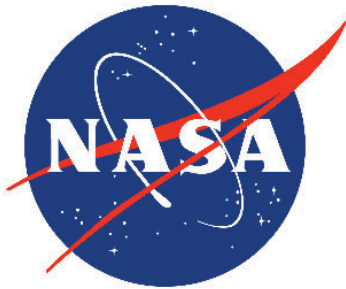


**2024 LONG-TERM MONITORING REPORT
VEHICLE ASSEMBLY BUILDING AREA**

**C5 Electrical Substation (SWMU 066)
Former Development and Testing Laboratory (SWMU 075)
Fire Station 3 (Formally Fire Station 6) (SWMU 106)
Launch Complex 39 Observation Gantry Area (SWMU 107)
Launch Equipment Shop (PRL 051)
Shuttle Flight Operations Contract Generator Maintenance Facility (SWMU 081)**

KENNEDY SPACE CENTER, FLORIDA

Prepared for:



**Environmental Assurance Branch
National Aeronautics and Space Administration
Kennedy Space Center, Florida 32899**

**A-E Contract 80KSC024DA001
Task Order 80KSC024FA117**

**December 2025
Revision 0**

**Prepared by:
AECOM Technical Services, Inc.
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In accordance with the provisions of Florida Statutes, Chapter 492, this 2024 Long-Term Monitoring Report for the Kennedy Space Center Vehicle Assembly Building Area located in Merritt Island, Florida, has been prepared under the direct supervision of a Professional Geologist registered in the State of Florida. This work was performed in accordance with generally accepted professional geology practices pursuant to Chapter 492 of the Florida Statutes. The data, findings, recommendations, specifications, or professional opinions were prepared solely for the use of the National Aeronautics and Space Administration and the Florida Department of Environmental Protection. AECOM makes no other warranty, either expressed or implied, and is not responsible for the interpretation by others of these data.

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ABBREVIATIONS, ACRONYMS, AND SYMBOLS

11DCE	1,1-dichloroethene
ADP	Advance Data Package
AECOM	AECOM Technical Services, Inc
AST	aboveground storage tank
bls	below land surface
cDCE	<i>cis</i> -1,2-dichloroethene
C5ES	C5 Electrical Substation
COC	contaminant of concern
cVOC	chlorinated volatile organic compound
DPT	Direct Push Technology
EPA	United States Environmental Protection Agency
Eurofins	Eurofins Environment Testing – Orlando
FDEP	Florida Department of Environmental Protection
FDTL	Former Development and Testing Laboratory
FS3	Fire Station 3 (formerly Fire Station 6)
FS6	Fire Station 6
GCTL	Groundwater Cleanup Target Level
IM	Interim Measures
KSC	Kennedy Space Center
KSCRT	KSC Remediation Team
LC	Launch Complex
LC39OGA	Launch Complex 39 Observation Gantry Area
LES	Launch Equipment Shop
LOC	location of concern
LTM	long-term monitoring
LUC	land use control
LUCIP	Land Use Control Implementation Plan
µg/L	micrograms per liter
MDL	method detection limit

MSS	Mobile Service Structure
mg/kg	milligrams per kilogram
NADC	Natural Attenuation Default Concentration
NASA	National Aeronautics and Space Administration
NFA	no further action
OFW	Outstanding Florida Water
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PRL	Potential Release Location
RCRA	Resource Conservation and Recovery Act
RFI	RCRA Facility Investigation
RIS	Remediation Information System
SCTL	Soil Cleanup Target Level
SFOC	Shuttle Flight Operations Contract Generator Maintenance Facility
SWCTL	Surface Water Cleanup Target Level
SWMU	Solid Waste Management Unit
TCE	trichloroethene
<i>t</i> DCE	<i>trans</i> -1,2-dichloroethene
TRPH	total recoverable petroleum hydrocarbon
UST	underground storage tank
VAB	Vehicle Assembly Building Area
VC	vinyl chloride
VOC	volatile organic compound

EXECUTIVE SUMMARY

This report presents a summary of the groundwater monitoring activities that occurred in December 2024 at six sites in the Vehicle Assembly Building (VAB) Area Long-Term Monitoring (LTM) program at the John F. Kennedy Space Center, Florida. The six sites are C5 Electrical Substation (C5ES) – Solid Waste Management Unit (SWMU) 066, Former Development and Testing Laboratory (FDTL) – SWMU 075, Fire Station 3 (FS3) (formerly Fire Station 6) – SWMU 106, Launch Complex 39 Observation Gantry Area (LC39OGA) – SWMU 107, Launch Equipment Shop (LES) – Potential Release Location (PRL) 051, and Shuttle Flight Operations Contract Generator Maintenance Facility (SFOC) – SWMU 081.

The activities presented in this report include one field event: December 2024 – groundwater or surface water sampling at the C5ES, FDTL, FS3, LC39OGA, LES, and SFOC sites.

The following is a summary of each site with conclusions and recommendations based on the 2024 LTM activities.

C5ES – SWMU 066

This site was added to the VAB LTM program in 2022 and is currently sampled on a biennial frequency. The site contaminants of concern (COC) are *cis*-1,2-dichloroethene (*c*DCE) and vinyl chloride (VC).

Conclusions

Data from groundwater sampling activities performed during this reporting period were compared to the previous sampling data, and the following conclusions are provided.

- Groundwater flow in the 3 feet below land surface (bls) to 15 feet bls zone and the 13 feet bls to 38 feet bls zone was to the west, which is consistent with historical observations.
- VC was detected above the State of Florida Groundwater Cleanup Target Level (GCTL) in three monitoring wells: C5ES-MW0021, C5ES-MW0022, and C5ES-MW0023.
- 1,1-Dichloroethene (11DCE), *c*DCE, *trans*-1,2-dichloroethene (*t*DCE), tetrachloroethene (PCE), and trichloroethene (TCE) were not detected above GCTLs.
- No site volatile organic compounds (VOCs) had concentrations above State of Florida Natural Attenuation Default Concentrations (NADCs).

Recommendations

Based on groundwater sampling activities performed during this reporting period, and compared to previous sampling events, the following recommendations are provided.

- Conduct biennial sampling of nine monitoring wells for site VOCs: C5ES-MW0004S, C5ES-MW0004I, and C5ES-MW0018S through C5ES-MW0025.
- Site VOCs are 11DCE, cDCE, tDCE, TCE, PCE, and VC.
- Collect water level measurements at 27 monitoring wells.

The next sampling event is scheduled for May 2026.

FDTL – SWMU 075

The site was added to the VAB LTM program in 2014 and is currently sampled on a biennial frequency. The site COCs are TCE and VC.

Conclusions

Data from groundwater and surface water sampling activities performed during this reporting period were compared to the previous sampling data, and the following conclusions are provided.

- Groundwater flow in the 5 feet bls to 15 feet bls zone was to the northwest, and in the 10 feet bls to 25 feet bls zone was west, with a northwest component in the east, which is consistent with historical observations.
- In groundwater, VC was detected above the GCTL in five monitoring wells: FDTL-IW0015S, FDTL-IW0007I, FDTL-IW0008I, FDTL-IW0010I, and FDTL-IW0019I.
- cDCE and tDCE were detected; however, concentrations were below GCTLs in groundwater.
- PCE, TCE, and 11DCE were not detected in groundwater.
- VC was detected above the State of Florida Surface Water Cleanup Target Level (SWCTL) for Freshwater at one location, FDTL-SW0004.
- cDCE was detected at one surface water location; however, there is no SWCTL for cDCE at the time of publication of this report.
- PCE, TCE, 11DCE, or tDCE were not detected in surface water.
- No site VOCs had concentrations above NADCs.

Recommendations

Based on groundwater and surface water sampling activities performed during this reporting period, and compared to previous sampling events, the following recommendations are provided.

- Conduct biennial sampling of eight monitoring wells for site VOCs: FDTL-IW0015S, FDTL-IW0007I, FDTL-IW0008I, FDTL-IW0009I, FDTL-IW0010I, FDTL-IW0014I, FDTL-IW0017I, and FDTL-IW0019I.
- Collect five surface water samples for site VOCs: FDTL-SW0001, FDTL-SW0002, FDTL-SW0003, FDTL-SW0004, and FDTL-SW0005.

- Collect water level measurements at 17 monitoring wells.

The next sampling event is scheduled for May 2026.

FS3 – SWMU 106

The site was added to the VAB LTM program in 2013 and is currently sampled on a biennial frequency. The site COC is VC.

Conclusions

Data from groundwater sampling activities performed during this reporting period were compared to the previous sampling data, and the following conclusions are provided.

- Groundwater flow was to the northeast, which is consistent with historical observations.
- VC was detected above the GCTL in one monitoring well, FS6-MW0003, but was below the NADC.

Recommendations

Based on groundwater sampling activities performed during this reporting period, and compared to previous sampling events, the following recommendations are provided.

- Conduct annual sampling of three monitoring wells for VC analysis: FS6-MW0001, FS6-MW0002, and FS6-MW0003.
- Collect water level measurements at three monitoring wells.

The next sampling event is scheduled for November 2025.

LC390GA – SWMU 107

The site was added to the VAB LTM program in 2019 and is currently sampled on an annual frequency. The site COC is VC.

Conclusions

Data from groundwater and surface water sampling activities performed during this reporting period were compared to the previous sampling data, and the following conclusions are provided.

- Groundwater flow in the 5 feet bls to 15 feet bls zone and 22 feet bls to 27 feet bls zone was to the southwest towards the Banana River Outstanding Florida Water, which is consistent with historical observations.
- TCE, *c*DCE, and *t*DCE were detected; however, the concentrations were below GCTLs.
- VC was not detected.

- No site VOCs were detected in the surface water samples.
- No site VOCs were detected above NADCs.

Recommendations

Based on groundwater and surface water sampling activities performed during this reporting period, and compared to previous sampling events, the following recommendations are provided.

- Conduct annual sampling at 11 monitoring wells for site VOCs: LC39OGA-MW0001, LC39OGA-MW0002, and LC39OGA-MW0004 through LC39OGA-MW0012.
- Collect surface water samples at four locations for site VOCs: LC39OGA-SW0004 through LC39OGA-SW0007.
- Collect water level measurements at 11 monitoring wells: LC39OGA-MW0001, LC39OGA-MW0002, and LC39OGA-MW0004 through LC39OGA-MW0012.

The next sampling event is scheduled for November 2025.

LES – PRL 051

The site was added to the VAB LTM program in 2019 and is currently sampled on a biennial frequency. The site COC is total recoverable petroleum hydrocarbons (TRPH).

Conclusions

Data from groundwater sampling activities performed during this reporting period were compared to the previous sampling data, and the following conclusions are provided.

- Groundwater flow was to the south-southwest, which is consistent with historical observations.
- In December 2024, TRPH concentrations were below the GCTL.
- TRPH concentrations have been below the GCTL for two or more consecutive events in the wells sampled.

Recommendations

Based on groundwater sampling activities performed during this reporting period, and compared to previous sampling events, the following recommendations are provided.

- No further action (NFA) is recommended for groundwater based on TRPH concentrations below GCTLs during the last two consecutive sampling events.
- NFA is recommended for soils based on the analytical data and recommendations from the 2018 surficial soil sampling (NASA 2019b).

Upon approval of the recommended NFA, a Site Rehabilitation Completion Report will be prepared.

SFOC – SWMU 081

The site was added to the VAB LTM program in 2004 and is currently sampled on a biennial frequency. The site COC is antimony.

Conclusions

Data from groundwater sampling activities performed during this reporting period were compared to the previous sampling data, and the following conclusions are provided.

- Groundwater flow direction in the north, around SFOC-IW0001S and the antimony plume, was to the north-northeast, which is consistent with historical observations.
- Groundwater flow direction in the south was northwest, which is consistent with recent historical observations.
- Antimony was detected above the GCTL, but below the NADC in monitoring well SFOC-IW0001S.
- Antimony was detected in upgradient well SFOC-IW0002S, but below the GCTL.
- Antimony was not detected in the downgradient wells, SFOC-IW0004S and SFOC-IW0009.
- No detections of antimony were above the NADC.

Recommendations

Based on groundwater sampling activities performed during this reporting period, and compared to previous sampling events, the following recommendations are provided.

- Conduct biennial groundwater sampling at four monitoring wells for antimony analysis: SFOC-IW0001S, SFOC-IW0002S, SFOC-IW0004S, and SFOC-IW0009.
- Continue water level measurements at nine monitoring wells, SFOC-IW0001S through SFOC-IW0009.
- NFA is recommended for soils based on the analytical data and recommendations presented in the *Biennial Long-Term Groundwater Monitoring Report* (NASA 2021a).

The next sampling event is scheduled for May 2026.

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SECTION 1 INTRODUCTION

1.1 OVERVIEW

The National Aeronautics and Space Administration (NASA), through its Environmental Assurance Branch, is managing cleanup of six sites in the Vehicle Assembly Building (VAB) Area Long-Term Monitoring (LTM) program at the John F. Kennedy Space Center (KSC), Florida. The six sites are C5 Electrical Substation (C5ES) – Solid Waste Management Unit (SWMU) 066, Former Development and Testing Laboratory (FDTL) – SWMU 075, Fire Station 3 (FS3) (formerly Fire Station 6 [FS6]) – SWMU 106, Launch Complex 39 Observation Gantry Area (LC39OGA) – SWMU 107, Launch Equipment Shop (LES) – Potential Release Location (PRL) 051, and Shuttle Flight Operations Contract Generator Maintenance Facility (SFOC) – SWMU 081. The sites are monitored under KSC’s Resource Conservation and Recovery Act (RCRA) Corrective Action Program.

AECOM Technical Services, Inc. (AECOM) prepared this report and completed LTM activities for the VAB LTM program sites for NASA under Contract 80KSC024DA001, Task Order 80KSC024FA117. An Advance Data Package (ADP) was presented to the KSC Remediation Team (KSCRT) in preparation for this report. The KSCRT approved the recommendations within those presentations during the meeting on June 5, 2025. The ADP and KSCRT meeting minutes are provided in **Appendix A**. This report presents the activities and findings of the December 2024 sampling event at C5ES, FDTL, FS3, LC39OGA, LES, and SFOC compared to previously collected groundwater data. The evaluation of these data provides conclusions and recommendations for continued groundwater and surface water monitoring. No further action (NFA) for groundwater and soils is recommended for the LES, and as presented in the *Biennial Long-Term Groundwater Monitoring Report* (NASA 2021a), an NFA for soils is recommended for the SFOC.

1.2 SITE LOCATIONS

KSC is located on the east-central Atlantic Coast of Florida in the northern portion of Merritt Island, between the Indian River and Banana River Lagoons in Brevard County. The VAB LTM program site locations are shown on **Figure 1-1**. The current site layouts for each site are presented on **Figure 1-2** through **Figure 1-7**. Descriptions for each site’s location and background are summarized in Section 1.3.

1.3 BACKGROUND

The following are background summaries for each VAB LTM site. Site location and historical site operations are also discussed.

1.3.1 C5ES – SWMU 066

The C5ES site is located approximately 0.25 mile southwest of the VAB on Kennedy Parkway North, and is a currently active NASA-operated electrical power substation. The C5ES area

includes the Emergency Power Station (K6-1091), Florida Power and Light Building (K6-1090), Power Substation (K6-1141), and Switch Gear Building (K6-1141A). The C5ES area also includes diesel fuel tank areas, a sanitary waste drain field, a grounding grid area, and a dry stormwater retention basin associated with site activities. Inside the fenced area, which houses the transformers and power structures, the ground is covered with crushed limerock. The site is surrounded by wetlands to the north, Burrow Pond to the west, undeveloped land to the south, and Kennedy Parkway North to the east. The current site layout is presented on **Figure 1-2**.

Historically, polychlorinated biphenyls (PCBs) were stored in drums on the southwest corner of the site. From 1992 through 1995, during site upgrades and expansion, PCBs, total recoverable petroleum hydrocarbons (TRPH), and toluene were identified in soil and groundwater above regulatory criteria at C5ES (NASA 2020). Following implementation of two soil removal Interim Measures (IMs), in which approximately 210 cubic yards of soil was removed, a RCRA Facility Investigation (RFI) was proposed.

From 1998 through 1999, RFI activities were performed to determine the extent of affected media at the site. Based on the findings of the RFI, preliminary risk evaluation, and ecological risk assessment, NFA was recommended for soil and sediment at C5ES (NASA 1999), and groundwater contaminants of concern (COC) were determined to be chlorinated volatile organic compounds (cVOCs), specifically *cis*-1,2-dichloroethene (*c*DCE) and vinyl chloride (VC). A plume was identified in the southwest corner of the site at depths of 0 feet below land surface (bls) to 17 feet bls. The source area was identified as the former drum storage areas located near monitoring well C5ES-MW0009S. A second plume was identified on the west side of the site within the septic drain field, and natural attenuation monitoring was recommended (NASA 2022).

In 2001, the site was moved into the LTM program, and semi-annual LTM was conducted from 2001 through 2011. Semi-annual LTM sampling transitioned to annual sampling after 2011, and in 2016, the site was transitioned from annual to biennial sampling with the first biennial event conducted in 2018. In addition to LTM, supplemental groundwater investigations were conducted from 2007 through 2019 (NASA 2022).

In 2007, a supplemental groundwater investigation was conducted, and continuation of LTM was recommended. In 2009, Direct Push Technology (DPT) groundwater sampling was conducted to address elevated concentrations of *c*DCE and VC near C5ES-MW0018S and C5ES-MW0019I (NASA 2022).

From 2014 through 2017, site characterization and IM Design and Implementation activities were conducted. During the site characterization, 343 groundwater samples were collected from 55 locations, and the cVOC plume was delineated. In monitoring wells C5ES-MW0018S and C5ES-MW0019I, VC exceeded the State of Florida Groundwater Cleanup Target Level (GCTL) of 1 microgram per liter ($\mu\text{g/L}$). In 2016, a Remedial Alternatives Evaluation was conducted, and air sparging was selected to treat the high concentration plume (greater than the State of Florida

Natural Attenuation Default Concentration [NADC]) and hot spot (greater than 10 times the NADC) (NASA 2022). In 2017, an Air Sparge IM Work Plan was prepared (NASA 2017a).

In 2019, baseline DPT sampling was conducted, and 56 groundwater samples were collected to further delineate the plume and to determine the air sparge system layout. Based on the results of the December 2019 supplemental groundwater sampling, an Implementation Work Plan for the installation of an air sparge system was prepared and approved (NASA 2020). The air sparge system was constructed in July 2020, which consisted of the installation of two air sparge wells in the high concentration area of the plume. The construction also included installation of six performance monitoring wells C5ES-MW0020 through C5ES-MW0025, conveyance piping, and air sparge equipment. In July 2020, baseline groundwater sampling was conducted prior to system startup, which included the collection of samples from C5ES-MW0017S through C5ES-MW0025 (NASA 2022).

The air sparge system operated from July 2020 through January 2021. During this time, two quarterly groundwater performance monitoring well sampling events and one post-shutdown sampling event were conducted. Groundwater samples were collected from performance monitoring wells C5ES-MW0020, C5ES-MW0021, and C5ES-MW0022 to provide sufficient data to evaluate whether remedial operations reduced the cVOC concentrations in groundwater (NASA 2021b).

On January 26, 2021, the air sparge system was shut down due to site COC concentrations being below NADCs. No target cVOCs were detected above the laboratory detection limit of 0.50 µg/L. The July 2020 VC baseline concentrations in C5ES-MW0020 (19.6 µg/L), C5ES-MW0021 (83.1 µg/L), and C5ES-MW0022 (76.9 µg/L) were reduced to non-detectable concentrations (NASA 2021b).

From April 2021 through January 2022, post shutdown quarterly sampling was conducted. Groundwater samples were collected from three monitoring wells: C5ES-MW0020, C5ES-MW0021, and C5ES-MW0022. Results show that VC concentrations rebounded to 1.7 µg/L in C5ES-MW0021 and 0.49 µg/L in C5ES-MW0022. The rebound in VC concentration was above the GCTL of 1 µg/L in C5ES-MW0021 but was below NADCs. The 2021 Performance Monitoring Report recommended three additional quarters of post system shutdown monitoring of monitoring wells C5ES-MW0020, C5ES-MW0021, and C5ES-MW0022 and biennial sampling of 14 monitoring wells (NASA 2021b).

The three additional quarters, second through fourth, of post system shutdown monitoring occurred in July 2021, October 2021, and January 2022. Three monitoring wells, C5ES-MW0020, C5ES-MW0021, and C5ES-MW0022, were sampled, and results indicated that VC concentrations generally increased through the first three quarters and decreased during the fourth quarter in C5ES-MW0021, and C5ES-MW0022. Concentrations of VC in C5ES-MW0020 were below the GCTL (NASA 2022).

In April and May 2022, biennial groundwater sampling of 14 monitoring wells was conducted, and VC exceeded the GCTL in three monitoring wells C5ES-MW0019I, C5ES-MW0021, and C5ES-MW0023. No concentrations were above NADCs (NASA 2022).

In 2022, the site was added back to the VAB LTM program for long-term groundwater monitoring on a biennial frequency. The site COCs are cDCE and VC.

1.3.2 FDTL – SWMU 075

The FDTL site is located on a 5-acre vacant lot, except for a weather monitoring station, which is located in the northwestern corner of the site. The site is approximately 4 miles southwest of the VAB on G Avenue Northwest, which is accessed by Schwartz Road. It is surrounded by a drainage canal to the west and north, a man-made pond to the east, and wetlands to the south. The northern area of the site encompasses the weather monitoring station with access road and a seasonally dry retention pond. The east-central area of the site is the former location of the main FDTL building, Frequency Control and Analysis Building (L5-683), and only the paved parking areas remain. The Preamplifier Building (L5-734) was formerly located in the southeast corner of the site. Both buildings were removed from the site in 2005. The remaining areas of the site are seasonal wetland areas. The current site layout is presented on **Figure 1-3**.

From 1964 through 1971, the facility supported the Cape Canaveral Air Force Station Missile Test Program. In 1971, it became the Prototype Laboratory for the Apollo and Space Shuttle Programs. From 1981 through 1988, the site operated as the Development and Testing Laboratory, which included an asbestos laboratory and office space. From 1995 through 2002, the Frequency Control and Analysis Building (L5-683) was turned into a kennel, and the facility was used as a staging area for feral cats captured at KSC. The weather monitoring station was historically used for small weather rocket launches, and the paved parking areas were formerly used for impact foam testing. Various areas of the site were also historically used for equipment, vehicle, and salvage materials storage (NASA 2005b).

In January 2006, an RFI (NASA 2005b) (which included a Corrective Measures Study Plan) and IM Report (NASA 2005a) were approved. In August 2007, a Corrective Measures Design (NASA 2007a) was completed, and in October 2007, the Statement of Basis (NASA 2007c) and Land Use Control Implementation Plan (LUCIP) (NASA 2007b) were approved to inform users of the site of institutional controls that have been implemented to prohibit the use of groundwater from the site due to impacts from cVOCs. The Corrective Measures Implementation Work Plan was prepared in October 2008 (NASA 2008). Two phases were approved in the plan:

- Phase I: Aggressive Remediation Zone. Area where active remediation was conducted, and included the high concentration plume in which site COCs were greater than State of Florida NADCs

- Remedy: 50 air sparge wells
- Goal: Reduce site COCs to less than NADCs
- Phase II: Low Concentration Plume. Area where site COCs exceeded GCTLs but were less than NADCs
 - Remedy: Monitored natural attenuation
 - Goal: Reduce site COCs to less than GCTLs

Baseline groundwater sampling was conducted in December 2008 and January 2009. From December 2008 through September 2009, additional monitoring wells, air sparge wells, and system components were installed. The air sparge system was initially started on September 14, 2009. In December 2009, quarterly groundwater sampling results achieved the Phase I active remediation goal of reducing site COCs to less than NADCs. On April 29, 2010, the system was shut down, after the March 2010 quarterly groundwater sampling results confirmed the December 2009 data. In May 2012, the system trailer was removed from the site, and in June 2013, the air sparge wells were abandoned and the piping and system components were removed from the site (NASA 2015a).

From December 2009 through May 2014, groundwater sampling was conducted, starting with a quarterly sampling frequency, which transitioned to semiannual after September 2011, and then annual after September 2012. In November 2014, the site was added to the VAB LTM program, and LTM on a biennial frequency was recommended. The site COCs are trichloroethene (TCE) and VC (NASA 2015a).

From 2016 through 2023, groundwater sampling was conducted on a biennial frequency. Following the 2020 sampling event, monitoring well FDTL-IW0014I was removed from the sampling plan, and monitoring well FDTL-IW0010I was added to the sampling plan. Surface water sampling was added to the sampling plan at locations FDTL-SW0002, FDTL-SW0003, and FDTL-SW0004 (NASA 2021a). Following the 2023 sampling event, monitoring well FDTL-IW0014I was added back to the sampling plan for downgradient delineation of the VC plume, and surface water sampling at locations FDTL-SW0001 and FDTL-SW0005 were added to the sampling plan (NASA 2024a).

1.3.3 FS3 (Formerly FS6) – SWMU 106

The FS3 site is located approximately 2 miles west and northwest of the VAB area along Pad B Road and extends northward from Saturn Causeway to Launch Complex (LC) 39B. The site encompasses the facilities and structures along Pad B Road, which includes 14 numbered structures and several unnumbered structures. The current site layout is presented on **Figure 1-4**.

In 2007, 15 locations of concern (LOCs) were identified during site assessment. LOC 1 – Drainage Outfalls is the area covered under this report and is located in the central area of the SWMU. This central area includes five buildings, two groundwater aboveground storage tanks (ASTs), and LOC 6 – Active Transformer, which is the only other active environmental area

within the SWMU. LOC 1 is surrounded by Pad B Road and the Crawlerway to the west, wetland areas to the south and east, and the Industrial Water Pumping Station (J7-1388), parking areas, potable water ASTs, and Pad A Emergency Road to the north (NASA 2010).

The facilities, in the central area of the SWMU adjacent to FS3, are utilized to support operations at LC39A and LC39B. The Industrial Water Pumping Station (J7-1388) supplies water to LC39A and LC39B. LOC 1 is located southwest of the Industrial Water Pumping Station (J7-1388) and consists of concrete drains and stormwater drains connected directly to the parking area. An astronaut rescue vehicle was observed parked and leaking into a drain located in the parking area. LOC 1 also consists of drainage piping connected to former floor drains in the Industrial Water Pumping Station (J7-1388) and drains connected to a concrete pit that was secondary containment for a former 12,000-gallon diesel AST (NASA 2010).

In 2007, the SWMU Assessment Report identified 15 LOCs and confirmed that no ecological habitat was present within the site boundary. From 2007 to 2010, a Confirmation Sampling Report, IM Work Plan, and RFI Work Plan were approved. NFA was approved for LOCs 3, 4, 7, and 9 through 15 and for groundwater at LOC 5. IM was approved for soil at LOCs 1, 2, 5, and 8, and an RFI was approved for groundwater at LOC 1. An Interim LUCIP was approved for groundwater at LOC 1 and for soil at LOC 6. A summary of the activities from prior to 2007 through 2010, at LOCs 1 and 6, is provided below (NASA 2010).

LOC 1 – Drainage Outfalls:

Groundwater:

- 22 DPT groundwater sampling locations were completed.
- Installation and sampling of one monitoring well FS6-MW0001S were completed.
- VC was detected above the GCTL in 10 DPT locations and 1 monitoring well sample.
- RFI Work Plan was approved for groundwater to delineate VC exceedances in groundwater via DPT groundwater sampling and install monitoring wells.

Soil:

- 14 soil samples were collected at depths down to 2 feet bls.
- Three soil samples, collected at 0 feet bls to 0.5 feet bls, contained metals (barium, chromium, copper, mercury, and selenium) and TRPH above the State of Florida residential Soil Cleanup Target Level (SCTL) or leachability based on groundwater.
- IM Work Plan was approved for soils.

LOC 6 – Active Transformer:

- At PRL 043, 6 to 8 gallons of oil spilled in 1991.
- Excavation of approximately 200 cubic feet of soil around the transformer pad was performed.

- Previous sampling indicated PCBs at 0.59 milligrams per kilogram (mg/kg), which is above the residential SCTL of 0.5 mg/kg for PCBs, were present in the soils under the transformer pad.
- Due to the transformer being active, excavation was halted, and the area was backfilled.
- LUCIP to keep the transformer pad in place was implemented.

In 2012, an IM report for soil was approved. In the LOC 1 area, an excavation of approximately 660 square feet by 1 foot bls was conducted to both horizontal and vertical sample locations with concentrations below residential SCTLs. NFA for soils at LOCs 1, 2, 5, and 8 was approved (NASA 2012a).

In 2013, the RFI Progress Report with Step I Engineering Evaluation (NASA 2013a) was completed for LOC 1. Groundwater sampling at 15 DPT locations was completed with a mobile laboratory to delineate the affected groundwater and determine new monitoring well locations. DPT sample intervals were 8 feet bls to 12 feet bls, 17 feet bls to 21 feet bls, 22 feet bls to 26 feet bls, 27 feet bls to 31 feet bls, 38 feet bls to 42 feet bls, and 43 feet bls to 47 feet bls. Two new monitoring wells, FS6-MW0002S and FS6-MW0003S, were installed, and samples from the two new monitoring wells and the existing monitoring well FS6-MW0001S were collected. There was one exceedance of TCE above the GCTL at one DPT location, DPT0038, but it was not confirmed by sampling the monitoring well FS6-MW0002S installed in the same location. VC concentrations in groundwater were confirmed to be above the GCTL at monitoring well FS6-MW0001S. All site COC concentrations were below NADCs. Interim groundwater monitoring was conducted at the three monitoring wells for VOCs during two semiannual events. After evaluating the results, LTM along with a Statement of Basis and LUCIP were approved. The LTM Work Plan (NASA 2014a) included annual groundwater monitoring of monitoring wells FS6-MW0001S and FS6-MW0003S for VOCs and water level measurements in the three monitoring wells.

The site was added to the VAB LTM program in May 2013, and long-term groundwater monitoring on a biennial frequency was approved. The site COC is VC. LTM was conducted biennially at the site in 2014, 2016, 2018, and 2020. Results from the 2020 LTM event indicated that VC concentrations were below the GCTL in both monitoring wells sampled, FS6-MW0001S and FS6-MW0003S. Recommendations presented in the *Biennial Long-Term Groundwater Monitoring Report* (NASA 2021a) included continuing biennial sampling of two monitoring wells, FS6-MW0001 and FS6-MW0003, for VC, and to continue water level measurements at three monitoring wells.

This site was originally scheduled to be sampled during the May 2023 biennial sampling event; however, due to site flooding, which prevented access to the monitoring wells, the site was not sampled. In February 2024, another attempt to sample the wells was conducted; however, the site remained flooded. Due to the extended time period since the last sampling event, monitoring

well FS6-MW0002 will also be sampled, and the frequency was changed to annual for 2 years (NASA 2024b).

1.3.4 LC39OGA – SWMU 107

The LC39OGA site is located approximately 2 miles northeast of the VAB area, along the southern side of the Saturn Causeway. The East Crawler Park site, now known as the Mobile Service Structure (MSS) Park site, is to the north, and the Banana River, which is part of the Indian River and is an Outstanding Florida Water (OFW), is to the south. The western portion of the site consists of a former vehicle staging area, the Marine Patrol Storage Facility (K7-0288), Security Boathouse (K7-0287), and the current well network. The eastern portion of the site consists of two visitor tour buildings (K7-0140 and K7-0142), a guard house (K7-0140A), and the Launch Complex 39 Observation Tower (K7-0141). The current site layout is presented on **Figure 1-5**.

In 2009, an SWMU assessment was conducted, and five LOCs were identified, one of which was LOC 3, which is covered in this report. LOC 3 was a former vehicle staging area. During the LOC 3 SWMU assessment, samples contained VC above the GCTL and PCBs above the residential and industrial SCTLs; however, no source was identified (NASA 2013b).

From 2009 through 2013, confirmatory soil sampling was conducted at the site (NASA 2013b). A total of 104 soil samples were collected for PCB analysis; 21 samples exceeded the residential SCTL of 0.5 mg/kg for PCBs. In 2016, a Soil IM was conducted to address soil with PCBs above the residential SCTL (NASA 2017b). Approximately 370 tons were removed and properly disposed of off-site. At the February 2017 KSCRT meeting, team consensus was reached for NFA for soil [Meeting Minute 1702-M04; Decision Number 1702-D08].

From 2009 through 2011, 218 groundwater samples from 52 locations were collected and analyzed for VOCs. Of the 218 samples, 215 samples were collected using DPT and 3 samples were collected in 2011 from monitoring wells LC39OGA-MW0001, LC39OGA-MW0002, and LC39OGA-MW0003. VC was detected above the GCTL, but below the NADC to a depth of 27 feet bls; however, no source area was identified (NASA 2013b).

In May 2014, an LTM Work Plan was presented at a KSCRT meeting (NASA 2014b). The LTM plan included semiannual groundwater sampling of eight monitoring wells: LC39OGA-MW0001, LC39OGA-MW0002, LC39OGA-MW0004, LC39OGA-MW0005, LC39OGA-MW0006, LC39OGA-MW0007, LC39OGA-MW0008, and LC39OGA-MW0009 for VOCs. The monitoring program also included sampling for dissolved gases and collecting field parameters to better assess geochemical conditions. The plan was to re-evaluate the monitoring program after 2 years (NASA 2018).

Prior to the November 2015 and May 2016 LTM events, sampling of dissolved gases was discontinued because data confirmed reductive dichlorination was occurring at the site.

Monitoring wells LC39OGA-MW0006 and LC39OGA-MW0008 were removed from the program due to having two consecutive events below GCTLs. The LTM plan was updated to semiannual sampling of six monitoring wells for VOCs (NASA 2018).

Prior to the November 2017 LTM sampling, LC39OGA-MW0005 was removed from the sampling program because VC had not been detected for three consecutive events. The sampling frequency was changed from semiannual to annual. The LTM plan was updated to annual sampling of five wells for VOCs (NASA 2018).

In 2019, the site was added to the VAB LTM program, and after team discussions, LC39OGA-MW0003 was added to the LTM plan to confirm that detections of VOCs in 2011, which were below GCTLs, were still below GCTLs. Sampling was conducted on an annual frequency for six monitoring wells: LC39OGA-MW0001, LC39OGA-MW0002, LC39OGA-MW0003, LC39OGA-MW0004, LC39OGA-MW0007, and LC39OGA-MW0009. The site COC is VC (NASA 2021a).

In November 2019 and November 2020, annual sampling was conducted at six monitoring wells. The wells were sampled for site VOCs, which are *c*DCE, *trans*-1,2-dichloroethene (*t*DCE), TCE, and VC. In 2019, VC concentrations were above the GCTL of 1 µg/L in three monitoring wells, LC39OGA-MW0001, LC39OGA-MW0002, and LC39OGA-MW0004, screened from 5 feet bls to 15 feet bls. In 2020, VC concentrations were above the GCTL in one monitoring well, LC39OGA-MW0009, screened from 22 feet bls to 27 feet bls. It was proposed to continue sampling the same six monitoring wells on an annual frequency, to collect three surface water samples adjacent to monitoring well LC39OGA-MW0003, and to conduct DPT groundwater sampling in the vicinity of monitoring well LC39OGA-MW0009 to investigate the extents of VC upgradient of the plume (NASA 2021a).

In May 2021, DPT groundwater sampling was conducted in the vicinity of LC39OGA-MW0009 and upgradient of the plume. Thirty-one groundwater samples were collected from eight DPT locations, LC39OGA-DPT0048 through LC39OGA-DPT0055, at depths ranging from 13 feet bls to 57 feet bls. Concentrations of VC were above the GCTL in 10 samples, 5 from 13 feet bls to 17 feet bls and 5 from 23 feet bls to 27 feet bls. Concentrations of *c*DCE and *t*DCE were detected in several samples; however, the concentrations were below GCTLs. TCE was not detected. No concentrations of site VOCs were detected below 27 feet bls (NASA 2024a).

In June 2021, annual sampling was conducted at six monitoring wells, LC39OGA-MW0001, LC39OGA-MW0002, LC39OGA-MW0003, LC39OGA-MW0004, LC39OGA-MW0007, and LC39OGA-MW0009, and three surface water sample locations, LC39OGA-SW0001, LC39OGA-SW0002, and LC39OGA-SW0003. The samples were analyzed for site VOCs. Concentrations of VC were above the GCTL in four monitoring wells, LC39OGA-MW0001, LC39OGA-MW0002, and LC39OGA-MW0004, screened from 5 feet bls to 15 feet bls, and LC39OGA-MW0009, screened from 22 feet bls to 27 feet bls. There were no detections of site

VOCs in surface water. The team proposed to conduct additional limited DPT groundwater sampling in the northeast area upgradient of the plume to determine the location of an upgradient monitoring well. The team also proposed to install a new monitoring well, LC39OGA-MW0010, screened from 5 feet bls to 15 feet bls downgradient of the plume, and conduct annual sampling of 10 monitoring wells, adding LC39OGA-MW0005, LC39OGA-MW0006, LC39OGA-MW0008, and LC39OGA-MW0010 to the LTM plan, and conduct sampling at four surface water locations, LC39OGA-SW0002, LC39OGA-SW0004, LC39OGA-SW0005, and LC39OGA-SW0006 (NASA 2024a).

In July 2022, 37 DPT groundwater samples were collected from eight DPT locations, LC39OGA-DPT0056 through LC39OGA-DPT0063, at depths ranging from 8 feet bls to 57 feet bls. Concentrations of VC were detected above the GCTL in five samples from two locations, LC39OGA-DPT0058 and LC39OGA-DPT0060, two from 8 feet bls to 12 feet bls, one from 13 feet bls to 17 feet bls, and two from 23 feet bls to 27 feet bls. The concentration of *c*DCE was detected above the GCTL in one sample from LC39OGA-DPT0060 in the 8 feet bls to 12 feet bls sample interval. Concentrations of TCE and *t*DCE were detected in several samples; however, the concentrations were at or below GCTLs. No concentrations of site VOCs were detected below 27 feet bls. The team proposed to install two upgradient monitoring wells, LC39OGA-MW011, screened from 5 feet bls to 15 feet bls, and LC39OGA-MW012, screened from 22 feet bls to 27 feet bls, adjacent to LC39OGA-DPT0060, and add them to the annual LTM plan (NASA 2024a).

In May 2023, annual LTM sampling was conducted at 10 monitoring wells, LC39OGA-MW0001 through LC39OGA-MW0010, and 4 surface water locations, LC39OGA-SW0002, LC39OGA-SW0004, LC39OGA-SW0005, and LC39OGA-SW0006. Monitoring wells LC39OGA-MW011 and LC39OGA-MW012 were not installed due to construction activities that restricted access to the MSS Park Site, where the wells were to be located. Concentrations of *c*DCE, *t*DCE, and TCE were detected in several monitoring wells; however, the concentrations were below the GCTLs of 70 µg/L, 100 µg/L, and 3 µg/L, respectively. VC was not detected in any sample collected during the event. There were no detections of site VOCs in the surface water samples (NASA 2024a).

In February 2024, two new monitoring wells, LC39OGA-MW011 and LC39OGA-MW012, were installed and added to the LTM plan. Annual LTM sampling was conducted at 12 monitoring wells, LC39OGA-MW0001 through LC39OGA-MW0012, and 4 surface water locations, LC39OGA-SW0002, LC39OGA-SW0004, LC39OGA-SW0005, and LC39OGA-SW0006. Concentrations of *c*DCE and *t*DCE were detected in several monitoring wells; however, the concentrations were below the GCTLs of 70 µg/L and 100 µg/L, respectively. TCE was not detected. VC was detected above the GCTL of 1 µg/L in four monitoring wells, LC39OGA-MW0002, LC39OGA-MW0004, LC39OGA-MW0010, and LC39OGA-MW0012. There were no detections of site VOCs in the surface water samples. Based on the results from the February 2024 sampling event, the team proposed to remove LC39OGA-MW0003 and

LC39OGA-SW0002 from the sampling plan due to two or more consecutive events with site COCs below GCTLs, and add LC39OGA-SW0007, which is located downgradient of LC39OGA-MW0010, to the sampling plan (NASA 2024b).

1.3.5 LES – PRL 051

The LES site is located within the main VAB area, approximately 0.3 mile south-southwest of the VAB, at the north corner of the LES building (K6-1247). It is surrounded by a parking lot and the Saturn Causeway to the north and west, Instrumentation Road to the east, and the LES building (K6-1247) to the south. The main well field is currently a vacant area covered by soil and grass. The LES building (K6-1247) is a manufacturing shop for launch ground support and facilities. It contains a machine shop, electrical shop, sheet metal shop, welding shop, and offices for planning and scheduling. The site had a 4,000-gallon underground storage tank (UST) that was used to store diesel fuel, which was removed in the mid-1990s. The current site layout is presented on **Figure 1-6**.

In 1996, a site assessment was performed after removal of the diesel fuel UST. This initial assessment confirmed the presence of TRPH and polycyclic aromatic hydrocarbons (PAHs) at concentrations above State of Florida Cleanup Target Levels for both soil and groundwater. Source removals occurred in 1996 and 2000. Approximately 178 tons of impacted soils were removed. Due to physical constraints at the site (mainly underground utilities), approximately 1,800 tons of petroleum-impacted saturated soils were left in place. The petroleum-impacted soils were located at depths of greater than 4 feet bls, which is below the most recent average depth to water of 5.96 feet bls (NASA 2017c).

In 2003, LTM of groundwater was initiated, and in 2004, free product was observed in several monitoring wells. In 2007 and 2009, RegenOx Injections were conducted. After the injections, saturated soil TRPH concentrations decreased, but remained greater than the residential SCTL of 460 mg/kg, and TRPH concentrations were greater than the GCTL of 5,000 µg/L in groundwater (NASA 2017c).

From 2010 through 2018, an ozone injection recirculation system was in periodic operation at the site. The system was installed in 2010, and throughout its operation, several modifications were completed, and additional extraction wells were installed (NASA 2017c). Team consensus was reached at the September 2015 KSCRT meeting to monitor groundwater for TRPH only and discontinue monitoring for PAHs [Meeting Minute 1509-M13; Decision Number 1509-D92 through D94].

In December 2017, only two wells had TRPH concentrations greater than the GCTL; therefore, team consensus at the March 2018 KSCRT meeting to shut down the system permanently was reached [Meeting Minute 1803-M12; Decision Number 1803-D54]. The system was shut down on March 23, 2018, and the injection and extraction wells were abandoned on February 13, 2019 (NASA 2019b).

In 2018, surficial soil sampling was conducted to 2 feet bls to investigate PAH and TRPH concentrations in the vadose zone soils. Historical soil sample results, at and below 4 feet bls, which are within the saturated zone, indicated concentrations of PAHs and TRPH greater than SCTLs. A total of 20 soil samples from 10 soil boring locations were analyzed for both PAHs and TRPH. Sample intervals were 0 feet bls to 0.5 feet bls and 0.5 feet bls to 2 feet bls. PAHs and TRPH concentrations were below SCTLs at all locations sampled (NASA 2019b). This soil data is being utilized to propose NFA for soils in Section 9.5 of this report.

In April 2019, groundwater monitoring for TRPH was conducted at two monitoring wells, LES-IW0005S and LES-IW0011S. Both wells had TRPH concentrations above the GCTL of 5,000 µg/L, but below the NADC (NASA 2019b).

The site was added to the VAB LTM program in April 2019, and three monitoring wells, LES-IW0005S, LES-IW0009S, and LES-IW0011S, were sampled on a semiannual frequency. The site COC is TRPH. In November 2019, TRPH was detected above the GCTL in one monitoring well, LES-IW0011S. In June 2020, TRPH was detected above the GCTL in one monitoring well, LES-IW0005S. In November 2020, TRPH was detected above the GCTL in one monitoring well, LES-IW0011S. Following the November 2020 sampling event, the sampling frequency was changed to annual (NASA 2021a).

In June 2021, TRPH concentrations were below the GCTL of 5,000 µg/L. In November 2021, TRPH was detected above the GCTL in one monitoring well, LES-IW0011S. In May 2023, TRPH was not detected, and the laboratory method detection limit (MDL) was below the GCTL. Following the May 2023 sampling event, the sampling frequency was changed to biennial (NASA 2024a).

1.3.6 SFOC – SWMU 081

The SFOC site is located approximately 1 mile south of the VAB area on Contractors Road. It is surrounded by a dry retention pond and then the Component Refurbishment Chemical Analysis and Calibration Facility to the north, forested/wetland areas to the east, and wetlands and the Contractors Road Heavy Equipment Area and Contractors Road to the south and west.

The facility has two permanent buildings: the Generator Maintenance Shop (K6-1847) and Generator Office (K6-1847A); four permanent sheds: the Generator Checkout Shed (K6-1847B), Generator Storage Shed (K6-1847C), Paint, Oil, and Lubricant Shed (K6-1847D), and Equipment Wash Area Shed (K6-1847E); and one portable storage building: Portable Hazardous Waste Staging Building (K6-1847F). The facility was constructed in 1988 and is currently still in operation. The facility is used for maintenance or storage of portable generators, portable diesel fuel storage tanks, new and used batteries, and new and used oil. The current site layout is presented on **Figure 1-7**.

During initial assessment, 12 LOCs were identified at the site, and several investigations were performed for each LOC. In 2005, a Statement of Basis (NASA 2005d) was approved and a LUCIP (NASA 2005c) was implemented for copper, benzo(a)pyrene, dibenzo(b)anthracene, arsenic, and TRPH for soils and for antimony in groundwater. The LUCIP allowed the soils to remain in place because human exposure is minimized due to infrequent use of the site, and the current and projected use of the site was industrial (NASA 2004).

LOC 10 - Former Battery Storage Area (PRL 80) is the LOC that is covered in this report. It is located northeast of the Generator Maintenance Shop (K6-1847) on the north side of the site access road, which is currently a grassed berm. Historically, used batteries were stored in the area for recycling and were exposed to the elements with several caps missing, and stressed vegetation was observed. The batteries were removed from the area in January 1995 (NASA 2004).

From 1996 through 2002, SWMU Assessment and Confirmatory Sampling, including soil, DPT groundwater, and surface water sampling, were conducted. Antimony, along with several other metals were detected in shallow groundwater in the LOC 10 area. A shallow monitoring well, SFOC-IW0001S, was installed adjacent to the former battery storage area. Concentrations of aluminum and antimony were detected above screening criteria in groundwater (NASA 2004).

From 2003 through 2004, the LTM Work Plan and RFI were completed (NASA 2004). Confirmatory sampling was conducted in the LOC 10 area to confirm previous exceedances of aluminum and antimony in groundwater. One monitoring well, SFOC-IW0001S, had antimony concentrations above the GCTL of 6 µg/L and above the NADC of 60 µg/L, and NFA for aluminum in groundwater was recommended due to aluminum concentrations being within range of KSC background levels. Two monitoring wells, SFOC-IW0001S and SFOC-IW0004S, were monitored semiannually for antimony. The site was added to the VAB LTM program in December 2004. The site COC is antimony. In 2007, the sampling frequency was changed from semiannual to annual (NASA 2007d).

From 2011 through 2012, the VAB Area LUCIP Elimination Project was completed. The SFOC site was one of the sites selected. During the investigation, land use controls (LUCs) were re-evaluated for soils affected by arsenic, benzo(a)pyrene, copper, dibenzo(a,h)anthracene, and TRPH. The objective was to eliminate LUCs through confirmatory sampling, delineation, and removal of impacted soils, if necessary. At the December 2012 KSCRT meeting, team consensus was reached for the soil LUCIP to be eliminated and NFA for soils at SFOC was approved [Meeting Minute 1212-M14; Decision Number 1212-D30] (NASA 2012b).

In 2015, the sampling frequency was changed from annual to biennial (NASA 2015b). Due to a correlation with groundwater elevations, antimony appeared to be associated with soils in the smear zone and not representative of aquifer conditions. Monitoring well SFOC-IW0008 was installed and screened from 8 feet bls to 18 feet bls, which is below the water table. In October

2018, antimony was not detected in SFOC-IW0008. In December 2018, SFOC-IW0001S was replaced with SFOC-IW0008, and the LTM plan was updated to include sampling of SFOC-IW0004S and SFOC-IW0008 (NASA 2019c).

In 2020, two monitoring wells, SFOC-IW0004S and SFOC-IW0008, were sampled and analyzed for antimony. Antimony was detected in both wells sampled, but concentrations were below the GCTL of 6 µg/L. A total of 15 soil samples were collected from five boring locations adjacent to SFOC-IW0001S to evaluate antimony in the vadose zone soils. Antimony was detected in the soil samples at low concentrations, but below the residential SCTL of 27 mg/kg. After reviewing the results, it was recommended that SFOC-IW0001S be added back to the LTM plan in place of SFOC-IW0008, and that a new monitoring well, SFOC-IW0009, screened from 2 feet bls to 12 feet bls, be installed downgradient (north) of SFOC-IW0001S. Sampling of three monitoring wells, SFOC-IW0001S, SFOC-IW0004S, and SFOC-IW0009, for antimony was proposed (NASA 2021a).

