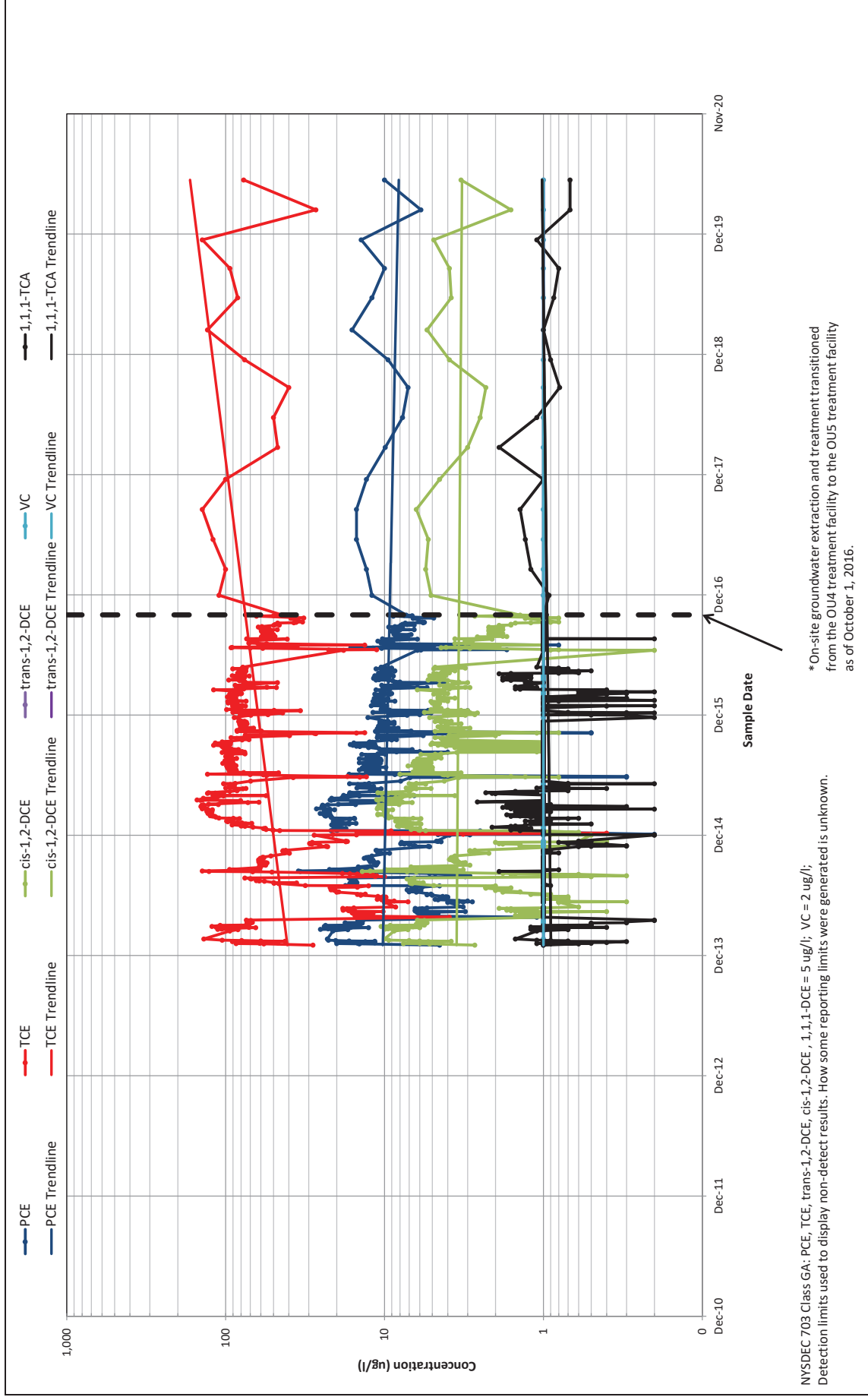
CHLORINATED VOC CONCENTRATIONS
WELL MW-7B-R
CLAREMONT POLYCHEMICAL CORPORATION OPERABLE UNIT 5
NYSDEC SITE #130015

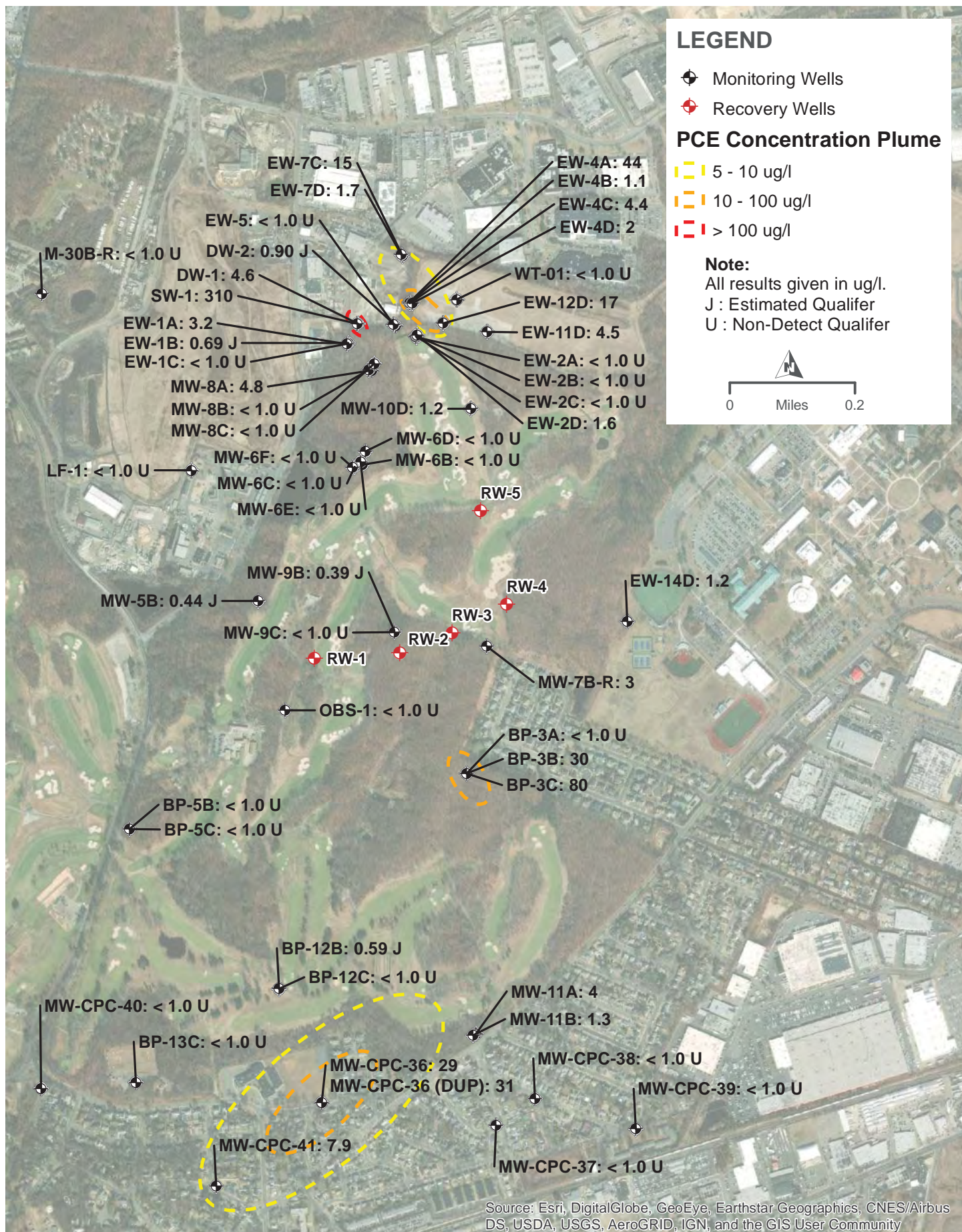












**JUNE 2020 TETRACHLOROETHENE (PCE) PLUME
CLAREMONT POLYCHEMICAL CORPORATION**

FIGURE 30



LEGEND

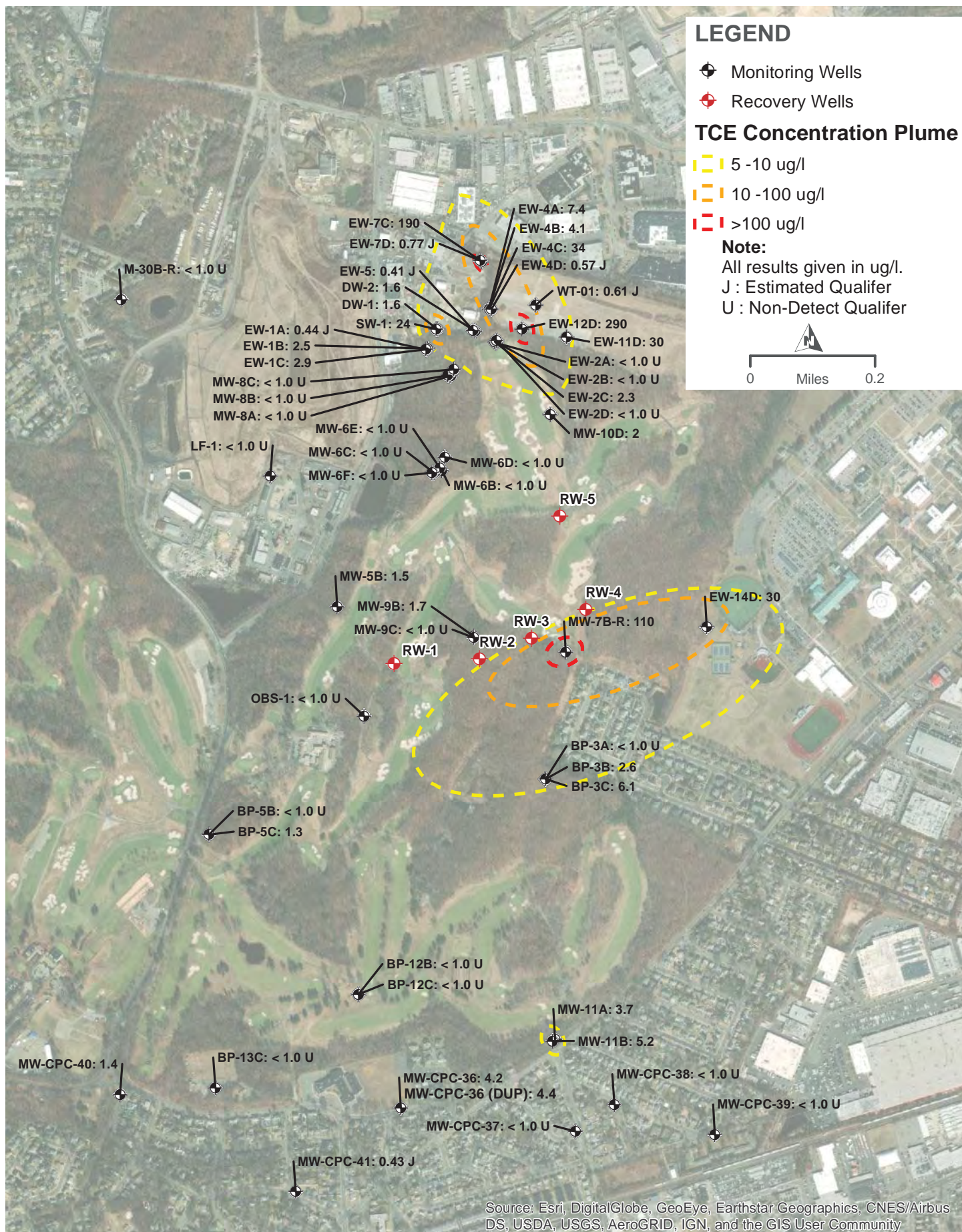
- Monitoring Wells
- Recovery Wells

TCE Concentration Plume

- 5 - 10 ug/l
- 10 - 100 ug/l
- > 100 ug/l

Note:

All results given in ug/l.
J : Estimated Qualifier
U : Non-Detect Qualifier

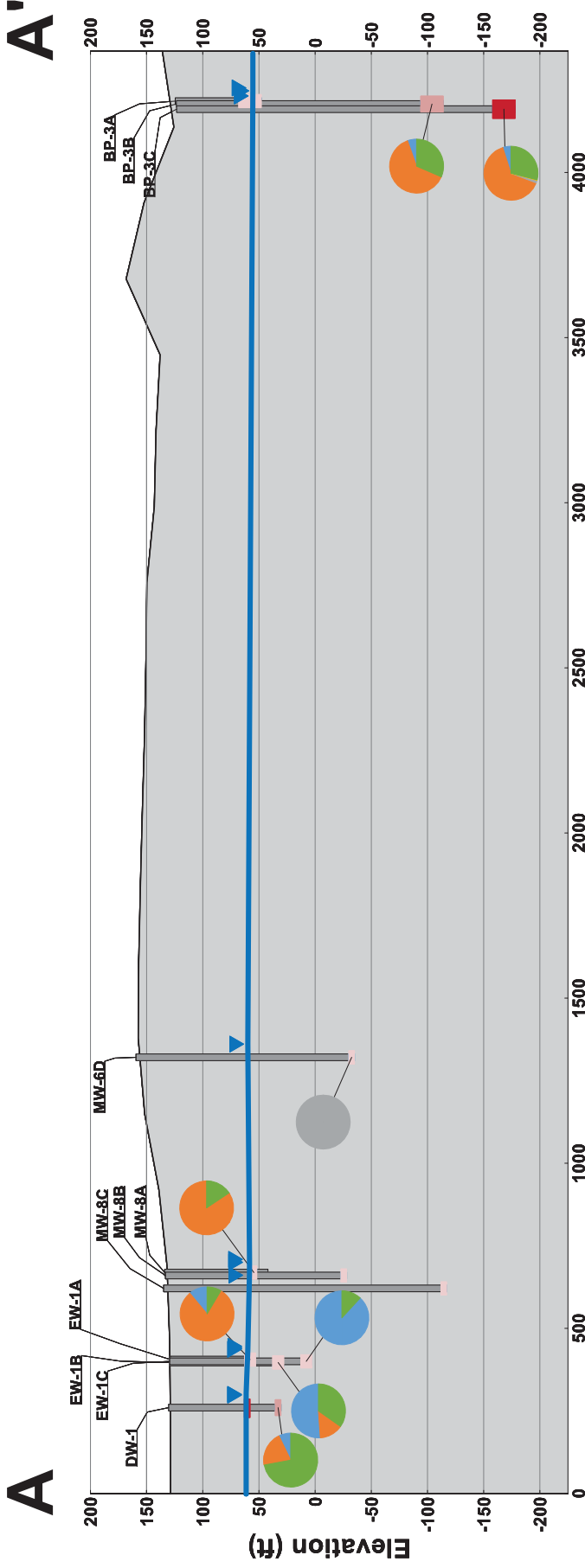


Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



JUNE 2020 TRICHLOROETHENE (TCE) PLUME CLAREMONT POLYCHEMICAL CORPORATION

FIGURE 31

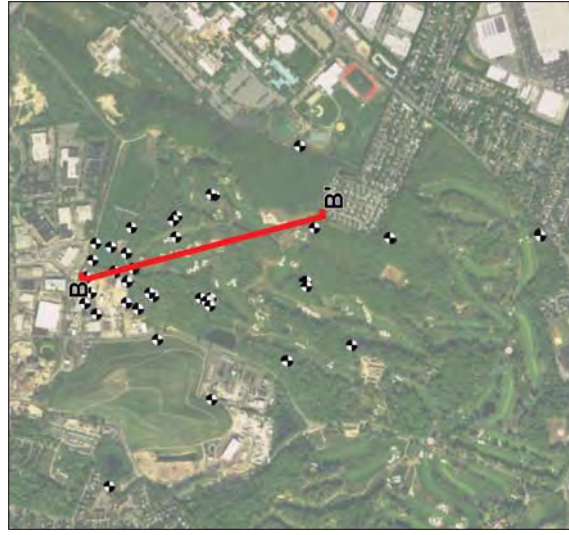
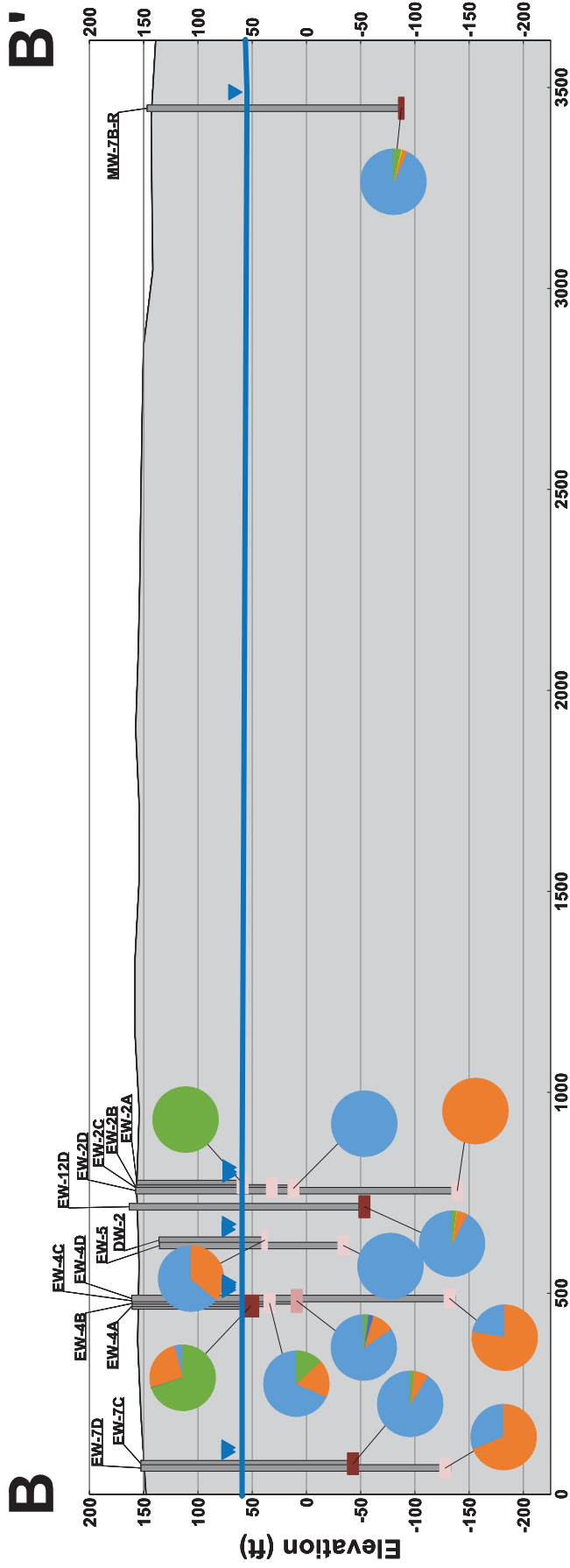


NOTES:

- Capture distance to transect line is 250 feet.
- Pie Charts shown are for samples with results from the selected constituents that were above the detection limit.
- Wells without a Pie Chart did not have reported results above the detection limit for the selected constituents.

CROSS SECTION TRANSECT A
CLAREMONT POLYCHEMICAL CORPORATION
FIGURE 32

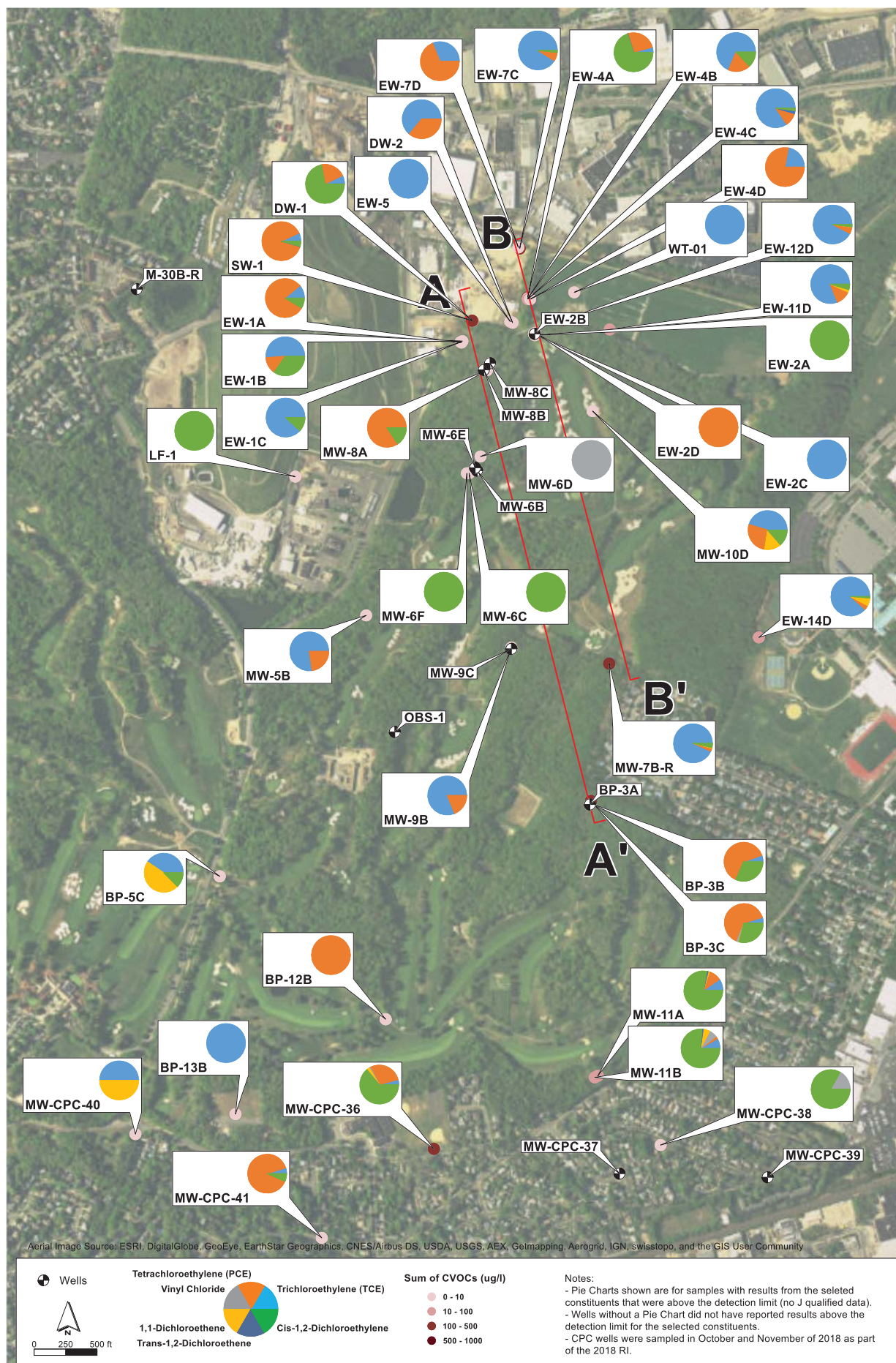




NOTES:

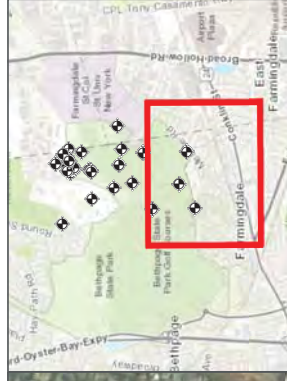
- Capture distance to transect line is 250 feet.
- Pie Charts shown are for samples with results from the selected constituents that were above the detection limit.
- Wells without a Pie Chart did not have reported results above the detection limit for the selected constituents.

CROSS SECTION TRANSECT B
CLAREMONT POLYCHEMICAL CORPORATION
FIGURE 33



DETECTED CHLORINATED BREAKDOWN PRODUCTS
CLAREMONT POLYCHEMICAL CORPORATION

FIGURE 34



Monitoring Wells
Public Water Supply Wells

Monitoring Well Results Notes:

- Monitoring Well Results. Notes:
1. 1,4-Dioxane was compared to the NYSDep Proposed Drinking Water MCL from December, 2018.
 2. Only compounds with exceedances are shown. If the compound is not shown it was not detected above the criteria.
 3. Criteria for compounds shown on this figure are presented in the table below.
 4. Exceedance of relevant criteria indicated by yellow highlighting in the data box on the map.
 5. ND indicates non-detect at the detection limit shown.
 6. Final, validated data presented on figure with the following exceptions: June 2020.
 7. All results presented in ug/L.