In 2023, biennial groundwater sampling was conducted in three monitoring wells, SFOC-IW0001S, SFOC-IW0004S, and SFOC-IW0009. Monitoring well SFOC-IW0009 was installed downgradient of the antimony groundwater plume prior to the biennial sampling event. Antimony was detected in one well, SFOC-IW0001S, at 76 µg/L, which was above the GCTL of 6 µg/L, and above the NADC of 60 µg/L. Following the 2023 sampling event, SFOC-IW0002S was added to the sampling plan as an upgradient well and will be sampled for antimony (NASA 2024a).

1.4 PURPOSE

The purpose of this report is to present the annual LTM field activities and results conducted in December 2024 at C5ES – SWMU 066, FDTL – SWMU 075, FS3 – SWMU 106, LC39OGA – SWMU 107, LES – PRL 051, and SFOC – SWMU 081, and to present conclusions and recommendations.

1.5 REPORT ORGANIZATION

The remainder of this report is organized as follows:

- **Section 2:** Long-Term Monitoring Field Activities Overview. This section describes the methodology used during the December 2024 LTM sampling event.
- **Section 3:** C5ES (SWMU 066) Results. This section presents a summary of the analytical results for the sampling activities at C5ES.
- **Section 4:** FDTL (SWMU 075) Results. This section presents a summary of the analytical results for the sampling activities at FDTL.
- **Section 5:** FS3 (SWMU 106) Results. This section presents a summary of the analytical results for the sampling activities at FS3.
- **Section 6:** LC39OGA (SWMU 107) Results. This section presents a summary of the analytical results for the sampling activities at LC39OGA.

- **Section 7:** LES (PRL 051) Results. This section presents a summary of the analytical results for the sampling activities at LES.
- **Section 8:** SFOC (SWMU 081) Results. This section presents a summary of the analytical results for the sampling activities at SFOC.
- **Section 9:** Conclusions and Recommendations. This section presents conclusions and recommendations for the VAB LTM sites and presents the proposed 2025-2026 LTM monitoring schedule.
- **Section 10:** References. This section lists the documents used in developing this report.

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SECTION 2 LONG-TERM MONITORING FIELD ACTIVITY OVERVIEW

2.1 LTM FIELD ACTIVITIES

One field event was conducted in December 2024 for the VAB LTM program and is listed below.

- December 2024 – Groundwater monitoring and surface water sampling were conducted at the C5ES, FDTL, FS3, LC39OGA, LES, and SFOC sites.

Field activities were conducted in general accordance with Florida Department of Environmental Protection (FDEP) Standard Operating Procedures (FDEP 2018), the KSC Sampling and Analysis Plan (NASA 2017d), and the KSC Decision Process Document for the RCRA Corrective Action Program (NASA 2019a). The 2024 LTM schedule is presented as **Table 2-1**. Field notes are provided in **Appendix B**. Groundwater sampling and calibration logs are provided in **Appendix C**.

2.2 INVESTIGATION-DERIVED WASTE

Investigation-derived waste from field activities was contained in properly labeled 55-gallon drums, which were stored on NASA-provided spill pallets, and secured with cargo straps to be properly disposed of by NASA.

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SECTION 3 C5ES (SWMU 066) RESULTS

This section provides a summary of the results from the LTM activities performed at the C5ES site. The site was added to the VAB LTM program in 2022 and is sampled on a biennial frequency. The site COCs are *c*DCE and VC.

3.1 GROUNDWATER ELEVATIONS AND FLOW DIRECTION

On December 18, 2024, water levels were measured at 25 monitoring wells: 18 from the 3 feet bls to 15 feet bls interval and 7 from the 13 feet bls to 38 feet bls interval. Groundwater flow in the 3 feet bls to 15 feet bls zone was to the west, which is consistent with historical observations, and average depth to water was 5.69 feet bls. Groundwater flow in the 13 feet bls to 38 feet bls zone was to the west, which is consistent with historical observations, and average depth to water was 5.60 feet bls. Groundwater level measurements were recorded from site wells prior to sampling and are summarized in **Table 3-1**. Groundwater contour maps for December 2024 are provided as **Figure 3-1** and **Figure 3-2**.

3.2 GROUNDWATER MONITORING RESULTS

In December 2024, AECOM personnel sampled nine monitoring wells: C5ES-MW0004S, C5ES-MW0004I, C5ES-MW0018S, C5ES-MW0019I, and C5ES-MW0021 through C5ES-MW0025. The samples were submitted to a fixed-based laboratory, Eurofins Environment Testing - Orlando (Eurofins), for analysis by United States Environmental Protection Agency (EPA) Method 8260B for site VOCs: 1,1-dichloroethene (11DCE), *c*DCE, *t*DCE, tetrachloroethene (PCE), TCE, and VC.

December 2024 analytical results indicate VC was detected above the GCTL of 1 µg/L in three monitoring wells: C5ES-MW0021, C5ES-MW0022, and C5ES-MW0023. The maximum VC concentration was 14 µg/L in monitoring well C5ES-MW0021. Analytical results also indicate detections of *c*DCE and *t*DCE at concentrations above the MDLs but below the GCTLs of 70 µg/L and 100 µg/L, respectively. The remaining analytes were not detected above MDLs. None of the analytical results in December 2024 exceeded NADCs.

Groundwater analytical results are summarized in **Table 3-2**. Groundwater analytical results, along with the plume for VC exceeding GCTLs in December 2024, are presented on **Figure 3-3**. Laboratory analytical reports are provided in **Appendix D**. Data were uploaded to KSC's Remediation Information System (RIS) upon receipt. The RIS completion tickets are provided in **Appendix E**.

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SECTION 4 FDTL (SWMU 075) RESULTS

This section provides a summary of the results from the LTM activities performed at the FDTL site. The site was added to the VAB LTM program in November 2014 and is sampled on a biennial frequency. The site COCs are TCE and VC.

4.1 GROUNDWATER ELEVATIONS AND FLOW DIRECTION

On December 19, 2024, water levels were measured at 15 monitoring wells: 3 from the 5 feet bls to 15 feet bls interval and 12 from the 10 feet bls to 25 feet bls interval. Groundwater flow in the 5 feet bls to 15 feet bls zone was to the northwest, which is consistent with historical observations, and average depth to water was 5.49 feet bls. Groundwater flow in the 10 feet bls to 25 feet bls zone was west, with a northwest component in the east, which is consistent with historical observations, and average depth to water was 4.36 feet bls. Groundwater level measurements were recorded from site wells prior to sampling and are summarized in **Table 4-1**. Groundwater contour maps for December 2024 are provided as **Figure 4-1** and **Figure 4-2**.

4.2 GROUNDWATER MONITORING RESULTS

In December 2024, AECOM personnel sampled eight monitoring wells: FDTL-IW0015S, FDTL-IW0007I, FDTL-IW0008I, FDTL-IW0009I, FDTL-IW0010I, FDTL-IW0014I, FDTL-IW0017I, and FDTL-IW0019I. The samples were submitted to Eurofins for analysis by EPA Method 8260B for site VOCs: 11DCE, *c*DCE, *t*DCE, PCE, TCE, and VC.

December 2024 analytical results indicate VC was detected above the GCTL of 1 µg/L in five monitoring wells: FDTL-IW0015S, FDTL-IW0007I, FDTL-IW0008I, FDTL-IW0010I, and FDTL-IW0019I. The maximum VC concentration was 52 µg/L in monitoring well FDTL-IW0008I. Analytical results also indicate detections of *c*DCE and *t*DCE at concentrations above the MDL but below the GCTLs of 70 µg/L and 3 µg/L, respectively. The remaining analytes were not detected above MDLs. None of the analytical results in December 2024 exceeded NADCs.

Groundwater analytical results are summarized in **Table 4-2**. Groundwater analytical results, along with the plume for VC exceeding GCTLs in December 2024, are presented on **Figure 4-3**. Laboratory analytical reports are provided in **Appendix D**. Data were uploaded to KSC's RIS upon receipt. The RIS completion tickets are provided in **Appendix E**.

4.3 SURFACE WATER SAMPLING RESULTS

In December 2024, AECOM personnel collected five surface water samples, FDTL-SW0001 through FDTL-SW0005, from the canal west and northwest of the site. The samples were submitted to Eurofins for analysis by EPA Method 8260B for site VOCs: 11DCE, *c*DCE, *t*DCE, PCE, TCE, and VC.

December 2024 analytical results indicate VC was detected above the State of Florida Surface Water Cleanup Target Level for Freshwater (SWCTL) of 2.4 µg/L in one surface water sample: FDTL-SW0004 at a concentration of 10 µg/L. Analytical results also indicate *c*DCE was detected; however, at the time of publication of this report, there was no SWCTL for *c*DCE. The remaining analytes were not detected above the MDLs.

Surface water analytical results are summarized in **Table 4-2** and are presented on **Figure 4-3**. Laboratory analytical reports are provided in **Appendix D**. Data were uploaded to KSC's RIS upon receipt. The RIS completion tickets are provided in **Appendix E**.

SECTION 5 FS3 (SWMU 106) RESULTS

This section provides a summary of the results from the LTM activities performed at the FS3 (formally FS6) site. The site was added to the VAB LTM program in 2013 and is sampled on a biennial frequency. The site COC is VC.

5.1 GROUNDWATER ELEVATIONS AND FLOW DIRECTION

On December 18, 2024, water levels were measured in three monitoring wells. Groundwater flow was to the northeast, and average depth to water was 3.15 feet bls. Groundwater flow direction is consistent with historical observations. Groundwater level measurements were recorded from site wells prior to sampling and are summarized in **Table 5-1**. The groundwater contour map for December 2024 is provided on **Figure 5-1**.

5.2 GROUNDWATER MONITORING RESULTS

In December 2024, AECOM personnel sampled three monitoring wells: FS6-MW0001, FS6-MW0002, and FS6-MW0003. Prior to sampling, a temporary stick-up riser (2-inch diameter polyvinyl chloride) was placed on monitoring well FS3-MW0001 to prevent surface water from entering the well while sampling. The well was then redeveloped to remove sediments and stagnant water. The redeveloped well was then given a minimum of 24 hours to rest before purging and sampling. The samples were submitted to Eurofins for analysis by EPA Method 8260B for VC.

In December 2024, VC concentrations were above the GCTL in one monitoring well, FS6-MW0003, at a concentration of 1.8 µg/L. Groundwater analytical results are summarized in **Table 5-2** and are presented on **Figure 5-2**. Laboratory analytical reports are provided in **Appendix D**. Data were uploaded to KSC's RIS upon receipt. The RIS completion tickets are provided in **Appendix E**.

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SECTION 6 LC39OGA (SWMU 107) RESULTS

This section provides a summary of the results from the LTM activities performed at the LC39OGA site. The site was added to the VAB LTM program in 2019 and is sampled on an annual frequency. The site COC is VC.

6.1 GROUNDWATER ELEVATIONS AND FLOW DIRECTION

On December 20, 2024, water levels were measured in 11 monitoring wells: 6 in the 5 feet bls to 15 feet bls zone and 5 in the 15 feet bls to 27 feet bls zone. Groundwater flow in the 5 feet bls to 15 feet bls zone was to the southwest, and average depth to water was 1.78 feet bls. Groundwater flow in the 22 feet bls to 27 feet bls zone was also to the southwest, and average depth to water was 2.15 feet bls. Groundwater flow direction for both zones was towards the Banana River OFW, which is consistent with historical observations. Groundwater level measurements were recorded from site wells prior to sampling and are summarized in **Table 6-1**. Groundwater contour maps for December 2024, representing the 5 feet bls to 15 feet bls and 22 feet bls to 27 feet bls zones, are presented on **Figure 6-1** and **Figure 6-2**.

6.2 GROUNDWATER MONITORING RESULTS

In December 2024, AECOM personnel sampled 11 monitoring wells: LC39OGA-MW0001, LC39OGA-MW0002, and LC39OGA-MW0004 through LC39OGA-MW0012. The samples were submitted to Eurofins for analysis by EPA Method 8260B for site VOCs: TCE, *c*DCE, *t*DCE, and VC. In December 2024, *c*DCE, *t*DCE, and TCE were detected in several monitoring wells; however, the concentrations were below GCTLs. Analytical results indicate that VC was not detected, and the MDL was below the GCTL. No VOC concentrations were above NADCs.

Groundwater analytical results are summarized in **Table 6-2** and are presented on **Figure 6-3**. Laboratory analytical reports are provided in **Appendix D**. Data were uploaded to KSC's RIS upon receipt. The RIS completion tickets are provided in **Appendix E**.

6.3 SURFACE WATER SAMPLING RESULTS

In December 2024, AECOM personnel collected four surface water samples: LC39OGA-SW0004 through LC39OGA-SW0007. The samples were submitted to Eurofins for analysis by EPA Method 8260B for site VOCs: TCE, *c*DCE, *t*DCE, and VC. No VOC concentrations were detected in the surface water samples collected, and the MDLs were below SWCTLs.

Surface water analytical results are summarized in **Table 6-2** and are presented on **Figure 6-3**. Laboratory analytical reports are provided in **Appendix D**. Data were uploaded to KSC's RIS upon receipt. The RIS completion tickets are provided in **Appendix E**.

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SECTION 7 LES (PRL 051) RESULTS

This section provides a summary of the results from the LTM activities performed at the LES site. The site was added to the VAB LTM program in April 2019 and is sampled on a biennial frequency. The site COC is TRPH.

7.1 GROUNDWATER ELEVATIONS AND FLOW DIRECTION

On December 17, 2024, water levels were measured in 12 shallow monitoring wells. Groundwater flow was to the south-southwest, which is consistent with historical observations. The average depth to water in December 2024 was 5.96 feet bls. Groundwater level measurements were recorded from site wells prior to sampling and are summarized in **Table 7-1**. The groundwater contour map for December 2024 is provided as **Figure 7-1**.

7.2 GROUNDWATER MONITORING RESULTS

In December 2024, groundwater samples were collected from three monitoring wells: LES-IW0005S, LES-IW0009S, and LES-IW0011S. Groundwater samples were submitted to Eurofins for analysis by the Florida Petroleum Residual Organic Method for TRPH.

In December 2024, TRPH was detected in one well, LES-IW0011S, but concentrations were below the GCTL of 5,000 µg/L. TRPH was not detected in monitoring wells LES-IW0005S or LES-IW0009S. No concentrations of TRPH exceeded NADCs during the December 2024 event.

Groundwater analytical results are summarized in **Table 7-2** and are provided on **Figure 7-2**. Laboratory analytical reports are provided in **Appendix D**. Data were uploaded to KSC's RIS upon receipt. The RIS completion tickets are provided in **Appendix E**.

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SECTION 8 SFOC (SWMU 081) RESULTS

This section provides a summary of the results from the LTM activities performed at the SFOC site. The site was added to the VAB LTM program in December 2004 and is sampled on a biennial frequency. The site COC is antimony.

8.1 GROUNDWATER ELEVATIONS AND FLOW DIRECTION

On December 23, 2024, water levels were measured in nine shallow monitoring wells. Groundwater flow direction in the north, around SFOC-IW0001S and the antimony plume, was to the north-northeast, which is consistent with historical observations. Groundwater flow direction in the south was northwest, which is consistent with recent historical observations. Average depth to water was 3.33 feet bls. Groundwater level measurements were recorded from site wells prior to sampling and are summarized in **Table 8-1**. A groundwater contour map for December 2024 is provided as **Figure 8-1**.

8.2 GROUNDWATER MONITORING RESULTS

In December 2024, prior to sampling, four monitoring wells, SFOC-IW0001S, SFOC-IW0002S, SFOC-IW0004S, and SFOC-IW0009, were redeveloped to remove sediments and stagnant water. The redeveloped wells were then given a minimum of 24 hours to rest before purging and sampling. Groundwater samples were collected from four monitoring wells: SFOC-IW0001S, SFOC-IW0002S, SFOC-IW0004S, and SFOC-IW0009. Groundwater samples were submitted to Eurofins, for analysis by EPA Method 6020B for antimony.

Antimony was detected at a concentration of 38 µg/L in monitoring well SFOC-IW0001S, which is above the GCTL of 6 µg/L, but below the NADC of 60 µg/L. Antimony was detected in upgradient well SFOC-IW0002S, but below the GCTL of 6 µg/L. Antimony was not detected in downgradient wells SFOC-IW0004S and SFOC-IW0009. No detections of antimony were above the NADC.

Groundwater analytical results are summarized in **Table 8-2** and are presented on **Figure 8-2**. Laboratory analytical reports are provided in **Appendix D**. Data were uploaded to KSC's RIS upon receipt. The RIS completion tickets are provided in **Appendix E**.

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SECTION 9 CONCLUSIONS AND RECOMMENDATIONS

This section provides conclusions and recommendations for the VAB LTM program sites based on the December 2024 LTM results. The VAB LTM activities and results were presented to the KSCRT in June 2025, and the KSCRT agreed with the recommendations below. The ADP and meeting minutes are provided in **Appendix A**. The 2025-2026 LTM schedule is provided in **Table 9-1**.

9.1 C5ES – SWMU 066

Conclusions

Data from groundwater sampling activities performed during this reporting period were compared to the previous sampling data, and the following conclusions are provided.

- Groundwater flow in the 3 feet bls to 15 feet bls zone and the 13 feet bls to 38 feet bls zone was to the west, which is consistent with historical observations.
- VC was detected above the GCTL in three monitoring wells: C5ES-MW0021, C5ES-MW0022, and C5ES-MW0023.
- 11DCE, cDCE, tDCE, PCE, and TCE were not detected above GCTLs.
- No site VOCs had concentrations above NADCs.

Recommendations

Based on groundwater sampling activities performed during this reporting period, and compared to previous sampling events, the following recommendations are provided.

- Conduct biennial sampling of nine monitoring wells for site VOCs: C5ES-MW0004S, C5ES-MW0004I, and C5ES-MW0018S through C5ES-MW0025.
- Site VOCs are 11DCE, cDCE, tDCE, TCE, PCE, and VC.
- Collect water level measurements at 27 monitoring wells.

The next sampling event is scheduled for May 2026.

9.2 FDTL – SWMU 075

Conclusions

Data from groundwater and surface water sampling activities performed during this reporting period were compared to the previous sampling data, and the following conclusions are provided.

- Groundwater flow in the 5 feet bls to 15 feet bls zone was to the northwest, and in the 10 feet bls to 25 feet bls zone was west, with a northwest component in the east, which is consistent with historical observations.

- In groundwater, VC was detected above the GCTL in five monitoring wells: FDTL-IW0015S, FDTL-IW0007I, FDTL-IW0008I, FDTL-IW0010I, and FDTL-IW0019I.
- *c*DCE and *t*DCE were detected; however, concentrations were below GCTLs in groundwater.
- PCE, TCE, and 11DCE were not detected in groundwater.
- VC was detected above the SWCTL at one location, FDTL-SW0004.
- *c*DCE was detected at one surface water location; however, there is no SWCTL for *c*DCE at the time of publication of this report.
- PCE, TCE, 11DCE, or *t*DCE were not detected in surface water.
- No site VOCs had concentrations above NADCs.

Recommendations

Based on groundwater and surface water sampling activities performed during this reporting period, and compared to previous sampling events, the following recommendations are provided.

- Conduct biennial sampling of eight monitoring wells for site VOCs: FDTL-IW0015S, FDTL-IW0007I, FDTL-IW0008I, FDTL-IW0009I, FDTL-IW0010I, FDTL-IW0014I, FDTL-IW0017I, and FDTL-IW0019I.
- Collect five surface water samples for site VOCs: FDTL-SW0001, FDTL-SW0002, FDTL-SW0003, FDTL-SW0004, and FDTL-SW0005.
- Collect water level measurements at 17 monitoring wells.

The next sampling event is scheduled for May 2026.

9.3 FS3 – SWMU 106

Conclusions

Data from groundwater sampling activities performed during this reporting period were compared to the previous sampling data, and the following conclusions are provided.

- Groundwater flow was to the northeast, which is consistent with historical observations.
- VC was detected above the GCTL in one monitoring well, FS6-MW0003, but was below the NADC.

Recommendations

Based on groundwater sampling activities performed during this reporting period, and compared to previous sampling events, the following recommendations are provided.

- Conduct annual sampling of three monitoring wells for VC analysis: FS6-MW0001, FS6-MW0002, and FS6-MW0003.
- Collect water level measurements at three monitoring wells.

The next sampling event is scheduled for November 2025.

9.4 LC39OGA – SWMU 107

Conclusions

Data from groundwater and surface water sampling activities performed during this reporting period were compared to the previous sampling data, and the following conclusions are provided.

- Groundwater flow in the 5 feet bls to 15 feet bls zone and 22 feet bls to 27 feet bls zone was to the southwest towards the Banana River OFW, which is consistent with historical observations.
- TCE, cDCE, and tDCE were detected; however, the concentrations were below GCTLs.
- VC was not detected.
- No site VOCs were detected in the surface water samples.
- No site VOCs were detected above NADCs.

Recommendations

Based on groundwater and surface water sampling activities performed during this reporting period, and compared to previous sampling events, the following recommendations are provided.

- Conduct annual sampling at 11 monitoring wells for site VOCs: LC39OGA-MW0001, LC39OGA-MW0002, and LC39OGA-MW0004 through LC39OGA-MW0012.
- Collect surface water samples at four locations for site VOCs: LC39OGA-SW0004 through LC39OGA-SW0007.
- Collect water level measurements at 11 monitoring wells: LC39OGA-MW0001, LC39OGA-MW0002, and LC39OGA-MW0004 through LC39OGA-MW0012.

The next sampling event is scheduled for November 2025.

9.5 LES – PRL 051

The site was added to the VAB LTM program in April 2019 and is currently sampled on a biennial frequency. The site COC is TRPH.

Conclusions

Data from groundwater sampling activities performed during this reporting period were compared to the previous sampling data, and the following conclusions are provided.

- Groundwater flow was to the south-southwest, which is consistent with historical observations.
- In December 2024, TRPH concentrations were below the GCTL.

- TRPH concentrations have been below the GCTL for two more consecutive events in the wells sampled.

Recommendations

Based on groundwater sampling activities performed during this reporting period, and compared to previous sampling events, the following recommendations are provided.

- NFA is recommended for groundwater based on TRPH concentrations below GCTLs during the last two consecutive sampling events.
- NFA is recommended for soils based on the analytical data and recommendations from the 2018 surficial soil sampling (NASA 2019b).

Upon approval of the recommended NFA, a Site Rehabilitation Completion Report will be prepared.

9.6 SFOC – SWMU 081

Conclusions

Data from groundwater sampling activities performed during this reporting period were compared to the previous sampling data, and the following conclusions are provided.

- Groundwater flow direction in the north, around SFOC-IW0001S and the antimony plume, was to the north-northeast, which is consistent with historical observations.
- Groundwater flow direction in the south was northwest, which is consistent with recent historical observations.
- Antimony was detected above the GCTL but below the NADC in monitoring well SFOC-IW0001S.
- Antimony was detected in upgradient well SFOC-IW0002S, but below the GCTL.
- Antimony was not detected in the downgradient wells, SFOC-IW0004S and SFOC-IW0009.
- No detections of antimony were above the NADC.

Recommendations

Based on groundwater sampling activities performed during this reporting period, and compared to previous sampling events, the following recommendations are provided.

- Conduct biennial groundwater sampling at four monitoring wells for antimony analysis: SFOC-IW0001S, SFOC-IW0002S, SFOC-IW0004S, and SFOC-IW0009.

- Continue water level measurements at nine monitoring wells, SFOC-IW0001S through SFOC-IW0009.
- NFA is recommended for soils based on the analytical data and recommendations presented in the *Biennial Long-Term Groundwater Monitoring Report* (NASA 2021a).

The next sampling event is scheduled for May 2026.

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TABLES

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Table 2-1
2024 Long-Term Monitoring Schedule
Vehicle Assembly Building Area Long-Term Monitoring Program

Well ID	Screen Interval (feet bls)	December 2024 (Biennial Event)	
		Water Levels	Sampled (Analytical Parameters)
C5 Electrical Substation (C5ES) SWMU 066			
C5-MW0001S	5 to 15	X	
C5-MW0001I	28 to 33	X	
C5-MW0002S	5 to 15	X	
C5-MW0003S	5 to 15	X	
C5-MW0003I	28 to 33	X	
C5-MW0004S	5 to 15	X	Site VOCs
C5-MW0004I	28 to 33	X	Site VOCs
C5-MW0005S	5 to 15	X	
C5-MW0008S	3 to 13	X	
C5-MW0009S	5 to 15	X	
C5-MW0010S	10 to 15	X	
C5-MW0010I	20 to 25	X	
C5-MW0011S	10 to 15	X	
C5-MW0012S	10 to 15	X	
C5-MW0012I	20 to 25	X	
C5-MW0013S	9.5 to 14.5	X	
C5-MW0013I	33 to 38	X	
C5-MW0016S	7 to 12	X	
C5-MW0017S	7 to 12	X	
C5-MW0018S	7 to 12	X	Site VOCs
C5-MW0019I	13 to 23	X	Site VOCs
C5-MW0020	5 to 15	X	
C5-MW0021	5 to 15	X	Site VOCs
C5-MW0022	5 to 15	X	Site VOCs
C5-MW0023	5 to 15	X	Site VOCs
C5-MW0024	20 to 25	X	Site VOCs
C5-MW0025	5 to 15	X	Site VOCs
Fire Station 3 (FS3) (Former Fire Station 6) SWMU 106			
FS6-MW0001	25 to 35	X	Site VOCs
FS6-MW0002	20 to 30	X	Site VOCs
FS6-MW0003	20 to 30	X	Site VOCs

Table 2-1
2024 Long-Term Monitoring Schedule
Vehicle Assembly Building Area Long-Term Monitoring Program

Well ID	Screen Interval (feet bls)	December 2024 (Biennial Event)	
		Water Levels	Sampled (Analytical Parameters)
Former Development and Testing Laboratory (FDTL) SWMU 075			
FDTL-IW0003I	15 to 25	X	
FDTL-IW0004I	15 to 25	X	
FDTL-IW0006S	5 to 15	X	
FDTL-IW0007I	10 to 20	X	Site VOCs
FDTL-IW0008I	10 to 20	X	Site VOCs
FDTL-IW0009I	10 to 20	X	Site VOCs
FDTL-IW0010I	10 to 20	X	Site VOCs
FDTL-IW0011I	10 to 20	X	
FDTL-IW0012I	10 to 20	X	
FDTL-IW0013I	10 to 20	X	
FDTL-IW0014I	10 to 20	X	Site VOCs
FDTL-IW0015S	5 to 15	X	Site VOCs
FDTL-IW0016I	10 to 20	X	
FDTL-IW0017I	10 to 20	X	Site VOCs
FDTL-IW0018I	5 to 15	X	
FDTL-IW0019I	10 to 20	X	Site VOCs
FDTL-IW0020I	10 to 20	X	
FDTL-SW0001	Surface Water		Site VOCs
FDTL-SW0002	Surface Water		Site VOCs
FDTL-SW0003	Surface Water		Site VOCs
FDTL-SW0004	Surface Water		Site VOCs
FDTL-SW0005	Surface Water		Site VOCs

Table 2-1
2024 Long-Term Monitoring Schedule
Vehicle Assembly Building Area Long-Term Monitoring Program

Well ID	Screen Interval (feet bls)	December 2024 (Biennial Event)	
		Water Levels	Sampled (Analytical Parameters)
Launch Complex 39 Observation Gantry Area (LC39OGA) SWMU 107			
LC39OGA-MW0001	5 to 15	X	Site VOCs
LC39OGA-MW0002	5 to 15	X	Site VOCs
LC39OGA-MW0003	5 to 15		
LC39OGA-MW0004	5 to 15	X	Site VOCs
LC39OGA-MW0005	5 to 15	X	Site VOCs
LC39OGA-MW0006	22 to 27	X	Site VOCs
LC39OGA-MW0007	22 to 27	X	Site VOCs
LC39OGA-MW0008	22 to 27	X	Site VOCs
LC39OGA-MW0009	22 to 27	X	Site VOCs
LC39OGA-MW0010	5 to 15	X	Site VOCs
LC39OGA-MW0011	5 to 15	X	Site VOCs
LC39OGA-MW0012	22 to 27	X	Site VOCs
LC39OGA-SW0001	Surface Water		
LC39OGA-SW0002	Surface Water		
LC39OGA-SW0003	Surface Water		
LC39OGA-SW0004	Surface Water		Site VOCs
LC39OGA-SW0005	Surface Water		Site VOCs
LC39OGA-SW0006	Surface Water		Site VOCs
LC39OGA-SW0007	Surface Water		Site VOCs
Launch Equipment Shop (LES) PRL 051			
LES-IW0001I	20 to 25		
LES-IW0002S	3 to 13	X	
LES-IW0003S	7 to 17	X	
LES-IW0004S	3 to 13	X	
LES-IW0005S	3 to 13	X	TRPH
LES-IW0006S	5 to 15	X	
LES-IW0006D	40 to 45		
LES-IW0007S	5 to 15	X	
LES-IW0008S	5 to 15	X	
LES-IW0009S	5 to 15	X	TRPH
LES-IW0010S	4 to 14	X	
LES-IW0011S	5 to 15	X	TRPH
LES-IW0012S	5 to 15	X	
LES-IW0013S	6 to 11	X	

Table 2-1
2024 Long-Term Monitoring Schedule
Vehicle Assembly Building Area Long-Term Monitoring Program

Well ID	Screen Interval (feet bls)	December 2024 (Biennial Event)	
		Water Levels	Sampled (Analytical Parameters)
Shuttle Flight Operations Contract Generator Maintenance Facility (SFOC) SWMU 081			
SFOC-IW0001S	2 to 12	X	Antimony
SFOC-IW0002S	2 to 12	X	Antimony
SFOC-IW0003S	2 to 12	X	
SFOC-IW0004S	2 to 12	X	Antimony
SFOC-IW0005S	2 to 12	X	
SFOC-IW0006S	5 to 15	X	
SFOC-IW0007S	5 to 15	X	
SFOC-IW0008	8 to 18	X	
SFOC-IW0009	2 to 12	X	Antimony

Notes:

Blank cells indicate that the well is not included for that event or activity.

bls = below land surface

SWMU = Solid Waste Management Unit

TRPH = Total Recoverable Petroleum Hydrocarbons

VOC = Volatile Organic Compound

Table 3-1
Groundwater Elevation Data
C5 Electrical Substation (C5ES) - SWMU 066

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	05/20/08		12/18/98		03/09/99		06/11/99		04/02/04	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)		
3 to 15 feet bls												
C5ES-MW0001S	5 to 15	7.66	6.01	1.65	6.57	1.09	6.58	1.08	7.62	0.04	8.03	-0.37
C5ES-MW0002S	5 to 15	6.74	4.87	1.87	5.43	1.31	5.47	1.27	6.61	0.13	7.00	-0.26
C5ES-MW0003S	5 to 15	6.84	5.19	1.65	5.74	1.10	5.77	1.07	6.80	0.04	7.22	-0.38
C5ES-MW0004S	5 to 15	6.64	5.09	1.55	5.69	0.95	5.69	0.95	6.64	0.00	7.11	-0.47
C5ES-MW0005S	5 to 15	7.11	5.22	1.89	5.87	1.24	5.91	1.20	7.08	0.03	6.53	0.58
C5ES-MW0006S	5 to 15	NA	6.55	NA	8.70	NA	7.22	NA	8.03	NA	NA	NM
C5ES-MW0007S	5 to 15	8.10	5.43	2.67	6.03	2.07	6.01	2.09	NM	NM	7.89	0.21
C5ES-MW0008S	3 to 13	8.52	6.45	2.07	7.08	1.44	7.16	1.36	NM	NM	8.81	-0.29
C5ES-MW0009S	5 to 15	8.33	6.42	1.91	7.01	1.32	7.09	1.24	NM	NM	8.61	-0.28
C5ES-MW0010S	10 to 15	7.89	NI	NI	8.43	-0.54	8.57	-0.68	8.05	-0.16	8.69	-0.80
C5ES-MW0011S	10 to 15	2.09	NI	NI	2.75	-0.66	2.68	-0.59	2.38	-0.29	8.40	-6.31
C5ES-MW0012S	10 to 15	4.40	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
C5ES-MW0013S	9.5 to 14.5	7.98	NI	NI	2.65	-0.55	2.64	-0.54	2.22	-0.12	2.71	-0.61
C5ES-MW0016S	7 to 12	5.05	NI	NI	NI	NM	8.01	-0.03	6.72	1.26	8.04	-0.06
C5ES-MW0017S	7 to 12	3.23	NI	NI	NI	NI	NI	NI	5.35	-0.30	5.80	-0.75
C5ES-MW0018S	7 to 12	3.47	NI	NI	NI	NI	NI	NI	3.55	-0.32	4.10	-0.87
C5ES-PZ0001	5 to 15	7.57	7.42	0.15	7.85	-0.28	8.05	-0.48	3.76	-0.29	4.20	-0.73
C5ES-PZ0002	5 to 15	5.32	4.80	0.52	5.30	0.02	5.38	-0.06	2.22	0.33	8.00	-0.43
C5ES-PZ0003	5 to 15	6.71	6.25	0.46	6.70	0.01	6.62	0.09	4.99	0.33	NM	NM
C5ES-MW0020	5 to 15	7.16	NI	NI	NI	NI	NI	NI	6.38	0.33	NI	NI
C5ES-MW0021	5 to 15	7.58	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
C5ES-MW0022	5 to 15	7.97	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
C5ES-MW0023	5 to 15	3.12	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
C5ES-MW0025	5 to 15	1.13	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
13 to 38 feet bls												
C5ES-MW0001I	28 to 33	7.98	6.35	1.63			6.90	1.08	7.93	0.05	8.36	-0.38
C5ES-MW0003I	28 to 33	6.86	5.33	1.53			5.91	0.95	6.90	-0.04	7.20	-0.34
C5ES-MW0004I	28 to 33	6.88	5.45	1.43			6.14	0.74	7.07	-0.19	9.63	-2.75
C5ES-MW0010I	20 to 25	8.04	NI	NI			8.60	-0.56	8.15	-0.11	8.69	-0.65
C5ES-MW0011I	20 to 25	NA	NI	NI			2.68	NA	2.28	NA	NM	NM
C5ES-MW0012I	20 to 25	2.05	NI	NI			2.62	-0.57	2.21	-0.16	2.67	-0.62
C5ES-MW0013I	33 to 38	8.03	NI	NI			6.62	1.41	7.58	0.45	8.13	-0.10
C5ES-MW0014I	33 to 38	4.81	NI	NI			4.78	0.03	4.33	0.48	5.11	-0.30
C5ES-MW0015I	33 to 38	4.47	NI	NI			4.36	0.11	3.90	0.57	4.49	-0.02
C5ES-MW0019I	13 to 23	2.56	NI	NI			NI	NI	NI	NI	NI	NI
C5ES-MW0024	20 to 25	2.81	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI

Notes:

bls = below land surface
 BTOC = below top of casing
 NAVD88 = North American Vertical Datum of 1988
 TOC = top of casing
 NI = Not installed
 NM = Not measured

Table 3-1
Groundwater Elevation Data
C5 Electrical Substation (C5ES) - SWMU 066

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	10/01/04		05/26/05		10/26/05		05/23/06		11/16/06	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
3 to 15 feet bls												
C5ES-MW0001S	5 to 15	7.66	5.99	1.67	7.72	-0.06	4.81	2.85	8.12	-0.46	7.97	-0.31
C5ES-MW0002S	5 to 15	6.74	5.06	1.68	6.72	0.02	4.37	2.37	7.20	-0.46	7.02	-0.28
C5ES-MW0003S	5 to 15	6.84	5.18	1.66	6.90	-0.06	4.00	2.84	7.26	-0.42	7.13	-0.29
C5ES-MW0004S	5 to 15	6.64	5.08	1.56	6.83	-0.19	3.85	2.79	7.17	-0.53	6.92	-0.28
C5ES-MW0005S	5 to 15	7.11	5.51	1.60	7.23	-0.12	4.65	2.46	7.66	-0.55	7.45	-0.34
C5ES-MW0006S	5 to 15	NA	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
C5ES-MW0007S	5 to 15	8.10	6.28	1.82	7.65	0.45	4.53	3.57	7.45	0.65	7.90	0.20
C5ES-MW0008S	3 to 13	8.52	6.81	1.71	8.50	0.02	5.99	2.53	8.65	-0.13	7.79	0.73
C5ES-MW0009S	5 to 15	8.33	6.62	1.71	8.37	-0.04	5.55	2.78	8.50	-0.17	8.60	-0.27
C5ES-MW0010S	10 to 15	7.89	6.64	1.25	8.18	-0.29	5.75	2.14	8.44	-0.55	7.19	0.70
C5ES-MW0011S	10 to 15	2.09	1.01	1.08	2.45	-0.36	0.69	1.40	2.74	-0.65	2.37	-0.28
C5ES-MW0012S	10 to 15	4.40	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
C5ES-MW0013S	9.5 to 14.5	2.10	0.80	1.30	2.42	-0.32	-0.05	2.15	2.70	-0.60	2.39	-0.29
C5ES-MW0016S	7 to 12	7.98	6.38	1.60	7.70	0.28	5.88	2.10	8.15	-0.17	8.23	-0.25
C5ES-MW0017S	7 to 12	5.05	4.39	0.66	5.53	-0.48	3.57	1.48	5.65	-0.60	4.33	0.72
C5ES-MW0018S	7 to 12	3.23	2.62	0.61	3.72	-0.49	1.79	1.44	3.80	-0.57	3.47	-0.24
C5ES-PZ0001	5 to 15	3.47	2.84	0.63	3.95	-0.48	2.00	1.47	4.04	-0.57	3.72	-0.25
C5ES-PZ0002	5 to 15	7.57	5.59	1.98	7.52	0.05	4.64	2.93	8.05	-0.48	7.72	-0.15
C5ES-MW0020	5 to 15	5.32	NM	NM	7.83	-2.51	NM	NM	NM	NM	NM	NM
C5ES-MW0021	5 to 15	6.71	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
C5ES-MW0022	5 to 15	7.16	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
C5ES-MW0023	5 to 15	7.58	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
C5ES-MW0025	5 to 15	7.97	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
C5ES-MW0026	5 to 15	3.12	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
C5ES-MW0027	5 to 15	1.13	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
13 to 38 feet bls												
C5ES-MW00011	28 to 33	7.98	6.28	1.70	8.05	-0.07	5.36	2.62	8.46	-0.48	8.26	-0.28
C5ES-MW00031	28 to 33	6.86	5.26	1.60	6.90	-0.04	4.30	2.56	7.27	-0.41	7.04	-0.18
C5ES-MW00041	28 to 33	6.88	5.35	1.53	7.06	-0.18	4.40	2.48	7.40	-0.52	7.14	-0.26
C5ES-MW00101	20 to 25	8.04	6.84	1.20	8.33	-0.29	6.01	2.03	8.58	-0.54	8.31	-0.27
C5ES-MW00111	20 to 25	NA	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
C5ES-MW00121	20 to 25	2.05	0.90	1.15	2.40	-0.35	1.00	1.05	2.62	-0.57	2.34	-0.29
C5ES-MW00131	33 to 38	8.03	6.23	1.80	7.69	0.34	5.65	2.38	8.18	-0.15	8.34	-0.31
C5ES-MW00141	33 to 38	4.81	2.30	2.51	4.45	0.36	2.43	2.38	4.90	-0.09	5.01	-0.20
C5ES-MW00151	33 to 38	4.47	2.55	1.92	4.00	0.47	2.37	2.10	NM	NM	4.68	-0.21
C5ES-MW00191	13 to 23	2.56	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
C5ES-MW0024	20 to 25	2.81	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM

Notes:

bls = below land surface
 BTOC = below top of casing
 NAVD88 = North American Vertical Datum of 1988
 TOC = top of casing
 NI = Not installed
 NM = Not measured

Table 3-1
Groundwater Elevation Data
C5 Electrical Substation (C5ES) - SWMU 066

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	05/15/07		11/13/07		05/20/08		11/10/08		05/14/09	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
3 to 15 feet bls												
C5ES-MW0001S	5 to 15	7.66	7.39	0.27	6.93	0.73	8.05	-0.39	7.00	0.66	8.42	-0.76
C5ES-MW0002S	5 to 15	6.74	6.48	0.26	5.93	0.81	7.13	-0.39	5.82	0.92	7.52	-0.78
C5ES-MW0003S	5 to 15	6.84	6.50	0.34	6.11	0.73	7.19	-0.35	6.20	0.64	7.55	-0.71
C5ES-MW0004S	5 to 15	6.64	6.35	0.29	6.08	0.56	7.10	-0.46		NM	7.48	-0.84
C5ES-MW0005S	5 to 15	7.11	6.97	0.14	6.41	0.70	7.58	-0.47	6.47	0.64	8.00	-0.89
C5ES-MW0006S	5 to 15	NA		NM				NM		NM		NM
C5ES-MW0007S	5 to 15	8.10	7.67	0.43	6.86	1.24	7.89	0.21	7.07	1.03	8.93	-0.83
C5ES-MW0008S	3 to 13	8.52	8.26	0.26	7.67	0.85	8.98	-0.46	7.76	0.76	9.28	-0.76
C5ES-MW0009S	5 to 15	8.33	8.08	0.25	7.53	0.80	8.72	-0.39	7.64	0.69	9.15	-0.82
C5ES-MW0010S	10 to 15	7.89	7.66	0.23	7.49	0.40	8.39	-0.50	7.58	0.31	8.73	-0.84
C5ES-MW0011S	10 to 15	2.09	1.97	0.12	1.63	0.46	2.66	-0.57	1.78	0.31	3.07	-0.98
C5ES-MW0012S	10 to 15	4.40		NI		NI		NI		NI		NI
C5ES-MW0012S	10 to 15	2.10	1.91		1.71	0.39	2.65	-0.55	1.73	0.37	2.93	-0.83
C5ES-MW0013S	9.5 to 14.5	7.98	7.63	0.35	6.94	1.04	8.04	-0.06	6.87	1.11	8.44	-0.46
C5ES-MW0016S	7 to 12	5.05	5.01	0.04	5.01	0.04	5.57	-0.52	4.49	0.56	6.00	-0.95
C5ES-MW0017S	7 to 12	3.23	3.20	0.03	3.22	0.01	3.67	-0.44	3.44	-0.21	4.14	-0.91
C5ES-MW0018S	7 to 12	3.47	3.43	0.04	3.45	0.02	3.92	-0.45	3.46	0.01	4.36	-0.89
C5ES-PZ0001	5 to 15	7.57	7.27	0.30	6.78	0.79	7.78	-0.21	6.91	0.66	7.81	-0.24
C5ES-PZ0002	5 to 15	5.32		NM		NM		NM		NM		NM
C5ES-PZ0003	5 to 15	6.71		NM		NM		NM		NM		NM
C5ES-MW0020	5 to 15	7.16		NI		NI		NI		NI		NI
C5ES-MW0021	5 to 15	7.58		NI		NI		NI		NI		NI
C5ES-MW0022	5 to 15	7.97		NI		NI		NI		NI		NI
C5ES-MW0023	5 to 15	3.12		NI		NI		NI		NI		NI
C5ES-MW0025	5 to 15	1.13		NI		NI		NI		NI		NI
13 to 38 feet bls												
C5ES-MW0001I	28 to 33	7.98	7.69	0.29	7.26	0.72	8.36	-0.38	7.26	0.72	7.56	0.42
C5ES-MW0003I	28 to 33	6.86	6.52	0.34	6.15	0.71	7.18	-0.32	6.17	0.69	7.70	-0.84
C5ES-MW0004I	28 to 33	6.88	6.60	0.28	6.33	0.55	7.32	-0.44		NM		NM
C5ES-MW0010I	20 to 25	8.04	7.77	0.27	7.68	0.36	8.48	-0.44	7.52	0.52	8.81	-0.77
C5ES-MW0011I	20 to 25	NA		NM		NM		NM		NM		NM
C5ES-MW0012I	20 to 25	2.05	1.84	0.21	1.56	0.49	2.54	-0.49	1.80	0.25	2.85	-0.80
C5ES-MW0013I	33 to 38	8.03	7.61	0.42	6.93	1.10	8.07	-0.04	6.92	1.11	8.48	-0.45
C5ES-MW0014I	33 to 38	4.81	4.30	0.51	3.70	1.11	4.81	0.00	3.74	1.07	5.25	-0.44
C5ES-MW0015I	33 to 38	4.47	3.91	0.56	2.38	2.09	4.40	0.07	3.22	1.25	4.81	-0.34
C5ES-MW0019I	13 to 23	2.56		NI	2.17	0.39	2.99	-0.43	2.23	0.33	3.43	-0.87
C5ES-MW0024	20 to 25	2.81		NI		NI		NI		NI		NI

Notes:

bls = below land surface
 BTOC = below top of casing
 NAVD88 = North American Vertical Datum of 1988
 TOC = top of casing
 NI = Not installed
 NM = Not measured

Table 3-1
Groundwater Elevation Data
C5 Electrical Substation (C5ES) - SWMU 066

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	11/13/09		05/19/10		11/09/10		05/09/11		10/28/11	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
3 to 15 feet bls												
C5ES-MW0001S	5 to 15	7.66	7.15	0.51	6.57	1.09	7.61	0.05	8.15	-0.49	6.91	0.75
C5ES-MW0002S	5 to 15	6.74	6.15	0.59	5.53	1.21	6.57	0.17	7.09	-0.35	5.77	0.97
C5ES-MW0003S	5 to 15	6.84	6.30	0.54	5.73	1.11	6.80	0.04	7.32	-0.48	6.06	0.78
C5ES-MW0004S	5 to 15	6.64	6.35	0.29	5.48	1.16	6.71	-0.07	7.29	-0.65	6.04	0.60
C5ES-MW0005S	5 to 15	7.11	6.71	0.40	6.12	0.99	7.13	-0.02	7.67	-0.56	6.38	0.73
C5ES-MW0006S	5 to 15	NA		NM		NM		NM		NM		NM
C5ES-MW0007S	5 to 15	8.10	7.16	0.94	6.64	1.46	7.57	0.53	8.40	-0.30	7.04	1.06
C5ES-MW0008S	3 to 13	8.52	7.95	0.57	7.31	1.21	8.36	0.16	8.86	-0.34	7.60	0.92
C5ES-MW0009S	5 to 15	8.33	7.83	0.50	7.21	1.12	8.24	0.09	8.76	-0.43	7.51	0.82
C5ES-MW0010S	10 to 15	7.89	8.05	-0.16	7.49	0.40	8.10	-0.21	8.91	-1.02	7.43	0.46
C5ES-MW0011S	10 to 15	2.09	1.77	0.32		NM	2.37	-0.28	2.99	-0.90	1.78	0.31
C5ES-MW0012S	10 to 15	4.40		NI		NI		NI		NI		NI
C5ES-MW0012S	10 to 15	2.10	2.00	0.10	1.59	0.51	2.31	-0.21	2.91	-0.81	1.68	0.42
C5ES-MW0013S	9.5 to 14.5	7.98	7.15	0.83	6.80	1.18	7.57	0.41	7.92	0.06	6.87	1.11
C5ES-MW0016S	7 to 12	5.05	5.50	-0.45	5.35	-0.30	5.53	-0.48	6.19	-1.14	5.14	-0.09
C5ES-MW0017S	7 to 12	3.23	3.30	-0.07	4.78	-1.55	4.73	-1.50	4.35	-1.12	3.39	-0.16
C5ES-MW0018S	7 to 12	3.47	3.59	-0.12	4.55	-1.08	3.93	-0.46	4.56	-1.09	3.57	-0.10
C5ES-PZ0001	5 to 15	7.57	7.19	0.38	6.56	1.01	7.60	-0.03	8.23	-0.66	6.46	1.11
C5ES-PZ0002	5 to 15	5.32		NM		NM		NM		NM		NM
C5ES-PZ0003	5 to 15	6.71		NM		NM		NM		NM		NM
C5ES-MW0020	5 to 15	7.16		NI		NI		NI		NI		NI
C5ES-MW0021	5 to 15	7.58		NI		NI		NI		NI		NI
C5ES-MW0022	5 to 15	7.97		NI		NI		NI		NI		NI
C5ES-MW0023	5 to 15	3.12		NI		NI		NI		NI		NI
C5ES-MW0025	5 to 15	1.13		NI		NI		NI		NI		NI
13 to 38 feet bls												
C5ES-MW0001I	28 to 33	7.98	7.41	0.57	6.56	1.42	7.67	0.31	7.43	0.55	6.61	1.37
C5ES-MW0003I	28 to 33	6.86	6.40	0.46	6.91	-0.05	6.81	0.05	7.32	-0.46	6.12	0.74
C5ES-MW0004I	28 to 33	6.88		NM	6.15	0.73	6.97	-0.09	7.55	-0.67	6.25	0.63
C5ES-MW0010I	20 to 25	8.04	7.89	0.15	7.70	0.34	8.28	-0.24	8.89	-0.85	7.72	0.32
C5ES-MW0011I	20 to 25	NA		NM		NM		NM		NM		NM
C5ES-MW0012I	20 to 25	2.05	1.93	0.12	1.78	0.27	2.31	-0.26	2.95	-0.90	1.84	0.21
C5ES-MW0013I	33 to 38	8.03	7.15	0.88	6.78	1.25	7.60	0.43	7.97	0.06	6.82	1.21
C5ES-MW0014I	33 to 38	4.81	4.21	0.60	3.56	1.25	4.30	0.51	4.74	0.07	3.65	1.16
C5ES-MW0015I	33 to 38	4.47	2.70	1.77	3.12	1.35	3.92	0.55	4.26	0.21	3.19	1.28
C5ES-MW0019I	13 to 23	2.56	2.39	0.17	2.15	0.41	2.76	-0.20	3.36	-0.80	2.02	0.54
C5ES-MW0024	20 to 25	2.81		NI		NI		NI		NI		NI

Notes:

bls = below land surface
 BTOC = below top of casing
 NAVD88 = North American Vertical Datum of 1988
 TOC = top of casing
 NI = Not installed
 NM = Not measured

Table 3-1
Groundwater Elevation Data
C5 Electrical Substation (C5ES) - SWMU 066

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	11/28/12		05/30-31/2013		11/19/14		07/22/20		07/27/2020	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
3 to 15 feet bls												
C5ES-MW0001S	5 to 15	7.66	7.26	0.40	7.29	0.37	6.64	1.02	6.94	0.72	7.08	0.58
C5ES-MW0002S	5 to 15	6.74	6.34	0.40	6.20	0.54	5.58	1.16		NM		NM
C5ES-MW0003S	5 to 15	6.84	6.37	0.47	6.47	0.37	5.81	1.03	6.06	0.78	6.20	0.64
C5ES-MW0004S	5 to 15	6.64	6.29	0.35	6.50	0.14	5.80	0.84		NM		NM
C5ES-MW0005S	5 to 15	7.11	6.82	0.29	6.81	0.30	6.13	0.98		NM		NM
C5ES-MW0006S	5 to 15	NA		NM		NM		NM		NM		NM
C5ES-MW0007S	5 to 15	8.10	7.40	0.70	7.12	0.98		NM		NM		NM
C5ES-MW0008S	3 to 13	8.52	8.01	0.51	7.97	0.55	7.29	1.23		NM		NM
C5ES-MW0009S	5 to 15	8.33	7.89	0.44	7.91	0.42	7.23	1.10		NM		NM
C5ES-MW0010S	10 to 15	7.89	7.63	0.26	7.97	-0.08	7.29	0.60		NM		NM
C5ES-MW0011S	10 to 15	2.09		NM		NM		NM	DESTROYED		DESTROYED	
C5ES-MW0012S	10 to 15	4.40		NI		NI	3.80	0.60		NM		NM
C5ES-MW0013S	10 to 15	2.10	1.56	0.54	2.20	-0.10	1.43	0.67		NM		NM
C5ES-MW0016S	9.5 to 14.5	7.98	7.42	0.56	7.24	0.74	6.82	1.16		NM		NM
C5ES-MW0017S	7 to 12	5.05	4.79	0.26		NM	4.91	0.14		NM		NM
C5ES-MW0017S	7 to 12	3.23	3.02	0.21	5.50	-2.27	3.10	0.13	3.24	-0.01		NM
C5ES-MW0018S	7 to 12	3.47	3.31	0.16	2.95	0.52	3.29	0.18	3.39	0.08		NM
C5ES-PZ0001	5 to 15	7.57	7.13	0.44	7.15	0.42	6.69	0.88		NM		NM
C5ES-PZ0002	5 to 15	5.32		NM		NM		NM		NM		NM
C5ES-PZ0003	5 to 15	6.71		NM		NM		NM		NM		NM
C5ES-MW0020	5 to 15	7.16		NI		NI		NI	6.48	0.68	6.58	0.58
C5ES-MW0021	5 to 15	7.58		NI		NI		NI	6.93	0.65	7.00	0.58
C5ES-MW0022	5 to 15	7.97		NI		NI		NI	7.26	0.71	7.38	0.59
C5ES-MW0023	5 to 15	3.12		NI		NI		NI	2.54	0.58	2.26	0.86
C5ES-MW0025	5 to 15	1.13		NI		NI		NI	2.23	-1.10		NM
13 to 38 feet bls												
C5ES-MW0001I	28 to 33	7.98	7.41	0.57	6.56	1.42	6.94	1.04	7.26	0.72	7.41	0.57
C5ES-MW0003I	28 to 33	6.86	6.44	0.42	6.52	0.34	5.89	0.97	6.15	0.71	6.28	0.58
C5ES-MW0004I	28 to 33	6.88	6.57	0.31	6.74	0.14	6.07	0.81		NM		NM
C5ES-MW0010I	20 to 25	8.04	7.73	0.31	8.13	-0.09	7.46	0.58		NM		NM
C5ES-MW0011I	20 to 25	NA		NM		NM		NM		NM		NM
C5ES-MW0012I	20 to 25	2.05	1.81	0.24	2.20	-0.15	1.50	0.55		NM		NM
C5ES-MW0013I	33 to 38	8.03	7.39	0.64	7.19	0.84	6.75	1.28		NM		NM
C5ES-MW0014I	33 to 38	4.81	4.15	0.66	3.96	0.85	3.50	1.31		NM		NM
C5ES-MW00015I	33 to 38	4.47	3.76	0.71	3.51	0.96		NM		NM		NM
C5ES-MW0019I	13 to 23	2.56	2.31	0.25	2.65	-0.09	1.92	0.64		NM		NM
C5ES-MW0024	20 to 25	2.81		NI		NI		NI	2.23	0.58	2.31	0.50

Notes:

bls = below land surface
 BTOC = below top of casing
 NAVD88 = North American Vertical Datum of 1988
 TOC = top of casing
 NI = Not installed
 NM = Not measured

Table 3-1
Groundwater Elevation Data
C5 Electrical Substation (C5ES) - SWMU 066

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	07/27/2020		07/28/20		07/29/20		08/05/20		08/12/20	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
3 to 15 feet bls												
C5ES-MW0001S	5 to 15	7.66	5.02	2.64	6.32	1.34	6.61	1.05	6.62	1.04	5.40	2.26
C5ES-MW0002S	5 to 15	6.74		NM		NM		NM		NM		NM
C5ES-MW0003S	5 to 15	6.84	5.76	1.08	5.51	1.33	5.70	1.14	5.38	1.46	5.09	1.75
C5ES-MW0004S	5 to 15	6.64		NM		NM		NM		NM		NM
C5ES-MW0005S	5 to 15	7.11		NM		NM		NM		NM		NM
C5ES-MW0006S	5 to 15	NA		NM		NM		NM		NM		NM
C5ES-MW0007S	5 to 15	8.10		NM		NM		NM		NM		NM
C5ES-MW0008S	3 to 13	8.52		NM		NM		NM		NM		NM
C5ES-MW0009S	5 to 15	8.33		NM		NM		NM		NM		NM
C5ES-MW0010S	10 to 15	7.89		NM		NM		NM		NM		NM
C5ES-MW0011S	10 to 15	2.09	DESTROYED		DESTROYED		DESTROYED		DESTROYED		DESTROYED	
C5ES-MW0011S	10 to 15	4.40		NM		NM		NM		NM		NM
C5ES-MW0012S	10 to 15	2.10		NM		NM		NM		NM		NM
C5ES-MW0013S	9.5 to 14.5	7.98		NM		NM		NM		NM		NM
C5ES-MW0016S	7 to 12	5.05		NM		NM		NM		NM		NM
C5ES-MW0017S	7 to 12	3.23		NM		NM		NM		NM		NM
C5ES-MW0018S	7 to 12	3.47		NM		NM		NM		NM		NM
C5ES-PZ0001	5 to 15	7.57		NM		NM		NM		NM		NM
C5ES-PZ0002	5 to 15	5.32		NM		NM		NM		NM		NM
C5ES-PZ0003	5 to 15	6.71		NM		NM		NM		NM		NM
C5ES-MW0020	5 to 15	7.16	5.71	1.45	5.10	2.06	6.10	1.06	7.19	-0.03	0.00	7.16
C5ES-MW0021	5 to 15	7.58	6.75	0.83	0.00	7.58	0.00	7.58	7.34	0.24	0.00	7.58
C5ES-MW0022	5 to 15	7.97	5.44	2.53	4.55	3.42	4.78	3.19	7.59	0.38	0.00	7.97
C5ES-MW0023	5 to 15	3.12	2.58	0.54	2.14	0.98	2.35	0.77	2.23	0.89	1.95	1.17
C5ES-MW0025	5 to 15	1.13		NM		NM		NM		NM		NM
13 to 38 feet bls												
C5ES-MW0001I	28 to 33	7.98	6.92	1.06	6.85	1.13	7.08	0.90	6.24	1.74	6.45	1.53
C5ES-MW0003I	28 to 33	6.86	5.38	1.48	5.69	1.17	5.90	0.96	5.35	1.51	5.42	1.44
C5ES-MW0004I	28 to 33	6.88		NM		NM		NM		NM		NM
C5ES-MW0010I	20 to 25	8.04		NM		NM		NM		NM		NM
C5ES-MW0011I	20 to 25	NA		NM		NM		NM		NM		NM
C5ES-MW0012I	20 to 25	2.05		NM		NM		NM		NM		NM
C5ES-MW0013I	33 to 38	8.03		NM		NM		NM		NM		NM
C5ES-MW0014I	33 to 38	4.81		NM		NM		NM		NM		NM
C5ES-MW0015I	33 to 38	4.47		NM		NM		NM		NM		NM
C5ES-MW0019I	13 to 23	2.56		NM		NM		NM		NM		NM
C5ES-MW0024	20 to 25	2.81	2.31	0.50	1.82	0.99		NM		NM		NM

Notes:

bls = below land surface
 BTOC = below top of casing
 NAVD88 = North American Vertical Datum of 1988
 TOC = top of casing
 NI = Not installed
 NM = Not measured

Table 3-1
Groundwater Elevation Data
C5 Electrical Substation (C5ES) - SWMU 066

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	08/19/20		09/29/20		10/20/20		11/20/20		12/30/20	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
3 to 15 feet bls												
C5ES-MW0001S	5 to 15	7.66	3.96	3.70	4.64	3.02	4.59	3.07	5.83	1.83	7.51	0.15
C5ES-MW0002S	5 to 15	6.74		NM				NM				NM
C5ES-MW0003S	5 to 15	6.84	3.23	3.61	3.13	3.71	3.03	3.81	4.93	1.91	9.11	-2.27
C5ES-MW0004S	5 to 15	6.64		NM				NM				NM
C5ES-MW0005S	5 to 15	7.11		NM				NM				NM
C5ES-MW0006S	5 to 15	NA		NM				NM				NM
C5ES-MW0007S	5 to 15	8.10		NM				NM				NM
C5ES-MW0008S	3 to 13	8.52		NM				NM				NM
C5ES-MW0009S	5 to 15	8.33		NM				NM				NM
C5ES-MW0010S	10 to 15	7.89		NM				NM				NM
C5ES-MW0011S	10 to 15	2.09	DESTROYED	DESTROYED	DESTROYED	DESTROYED	DESTROYED	DESTROYED	DESTROYED	DESTROYED	DESTROYED	DESTROYED
C5ES-MW0012S	10 to 15	4.40		NM				NM				NM
C5ES-MW0012S	10 to 15	2.10		NM				NM				NM
C5ES-MW0013S	9.5 to 14.5	7.98		NM				NM				NM
C5ES-MW0016S	7 to 12	5.05		NM				NM				NM
C5ES-MW0017S	7 to 12	3.23		NM				NM				NM
C5ES-MW0018S	7 to 12	3.47		NM				NM				NM
C5ES-PZ0001	5 to 15	7.57		NM				NM				NM
C5ES-PZ0002	5 to 15	5.32		NM				NM				NM
C5ES-PZ0003	5 to 15	6.71		NM				NM				NM
C5ES-MW0020	5 to 15	7.16	0.00	7.16	0.00	7.16	0.00	7.16	0.00	7.16	0.00	7.16
C5ES-MW0021	5 to 15	7.58	0.00	7.58	0.00	7.58	0.00	7.58	0.00	7.58	0.00	7.58
C5ES-MW0022	5 to 15	7.97	0.00	7.97	0.00	7.97	0.00	7.97	0.00	7.97	0.00	7.97
C5ES-MW0023	5 to 15	3.12		NM	0.10	3.02	1.46	1.66	1.81	1.31	2.54	0.58
C5ES-MW0025	5 to 15	1.13		NM				NM				NM
13 to 38 feet bls												
C5ES-MW0001I	28 to 33	7.98	5.16	2.82	5.24	2.74	5.13	2.85	6.48	1.50	7.65	0.33
C5ES-MW0003I	28 to 33	6.86	4.08	2.78	4.26	2.60	4.23	2.63	5.23	1.63	8.31	-1.45
C5ES-MW0004I	28 to 33	6.88		NM				NM				NM
C5ES-MW0010I	20 to 25	8.04		NM				NM				NM
C5ES-MW0011I	20 to 25	NA		NM				NM				NM
C5ES-MW0012I	20 to 25	2.05		NM				NM				NM
C5ES-MW0013I	33 to 38	8.03		NM				NM				NM
C5ES-MW0014I	33 to 38	4.81		NM				NM				NM
C5ES-MW0015I	33 to 38	4.47		NM				NM				NM
C5ES-MW0019I	13 to 23	2.56		NM				NM				NM
C5ES-MW0024	20 to 25	2.81		NM				NM				NM

Notes:

bls = below land surface
 BTOC = below top of casing
 NAVD88 = North American Vertical Datum of 1988
 TOC = top of casing
 NI = Not installed
 NM = Not measured

Table 3-1
Groundwater Elevation Data
C5 Electrical Substation (C5ES) - SWMU 066

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	04/22/21		10/21/21		07/27/21		10/21/21		01/19/22	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
3 to 15 feet bls												
C5ES-MW0001S	5 to 15	7.66	5.78	1.88	5.78	1.88						
C5ES-MW0002S	5 to 15	6.74										
C5ES-MW0003S	5 to 15	6.84	4.84	2.00	4.84	2.00						
C5ES-MW0004S	5 to 15	6.64										
C5ES-MW0005S	5 to 15	7.11										
C5ES-MW0006S	5 to 15	NA										
C5ES-MW0007S	5 to 15	8.10										
C5ES-MW0008S	3 to 13	8.52										
C5ES-MW0009S	5 to 15	8.33										
C5ES-MW0010S	10 to 15	7.89										
C5ES-MW0011S	10 to 15	2.09										
C5ES-MW0012S	10 to 15	2.10										
C5ES-MW0013S	9.5 to 14.5	7.98										
C5ES-MW0016S	7 to 12	5.05										
C5ES-MW0017S	7 to 12	3.23										
C5ES-MW0018S	7 to 12	3.47										
C5ES-PZ0001	5 to 15	7.57										
C5ES-PZ0002	5 to 15	5.32										
C5ES-PZ0003	5 to 15	6.71										
C5ES-MW0020	5 to 15	7.16	5.34	1.82	5.34	1.82	3.31	3.85	6.37	0.79	6.34	0.82
C5ES-MW0021	5 to 15	7.58	5.81	1.77	5.81	1.77	6.92	0.66	6.82	0.76	6.77	0.81
C5ES-MW0022	5 to 15	7.97	6.18	1.79	6.18	1.79	7.18	0.79	7.18	0.79	7.11	0.86
C5ES-MW0023	5 to 15	3.12										
C5ES-MW0025	5 to 15	1.13										
13 to 38 feet bls												
C5ES-MW00011	28 to 33	7.98										
C5ES-MW00031	28 to 33	6.86										
C5ES-MW00041	28 to 33	6.88										
C5ES-MW00101	20 to 25	8.04										
C5ES-MW00111	20 to 25	NA										
C5ES-MW00121	20 to 25	2.05										
C5ES-MW00131	33 to 38	8.03										
C5ES-MW00141	33 to 38	4.81										
C5ES-MW00151	33 to 38	4.47										
C5ES-MW00191	13 to 23	2.56										
C5ES-MW0024	20 to 25	2.81										

Notes:

bls = below land surface
 BTOC = below top of casing
 NAVD88 = North American Vertical Datum of 1988
 TOC = top of casing
 NI = Not installed
 NM = Not measured

Table 3-1
Groundwater Elevation Data
C5 Electrical Substation (C5ES) - SWMU 066

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	04/27/22		12/18/24	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
3 to 15 feet bls						
C5ES-MW0001S	5 to 15	7.66	7.51	0.15	7.11	0.55
C5ES-MW0002S	5 to 15	6.74	6.38	0.36	5.96	0.78
C5ES-MW0003S	5 to 15	6.84	6.55	0.29	6.30	0.54
C5ES-MW0004S	5 to 15	6.64	6.53	0.11	6.24	0.40
C5ES-MW0005S	5 to 15	7.11	6.74	0.37	6.41	0.70
C5ES-MW0006S	5 to 15	NA	NM	NM		NM
C5ES-MW0007S	5 to 15	8.10	NM	NM		NM
C5ES-MW0008S	3 to 13	8.52		NM	7.81	0.71
C5ES-MW0009S	5 to 15	8.33		NM	7.71	0.62
C5ES-MW0010S	10 to 15	7.89	7.99	-0.10	7.67	0.22
C5ES-MW0011S	10 to 15	2.09		DESTROYED		DESTROYED
C5ES-MW0012S	10 to 15	4.40	4.59	-0.19	4.07	0.33
C5ES-MW0013S	9.5 to 14.5	7.98	7.35	0.63		CANNOT LOCATE
C5ES-MW0016S	7 to 12	5.05	5.24	-0.19	4.98	0.07
C5ES-MW0017S	7 to 12	3.23	3.61	-0.38	3.19	0.04
C5ES-MW0018S	7 to 12	3.47	3.64	-0.17	3.40	0.07
C5ES-PZ0001	5 to 15	7.57		NM		NM
C5ES-PZ0002	5 to 15	5.32		NM		NM
C5ES-PZ0003	5 to 15	6.71		NM		NM
C5ES-MW0020	5 to 15	7.16	7.06	0.10	6.62	0.54
C5ES-MW0021	5 to 15	7.58	7.31	0.27	7.05	0.53
C5ES-MW0022	5 to 15	7.97	7.72	0.25	7.38	0.59
C5ES-MW0023	5 to 15	3.12	2.99	0.13	2.65	0.47
C5ES-MW0025	5 to 15	1.13	1.30	-0.17	0.81	0.32
13 to 38 feet bls						
C5ES-MW0001I	28 to 33	7.98	7.93	0.05	7.32	0.66
C5ES-MW0003I	28 to 33	6.86	6.63	0.23	6.28	0.58
C5ES-MW0004I	28 to 33	6.88	6.76	0.12	6.45	0.43
C5ES-MW0010I	20 to 25	8.04	8.09	-0.05	7.72	0.32
C5ES-MW0011I	20 to 25	NA		NM		CANNOT LOCATE
C5ES-MW0012I	20 to 25	2.05	2.05	0.00		CANNOT LOCATE
C5ES-MW0013I	33 to 38	8.03	7.33	0.70	7.02	1.01
C5ES-MW0014I	33 to 38	4.81	4.16	0.65		NM
C5ES-MW0015I	33 to 38	4.47	4.18	0.29		NM
C5ES-MW0019I	13 to 23	2.56	2.29	0.27	2.14	0.42
C5ES-MW0024	20 to 25	2.81	2.61	0.20	2.29	0.52

Notes:

bls = below land surface
 BTOC = below top of casing
 NAVD88 = North American Vertical Datum of 1988
 TOC = top of casing
 NI = Not installed
 NM = Not measured

Table 3-2
Groundwater Analytical Results
C5 Electrical Substation (C5ES) - SWMU 066

Category			Volatile Organic Compounds (VOCs) by Method 8260					
Analyte			TETRACHLOROETHENE	TRICHLOROETHENE	1,1-DICHLOROETHENE	CIS-1,2-DICHLOROETHENE	TRANS-1,2-DICHLOROETHENE	VINYL CHLORIDE
GCTL (µg/L)			3	3	7	70	100	1
NADC (µg/L)			300	300	70	700	1000	100
Location ID	Screened Interval (feet bls)	Sample Date						
C5ES-MW0001S	5 to 15	06/23/1998	0.50 U	0.41 U	1.4 IJ	25	4.8 IJ	50
		12/17/1998	1.0 U	2.5 IJ	2.4	67	6.3 IJ	36
		06/03/1999	1.3 IJ	1.3 IJ	0.45 U	26	7.0	25
		08/12/2014	0.23 U	0.17 U	0.15 U	0.16 U	0.16 U	0.16 U
		04/28/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.41 U
C5ES-MW0001I	28 to 33	06/23/1998	0.50 U	0.41 U	0.71 U	2 IJ	1.1 IJ	22
		06/23/1998 DUP	0.50 U	0.41 U	0.71 U	1.9 IJ	1.0 IJ	21
		12/18/1998	0.50 U	0.41 U	0.71 U	1.8 IJ	0.68 U	13
		06/03/1999	1.6 U	0.28 U	0.45 U	2 IJ	0.44 U	7.5 IJ
		08/12/2014	0.23 U	0.17 U	0.15 U	0.23 I	0.33 I	0.41 I
		04/28/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.41 U
C5ES-MW0002S	5 to 15	06/22/1998	0.50 U	0.41 U	0.71 U	0.48 U	0.68 U	0.88 U
		12/16/1998	0.50 U	0.41 U	0.71 U	1 IJ	0.68 U	0.88 U
C5ES-MW0003S	5 to 15	06/23/1998	0.50 U	0.41 U	0.71 U	1.5 IJ	1.6 IJ	39
		12/16/1998	0.50 U	0.41 U	0.71 U	0.48 U	0.68 U	0.95 IJ
		06/03/1999	1.6 U	0.28 U	0.45 U	1.1 IJ	0.44 U	0.50 U
		07/06/2007	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
		11/13/2014	0.46 U	0.38 U	0.60 U	0.44 U	0.58 U	0.52 U
C5ES-MW0003I	28 to 33	06/23/1998	0.50 U	0.41 U	0.71 U	0.48 U	0.68 U	0.88 U
		12/16/1998	0.50 U	0.41 U	0.71 U	2.5 IJ	0.77 IJ	0.88 U
		06/03/1999	1.6 U	0.28 U	0.45 U	3.1 IJ	1.3 IJ	0.50 U
		07/06/2007	1.0 U	1.0 U	1.0 U	2.2	1.0 U	1.0 U
C5ES-MW0004S	5 to 15	06/24/1998	0.50 U	16	3.8 IJ	150	10	86
		12/16/1998	2.0 IJ	1.1 IJ	0.71 U	50	1.8 IJ	15
		06/03/1999	1.6 UQ	0.28 UQ	0.45 UQ	4.5 IJQ	0.44 UQ	7.1 Q
		07/06/2007	1.0 U	1.0 U	1.0 U	9.3	1.7	22
		04/28/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.41 U
		12/18/2024	0.76 U	0.89 U	0.94 U	0.53 U	0.73 U	0.71 U
C5ES-MW0004I	28 to 33	06/24/1998	0.50 U	0.41 U	0.71 U	2.6 IJ	0.68 U	4.9 IJ
		12/16/1998	0.50 U	0.41 U	0.71 U	1.9 IJ	0.68 U	3.6 IJ
		06/03/1999	1.6 U	0.28 U	0.45 U	1.6 IJ	0.44 U	0.50 U
		07/06/2007	1.0 U	1.0 U	1.0 U	6.1	1.1	5.6
		04/28/2022	0.50 U	0.50 U	0.50 U	1.2	0.50 U	0.41 U
		12/18/2024	0.76 U	0.89 U	0.94 U	0.53 I	0.73 U	0.71 U
C5ES-MW0005S	5 to 15	06/22/1998	0.50 U	0.41 U	0.71 U	0.48 U	0.68 U	36
		12/16/1998	0.50 U	0.41 U	0.71 U	0.75 IJ	0.68 U	16
		11/13/2014	0.46 U	0.38 U	0.60 U	0.44 U	0.58 U	0.52 U
		04/28/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.41 U
C5ES-MW0006S	5 to 15	06/24/1998	0.50 U	0.41 U	0.71 U	0.48 U	0.68 U	0.88 U
		12/17/1998	0.50 U	0.41 U	0.71 U	0.48 U	0.68 U	0.88 U
C5ES-MW0007S	5 to 15	06/24/1998	0.50 U	0.41 U	0.71 U	0.48 U	0.68 U	0.88 U
		12/17/1998	0.50 U	0.41 U	0.71 U	0.48 U	0.68 U	0.88 U
C5ES-MW0008S	3 to 13	06/24/1998	0.50 U	0.41 U	0.71 U	1.1 IJ	0.68 U	0.88 U
		12/17/1998	0.50 U	0.41 U	0.71 U	0.48 U	0.68 U	1.1 IJ
		12/17/1998 DUP	0.50 U	0.41 U	0.71 U	0.48 U	0.68 U	1.2 IJ
		02/23/2015	0.23 U	0.19 U	0.30 U	0.22 U	0.29 U	0.26 U
C5ES-MW0009S	5 to 15	06/24/1998	0.50 U	0.41 U	17	26	7.1	110
		12/17/1998	5.0 U	4.1 U	11 IJ	16 IJ	8.4 IJ	204
		01/25/2001	1.6 U	0.28 U	1.3 IJ	3.3 IJ	3.5 IJ	80
		01/25/2001 DUP	1.6 U	0.28 U	1.1 IJ	3 IJ	3.1 IJ	73
		08/27/2001	1.4 IJ	1.6 IJ	0.45 U	0.69 IJ	0.44 U	1.5
		03/19/2002	1.0 IJ	1.6 IJ	0.45 U	1.2 IJ	0.44 U	0.50 U
		09/16/2002	1.6 U	0.28 U	0.45 U	0.84 IJ	0.44 U	2.6
		03/24/2003	1.7	0.50 I	1.0 U	1 U	1.0 U	1.0 U
		09/17/2003	0.41 I	1.0 U	1.0 U	1.0 U	1.0 U	5.9
		04/02/2004	4.8	1.0 U	1.0 U	1.0 U	1.0 U	0.69 I
		08/27/2004	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
		05/03/2005	0.90 J	0.50 U	0.50 U	0.50 U	0.50 U	0.63 J
		07/06/2007	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.3
		02/23/2015	0.23 U	0.19 U	0.30 U	0.22 U	0.29 U	0.26 U
		05/02/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.41 U
C5ES-MW0010S	10 to 15	12/15/1998	0.50 U	0.41 U	0.71 U	0.48 U	0.68 U	0.88 U
		06/03/1999	1.6 U	0.28 U	0.45 U	0.65 U	0.44 U	7.2
		01/24/2001	1.6 U	0.28 U	0.45 U	0.65 U	0.44 U	2.3
		08/27/2001	1.6 U	0.28 U	0.45 U	0.65 U	0.44 U	0.50 U
		03/20/2002	1.6 U	0.28 U	0.45 U	0.65 U	0.44 U	0.50 U
		09/16/2002	1.6 U	0.28 U	0.45 U	0.65 U	0.44 U	0.50 U

Table 3-2
Groundwater Analytical Results
C5 Electrical Substation (C5ES) - SWMU 066

Category			Volatile Organic Compounds (VOCs) by Method 8260					
Analyte			TETRACHLOROETHENE	TRICHLOROETHENE	1,1-DICHLOROETHENE	CIS-1,2-DICHLOROETHENE	TRANS-1,2-DICHLOROETHENE	VINYL CHLORIDE
GCTL (µg/L)			3	3	7	70	100	1
NADC (µg/L)			300	300	70	700	1000	100
Location ID	Screened Interval (feet bls)	Sample Date						
C5ES-MW00101	20 to 25	12/15/1998	2.5 U	2.0 U	3.6 U	2.4 U	3.4 U	87
		06/03/1999	1.6 U	0.28 U	0.45 U	0.65 U	0.44 U	150
		01/24/2001	1.6 U	0.28 U	0.45 U	0.65 U	1.3 U	66
		08/28/2001	1.6 U	0.28 U	0.45 U	0.65 U	1.2 U	48
		03/20/2002	1.6 U	0.28 U	0.45 U	0.65 U	0.44 U	6.7
		09/16/2002	1.6 U	0.28 U	0.45 U	0.65 U	0.44 U	28
		09/16/2002 DUP	1.6 U	0.28 U	0.45 U	0.65 U	0.44 U	29
		03/24/2003	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	21
		09/16/2003	1.0 U	1.0 U	1.0 U	1.0 U	0.63 U	12
		04/01/2004	1.0 U	1.0 U	1.0 U	1.0 U	3.7	52
		08/30/2004	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
		05/03/2005	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	10
		11/02/2005	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	3.8
		05/17/2006	0.50 U	0.50 U	0.50 U	2.5	1.3	79
		11/08/2006	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	3.2
		05/15/2007	0.50 U	0.76 U	0.50 U	3.5	0.75 U	19
		11/13/2007	0.25 U	0.38 U	0.23 U	0.28 U	0.20 U	0.34 U
		05/19/2008	0.25 U	0.38 U	0.23 U	2.6	1.6	93
		11/10/2008	0.22 U	0.32 U	0.54 U	0.5 U	0.45 U	6.7
		05/14/2009	0.22 U	0.32 U	0.54 U	2.3	1.8	60
		11/05/2009	0.22 U	0.15 U	0.16 U	0.7 U	0.68 U	17
		05/18/2010	0.17 U	0.12 U	0.41 U	0.38 U	0.39 U	3.6
		11/09/2010	0.11 U	0.16 U	0.16 U	0.75 U	0.49 U	5.3
		05/09/2011	0.11 U	0.16 U	0.16 U	0.66 U	0.46 U	4.7
		10/28/2011	0.11 U	0.16 U	0.16 U	0.37 U	0.34 U	0.22 U
		11/28/2012	0.11 U	0.16 U	0.16 U	0.55 U	0.64 U	6.7
		05/30/2013	0.11 U	0.16 U	0.16 U	0.36 U	0.43 U	2.0
		11/18/2014	0.58 U	0.5 U	0.5 U	0.5 U	0.5 U	0.63 U
		05/27/2016	0.58 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
C5ES-MW0011S	10 to 15	12/15/1998	1.0 U	0.82 U	1.4 U	5.2 U	3.8 U	80
		06/03/1999	1.6 U	0.28 U	0.45 U	5.1	2.7 U	67
		01/24/2001	1.6 U	0.28 U	0.45 U	0.89 U	2.0 U	45
		08/27/2001	1.6 U	0.28 U	0.45 U	0.65 U	0.72 U	5.1
		03/20/2002	1.6 U	0.28 U	0.45 U	0.65 U	0.44 U	1.8
		09/16/2002	1.6 U	0.28 U	0.45 U	0.65 U	0.44 U	0.50 U
		03/24/2003	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
		11/18/2014	0.58 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
C5ES-MW0011I	20 to 25	12/15/1998	0.50 U	0.41 U	0.71 U	2.1 U	0.87 U	22
		06/03/1999	1.6 U	0.28 U	0.45 U	2.2 U	1.3 U	28
		01/24/2001	1.6 U	0.28 U	0.45 U	0.95 U	0.74 U	17
		08/27/2001	1.6 U	0.28 U	2.5 U	1.6 U	2.2 U	34
		03/20/2002	1.6 U	0.28 U	0.45 U	0.62 U	0.84 U	9.4
		09/16/2002	1.6 U	0.28 U	0.45 U	0.65 U	0.44 U	6.6
		03/24/2003	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
		03/24/2003 DUP	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
		09/16/2003	1.0 U	1.0 U	1.0 U	0.79 U	1.0 U	1.5
		04/02/2004	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
		08/30/2004	1.0 U	1.0 U	1.0 U	0.62 U	1.0 U	0.60 U
C5ES-MW0012S	10 to 15	12/15/1998	1.0 U	2.2 U	0.79 U	50	3.1 U	38
		12/15/1998 DUP	1.0 U	3.3 U	1.4 U	67	4.1 U	58
		06/03/1999	1.6 U	4.2	0.45 U	71	16	230 U
		06/08/1999	-	-	-	-	-	200 Q
		01/24/2001	1.6 U	0.43 U	0.45 U	12	1.4 U	28
		08/28/2001	1.6 U	0.28 U	0.45 U	0.65 U	0.44 U	2.6
		03/20/2002	1.6 U	0.28 U	0.45 U	1.8 U	0.58 U	6.5
		09/16/2002	1.6 U	0.28 U	0.45 U	7.7	0.44 U	8.9
		03/24/2003	1.0 U	1.0 U	1.0 U	5.3	1.2	9.9
		09/16/2003	1.0 U	1.0 U	1.0 U	1.4	1.0 U	6.8
		04/01/2004	1.0 U	1.0 U	1.0 U	0.69 U	1.0 U	5.7
		08/30/2004	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.75 U
		05/03/2005	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.8
		11/02/2005	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	6.2
		05/17/2006	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	6.1
		11/08/2006	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	3.0
		05/15/2007	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	7.3
		11/13/2007	0.25 U	0.38 U	0.23 U	2.2	0.64 U	17
		05/19/2008	0.25 U	0.38 U	0.23 U	0.58 U	0.81 U	22
		11/10/2008	0.22 U	0.32 U	0.54 U	0.48 U	0.45 U	1.2
		05/14/2009	0.22 U	0.32 U	0.54 U	0.31 U	0.45 U	3.1
		11/05/2009	0.22 U	0.15 U	0.16 U	0.41 U	0.13 U	3.9
		05/18/2010	0.17 U	0.12 U	0.41 U	0.35 U	0.39 U	0.16 U
		11/09/2010	0.11 U	0.16 U	0.16 U	1.1	0.40 U	5.4
		05/09/2011	0.11 U	0.16 U	0.16 U	0.36 U	0.15 U	1.4
		10/28/2011	0.11 U	0.16 U	0.16 U	0.99 U	0.41 U	10
		11/28/2012	0.11 U	0.16 U	0.16 U	0.91 U	0.35 U	5.0
		05/31/2013	0.11 U	0.16 U	0.16 U	0.36 U	0.12 U	0.22 U
		11/18/2014	0.58 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
		05/27/2016	0.58 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

Table 3-2
Groundwater Analytical Results
C5 Electrical Substation (C5ES) - SWMU 066

Category			Volatile Organic Compounds (VOCs) by Method 8260					
Analyte			TETRACHLOROETHENE	TRICHLOROETHENE	1,1-DICHLOROETHENE	CIS-1,2-DICHLOROETHENE	TRANS-1,2-DICHLOROETHENE	VINYL CHLORIDE
GCTL (µg/L)			3	3	7	70	100	1
NADC (µg/L)			300	300	70	700	1000	100
Location ID	Screened Interval (feet bls)	Sample Date						
C5ES-MW00121	20 to 25	12/15/1998	0.50 U	0.41 U	0.71 U	8.1	1.1 IJ	27
		06/03/1999	1.6 UQ	0.28 UQ	0.45 UQ	6.2 Q	1.2 IJQ	27 Q
		01/24/2001	1.6 U	0.84 IJ	0.53 IJ	18	2.0 IJ	81
		08/28/2001	1.6 U	1.4 IJ	1.0 IJ	64	4.1 IJ	67
		03/20/2002	1.6 U	0.28 U	0.87 IJ	60	4.0 IJ	73
		09/16/2002	1.6 U	0.28 U	0.45 U	42	4.4 IJ	100
		03/24/2003	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U
		09/16/2003	1.0 U	1.0 U	1.0 U	13	2.7	42
		09/16/2003 DUP	1.0 U	0.65 I	1.0 U	15	2.4	34
		04/01/2004	1.0 U	1.0 U	1.0 U	10	4.8	54
		08/30/2004	1.0 U	0.63 IU	1.0 U	28	3.7	54
		05/03/2005	0.50 U	0.50 U	0.50 U	4	1.3	9.1
		11/02/2005	0.50 U	0.50 U	0.50 U	2.7	1.2	9.9
		05/17/2006	0.50 U	0.50 U	0.50 U	1.4	1.5	16
		11/08/2006	0.50 U	0.50 U	0.50 U	2	0.81 I	8.9
		05/15/2007	0.50 U	0.50 U	0.50 U	1.1	0.57 I	4.1
		11/13/2007	0.25 U	0.38 U	0.23 U	0.96 I	0.20 U	3.0
		05/19/2008	0.25 U	0.38 U	0.23 U	2.1	1.1	10
		11/10/2008	0.22 U	0.32 U	0.54 U	4.6	1.1	27
		05/14/2009	0.22 U	0.32 U	0.54 U	2.2	1.3	7.6
		11/05/2009	0.22 U	0.15 U	0.16 U	2.6	1.2	13
		05/18/2010	0.17 U	0.12 U	0.41 U	1.7	0.43 I	9.9
		11/09/2010	0.11 U	0.16 U	0.16 U	1.5	0.44 I	1.1
		05/09/2011	0.11 U	0.16 U	0.16 U	1.3	0.78 I	4.5
		10/28/2011	0.11 U	0.16 U	0.16 U	1.1	0.57 I	2.3
		11/28/2012	0.11 U	0.16 U	0.16 U	0.59 I	0.62 I	2.4
		05/31/2013	0.11 U	0.16 U	0.16 U	0.36 U	0.12 U	0.22 U
		11/18/2014	0.58 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
		05/27/2016	0.58 U	0.5 U	0.5 U	0.5 U	0.65 I	0.5 U
C5ES-MW0013S	9.5 to 14.5	12/14/1998	0.50 U	0.41 U	0.71 U	0.48 U	0.68 U	0.88 U
		08/12/2014	0.23 U	0.17 U	0.15 U	0.16 U	0.16 U	0.16 U
C5ES-MW0013I	33 to 38	12/14/1998	0.50 U	6.6	1.0 IJ	9.4	1.8 IJ	0.88 U
		01/24/2001	1.6 U	3.7	0.76 IJ	7.3	1.6 IJ	2.0
		08/28/2001	1.6 U	1.7 IJ	0.45 U	2.6 IJ	0.44 U	0.50 U
		03/19/2002	1.6 U	1.2 IJ	0.45 U	3.6 IJ	0.79 IJ	0.50 U
		09/16/2002	1.6 U	0.95 IJ	0.45 U	1.8 IJ	0.44 U	0.50 U
		08/12/2014	0.23 U	0.17 U	0.15 U	0.16 U	0.16 U	0.48 I
C5ES-MW0014I	33 to 38	12/14/1998	1.0 U	1.4 IJ	1.4 U	7.4 IJ	1.4 U	1.8 U
		01/25/2001	1.6 U	5.2	0.5 IJ	8.1	2.7 IJ	7.7
		08/28/2001	1.6 U	2.5 IJ	0.45 U	1.1 IJ	1.2 IJ	5.2
		03/19/2002	1.6 U	1.1 IJ	0.45 U	1.3 IJ	0.56 IJ	1.6 IJ
		09/17/2002	1.6 U	1.4 IJ	0.45 U	2.7 IJ	1.3 IJ	6.5
		03/24/2003	1.0 U	1.0 U	1.0 U	0.71	1.0 U	1.1
		09/16/2003	1.0 U	1.3	1.0 U	0.87 I	1.4	5.0
		04/02/2004	1.0 U	3.0	1.0 U	0.49 I	1.0 U	4.6
		08/27/2004	1.0 U	1.0	1.0 U	1.0	1.0 U	2.4
		05/03/2005	0.50 U	0.85 J	0.50 U	0.84 J	0.50 U	2.3
		11/02/2005	0.50 U	1.1	0.50 U	0.56 I	0.53 I	2.2
		05/17/2006	0.50 U	0.64 I	0.50 U	0.50 U	0.50 U	2.6
		11/08/2006	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	8.8
		05/15/2007	0.50 U	0.55 I	0.50 U	0.50 U	0.50 U	2.1
		11/13/2007	0.25 U	0.55 I	0.23 U	0.28 U	0.39 I	0.34 U
		05/19/2008	0.25 U	0.41 I	0.23 U	0.28 U	0.28 I	2.1
		11/10/2008	0.22 U	0.43 I	0.54 U	0.82 I	0.45 U	1.4
		05/14/2009	0.22 U	0.38 I	0.54 U	0.90 I	0.45 U	1.2
		11/05/2009	0.22 U	0.15 U	0.16 U	0.79 I	0.13 U	0.78 I
		05/19/2010	0.17 U	0.12 U	0.41 U	0.51 I	0.39 U	0.16 U
		11/09/2010	0.11 U	0.35 I	0.16 U	0.68 I	0.12 U	0.95 I
		08/11/2014	0.23 U	0.17 U	0.15 U	0.16 U	0.16 U	0.16 U
C5ES-MW0015I	33 to 38	12/14/1998	0.50 U	0.41 U	0.71 U	7.0	0.68 U	0.88 U
		01/24/2001	1.6 U	0.96 IJ	0.45 U	3.7 IJ	0.49 IJ	2.3
		08/28/2001	1.6 U	0.97 IJ	0.45 U	2.1 IJ	0.44 U	1.0
		03/19/2002	1.6 U	0.28 U	0.45 U	2.1 IJ	0.44 U	0.50 U
		09/17/2002	1.6 U	0.28 U	0.45 U	1.7 IJ	1.8 IJ	0.50 U
		09/17/2002 DUP	1.6 U	0.28 U	0.45 U	1.4 IJ	0.44 U	0.50 U
C5ES-MW0016S	7 to 12	06/03/1999	1.6 U	0.28 U	0.45 U	0.65 U	0.44 U	1.6 IJ
		01/25/2001	1.6 U	0.28 U	0.45 U	0.65 U	0.44 U	4.4
		08/27/2001	1.6 U	0.28 U	0.45 U	0.65 U	0.44 U	7.8
		03/20/2002	1.6 U	0.28 U	0.45 U	0.65 U	0.58 IJ	11
		09/16/2002	1.6 U	0.28 U	0.45 U	0.65 U	0.44 U	12
		03/24/2003	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
		09/16/2003	1.0 U	1.0 U	1.0 U	1.0 U	0.65 I	5.1
		04/01/2004	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.9
		08/27/2004	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
		05/03/2005	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.87 J

Table 3-2
Groundwater Analytical Results
C5 Electrical Substation (C5ES) - SWMU 066

Category			Volatile Organic Compounds (VOCs) by Method 8260					
Analyte			TETRACHLOROETHENE	TRICHLOROETHENE	1,1-DICHLOROETHENE	CIS-1,2-DICHLOROETHENE	TRANS-1,2-DICHLOROETHENE	VINYL CHLORIDE
GCTL (µg/L)			3	3	7	70	100	1
NADC (µg/L)			300	300	70	700	1000	100
Location ID	Screened Interval (feet bls)	Sample Date						
C5ES-MW0017S	7 to 12	06/03/1999	1.6 U	0.28 U	0.45 U	1.7 IJ	1.9 IJ	34
		06/03/1999 DUP	1.6 U	0.28 U	0.45 U	1.8 IJ	2.1 IJ	34
		01/25/2001	1.6 U	0.28 U	0.45 U	6.6	4.6 IJ	99
		08/27/2001	1.6 U	0.28 U	0.45 U	3.3	3.5	34
		03/19/2002	1.6 U	0.28 U	0.45 U	2.9 IJ	3.1 IJ	53
		09/16/2002	1.6 U	0.28 U	0.45 U	1.5 IJ	3.8 IJ	64
		03/24/2003	1.0 U	1.0 U	1.0 U	1.0 U	1.1	11
		09/16/2003	1.0 U	1.0 U	1.0 U	0.61 I	1.7	19
		04/01/2004	1.0 U	1.0 U	1.0 U	0.75 I	4.8	25
		08/27/2004	1.0 U	1.0 U	1.0 U	0.83 IJ	1.7	18
		05/03/2005	0.50 U	0.50 U	0.50 U	0.85 J	2.1	54
		11/03/2005	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	5.3
		05/17/2006	0.50 U	0.50 U	0.50 U	0.65 I	0.50 U	5.6
		11/08/2006	0.50 U	0.50 U	0.50 U	0.50 U	0.80 I	7.9
		05/15/2007	0.50 U	0.50 U	0.50 U	0.66 I	0.65 I	4.5
		11/13/2007	0.25 U	0.38 U	0.23 U	0.28 U	0.20 U	0.34 U
		05/19/2008	0.25 U	0.38 U	0.23 U	0.52 I	0.64 I	4.8
		11/10/2008	0.22 U	0.32 U	0.54 U	0.38 I	0.49 I	4.5
		05/14/2009	0.22 U	0.32 U	0.54 U	0.63 I	0.69 I	5.1
		11/05/2009	0.22 U	0.15 U	0.16 U	0.43 I	0.54 I	2.7
		05/19/2010	0.17 U	0.12 U	0.41 U	0.31 I	0.39 U	3.9
		11/09/2010	0.11 U	0.16 U	0.16 U	0.36 U	0.29 I	1.4
		05/09/2011	0.11 U	0.16 U	0.16 U	0.56 I	0.43 I	1.5
		10/28/2011	0.11 U	0.16 U	0.16 U	0.52 I	0.30 I	0.68 I
		11/28/2012	0.11 U	0.16 U	0.16 U	0.59 I	0.30 I	0.52 I
		05/30/2013	0.11 U	0.16 U	0.16 U	0.36 U	0.12 U	0.22 U
		11/18/2014	0.58 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
		05/27/2016	0.58 U	0.5 U	0.5 U	0.5 U	0.65 I	0.5 U
		10/01/2018	0.50 U	0.61 U	0.26 U	0.32 U	0.39 U	1.6
		07/23/2020	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.41 U
		05/02/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.41 U
C5ES-MW0018S	7 to 12	06/03/1999	1.6 U	0.28 U	0.45 U	2.5 IJ	0.44 U	23
		01/25/2001	1.6 U	0.28 U	0.45 U	7.3	2.4 IJ	120
		08/27/2001	1.6 U	0.28 U	0.45 U	3.7 IJ	1.1 IJ	33
		03/20/2002	1.6 U	0.28 U	0.45 U	3.5 IJ	4.3 IJ	120
		09/16/2002	1.6 U	0.28 U	0.45 U	1.2 IJ	1.9 IJ	71
		03/24/2003	1.0 U	1.0 U	1.0 U	0.8 I	3.6	99
		09/16/2003	1.0 U	1.0 U	1.0 U	3.9	3.8	55
		04/01/2004	1.0 U	1.0 U	1.0 U	1.9	5.6	120
		08/27/2004	1.0 U	1.0 U	1.0 U	1.0 U	3.4	110
		05/03/2005	0.50 U	0.50 U	0.50 U	0.50 U	1.2	10
		11/02/2005	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	9.3
		05/17/2006	0.50 U	0.50 U	0.50 U	3.7	5.3	103
		11/08/2006	1.0 U	1.0 U	1.0 U	6.5	3.9	100
		05/15/2007	0.50 U	0.50 U	0.50 U	3.4	3.4	85
		11/13/2007	0.25 U	0.38 U	0.23 U	7.2	6.6	116
		05/19/2008	0.25 U	0.38 U	0.23 U	8.7	6.2	129
		11/10/2008	0.22 U	0.32 U	0.54 U	1.6	5.2	121
		05/14/2009	0.22 U	0.32 U	0.54 U	4.9	9.4	174
		11/05/2009	0.22 U	0.15 U	0.16 U	31	13	210
		05/19/2010	0.17 U	0.12 U	0.41 U	0.68 I	3.6	71
		11/09/2010	0.11 U	0.16 U	0.16 U	4.3	6.6	130
		05/09/2011	0.11 U	0.16 U	0.16 U	1.6	5.1	130
		10/28/2011	0.11 U	0.16 U	0.16 U	1.3	4.3	110
		11/28/2012	0.11 U	0.16 U	0.16 U	1.5	8.6	170
		05/30/2013	0.11 U	0.16 U	0.16 U	0.85 I	7.7	160
		11/18/2014	0.58 U	0.5 U	0.5 U	0.5 U	3.9	96
		05/27/2016	0.58 U	0.5 U	0.5 U	0.5 U	1.7	23
		10/01/2018	0.50 U	0.61 U	0.26 U	0.32 U	1.6 I	14
		07/23/2020	0.50 U	0.50 U	0.50 U	0.50 U	0.49 J	6.2
		05/02/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.1
		12/18/2024	0.76 U	0.89 U	0.94 U	0.53 U	0.73 U	0.71 U
C5ES-MW0019I	13 to 23	11/13/2007	0.25 U	0.38 U	0.23 U	12	8.2	189
		05/19/2008	0.25 U	0.38 U	0.23 U	6.2	8.4	206
		11/10/2008	0.22 U	0.32 U	0.54 U	3.4	8.0	183
		05/14/2009	0.22 U	0.32 U	0.54 U	2.6	6.5	101
		11/05/2009	0.22 U	0.15 U	0.16 U	1.6	5.9	120
		05/19/2010	0.17 U	0.12 U	0.41 U	6.4	5.9	140
		11/09/2010	0.11 U	0.16 U	0.16 U	9.6	7.2	150
		05/09/2011	0.11 U	0.16 U	0.16 U	7.1	8.0	180
		10/28/2011	0.11 U	0.16 U	0.16 U	6.7	7.4	190
		11/28/2012	0.11 U	0.16 U	0.16 U	1.2	7.8	160
		05/30/2013	0.11 U	0.16 U	0.16 U	37	9.8	180
		11/18/2014	0.58 U	0.5 U	0.5 U	0.5 U	0.5 U	5.4
		05/27/2016	0.58 U	0.5 U	0.5 U	0.5 U	1.7	29.0
		10/01/2018	0.50 U	0.61 U	0.26 U	0.32 U	1.7 I	31
		07/22/2020	0.50 U	0.50 U	0.50 U	0.50 U	0.86 J	11.3
C5ES-MW0020	5 to 15	04/28/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	4.2
		12/18/2024	0.76 U	0.89 U	0.94 U	0.53 U	0.73 U	0.71 U
		07/22/2020	0.50 U	0.50 U	0.50 U	0.76 J	1.1	19.6
		10/22/2020	0.50 U	0.50 U	0.50 U	8.8	0.86 J	0.41 U
		01/28/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.41 U
		04/22/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.41 U
		07/27/2021	0.50 U	0.50 U	0.50 U	0.61 J	0.50 U	0.73 J
		10/21/2021	0.50 U	0.38 J	0.50 U	4.7	0.50 U	1.2
C5ES-MW0021	5 to 15	01/19/2022	0.50 U	0.50 U	0.50 U	1.8	0.23 J	0.50 J
		04/28/2022	0.50 U	0.50 U	0.50 U	2.1	0.50 U	1.3
		07/22/2020	0.50 U	0.50 U	0.50 U	2.7	5.4	83.1
		10/22/2020	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.041 U
		01/28/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.041 U
		04/22/2021	0.50 U	0.50 U	0.50 U	0.69 J	0.50 U	1.7
		07/27/2021	0.29 J	0.50 U	0.50 U	6.5	0.60 J	3.0
		10/21/2021	0.50 U	0.50 U	0.50 U	5.6	0.99 J	7.6
		01/19/2022	0.50 U	0.50 U	0.50 U	3.9	0.75 J	6.9
		04/28/2022	0.50 U	0.50 U	0.50 U	1.8	0.50 U	4.0
		12/18/2024	0.76 U	0.89 U	0.94 U	7.6	2.1	14

Table 3-2
Groundwater Analytical Results
C5 Electrical Substation (C5ES) - SWMU 066

Category			Volatile Organic Compounds (VOCs) by Method 8260					
Analyte			TETRACHLOROETHENE	TRICHLOROETHENE	1,1-DICHLOROETHENE	CIS-1,2-DICHLOROETHENE	TRANS-1,2-DICHLOROETHENE	VINYL CHLORIDE
GCTL (µg/L)			3	3	7	70	100	1
NADC (µg/L)			300	300	70	700	1000	100
Location ID	Screened Interval (feet bls)	Sample Date						
C5ES-MW0022	5 to 15	07/22/2020	0.23 J	0.77 J	0.50 U	12.3	5.6	76.9
		10/22/2020	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.041 U
		01/28/2021	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.041 U
		04/22/2021	1.1	1.2	0.50 U	13.1	1.7	0.49 J
		07/27/2021	0.50 U	0.50 U	0.50 U	3.2	0.53 J	1.4
		10/21/2021	0.50 U	0.50 U	0.50 U	6.2	0.67 J	2.9
		01/19/2022	0.50 U	0.50 U	0.50 U	10.2	0.74 J	1.7
		04/28/2022	0.50 U	0.50 U	0.50 U	1.8	0.50 U	1.2
		12/18/2024	0.76 U	0.89 U	0.94 U	2.8	0.73 U	3.4
C5ES-MW0023	5 to 15	07/22/2020	0.50 U	0.50 U	0.50 U	1.4	1.4	32.7
		04/28/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	3.0
		12/18/2024	0.76 U	0.89 U	0.94 U	0.53 U	0.73 U	2.2
C5ES-MW0024	20 to 25	7/22/2020	0.50 U	0.50 U	0.50 U	0.50 U	0.42 J	1.1
		12/18/2024	0.76 U	0.89 U	0.94 U	0.53 U	0.73 U	0.71 U
C5ES-MW0025	5 to 15	7/22/2020	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	4.1
		05/02/2022	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.41 U
		12/18/2024	0.76 U	0.89 U	0.94 U	0.53 U	0.73 U	0.71 U

Notes:

Bolded results indicate the presence of an analyte at the specified concentration.