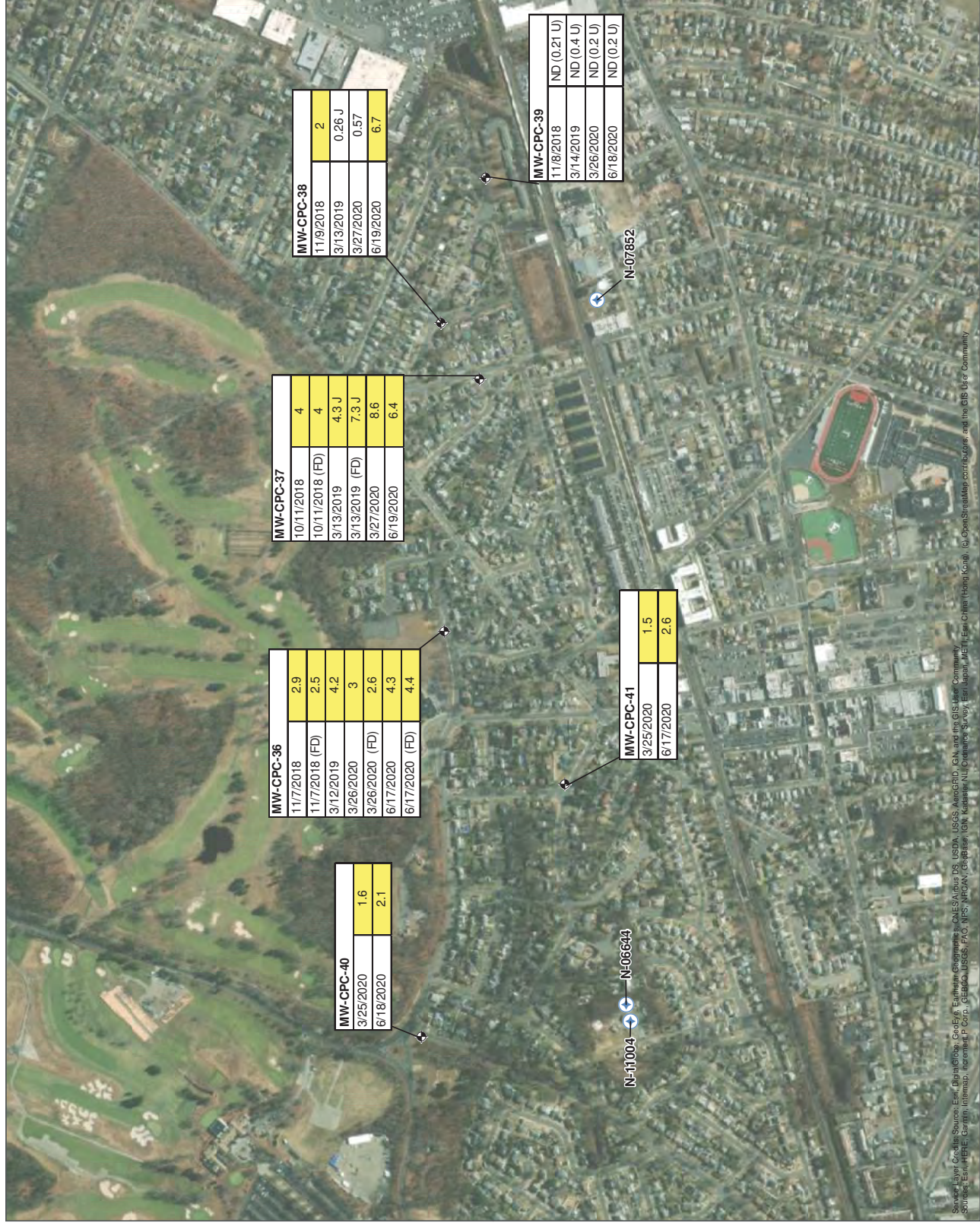
Standards / Criteria:

	ug/L
1,4-Dioxane	1

**1,4-DIOXANE EXCEEDANCES
IN SENTINEL WELLS**
CLAREMONT POLYCHEMICAL
CORPORATION



FIGURE 35



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

PATH: \\NJ-MAHWA\ACTIVE\PROJECTS\2023\15 CON\925889\60000000002750627.0_QIS_MODELS\7.2_WORK_IN_PROGRESS\MAP_DOCS\2020_Q2\FQIS_SENTINELWELLS_CHEMBOXES_14NOVANE.MXD - USER: HROSADO - DATE: 7/28/2020



2. Only compounds with exceedances are shown. If the compound is not shown it was not detected above the criteria.
3. Criteria for compounds shown on this figure are presented in the table below.

Standards / Criteria:

Perfluorononanoic acid (PFNA)	100
Perfluorooctanesulfonic acid (PFOS)	10
Perfluorooctanoic acid (PFOA)	10
Total PFOA & PFOS	70
Total PFAS	500



FIGURE 36

MW-CPC-38	PFOS + PFOA	Total PFAS
11/9/2018	0.76	18.92
3/13/2019	0.72	38.92
3/27/2020	ND	0.76
6/19/2020	0.72	65.61

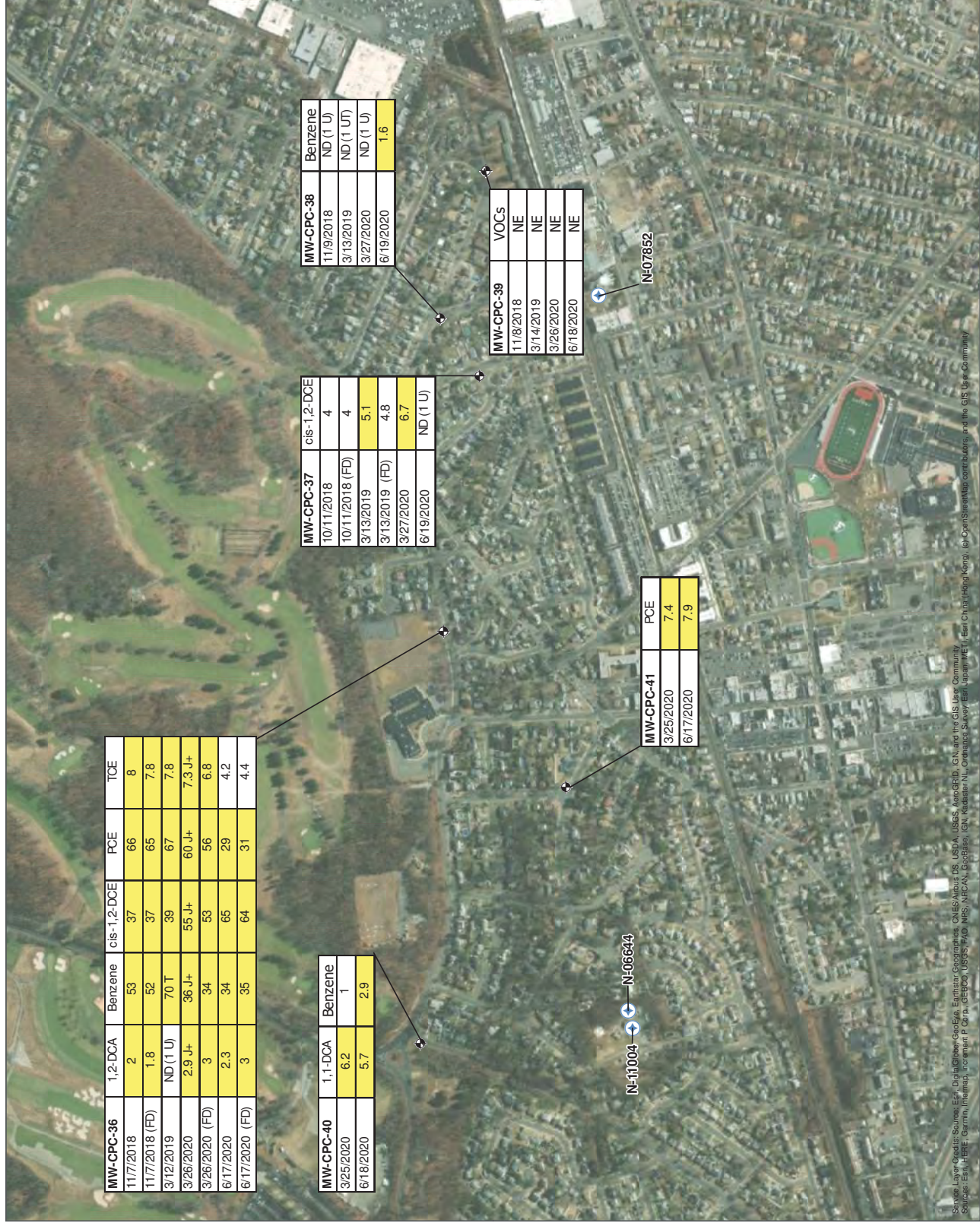
MW-CPC-39	PFOS + PFOA	Total PFAS
11/8/2018	0.4	1.31
3/14/2019	ND	ND
3/26/2020	ND	ND
6/18/2020	ND	6.55

MW-CPC-41	PFOA	PFOA + PFOS	Total PFAS
3/25/2020	29.8	51.5	193.24
6/17/2020	30.5	52.7	284.59

MW-CPC-40	PFOS + PFOA	Total PFAS
3/25/2020	ND	ND
6/18/2020	ND	117.59

N-11004 — N-06644

[illegible]



Monitoring Well Results Notes:
1. Groundwater Quality Standards and Guidance Values: NYSDEC TOGS 1.1.1 (6 NYCRR Part 703)
Class GA:

Monitoring Well Results Notes:

1. Groundwater Quality Standards and Guidance Values: NYSDEC TOGS 1.1.6 (16 NYCRR Part 703) Class GA.
2. Only compounds with exceedances are shown. If the compound is not shown it was not detected above the criteria.
3. Criteria for compounds shown on this figure are presented in the table below.
4. Exceedance of relevant criteria indicated by yellow highlighting in the data box on the map.
5. NE indicates no exceedances. ND indicates non-detect at the detection limit shown.
6. Final, validated data presented on figure with the following exceptions: June 2020.
7. All results presented in ug/L.

Compound	log K _{ow}
1,1-Dichloroethane (1,1-DCA)	5
1,2-Dichloroethane (1,2-DCA)	0.6
Benzene	1
Cis-1,2-Dichloroethylene (cis-1,2-DCE)	5
Tetrachloroethylene (PCE)	5
Trichloroethylene (TOC)	5



FIGURE 37

ATTACHMENT A

Summary of Analytical Results – Second Quarter 2020 Groundwater Samples

Attachment A
Summary of Analytical Results
June 2020 (2Q20) Sampling Event
Claremont Polychemical Superfund Site OU5
Old Bethpage, NY

[illegible]

Note: U = not detected; J = estimated value; T = quality control parameter exceeded laboratory limits (LCS/LCSD failed recovery criteria). Values in shaded cells exceed NYSDEC 703 Class GA criteria.

ATTACHMENT A1

Summary of Emerging Contaminant Results – Second Quarter 2020 Groundwater Samples

Attachment A1
Summary of Emerging Contaminant Results
June 2020 (2020) Sampling Event
Claremont Polychemical Superfund Site OU5
Old Bethpage, NY

[illegible]

Note: U = not detected; J = estimated value; B = contamination detected in the associated blank Values in shaded cells exceed NYSDEC Part 375 PFAS Criteria.

Qualifiers	Definitions
B	Indicates analyte found in associated method blank.
J	Indicates an estimated value.
T	Indicates a tentatively identified compound and an estimated value.
U	Indicates result was not detected. Reporting detection limit is listed instead.

Matrix	Applicable Criteria	Defintions
Groundwater	NYS Ground Water Class GA	New York State Part 703.5 Criteria, Class GA (a)
	NYSDEC Part 375 PFAS	NYSDEC Part 375 (b)
	PFOA & PFOS Sum	EPA PFOA & PFOS HAL (c)
	NYSDEC Part 375 1,4-Dioxane	NYSDEC Part 375 (d)

References:

- (a) New York State Part 703.5 Water quality standards for taste-, color- and odor-producing, toxic and other deleterious substances
[https://govt.westlaw.com/nycrr/Document/I4ed90418cd1711dda432a117e6e0f345?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=\(sc.Default\)&bhcp=1](https://govt.westlaw.com/nycrr/Document/I4ed90418cd1711dda432a117e6e0f345?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=(sc.Default)&bhcp=1)
- (b) Guidelines for Sampling and Analysis of PFAS Under NYSDEC's Part 375 Remedial Programs, January 2020
https://www.dec.ny.gov/docs/remediation_hudson_pdf/pfassampanaly.pdf
- (c) EPA Fact Sheet PFOA & PFOS Drinking Water Health Advisories, November 2016
https://www.epa.gov/sites/production/files/2016-06/documents/drinkingwaterhealthadvisories_pfoa_pfes_updated_5.31.16.pdf
- (d) Drinking Water Quality Council Recommends Nation's Most Protective Maximum Contaminant Levels for Three Unregulated Contaminants in Drinking Water
https://health.ny.gov/press/releases/2018/2018-12-18_drinking_water_quality_council_recommendations.htm

Notes:

Totalled fields include the total of all detected results of constituents. If all results are non-detect, the total is equal to the maximum result detection limit.

NA indicates constituent was not analyzed for, due to variations in requested lab methods.