Blue font indicates an exceedance of GCTLs.

Red font indicates an exceedance of NADCs.

Blank cells indicate the analyte was not analyzed for that specific well.

bls = below ground surface

GCTL = Groundwater Cleanup Target Level, Chapter 62-777 Florida Administrative Code, Table 1 (2005)

I = Analytical result is greater than or equal to the method detection limit, but less than the practical quantitation limit

J = Estimated value

NADC = Natural Attenuation Default Concentration, Chapter 62-777 Florida Administrative Code, Table V (2005)

Q = Sample held beyond holding time

SWMU = Solid Waste Management Unit

U = Analyte was not detected

µg/L = micrograms per liter

Table 4-1
Groundwater Elevation Data
Former Development and Testing Laboratory (FDTL) - SWMU 075

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	02/28/11		09/12/11		03/26/12		09/17/12		09/03/13	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
5 to 15 feet bls												
FDTL-IW0006S	5 to 15	3.86	5.85	-1.99	4.71	-0.85	6.40	-2.54	5.08	-1.22		NM
FDTL-IW0015S	5 to 15	5.21	7.16	-1.95	5.97	-0.76	7.76	-2.55	6.48	-1.27	6.27	-1.06
FDTL-IW0018I	5 to 15	4.44	6.48	-2.04	5.39	-0.95	6.98	-2.54	5.98	-1.54		NM
10 to 35 feet bls												
FDTL-IW0003I	15 to 25	4.50	6.30	-1.80	6.24	-1.74	5.19	-0.69	6.17	-1.67		NM
FDTL-IW0004I	15 to 25	4.72	6.62	-1.90	5.55	-0.83	7.31	-2.59	5.91	-1.19	5.90	-1.18
FDTL-IW0005I	25 to 35	4.65	6.69	-2.04	5.47	-0.82	7.12	-2.47	5.99	-1.34		NM
FDTL-IW0007I	10 to 20	2.15	4.12	-1.97	3.06	-0.91	4.70	-2.55	3.43	-1.28	3.21	-1.06
FDTL-IW0008I	10 to 20	2.85	4.85	-2.00	3.76	-0.91	5.40	-2.55	4.11	-1.26		NM
FDTL-IW0009I	10 to 20	2.11	4.10	-1.99	3.04	-0.93	4.65	-2.54	3.34	-1.23	3.16	-1.05
FDTL-IW0010I	10 to 20	2.67	4.65	-1.98	3.59	-0.92	5.21	-2.54	3.92	-1.25	3.74	-1.07
FDTL-IW0011I	10 to 20	4.13	6.17	-2.04	5.07	-0.94	6.72	-2.59	5.49	-1.36		NM
FDTL-IW0012I	10 to 20	2.34	4.30	-1.96	3.19	-0.85	4.90	-2.56	3.58	-1.24		NM
FDTL-IW0013I	10 to 20	4.97	6.95	-1.98	5.89	-0.92	7.47	-2.50	6.24	-1.27	6.01	-1.04
FDTL-IW0014I	10 to 20	4.17	6.14	-1.97		NM	7.84	-3.67	6.60	-2.43	6.39	-2.22
FDTL-IW0016I	10 to 20	3.92	5.82	-1.90	4.65	-0.73	6.44	-2.52	5.14	-1.22		NM
FDTL-IW0017I	10 to 20	1.74	3.90	-2.16		NM	4.40	-2.66	3.13	-1.39	2.87	-1.13
FDTL-IW0019I	10 to 20	3.26	5.40	-2.14	4.37	-1.11	5.99	-2.73	4.67	-1.41	4.52	-1.26
FDTL-IW0020I	10 to 20	2.43	4.62	-2.19	3.52	-1.09	5.20	-2.77	3.93	-1.50		NM

Notes:

bls = below land surface

BTOC = below top of casing

NAVD88 = North American Vertical Datum of 1988

TOC = top of casing

NM = not measured

Table 4-1
Groundwater Elevation Data
Former Development and Testing Laboratory (FDTL) - SWMU 075

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	5/22/2014		05/25/16		09/20/18		06/01/20		05/08/23	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
5 to 15 feet bls												
FDTL-IW0006S	5 to 15	3.86			5.48	-1.62	4.95	-1.09	5.31	-1.45	6.86	-3.00
FDTL-IW0015S	5 to 15	5.21	6.92	-1.71	6.82	-1.61	6.29	-1.08	6.63	-1.42	8.15	-2.94
FDTL-IW0018I	5 to 15	4.44			6.17	-1.73	5.71	-1.27	6.10	-1.66	7.18	-2.74
10 to 35 feet bls												
FDTL-IW0003I	15 to 25	4.50			5.91	-1.41	6.47	-1.97	6.31	-1.81	7.11	-2.61
FDTL-IW0004I	15 to 25	4.72	6.29	-1.57	6.32	-1.60	5.83	-1.11	6.31	-1.59	7.74	-3.02
FDTL-IW0005I	25 to 35	4.65			6.34	-1.69	5.61	-0.96	5.92	-1.27		NM
FDTL-IW0007I	10 to 20	2.15	3.82	-1.67	3.80	-1.65	3.23	-1.08	3.71	-1.56	5.18	-3.03
FDTL-IW0008I	10 to 20	2.85			4.39	-1.54	3.83	-0.98	4.37	-1.52	3.44	-0.59
FDTL-IW0009I	10 to 20	2.11	3.81	-1.70	3.80	-1.69	3.15	-1.04	3.72	-1.61	5.20	-3.09
FDTL-IW0010I	10 to 20	2.67	4.29	-1.62	4.30	-1.63	3.69	-1.02	4.23	-1.56	3.60	-0.93
FDTL-IW0011I	10 to 20	4.13			5.84	-1.71	5.23	-1.10	5.60	-1.47	7.21	-3.08
FDTL-IW0012I	10 to 20	2.34			3.96	-1.62	3.40	-1.06	3.85	-1.51	3.25	-0.91
FDTL-IW0013I	10 to 20	4.97	6.65	-1.68	6.47	-1.50	5.91	-0.94	6.47	-1.50		NM
FDTL-IW0014I	10 to 20	4.17	7.05	-2.88	6.90	-2.73	6.34	-2.17	7.00	-2.83	8.51	-4.34
FDTL-IW0016I	10 to 20	3.92			5.50	-1.58	4.94	-1.02	5.26	-1.34	6.86	-2.94
FDTL-IW0017I	10 to 20	1.74	3.45	-1.71	3.40	-1.66	2.80	-1.06	3.33	-1.59	4.95	-3.21
FDTL-IW0019I	10 to 20	3.26	4.82	-1.56	5.05	-1.79	4.49	-1.23	4.99	-1.73	6.49	-3.23
FDTL-IW0020I	10 to 20	2.43			4.25	-1.82	3.68	-1.25	4.12	-1.69	3.54	-1.11

Notes:

bls = below land surface

BTOC = below top of casing

NAVD88 = North American Vertical Datum of 1988

TOC = top of casing

NM = not measured

Table 4-1
Groundwater Elevation Data
Former Development and Testing Laboratory (FDTL) - SWMU 075

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	12/19/24	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
5 to 15 feet bls				
FDTL-IW0006S	5 to 15	3.86	4.94	-1.08
FDTL-IW0015S	5 to 15	5.21	6.19	-0.98
FDTL-IW0018I	5 to 15	4.44	5.35	-0.91
10 to 35 feet bls				
FDTL-IW0003I	15 to 25	4.50	4.68	-0.18
FDTL-IW0004I	15 to 25	4.72	5.80	-1.08
FDTL-IW0005I	25 to 35	4.65	NM	
FDTL-IW0007I	10 to 20	2.15	3.24	-1.09
FDTL-IW0008I	10 to 20	2.85	3.88	-1.03
FDTL-IW0009I	10 to 20	2.11	3.21	-1.10
FDTL-IW0010I	10 to 20	2.67	3.75	-1.08
FDTL-IW0011I	10 to 20	4.13	5.22	-1.09
FDTL-IW0012I	10 to 20	2.34	NM	
FDTL-IW0013I	10 to 20	4.97	OBSCURED AT 2.94' BTOC	
FDTL-IW0014I	10 to 20	4.17	6.57	-2.40
FDTL-IW0016I	10 to 20	3.92	4.91	-0.99
FDTL-IW0017I	10 to 20	1.74	2.94	-1.20
FDTL-IW0019I	10 to 20	3.26	4.56	-1.30
FDTL-IW0020I	10 to 20	2.43	3.61	-1.18

Notes:

bls = below land surface
BTOC = below top of casing
NAVD88 = North American Vertical Datum of 1988
TOC = top of casing
NM = not measured

Table 4-2
Groundwater and Surface Water Analytical Results
Former Development and Testing Laboratory (FDTL) - SWMU 075

Category			Volatile Organic Compounds (VOCs) by Method 8260					
Analyte			TETRACHLOROETHENE	TRICHLOROETHENE	1,1-DICHLOROETHENE	CIS-1,2-DICHLOROETHENE	TRANS-1,2-DICHLOROETHENE	VINYL CHLORIDE
GCTL (µg/L)			3	3	7	70	100	1
NADC (µg/L)			300	300	70	700	1000	100
Freshwater SWCTL (µg/L)			8.85	80.7	3.2	NA	11000	2.4
Location ID	Screened Interval (feet bls)	Sample Date						
FDTL-IW0003I	15 to 25	03/27/06	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
		05/30/07	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
		12/04/08	0.22 U	0.32 U	0.54 U	0.2 U	0.45 U	0.3 U
		03/16/10	0.44 U	0.24 U	0.29 U	0.32 U	0.34 U	0.28 U
		09/29/10	0.44 U	0.24 U	0.29 U	0.32 U	0.34 U	0.28 U
		03/01/11	0.25 U	0.26 U	0.23 U	0.26 U	0.35 U	0.22 U
FDTL-IW0004I	15 to 25	03/27/06	0.50 U	15.5	0.50 U	2.2	0.50 U	0.50 U
		05/30/07	1.0 U	18.7	1.0 U	4.6	1.0 U	1.0 U
		12/05/08	0.22 U	14.4	0.54 U	9.2	0.54 I	0.3 U
		03/16/10	0.44 U	9.9	0.29 U	9.9	0.95 I	0.28 U
		09/28/10	0.44 U	4.7	0.29 U	11.4	1.6	0.28 U
		03/01/11	0.25 U	4.5	0.23 U	12.1	1.7	0.22 U
		09/13/11	1.0 U	3.6	1.0 U	5.9	1.0 U	1.0 U
		03/26/12	1.0 U	3.6	1.0 U	3.9	1.0 U	1.0 U
		09/17/12	1.0 U	1.5 J	1.0 U	6.5	0.75 J	1.0 U
		09/03/13	1.0 U	1.8 J	1.0 U	4.9	1.0 U	1.0 U
		05/22/14	1.0 U	1.0 U	1.0 U	4.7	1.0 U	1.0 U
FDTL-IW0006S	5 to 15	03/28/06	0.50 U	2.7	0.50 U	110	9.1	47.3
		05/30/07	1.0 U	3.4	1.0 U	162	19.6	20.4
		12/04/08	0.22 U	3.5	0.54 U	98.4	7.5	97.3
		03/17/10	0.44 U	0.24 U	0.29 U	0.35 I	0.34 U	0.28 U
		09/28/10	0.44 U	0.24 U	0.29 U	0.83 I	0.34 U	0.28 U
		03/01/11	0.25 U	0.26 U	0.23 U	0.68 I	0.35 U	0.22 U
FDTL-IW0007I	10 to 20	03/16/06	2.5 U	648	2.5 U	158	11.5	2.5 U
		03/28/06	0.50 U	478	0.50 U	84.7	8.1	0.50 U
		05/30/07	50 U	1440	50 U	1470	52.7	36.8 I
		12/04/08	4.4 U	706	11.0 U	945	38.6	6 U
		12/23/09	0.22 U	16.5	0.54 U	12.6	0.45 U	0.30 U
		03/17/10	0.44 U	1.2	0.29 U	2.7	0.34 U	0.28 U
		06/24/10	0.44 U	8.0	0.29 U	8.2	0.34 U	0.28 U
		09/28/10	0.44 U	34.4	0.29 U	52	2.3	0.47 I
		12/28/10	0.25 U	9.7	0.25 U	12.1	0.40 I	0.22 U
		03/01/11	0.25 U	6.2	0.23 U	10.1	0.35 U	0.22 U
		09/12/11	1.0 U	4.7	1.0 U	9.9	1.0 U	1.0 U
		03/26/12	1.0 U	1.6	1.0 U	6.3	1.0 U	1.0 U
		09/17/12	1.0 U	3.8	1.0 U	36	1.0 U	1.0 U
		09/03/13	1.0 U	1.6	1.0 U	13	1.0 U	20
		05/22/14	1.0 U	1.4 I	0.94 U	6.9	0.73 U	17
		05/26/16	0.58 U	3.0	0.50 U	8.0	0.50 U	0.50 U
		10/05/18	0.50 U	2.1	0.26 U	20	0.39 U	17
		06/01/20	0.22 U	1.9	0.32 U	8.9	0.31 I	17.6
		05/08/23	0.76 U	0.89 U	0.94 U	16	0.73 U	42
		12/19/24	0.76 U	0.89 U	0.94 U	10	0.73 U	21

Table 4-2
Groundwater and Surface Water Analytical Results
Former Development and Testing Laboratory (FDTL) - SWMU 075

Category			Volatile Organic Compounds (VOCs) by Method 8260					
Analyte			TETRACHLOROETHENE	TRICHLOROETHENE	1,1-DICHLOROETHENE	CIS-1,2-DICHLOROETHENE	TRANS-1,2-DICHLOROETHENE	VINYL CHLORIDE
GCTL (µg/L)			3	3	7	70	100	1
NADC (µg/L)			300	300	70	700	1000	100
Freshwater SWCTL (µg/L)			8.85	80.7	3.2	NA	11000	2.4
Location ID	Screened Interval (feet bls)	Sample Date						
FDTL-1W0008I	10 to 20	03/28/06	0.50 U	216	0.55 I	28.4	2.2	1.0
		05/30/07	1.0 U	186	0.82 I	57.7	8.8	2.6
		12/05/08	0.22 U	78.8	0.54 U	55	3.8	0.98 I
		03/17/10	0.44 U	7.9	0.29 U	6.9	0.34 U	0.51 I
		09/28/10	0.44 U	2.3	0.29 U	2.6	0.34 U	0.28 U
		03/01/11	0.25 U	1.1	0.23 U	3.3	0.35 U	0.22 U
		05/26/16	0.58 U	0.82 I	0.50 U	16	1.3	15
		10/05/18	0.50 U	0.61.0 U	0.26 U	25	1.7 I	15
		06/01/20	0.52 I	0.40 I	0.32 U	5.3	0.88 I	24.8
		05/08/23	0.76 U	0.89 U	0.94 U	15	0.73 U	30
		12/19/24	0.76 U	0.89 U	0.94 U	21	0.95 I	52
FDTL-1W0009I	10 to 20	03/28/06	0.50 U	1060	1.7	83	1.5	0.61 I
		12/04/08	11.0 U	2520	12 U	753	23 U	15 U
		12/23/09	0.22 U	9.5	0.24 U	2.7	0.45 U	0.30 U
		03/18/10	0.44 U	0.92 I	0.22 U	0.32 U	0.34 U	0.28 U
		06/24/10	0.44 U	7.2	0.22 U	2.8	0.34 U	0.28 U
		09/28/10	0.44 U	14.1	0.22 U	4.3	0.34 U	0.28 U
		12/28/10	0.25 U	13.6	0.25 U	5.3	0.35 U	0.22 U
		03/01/11	0.25 U	11	0.25 U	4.5	0.35 U	0.22 U
		09/12/11	1.0 U	5.6	1.0 U	5.9	1.0 U	1.0 U
		03/26/12	1.0 U	6.9	1.0 U	15	1.0 U	1.0 U
		09/17/12	1.0 U	5.1	1.0 U	16	1.0 U	1.0 U
		09/03/13	1.0 U	7.7	1.0 U	14	1.0 U	1.0 U
		05/22/14	1.0 U	6.3	0.62 U	13	0.73 U	0.71.0 U
		05/26/16	0.58 U	5.0	0.50 U	15	0.50 U	1.5
		10/05/18	0.50 U	2.0	0.26 U	13	0.39 U	0.26 U
		06/01/20	0.31 I	2.0	0.32 U	7.7	0.22 U	0.41.0 U
		05/08/23	0.76 U	0.89 U	0.94 U	3.8	0.73 U	11
		12/20/24	0.76 U	0.89 U	0.94 U	0.53 U	0.73 U	0.71.0 U
FDTL-1W0010I	10 to 20	03/28/06	0.50 U	25	0.50 U	3.1	0.50 U	0.50 U
		12/04/08	1.1.0 U	153	2.7 U	57.3	2.3 U	1.5 U
		03/17/10	0.44 U	34.2	0.29 U	9.6	0.34 U	0.28 U
		09/27/10	0.44 U	17.4	0.29 U	5.9	0.34 U	0.28 U
		02/28/11	0.25 U	21.6	0.25 I	9.5	0.35 U	0.22 U
		09/12/11	1.0 U	12	1.0 U	7.8	1.0 U	1.0 U
		03/26/12	1.0 U	3.9	1.0 U	3.1	1.0 U	1.0 U
		09/17/12	1.0 U	6.8	1.0 U	8.9	1.0 U	1.0 U
		09/03/13	1.0 U	1.8 J	1.0 U	1.9 J	1.0 U	1.0 U
		05/22/14	1.0 U	1.0 U	1.0 U	1.0 J	1.0 U	1.0 U
		05/08/23	0.76 U	0.89 U	0.94 U	7.7	0.73 U	12
		12/19/24	0.76 U	0.89 U	0.94 U	8.1	0.73 U	8.5
FDTL-1W0011I	10 to 20	03/28/06	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
		05/30/07	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
		12/05/08	0.22 U	0.32 U	0.54 U	0.41 I	0.45 U	0.3 U
		03/17/10	0.44 U	0.4 I	0.29 U	5.0	0.34 U	0.28 U
		09/27/10	0.44 U	0.24 U	0.29 U	2.9	0.34 U	0.28 U
		02/28/11	0.25 U	0.26 U	0.23 U	3.4	0.35 U	0.22 U
FDTL-1W0012I	10 to 20	03/28/06	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
		12/05/08	0.22 U	0.32 U	0.54 U	0.2 U	0.45 U	0.3 U
		03/17/10	0.44 U	0.24 U	0.29 U	0.32 U	0.34 U	0.28 U
		09/29/10	0.44 U	0.24 U	0.29 U	0.32 U	0.34 U	0.28 U
		03/01/11	0.25 U	0.26 U	0.23 U	0.26 U	0.35 U	0.22 U

Table 4-2
Groundwater and Surface Water Analytical Results
Former Development and Testing Laboratory (FDTL) - SWMU 075

Category			Volatile Organic Compounds (VOCs) by Method 8260					
Analyte			TETRACHLOROETHENE	TRICHLOROETHENE	1,1-DICHLOROETHENE	CIS-1,2-DICHLOROETHENE	TRANS-1,2-DICHLOROETHENE	VINYL CHLORIDE
GCTL (µg/L)			3	3	7	70	100	1
NADC (µg/L)			300	300	70	700	1000	100
Freshwater SWCTL (µg/L)			8.85	80.7	3.2	NA	11000	2.4
Location ID	Screened Interval (feet bls)	Sample Date						
FDTL-1W0013I	10 to 20	03/27/06	0.50 U	16.1	0.50 U	1.9	0.50 U	0.50 U
		05/30/07	1.0 U	64.3	1.0 U	5.2	1.0 U	1.0 U
		12/04/08	0.44 U	104	1.10 U	12	0.9 U	0.6 U
		03/17/10	0.88 U	113	0.58 U	14.2	0.68 U	0.56 U
		09/28/10	0.44 U	80.8	0.6 I	19.1	0.72 I	0.28 U
		02/28/11	0.25 U	87.3	0.71 I	29.2	1.4	0.22 U
		09/13/11	1.0 U	52	1	31	1.8	1.0 U
		03/26/12	1.0 U	48	1.0 U	16	1.1	1.0 U
		09/17/12	1.0 U	22	1.2 J	68	6.3	1.0 U
		09/03/13	1.0 U	2.9	1.5 I	78	11	1.0 U
		05/22/14	1.0 U	0.89 U	0.94 U	65	9.3	0.71.0 U
		05/26/16	0.58 U	0.50 U	0.50 U	23	4.4	0.50 U
FDTL-1W0014I	10 to 20	03/27/06	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
		05/30/07	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
		12/04/08	0.22 U	2.9	0.54 U	1.2	0.45 U	0.3 U
		03/17/10	0.44 U	3.3	0.29 U	1.2	0.34 U	0.28 U
		09/28/10	0.44 U	1.7	0.29 U	0.93 I	0.34 U	0.28 U
		02/28/11	0.25 U	2.0	0.23 U	1.3	0.35 U	0.22 U
		03/26/12	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
		09/17/12	1.0 U	1.0 U	1.0 U	1.0 J	1.0 U	1.0 U
		09/03/13	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
		05/22/14	1.0 U	0.89 U	0.94 U	0.53 U	0.73 U	0.71.0 U
		05/26/16	0.58 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
		10/05/18	0.50 U	0.61.0 U	0.26 U	0.32 U	0.39 U	0.26 U
		06/01/20	0.22 U	0.35 U	0.32 U	0.28 U	0.22 U	0.41.0 U
		12/19/24	0.76 U	0.89 U	0.94 U	0.53 U	0.73 U	0.71.0 U
		12/19/24 (DUP)	0.76 U	0.89 U	0.94 U	0.53 U	0.73 U	0.71.0 U
FDTL-1W0015S	5 to 15	03/27/06	0.50 U	0.50 U	0.50 U	4.6	0.50 U	303
		12/05/08	0.22 U	0.32 U	0.54 U	1.5	0.45 U	79.2
		12/23/09	0.22 U	0.32 U	0.54 U	1.2	0.45 U	45.8
		03/16/10	0.44 U	0.24 U	0.29 U	0.96 I	0.34 U	23
		06/24/10	0.44 U	1.0	0.29 U	0.75 I	0.34 U	13.5
		09/29/10	0.44 U	2.2	0.29 U	1.2	0.34 U	14.6
		12/28/10	0.25 U	1.1	0.23 U	0.81 I	0.35 U	10.8
		03/01/11	0.25 U	1.4	0.23 U	0.92 I	0.35 U	10.8
		09/13/11	1.0 U	1.0 U	1.0 U	0.62 J	1.0 U	2.9
		03/26/12	1.0 U	1.0	1.0 U	9.0	1.0 U	2.6
		09/17/12	1.0 U	1.0 U	1.0 U	1.4 J	1.0 U	14
		09/04/13	1.0 U	1.0 U	1.0 U	1.6 I	1.0 U	17
		05/22/14	1.0 U	0.89 U	0.94 U	1.3 I	0.73 U	12
		05/26/16	0.58 U	0.50 U	0.58 I	0.50 U	0.50 U	15
		10/05/18	0.50 U	0.61.0 U	0.26 U	0.32 U	0.39 U	22
		06/01/20	0.22 U	0.35 U	0.32 U	1.6	0.22 U	36.5
		05/08/23	0.76 U	0.89 U	0.94 U	0.88 I	0.73 U	22
		12/19/24	0.76 U	0.89 U	0.94 U	1.0	0.73 U	23
FDTL-1W0016I	10 to 20	03/27/06	0.50 U	16	0.50 U	20.5	2.9	0.50 U
		05/30/07	1.0 U	7.1	1.0 U	21.2	3.1	1.0 U
		12/05/08	0.22 U	3.0	0.54 U	14	3.0	0.3 U
		03/18/10	0.44 U	1.1	0.29 U	0.76 I	0.34 U	0.28 U
		09/29/10	0.44 U	0.36 I	0.29 U	1.2	0.34 U	0.28 U
		03/01/11	0.25 U	0.26 U	0.23 U	1.1	0.35 U	0.22 U

Table 4-2
Groundwater and Surface Water Analytical Results
Former Development and Testing Laboratory (FDTL) - SWMU 075

Category			Volatile Organic Compounds (VOCs) by Method 8260					
Analyte			TETRACHLOROETHENE	TRICHLOROETHENE	1,1-DICHLOROETHENE	CIS-1,2-DICHLOROETHENE	TRANS-1,2-DICHLOROETHENE	VINYL CHLORIDE
GCTL (µg/L)			3	3	7	70	100	1
NADC (µg/L)			300	300	70	700	1000	100
Freshwater SWCTL (µg/L)			8.85	80.7	3.2	NA	11000	2.4
Location ID	Screened Interval (feet bls)	Sample Date						
FDTL-IW0017I	10 to 20	01/21/09	0.22 U	0.32 U	0.54 U	0.20 U	0.45 U	0.30 U
		03/17/10	0.44 U	0.24 U	0.29 U	0.32 U	0.34 U	0.28 U
		12/28/10	0.25 U	0.42 I	0.23 U	0.67 I	0.35 U	0.22 U
		02/28/11	0.25 U	0.31 I	0.23 U	0.48 I	0.35 U	0.22 U
		03/26/12	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
		09/04/13	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
		05/22/14	1.0 U	1.1 I	0.94 U	0.53 I	0.73 U	0.71.0 U
		05/26/16	0.58 U	4.2	0.50 U	0.50 U	0.50 U	0.50 U
		10/05/18	0.50 U	0.68 I	0.26 U	5.8	0.39 U	0.26 U
		06/01/20	0.22 I	4.1	0.32 U	3.6	0.22 U	0.41.0 U
		05/08/23	0.76 U	0.89 U	0.94 U	3.0	0.73 U	0.71.0 U
		12/19/24	0.76 U	0.89 U	0.94 U	3.9	0.92 I	0.71.0 U
FDTL-IW0018I	5 to 15	12/05/08	0.22 U	0.46 I	0.54 U	0.2 U	0.45 U	0.3 U
		03/16/10	0.44 U	0.24 U	0.29 U	0.44 I	0.34 U	0.28 U
		09/29/10	0.44 U	0.24 U	0.29 U	0.32 U	0.34 U	0.28 U
		03/01/11	0.25 U	0.26 U	0.23 U	0.26 U	0.35 U	0.22 U
FDTL-IW0019I	10 to 20	12/05/08	1.1.0 U	251	1.2 U	159	11.9	3.1 I
		03/18/10	0.44 U	3.7	0.22 U	4.6	3.2	83
		09/28/10	0.44 U	1.5	0.22 U	1.7	1.4	31.6
		03/01/11	0.25 U	0.86 I	0.25 U	1.3	1.2	27
		09/12/11	1.0 U	0.62 J	1.0 U	0.89 J	1.0 U	6.6
		03/26/12	1.0 U	1.2	1.0 U	0.93 J	1.4	58
		09/17/12	1.0 U	2.2	1.0 U	4.5	1.2 J	64
		09/03/13	1.0 U	1.0 U	1.0 U	0.69 I	1.7 I	84
		05/22/14	1.0 U	0.89 U	0.62 U	0.53 U	0.86 I	62
		05/26/16	0.58 U	0.50 U	0.50 U	0.50 U	1.0	62
		10/05/18	0.50 U	0.61.0 U	0.26 U	0.32 U	0.63 I	55
		06/01/20	0.37 I	0.35 U	0.32 U	1.1	0.39 I	23.3
		05/08/23	0.76 U	0.89 U	0.94 U	1.6	0.73 U	21
		12/19/24	0.76 U	0.89 U	0.94 U	1.5	0.73 U	16
FDTL-IW0020I	10 to 20	12/04/08	0.22 U	10.3	0.54 U	79	2.1	0.3 U
		03/17/10	0.44 U	4.3	0.29 U	15.5	0.34 U	0.28 U
		09/28/10	0.44 U	4.0	0.29 U	15.7	0.34 U	0.28 U
		02/28/11	0.25 U	3.3	0.23 U	14.9	0.35 U	0.22 U
		09/12/11	1.0 U	3.4	1.0 U	15	1.0 U	1.0 U
		03/26/12	1.0 U	3.0	1.0 U	7.7	1.0 U	1.0 U
		09/17/12	1.0 U	1.7 J	1.0 U	14	1.0 U	1.0 U

Table 4-2
Groundwater and Surface Water Analytical Results
Former Development and Testing Laboratory (FDTL) - SWMU 075

Category			Volatile Organic Compounds (VOCs) by Method 8260					
Analyte			TETRACHLOROETHENE	TRICHLOROETHENE	1,1-DICHLOROETHENE	CIS-1,2-DICHLOROETHENE	TRANS-1,2-DICHLOROETHENE	VINYL CHLORIDE
GCTL (µg/L)			3	3	7	70	100	1
NADC (µg/L)			300	300	70	700	1000	100
Freshwater SWCTL (µg/L)			8.85	80.7	3.2	NA	11000	2.4
Location ID	Screened Interval (feet bls)	Sample Date						
FDTL-SW0001		12/01/08	0.22 U	0.32 U	0.54 U	--	0.45 U	0.3 U
		12/01/09	0.22 U	0.32 U	0.54 U	--	0.45 U	0.30 U
		03/01/10	0.44 U	0.24 U	0.29 U	--	0.34 U	0.28 U
		06/01/10	0.44 U	0.24 U	0.29 U	--	0.34 U	0.28 U
		09/01/10	0.44 U	0.24 U	0.29 U	--	0.34 U	0.28 U
		12/01/10	0.25 U	0.26 U	0.23 U	--	0.35 U	0.22 U
		02/01/11	0.25 U	0.26 U	0.23 U	--	0.35 U	0.22 U
		09/01/11	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
		03/01/12	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
		09/01/12	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
		09/01/13	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
		12/20/24	0.76 U	0.89 U	0.94 U	0.53 U	0.73 U	0.71.0 U
FDTL-SW0002		12/01/08	0.22 U	0.32 U	0.54 U	--	0.45 U	0.3 U
		12/01/09	0.22 U	0.32 U	0.54 U	--	0.45 U	0.30 U
		03/01/10	0.44 U	0.24 U	0.29 U	--	0.34 U	0.28 U
		06/01/10	0.44 U	0.24 U	0.29 U	--	0.34 U	0.28 U
		09/01/10	0.44 U	0.24 U	0.29 U	--	0.34 U	0.28 U
		12/01/10	0.25 U	0.26 U	0.23 U	--	0.35 U	0.22 U
		02/01/11	0.25 U	0.26 U	0.23 U	--	0.35 U	0.22 U
		09/01/11	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
		03/01/12	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
		09/01/12	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
		09/01/13	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U
		05/08/23	0.76 U	0.89 U	0.94 U	0.53 U	0.73 U	0.71.0 U
		12/20/24	0.76 U	0.89 U	0.94 U	0.53 U	0.73 U	0.71.0 U
FDTL-SW0003		05/08/23	0.76 U	0.89 U	0.94 U	0.53 U	0.73 U	0.71.0 U
		12/20/24	0.76 U	0.89 U	0.94 U	0.53 U	0.73 U	0.71.0 U
FDTL-SW0004		05/08/23	0.76 U	0.89 U	0.94 U	0.53 U	0.73 U	0.71.0 U
		12/20/24	0.76 U	0.89 U	0.94 U	6.2	0.73 U	10
FDTL-SW0005		12/19/24	0.76 U	0.89 U	0.94 U	0.53 U	0.73 U	0.71.0 U

Notes:

Bolded results indicate the presence of an analyte at the specified concentration.

Blue font indicates an exceedance of GCTLs or SWCTLs.

Red font indicates an exceedance of NADCs.

Blank cells indicate the analyte was not analyzed for that specific well.

bls = below ground surface

GCTL = Groundwater Cleanup Target Level, Chapter 62-777 Florida Administrative Code, Table 1 (2005)

I = The analytical result was greater than or equal to the method detection limit, but less than the practical quantitation limit

J = The analytical result was an estimated value

NA = not available at time of rule adoption

NADC = Natural Attenuation Default Concentration, Chapter 62-777 Florida Administrative Code, Table V (2005)

SWCTL = Surface Water Cleanup Target Level, Chapter 62-777 Florida Administrative Code, Table 1 (2005)

SWMU = Solid Waste Management Unit

U = Analyte was not detected

µg/L = micrograms per liter

Table 5-1
Groundwater Elevation Data
Fire Station 3 (FS3) - SWMU 106

Well ID	Screen Interval (feet bls)	Ground Elevation (feet NAVD88)	TOC Elevation (feet NAVD88)	07/28/09		06/28/10		11/20/12	
				Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
FS6-MW0001	25 to 35	1.51	1.12	0.83	0.29	1.10	0.02	0.90	0.22
FS6-MW0002	20 to 30	3.41	6.80	NM	NM		NM	6.53	0.27
FS6-MW0003	20 to 30	2.72	5.88	NM	NM		NM	5.97	-0.09

Notes:

bls = below land surface

BTOC = below top of casing

NAVD88 = North American Vertical Datum of 1988

TOC = top of casing

NM = not measured

Table 5-1
Groundwater Elevation Data
Fire Station 3 (FS3) - SWMU 106

Well ID	Screen Interval (feet bls)	Ground Elevation (feet NAVD88)	TOC Elevation (feet NAVD88)	05/13/13		11/25/13		11/19/14	
				Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
FS6-MW0001	25 to 35	1.51	1.12	0.25	0.87	1.06	0.06	0.35	0.77
FS6-MW0002	20 to 30	3.41	6.80	5.79	1.01	6.75	0.05	5.90	0.90
FS6-MW0003	20 to 30	2.72	5.88	5.25	0.63	5.98	-0.10	5.34	0.54

Notes:

bls = below land surface

BTOC = below top of casing

NAVD88 = North American Vertical Datum of 1988

TOC = top of casing

NM = not measured

Table 5-1
Groundwater Elevation Data
Fire Station 3 (FS3) - SWMU 106

Well ID	Screen Interval (feet bls)	Ground Elevation (feet NAVD88)	TOC Elevation (feet NAVD88)	05/25/16		11/07/16		09/19/18	
				Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
FS6-MW0001	25 to 35	1.51	1.12	0.76	0.36	0.50	0.62	1.09	0.03
FS6-MW0002	20 to 30	3.41	6.80	6.64	0.16	6.06	0.74	6.78	0.02
FS6-MW0003	20 to 30	2.72	5.88	5.94	-0.06	5.45	0.43	6.09	-0.21

Notes:

bls = below land surface

BTOC = below top of casing

NAVD88 = North American Vertical Datum of 1988

TOC = top of casing

NM = not measured

Table 5-1
Groundwater Elevation Data
Fire Station 3 (FS3) - SWMU 106

Well ID	Screen Interval (feet bls)	Ground Elevation (feet NAVD88)	TOC Elevation (feet NAVD88)	06/01/20		12/18/24	
				Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
FS6-MW0001	25 to 35	1.51	1.12	0.00	1.12	0.00	1.12
FS6-MW0002	20 to 30	3.41	6.80	5.65	1.15	5.14	1.66
FS6-MW0003	20 to 30	2.72	5.88	4.94	0.94	4.31	1.57

Notes:

bls = below land surface

BTOC = below top of casing

NAVD88 = North American Vertical Datum of 1988

TOC = top of casing

NM = not measured

Table 5-2
Groundwater Analytical Results
Fire Station 3 (FS3) - SWMU 106

Category			VOCs by Method 8260
Analyte			VINYL CHLORIDE
GCTL (µg/L)			1
NADC (µg/L)			100
Location ID	Screened Interval (ft bls)	Sample Date	
FS6-MW0001	25 to 35	07/28/09	3.1
		06/28/10	1.6
		11/20/12	2.5
		05/13/13	2
		11/25/13	2.8
		11/17/14	2.2
		05/25/16	0.50 U
		11/16/16	1.5
		10/04/18	2.3
		06/02/20	0.66 I
		12/18/24	0.71 U
FS6-MW0002	20 to 30	11/20/12	0.44 U
		05/13/13	0.44 U
		11/25/13	0.44 U
		12/16/24	0.71 U
FS6-MW0003	20 to 30	11/20/12	0.44 U
		05/13/13	3.7
		11/25/13	5.2
		11/17/14	4.7
		05/25/16	0.50 U
		11/16/16	2.0
		10/18/18	6.2
		06/02/20	0.96 I
		12/18/24	1.8

Notes:

Bolded results indicate the presence of an analyte at the specified concentration.

Blue font indicates an exceedance of GCTLs.

Red font indicates an exceedance of NADCs.

Blank cells indicate the analyte was not analyzed for that specific well.

ft bls = feet below ground surface

GCTL = Groundwater Cleanup Target Level, Chapter 62-777 Florida Administrative Code, Table 1 (2005)

I = The analytical result is greater than or equal to the method detection limit, but less than the practical quantitation limit

J = An estimated value

NADC = Natural Attenuation Default Concentration, Chapter 62-777 Florida Administrative Code, Table V (2005)

SWMU = Solid Waste Management Unit

U = Analyte was not detected

µg/L = micrograms per liter

VOC = volatile organic compound

Table 6-1
Groundwater Elevation Data
Launch Complex 39 Observation Gantry Area (LC39OGA) - SWMU 107

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	11/19/14		05/11/15		11/30/15		05/25/16		11/28/17		11/18/19	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
5 to 15 feet bls														
LC39OGA-MW0001	5 to 15	0.87	0.80	0.07	0.72	0.15	0.20	0.67	0.90	-0.03	0.00	0.87	0.00	0.87
LC39OGA-MW0002	5 to 15	1.11	0.50	0.61	0.59	0.52	0.40	0.71	1.20	-0.09	0.25	0.86	0.07	1.04
LC39OGA-MW0003	5 to 15	1.52		NM			0.65	0.87	1.46	0.06	0.81	0.71	0.25	1.27
LC39OGA-MW0004	5 to 15	1.60	1.30	0.30	1.32	0.28	0.76	0.84	1.60	0.00	0.60	1.00	0.27	1.33
LC39OGA-MW0005	5 to 15	2.17	1.42	0.75	1.94	0.23	1.10	1.07	1.96	0.21	1.21	0.96	0.78	1.39
LC39OGA-MW0010	5 to 15	1.32		NM		NM		NM		NM		NM		NM
LC39OGA-MW0011	5 to 15	5.77		NM		NM		NM		NM		NM		NM
22 to 27 feet bls														
LC39OGA-MW0006	22 to 27	1.12	0.85	0.27	0.79	0.33	0.20	0.92	0.98	0.14	0.05	1.07	0.00	1.12
LC39OGA-MW0007	22 to 27	1.32	1.12	0.20	0.98	0.34	0.70	0.62	1.21	0.11	0.23	1.09	0.27	1.05
LC39OGA-MW0008	22 to 27	1.62	1.31	0.31	1.28	0.34	0.70	0.92	1.49	0.13	0.56	1.06	0.31	1.31
LC39OGA-MW0009	22 to 27	2.24	1.70	0.54	1.85	0.39	1.10	1.14	1.94	0.30	1.11	1.13	0.79	1.45
LC39OGA-MW0012	22 to 27	5.91		NM		NM		NM		NM		NM		NM

Notes:

bls = below land surface

BTOC = below top of casing

NAVD88 = North American Vertical Datum of 1988

NM = not measured

TOC = top of casing

Table 6-1
Groundwater Elevation Data
Launch Complex 39 Observation Gantry Area (LC39OGA) - SWMU 107

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	11/18/20		06/30/21		05/09/23		02/19/24		12/20/24	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
5 to 15 feet bls												
LC39OGA-MW0001	5 to 15	0.87	0.15	0.72	0.86	0.01	0.65	0.22	1.05	-0.18	0.72	0.15
LC39OGA-MW0002	5 to 15	1.11	0.68	0.43	1.13	-0.02	0.88	0.23	1.21	-0.10	0.97	0.14
LC39OGA-MW0003	5 to 15	1.52	0.80	0.72	1.41	0.11	1.16	0.36	1.52	0.00		NM
LC39OGA-MW0004	5 to 15	1.60	0.88	0.72	1.44	0.16	1.25	0.35	1.64	-0.04	1.31	0.29
LC39OGA-MW0005	5 to 15	2.17	1.10	1.07	1.65	0.52	1.67	0.50	1.70	0.47	1.58	0.59
LC39OGA-MW0010	5 to 15	1.32	NM	NM		NM	0.97	0.35	1.57	-0.25	1.05	0.27
LC39OGA-MW0011	5 to 15	5.77	NM	NM		NM		NM	4.83	0.94	5.06	0.71
22 to 27 feet bls												
LC39OGA-MW0006	22 to 27	1.12	0.70	0.42	1.15	-0.03	0.85	0.27	1.41	-0.29	1.16	-0.04
LC39OGA-MW0007	22 to 27	1.32	0.90	0.42	1.22	0.10	1.21	0.11	1.58	-0.26	1.31	0.01
LC39OGA-MW0008	22 to 27	1.62	0.91	0.71	1.44	0.18	1.21	0.41	1.74	-0.12	1.34	0.28
LC39OGA-MW0009	22 to 27	2.24	1.25	0.99	1.88	0.36	1.67	0.57	2.11	0.13	1.80	0.44
LC39OGA-MW0012	22 to 27	5.91	NM	NM		NM		NM	5.25	0.66	5.13	0.78

Notes:

bls = below land surface

BTOC = below top of casing

NAVD88 = North American Vertical Datum of 1988

NM = not measured

TOC = top of casing

Table 6-2
Groundwater and Surface Water Analytical Results
Launch Complex 39 Observation Gantry Area (LC39OGA) - SWMU 107

Category			Volatile Organic Compounds (VOCs) by Method 8260			
Analyte			TRICHLOROETHENE	CIS-1,2-DICHLOROETHENE	TRANS-1,2-DICHLOROETHENE	VINYL CHLORIDE
GCTL (µg/L)			3	70	100	1
NADC (µg/L)			300	700	1000	100
Freshwater SWCTL (µg/L)			80.7	NA	11000	2.4
Location ID	Screened Interval (feet bls)	Sample Date				
LC39OGA-MW0001	5 to 15	08/30/11	0.36 U	1.4	33.2	8.0
		12/05/14	0.5 U	0.64 I	22	4.1
		05/11/15	0.5 U	0.69 I	21	0.5 U
		10/30/15	0.58 U	0.55 I	15	0.5 U
		05/25/16	0.5 U	0.5 U	4.7	1.0
		11/28/17	0.58 U	0.78 I	11	2.7
		11/18/19	0.35 U	0.28 U	16.7	6.7
		11/18/20	0.35 U	0.28 U	23.6	0.41 U
		06/30/21	0.89 U	0.53 U	18	5.1
		05/09/23	0.89 U	0.53 U	13	0.71 U
		02/19/24	0.89 U	0.53 U	5.9	0.89 I
		12/20/24	0.89 U	0.53 U	11	0.71 U
LC39OGA-MW0002	5 to 15	08/30/11	0.36 U	7.2	6.7	37.5
		12/05/14	0.5 U	2.1	4.3	19
		05/11/15	0.5 U	3.3	3.9	26
		10/30/15	0.58 U	0.72 I	4.0	21
		05/25/16	0.5 U	0.5 U	4.0	21
		11/28/17	0.58 U	0.5 U	4.0	9.4
		11/18/19	0.35 U	0.28 U	6.1	13.6
		11/18/20	0.35 U	0.28 U	4.1	0.41 U
		06/30/21	0.89 U	0.53 U	3.1	13
		05/09/23	0.89 U	0.53 U	3.0	0.71 U
		02/19/24	0.89 U	0.53 U	3.6	3.7
		12/20/24	0.89 U	0.53 U	2.6	0.71 U
LC39OGA-MW0003	5 to 15	08/30/11	2.5	5.1	0.19 U	0.36 U
		11/18/19	1.4	1.9	0.22 U	0.41 U
		11/18/20	1.3	2.3	0.22 U	0.41 U
		06/30/21	4.4 U	3.0 I	3.6 U	3.6 U
		05/09/23	0.96 I	0.87 I	0.73 U	0.71 U
		02/19/24	0.89 U	0.53 U	0.73 U	0.71 U
LC39OGA-MW0004	5 to 15	11/18/14	0.5 U	3.9	1.6	10
		05/12/15	0.5 U	4.6	1.7	8.9
		10/30/15	0.5 U	3.9	2.1	7.4
		05/25/16	0.5 U	4.3	2.8	13
		11/28/17	0.58 U	0.65 I	0.5 U	32
		11/18/19	0.35 U	1.8	2.6	21.8
		11/18/20	0.35 U	1.6	2.1	0.41 U
		06/30/21	0.89 U	0.53 U	2.0	19
		05/09/23	0.89 U	0.53 U	0.93 I	0.71 U
		02/19/24	0.89 U	0.53 U	0.85 I	5.1
LC39OGA-MW0005	5 to 15	12/20/24	0.89 U	0.53 U	0.73 U	0.71 U
		11/18/14	0.5 U	0.5 U	5.3	4.3
		05/11/15	0.5 U	0.5 U	2.2	0.5 U
		10/30/15	0.58 U	0.5 U	3.5	0.5 U
		05/25/16	0.5 U	0.5 U	6.3	0.5 U
		05/09/23	0.89 U	0.70 I	3.1	0.71 U
LC39OGA-MW0006	22 to 27	02/19/24	0.89 U	0.53 U	0.73 U	0.71 U
		12/20/24	0.89 U	0.59 I	0.73 U	0.71 U
		12/20/24 (DUP)	0.89 U	0.53 U	0.73 U	0.71 U

Table 6-2
Groundwater and Surface Water Analytical Results
Launch Complex 39 Observation Gantry Area (LC39OGA) - SWMU 107

Category			Volatile Organic Compounds (VOCs) by Method 8260			
Analyte			TRICHLOROETHENE	CIS-1,2-DICHLOROETHENE	TRANS-1,2-DICHLOROETHENE	VINYL CHLORIDE
GCTL (µg/L)			3	70	100	1
NADC (µg/L)			300	700	1000	100
Freshwater SWCTL (µg/L)			80.7	NA	11000	2.4
Location ID	Screened Interval (feet bls)	Sample Date				
LC39OGA-MW0007	22 to 27	11/18/14	0.5 U	1.3	0.5 U	0.5 U
		05/12/15	0.5 U	1.0	0.5 U	0.5 U
		10/30/15	0.58 U	1.0	0.5 U	0.5 U
		05/25/16	0.5 U	1.5	0.5 U	0.5 U
		11/28/17	0.58 U	0.65 I	0.5 U	0.5 U
		11/18/19	0.35 U	2.0	0.22 U	0.41 U
		11/18/20	0.35 U	0.43 I	0.22 U	0.41 U
		06/30/21	0.89 U	0.96 I	0.73 U	0.71 U
		05/09/23	0.89 U	0.55 I	0.73 U	0.71 U
		02/19/24	0.89 U	0.72 I	0.73 U	0.71 U
		12/20/24	0.89 U	0.53 U	0.73 U	0.71 U
LC39OGA-MW0008	22 to 27	11/18/14	0.5 U	2.2	0.5 U	0.61 I
		05/12/15	0.5 U	3.0	0.5 U	0.5 U
		05/09/23	0.89 U	1.8	0.73 U	0.71 U
		02/19/24	0.89 U	2.2	0.73 U	0.73 I
		12/20/24	0.89 U	1.0	0.73 U	0.71 U
LC39OGA-MW0009	22 to 27	11/18/14	0.5 U	6.0	0.5 U	13
		05/11/15	0.5 U	5.0	1.1	13
		10/30/15	0.58 U	4.6	0.5 U	7.1
		05/25/16	0.5 U	0.97 I	0.5 U	1.2
		11/28/17	0.58 U	5.0	0.50 I	6.1
		11/18/19	0.35 U	4.5	0.22 U	0.41 U
		11/18/20	0.35 U	6.0	0.52 I	8.0
		06/30/21	0.89 U	7.2	0.73 U	7.6
		05/09/23	0.89 U	5.7	0.73 U	0.71 U
		02/19/24	0.89 U	1.2	0.73 U	1.0
		12/20/24	0.89 U	1.4	0.73 U	0.71 U
LC39OGA-MW0010	5 to 15	05/09/23	0.89 U	1.1	2.6	0.71 U
		02/19/24	0.89 U	0.53 U	3.2	5.0
		12/20/24	0.89 U	0.53 U	3.1	0.71 U
LC39OGA-MW0011	5 to 15	02/19/24	0.89 U	0.53 U	0.73 U	0.71 U
		12/20/24	1.3	6.3	0.73 U	0.71 U
LC39OGA-MW0012	22 to 27	02/19/24	0.89 U	1.1	0.73 U	8.5
		12/20/24	0.89 U	1.7	0.73 U	0.71 U

Table 6-2
Groundwater and Surface Water Analytical Results
Launch Complex 39 Observation Gantry Area (LC39OGA) - SWMU 107

Category			Volatile Organic Compounds (VOCs) by Method 8260			
Analyte			TRICHLOROETHENE	CIS-1,2-DICHLOROETHENE	TRANS-1,2-DICHLOROETHENE	VINYL CHLORIDE
GCTL (µg/L)			3	70	100	1
NADC (µg/L)			300	700	1000	100
Freshwater SWCTL (µg/L)			80.7	NA	11000	2.4
Location ID	Screened Interval (feet bls)	Sample Date				
LC39OGA-SW0001	Surface Water	06/30/21	0.89 U	0.53 U	0.73 U	0.71 U
LC39OGA-SW0002	Surface Water	06/30/21	0.89 U	0.53 U	0.73 U	0.71 U
		05/09/23	0.89 U	0.53 U	0.73 U	0.71 U
		02/19/24	0.89 U	0.53 U	0.73 U	0.71 U
LC39OGA-SW0003	Surface Water	06/30/21	0.89 U	0.53 U	0.73 U	0.71 U
LC39OGA-SW0004	Surface Water	05/09/23	0.89 U	0.53 U	0.73 U	0.71 U
		02/19/24	0.89 U	0.53 U	0.73 U	0.71 U
		12/20/24	0.89 U	0.53 U	0.73 U	0.71 U
LC39OGA-SW0005	Surface Water	05/09/23	0.89 U	0.53 U	0.73 U	0.71 U
		02/19/24	0.89 U	0.53 U	0.73 U	0.71 U
		12/20/24	0.89 U	0.53 U	0.73 U	0.71 U
LC39OGA-SW0006	Surface Water	05/09/23	0.89 U	0.53 U	0.73 U	0.71 U
		02/19/24	0.89 U	0.53 U	0.73 U	0.71 U
		12/20/24	0.89 U	0.53 U	0.73 U	0.71 U
LC39OGA-SW0007	Surface Water	12/20/24	0.89 U	0.53 U	0.73 U	0.71 U

Notes:

Bolded results indicate the presence of an analyte at the specified concentration.