ATTACHMENT B
Synoptic Water Level Data

Water Level Data Sheet

Claremont GWTF OU5

Old Bethpage, New York

Date of Recording:		18-Mar-20		Data Recorded By:		PET/MP
Well ID	12-6-19 DTW Reading	Time	DTW	Riser Elevation	Water Elevation	Comments/Notes
BP-3A	62.12	1244	62.55	124.16	61.61	
BP-3B	64.79	1240	64.08	123.19	59.11	
BP-3C	64.95	1242	64.28	123.91	59.63	
DW-1	65.04	1418	64.54	130.13	65.59	
DW-2	70.92	1427	70.39	135.52	65.13	
EW-1A	63.90	1407	63.41	128.75	65.34	
EW-1B	64.45	1409	63.73	129.31	65.58	
EW-1C	64.39	1412	63.94	129.16	65.22	
EW-2A	91.73	845	91.32	156.09	64.77	
EW-2B	92.21	850	91.77	156.50	64.73	
EW-2C	92.25	848	91.8	156.50	64.70	
EW-2D	92.89	852	92.49	157.12	64.63	
EW-3A	96.37	903	95.78	157.88	62.10	
EW-3B	96.55	905	95.92	157.99	62.07	
EW-3C	96.44	910	95.74	157.87	62.13	
EW-4A	95.82	1319	95.33	160.58	65.25	
EW-4B	95.84	1316	95.36	160.59	65.23	
EW-4C	95.61	1315	95.17	160.33	65.16	
EW-4D	95.95	1312	95.58	160.62	65.04	
EW-5	70.42	1426	69.4	135.05	65.65	
EW-6A	63.02	1440	62.53	128.92	66.39	
EW-6C	63.34	1439	63.03	129.02	65.99	
EW-7C	87.12	1452	86.74	152.45	65.71	
EW-7D	87.05	1457	86.62	152.35	65.73	
EW-8D	64.74	1432	64.39	130.21	65.82	
EW-9D	70.86	1444	70.46	136.20	65.74	
EW-10C	94.62	1324	94.16	159.80	65.64	
EW-11D	100.61	1305	100.17	164.17	64.00	
EW-12D	99.22	1307	98.78	163.34	64.56	
EW-13D	99.10	1328	98.76	163.61	64.85	
EW-14D	41.53	1223	40.75	100.58	59.83	
LF-1	44.89	-	-	109.83	NA	Not Accessible
LF-02	52.36	1507	51.95	117.18	65.23	
M-30BR	84.66	1516	84.49	153.07	68.58	
MW-5B	73.22	835	72.85	136.99	64.14	
MW-6A	95.77	1337	95.21	158.83	63.62	
MW-6B	95.85	1351	95.36	159.02	63.66	
MW-6C	95.24	1345	94.69	158.65	63.96	
MW-6D	96.42	1347	95.32	159.01	63.69	
MW-6E	96.42	1349	95.95	159.54	63.59	
MW-6F	95.72	1340	95.28	158.71	63.43	
MW-7BR	87.80	918	86.91	146.27	59.36	
MW-8A	69.33	1358	68.81	133.52	64.71	
MW-8B	68.70	1356	68.22	132.84	64.62	

Water Level Data Sheet

Claremont GWTF OU5

Old Bethpage, New York

Date of Recording:		18-Mar-20		Data Recorded By:		PET/MP
Well ID	12-6-19 DTW Reading	Time	DTW	Riser Elevation	Water Elevation	Comments/Notes
MW-8C	70.16	1400	69.74	134.27	64.53	
MW-9B	91.37	924	91.2	151.78	60.58	
MW-9C	92.03	926	91.43	151.97	60.54	
MW-10B	97.34	859	96.83	159.90	63.07	
MW-10C	96.41	1258	95.84	158.89	63.05	
MW-10D	97.22	1256	96.79	159.67	62.88	
MW-11A	23.31	1123	22.49	78.71	56.22	
MW-11B	23.12	1127	22.36	78.43	56.07	
OBS-1	48.37	934	47.85	109.03	61.18	
SW-1	65.20	1422	64.71	130.24	65.53	
WT-01	98.89	1331	98.34	163.28	64.94	
55 wells						
MW-CPC-36	20.64	1016	20.01	75.90	55.89	
MW-CPC-37	26.42	1049	25.12	77.90	52.78	
MW-CPC-38	27.19	1042	26.08	78.90	52.82	
MW-CPC-39	24.58	1034	23.47	75.30	51.83	
BP-5B	35.73	942	35.15			
BP-5C	35.74	939	35.22			
BP-12B	20.19	952	19.49			
BP-12C	20.13	955	20.9			
BP-13B	76.61	1006	75.98			
BP-13C	77.65	1004	77.19			

GROUNDWATER ELEVATIONS

BETHPAGE STATE PARK

WATER LEVEL MEASUREMENTS

June 10, 2020

VE, KF, MF

WELL	TIME	MEASURING POINT ELEV	DEPTH TO WATER	WATER TABLE	ORW FLOW RATE	COMMENTS
BP-1A	1220	109.77	45.40	64.37		
BP-1B	1218	109.53	45.24	64.29		
BP-1C	1216	109.37	44.92	64.45		
BP-2A	1044	151.00	85.27	65.73		
BP-2B*	1042	151.13	86.55	64.58		
BP-3A	1323	124.54	61.88	62.66		<i>measured by HDR</i>
BP-3B	1319	123.57	64.31	59.26		<i>measured by HDR</i>
BP-3C	1317	123.68	64.09	59.59		<i>measured by HDR</i>
BP-4A	1101	92.69	31.54	61.15		
BP-4B*	1056	91.92	30.89	61.03		
BP-4C*	1054	91.68	31.51	60.17		
BP-4I	1057	92.10	31.00	61.10		
BP-5A	1013	96.34	34.75	61.59		
BP-5B	1018	96.48	35.20	61.28		<i>PDB in B & C wells</i>
BP-5C	1016	96.28	35.30	60.98		<i>PDB in B & C wells</i>
BP-6A	0947	102.55	38.52	64.03		
BP-6B	0952	102.58	39.20	63.38		
BP-6C	0949	102.35	38.97	63.38		
BP-7A	1003	147.54	81.50	66.04		
BP-7B	1001	148.76	82.90	65.86		
BP-7C	0959	148.40	82.75	65.65		
BP-8A	1135	89.88	26.34	63.54		
BP-8B	1125	89.82	26.15	63.67		
BP-8C	1130	89.53	26.90	62.63		
BP-9B*	1157	85.09	25.80	59.29		
BP-9C*	1155	84.88	27.31	57.57		
BP-9I	1156	85.18	25.84	59.34		
BP-10B*	1140	81.21	23.48	57.73		
BP-10C*	NA	80.94	NA	NA		<i>LOGGER in WELL</i>
BP-11	NA	81.76	NA	NA		<i>WELL BURIED</i>
BP-12A*	1203	78.33	19.45	58.88		
BP-12B*	1204	78.24	19.60	58.64		<i>PDB in B & C wells</i>
BP-12C*	1206	78.56	21.17	57.39		<i>HEAD DIFF = -1.25 FT</i>
BP-13B*	1055	133.37	76.19	57.18		
BP-13C*	1050	133.67	78.40	55.27		<i>HEAD DIFF = -1.91 FT</i>
BP-14B*	1117	81.50	22.07	59.43		
BP-14C*	1119	81.48	23.00	58.48		
BP-15B	1131	98.38	38.56	59.82		
BP-15C	1130	98.45	38.64	59.81		<i>HEAD DIFF = -0.01 FT</i>
OBV-1B	0929	157.26	87.27	69.99		
OBV-1C	0931	156.69	87.83	68.86		
W-7A	1157	104.44	39.22	65.22		
W-7B	1200	104.55	38.19	66.36		
W-7C	1205	104.68	39.55	65.13		
W-7D	1155	104.58	39.99	64.59		
RB-1	1215	135.02	66.84	68.18		
UM-1	1110	115.64	50.12	65.52		
U-6A	NA	153.94	NA	NA		
ORW-1	NA	147.68	NA	NA	Off	<i>Vault Door Jammed</i>
ORW-2	1034	97.88	36.37	61.51	Off	
ORW-3	1105	91.39	30.53	60.86	Off	
ORW-4	1111	88.88	29.16	59.72	Off	
ORW-5A	1022	100.38	41.33	59.05	Off	
ORW-6	1148	83.42	24.22	59.20	Off	
ORW-7	1153	76.14	18.18	57.96	Off	

* = DEDICATOR PUMP IN WELL

ATTACHMENT C

Full Laboratory Data Deliverable available on Claremont OU4 Sharepoint Site

ATTACHMENT D
Field Documentation

Chain of Custody Record

Client Information Client Contact: Mr. Payson Long Company: New York State D.E.C. Address: 625 Broadway 12th Floor City: Albany State/Zip: NY, 12233-7017 Phone: _____ Email: payson.long@dec.ny.gov Project Name: DEC Claremont Treatment Plant, 130015 Site: Claremont Polychemical GWTF OU5		Sampler: HDR Inc. Lab PM: Julie Gilmore Phone: 516-777-7242 E-Mail: julie.gilmore@testamericainc.com		Carrier Tracking (No.): Job # 222 211439		GOC No: CPC GW 121118 Page 1 of 5			
Due Date Requested: 10 days TAT Requested (days): 10 days PO #: _____ WO #: _____ CallOut: 136112; Site: 130015 Project #: 46008579 SSOW#: _____				Analysis Requested 8260C - Routine SOW VOC List+TBA 8270D - Routine SOW SVOC List 6010D - Metals - As, Ba, Cd, Cr, Fe, Mn, Pb, Sb, Se 7470A - Mercury 2570D - TDS 2540D - TSS 7196A - Hexavalent Chromium 351.2 - TXN 9060A - TOC 300.0 - Cl, F, SO4 9012B - Total Cyanide				Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Anichlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: _____ M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecalhydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)	
Sample Identification Sample Date Sample Time Sample Type (C=Comp, G=grab) Matrix (We:water, S:solid, O:wastewater, BT:tissue, A:air)		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No)		Total Number of Containers Special Instructions/Note:		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months			
BP3A-CP-00-061620 BP3B-CP-00-061620 BP3C-CP-00-061620 BP5B-CP-00-061520 BP5C-CP-00-061520 BP12B-CP-00-061520 BP12C-CP-00-061520 BP12C-CP-01-061520 BP13B-CP-00-061520 BP13C-CP-00-061520 DW1-CP-00-061620 DW2-CP-00-061620		6/16/20 10:05 G W 6/16/20 9:57 G W 6/16/20 9:46 G W 6/15/20 10:50 G W 6/15/20 10:38 G W 6/15/20 11:18 G W 6/15/20 11:08 G W 6/15/20 11:08 G W 6/15/20 11:53 G W 6/15/20 11:42 G W 6/16/20 12:27 G W 6/16/20 12:50 G W		1 2 3 4 5 6 7 8 9 10 11 12		field sample field sample field sample field sample field sample field sample field sample field duplicate sample field sample field sample field sample field sample			
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify) NY Cat B				Special Instructions/QC Requirements:					
Empty Kit Relinquished by: _____ Date: _____ Relinquished by: _____ Date/Time: 6/18/20 12:18 Company: HDR Relinquished by: _____ Date/Time: 6/18/20 15:20 Company: HDR Relinquished by: _____ Date/Time: 6/18/20 18:00 Company: HDR				Method of Shipment: _____ Received by: _____ Date/Time: 6/18/20 12:18 Company: HDR Received by: _____ Date/Time: 6/18/20 17:00 Company: HDR Received by: _____ Date/Time: 6/18/20 18:00 Company: HDR					
Custody Seal No.: _____ Custody Seal Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No				Cooler Temperature(s) °C and Other Remarks:					

TestAmerica Edison
777 New Durham Road
Edison, NJ 08817
Phone (732) 549-3900 Fax (732) 549-3679