Blue font indicates an exceedance of GCTLs or Freshwater SWCTLs.

Red font indicates an exceedance of NADCs.

Blank cells indicate the analyte was not analyzed for that specific well.

bls = below land surface

GCTL = Groundwater Cleanup Target Level, Chapter 62-777 Florida Administrative Code, Table 1 (2005)

I = The reported value is between the laboratory method detection limit, and the practical quantitation limit.

NA = not available at time of rule adoption

NADC = Natural Attenuation Default Concentration, Chapter 62-777 Florida Administrative Code, Table V (2005)

SWCTL = Surface Water Cleanup Target Level, Chapter 62-777 Florida Administrative Code, Table 1 (2005)

SWMU = Solid Waste Management Unit

U = The compound was analyzed for but not detected.

µg/L = micrograms per liter

Table 7-1
Groundwater Elevation Data
Launch Equipment Shop (LES) - PRL 051

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	01/22/07		06/19/07		06/26/07		07/16/07		07/20/07	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
3 to 17 feet bls												
LES-1W0002S	3 to 13	8.25	7.32	0.93	7.06	1.19	6.85	1.40	NM	NM	NM	NM
LES-1W0003S	7 to 17	7.41	6.49	0.92	6.27	1.14	5.70	1.71	5.68	1.73	5.58	1.83
LES-1W0004S	3 to 13	8.12	7.15	0.97	6.79	1.33	6.14	1.98	6.08	2.04	5.81	2.31
LES-1W0005S	3 to 13	7.39	6.45	0.94	5.99	1.40	4.58	2.81	5.37	2.02	5.07	2.32
LES-1W0006S	5 to 15	8.14	NM	NM	6.92	1.22	6.72	1.42	NM	NM	6.08	2.06
LES-1W0007S	5 to 15	7.45	NM	NM	6.02	1.43		NM	5.36	2.09	5.28	2.17
LES-1W0008S	5 to 15	7.44	NM	NM	6.09	1.35		NM	5.44	2.00	5.30	2.14
LES-1W0009S	5 to 15	7.09	6.08	1.01		NM		NM		NM		NM
LES-1W0010S	4 to 14	7.23		NM	6.15	1.08	5.50	1.73	5.51	1.72	5.50	1.73
LES-1W0011S	5 to 15	7.59	NM	NM		NM		NM		NM		NM
LES-1W0012S	5 to 15	7.45	NM	NM		NM		NM		NM		NM
LES-1W0013S	6 to 11	7.47	NM	NM		NM		NM		NM		NM
20 to 25 feet bls												
LES-1W0001I	20 to 25	7.46		NM	6.45	1.01	6.65	0.81	5.85	1.61	6.03	1.43
40 to 45 feet bls												
LES-1W0006D	40 to 45	7.67		NM	6.67	1	6.88	0.79	6.08	1.59	6.25	1.42

Notes:

bls = below land surface

BTOC = below top of casing

NAVD88 = North American Vertical Datum of 1988

NM = not measured

TOC = top of casing

Table 7-1
Groundwater Elevation Data
Launch Equipment Shop (LES) - PRL 051

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	08/06/07		08/10/07		10/15/07		10/18/07		11/13/07	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)		
3 to 17 feet bls												
LES-IW0002S	3 to 13	8.25	6.49	1.76	6.29	1.96	6.15	2.10	5.73	2.52	6.16	2.09
LES-IW0003S	7 to 17	7.41	5.71	1.70	5.70	1.71	5.48	1.93		NM	5.35	2.06
LES-IW0004S	3 to 13	8.12	6.18	1.94	5.83	2.29	5.85	2.27	4.78	3.34	5.83	2.29
LES-IW0005S	3 to 13	7.39	5.40	1.99	5.06	2.33	5.03	2.36	3.38	4.01	4.89	2.50
LES-IW0006S	5 to 15	8.14	6.34	1.80	6.17	1.97	6.02	2.12	5.60	2.54	6.00	2.14
LES-IW0007S	5 to 15	7.45	5.43	2.02	5.38	2.07	5.01	2.44	4.41	3.04	4.93	2.52
LES-IW0008S	5 to 15	7.44	5.62	1.82	5.29	2.15	5.40	2.04	4.88	2.56	5.02	2.42
LES-IW0009S	5 to 15	7.09		NM		NM		NM		NM		NM
LES-IW0010S	4 to 14	7.23	5.61	1.62	5.67	1.56	5.36	1.87	5.15	2.08	5.43	1.80
LES-IW0011S	5 to 15	7.59		NM		NM		NM		NM		NM
LES-IW0012S	5 to 15	7.45		NM		NM		NM		NM		NM
LES-IW0013S	6 to 11	7.47		NM		NM		NM		NM		NM
20 to 25 feet bls												
LES-IW00011	20 to 25	7.46	5.98	1.48	6.16	1.30	5.77	1.69	5.83	1.63	5.82	1.64
40 to 45 feet bls												
LES-IW0006D	40 to 45	7.67	6.2	1.47	6.39	1.28	5.98	1.69	6.07	1.60	6.04	1.63

Notes:

bls = below land surface

BTOC = below top of casing

NAVD88 = North American Vertical Datum of 1988

NM = not measured

TOC = top of casing

Table 7-1
Groundwater Elevation Data
Launch Equipment Shop (LES) - PRL 051

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	12/17/07		12/18/07		12/19/07		01/24/08		02/26/08	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)		
3 to 17 feet bls												
LES-IW0002S	3 to 13	8.25	7.02	1.23	6.60	1.65	5.81	2.44	6.30	1.95	6.88	1.37
LES-IW0003S	7 to 17	7.41	5.86	1.55	7.87	-0.46	7.00	0.41	5.95	1.46	6.00	1.41
LES-IW0004S	3 to 13	8.12	6.68	1.44	5.92	2.20	5.46	2.66	6.30	1.82	6.43	1.69
LES-IW0005S	3 to 13	7.39	5.90	1.49	4.36	3.03	4.31	3.08	5.77	1.62	5.46	1.93
LES-IW0006S	5 to 15	8.14	6.95	1.19	6.31	1.83	5.45	2.69		NM	6.71	1.43
LES-IW0007S	5 to 15	7.45	5.81	1.64	5.48	1.97	5.50	1.95		NM	5.59	1.86
LES-IW0008S	5 to 15	7.44	6.00	1.44	5.52	1.92	5.28	2.16		NM	5.60	1.84
LES-IW0009S	5 to 15	7.09		NM		NM		NM	5.66	1.43		NM
LES-IW0010S	4 to 14	7.23	6.18	1.05	6.02	1.21	6.03	1.20	5.84	1.39	5.98	1.25
LES-IW0011S	5 to 15	7.59		NM		NM		NM		NM		NM
LES-IW0012S	5 to 15	7.45		NM		NM		NM		NM		NM
LES-IW0013S	6 to 11	7.47		NM		NM		NM		NM		NM
20 to 25 feet bls												
LES-IW00011	20 to 25	7.46	6.43	1.03	6.45	1.01	6.45	1.01		NM	6.36	1.1
40 to 45 feet bls												
LES-IW0006D	40 to 45	7.67	6.66	1.01	6.67	1.00	6.68	0.99		NM	6.58	1.09

Notes:

bls = below land surface

BTOC = below top of casing

NAVD88 = North American Vertical Datum of 1988

NM = not measured

TOC = top of casing

Table 7-1
Groundwater Elevation Data
Launch Equipment Shop (LES) - PRL 051

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	02/29/08		03/17/08		03/20/08		04/07/08		05/19/08	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
3 to 17 feet bls												
LES-IW0002S	3 to 13	8.25	6.84	1.41	6.84	1.41	5.24	3.01	6.84	1.41	7.63	0.62
LES-IW0003S	7 to 17	7.41	5.54	1.87	5.79	1.62	3.30	4.11	5.95	3.30	6.86	0.55
LES-IW0004S	3 to 13	8.12	5.84	2.28	6.49	1.63	4.81	3.31	6.06	2.06	7.30	0.82
LES-IW0005S	3 to 13	7.39	4.60	2.79	5.75	1.64	3.94	3.45	5.34	2.05	6.63	0.76
LES-IW0006S	5 to 15	8.14	6.19	1.95	6.88	1.26	4.65	3.49	6.95	1.19		NM
LES-IW0007S	5 to 15	7.45	5.28	2.17	5.66	1.79	5.07	2.38	5.72	1.73		NM
LES-IW0008S	5 to 15	7.44	5.09	2.35	5.89	1.55		NM	6.01	1.43		NM
LES-IW0009S	5 to 15	7.09		NM		NM		NM		NM	6.60	0.49
LES-IW0010S	4 to 14	7.23	5.98	1.25	5.48	1.75	5.60	1.63	5.83	1.40	7.92	-0.69
LES-IW0011S	5 to 15	7.59		NM		NM		NM		NM		NM
LES-IW0012S	5 to 15	7.45		NM		NM		NM		NM		NM
LES-IW0013S	6 to 11	7.47		NM		NM		NM		NM		NM
20 to 25 feet bls												
LES-IW00011	20 to 25	7.46	6.39	1.07	6.40	1.06	6.31	1.15	6.71	0.75		NM
40 to 45 feet bls												
LES-IW0006D	40 to 45	7.67	6.64	1.03	6.61	1.06	5.52	2.15	6.29	1.38		NM

Notes:

bls = below land surface

BTOC = below top of casing

NAVD88 = North American Vertical Datum of 1988

NM = not measured

TOC = top of casing

Table 7-1
Groundwater Elevation Data
Launch Equipment Shop (LES) - PRL 051

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	09/10/08		04/02/09		09/24/09		01/27/10		03/15/10	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
3 to 17 feet bls												
LES-IW0002S	3 to 13	8.25	5.31	2.94	5.70	2.55	6.69	1.56	NM	NM	NM	NM
LES-IW0003S	7 to 17	7.41	5.15	2.26	10.24	-2.83	5.50	1.91	5.69	1.72	4.89	2.52
LES-IW0004S	3 to 13	8.12	5.00	3.12	6.12	2.00	6.30	1.82	NM	NM	NM	NM
LES-IW0005S	3 to 13	7.39	4.14	3.25	6.55	0.84	5.64	1.75	NM	NM	NM	NM
LES-IW0006S	5 to 15	8.14	NM	NM	NM	NM	6.53	1.61	NM	NM	NM	NM
LES-IW0007S	5 to 15	7.45	4.14	3.31	NM	NM	5.70	1.75	NM	NM	NM	NM
LES-IW0008S	5 to 15	7.44	4.31	3.13	NM	NM	5.54	1.90	NM	NM	NM	NM
LES-IW0009S	5 to 15	7.09	4.42	2.67	8.40	-1.31	5.62	1.47	NM	NM	NM	NM
LES-IW0010S	4 to 14	7.23	4.30	2.93	7.19	0.04	5.80	1.43	NM	NM	NM	NM
LES-IW0011S	5 to 15	7.59	NM	NM	NM	NM	NM	NM	NM	NM	4.29	3.30
LES-IW0012S	5 to 15	7.45	NM	NM	NM	NM	NM	NM	NM	NM	4.48	2.97
LES-IW0013S	6 to 11	7.47	NM	NM	NM	NM	NM	NM	5.32	2.15	4.39	3.08
20 to 25 feet bls												
LES-IW00011	20 to 25	7.46	5.2	2.26	NM	NM	6.16	1.3	NM	NM	NM	NM
40 to 45 feet bls												
LES-IW0006D	40 to 45	7.67	5.45	2.22	NM	NM	6.40	1.27	NM	NM	NM	NM

Notes:

bls = below land surface

BTOC = below top of casing

NAVD88 = North American Vertical Datum of 1988

NM = not measured

TOC = top of casing

Table 7-1
Groundwater Elevation Data
Launch Equipment Shop (LES) - PRL 051

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	04/08/10		04/29/10		01/12/11		07/18/11		01/24/12	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
3 to 17 feet bls												
LES-IW0002S	3 to 13	8.25		NM		NM	7.49	0.76	6.34	1.91	7.21	1.04
LES-IW0003S	7 to 17	7.41	5.28		5.27	2.14	6.26	1.15	5.40	2.01	6.39	1.02
LES-IW0004S	3 to 13	8.12		NM		NM	7.11	1.01	5.90	2.22	6.93	1.19
LES-IW0005S	3 to 13	7.39		NM		NM	6.49	0.90	5.13	2.26	6.25	1.14
LES-IW0006S	5 to 15	8.14		NM		NM		NM	6.20	1.94		NM
LES-IW0007S	5 to 15	7.45		NM		NM		NM	5.24	2.21		NM
LES-IW0008S	5 to 15	7.44		NM		NM		NM	5.48	1.96		NM
LES-IW0009S	5 to 15	7.09		NM		NM	6.43	0.66	5.45	1.64	6.14	0.95
LES-IW0010S	4 to 14	7.23		NM		NM	6.58	0.65	5.35	1.88	6.29	0.94
LES-IW0011S	5 to 15	7.59		NM		NM	6.42	1.17	5.35	2.24	6.19	1.40
LES-IW0012S	5 to 15	7.45		NM		NM	6.25	1.20	5.10	2.35	6.50	0.95
LES-IW0013S	6 to 11	7.47		NM	4.68	2.79	6.12	1.35	5.02	2.45	5.97	1.50
20 to 25 feet bls												
LES-IW00011	20 to 25	7.46		NM		NM		NM	6.00	1.46		NM
40 to 45 feet bls												
LES-IW0006D	40 to 45	7.67		NM		NM		NM	6.20	1.47		NM

Notes:

bls = below land surface

BTOC = below top of casing

NAVD88 = North American Vertical Datum of 1988

NM = not measured

TOC = top of casing

Table 7-1
Groundwater Elevation Data
Launch Equipment Shop (LES) - PRL 051

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	07/23/12		01/24/13		07/15/13		01/09/14		07/24/14	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)		
3 to 17 feet bls												
LES-IW0002S	3 to 13	8.25	5.66	2.59	7.20	1.05	6.12	2.13	7.54	0.71	6.23	2.02
LES-IW0003S	7 to 17	7.41	5.30	2.11	6.43	0.98	5.35	2.06	6.76	0.65	5.67	1.74
LES-IW0004S	3 to 13	8.12	5.28	2.84	6.91	1.21	5.74	2.38	7.04	1.08	5.81	2.31
LES-IW0005S	3 to 13	7.39	4.60	2.79	6.11	1.28	5.05	2.34	6.10	1.29	4.56	2.83
LES-IW0006S	5 to 15	8.14	5.49	2.65	7.13	1.01	6.00	2.14	7.68	0.46	6.09	2.05
LES-IW0007S	5 to 15	7.45	NM	NM		NM		NM	6.46	0.99	5.18	2.27
LES-IW0008S	5 to 15	7.44				NM		NM				NM
LES-IW0009S	5 to 15	7.09	4.93	2.16	6.10	0.99	5.15	1.94	6.61	0.48	5.26	1.83
LES-IW0010S	4 to 14	7.23	4.89	2.34	6.29	0.94	5.20	2.03	6.71	0.52	5.29	1.94
LES-IW0011S	5 to 15	7.59	4.66	2.93	6.17	1.42	5.10	2.49	6.60	0.99	5.19	2.40
LES-IW0012S	5 to 15	7.45	4.44	3.01	6.01	1.44	4.91	2.54	6.36	1.09	4.87	2.58
LES-IW0013S	6 to 11	7.47	4.38	3.09	5.97	1.50	4.89	2.58	6.13	1.34	4.75	2.72
20 to 25 feet bls												
LES-IW00011	20 to 25	7.46	NM	NM		NM		NM	7.26	0.20	5.97	1.49
40 to 45 feet bls												
LES-IW0006D	40 to 45	7.67	NM	NM		NM		NM	7.52	0.15		NM

Notes:

bls = below land surface

BTOC = below top of casing

NAVD88 = North American Vertical Datum of 1988

NM = not measured

TOC = top of casing

Table 7-1
Groundwater Elevation Data
Launch Equipment Shop (LES) - PRL 051

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	01/05/15		07/20/15		01/21/16		07/06/16		07/06/17	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
3 to 17 feet bls												
LES-IW0002S	3 to 13	8.25	6.15	2.10	7.37	0.88	6.73	1.52	5.43	2.82	6.73	1.52
LES-IW0003S	7 to 17	7.41	5.19	2.22	6.67	0.74	5.40	2.01	4.05	3.36	6.47	0.94
LES-IW0004S	3 to 13	8.12	5.70	2.42	6.95	1.17	6.34	1.78	5.01	3.11	6.70	1.42
LES-IW0005S	3 to 13	7.39	4.82	2.57	6.18	1.21	5.55	1.84	4.20	3.19	5.88	1.51
LES-IW0006S	5 to 15	8.14	6.00	2.14		NM	6.62	1.52		NM		NM
LES-IW0007S	5 to 15	7.45		NM		NM		NM		NM		NM
LES-IW0008S	5 to 15	7.44		NM		NM		NM		NM		NM
LES-IW0009S	5 to 15	7.09	5.15	1.94	6.18	0.91	5.68	1.41	4.64	2.45	5.90	1.19
LES-IW0010S	4 to 14	7.23	5.15	2.08	6.18	1.05	5.67	1.56		NM		NM
LES-IW0011S	5 to 15	7.59	5.11	2.48	6.25	1.34	5.70	1.89	3.50	4.09	5.98	1.61
LES-IW0012S	5 to 15	7.45	4.80	2.65	5.95	1.50	5.45	2.00	4.12	3.33	5.79	1.66
LES-IW0013S	6 to 11	7.47	4.70	2.77	6.26	1.21	4.52	2.95		NM		NM
20 to 25 feet bls												
LES-IW00011	20 to 25	7.46		NM		NM		NM		NM		NM
40 to 45 feet bls												
LES-IW0006D	40 to 45	7.67		NM		NM		NM		NM		NM

Notes:

bls = below land surface

BTOC = below top of casing

NAVD88 = North American Vertical Datum of 1988

NM = not measured

TOC = top of casing

Table 7-1
Groundwater Elevation Data
Launch Equipment Shop (LES) - PRL 051

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	02/08/17		03/24/17		04/28/17		05/26/17		06/29/17	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
3 to 17 feet bls												
LES-1W0002S	3 to 13	8.25		NM		NM		NM		NM		NM
LES-1W0003S	7 to 17	7.41		NM		NM		NM		NM		NM
LES-1W0004S	3 to 13	8.12		NM		NM		NM		NM		NM
LES-1W0005S	3 to 13	7.39	5.94	1.47	5.40	1.99	6.46	7.11	0.28	5.74	1.65	
LES-1W0006S	5 to 15	8.14		NM		NM		NM		NM		NM
LES-1W0007S	5 to 15	7.45		NM		NM		NM		NM		NM
LES-1W0008S	5 to 15	7.44		NM		NM		NM		NM		NM
LES-1W0009S	5 to 15	7.09	5.94	1.51		NM		NM		NM		NM
LES-1W0010S	4 to 14	7.23		NM		NM		NM		NM		NM
LES-1W0011S	5 to 15	7.59	6.00	1.09	5.90	1.69	6.39	6.74	0.85	5.74	1.85	
LES-1W0012S	5 to 15	7.45		NM		NM		NM		NM		NM
LES-1W0013S	6 to 11	7.47		NM		NM		NM		NM		NM
20 to 25 feet bls												
LES-1W00011	20 to 25	7.46		NM		NM		NM		NM		NM
40 to 45 feet bls												
LES-1W0006D	40 to 45	7.67		NM		NM		NM		NM		NM

Notes:

bls = below land surface

BTOC = below top of casing

NAVD88 = North American Vertical Datum of 1988

NM = not measured

TOC = top of casing

Table 7-1
Groundwater Elevation Data
Launch Equipment Shop (LES) - PRL 051

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	07/31/17		08/29/17		09/27/17		10/23/17		11/20/17	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
3 to 17 feet bls												
LES-IW0002S	3 to 13	8.25	6.23	2.02	NM		NM		NM		NM	
LES-IW0003S	7 to 17	7.41	4.86	2.55	NM		NM		NM		NM	
LES-IW0004S	3 to 13	8.12	5.90	2.22	NM		NM		NM		NM	
LES-IW0005S	3 to 13	7.39	5.15	2.24	6.04	1.35	4.61	2.78	3.87	3.52	4.82	2.57
LES-IW0006S	5 to 15	8.14	6.06	2.08		NM		NM		NM		NM
LES-IW0007S	5 to 15	7.45	5.19	2.26		NM		NM		NM		NM
LES-IW0008S	5 to 15	7.44		NM		NM		NM		NM		NM
LES-IW0009S	5 to 15	7.09	5.14	1.95		NM		NM		NM		NM
LES-IW0010S	4 to 14	7.23	5.30	1.93		NM		NM		NM		NM
LES-IW0011S	5 to 15	7.59	5.19	2.40	5.89	1.70	4.64	2.95	3.93	3.66	4.93	2.66
LES-IW0012S	5 to 15	7.45	5.01	2.44		NM		NM		NM		NM
LES-IW0013S	6 to 11	7.47	5.26	2.21		NM		NM		NM		NM
20 to 25 feet bls												
LES-IW00011	20 to 25	7.46		NM		NM		NM		NM		NM
40 to 45 feet bls												
LES-IW0006D	40 to 45	7.67		NM		NM		NM		NM		NM

Notes:

bls = below land surface

BTOC = below top of casing

NAVD88 = North American Vertical Datum of 1988

NM = not measured

TOC = top of casing

Table 7-1
Groundwater Elevation Data
Launch Equipment Shop (LES) - PRL 051

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	12/12/17		01/12/18		05/20/18		10/03/18		01/30/19	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)		
3 to 17 feet bls												
LES-IW0002S	3 to 13	8.25		NM	5.93	2.32		5.53		0.96	6.23	2.02
LES-IW0003S	7 to 17	7.41		NM	5.17	2.24				0.42	6.10	1.31
LES-IW0004S	3 to 13	8.12		NM	5.58	2.54		5.05		1.14	5.75	2.37
LES-IW0005S	3 to 13	7.39	5.26	2.13	4.92	2.47		4.55		1.16	5.20	2.19
LES-IW0006S	5 to 15	8.14		NM		NM		5.32		0.90	6.16	1.98
LES-IW0007S	5 to 15	7.45		NM		NM		4.73		1.24		NM
LES-IW0008S	5 to 15	7.44		NM		NM				1.06		NM
LES-IW0009S	5 to 15	7.09		NM	4.84	2.25		5.01		0.87	6.60	0.49
LES-IW0010S	4 to 14	7.23		NM		NM		4.51		0.86	5.10	2.13
LES-IW0011S	5 to 15	7.59	5.30	2.29	4.90	2.69		4.45		1.55	5.31	2.28
LES-IW0012S	5 to 15	7.45		NM	4.77	2.68		3.39		2.14	5.12	2.33
LES-IW0013S	6 to 11	7.47		NM		NM		4.43		1.56	4.96	2.51
20 to 25 feet bls												
LES-IW00011	20 to 25	7.46		NM		NM				NM		NM
40 to 45 feet bls												
LES-IW0006D	40 to 45	7.67		NM		NM				0.50		NM

Notes:

bls = below land surface

BTOC = below top of casing

NAVD88 = North American Vertical Datum of 1988

NM = not measured

TOC = top of casing

Table 7-1
Groundwater Elevation Data
Launch Equipment Shop (LES) - PRL 051

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	04/01/19		11/18/19		06/02/20		11/18/20		06/30/21	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
3 to 17 feet bls												
LES-1W0002S	3 to 13	8.25	6.77	1.48	5.33	2.92	6.40	1.85	5.35	2.90	5.97	2.28
LES-1W0003S	7 to 17	7.41	5.24	2.17	4.12	3.29	5.28	2.13	5.57	1.84	6.24	1.17
LES-1W0004S	3 to 13	8.12	6.46	1.66	5.00	3.12	5.69	2.43	5.01	3.11	5.58	2.54
LES-1W0005S	3 to 13	7.39	5.75	1.64	4.18	3.21	5.25	2.14	4.19	3.20	4.89	2.50
LES-1W0006S	5 to 15	8.14	6.70	1.44	5.18	2.96	5.18	1.76	5.20	2.94	5.86	2.28
LES-1W0007S	5 to 15	7.45		NM	4.19	3.26	5.28	2.17	4.18	3.27	4.91	2.54
LES-1W0008S	5 to 15	7.44		NM	4.37	3.07	5.48	1.96	4.36	3.08	5.08	2.36
LES-1W0009S	5 to 15	7.09	5.94	1.44	4.40	2.69	5.62	1.47	4.41	2.68	4.98	2.11
LES-1W0010S	4 to 14	7.23	5.80	1.53	4.42	2.81	5.11	2.12	4.43	2.80	4.91	2.32
LES-1W0011S	5 to 15	7.59	5.83	1.76	4.32	3.27	5.49	2.10	4.35	3.24	5.00	2.59
LES-1W0012S	5 to 15	7.45	5.65	1.80	4.10	3.35	5.24	2.21	4.11	3.34	4.85	2.60
LES-1W0013S	6 to 11	7.47	5.70	1.77	4.18	3.29	5.41	2.06	4.10	3.37	4.82	2.65
20 to 25 feet bls												
LES-1W0001I	20 to 25	7.46		NM		NM		NM		NM		NM
40 to 45 feet bls												
LES-1W0006D	40 to 45	7.67		NM		NM		NM		NM		NM

Notes:

bls = below land surface

BTOC = below top of casing

NAVD88 = North American Vertical Datum of 1988

NM = not measured

TOC = top of casing

Table 7-1
Groundwater Elevation Data
Launch Equipment Shop (LES) - PRL 051

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	05/10/23		12/17/24	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
3 to 17 feet bls						
LES-1W0002S	3 to 13	8.25	5.95	2.30	6.78	1.47
LES-1W0003S	7 to 17	7.41	5.08	2.33	5.71	1.70
LES-1W0004S	3 to 13	8.12	5.63	2.49	6.47	1.65
LES-1W0005S	3 to 13	7.39	6.90	0.49	5.75	1.64
LES-1W0006S	5 to 15	8.14	5.80	2.34	6.69	1.45
LES-1W0007S	5 to 15	7.45	4.79	2.66	5.75	1.70
LES-1W0008S	5 to 15	7.44	4.98	2.46	5.88	1.56
LES-1W0009S	5 to 15	7.09	5.00	2.09	5.55	1.54
LES-1W0010S	4 to 14	7.23	5.00	2.23	5.95	1.28
LES-1W0011S	5 to 15	7.59	5.65	1.94	5.82	1.77
LES-1W0012S	5 to 15	7.45	4.70	2.75	5.56	1.89
LES-1W0013S	6 to 11	7.47	NM	NM	5.65	1.82
20 to 25 feet bls						
LES-1W0001I	20 to 25	7.46	NM	NM	NM	
40 to 45 feet bls						
LES-1W0006D	40 to 45	7.67	NM	NM	NM	

Notes:

bls = below land surface

BTOC = below top of casing

NAVD88 = North American Vertical Datum of 1988

NM = not measured

TOC = top of casing

Table 7-2
Groundwater Analytical Results
Launch Equipment Shop (LES) - PRL 051

		Analyte	TRPH
		GCTL (µg/L)	5000
		NADC (µg/L)	50000
Location ID	Screened Interval (feet bls)	Sample Date	
LES-IW0002S	3 to 13	09/05/07	13500
		01/24/08	5770
		05/19/08	4660
		09/10/08	170 U
		01/02/09	1700
		04/02/09	7080
		09/24/09	3740
		01/31/11	3460
		07/19/11	4560
		01/25/12	4350
		07/23/12	3330
		01/24/13	2610
		07/15/13	2220
		01/10/14	2970
		07/25/14	1280
		01/05/15	1190
		07/21/15	1930
		01/21/16	988
		07/06/16	120
		01/06/17	2700
LES-IW0003S	7 to 17	07/31/17	2400
		01/12/18	760 U
		09/05/07	16300
		01/24/08	8350
		05/19/08	4110
		09/10/08	2770
		01/02/09	2600
		04/02/09	5750
		09/24/09	17700
		01/27/10	1390
		03/15/10	1010
		04/08/10	1500
		04/29/10	1320
		01/13/11	7510
		07/19/11	2850
		01/24/12	4860
		07/23/12	2000
		01/24/13	2880
		07/15/13	2490
		01/09/14	2130
		07/24/14	1700
		01/05/15	1990
		07/21/15	2020
		01/21/16	10700
		07/06/16	3000
		01/06/17	2400
		07/31/17	3200
		01/12/18	780 U

Table 7-2
Groundwater Analytical Results
Launch Equipment Shop (LES) - PRL 051

		Analyte	TRPH
		GCTL (µg/L)	5000
		NADC (µg/L)	50000
Location ID	Screened Interval (feet bls)	Sample Date	
LES-IW0004S	3 to 13	09/05/07	2030
		01/24/08	4840
		05/19/08	1180
		09/10/08	170 U
		01/02/09	514
		04/02/09	11900
		09/24/09	909
		01/12/11	7440
		07/18/11	6020
		01/24/12	1460
		07/23/12	3290
		01/24/13	3190
		07/15/13	1160
		01/09/14	2650
		07/25/14	3210
		01/05/15	1470
		07/21/15	1470
		01/21/16	685
		07/06/16	80 U
		01/06/17	890 I
LES-IW0005S	3 to 13	07/31/17	1600
		01/12/18	750 U
		09/05/07	15400
		01/24/08	14700
		05/19/08	7400
		09/10/08	13600
		01/20/09	9140
		04/02/09	27500
		09/24/09	21800
		01/12/11	22400
		07/18/11	14000
		01/24/12	9230
		07/24/12	11100
		01/24/13	10100
		07/15/13	15900
		01/09/14	2360
		07/25/14	4000
		01/05/15	2760
		07/21/15	3110
		01/21/16	3840
		07/06/16	5300
		01/06/17	7200
		02/08/17	11800
		03/24/17	7000
		04/28/17	8500
		05/26/17	11400
		06/29/17	12200
		07/31/17	33500
		08/29/17	19300
		09/27/17	3200
		10/23/17	2100
		11/20/17	4000
		12/12/17	5100
		01/12/18	4300
		05/11/18	7900
		10/03/18	4500
		01/30/19	10600
		04/01/19	8300
		11/18/19	2240
		06/02/20	7020
		11/18/20	1290
		06/30/21	510 I
		11/23/21	100 U
		05/10/23	3900 U
		12/17/24	340 U
		12/17/2024 (DUP)	340 U

Table 7-2
Groundwater Analytical Results
Launch Equipment Shop (LES) - PRL 051

Analyte			TRPH
GCTL (µg/L)			5000
NADC (µg/L)			50000
Location ID	Screened Interval (feet bls)	Sample Date	
LES-IW0006S	5 to 15	07/24/12	830
LES-IW0009S	5 to 15	09/05/07	376
		01/24/08	170 U
		05/19/08	170 U
		09/10/08	680
		01/20/09	203 I
		04/02/09	1,700 U
		09/24/09	363
		01/12/11	140 U
		07/18/11	403
		01/25/12	1370
		07/23/12	295
		01/24/13	408
		07/15/13	360
		01/10/14	147 I
		07/24/14	235 I
		01/05/18	347
		07/22/15	381
		01/21/16	437
		07/06/16	80 U
		01/06/17	800 U
		02/08/17	800 U
		07/31/17	770 U
		01/12/18	770 U
		01/30/19	760 U
		11/18/19	281
		06/02/20	140 U
		11/18/20	268 I
		06/30/21	100 U
		11/23/21	100 U
		05/10/23	3900 U
		12/17/24	340 U
LES-IW0010S	4 to 14	09/05/07	390
		01/24/08	1,700 U
		05/19/08	886
		09/10/08	160 U
		01/20/09	164 I
		04/02/09	1,700 U
		09/24/09	398
		01/13/11	490
		07/18/11	224 I
		01/25/12	1570
		07/23/12	163 I
		01/24/13	489
		07/15/13	303
		01/10/14	4800
		07/24/14	184 I
		01/05/15	1860
		07/22/15	2300

Table 7-2
Groundwater Analytical Results
Launch Equipment Shop (LES) - PRL 051

		Analyte	TRPH
		GCTL (µg/L)	5000
		NADC (µg/L)	50000
Location ID	Screened Interval (feet bls)	Sample Date	
LES-IW0011S	5 to 15	03/15/10	2370
		01/13/11	7780
		07/19/11	5230
		01/24/12	4390
		07/23/12	3670
		01/24/13	11200
		07/15/13	12300
		01/10/24	4990
		07/25/14	7950
		01/05/15	6830
		07/21/15	6330
		01/21/16	8560
		07/06/16	6800
		01/06/17	46400
		02/08/17	18600
		03/24/17	4500
		04/28/17	12100
		05/26/17	1900
		06/29/17	6600
		07/31/17	2700
		08/29/17	6500
		09/27/17	4100
		10/23/17	2900
		11/20/17	9400
		12/12/17	12100
		01/12/18	8400
		05/11/18	9800
		10/03/18	2400
		01/30/19	6400
		04/01/19	13000
		11/18/19	9770
		06/02/20	4570
		11/18/20	8760
		06/30/21	2100
		11/23/21	5200
		05/10/23	3900 U
		12/17/24	2700
LES-IW0012S	5 to 15	03/15/10	773
		01/13/11	14300
		07/19/11	1580
		01/24/12	3270
		07/23/12	12000
		01/24/13	3170
		07/15/13	12900
		01/09/14	3980
		07/24/14	3870
		01/15/15	1870
		07/21/15	1330
		01/21/16	2630
		07/06/16	1000
		01/06/17	3800
		07/31/17	3000
		01/12/18	800 U

Table 7-2
Groundwater Analytical Results
Launch Equipment Shop (LES) - PRL 051

		Analyte	TRPH
		GCTL (µg/L)	5000
		NADC (µg/L)	50000
Location ID	Screened Interval (feet bls)	Sample Date	
LES-IW0013S	6 to 11 (5 ft sump) (total depth = 16 ft)	01/27/10	3870
		03/15/10	1010
		04/08/10	1610
		04/29/10	735
		01/13/11	6060
		07/19/11	1190
		01/24/12	1760
		07/23/12	597
		01/24/13	2690
		07/15/13	505
		01/09/14	2100
		07/24/14	1460
		01/05/15	1190
		07/22/15	1380

Notes:

Bolded results indicate the presence of an analyte at the specified concentration.

Blue font indicates an exceedance of GCTLs.

Red font indicates an exceedance of NADCs.

Blank cells indicate the analyte was not analyzed for that specific well.

bls = below ground surface

GCTL = Groundwater Cleanup Target Level, Chapter 62-777 Florida Administrative Code, Table 1 (2005)

I = The reported value is between the laboratory method detection limit, and the practical quantitation limit.

J = Estimated value

NADC = Natural Attenuation Default Concentration, Chapter 62-777 Florida Administrative Code, Table V (2005)

PRL = Potential Release Location

TRPH = Total Recoverable Petroleum Hydrocarbons

U = The compound was analyzed for but not detected.

µg/L = micrograms per liter

Table 8-1
Groundwater Elevation Data
Shuttle Flight Operations Contract Generator Maintenance Facility (SFOC) - SWMU 081

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	05/20/08		11/10/08		05/15/09	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
SFOC-IW0001S	2 to 12	6.92	6.49	0.43	4.93	1.99	7.06	-0.14
SFOC-IW0002S	2 to 12	5.65	5.01	0.64	2.53	3.12	5.53	0.12
SFOC-IW0003S	2 to 12	4.88		NM		NM		NM
SFOC-IW0004S	2 to 12	5.10	4.74	0.36	2.22	2.88	5.29	-0.19
SFOC-IW0005S	2 to 12	3.76	3.67	0.09	1.15	2.61	4.17	-0.41
SFOC-IW0006S	5 to 15	6.56	5.85	0.71	3.41	3.15	6.44	0.11
SFOC-IW0007S	2 to 12	4.31		NM		NM		NM
SFOC-IW0008	8 to 18	7.14		NM		NM		NM
SFOC-IW0009	2 to 12	4.78		NM		NM		NM

Notes:

bls = below land surface

BTOC = below top of casing

NAVD88 = North American Vertical Datum of 1988

NM = not measured

TOC = top of casing

Table 8-1
Groundwater Elevation Data
Shuttle Flight Operations Contract Generator Maintenance Facility (SFOC) - SWMU 081

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	11/13/09		05/20/10		11/08/10	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
SFOC-IW0001S	2 to 12	6.92	5.72	1.20	3.67	3.25	6.18	0.74
SFOC-IW0002S	2 to 12	5.65	4.23	1.42	2.22	3.43	4.51	1.14
SFOC-IW0003S	2 to 12	4.88		NM	1.65	3.23	3.92	0.96
SFOC-IW0004S	2 to 12	5.10	6.69	-1.59	1.78	3.32	4.17	0.93
SFOC-IW0005S	2 to 12	3.76	1.95	1.81	0.87	2.89	2.98	0.78
SFOC-IW0006S	5 to 15	6.56	5.15	1.41	3.11	3.45	5.58	0.98
SFOC-IW0007S	2 to 12	4.31		NM		NM		NM
SFOC-IW0008	8 to 18	7.14		NM		NM		NM
SFOC-IW0009	2 to 12	4.78		NM		NM		NM

Notes:

bls = below land surface

BTOC = below top of casing

NAVD88 = North American Vertical Datum of 1988

NM = not measured

TOC = top of casing

Table 8-1
Groundwater Elevation Data
Shuttle Flight Operations Contract Generator Maintenance Facility (SFOC) - SWMU 081

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	05/09/11		11/01/11		11/27/12	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
SFOC-IW0001S	2 to 12	6.92	6.10	0.82	2.80	4.12	5.31	1.61
SFOC-IW0002S	2 to 12	5.65	4.62	1.03		NM	3.83	1.82
SFOC-IW0003S	2 to 12	4.88	4.09	0.79		NM	3.11	1.77
SFOC-IW0004S	2 to 12	5.10	4.37	0.73	1.01	4.09	3.43	1.67
SFOC-IW0005S	2 to 12	3.76	3.13	0.63	0.00	3.76	2.34	1.42
SFOC-IW0006S	5 to 15	6.56	5.59	0.97	NM		4.71	1.85
SFOC-IW0007S	2 to 12	4.31		NM		NM		NM
SFOC-IW0008	8 to 18	7.14		NM		NM		NM
SFOC-IW0009	2 to 12	4.78		NM		NM		NM

Notes:

bls = below land surface

BTOC = below top of casing

NAVD88 = North American Vertical Datum of 1988

NM = not measured

TOC = top of casing

Table 8-1
Groundwater Elevation Data
Shuttle Flight Operations Contract Generator Maintenance Facility (SFOC) - SWMU 081

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	05/29/13		11/19/14		05/24/16	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
SFOC-IW0001S	2 to 12	6.92	4.40	2.52	4.15	2.77	5.01	1.91
SFOC-IW0002S	2 to 12	5.65	2.92	2.73	2.46	3.19	3.51	2.14
SFOC-IW0003S	2 to 12	4.88	2.15	2.73	2.05	2.83	2.90	1.98
SFOC-IW0004S	2 to 12	5.10	2.51	2.59	2.25	2.85	3.18	1.92
SFOC-IW0005S	2 to 12	3.76	1.42	2.34	1.15	2.61	2.11	1.65
SFOC-IW0006S	5 to 15	6.56	3.93	2.63	3.75	2.81	4.45	2.11
SFOC-IW0007S	2 to 12	4.31		NM		NM		NM
SFOC-IW0008	8 to 18	7.14		NM		NM		NM
SFOC-IW0009	2 to 12	4.78		NM		NM		NM

Notes:

bls = below land surface

BTOC = below top of casing

NAVD88 = North American Vertical Datum of 1988

NM = not measured

TOC = top of casing

Table 8-1
Groundwater Elevation Data
Shuttle Flight Operations Contract Generator Maintenance Facility (SFOC) - SWMU 081

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	09/20/18		06/02/20		05/09/23	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)	Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
SFOC-IW0001S	2 to 12	6.92	5.62	1.30	4.63	2.29	4.51	2.41
SFOC-IW0002S	2 to 12	5.65	4.10	1.55	2.97	2.68	2.84	2.81
SFOC-IW0003S	2 to 12	4.88	3.65	1.23	2.33	2.55	3.21	1.67
SFOC-IW0004S	2 to 12	5.10	3.86	1.24	2.77	2.33	2.56	2.54
SFOC-IW0005S	2 to 12	3.76	3.01	0.75	1.46	2.30	1.45	2.31
SFOC-IW0006S	5 to 15	6.56	5.09	1.47	4.18	2.38	1.73	4.83
SFOC-IW0007S	2 to 12	4.31	NM		NM		3.97	0.34
SFOC-IW0008	8 to 18	7.14	5.69	1.45	4.70	2.44	6.51	0.63
SFOC-IW0009	2 to 12	4.78	NM		NM		4.45	0.33

Notes:

bls = below land surface

BTOC = below top of casing

NAVD88 = North American Vertical Datum of 1988

NM = not measured

TOC = top of casing

Table 8-1
Groundwater Elevation Data
Shuttle Flight Operations Contract Generator Maintenance Facility (SFOC) - SWMU 081

Well ID	Screen Interval (feet bls)	TOC Elevation (feet NAVD88)	12/23/24	
			Depth to Water (feet BTOC)	Water Elevation (feet NAVD88)
SFOC-IW0001S	2 to 12	6.92	4.88	2.04
SFOC-IW0002S	2 to 12	5.65	3.38	2.27
SFOC-IW0003S	2 to 12	4.88	2.62	2.26
SFOC-IW0004S	2 to 12	5.10	3.06	2.04
SFOC-IW0005S	2 to 12	3.76	1.98	1.78
SFOC-IW0006S	5 to 15	6.56	4.38	2.18
SFOC-IW0007S	2 to 12	4.31	1.98	2.33
SFOC-IW0008	8 to 18	7.14	4.95	2.19
SFOC-IW0009	2 to 12	4.78	2.75	2.03

Notes:

bls = below land surface

BTOC = below top of casing

NAVD88 = North American Vertical Datum of 1988

NM = not measured

TOC = top of casing

Table 8-2
Groundwater Analytical Results
Shuttle Flight Operations Contract Generator Maintenance Facility (SFOC) - SWMU 081

Category			Metals
Analyte			Antimony
GCTL (µg/L)			6
NADC (µg/L)			60
Location ID	Screened Interval (feet bls)	Sample Date	
SFOC-IW0001S	2 to 12	11/01/97	41
		03/01/98	45
		10/01/99	286
		03/01/01	6.9 J
		11/01/01	130
		12/01/02	160
		08/21/03	140
		05/05/05	135
		10/27/05	183
		05/15/06	82.5
		11/07/06	52.8
		05/15/07	3.4 U
		01/17/08	74
		11/11/08	49.7
		05/15/09	7.0
		11/08/10	26
		05/11/11	67
		11/28/12	148
		05/01/13	82
		11/01/14	78
		05/01/16	21
		10/04/18	120
		05/09/23	76
		12/23/24	38
		12/23/2024 (DUP)	38
SFOC-IW0002S	2 to 12	12/23/24	0.43 I

Table 8-2
Groundwater Analytical Results
Shuttle Flight Operations Contract Generator Maintenance Facility (SFOC) - SWMU 081

Category			Metals
Analyte			Antimony
GCTL (µg/L)			6
NADC (µg/L)			60
Location ID	Screened Interval (feet bls)	Sample Date	
SFOC-IW0004S	2 to 12	03/01/01	20 U
		12/02/02	5 U
		01/01/03	5 U
		05/05/05	1.5 U
		11/01/05	1.5 U
		05/15/06	3.4 U
		11/07/06	3.4 U
		05/15/07	3.4 U
		11/11/08	5.3 I
		05/15/09	4.5 U
		11/08/10	0.8 I
		05/11/11	0.7 I
		11/28/12	0.120 U
		05/01/13	0.18 I
		11/01/14	0.84 U
		05/01/16	0.85 U
		10/04/18	4 U
		06/02/20	1.7 I
		05/09/23	1.1 U
		12/23/24	0.41 U
SFOC-IW0008	8 to 18	10/04/18	4 U
		06/02/20	1.9 I
SFOC-IW0009	2 to 12	05/09/23	1.1 U
		12/23/24	0.41 U

Notes:

Bolded results indicate the presence of an analyte at the specified concentration.

Blue font indicates an exceedance of GCTLs.

Red font indicates an exceedance of NADCs.

Blank cells indicate the analyte was not analyzed for that specific well.

bls = below ground surface

GCTL = Groundwater Cleanup Target Level, Chapter 62-777 Florida Administrative Code, Table 1 (2005)

I = Analytical result is greater than or equal to the method detection limit, but less than the practical quantitation limit

J = Estimated value

NADC = Natural Attenuation Default Concentration, Chapter 62-777 Florida Administrative Code, Table V (2005)

SWMU = Solid Waste Management Unit

TRPH = Total Recoverable Petroleum Hydrocarbons

U = Analyte was not detected

µg/L = micrograms per liter

Table 9-1
Proposed 2025 - 2026 Long-Term Monitoring Schedule
Vehicle Assembly Building Area Long-Term Monitoring Program

Well ID	Screen Interval (feet bls)	November 2025 (Annual Event)		May 2026 (Biennial Event)	
		Water Levels	Sampled (Analytical Parameters)	Water Levels	Sampled (Analytical Parameters)
C5 Electrical Substation (C5ES) SWMU 066					
C5-MW0001S	5 to 15			X	
C5-MW0001I	28 to 33			X	
C5-MW0002S	5 to 15			X	
C5-MW0003S	5 to 15			X	
C5-MW0003I	28 to 33			X	
C5-MW0004S	5 to 15			X	Site VOCs
C5-MW0004I	28 to 33			X	Site VOCs
C5-MW0005S	5 to 15			X	
C5-MW0008S	3 to 13			X	
C5-MW0009S	5 to 15			X	
C5-MW0010S	10 to 15			X	
C5-MW0010I	20 to 25			X	
C5-MW0011S	10 to 15			X	
C5-MW0012S	10 to 15			X	
C5-MW0012I	20 to 25			X	
C5-MW0013S	9.5 to 14.5			X	
C5-MW0013I	33 to 38			X	
C5-MW0016S	7 to 12			X	
C5-MW0017S	7 to 12			X	
C5-MW0018S	7 to 12			X	Site VOCs
C5-MW0019I	13 to 23			X	Site VOCs
C5-MW0020	5 to 15			X	
C5-MW0021	5 to 15			X	Site VOCs
C5-MW0022	5 to 15			X	Site VOCs
C5-MW0023	5 to 15			X	Site VOCs
C5-MW0024	20 to 25			X	Site VOCs
C5-MW0025	5 to 15			X	Site VOCs
Fire Station 3 (FS3) (Former Fire Station 6) SWMU 106					
FS6-MW0001	25 to 35	X	Site VOCs	X	Site VOCs
FS6-MW0002	20 to 30	X	Site VOCs	X	Site VOCs
FS6-MW0003	20 to 30	X	Site VOCs	X	Site VOCs
Former Development and Testing Laboratory (FDTL) SWMU 075					
FDTL-IW0003I	15 to 25			X	
FDTL-IW0004I	15 to 25			X	
FDTL-IW0005I	25 to 35			X	
FDTL-IW0006S	5 to 15			X	
FDTL-IW0007I	10 to 20			X	Site VOCs
FDTL-IW0008I	10 to 20			X	Site VOCs
FDTL-IW0009I	10 to 20			X	Site VOCs
FDTL-IW0010I	10 to 20			X	Site VOCs
FDTL-IW0011I	10 to 20			X	
FDTL-IW0012I	10 to 20			X	
FDTL-IW0013I	10 to 20			X	
FDTL-IW0014I	10 to 20			X	Site VOCs
FDTL-IW0015S	5 to 15			X	Site VOCs
FDTL-IW0016I	10 to 20			X	
FDTL-IW0017I	10 to 20			X	Site VOCs
FDTL-IW0018I	5 to 15			X	
FDTL-IW0019I	10 to 20			X	Site VOCs
FDTL-IW0020I	10 to 20			X	
FDTL-SW0001	Surface Water				Site VOCs
FDTL-SW0002	Surface Water				Site VOCs
FDTL-SW0003	Surface Water				Site VOCs
FDTL-SW0004	Surface Water				Site VOCs
FDTL-SW0005	Surface Water				Site VOCs

Table 9-1
Proposed 2025 - 2026 Long-Term Monitoring Schedule
Vehicle Assembly Building Area Long-Term Monitoring Program

Well ID	Screen Interval (feet bls)	November 2025 (Annual Event)		May 2026 (Biennial Event)	
		Water Levels	Sampled (Analytical Parameters)	Water Levels	Sampled (Analytical Parameters)
Launch Complex 39 Observation Gantry Area (LC39OGA) SWMU 107					
LC39OGA-MW0001	5 to 15	X	Site VOCs	X	Site VOCs
LC39OGA-MW0002	5 to 15	X	Site VOCs	X	Site VOCs
LC39OGA-MW0003	5 to 15				
LC39OGA-MW0004	5 to 15	X	Site VOCs	X	Site VOCs
LC39OGA-MW0005	5 to 15	X	Site VOCs	X	Site VOCs
LC39OGA-MW0006	22 to 27	X	Site VOCs	X	Site VOCs
LC39OGA-MW0007	22 to 27	X	Site VOCs	X	Site VOCs
LC39OGA-MW0008	22 to 27	X	Site VOCs	X	Site VOCs
LC39OGA-MW0009	22 to 27	X	Site VOCs	X	Site VOCs
LC39OGA-MW0010	5 to 15	X	Site VOCs	X	Site VOCs
LC39OGA-MW0011	5 to 15	X	Site VOCs	X	Site VOCs
LC39OGA-MW0012	22 to 27	X	Site VOCs	X	Site VOCs
LC39OGA-SW0001	Surface Water				
LC39OGA-SW0002	Surface Water				
LC39OGA-SW0003	Surface Water				
LC39OGA-SW0004	Surface Water		Site VOCs		Site VOCs
LC39OGA-SW0005	Surface Water		Site VOCs		Site VOCs
LC39OGA-SW0006	Surface Water		Site VOCs		Site VOCs
LC39OGA-SW0007	Surface Water		Site VOCs		Site VOCs
Shuttle Flight Operations Contract Generator Maintenance Facility (SFOC) SWMU 081					
SFOC-IW0001S	2 to 12			X	Antimony
SFOC-IW0002S	2 to 12			X	Antimony
SFOC-IW0003S	2 to 12			X	
SFOC-IW0004S	2 to 12			X	Antimony
SFOC-IW0005S	2 to 12			X	
SFOC-IW0006S	5 to 15			X	
SFOC-IW0007S	5 to 15			X	
SFOC-IW0008	8 to 18			X	
SFOC-IW0009	2 to 12			X	Antimony

Notes:

Blank cells indicate that the well is not included for that event or activity.

DPT = Direct Push Technology

bls = below land surface

SWMU = Solid Waste Management Unit

TRPH = Total Recoverable Petroleum Hydrocarbons

VOC = Volatile Organic Compound

FIGURES

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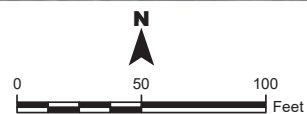


Legend

Monitoring Well

Notes:

- ft b/s = feet below land surface
- (5-15 ft b/s) = Monitoring well screen interval in feet below land surface
- SWMU = Solid Waste Management Unit
- Historical Data Source: RIS
- Aerial Source: FDOT 2018



**FIGURE 1-4
Site Layout**

Fire Station 3 (FS3)
(Former Fire Station 6)
SWMU 106
NASA Kennedy Space Center, Florida



FIGURE 1-5
Site Layout

Launch Complex 39 Observation Gantry Area
(LC39OGA) - SWMU 107
NASA Kennedy Space Center, Florida

Notes:

- Notes:
- 1) SWMU = Solid Waste Management Unit
 - 2) OFW = Outstanding Florida Waters
 - 3) MW = Monitoring Well
 - 4) SW = Surface Water

Source
Ortho imagery from Brevard County, 2018.



Legend

-  Monitoring Well
 Surface Water Sample
 Building



FIGURE 1-6
Site Layout

Launch Equipment Shop (LES)
PRL 051
NASA Kennedy Space Center, Florida

Legend

Monitoring Well

Notes:

- ft bls = feet below land surface
- (3-13 ft bls) = Monitoring Well Screen Interval
- SWMD = Solid Waste Management Unit
- Aerial Source: FDOT 2018

Scale:

0 15 30 Feet



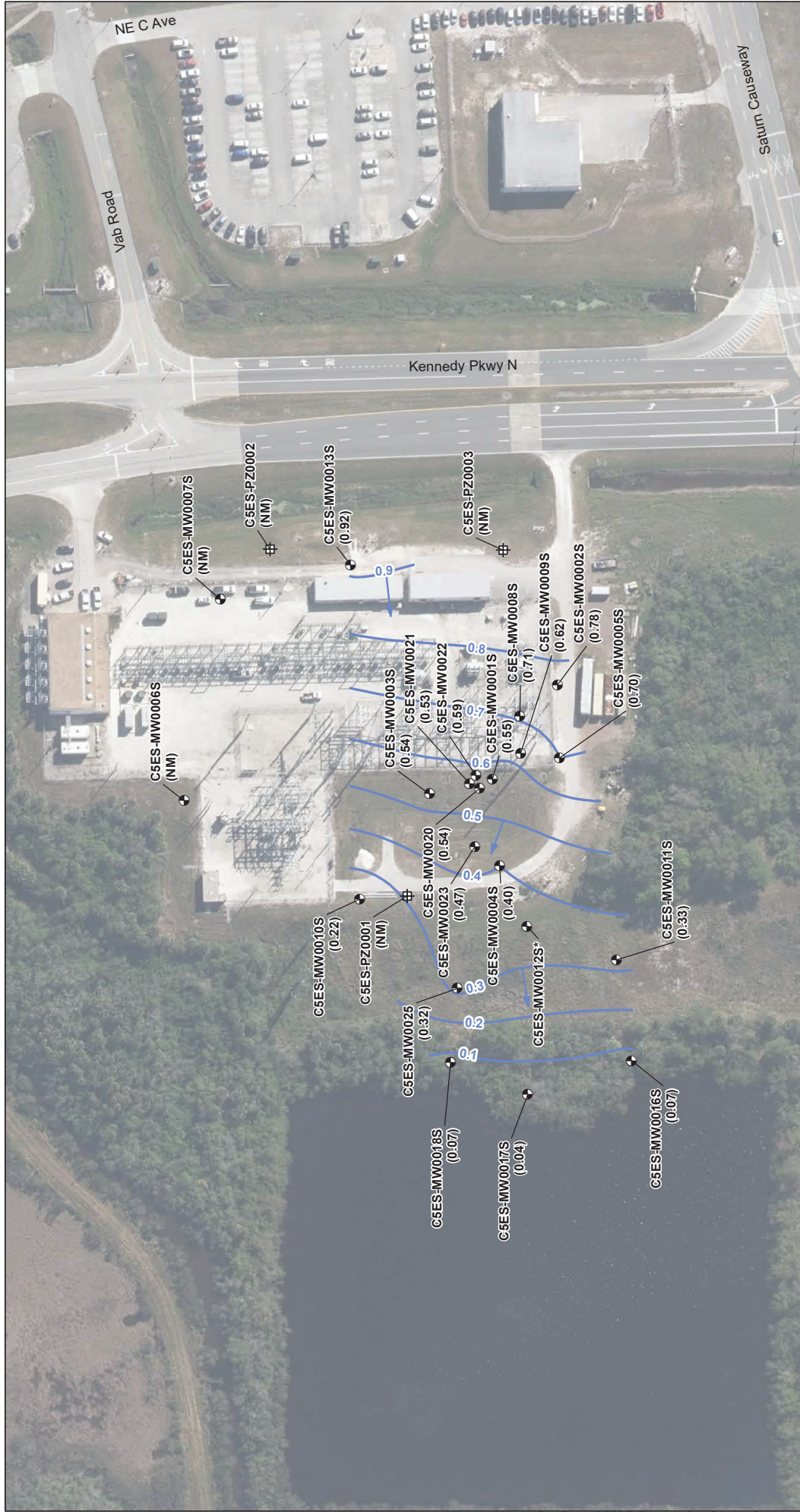
Legend

- Monitoring Well

Notes:
 • 15 feet below land surface
 • 15 ft bbs = Monitoring well screen interval in feet below land surface
 • SWMU = Solid Waste Management Unit
 • Historical Data Source: RIS
 • Aerial Source: FDOT 2018

**FIGURE 1-7
Site Layout**

Shuttle Flight Operations Contract
 Generator Maintenance Facility (SFOC)
 SWMU 081
 NASA Kennedy Space Center, Florida



Legend

- Monitoring Well (3 to 15 feet bls)
- ⊕ Shallow Piezometer Location
- Groundwater Contour (NAVD88 Feet)
- Groundwater Flow Direction
- 0.8- Groundwater Elevation

Notes:

- 1) SWMU = Solid Waste Management Unit
- 2) bls = below land surface
- 3) NAVD88 = North American Vertical Datum of 1988
- 4) Results shown as feet bls
- 5) NM = Not Measured
- 6) * = Well could not be located

FIGURE 3-1

Groundwater Contour Map

December 18, 2024

3 to 15 feet bls

Source: Ortho imagery from Brevard County, 2018.

C5 Electrical Substation - SWMU 066

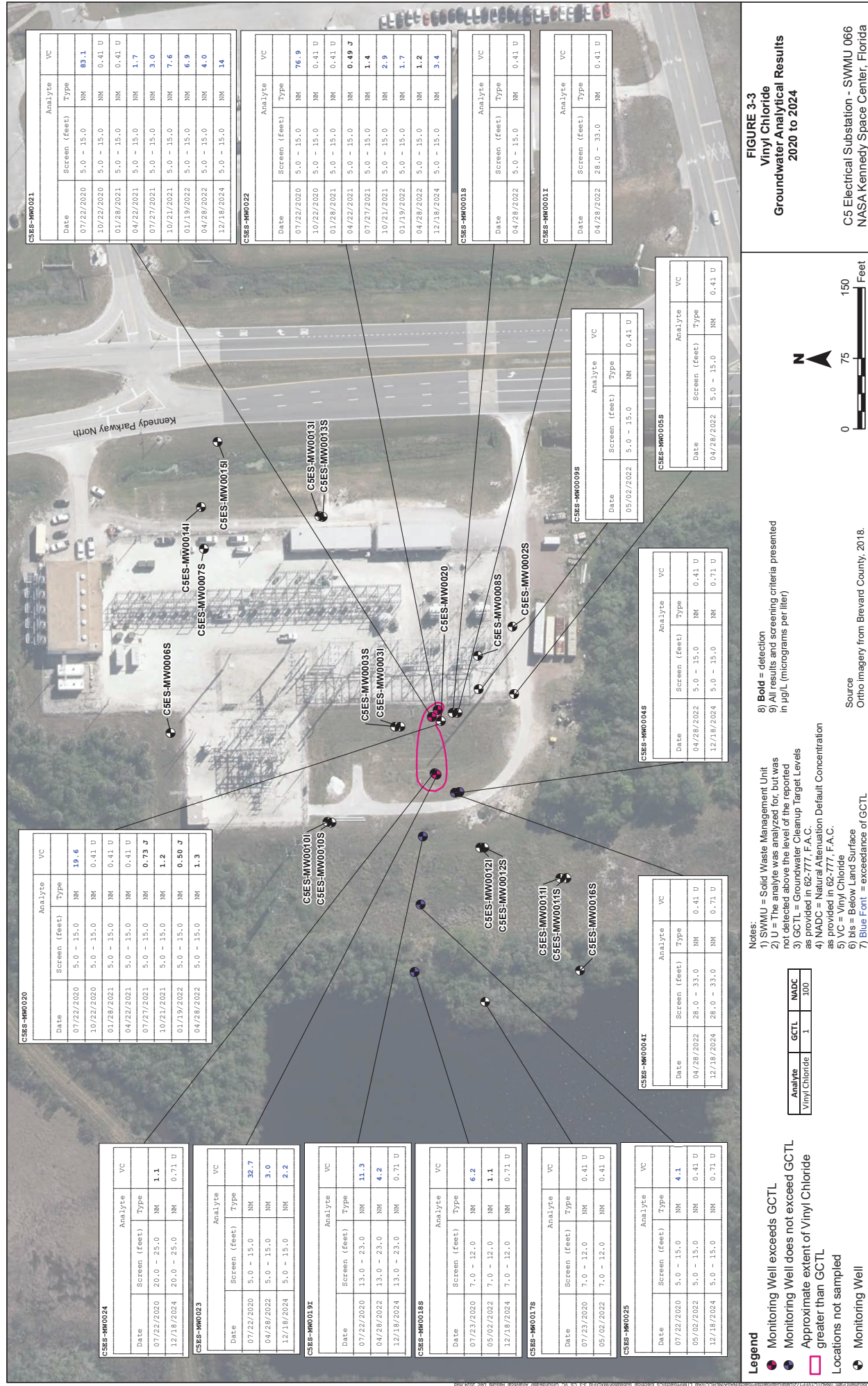
NASA Kennedy Space Center, Florida

0 75 150 Feet

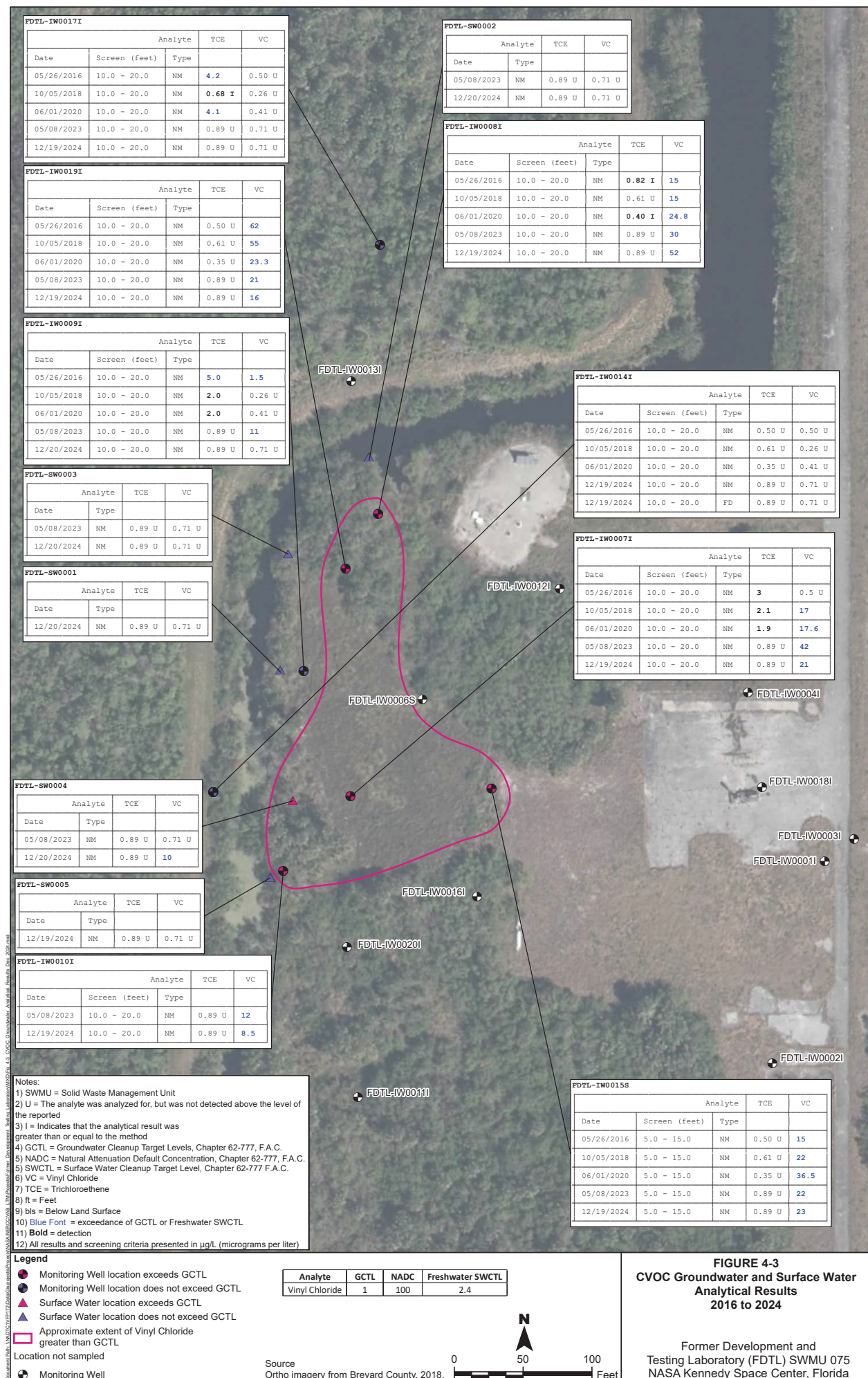


FIGURE 3-2
Groundwater Contour Map
December 18, 2024
13 to 38 feet bls

C5 Electrical Substation - SWMU 066
NASA Kennedy Space Center, Florida









Legend

- Monitoring Well
- Groundwater Contour (NAVD88 Feet)
- Groundwater Flow Direction
- Groundwater Elevation

Notes:

- 1) SWMU = Solid Waste Management Unit
- 2) bls = below land surface
- 3) NAVD88 = North American Vertical Datum of 1988
- 4) Results shown as feet bls

Source
Ortho imagery from Brevard County, 2018.

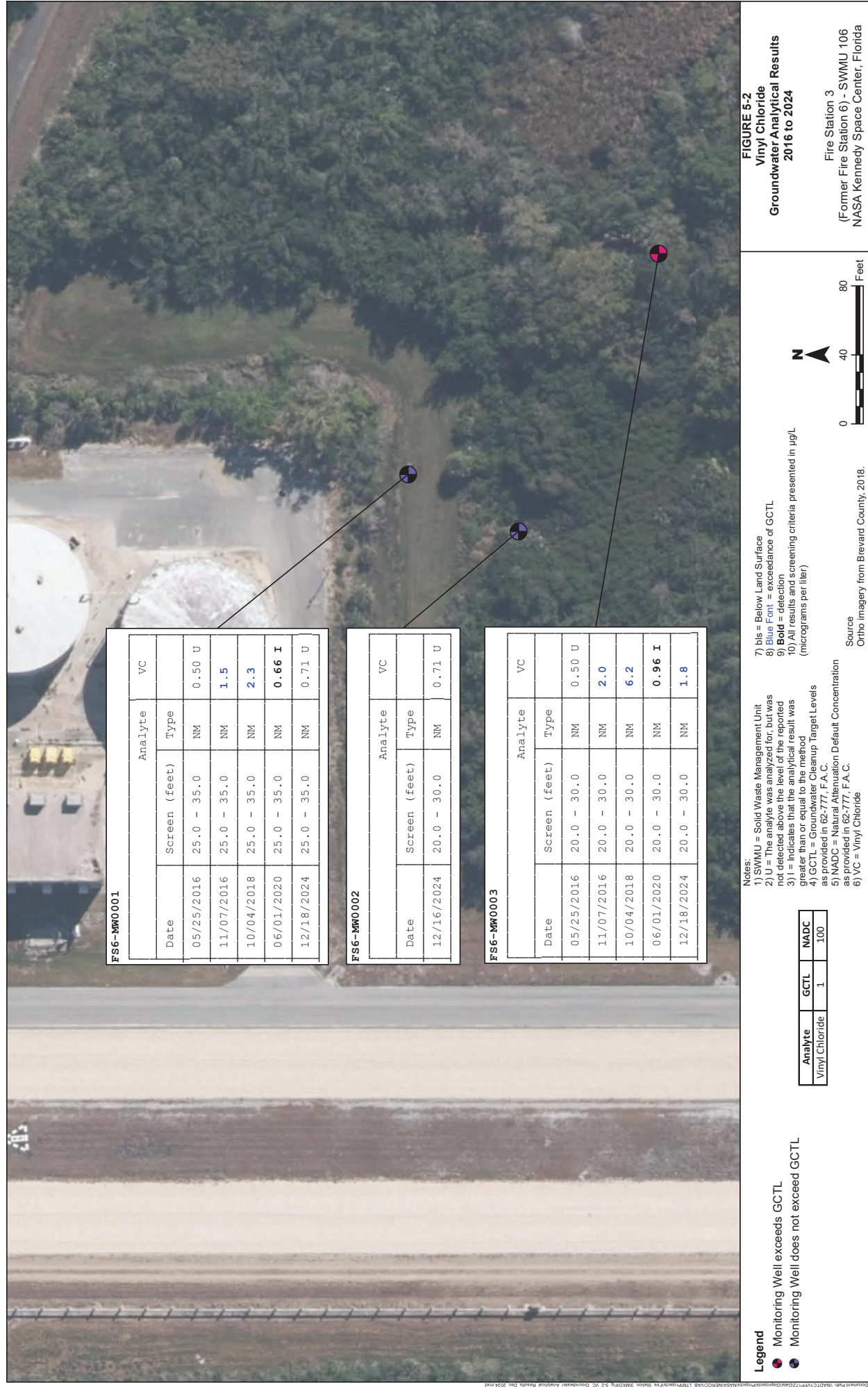
0 30 60

Feet

FIGURE 5-1
Groundwater Contour Map
December 18, 2024

Fire Station 3
 (Former Fire Station 6) - SWMU 106
 NASA Kennedy Space Center, Florida

Document Path: \\NAUTOC\Users\j220\My Documents\Projects\SWMU106\SWMU106_GW_Contour_Map_121824.mxd





Legend

- Monitoring Well (5 to 15 feet bls)
- Building
- Groundwater Contour (NAVD88 Feet)
- Groundwater Flow Direction
- Groundwater Elevation

Notes:

- 1) SWMU = Solid Waste Management Unit
- 2) OFW = Outstanding Florida Waters
- 3) MW = Monitoring Well
- 4) NM = Not Measured
- 5) bls = below land surface
- 6) NAVD88 = North American Vertical Datum of 1988
- 7) Results shown as feet bls

Source
Ortho Imagery from Brevard County, 2018.

0 70 140 Feet

FIGURE 6-1
Groundwater Contour Map
December 20, 2024
5 to 15 feet bls

Launch Complex 39 Observation Gantry Area
(LC39OGA) - SWMU 107
NASA Kennedy Space Center, Florida



Legend

- Monitoring Well (22 to 27 feet bls)
- Building
- Groundwater Contour (NAVD88 Feet)
- Groundwater Flow Direction
- Groundwater Elevation

Notes:

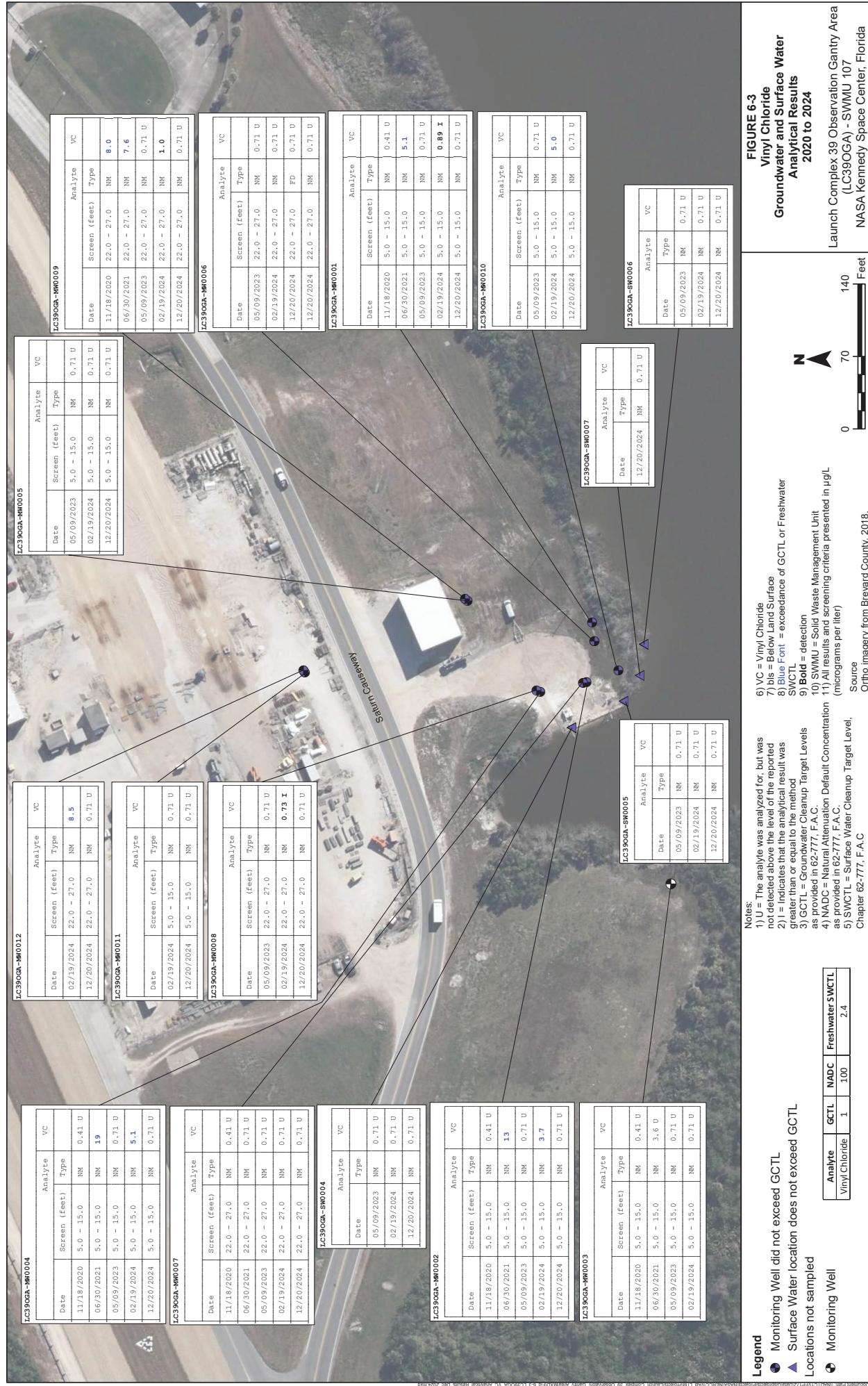
- 1) SWMU = Solid Waste Management Unit
- 2) OFW = Outstanding Florida Waters
- 3) bls = below land surface
- 4) NAVD88 = North American Vertical Datum of 1988
- 5) Results shown as feet bls

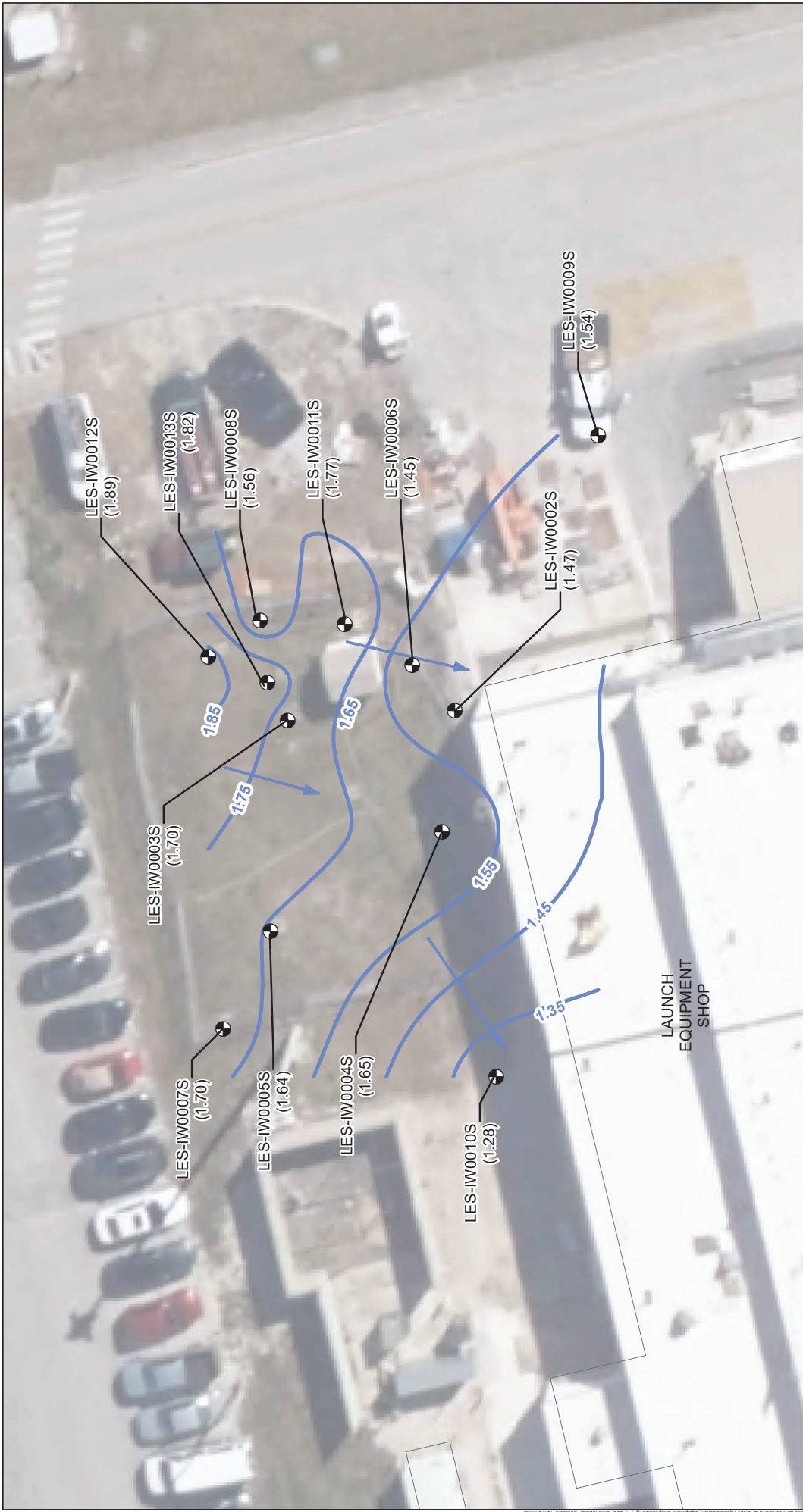
FIGURE 6-2
Groundwater Contour Map
December 20, 2024
22 to 27 feet bls

Launch Complex 39 Observation Gantry Area
(LC39OGA) - SWMU 107
NASA Kennedy Space Center, Florida

Source:
Ortho Imagery from Brevard County, 2018.

0 70 140 Feet





Legend

- Monitoring Well
- Buildings
- Groundwater Contour (NAVD88 Feet)
- Groundwater Flow Direction
- Groundwater Elevation

Notes:

- PRL = Potential Release Location
- bis = below land surface
- NAVD88 = North American Vertical Datum of 1988
- Results shown as feet bis

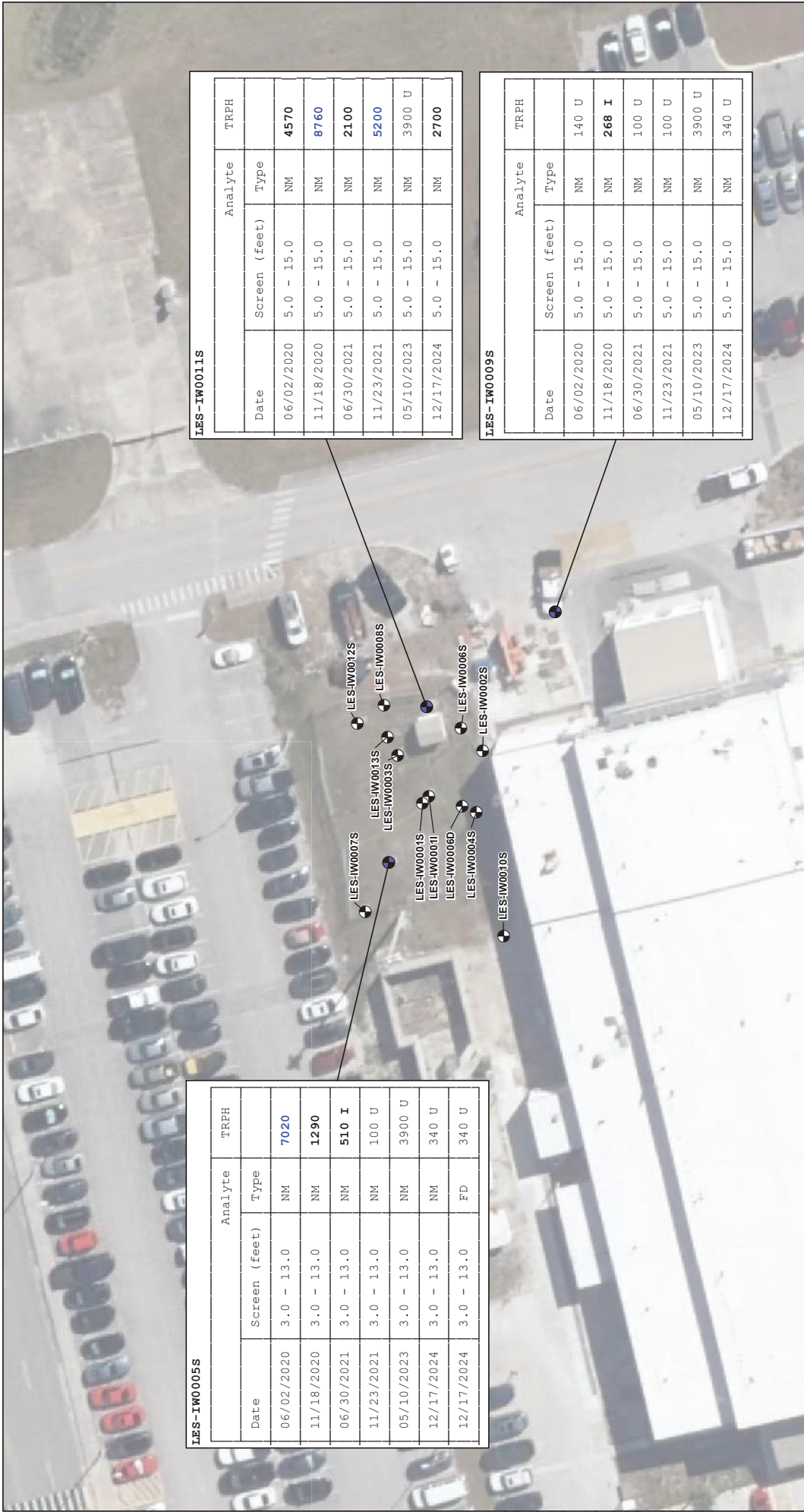
FIGURE 7-1

Groundwater Contour Map

December 17, 2024

Source: Ortho Imagery from Brevard County, 2018.

Launch Equipment Shop (LES) - PRL 051
NASA Kennedy Space Center, Florida



LES-IW0005S				
Analyte		TRPH		
Date	Screen (feet)	Type		
06/02/2020	3.0 - 13.0	NM	7020	
11/18/2020	3.0 - 13.0	NM	1290	
06/30/2021	3.0 - 13.0	NM	510 I	
11/23/2021	3.0 - 13.0	NM	100 U	
05/10/2023	3.0 - 13.0	NM	3900 U	
12/17/2024	3.0 - 13.0	NM	340 U	
12/17/2024	3.0 - 13.0	FD	340 U	

LES-IW0011S				
Analyte		TRPH		
Date	Screen (feet)	Type		
06/02/2020	5.0 - 15.0	NM	4570	
11/18/2020	5.0 - 15.0	NM	8760	
06/30/2021	5.0 - 15.0	NM	2100	
11/23/2021	5.0 - 15.0	NM	5200	
05/10/2023	5.0 - 15.0	NM	3900 U	
12/17/2024	5.0 - 15.0	NM	2700	

LES-IW0009S				
Analyte		TRPH		
Date	Screen (feet)	Type		
06/02/2020	5.0 - 15.0	NM	140 U	
11/18/2020	5.0 - 15.0	NM	268 I	
06/30/2021	5.0 - 15.0	NM	100 U	
11/23/2021	5.0 - 15.0	NM	100 U	
05/10/2023	5.0 - 15.0	NM	3900 U	
12/17/2024	5.0 - 15.0	NM	340 U	

Legend

- Monitoring Well does not exceed GCTL
- Locations not sampled
- Monitoring Well

Analyte	GCTL	NADC
TRPH	5000	50000

Notes:

- 1) SWMU = Solid Waste Management Unit
- 2) U = The analyte was analyzed for, but was not detected above the level of the reported
- 3) I = Indicates that the analytical result was greater than or equal to the method
- 4) bis = Below Land Surface
- 5) GCTL = Groundwater Cleanup Target Levels as provided in 62-777, F.A.C.
- 6) NADC = Natural Attenuation Default Concentration as provided in 62-777, F.A.C.
- 7) TRPH = Total Recoverable Petroleum Hydrocarbon
- 8) Blue Font = exceedance of GCTL
- 9) Bold = detection
- 10) All results and screening criteria presented in µg/L (micrograms per liter)

FIGURE 7-2
TRPH Groundwater Analytical Results
2020 to 2024

Launch Equipment Shop (LES) - PRL 051
NASA Kennedy Space Center, Florida



Legend

- Monitoring Well
- Buildings
- Groundwater Elevation Contour (Dashed where inferred) (NAVD88 Feet)
- Groundwater Flow Direction
- Groundwater Elevation

- Notes:
- 1) SWMU = Solid Waste Management Unit
 - 2) bbs = below land surface
 - 3) NAVD88 = North American Vertical Datum of 1988
 - 4) Results shown as feet bbs
 - 5) * = Well not used in contouring

Source
Ortfo Imagery from Brevard County, 2018.

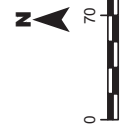


FIGURE 8-1
Groundwater Contour Map
December 23, 2024

Shuttle Flight Operations Contract Generator
Maintenance Facility (SFOC) - SWMU 081
NASA Kennedy Space Center, Florida



SFOC-IW0001S

Date	Analyte		Antimony
	Screen (feet)	Type	
11/21/2014	2.0 - 12.0	NM	78
05/24/2016	2.0 - 12.0	NM	21
10/04/2018	2.0 - 12.0	NM	120
05/09/2023	2.0 - 12.0	NM	76
12/23/2024	2.0 - 12.0	NM	38
12/23/2024	2.0 - 12.0	FD	38

SFOC-IW0008

Date	Analyte		Antimony
	Screen (feet)	Type	
10/04/2018	8.0 - 18.0	NM	4 U
06/02/2020	8.0 - 18.0	NM	1.9 I

SFOC-IW0002S

Date	Analyte		Antimony
	Screen (feet)	Type	
12/23/2024	2.0 - 12.0	NM	0.43 I

SFOC-IW0004S

Date	Analyte		Antimony
	Screen (feet)	Type	
11/21/2014	2.0 - 12.0	NM	0.84 U
05/24/2016	2.0 - 12.0	NM	0.85 U
10/04/2018	2.0 - 12.0	NM	4 U
06/02/2020	2.0 - 12.0	NM	1.7 I
05/09/2023	2.0 - 12.0	NM	1.1 U
12/23/2024	2.0 - 12.0	NM	0.41 U

SFOC-IW0009

Date	Analyte		Antimony
	Screen (feet)	Type	
05/09/2023	2.0 - 12.0	NM	1.1 U
12/23/2024	2.0 - 12.0	NM	0.41 U

Legend

- Monitoring Well exceeds the GCTL
- Monitoring Well does not exceed GCTL
- Approximate extent of Antimony greater than GCTL
- Locations not sampled
- Monitoring Well

Analyte	GCTL	NADC
Antimony	5	60

- Notes:
- 1) SWMU = Solid Waste Management Unit
 - 2) U = The analyte was analyzed for, but was not detected above the level of the reported detection limit
 - 3) I indicates that the analytical result was greater than or equal to the method detection limit
 - 4) GCTL = Groundwater Cleanup Target Levels as provided in 62-777, F.A.C.
 - 5) NADC = Natural Attenuation Default Concentration as provided in 62-777, F.A.C.
 - 6) bis = Below Land Surface

- 7) Blue Font = exceedance of GCTL
- 8) Red Font = exceedance of NADC
- 9) Bold = detection
- 10) All results and screening criteria presented in µg/L (micrograms per liter)



Source
Ortho imagery from Brevard County, 2018.

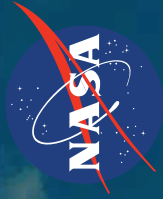
FIGURE 8-2
Antimony Groundwater Analytical Results
2014 to 2024

Shuttle Flight Operations Contract Generator
Maintenance Facility (SFOC) - SWMU 081
NASA Kennedy Space Center, Florida

APPENDIX A

ADVANCE DATA PACKAGES AND KSC REMEDIATION TEAM MEETING MINUTES

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AECOM

Vehicle Assembly Building Area Long-Term Monitoring (VAB LTM)

2024 Long-Term Monitoring Results

June 2025

This Advance Data Package (ADP) was prepared for NASA to aid evaluation of site conditions and remedial actions. This not a decision document. New information may come to light that makes this ADP outdated.