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information		Sampler		Lab PM		Carrier Tracking No(s)		GOC #	
HDR Inc. <td colspan="2">Julie Gilmore<td colspan="2">CPC GW 1118<td colspan="2"></td><td colspan="2"></td></td></td>		Julie Gilmore <td colspan="2">CPC GW 1118<td colspan="2"></td><td colspan="2"></td></td>		CPC GW 1118 <td colspan="2"></td> <td colspan="2"></td>					
Mr. Payson Long <td colspan="2">E-Mail<td colspan="2">jgilmore@testamericainc.com<td colspan="2"></td><td colspan="2"></td></td></td>		E-Mail <td colspan="2">jgilmore@testamericainc.com<td colspan="2"></td><td colspan="2"></td></td>		jgilmore@testamericainc.com <td colspan="2"></td> <td colspan="2"></td>					
516-777-7242 <td colspan="2"><td colspan="2"><td colspan="2"></td><td colspan="2"></td></td></td>		<td colspan="2"><td colspan="2"></td><td colspan="2"></td></td>		<td colspan="2"></td> <td colspan="2"></td>					
New York State D.E.C. <td colspan="2">Due Date Requested:<td colspan="2">Analysis Requested<td colspan="2">Job #<td colspan="2">211439</td></td></td></td>		Due Date Requested: <td colspan="2">Analysis Requested<td colspan="2">Job #<td colspan="2">211439</td></td></td>		Analysis Requested <td colspan="2">Job #<td colspan="2">211439</td></td>		Job # <td colspan="2">211439</td>		211439	
Address: <td colspan="2">TAT Requested (days):<td colspan="2">Preservation Codes:<td colspan="2"></td><td colspan="2"></td></td></td>		TAT Requested (days): <td colspan="2">Preservation Codes:<td colspan="2"></td><td colspan="2"></td></td>		Preservation Codes: <td colspan="2"></td> <td colspan="2"></td>					
625 Broadway 12th Floor <td colspan="2">10 days<td colspan="2">A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:</td><td colspan="2"></td><td colspan="2"></td></td>		10 days <td colspan="2">A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:</td> <td colspan="2"></td> <td colspan="2"></td>		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:					
City <td colspan="2">PO #<td colspan="2">Call Out: 136112; Site: 130015<td colspan="2"></td><td colspan="2"></td></td></td>		PO # <td colspan="2">Call Out: 136112; Site: 130015<td colspan="2"></td><td colspan="2"></td></td>		Call Out: 136112; Site: 130015 <td colspan="2"></td> <td colspan="2"></td>					
Albany <td colspan="2">WO #<td colspan="2">150 Winding Road, Old Bethpage<td colspan="2"></td><td colspan="2"></td></td></td>		WO # <td colspan="2">150 Winding Road, Old Bethpage<td colspan="2"></td><td colspan="2"></td></td>		150 Winding Road, Old Bethpage <td colspan="2"></td> <td colspan="2"></td>					
State, Zip <td colspan="2">Project #<td colspan="2">46008579<td colspan="2"></td><td colspan="2"></td></td></td>		Project # <td colspan="2">46008579<td colspan="2"></td><td colspan="2"></td></td>		46008579 <td colspan="2"></td> <td colspan="2"></td>					
NY, 12233-7017 <td colspan="2">SSOW#<td colspan="2"></td><td colspan="2"></td><td colspan="2"></td></td>		SSOW# <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td>							
Phone: <td colspan="2">Email<td colspan="2">payson.long@dec.ny.gov<td colspan="2"></td><td colspan="2"></td></td></td>		Email <td colspan="2">payson.long@dec.ny.gov<td colspan="2"></td><td colspan="2"></td></td>		payson.long@dec.ny.gov <td colspan="2"></td> <td colspan="2"></td>					
Project Name <td colspan="2">DEC Claremont Treatment Plant, 130015<td colspan="2"></td><td colspan="2"></td><td colspan="2"></td></td>		DEC Claremont Treatment Plant, 130015 <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td>							
Site <td colspan="2">Claremont Polychemical GWTF OU5<td colspan="2"></td><td colspan="2"></td><td colspan="2"></td></td>		Claremont Polychemical GWTF OU5 <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td>							
Sample Identification		Sample Date		Sample Time		Sample Type (G=Grab)		Matrix (W=Water, S=solid, O=soil, BT=tissue, A=air)	
EW01A-CP-00-061620		6/16/20		12:14 G		G=Grab		W	
EW01A-CP-01-061620		6/16/20		12:14 G		G=Grab		W	
EW01B-CP-00-061620		6/16/20		12:07 G		G=Grab		W	
EW01C-CP-00-061620		6/16/20		11:59 G		G=Grab		W	
EW02A-CP-00-061520		6/15/20		9:34 G		G=Grab		W	
EW02B-CP-00-061520		6/15/20		9:25 G		G=Grab		W	
EW02C-CP-00-061520		6/15/20		9:17 G		G=Grab		W	
EW02D-CP-00-061520		6/15/20		9:08 G		G=Grab		W	
EW04A-CP-00-061620		6/16/20		11:44 G		G=Grab		W	
EW04B-CP-00-061620		6/16/20		11:38 G		G=Grab		W	
EW04C-CP-00-061620		6/16/20		11:31 G		G=Grab		W	
EW04D-CP-00-061620		6/16/20		11:21 G		G=Grab		W	
Possible Hazard Identification		Non-Hazard		Flammable		Skin Irritant		Poison B	
Deliverable Requested: I, II, III, IV, Other (specify) NY Cat B		Unknown		Radiological					
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:			
Relinquished by: [Signature]		6/17/20		17:18		Company: HDR		Received by: [Signature]	
Relinquished by: [Signature]		6/18/20		15:20		Company: [Signature]		Received by: [Signature]	
Relinquished by: [Signature]		6/18/20		15:00		Company: [Signature]		Received by: [Signature]	
Custody Seal No.:		3-83011							

Chain of Custody Record

Client Information			Lab PM HDR Inc.			Carrier Tracking No(s) CPC 121118		
Client Contact Mr. Payson Long			Phone 516-777-7242			Page 3 of 3		
Company New York State D.E.C.			E-Mail julie.gilmore@testamericainc.com			Job # 222 211439		
Address 625 Broadway 12th Floor			Due Date Requested:			Analysis Requested		
City Albany			TAT Requested (days): 10 days					
State Zip NY, 12233-7017			PO #					
Phone			CallOut: 136112; Site: 130015					
Email payson.long@dec.ny.gov			WO #					
Project Name DEC Claremont Treatment Plant; 130015			150 Winding Road, Old Bethpage					
Site Claremont Polychemical GWTF OU5			Project # 46008579					
SSOW#								
Sample Identification			Sample Date			Sample Time		
EW05-CP-00-061620			6/16/20			12:42 G		
EW07C-CP-00-061620			6/16/20			13:05 G		
EW07D-CP-00-061620			6/16/20			13:14 G		
EW11D-CP-00-061620			6/16/20			10:48 G		
EW12D-CP-00-061620			6/16/20			11:09 G		
EW14D-CP-00-061620			6/16/20			9:19 G		
LF1-CP-00-061520			6/15/20			8:26 G		
M30BR-CP-00-061720			6/17/20			11:52 G		
MW05B-CP-00-061520			6/15/20			8:45 G		
MW06B-CP-00-061720			6/17/20			11:02 G		
MW06C-CP-00-061720			6/17/20			10:32 G		
MW06D-CP-00-061720			6/17/20			10:41 G		
Possible Hazard Identification			<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological					
Deliverable Requested: I, II, III, IV, Other (specify) NY Cat B								
Empty Kit Relinquished by:			Date:			Time:		
Relinquished by: P. Atkinson			Date/Time: 6/13/20 12:18			Company: HDR		
Relinquished by:			Date/Time: 6/15/20 15:20			Company:		
Relinquished by: [Signature]			Date/Time: 6/15/20 18:00			Company:		
Custody Seal No.: A Yes A No			Custody Seal No.: 130015			Cooler Temperature(s) °C and Other Remarks		

TestAmerica Edison

777 New Durham Road
Edison, NJ 08817
Phone (732) 549-3900 Fax (732) 549-3679

Chain of Custody Record



Client Information Client Contact: Mr. Payson Long Company: New York State D.E.C. Address: 625 Broadway 12th Floor City: Albany State: NY Zip: 12233-7017 Phone: [blank] Email: payson.long@dec.ny.gov Project Name: DEC Claremont Treatment Plant, 130015 Site: Claremont Polychemical GWTF OU5		Sampler: HDR Inc. Lab PM: Julie Gilmore E-Mail: julie.gilmore@testamericainc.com Carrier Tracking No(s): [blank]		COC No: NYG CPC GW COC #118 Page: 4 of 5 Job #: 211479															
Analysis Requested Due Date Requested: [blank] TAT Requested (days): 10 days PO #: [blank] CallOut: 136112; Site: 130015 WO #: [blank] 150 Winding Road, Old Bethpage Project #: 46008579 SSON#: [blank]			Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Anchor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: [blank]																
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (viewwater, ss, solid, oil, BT-tissue, A=AU)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C - Routine SOW VOC List+TBA	8270D - Routine SOW SVOC List	6010D - Metals - As, Ba, Cd, Cr, Fe, Mn, Pb, Sb, Se	7470A - Mercury	2570D - TDS	2540D - TSS	7196A - Hexavalent Chromium	351.2 - TKN	9060A - TOC	300.0 - Cl, F, SO4	9012B - Total Cyanide	Total Number of Containers	Special Instructions/Note:
MW06E-CP-00-061720	6/17/20	10:51	G	W	N	N	3											field sample	37
MW06F-CP-00-061720	6/17/20	10:08	G	W	N	N	3											field sample	38
MW07BR-CP-00-061520	6/15/20	8:51	G	W	N	N	3											field sample	39
MW08A-CP-00-061720	6/17/20	11:23	G	W	N	N	3											field sample	40
MW08B-CP-00-061720	6/17/20	11:16	G	W	N	N	3											field sample	41
MW08C-CP-00-061720	6/17/20	11:33	G	W	N	N	3											field sample	42
MW09B-CP-00-061520	6/15/20	10:12	G	W	N	N	3											field sample	43
MW09C-CP-00-061520	6/15/20	10:03	G	W	N	N	3											field duplicate sample	44
MW10D-CP-00-061620	6/16/20	10:33	G	W	N	N	3											field sample	45
MW11A-CP-00-061520	6/15/20	12:28	G	W	N	N	3											field sample	46
MW11B-CP-00-061520	6/15/20	12:16	G	W	N	N	3											field sample	47
OBS1-CP-00-061520	6/15/20	10:24	G	W	N	N	3											field sample	48
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify) NY Cat B																			
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months																			
Special Instructions/OC Requirements:																			
Chain of Custody: Relinquished by: [Signature] Date: 6/18/20 Time: 12:18 Company: NYG Relinquished by: [Signature] Date: 6/18/20 Time: 12:00 Company: NYG Relinquished by: [Signature] Date: 6/18/20 Time: 18:00 Company: NYG Custody Seal No.: [blank]																			

TestAmerica Edison

777 New Durham Road
Edison, NJ 08817
Phone (732) 549-3900 Fax (732) 549-3679

Chain of Custody Record



Client Information Company: Mr. Payson Long Address: New York State D.E.C. 625 Broadway 12th Floor City: Albany State: NY, Zip: 12233-7017 Phone: _____ Email: payson.long@dec.ny.gov Project Name: DEC Claremont Treatment Plant, 130015 Site: Claremont Polychemical GWTF OU5		Sampler: HDR Inc. Lab PM: Julie Gilmore E-Mail: julie.gilmore@testamericainc.com Carrier Tracking No(s): _____	COC No: CPC 01118 Page 5 of 5 Job #: 211439
Analysis Requested Due Date Requested: _____ TAT Requested (days): 10 days PO # _____ WO # _____ CallOut: 136112; Site: 130015 Project # 46008579 SSON# _____		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2SO3 E - NaHSO4 R - Na2SO3 F - MeOH S - H2SO4 G - Anchor T - TSP Dodecalhydrate H - Ascorbic Acid U - Acetone I - Ice V - MCAA J - DI Water W - pH 4-5 K - EDTA L - EDA Z - other (specify) _____ Other: _____	
Sample Identification Sample Date Sample Time Sample Type (C=Comp, G=grab) Matrix (W=water, S=solid, BT=tissue, AS=air) SW1-CP-00-061620 6/16/20 12:34 G W WT01-CP-00-061620 6/16/20 11:01 G W WT01-CP-01-061620 6/16/20 11:01 G W xTB1-CP-QC-061520 6/15/20 13:02 G W		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) 6010D - Metals - As, Ba, Cd, Cr, Fe, Mn, Pb, Sb, Se 8270D - Routine SOW SVOC List 8280C - Routine SOW VOC List + TBA 7470A - Mercury 2570D - TDS 2540D - TSS 7196A - Hexavalent Chromium 351.2 - TKN 9060A - TOC 300.0 - Cl, F, SO4 9012B - Total Cyanide	
Total Number of containers _____ Special Instructions/Note: field sample 49 field sample 50 field duplicate sample 51 trip blank 52		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/OC Requirements: _____	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify) NY Cat B		Date: _____ Relinquished by: _____ Relinquished by: _____ Relinquished by: _____ Custody Seal No.: _____ A Yes A No	
Date/Time: 6/18/20 12:15 Date/Time: 6/18/20 15:20 Date/Time: 6/18/20 18:00 Company: NDR Company: JH Company: VMAH		Date/Time: 6/18/20 12:15 Date/Time: 6/18/20 12:00 Date/Time: 6/18/20 17:00 Company: Capompoli Company: Capompoli Company: Capompoli	

Job Number:

211439

Number of Coolers:

IR Gun #

11

Cooler Temperatures

RAW		CORRECTED		RAW		CORRECTED	
Cooler #1:	38	℃	℃	Cooler #4:	℃	℃	Cooler #7:
Cooler #2:	℃	℃	℃	Cooler #5:	℃	℃	Cooler #8:
Cooler #3:	℃	℃	℃	Cooler #6:	℃	℃	Cooler #9:

[illegible]

If pH adjustments are required record the information below:

Sample No(s). adjusted:

Preservative Name/Conc.:

Lot # of Preservative(s):

Expiration Date:

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted. Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.