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Outline

- VAB LTM Program Overview
- C-5 Electrical Substation (C5ES) – Solid Waste Management Unit (SWMU) 066
- Fire Station #3 (FS3) – SWMU 106
- Former Development and Testing Laboratory (FDTL) – SWMU 075
- Launch Complex 39 Observation Gantry Area (LC39OGA) – SWMU 107
- Launch Equipment Shop (LES) – Potential Release Location (PRL) 051
- Shuttle Flight Operations Contract Generator Maintenance Facility (SFOC) – SWMU 081

VAB LTM Program Overview

- Six sites are currently in the VAB LTM Program and are sampled at various frequencies
- These sites are grouped together to combine field efforts and reduce quantities of Advance Data Packages (ADPs) and reports

Site Name	Site Acronym & Number	Site COCs	Sampling Frequency	2024 Biennial Sampling Event	2025 Annual Sampling Event	2026 Biennial Sampling Event
C-5 Electrical Substation	C5ES SWMU 066	VOCs	Biennial	December 2024		May 2026
Fire Station #3 (Former Fire Station #6)	FS3 SWMU 106	VC	Annual	December 2024	November 2025	May 2026
Former Development and Testing Laboratory	FDTL SWMU 075	TCE and VC	Biennial	December 2024		May 2026
Launch Complex 39 Observation Gantry Area	LC39OGA SWMU 107	VC	Annual	December 2024	November 2025	May 2026
Launch Equipment Shop	LES PRL 051	TRPH	Annual	December 2024		May 2026*
Shuttle Flight Operations Contract Generator Maintenance Facility	SFOC SWMU 081	Antimony	Biennial	December 2024		May 2026

Notes: *LES will not be sampled in May 2026 if No Further Action is approved; COC – Contaminant of Concern; SWMU – Solid Waste Management Unit; PRL – Potential Release Location; TCE – Trichloroethene; TRPH – Total Recoverable Petroleum Hydrocarbons; VC – Vinyl Chloride; VOCs – Volatile Organic Compounds

VAB LTM Program Overview

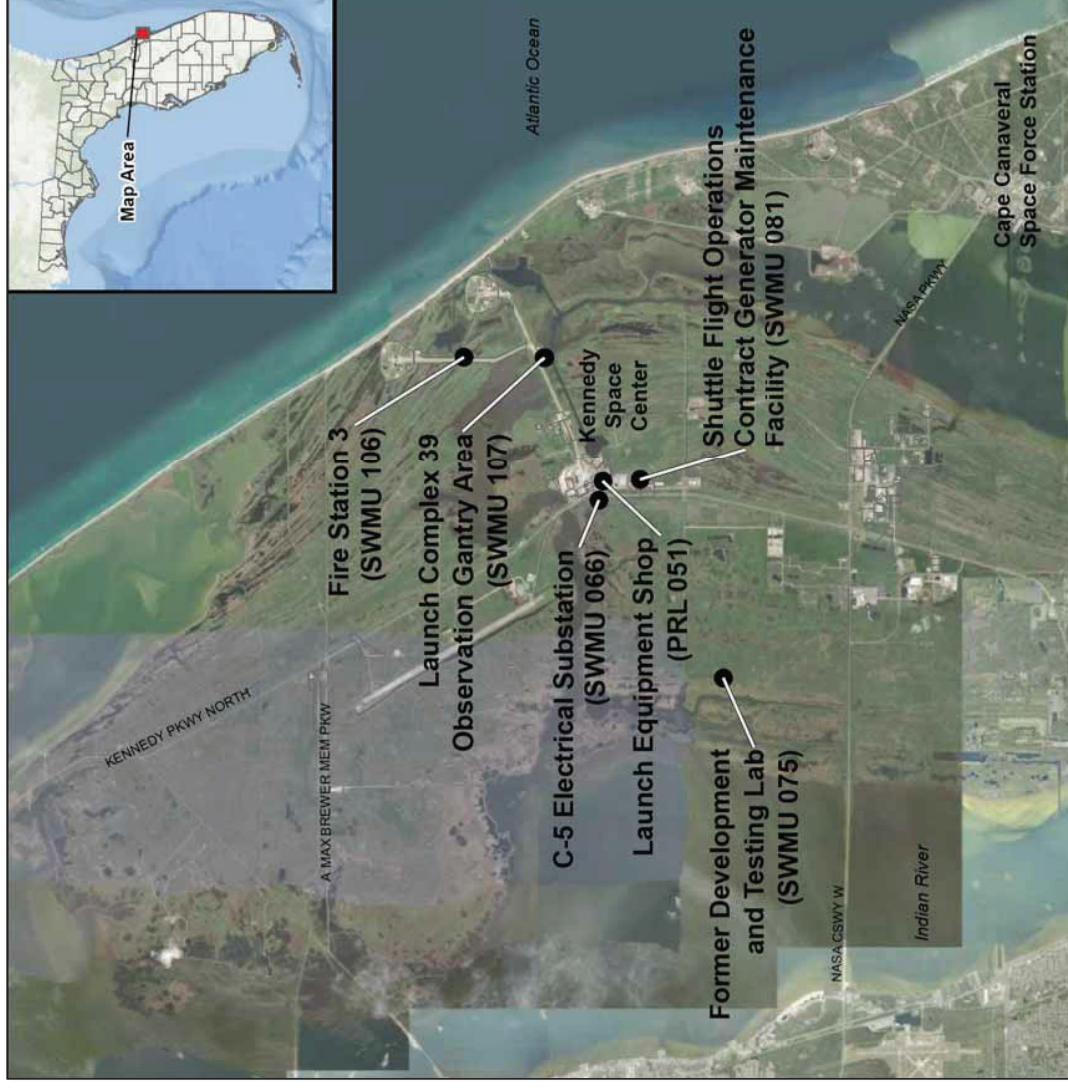
Sites Discussed in this ADP

- C5ES – SWMU 066
- FDTL – SWMU 075
- FS 3 – SWMU 106
- LC39OGA – SWMU 107
- LES – PRL 051
- SFOC – SWMU 081

Remediation Goal

- Achieve groundwater and soil contaminant concentrations below State of Florida Cleanup Target Levels promulgated in Chapter 62-777, Florida Administrative Code

4

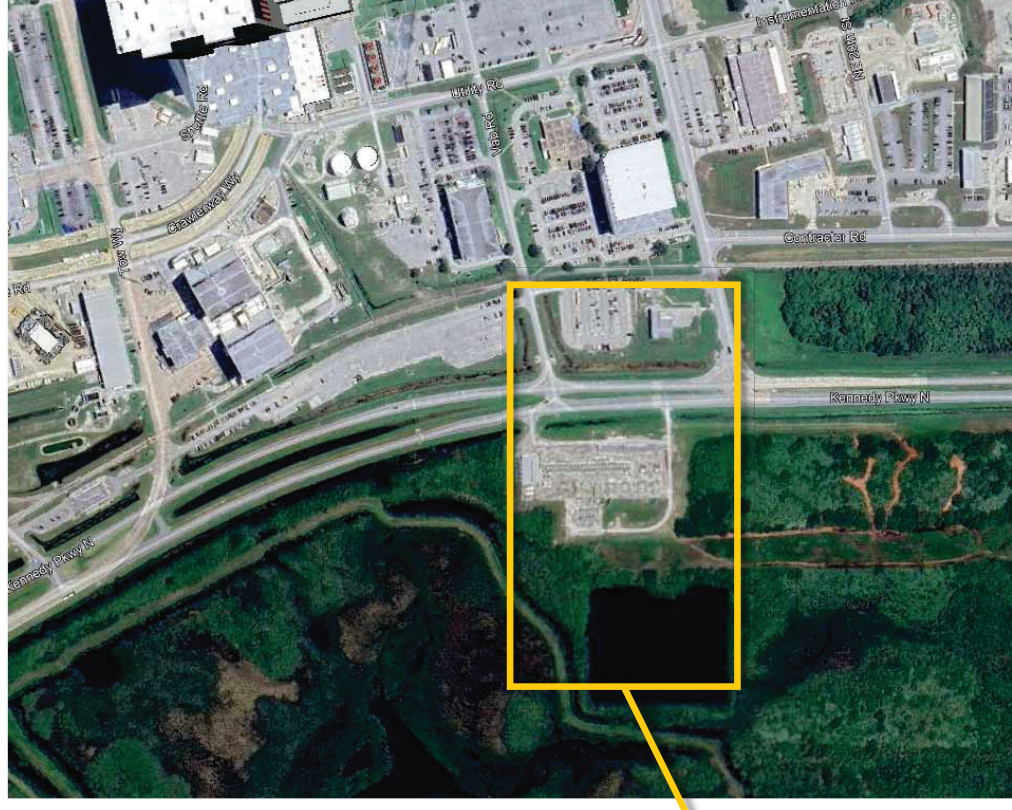
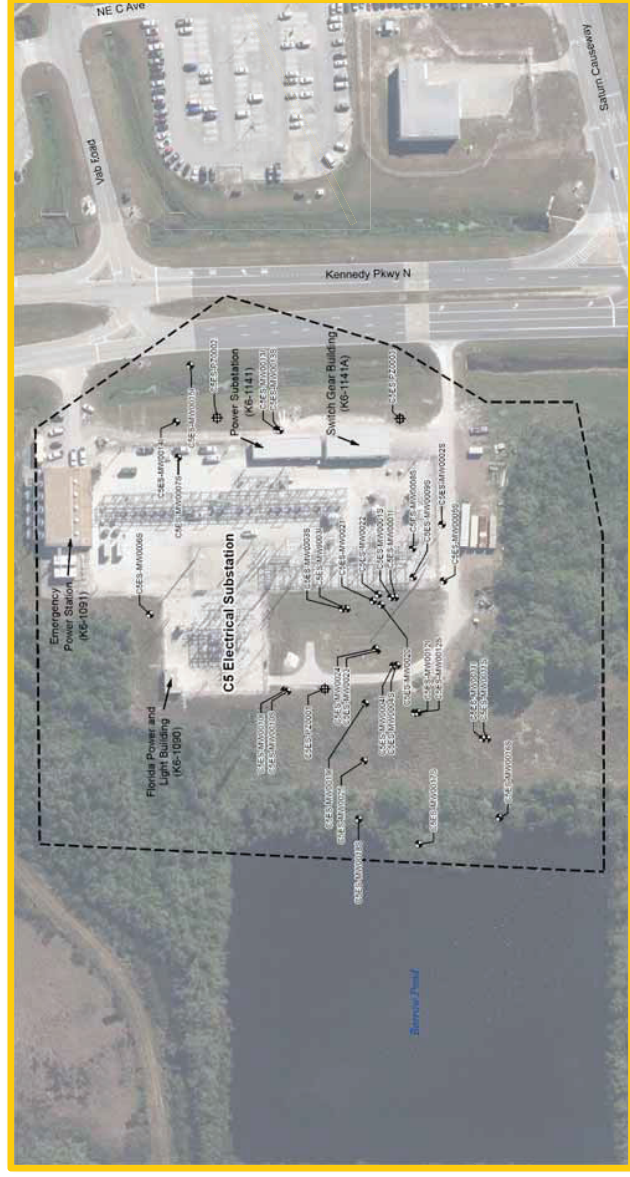


C-5 Electrical Substation SWMU 066

C-5 Electrical Substation – Site Location

Site Location and Features

- Site is located approximately 0.25 mile southwest of the VAB along Kennedy Parkway North
- NASA operated 10-acre electrical substation; currently active
- The site includes banks of transformers, buildings, parking areas, and the Florida Power and Light switching station
- Barrow Pond is located to the west

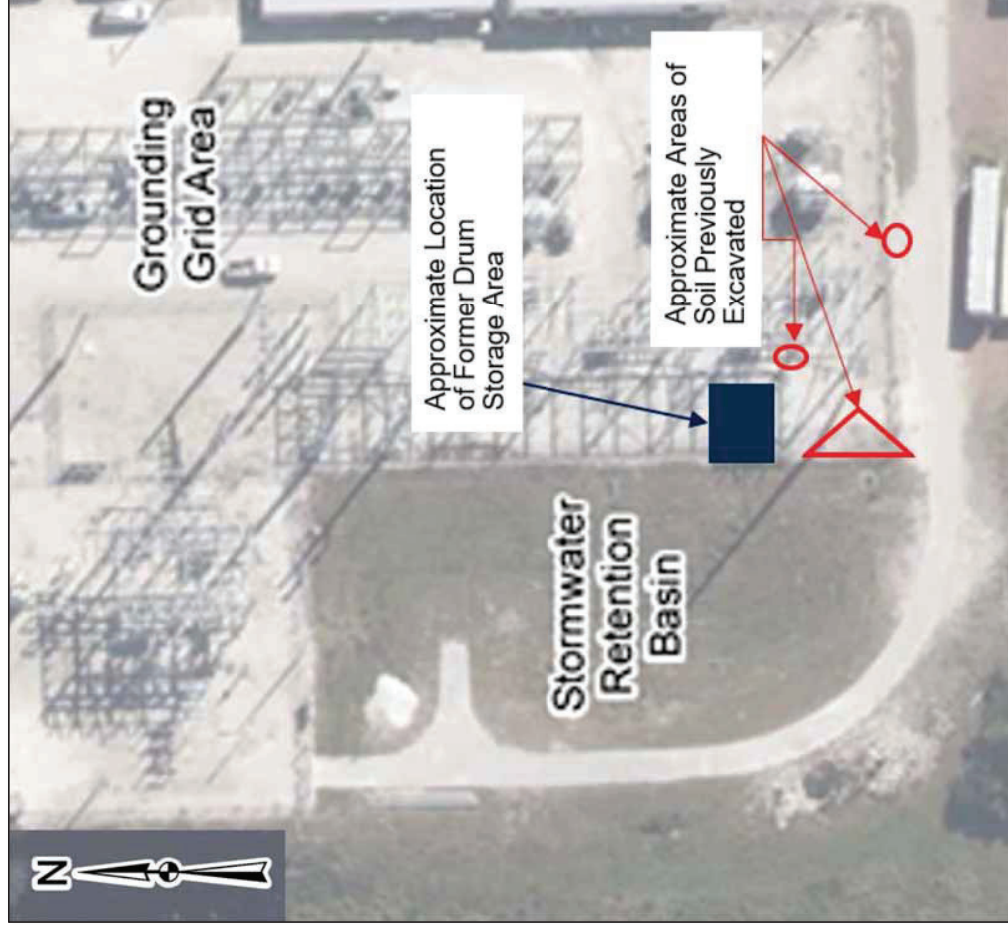


C-5 Electrical Substation – Site History

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Source Area

- Historically polychlorinated biphenyls (PCBs) were stored in drums on the southwest corner of the site
- 1995: During site upgrades and expansion, PCB impacts to soil were identified
 - Several excavations were completed
 - Approximately 210 cubic yards of soil was removed
- 1998 through 1999: RCRA Facility Investigation (RFI) was conducted at the site
 - No Further Action for soil and sediment was recommended
 - Groundwater monitoring was recommended
 - Site contaminants of concern (COCs) were chlorinated solvents
- 2001: The site was moved into the LTM Program

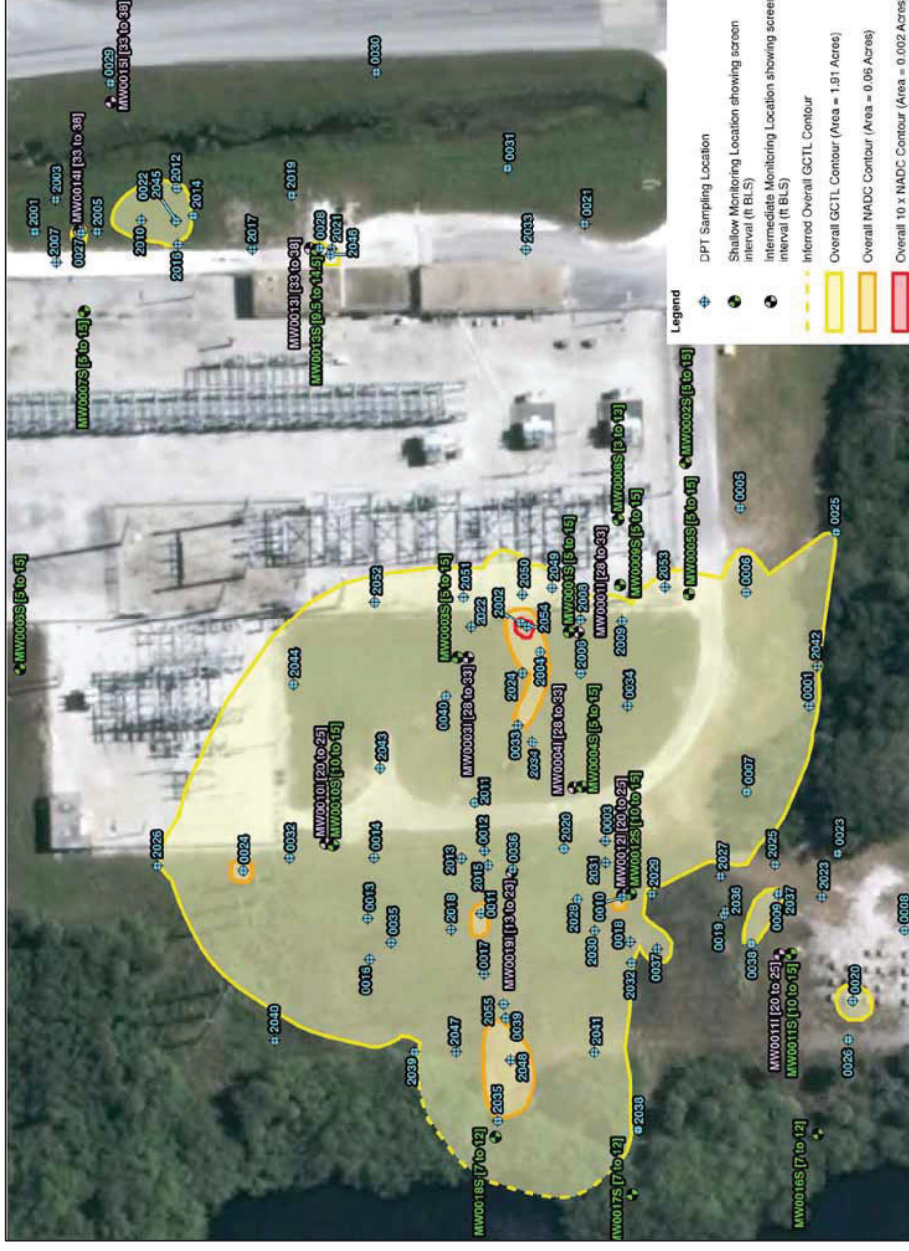


Source: Groundwater Monitoring Report ADP. HydroGeoLogic, Inc.
October 2022

C-5 Electrical Substation – Site History

Supplemental Investigations

- 2007: Initial supplemental groundwater investigation; continuation of LTM was recommended
- 2009: Direct Push Technology (DPT) groundwater sampling; conducted to address elevated concentrations of *cis*-1,2-dichloroethene (cDCE) and vinyl chloride (VC) near MW0018S and MW0019I

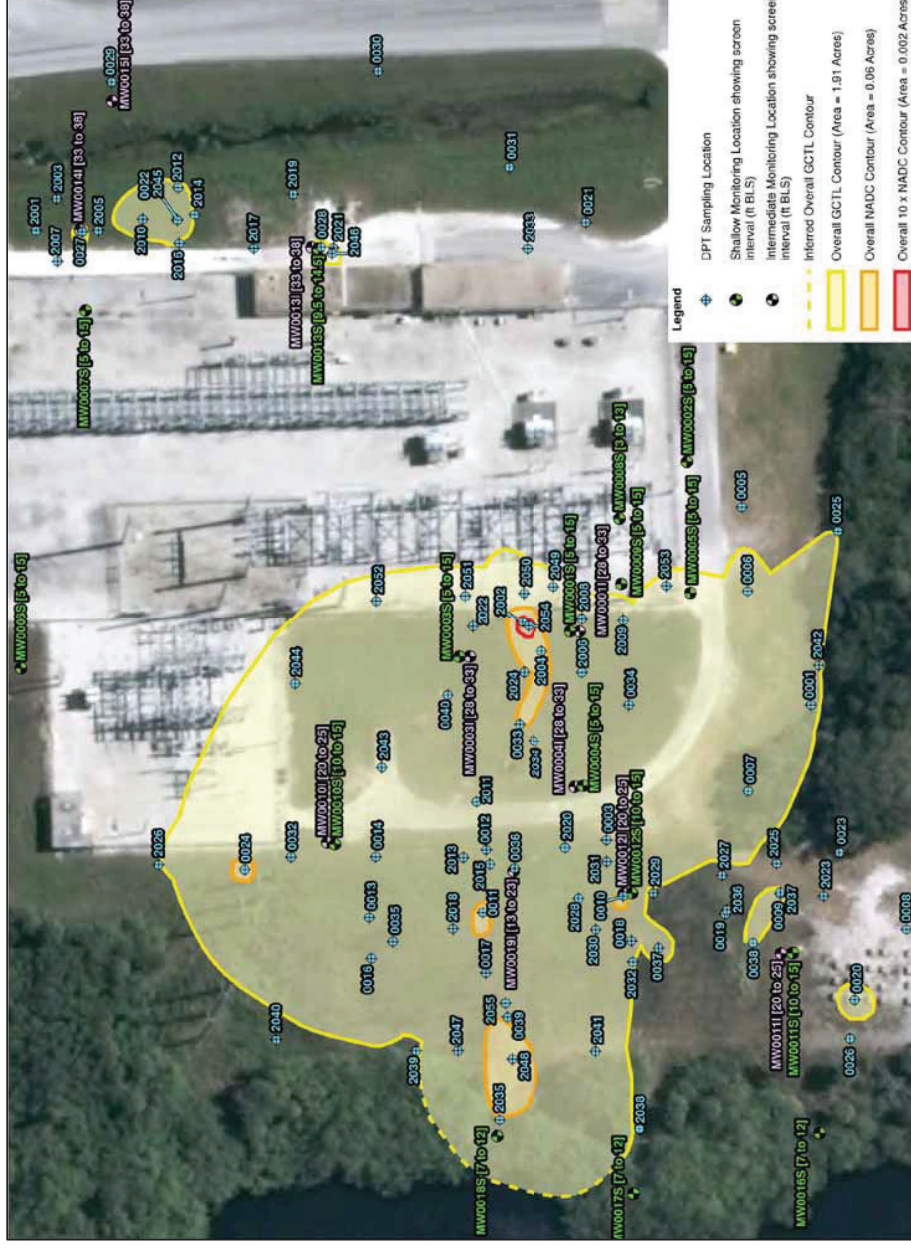


Source: 'Step 1 EE. Geosyntec. September 2015

C-5 Electrical Substation – Site History

Supplemental Investigations

- 2014 through 2017: Site Characterization and Interim Measure Design and Implementation activities
- Collected 343 groundwater samples from 55 locations
- Chlorinated volatile organic compound (VOC) plume was delineated
- VC exceeded the State of Florida Groundwater Cleanup Target Level (GCTL) in C5ES-MW0018S and C5ES-MW0019I



Source: 'Step 1 EE. Geosyntec. September 2015

10

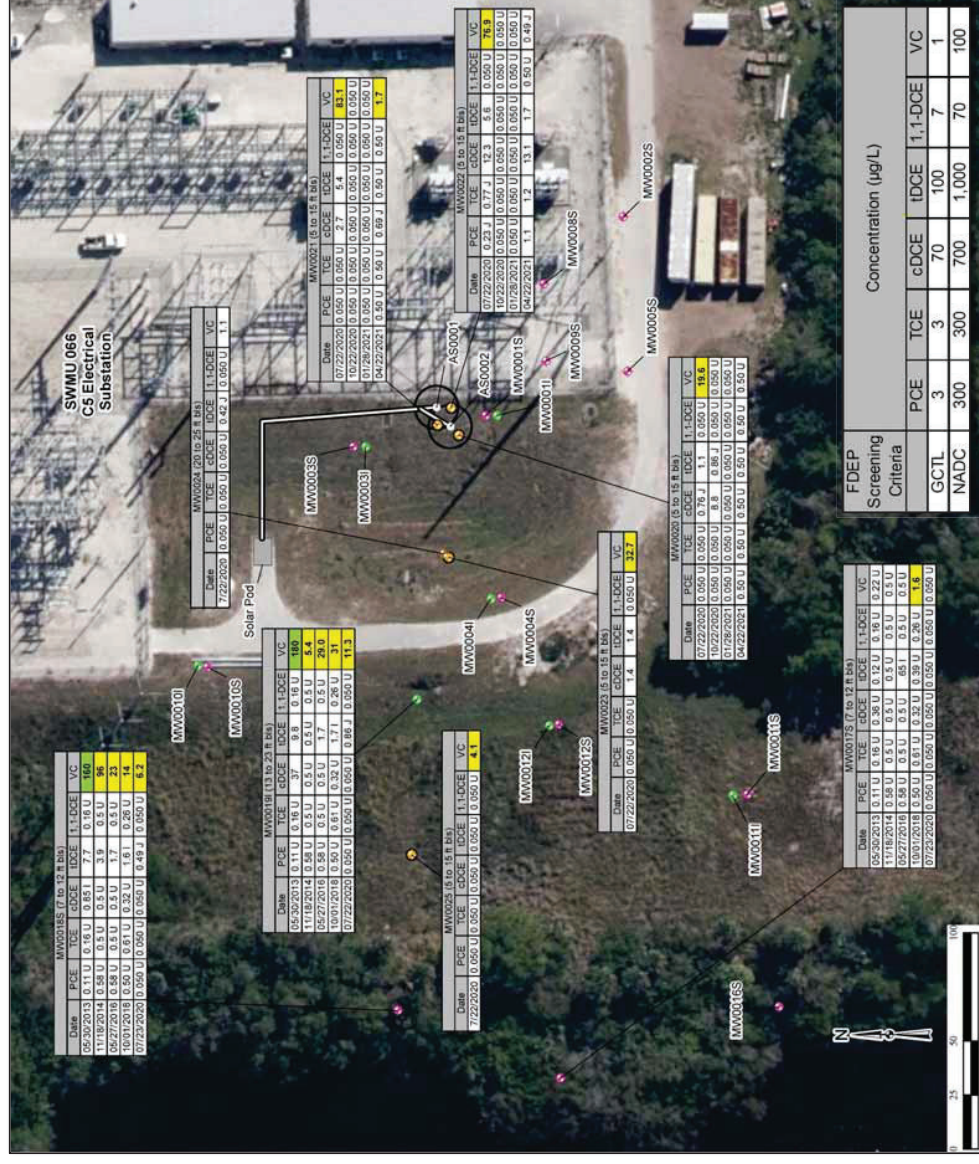
-



C-5 Electrical Substation – Site History

IM Implementation

- 2019: Baseline DPT sampling; collected 56 groundwater samples to delineate plume and determine air sparge system layout
- 2020: Air sparge installation
 - Baseline monitoring well sampling was conducted prior to startup
 - Two air sparge wells were installed in high concentration area of plume
- 2020 through 2021: Quarterly performance monitoring
- July 2020 through January 2021: System in operation



Source: Groundwater Monitoring Report ADP. HydroGeoLogic, Inc. October 2022

C-5 Electrical Substation – Site History

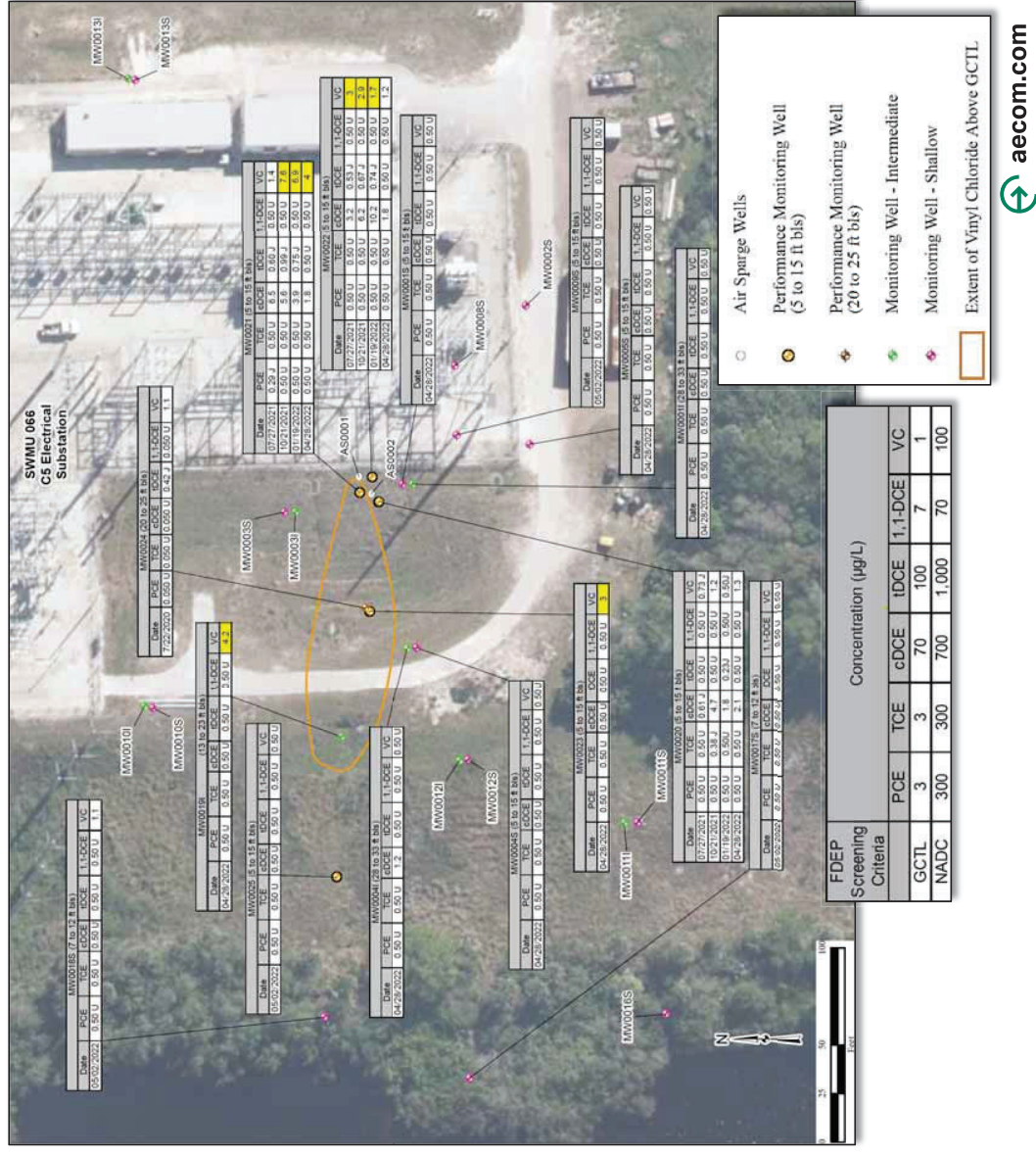
12

Source: Groundwater Monitoring Report. HydroGeologic, Inc. December 2022

Post System Shutdown

Monitoring

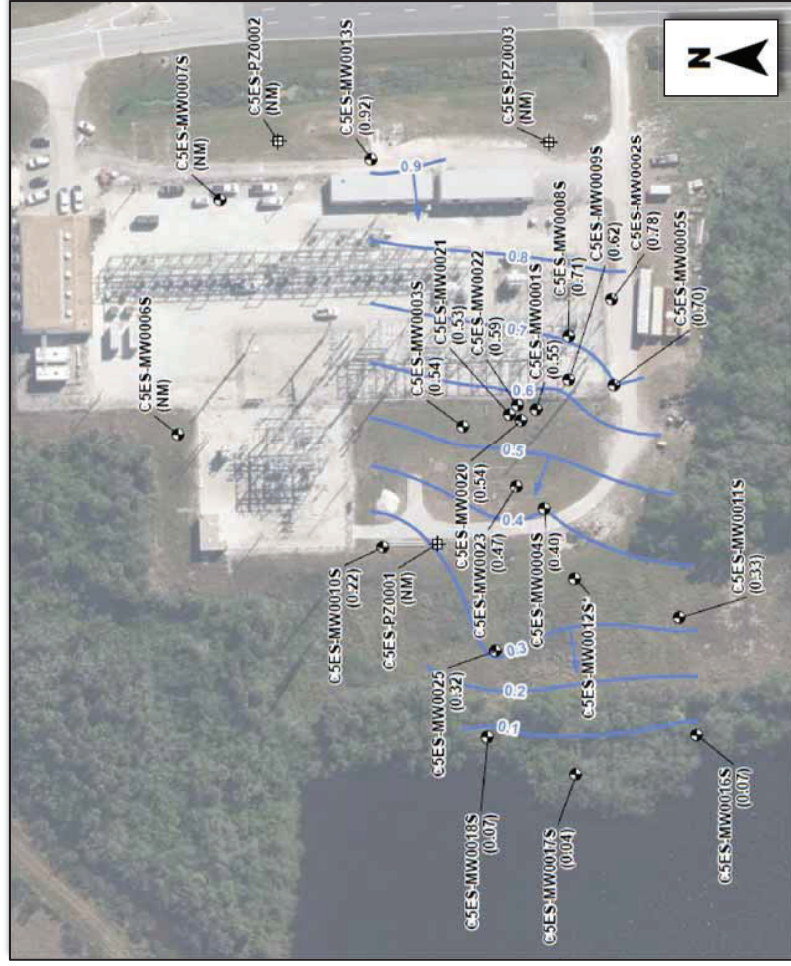
- January 26, 2021: Air sparge system was shut down due to site COC concentrations being below NADCs
- April 2021 through January 2022: Post shutdown quarterly sampling
 - 3 monitoring wells sampled MW0020, MW0021, and MW0022
- VC rebounded to just above the GCTL in MW0021 and MW0022; however, concentrations remain below the NADC
- April/May 2022: Biennial sampling
 - 14 monitoring wells sampled
 - VC exceeded the GCTL in three monitoring wells MW0019I, MW0021, and MW0023



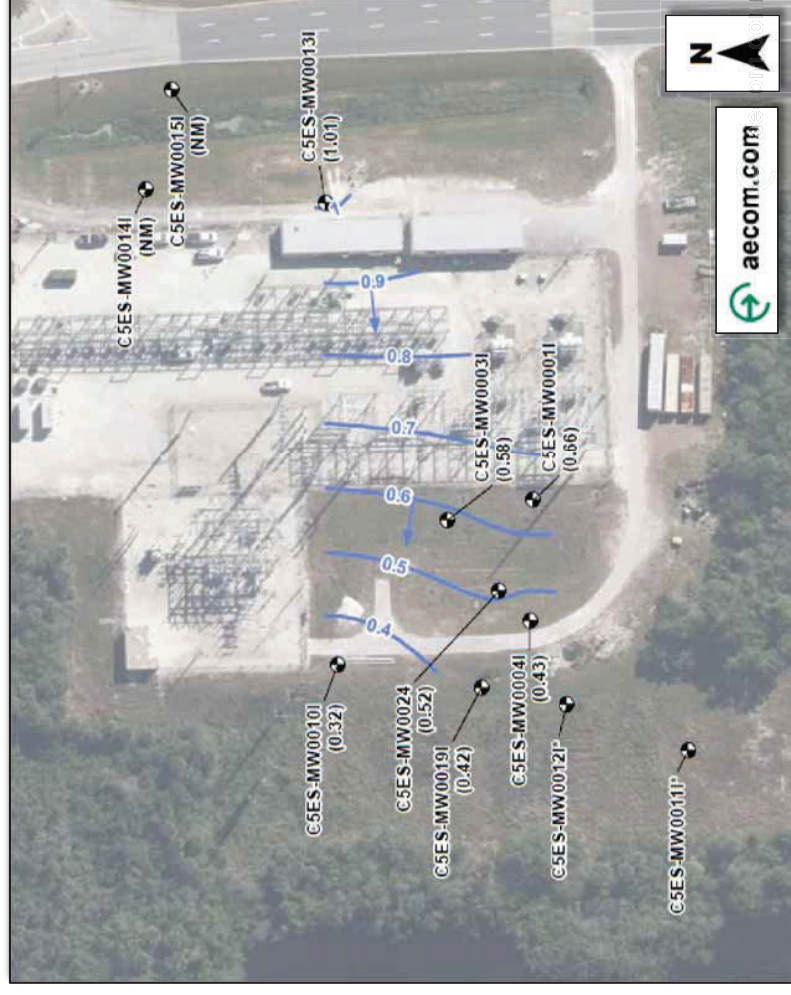
C-5 Electrical Substation – December 2024 Groundwater Flow

3 to 15 feet below land surface (bls)

- Flow direction was west, which is consistent with historical observations
- Average depth to water (DTW) was 5.69 feet bls



- Flow direction was west, which is consistent with historical observations
- Average DTW was 5.60 feet bls



C-5 Electrical Substation – December 2024 Analytical Results

- VC was detected above the GCTL of 1 microgram per liter (µg/L) in three monitoring wells MW0021, MW0022, and MW0023
- cDCE was detected in three wells and tDCE was detected in one monitoring well; however, the concentrations were below GCTLs
- 11DCE, PCE, and TCE were not detected
- No site VOCs had concentrations above NADCs

VC Concentrations in Groundwater

(last four events; GCTL = 1 µg/L)

Sample Date	MW0004S	MW0004I	MW0018S	MW0019I	MW0021	MW0022	MW0023	MW0024	MW0025
Screen Interval	5-15	28-33	7-12	13-23	5-15	5-15	5-15	20-25	5-15
July 2020	NS	NS	6.2	11.3	83.1	76.9	32.7	1.1	4.1
October 2021	NS	NS	NS	NS	7.6	2.9	NS	NS	NS
April/May 2022	0.50 U	0.50 U	1.1	4.2	4.0	1.2	3.0	NS	0.50 U
December 2024	0.71 U	0.71 U	0.71 U	0.71 U	14	3.4	2.2	0.71 U	0.71 U

Notes:

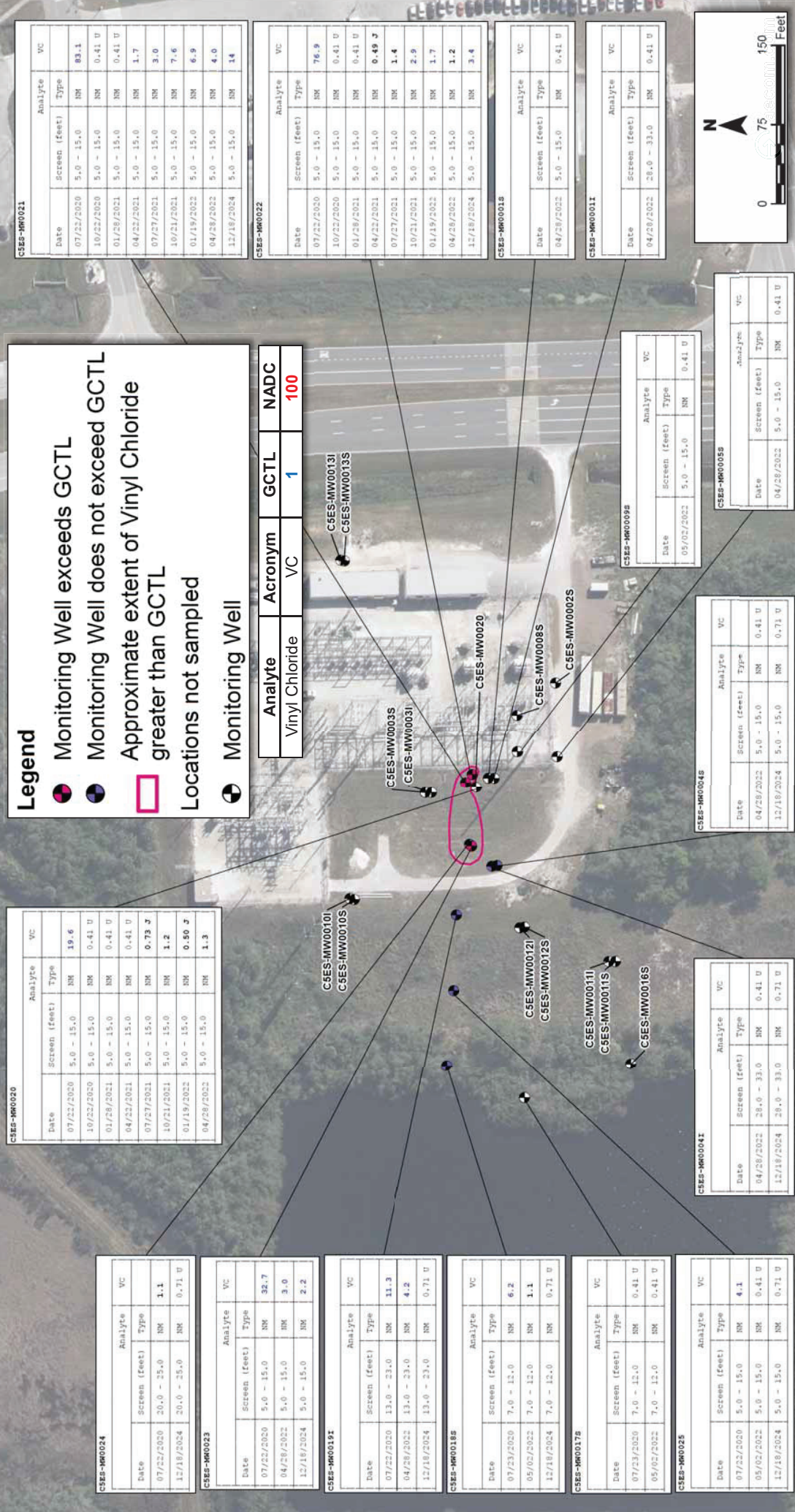
Detections are **bolded**

GCTL Exceedances are **blue bolded**

NS = Not Sampled

U = The analyte was not detected

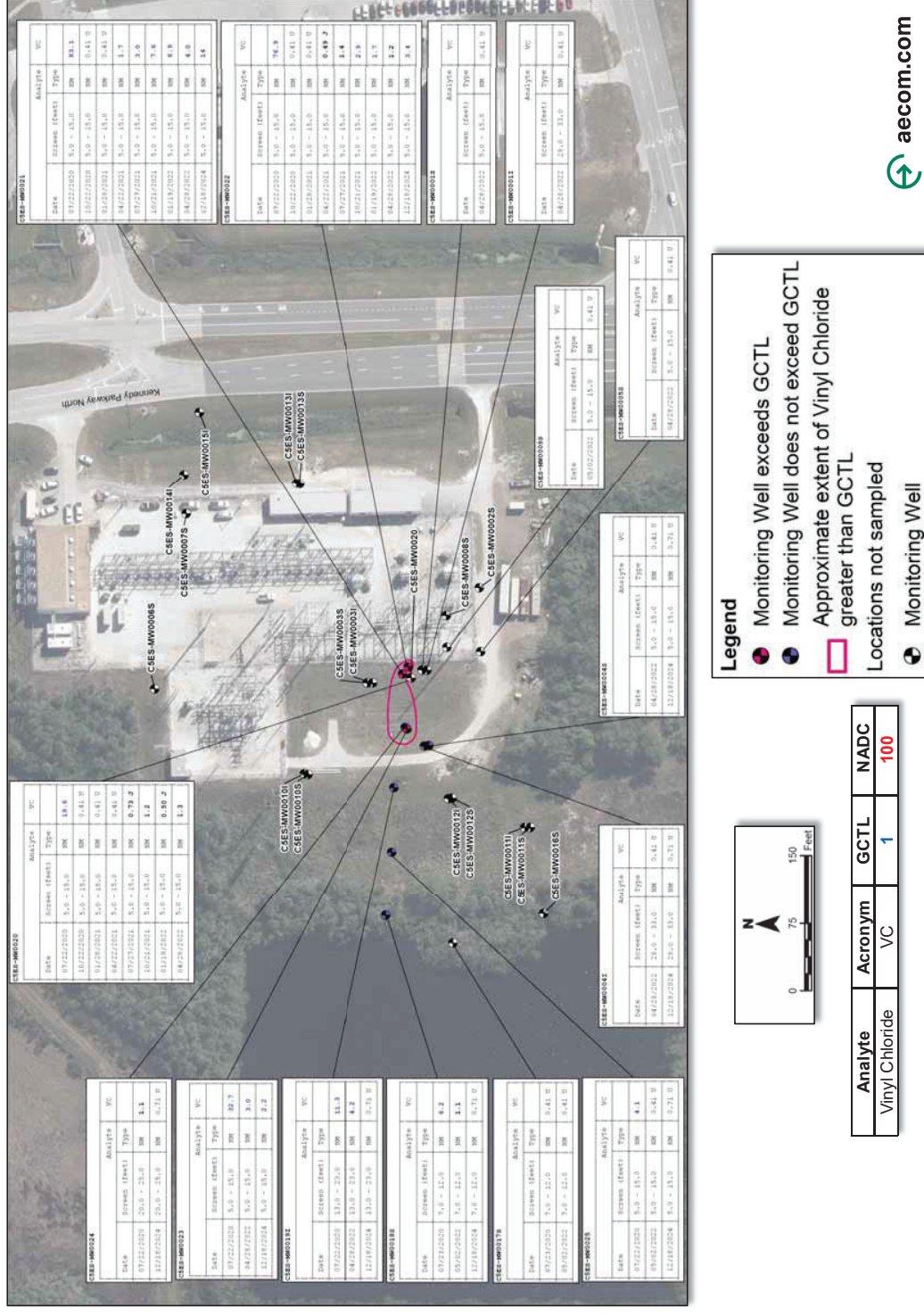
C-5 Electrical Substation – December 2024 Analytical Results



C-5 Electrical Substation – Test Consensus

- Conduct biennial sampling of nine monitoring wells for site VOCs
 - C5ES-MW0004S
 - C5ES-MW0004I
 - C5ES-MW0018S
 - C5ES-MW0019I
 - C5ES-MW0021 through C5ES-MW0025

- Collect water level measurements at 27 monitoring wells
- The next sampling event is scheduled for May 2026



C-5 Electrical Substation – Test Consensus

Proposed LTM Sampling Plan

Well ID	Screen Interval (feet bls)	Water Levels	Analysis
C5ES-MW0001S	5 to 15	X	
C5ES-MW0001I	28 to 33	X	
C5ES-MW0002S	5 to 15	X	
C5ES-MW0003S	5 to 15	X	
C5ES-MW0003I	28 to 33	X	
C5ES-MW0004S	5 to 15	X	Site VOCs*
C5ES-MW0004I	28 to 33	X	Site VOCs*
C5ES-MW0005S	5 to 15	X	
C5ES-MW0008S	3 to 13	X	
C5ES-MW0009S	5 to 15	X	
C5ES-MW0010S	10 to 15	X	
C5ES-MW0010I	20 to 25	X	
C5ES-MW0011S	10 to 15	X	
C5ES-MW0012S	10 to 15	X	
C5ES-MW0012I	20 to 25	X	

Continued on next page.