Initials: Kamal

Date: 8/8/20

TestAmerica Edison
7 New Durham Road
Edison, NJ 08817
Phone (732) 549-3900 Fax (732) 549-3679

Chain of Custody Record

TestAmerica
Environmental Testing

Client Information		Lab PM: Julie Gilmore		Carrier Tracking No(s):	
Contact: Jennifer Rhee		E-Mail: julie.gilmore@testamerica.com		Job #: 211466	
Phone: 845-664-5218				Page 1 of 1	

Address: International Blvd, 10th Floor, Suite 1000		Due Date Requested: Standard TAT		Analysis Requested	
City: New Jersey 07945		TAT Requested (days): 10 Day			
Phone: 56645218		PO #: HDR1000100031776			
Email: jennifer.rhee@hdrinc.com		WO #: 150 Winding Road, Old Bethpage			
Project Name: A#43 Claremont Polychemical R/FS		Project #: 10109218			
City: Bethpage, NY		SSOW#: 10109218			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260C - (MOD) TCL VOC MTBE TBA + 10 TICs	8270D SIM MS ID + 1,4 Dioxane	PCs - Modified Method 537 (list of 21 analytes)	Total Number of containers	Special Instructions/Note:
MW-CPC-41-R5-GW-258-20200617-0	6/17/20	1255	G	W	N	X	X	X	X	7	-1
MW-CPC-36-R5-GW-251-20200617-0	6/17/20	1515	G	W	N	X	X	X	X	7	-6
MW-CPC-36-R5-GW-251-20200617-1	6/17/20	1515	G	W	N	X	X	X	X	7	-3
TS-20200617	6/17/20				N	X	X			2	-4

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)		Return To Client		Disposal By Lab		Months	
Special Instructions/OC Requirements:		NY Cat B		NY/DEC EDD Format & Excel		Special Instructions/OC Requirements: please send invoices to Jennifer.Rhee@hdrinc.com	
Copy Kit Relinquished by:		Date: 6/18/20		Time: 12:15		Company: HDR	
Inquired by:		Date: 6/18/20		Time: 15:20		Company: HDR	
Inquired by:		Date: 6/18/20		Time: 18:00		Company: HDR	
Custody Seals Intact:		Date: 6/18/20		Time: 18:00		Company: HDR	
A Yes A No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		1800	

Job Number:

Number of Coolers:

IR Gun #

Cooler Temperatures

	CORRECTED		RAW	
	RAW	CORRECTED	RAW	CORRECTED
Cooler #1:	5.2°C	5.2°C		
Cooler #2:	°C	°C		
Cooler #3:	°C	°C		
Cooler #4:		°C		
Cooler #5:		°C		
Cooler #6:		°C		
Cooler #7:		°C		
Cooler #8:		°C		
Cooler #9:		°C		

[illegible]

If pH adjustments are required record the information below:

Sample No(s). adjusted:

Preservative Name/Conc.:

Lot # of Preservative(s):

Expiration Date:

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

* Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.

Initials:

Date: 6/8/20

Chain of Custody Record

Client Information Client Contact: Jennifer Rhee Company: HDR Address: 1 International Blvd, 10th Floor, Suite 1000 City: Mahwah State, Zip: New Jersey 07945 Phone: 845-664-5218 Email: jennifer.rhee@hdrinc.com Project Name: WA#43 Clarendon Polychlorinated Biphenyls Site: Old Bethpage, NY		Lab PM: Julie Gilmore E-Mail: julie.gilmore@testamerica.com		Carrier Tracking No(s): Job #: 211549	
Analysis Requested Due Date Requested: Standard TAT TAT Requested (days): 10 Day PO #: HD11000100031776 WO #: 150 Winding Road, Old Bethpage Project #: 10109218 SSOW#:		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Ammonia H - Ascorbic Acid I - TSP Dodecylhydric J - Ice K - DI Water L - EDTA M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecylhydric U - Acetone V - MCAA W - pH 4.5 X - other (specify)			
Sample Identification MW-CPC-39-R5-GW-374-20200618-0 MW-CPC-40-R5-GW-312-20200618-0 TB-20200618		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) 8260C - MOD TCL VOC METE TBA + 10 TICs 8270D - SIM MS JD - 1A Dioxane PFCS - Modified Method 507 - list 17-2- analytes		Total Number of Containers Special Instructions/Note: 1 2 3	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested:		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Leave For Months Special Instructions/Requirements: please send invoices to Jennifer.Rhee@hdrinc.com			
Empty Kit Relinquished by: [Signature] Relinquished by: [Signature] Relinquished by: [Signature]		Date: 6/19/20 Date: 6/19/20 Date: 6/19/20		Time: 11:17 Time: 15:10 Time: 18:00	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Custody Seal No.:		Received by: [Signature] Received by: [Signature] Received by: [Signature] Date: 6/19/20 Date: 6/19/20 Date: 6/19/20			
Company: HDR Company: HDR Company: HDR		Date of Shipment: 6/19/20 Date of Receipt: 6/19/20 Date of Receipt: 6/19/20			

SUB WORK



460-211549 Chain of Custody

4-3-2211

Job Number:

Number of Coolers:

IR Gun #

Cooler Temperatures

	RAW		CORRECTED	
	RAW	CORRECTED	RAW	CORRECTED
Cooler #1:	43	°C		
Cooler #2:		°C		
Cooler #3:		°C		
Cooler #4:		°C		
Cooler #5:		°C		
Cooler #6:		°C		
Cooler #7:		°C		
Cooler #8:		°C		
Cooler #9:		°C		

[illegible]

If pH adjustments are required record the information below:

Sample No(s). adjusted:

Preservative Name/Conc.:

Lot # of Preservative(s):

Expiration Date:

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.

EDS-WI-038, Rev 4.1

10/22/2019

Initials:

Date:

TestAmerica Edison

777 New Durham Road
Edison, NJ 08817
Phone (732) 549-3900 Fax (732) 549-3679

Chain of Custody Record

NYC
222

Client Information Client Contact: M. Papula, D. Maluszewski Phone: 845-664-5218 E-Mail: julie.gilmore@testamerica.com Company: HDR		Lab PM: Julie Gilmore E-Mail: julie.gilmore@testamerica.com		Carrier Tracking No: 222 Page: 1 of 1 Job #: 46026810 Preservation Codes:	
Address: 1 International Blvd, 10th Floor, Suite 1000 City: Mahwah State, Zip: New Jersey 07945 Phone: 845-664-5218 Email: jennifer.rhee@hdrinc.com Project Name: WA#43 Claremont Polychemical RI/FS Site: Old Bethpage, NY		Due Date Requested: Standard TAT TAT Requested (days): 10 Day PO #: HDR1000100031776 WO #: 501 Winding Road, Old Bethpage Project #: 10109218 SSOW#:		Analysis Requested Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Anichlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
Sample Identification MW-CPC-38-R5-GW-391-20200619-2 MW-CPC-38-R5-GW-391-20200619-0 MW-CPC-37-R5-GW-445-20200619-0 TB-20200619		Sample Date 6/19/20 6/19/20 6/19/20 6/19/20		Sample Time 830 1050 1320	
Sample Type (C=Comp, G=grab) G G G		Matrix (W=water, S=solid, O=oil, A=air) W W W		Field Filtered Sample (Yes or No) A X X X	
Perform MS/MSD (Yes or No) A X X X		8260C - (MOD) TCL VOC MTBE TBA + 10 TICs 8270D - SIM MS ID + 14 Dioxane PFCS - Modified Method 537 (HS) of 21 analytes		Total Number of Containers 6 7 7 2	
Special Instructions/Note: -1 -23 -4		Barcode 460-211632 Chain of Custody		Special Instructions/Note: -1 -23 -4	

SUB
WORK

460-211632 Chain of Custody

Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Corrosive <input type="checkbox"/> Toxic <input type="checkbox"/> Volatile				Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Dispose By Lab <input type="checkbox"/> Ship For Months			
Deliverable Requested:				Special Instructions/QC Requirements: please send invoices to Jennifer.Rhee@hdrinc.com			
Empty Kit Relinquished by:				Method of Shipment:			
Relinquished by: [Signature] Date/Time: 6/22/20 11:47 Company: HDR		Received by: [Signature] Date/Time: 6/22/20 11:47 Company: HDR		Relinquished by: [Signature] Date/Time: 6/22/20 11:47 Company: HDR		Received by: [Signature] Date/Time: 6/22/20 11:47 Company: HDR	
Relinquished by: [Signature] Date/Time: 6/22/20 11:47 Company: HDR		Received by: [Signature] Date/Time: 6/22/20 11:47 Company: HDR		Relinquished by: [Signature] Date/Time: 6/22/20 11:47 Company: HDR		Received by: [Signature] Date/Time: 6/22/20 11:47 Company: HDR	
Custody Seal No. A Yes A No				Cooler Temperature(s) C and Other Remarks			

4.2°C IR 11

21632

IR Gun # 21

Cooler Temperatures

	RAW		CORRECTED	
	RAW	CORRECTED	RAW	CORRECTED
Cooler #1:	4.6	5		
Cooler #2:		5		
Cooler #3:		5		
Cooler #4:		5		
Cooler #5:		5		
Cooler #6:		5		
Cooler #7:		5		
Cooler #8:		5		
Cooler #9:		5		

[illegible]

If pH adjustments are required record the information below:

Sample No(s). adjusted:

Preservative Name/Conc.:

Volume of Preservative used (ml):

Lot # of Preservative(s):

Expiration Date:

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.

EDS-WI-038, Rev 4.1
10/22/2019

Initials:

Date: 6-22-20

<div>Client Information</div> <div><div>Client Contact: Jennifer Rhee</div><div>Company: HDR</div></div> <div><div>Address: 1 International Blvd, 10th Floor, Suite 1000</div><div>City: Mahwah</div><div>State, Zip: New Jersey 07945</div><div>Phone: 8456645218</div><div>E-mail: Jennifer.Rhee@hdrinc.com</div><div>Project Name: WA#43 Claremont Polychemical RI/FS</div><div>Site: Old Bethpage, NY</div></div> <div><div>Due Date Requested: Standard TAT</div><div>TAT Requested (days): 10 Day</div><div>PO #: HDR1000100031776</div><div>WO #: 150 Winding Road, Old Bethpage</div><div>Project #: 10109218</div><div>SSOW#:</div></div> <div><div>Lab PM: Julie Gilmore</div><div>E-Mail: julie.gilmore@testamerica.com</div></div> <div><div>Carrier Tracking No(s):</div><div>COC No:</div></div>									
<div>Analysis Requested</div>									
<div>Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2S2O3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)</div>									
<div>Special Instructions/Note:</div>									
<div>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</div> <div><div>Return To Client</div><div>Disposal By Lab</div><div>Archive For</div><div>Months</div></div>									
<div>Special Instructions/QC Requirements: please send invoices to Jennifer.Rhee@hdrinc.com</div>									
<div>Method of Shipment: Received by: Date/Time: Company</div>									
<div>Method of Shipment: Received by: Date/Time: Company</div>									
<div>Method of Shipment: Received by: Date/Time: Company</div>									
<div>Custody Seals Intact: Δ Yes Δ No</div>									
<div>Custody Seal No.:</div>									

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Ver: 08/04/2016

Phone (732) 549-3900 Fax (732) 549-3679

Ver: 08/04/2016



NY- NJ Offices Health & Safety Program – Employee Self-Audit Form

Directions: *Self audits are required of field staff at the start of new assignments and whenever potential risks from anticipated exposures and/or site conditions change . Please complete front page prior to project field visit. Complete the back page after visit, sign & date; provide a copy to the OSC and place in project file.*

Project: NYSDEC Claremont Polychemical Corporation Project No.: 10109218
 Site Location: Oyster Bay, NY Date(s) of Visit: June 2020
 Staff Attending: _____
 Tasks: Perform groundwater sampling

Pre-Visit Questionnaire

GENERAL	Yes	No	N/A
1 Do all employees have required PPE (hard hat, safety glasses, traffic vests, hearing protection, etc.)?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Is a First Aid Kit available?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Has the nearest medical facility been located?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HEAT/COLD STRESS	Yes	No	N/A
1 Do employees have appropriate clothing and water/food supplies?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Note: In hot weather, hydrate and take rest breaks as needed in a cool or shaded area.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BIOLOGICAL HAZARDS	Yes	No	N/A
1 Are there any irritants or toxic plants at the project site (Poison Ivy, Sumac, etc.)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2 Are insects, mites, or spiders expected to be at the project site (ticks, mosquitoes, bees, wasps, etc.)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<i>Note: Use barrier creams/insect repellents when necessary.</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HAZARDOUS SITES	Yes	No	N/A
1 Is the site considered hazardous?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2 If "yes" - do team members have specific training for and certification in hazardous waste operations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<i>Note: Employee trainings to be documented in project specific HASP</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RAILROAD/TRAFFIC	Yes	No	N/A
1 Is the project site on or near a railroad?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2 If "yes" - have team members received proper RR training for working on or near a RR?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3 Are vehicles parked on the side of the road equipped with a yellow revolving light?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Have all state/municipal and/or MUTCD guidelines be reviewed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EXCAVATION/TRENCHES	Yes	No	N/A
1 Are there trenches or excavations on the site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2 If "yes"- have team members been trained on Excavation Safety?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2 If "yes"- is HDR personnel required to enter the trench/excavation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PORTABLE STAIRWAYS/LADDERS/FALL PROTECTION	Yes	No	N/A
1 Will employees need to use stairways/ladders?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2 If "yes" - have team members been trained on Ladder Safety?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3 Does a fall hazard exist?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4 If "yes" - have team members received proper fall protection training?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CONFINED SPACE	Yes	No	N/A
1 Is entry into a confined space necessary?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2 If "yes" - have team members been trained in permit required confined space?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
BOATING/WATER SAFETY	Yes	No	N/A
1 Does this project include activities performed on, over, or near bodies of water?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2 If "yes", do field staff have proper <i>Water & Boating Safety</i> training and proper PPE (PFD required?)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
RESPIRATORY SAFETY	Yes	No	N/A
1 Does work require employees to be exposed to airborne contaminants not eliminated by engineering controls?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2 If "yes" - have team members been properly trained and fit tested in the use of respirators?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ADDITIONAL COMMENTS			



NY- NJ Offices Health & Safety Program – Employee Self-Audit Form

Post-Visit Questionnaire

H&S BRIEFING/TAILGATE TALK

Yes No N/A

- 1 Was a H&S briefing/tailgate talk conducted at the beginning of field activities? ☒ ☐ ☐
- 2 Who conducted the briefing? Employee Name: David Avudzega
- 3 What safety issues were discussed? List: Tick awareness, heat awareness, traffic safety (see tailgate meetings)
COVID-19: social distancing where possible, masks (changed daily), gloves, Tyvek where appropriate

CLIENT/OWNER LED TRAINING

Yes No N/A

- 1 Did employees participate in a client and/or site owner led safety training on site? ☐ ☐ ☒
- 2 If "yes" - are copies of the training records available? ☐ ☐ ☒
- 3 Who conducted the training? Client/Owner Name: _____
- 4 What safety issues were discussed? List: _____

Note: Place copies of client/owner led trainings in project H&S folder if available.

1. Did you receive adequate training and site information in preparation for the on-site visit and/or work activities?
If not, what trainings do you think would be helpful?

2. Did you encounter and safety concerns at the site for which you were not prepared?

3. Was the anticipated PPE equipment sufficient?

Yes No N/A

If used as directed, yes, PPE listed should be sufficient (need to remember to wear DEET bug spray) ☒ ☐ ☐

If additional PPE equipment was needed, please list needed items here.

COVID-19: masks changed daily

Additional Comments (related to site Health & Safety)

See project's Task-Specific JHA for COVID-19 Hazards/Controls table.

Any field staff members with COVID-19 symptoms should depart from site immediately.

Masks should be worn at all times when around other field staff members. All staff should wash hands frequently.

Matthew T. Papula

Name

Signature

6/16/2020

Date

PFCs Sampling Checklist

Date: 17-Jun-2020

Weather (temp./precipitation): 69°F, clear, calm Site Name: Clatsop Clatsop Mont
GWTF 04-5

Field Clothing and PPE:

- ☒ No clothing or boots containing Gore-Tex™
- ☒ All safety boots made from polyurethane and PVC
- ☒ No materials containing Tyvek®
- ☒ Field crew has not used fabric softener on clothing
- ☒ Field crew has not used cosmetics, moisturizers, hand cream, or other related products this morning
- ☒ Field crew has not applied unauthorized sunscreen or insect repellent

Field Equipment:

- ☒ No Teflon® or LDPE containing materials on-site
- ☒ All sample materials made from stainless steel, HDPE, acetate, silicon, or polypropylene
- ☒ No waterproof field books on-site
- ☒ No plastic clipboards, binders, or spiral hard cover notebooks on-site
- ☒ No adhesives (Post-It Notes) on-site

- ☒ Coolers filled with regular ice only. No chemical (blue) ice packs in possession

Sample Containers:

- ☒ All sample containers made of HDPE or polypropylene
- ☒ Caps are unlined and made of HDPE or polypropylene

Wet Weather (as applicable):

- ☒ Wet weather gear made of polyurethane and PVC only

Equipment Decontamination:

- ☒ "PFC-free" water on-site for decontamination of sample equipment. No other water sources to be used.
- ☒ Alconox and Liquinox to be used as decontamination materials

Food Considerations:

- ☒ No food or drink on-site with exception of bottled water and/or hydration drinks (i.e., Gatorade and Powerade) that is available for consumption only in the staging area

If any applicable boxes cannot be checked, the Field Lead shall describe the noncompliance issues below and work with field personnel to address noncompliance issues prior to commencement of that day's work. Corrective action shall include removal of noncompliance items from the site or removal of worker offsite until in compliance.

Describe the noncompliance issues (include personnel not in compliance) and action/outcome of noncompliance:

Field Lead Name: Matthew T. Papula

Field Lead Signature: [Signature] Time: 0830

PFCs Sampling Checklist

Date: 18-Jun-2019

Weather (temp./precipitation): 66°F overcast,
LT Rain, 0-5 NE

Site Name: Claremont OU-5

Field Clothing and PPE:

- ☒ No clothing or boots containing Gore-Tex™
- ☒ All safety boots made from polyurethane and PVC
- ☒ No materials containing Tyvek®
- ☒ Field crew has not used fabric softener on clothing
- ☒ Field crew has not used cosmetics, moisturizers, hand cream, or other related products this morning
- ☒ Field crew has not applied unauthorized sunscreen or insect repellent

Field Equipment:

- ☒ No Teflon® or LDPE containing materials on-site
- ☒ All sample materials made from stainless steel, HDPE, acetate, silicon, or polypropylene
- ☒ No waterproof field books on-site
- ☒ No plastic clipboards, binders, or spiral hard cover notebooks on-site
- ☒ No adhesives (Post-It Notes) on-site

- ☒ Coolers filled with regular ice only. No chemical (blue) ice packs in possession

Sample Containers:

- ☒ All sample containers made of HDPE or polypropylene
- ☒ Caps are unlined and made of HDPE or polypropylene

Wet Weather (as applicable):

- ☒ Wet weather gear made of polyurethane and PVC only

Equipment Decontamination:

- ☒ "PFC-free" water on-site for decontamination of sample equipment. No other water sources to be used.
- ☒ Alconox and Liquinox to be used as decontamination materials

Food Considerations:

- ☒ No food or drink on-site with exception of bottled water and/or hydration drinks (i.e., Gatorade and Powerade) that is available for consumption only in the staging area

If any applicable boxes cannot be checked, the Field Lead shall describe the noncompliance issues below and work with field personnel to address noncompliance issues prior to commencement of that day's work. Corrective action shall include removal of noncompliance items from the site or removal of worker offsite until in compliance.

Describe the noncompliance issues (include personnel not in compliance) and action/outcome of noncompliance:

Field Lead Name: Matthew T. Papula

Field Lead Signature: [Signature] Time: 0745

PFCs Sampling Checklist

Date: 19-Jun-2020

Weather (temp./precipitation): 69°F, calm, cloudy Site Name: Claremont 06-5

Field Clothing and PPE:

- ☒ No clothing or boots containing Gore-Tex™
- ☒ All safety boots made from polyurethane and PVC
- ☒ No materials containing Tyvek®
- ☒ Field crew has not used fabric softener on clothing
- ☒ Field crew has not used cosmetics, moisturizers, hand cream, or other related products this morning
- ☒ Field crew has not applied unauthorized sunscreen or insect repellent

Field Equipment:

- ☒ No Teflon® or LDPE containing materials on-site
- ☒ All sample materials made from stainless steel, HDPE, acetate, silicon, or polypropylene
- ☒ No waterproof field books on-site
- ☒ No plastic clipboards, binders, or spiral hard cover notebooks on-site
- ☒ No adhesives (Post-It Notes) on-site

- ☒ Coolers filled with regular ice only. No chemical (blue) ice packs in possession

Sample Containers:

- ☒ All sample containers made of HDPE or polypropylene
- ☒ Caps are unlined and made of HDPE or polypropylene

Wet Weather (as applicable):

- ☒ Wet weather gear made of polyurethane and PVC only

Equipment Decontamination:

- ☒ "PFC-free" water on-site for decontamination of sample equipment. No other water sources to be used.
- ☐ Alconox and Liquinox to be used as decontamination materials

Food Considerations:

- ☒ No food or drink on-site with exception of bottled water and/or hydration drinks (i.e., Gatorade and Powerade) that is available for consumption only in the staging area

If any applicable boxes cannot be checked, the Field Lead shall describe the noncompliance issues below and work with field personnel to address noncompliance issues prior to commencement of that day's work. Corrective action shall include removal of noncompliance items from the site or removal of worker offsite until in compliance.

Describe the noncompliance issues (include personnel not in compliance) and action/outcome of noncompliance:

Field Lead Name: Matthew T. Papula

Field Lead Signature: [Signature] Time: 0800



Well Sampling Log

Well ID No.: MW-CPC-36

Well Casing Type:	2.5" Sch 80 PVC	Start SWL:	20.25	Project:	10109218 - 204
Well Depth**:	256	Water Column Ht.:	235.45	Date:	6/17/2020
Screened Interval:	246 - 255.7	Well Volume (gallons):	60	Crew:	MTP/DJM
Well Elevation**:		SWL During Sampling:	20.3	Pump Intake (ft)	251
Well Diameter (in.)	2.5	Sample Time:	1515	Meters Used:	Horiba U-52
Well Condition:	Good	Sample Method:	Bladder Pump	PID Head Space (ppm):	0
Weather Conditions:	78°F, Cloudy,E 5-10 MPH	Sample Analyses:	VOC, PFCs, 1,4-Dioxane	Sample ID:	MW-CPC-36-R5-GW-251-20200617-0
Comments:	Collected MW-CPC-36-R5-GW-251-20200617-1 Field Duplicate at this location.				

Notes: * - Measurement taken from top of well casing

Time	Est. Liters. Purged	Purge Rate (Lpm)	Temp. (C°)	Cond. (ms/cm)	ORP (mV)	D.O. (mg/L)	pH	TDS	Salinity (pph)	Turbidity (NTU)	Depth to Water*	Comments
1410	0	0.15	21.77	0.293	32	2.69	6.71	0.19	.1	134	20.30	
1415	0.75	0.15	18.44	0.314	-34	0.85	6.8	0.204	0.2	57.4	20.3	
1420	1.5	0.15	18.42	0.326	-41	0.48	6.76	0.212	0.2	20.41	20.3	
1425	2.25	0.15	15.39	0.336	-41	0	6.68	0.219	0.2	12.2	20.3	
1430	3	0.15	15.2	0.332	-42	0	6.65	0.216	0.2	12.8	20.3	
1435	3.75	0.15	15.19	0.328	-39	0	6.53	0.213	0.2	12.1	20.3	
1440	4.5	0.15	14.92	0.324	-34	0	6.42	0.21	0.2	10.1	20.3	
1445	5.25	0.15	15.08	0.313	-26	0	6.28	0.206	0.1	7.9	20.3	
1450	6	0.15	14.83	0.308	-18	0	6.19	0.2	0.1	7.6	20.3	
1455	6.75	0.15	14.77	0.301	-11	0	6.03	0.195	0.1	7.3	20.3	
1500	7.5	0.15	14.94	0.295	-4	0	5.96	0.193	0.1	7.7	20.3	
1505	8.25	0.15	14.71	0.292	-2	0	5.93	0.18	0.1	7.1	20.3	
1510	9	0.15	14.85	0.29	-1	0	5.9	0.188	0.1	7.2	20.3	
1515	Collecting Sample											

Comments: 50 PSI, 10/20 cycle.



MW-CPC-37

10109218 - 204

6/19/2020

MTP/DJM

445

Horiba U-52

0

Sample ID: MW-CPC-37-R5-GW-445-20200619-0-

Comments:

Notes: * - Measurement taken from top of well casing

Time	Est. Liters. Purged	Purge Rate (Lpm)	Temp. (C°)	Cond. (ms/cm)	ORP (mV)	D.O. (mg/L)	pH	TDS	Salinity (ppt)	Turbidity (NTU)	Depth to Water*	Comments
1205	0	0.35	22.36	0.208	25	6.67	6.34	0.135	0.1	0	25.7	
1210	1.75	0.35	20.19	0.208	-32	1.9	6.88	0.136	0.1	0	25.7	
1215	3.5	0.35	19.34	0.208	-59	1.46	6.83	0.136	0.1	0	25.7	
1220	5.25	0.35	20.03	0.213	-75	1.32	6.82	0.213	0.1	0	25.7	
1225	7	0.35	19.82	0.215	-81	1.27	6.76	0.215	0.1	0	25.7	
1230	8.75	0.35	19.85	0.22	-89	1.26	6.79	0.22	0.1	0	25.7	
1235	10.5	0.35	20.34	0.217	-82	1.19	6.74	0.241	0.1	0	25.7	
1240	12.25	0.35	20.21	0.224	-79	1.23	6.65	0.224	0.1	0	25.7	
1245	14	0.35	20.29	0.238	-27	1.18	6.24	0.152	0.1	0	25.7	
1250	15.75	0.35	20.4	0.247	14	1.14	5.87	0.162	0.1	0	25.7	
1255	17.5	0.35	20.23	0.252	30	1.15	5.79	0.164	0.1	0	25.7	
1300	19.25	0.35	19.75	0.261	35	1.2	5.74	0.17	0.1	0	25.7	
1305	21	0.35	19.58	0.264	41	1.2	5.65	0.171	0.1	0	25.7	
1310	22.75	0.35	19.30	0.267	42	1.27	5.63	0.174	0.1	0	25.7	
1315	24.5	0.35	19.36	0.266	50	1.23	5.58	0.174	0.1	0	25.7	
1320 Collecting Sample												
Comments: 65 PSI, 10/20 cycle.												



Well Sampling Log

Well ID No.: MW-CPC-38

Well Casing Type: 2.5" Sch 80 PVC Start SWL: 27.10 Project: 10109218 - 204
Well Depth**: 394.5 Water Column Ht.: 367.40 Date: 6/19/2020
Screened Interval: 384 - 395 Well Volume (gallons): 94 Crew: MTP/DJM
Well Elevation**: SWL During Sampling: 27.01 Pump Intake (ft) 391
Well Diameter (in.) 2.5 Sample Time: 1050 Meters Used: Horiba U-52
Well Condition: Good Sample Method: Bladder Pump PID Head Space (ppm): 0
Weather Conditions: 75°F, Cloudy, N 0-5 MPH Sample Analyses: VOC, PFCs, 1,4-Dioxane Sample ID: MW-CPC-38-R5-GW-391-20200619-0
Comments: Collected Equipment Blank MW-CPC-38-R5-391-20200619-2 at 0830 from the bladder used at this location.

Notes: * - Measurement taken from top of well casing

Time	Est. Liters Purged	Purge Rate (Lpm)	Temp. (C°)	Cond. (ms/cm)	ORP (mV)	D.O. (mg/L)	pH	TDS	Salinity (ppth)	Turbidity (NTU)	Depth to Water*	Comments
0930	0	0.35	23.54	0.204	91	5.83	6.68	0.133	0	41.8	27	
0935	1.75	0.35	16.57	0.095	-80	1.86	6.76	0.062	0	48.1	27	
0940	3.5	0.35	16.56	0.088	-85	1.53	6.91	0.057	0	53.7	27	
0945	5.25	0.35	16.2	0.086	-93	1.48	6.88	0.056	0	55.7	27	
0950	7	0.35	15.91	0.084	-91	1.41	6.79	0.055	0	64.7	27	
0955	8.75	0.35	15.55	0.084	-86	1.36	6.66	0.054	0	67.8	27	
1000	10.5	0.35	16.1	0.084	-89	1.33	6.73	0.084	0	66	27	
1005	12.25	0.35	15.57	0.085	-84	1.36	6.58	0.085	0	58.1	27	
1010	14	0.35	15.31	0.085	-84	1.36	6.46	0.084	0	58.3	27	
1015	15.75	0.35	15.4	0.085	-93	1.33	6.72	0.085	0	58.1	27	
1020	17.5	0.35	15.39	0.084	-113	1.27	7.03	0.084	0	63.5	27	
1025	19.25	0.35	15.38	0.084	-113	1.27	7.03	0.084	0	63.5	27	
1030	21	0.35	15.27	0.086	-117	1.28	7.05	0.086	0	67.9	27	
1035	22.75	0.35	15.27	0.085	-133	1.27	6.97	0.055	0	50.2	27	
1040	24.5	0.35	15.33	0.084	-112	1.27	6.99	0.055	0	54.3	27	
1045	26.25	0.35	15.61	0.085	-118	1.25	7.02	0.055	0	53.4	27.01	
1050 Collecting Sample												

Comments: 65 PSI, 9/11 cycle. Sampled after well was purged for 4 hrs.



Well Sampling Log

Well ID No.:

MW-CPC-39

Well Casing Type:

2.5" Sch 80 PVC

Start SWL:

25.04

Project:

10109218 - 204

Well Depth**:

390

Water Column Ht.:

364.96

Date:

6/18/2020

Screened Interval:

70.6 - 390

Well Volume (gallons):

93

Crew:

MTP/DJM

Well Elevation:**

ring Sampling:

24.91

ump Intake (ft)

374

Well Diameter (in.)

2.5

Sample Time:

1150

Meters Used:

Horiba U-52

Well Condition:

Good

Sample Method:

Pum

Chemical Shift (ppm):

0

Weather Conditions:

5 MP]

Sample Analyses:

FCs, 1,4-Dioxane

Sample ID:

MW-CPC-39-R5-GW-374-20200618-0

Comments:

Notes: * - Measurement taken from top of well casing

Time	Est. Liters. Purged	Purge Rate (Lpm)	Temp. (C°)	Cond. (ms/cm)	ORP (mV)	D.O. (mg/L)	pH	TDS	Salinity (pph)	Turbidity (NTU)	Depth to Water*	Comments
0945	0	0.3	16.9	0.091	20	7	6.28	0.058				
0950	1.5	0.3	16.2	0.067	-20	7.77	6.32	0.043	0	20.6	24.9	
0955	3	0.3	16.03	0.061	-21	7.04	6.32	0.039	0	31.4	24.9	
1000	4.5	0.3	15.78	0.058	-20	6.34	6.27	0.038	0	38.6	24.9	
1005	6	0.3	15.62	0.056	-13	5.18	6.21	0.036	0	38.8	24.9	
1010	7.5	0.3	15.68	0.056	-20	5.06	6.23	0.036	0	44.6	24.9	
1015	9	0.3	15.54	0.057	-24	4.5	6.26	0.037	0	41.7	24.9	
1020	10.5	0.3	15.59	0.056	-18	4.23	6.28	0.037	0	48.4	24.9	
1025	12	0.3	15.48	0.054	-24	1.62	6.23	0.035	0	47.6	24.9	
1030	13.5	0.3	15.5	0.051	-7	1.55	6.12	0.033	0	69.7	24.9	
1035	15	0.3	15.51	0.051	-13	1.51	6.14	0.033	0	110	24.9	
1040	16.5	0.3	15.56	0.051	-6	1.48	6.12	0.033	0	117	24.9	
1045	18	0.3	15.53	0.05	-13	1.43	6.13	0.033	0	123	24.9	
1050	19.5	0.3	15.41	0.05	-13	1.43	6.12	0.033	0	126	24.9	
1055	21	0.3	15.48	0.05	-10	1.41	6.08	0.033	0	136	24.9	
1100	22.5	0.3	15.46	0.5	-12	1.42	6.14	0.033	0	142	24.9	
1105	24	0.3	15.39	0.5	-17	1.4	6.16	0.033	0	144	24.9	
1110	25.5	0.3	15.49	0.051	-15	1.37	6.13	0.033	0	152	24.9	
1115	27	0.3	15.23	0.051	-19	1.37	6.16	0.033	0	153	24.9	
1120	28.5	0.3	15.43	0.051	-13	1.35	6.03	0.033	0	168	24.9	
1125	30	0.3	15.38	0.051	-20	1.34	6.14	0.033	0	174	24.9	
1130	31.5	0.3	15.22	0.051	-18	1.35	6.1	0.033	0	195	24.9	
1135	33	0.3	15.44	0.051	-13	1.32	6.15	0.034	0	179	24.9	
1140	34.5	0.3	15.34	0.051	-15	1.33	6.15	0.033	0	187	24.9	
1145	36	0.3	15.3	0.052	-17	1.32	6.15	0.033	0	193	24.9	
1150 Collecting Sample												
Comments: 55 PSI, 10/20 cycle.												



Well ID No.: MW-CPC-40

10109218 - 204

6/18/2020

MTP/DJM

312

Horiba U-52

0

MW-CPC-40-R5-GW-312-20200618-0

Comments:

Notes: * - Measurement taken from top of well casing

Time	Est. Liters. Purged	Purge Rate (Lpm)	Temp. (C°)	Cond. (ms/cm)	ORP (mV)	D.O. (mg/L)	pH	TDS	Salinity (ppt)	Turbidity (NTU)	Depth to Water*	Comments
1330	0	0.325	17.39	0.144	68	5.42	6.51	0.113	0.1	0	55.22	
1335	1.625	0.325	15.85	0.143	62	2.39	6.56	0.093	0.1	0	55.22	
1340	3.25	0.325	15.82	0.141	32	2.01	6.61	0.091	0.1	0	55.22	
1345	4.875	0.325	15.56	0.14	46	0.94	6.44	0.091	0.1	0	55.22	
1350	6.5	0.325	15.57	0.141	49	1.41	6.38	0.092	0.1	0	55.22	
1355	8.125	0.325	15.26	0.142	50	1.44	6.37	0.093	0.1	0	55.22	
1400	9.75	0.325	15.31	0.142	62	1.66	6.15	0.092	0.1	0	55.22	
1405	11.375	0.325	15.31	0.141	69	1.64	6.23	0.092	0.1	0	55.22	
1410	13	0.325	15.2	0.142	61	1.63	6.2	0.092	0.1	0	55.22	
1415	14.625	0.325	15.03	0.142	68	1.63	6.2	0.092	0.1	0	55.22	
1420 Collecting Sample												
Comments: 50 PSI, 10/20 cycle.												



Well Sampling Log

Well ID No.: MW-CPC-41

Well Casing Type:	2.5" Sch 80 PVC	Start SWL:	18.33	Project:	10109218 - 204
Well Depth**:	263	Water Column Ht.:	244.67	Date:	6/17/2020
Screened Interval:	253 - 263	Well Volume (gallons):	62.3	Crew:	MTP/DJM
Well Elevation**:		SWL During Sampling:	18.52	Pump Intake (ft)	258
Well Diameter (in.)	2.5	Sample Time:	1255	Meters Used:	Horiba U-52
Well Condition:	Good	Sample Method:	Bladder Pump	PID Head Space (ppm):	0
Weather Conditions:	72°F, Clear, NE 5-10 MPH	Sample Analyses:	VOC, PFCs, 1,4-Dioxane	Sample ID:	MW-CPC-41-R5-GW-258-20200617-0

Comments:

Notes: * - Measurement taken from top of well casing

Time	Est. Liters. Purged	Purge Rate (Lpm)	Temp. (C°)	Cond. (ms/cm)	ORP (mV)	D.O. (mg/L)	pH	TDS	Salinity (ppth)	Turbidity (NTU)	Depth to Water*	Comments
1135	0	0.2	19.74	0.154	193	3.13	5.13	0.1	0.1	5.1	18.46	
1140	1	0.2	18.42	0.122	190	0.092	5.08	0.079	0.1	5.6	18.46	
1145	2	0.2	18.77	0.12	212	0.41	4.89	0.078	0.1	3	18.46	
1150	3	0.2	19.18	0.12	226	0.29	4.8	0.078	0.1	225	18.46	
1155	4	0.2	20.08	0.118	180	0.1	5.04	0.077	0.1	OR	18.46	Turbidity very high, Took it off the Horiba until in cleared up some
1200	5	0.2								OR	18.46	
1205	6	0.2								OR	18.46	
1210	7	0.2								OR	18.46	
1215	8	0.2								637	18.46	
1220	9	0.2								48.1	18.52	
1225	10	0.2	17.82	0.117	185	0	5.07	0.077	0.1	80.2	18.52	
1230	11	0.2	16.73	0.117	202	0	4.93	0.077	0.1	24.2	18.52	
1235	12	0.2	16.69	0.116	208	0	4.88	0.073	0.1	21.7	18.52	
1240	13	0.2	16.69	0.116	212	0	4.77	0.075	0.1	18	18.52	
1245	14	0.2	16.78	0.115	220	0	4.75	0.075	0.1	13.8	18.52	
1250	15	0.2	16.81	0.114	221	0	4.83	0.074	0.1	9.77	18.52	
1255 Collecting Sample												

Comments: 60 PSI, 10/20 cycle.