Notes: *Site VOCs to Analyze: tetrachloroethene, trichloroethene, 1,1-dichloroethene, 1,1,2-dichloroethene, *cis*-1,2-dichloroethene, *trans*-1,2-dichloroethene, and vinyl chloride; bls = below land surface

C-5 Electrical Substation – Test Consensus

Proposed LTM Sampling Plan (continued)

Well ID	Screen Interval (feet bls)	Water Levels	Analysis
C5ES-MW0013S	9.5 to 14.5	X	
C5ES-MW0013I	33 to 38	X	
C5ES-MW0016S	7 to 12	X	
C5ES-MW0017S	7 to 12	X	
C5ES-MW0018S	7 to 12	X	Site VOCs*
C5ES-MW0019I	13 to 23	X	Site VOCs*
C5ES-MW0020	5 to 15	X	
C5ES-MW0021	5 to 15	X	Site VOCs*
C5ES-MW0022	5 to 15	X	Site VOCs*
C5ES-MW0023	5 to 15	X	Site VOCs*
C5ES-MW0024	20 to 25	X	Site VOCs*
C5ES-MW0025	5 to 15	X	Site VOCs*

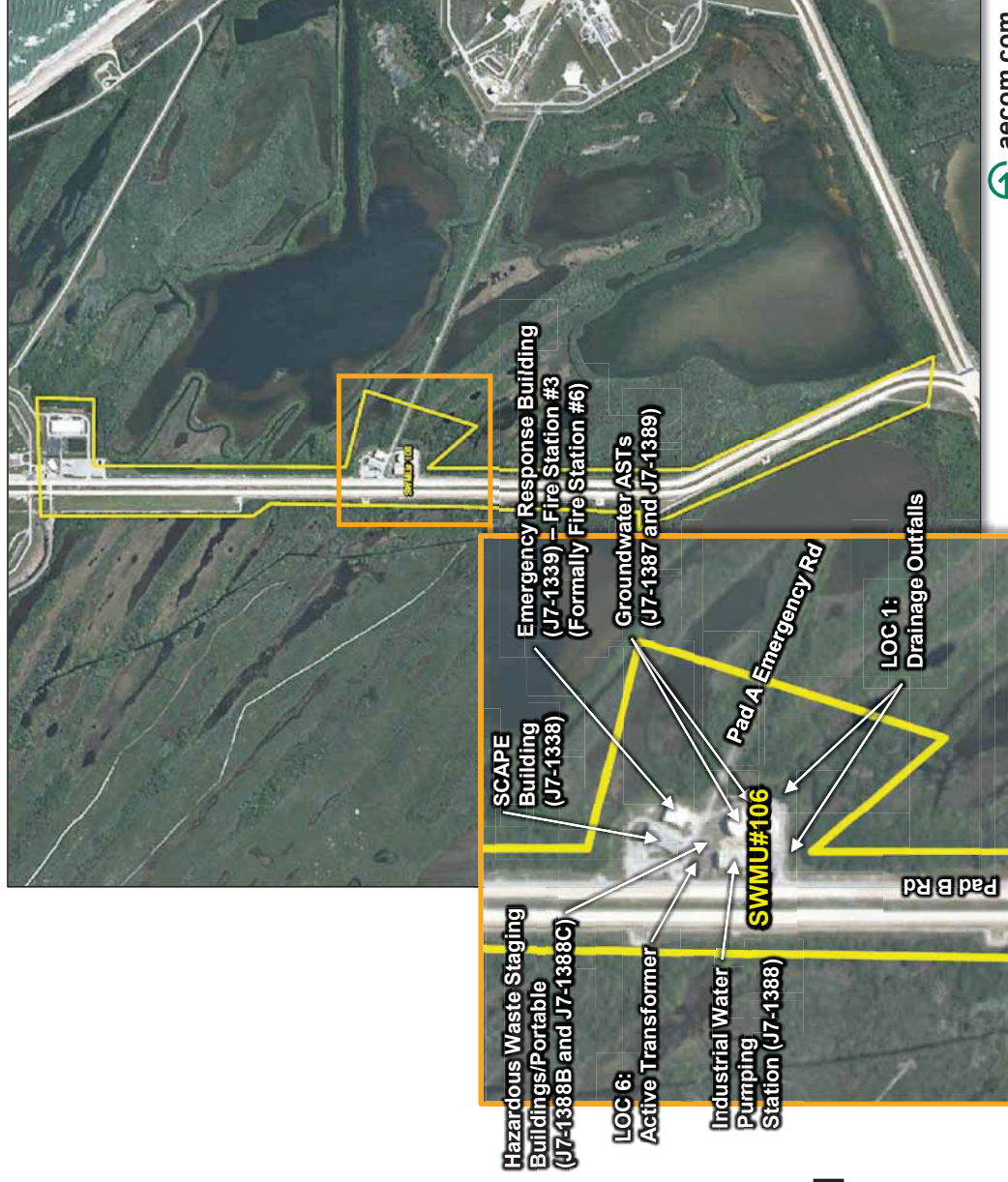
Notes: *Site VOCs to Analyze: 1,1-dichloroethene, *cis*-1,2-dichloroethene, *trans*-1,2-dichloroethene, tetrachloroethene, trichloroethene, and vinyl chloride; bls = below land surface

**Fire Station #3
SWMU 106**

Fire Station #3 (Former Fire Station #6) – Site Location

Site Location

- The site is located approximately 2 to 3 miles west and northwest of the VAB area along Pad B Road, and extends northward from Saturn Causeway to Launch Complex (LC) 39B
- The site encompasses the facilities and structures along Pad B Road, which includes 14 numbered structures and several unnumbered structures
- The FS3 area, located in the center of the SWMU, is utilized to support operations at LC 39A and LC 39B
- The Industrial Water Pumping Station (J7-1388) supplies water to LC 39A and LC 39B



Fire Station #3 – Site History

Site Locations of Concern (LOCs)

- 15 LOCs were identified during site assessment in 2007
- LOC 1 – Drainage outfalls, covered under this ADP, is located southeast of the Industrial Water Pumping Station
- LOC 1 is surrounded by Pad B Road and the Crawlerway to the west, wetland areas to the south and east, and the Industrial Water Pumping Station, parking areas, aboveground storage tanks, and Pad A Emergency Road to the north

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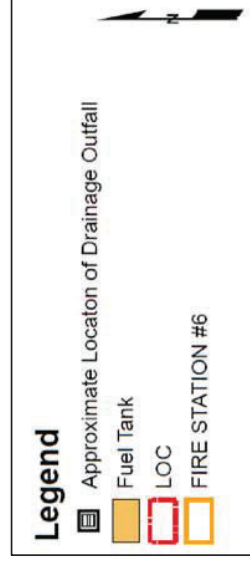
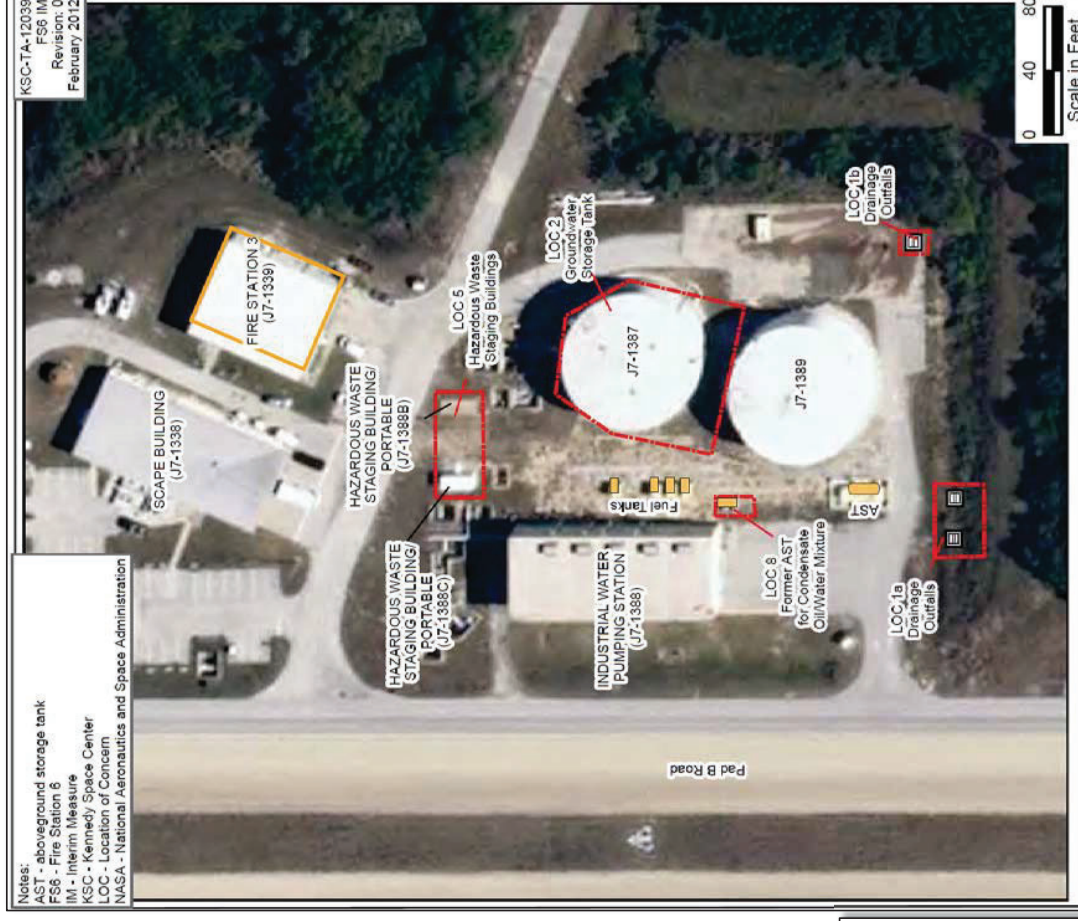
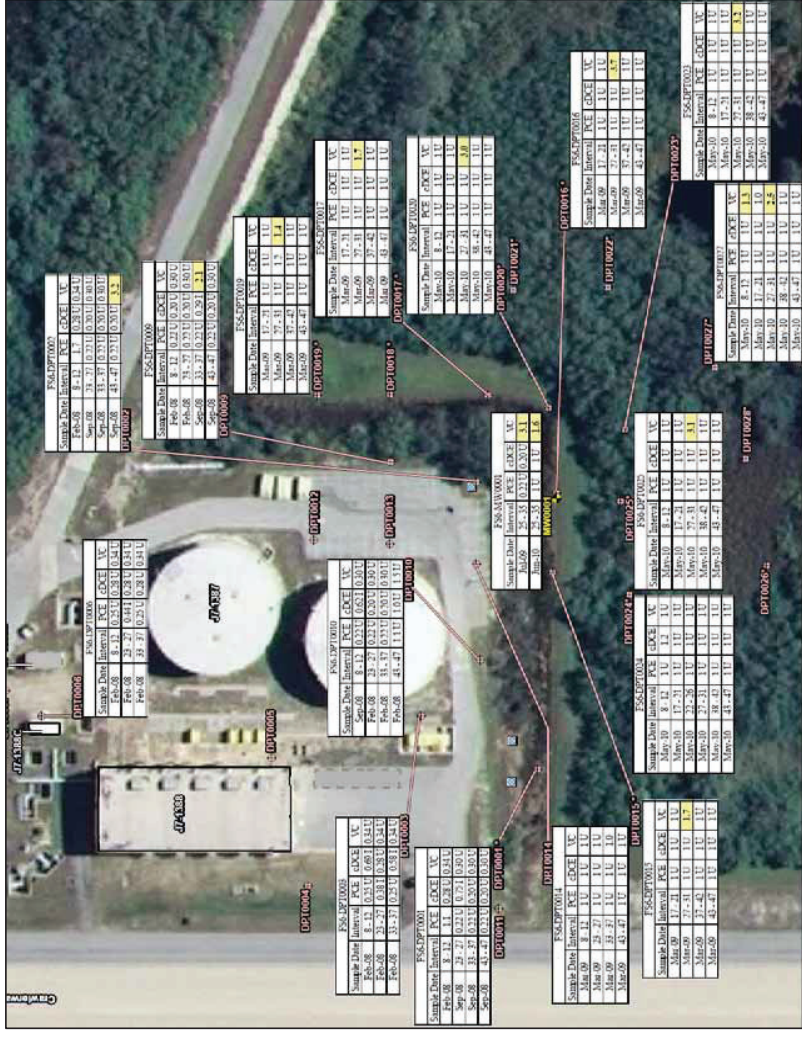


Figure Source: Fire Station No. 6 Area, PRL 161, Interim Measure Report, ARCADIS U.S., Inc., February 2012

Fire Station #3 – Site History

SWMU Assessment, Confirmation Sampling, IM Work Plan, and RFI Work Plan – LOC 1

- IM approved for soil
- RFI approved for groundwater
- Interim Land Use Control Implementation Plan (LUCIP) approved for groundwater at LOC 1
- LOC 1 – Drainage Outfalls
 - 24 DPT groundwater sampling completed
 - Installation and sampling of one monitoring well FS6-MW0001S
 - VC concentrations were greater than the GCTL of 1 µg/L at 10 DPT locations and one monitoring well FS6-MW0001S



Fire Station #3 – Site History

2012: IM Report for Soil - LOC 1

- Soils with barium, chromium, copper, and mercury above State of Florida residential Soil Cleanup Target Levels (rSCTLs)
- Excavation of approximately 660 square feet by 1-foot bls to horizontal and vertical samples with concentrations below rSCTLs
- No Further Action (NFA) for soils

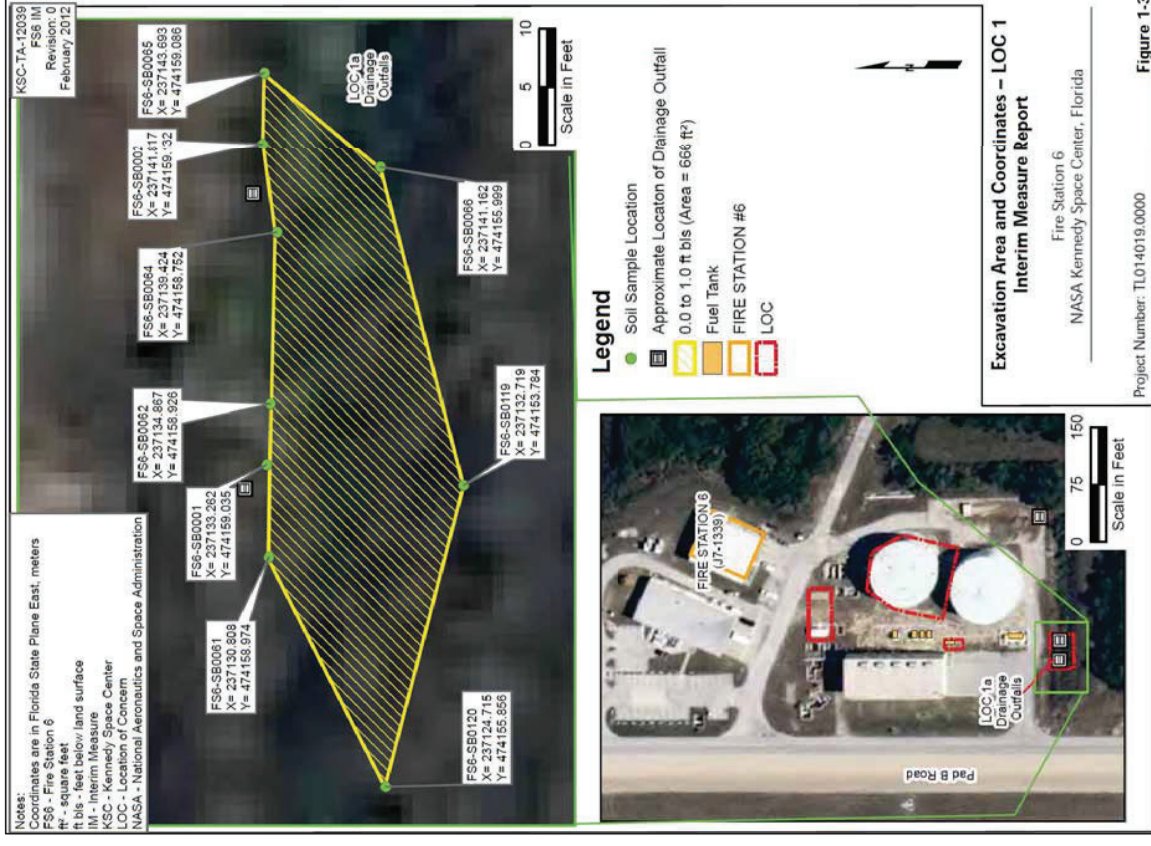


Figure Source: Fire Station No. 6 Area, PRL 161, Interim Measure Report, ARCADIS U.S., Inc., February 2012

Fire Station #3 – Site History

2013: RFI Progress Report with Step I Engineering Evaluation

- DPT groundwater sampling
 - 87 samples from 15 locations
 - Mobile lab used to accelerate delineation
- Installed two new monitoring wells FS6-MW0002S and FS6-MW0003S, and sampled three monitoring wells
- VC concentrations were above the GCTL in one monitoring well FS6-MW0001S
- Results were evaluated, and LTM was approved
- LTM Work Plan included annual groundwater monitoring of FS6-MW0001S and FS6-MW0003S for VOCs and water level measurements at the three monitoring wells

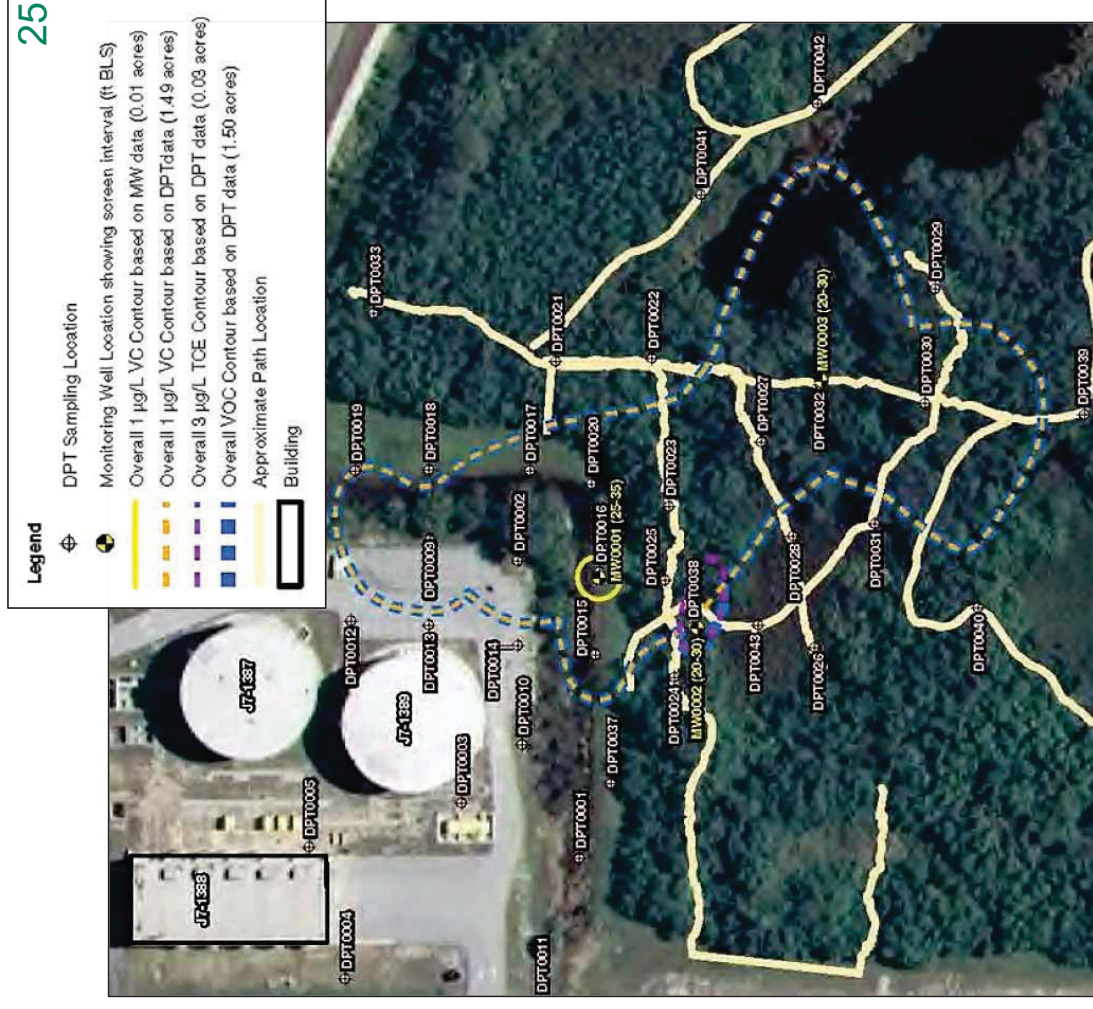
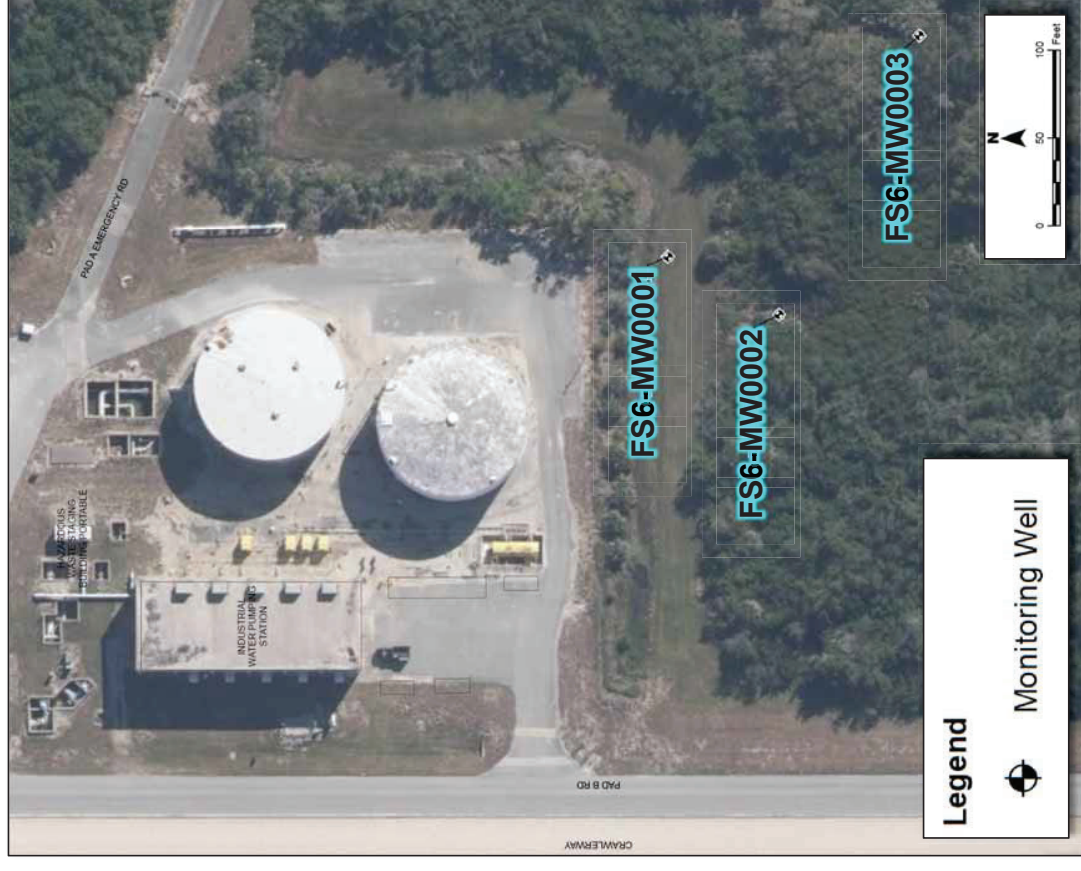


Figure Source: Vehicle Assembly Building Area 2018 Biennial Groundwater Monitoring Results, Geosyntec Consultants, March 2019

Fire Station #3 – Site History

2014 through Present:

- Site was added to the VAB LTM Program in 2014
 - Long-term groundwater monitoring on a biennial frequency (currently annual due to flooding from 2020 through 2024)
 - Alternate between wet and dry seasons
 - In 2024 the LTM Plan was updated to include all three wells due to an extended period of no sampling from 2022 through 2024
- Site COC is VC



Fire Station #3 – Site Layout and December 2024 Scope of Work

Site VOCs

- VC (site COC)

December 2024: Annual LTM

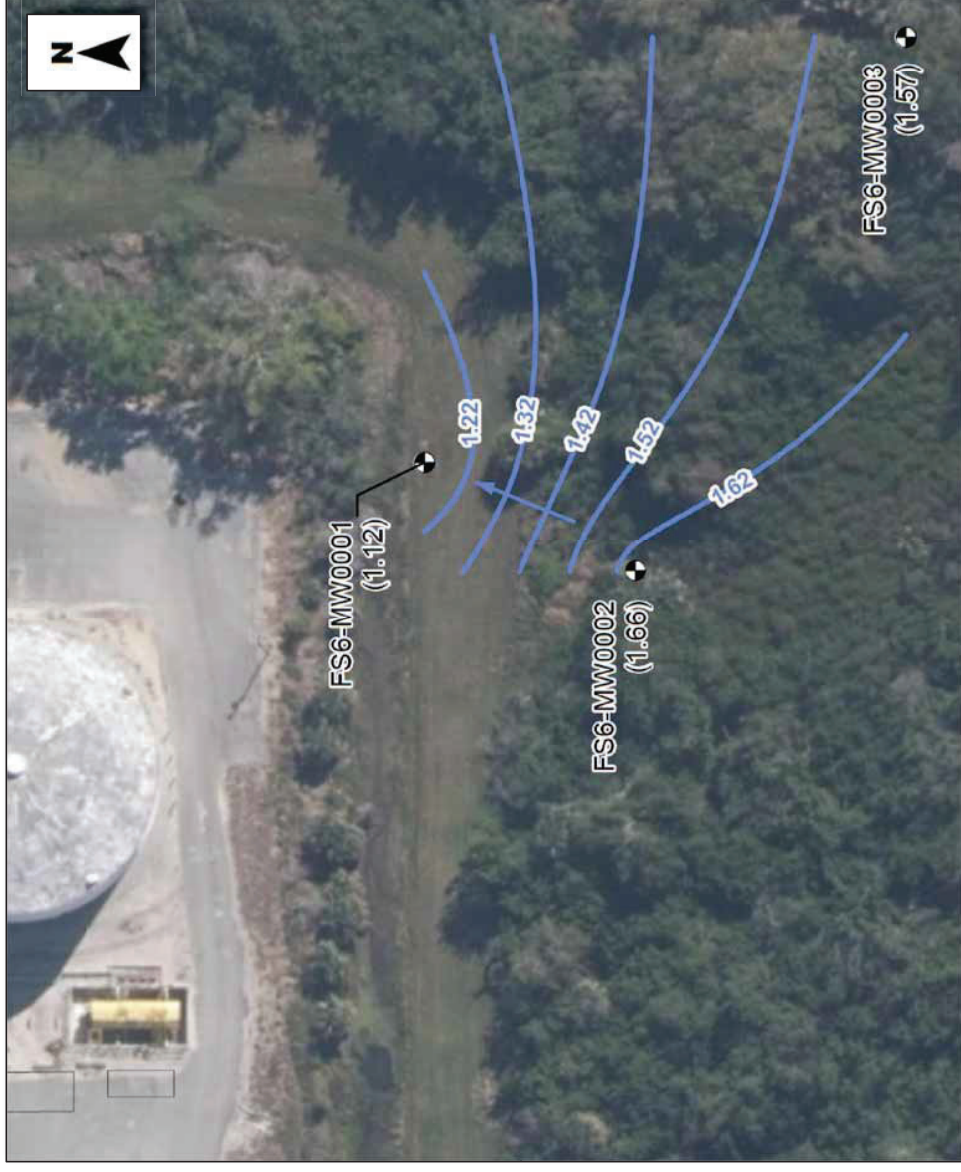
- Collected water level measurements at three monitoring wells
- Sampled three monitoring wells
- Analyzed samples for VC



Fire Station #3 – December 2024 Groundwater Flow

20 to 35 feet bls

- Flow direction was northeast, which is consistent with historical observations
- Average DTW was 3.15 feet below top of casing (Note: MW0002 and MW0003 have stickup completions)



Fire Station #3 – December 2024 Analytical Results

- VC was above the GCTL of 1 µg/L in one monitoring well, FS6-MW0003
- No site VOCs had concentrations above NADCs

VC Concentrations in Groundwater (last five events; GCTL = 1 µg/L)

Sample Date	FS6-MW0001	FS6-MW0002	FS6-MW0003
Screen Interval	25-35	20-30	20-30
5/25/2016	0.50 U	NS	0.50 U
11/16/2016	1.5	NS	2
10/4/2018	2.3	NS	6.2
6/2/2020	0.66 I	NS	0.96 I
12/18/2024	0.71 U	0.71 U	1.8

Notes:

Detections are **bolded**

GCTL Exceedances are **blue bolded**

I = The analytical result is greater than or equal to the method detection limit, but less than the practical quantitation limit

NS = Not Sampled

U = The analyte was not detected

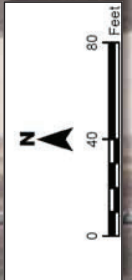
Fire Station #3 – December 2024 Analytical Results

Legend

Monitoring Well exceeds GCTL

Monitoring Well does not exceed GCTL

Approximate extent of Vinyl Chloride greater than GCTL



Analyte	Acronym	GCTL	NADC
Vinyl Chloride	VC	1	100

FS6-MW0001

Date	Analyte		VC
	Screen (feet)	Type	
05/25/2016	25.0 - 35.0	NM	0.50 U
11/07/2016	25.0 - 35.0	NM	1.5
10/04/2018	25.0 - 35.0	NM	2.3
06/01/2020	25.0 - 35.0	NM	0.66 I
12/18/2024	25.0 - 35.0	NM	0.71 U

FS6-MW0002

Date	Analyte		VC
	Screen (feet)	Type	
12/16/2024	20.0 - 30.0	NM	0.71 U

FS6-MW0003

Date	Analyte		VC
	Screen (feet)	Type	
05/25/2016	20.0 - 30.0	NM	0.50 U
11/07/2016	20.0 - 30.0	NM	2.0
10/04/2018	20.0 - 30.0	NM	6.2
06/01/2020	20.0 - 30.0	NM	0.96 I
12/18/2024	20.0 - 30.0	NM	1.8

Fire Station #3 – Test Consensus

- Conduct annual sampling of three monitoring wells for vinyl chloride analysis: FS6-MW0001, FS6-MW0002, and FS6-MW0003
- Collect water level measurements at three monitoring wells
- The next sampling event is scheduled for November 2025

Proposed LTM Sampling Plan

Well ID	Screen Interval (feet bls)	Water Levels	Analysis
FS6-MW0001	25 to 35	X	Vinyl Chloride
FS6-MW0002	20 to 30	X	Vinyl Chloride
FS6-MW0003	20 to 30	X	Vinyl Chloride

**Former Development and
Testing Laboratory
SWMU 075**

Former Development and Testing Laboratory – Site Location

33

Site Location and Features

- Five-acres in size and located approximately 4 miles southwest of the VAB area on G Avenue Northwest
- Currently a vacant lot, except for the Weather Monitoring Station in the north
- The east central area of the site is the former location of the main FDTL building, Frequency Control and Analysis Building (L5-683); only the paved parking areas remain
- The Preamplifier Building (L5-734) was formerly located in the southeast corner of the site
- The remaining areas of the site are seasonal wetlands

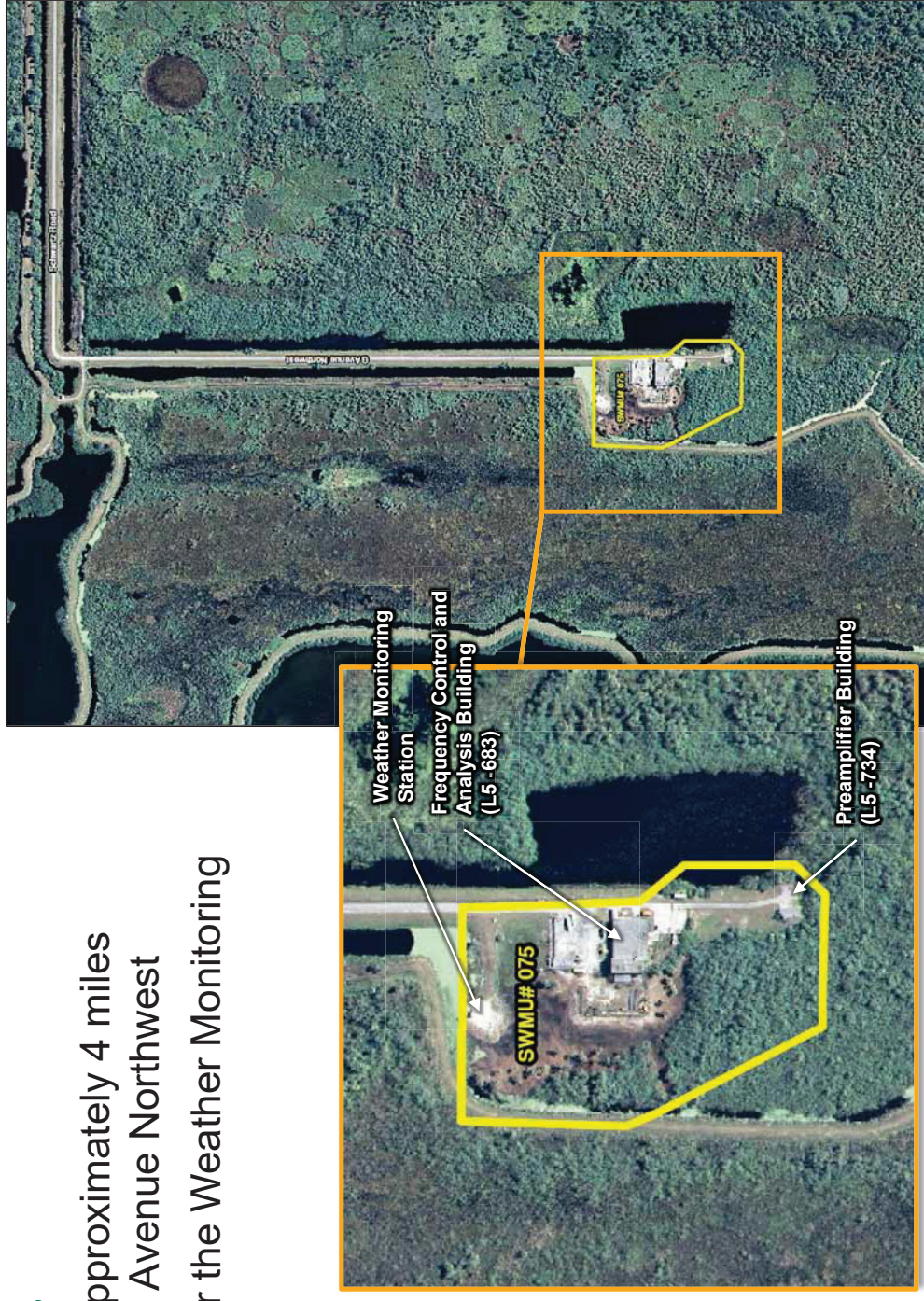


Figure Source: Vehicle Assembly Building Area 2018 Biennial Groundwater Monitoring Results, Geosyntec Consultants, March 2019

Former Development and Testing Laboratory – Site History

34

Site Use

- 1964 through 1971: Supported the Cape Canaveral Air Force Station Missile Test Program
- 1971: Became the Prototype Laboratory for the Apollo and Space Shuttle Programs
- 1981 through 1988: Development and Testing Laboratory, asbestos laboratory, and office space
- 1995 through 2002: Used as a staging area for feral cats captured at Kennedy Space Center (KSC)
- 2005: The two buildings were removed

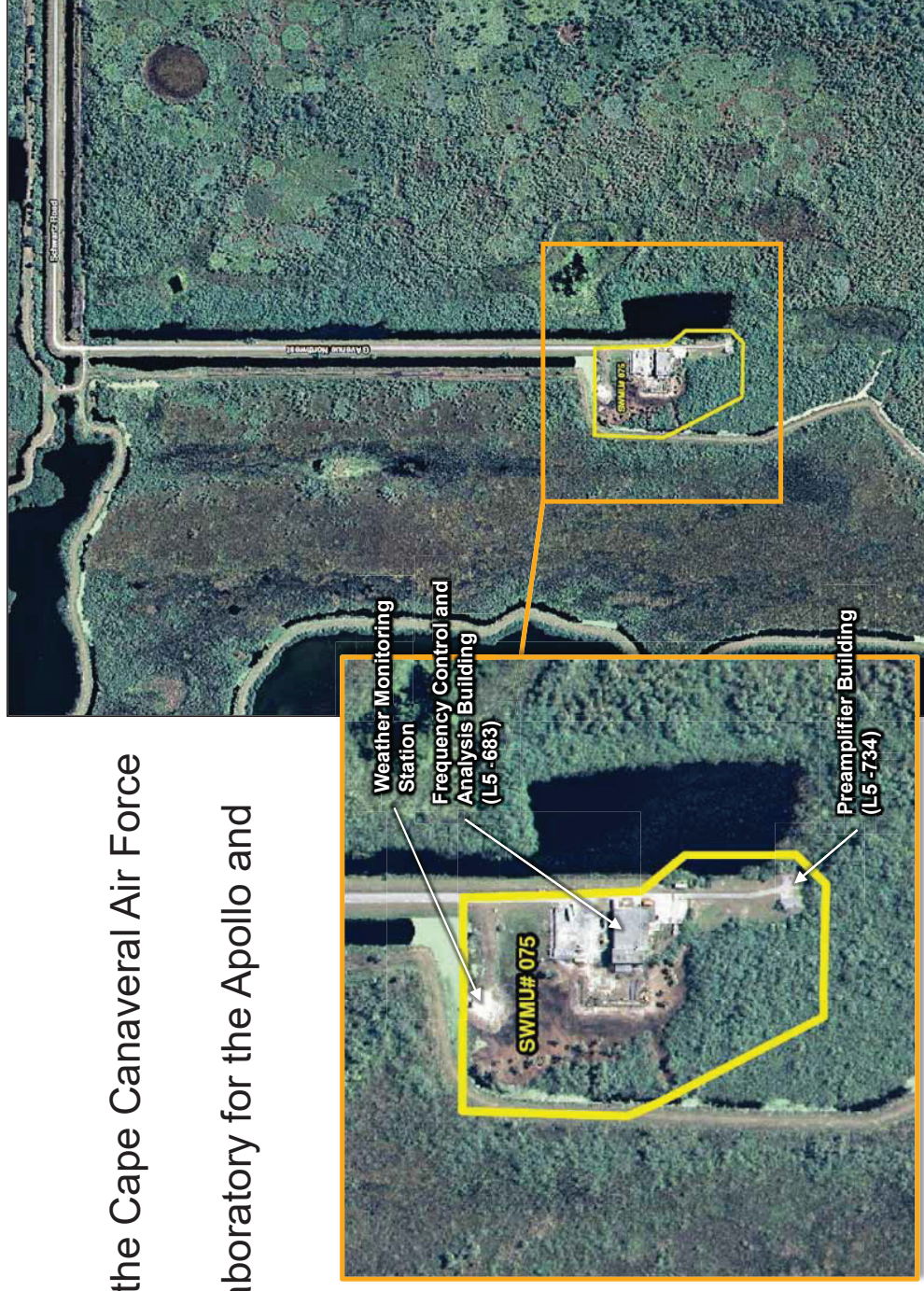


Figure Source: Vehicle Assembly Building Area 2018 Biennial Groundwater Monitoring Results, Geosyntec Consultants, March 2019

Former Development and Testing Laboratory – Site History

Site Use

- The weather monitoring station was historically used for small weather rocket launches
- The parking lot was formerly used for impact foam testing and various areas of the site were also used for equipment, vehicle, and salvage materials storage

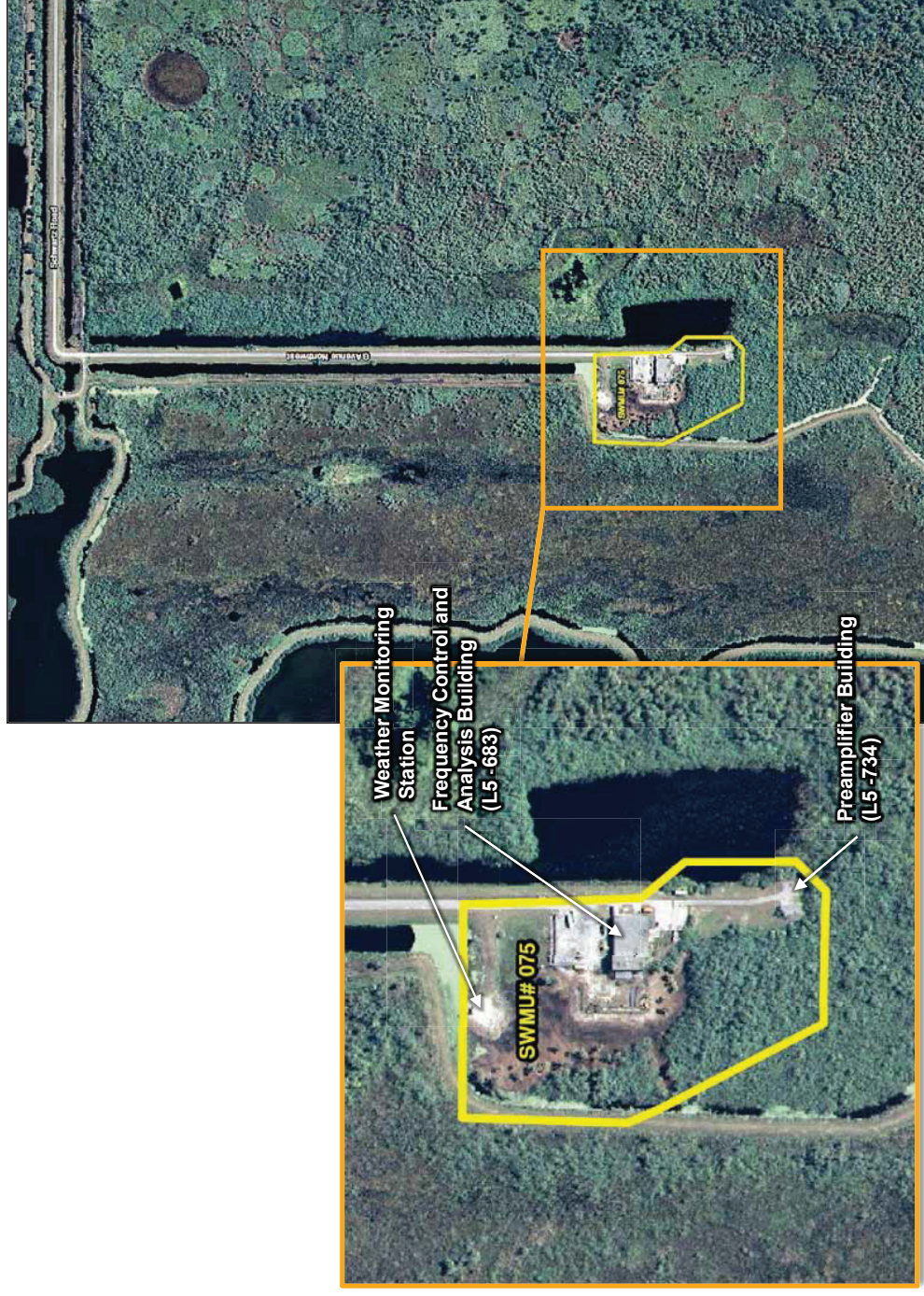


Figure Source: Vehicle Assembly Building Area 2018 Biennial Groundwater Monitoring Results, Geosyntec Consultants, March 2019

Former Development and Testing Laboratory – Site History

RCRA Facility Investigation (RFI)

- 2006: Conducted an RFI; Corrective Measures Study Work Plan and IM Report were approved
- 2007: Corrective Measures Design (CMD)
- 2008: Corrective Measures Implementation Work Plan

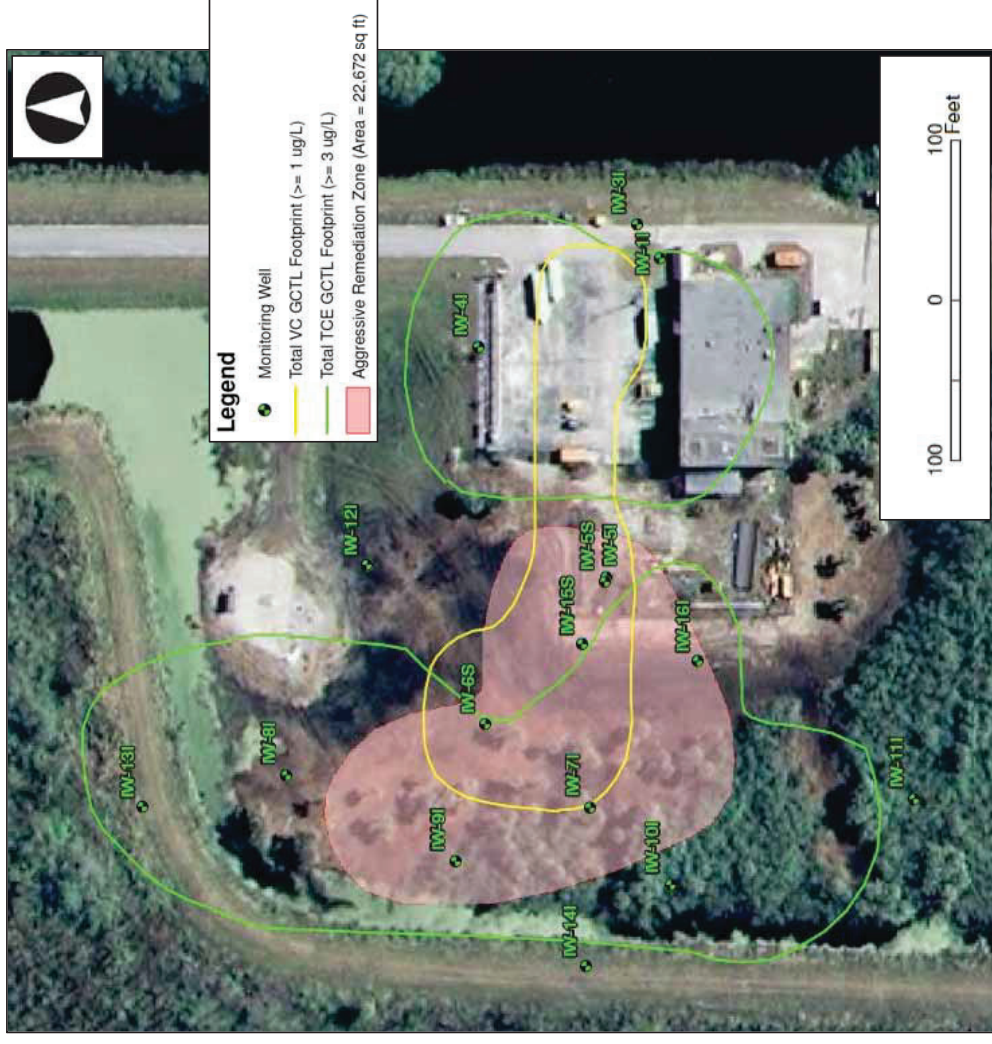
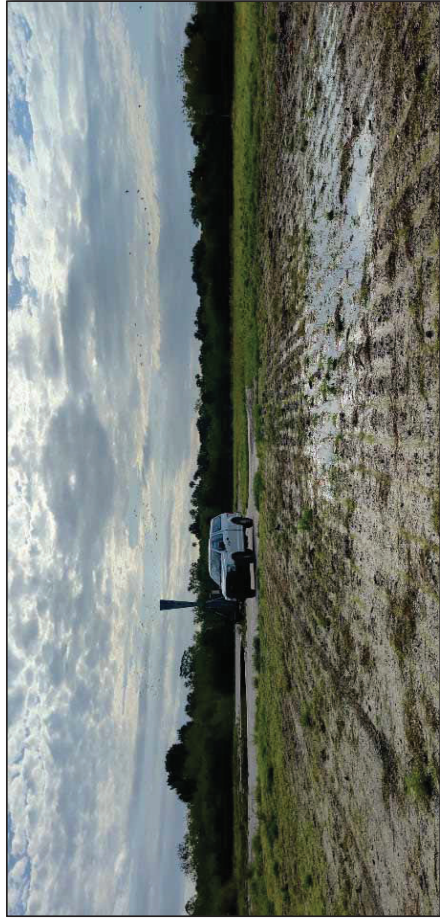


Figure Source: Former Development and Testing Laboratory (FDTL), SWMU NO. 075, Corrective Measures Implementation Work Plan, Tetra Tach NUS, Inc., October 2008

Former Development and Testing Laboratory – Site History

Corrective Measures Implementation Work Plan Objectives

- Reduce COCs to less than GCTLs
- Phase I: Aggressive Remediation Zone
 - Area where active remediation was conducted
 - Site COCs exceeded NADCs
 - Remedy: 50 air sparge wells
 - Goal: Reduce site COCs to less than NADCs
- Phase II: Low Concentration Plume
 - Site COCs exceeded GCTLs but are less than NADC
 - Remedy: Monitored natural attenuation
 - Goal: Reduce site COCs to less than GCTLs

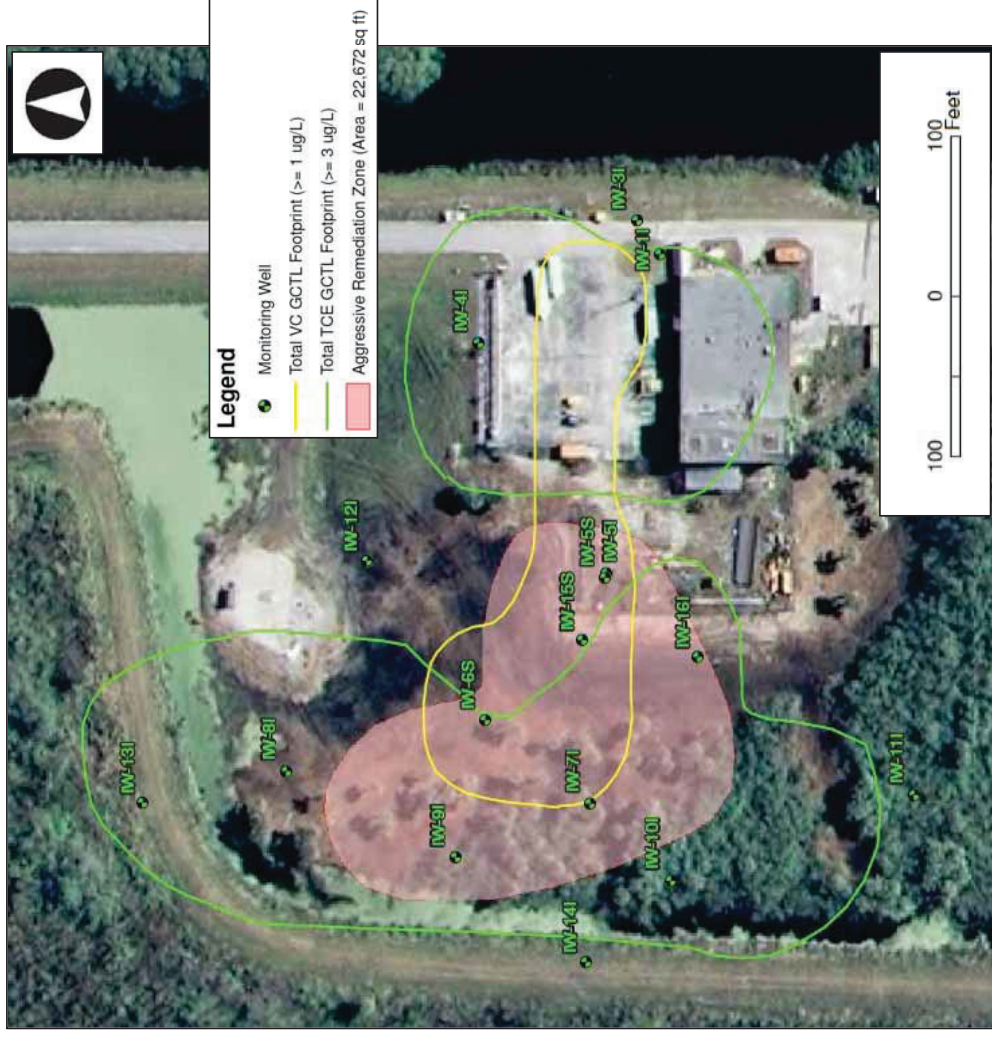


Figure Source: Former Development and Testing Laboratory (FDTL), SWMU NO. 075, Corrective Measures Implementation Work Plan, Tetra Tech NUS, Inc., October 2008

Former Development and Testing Laboratory – Site History

Air sparge system installation and operation

- December 2008 and January 2009: Baseline Groundwater Sampling
- December 2008 through September 2009: Installation of additional monitoring wells, air sparge wells, and system components
- September 2009: Initial system startup
- December 2009: Quarterly groundwater sampling results achieved Phase I active remediation goals

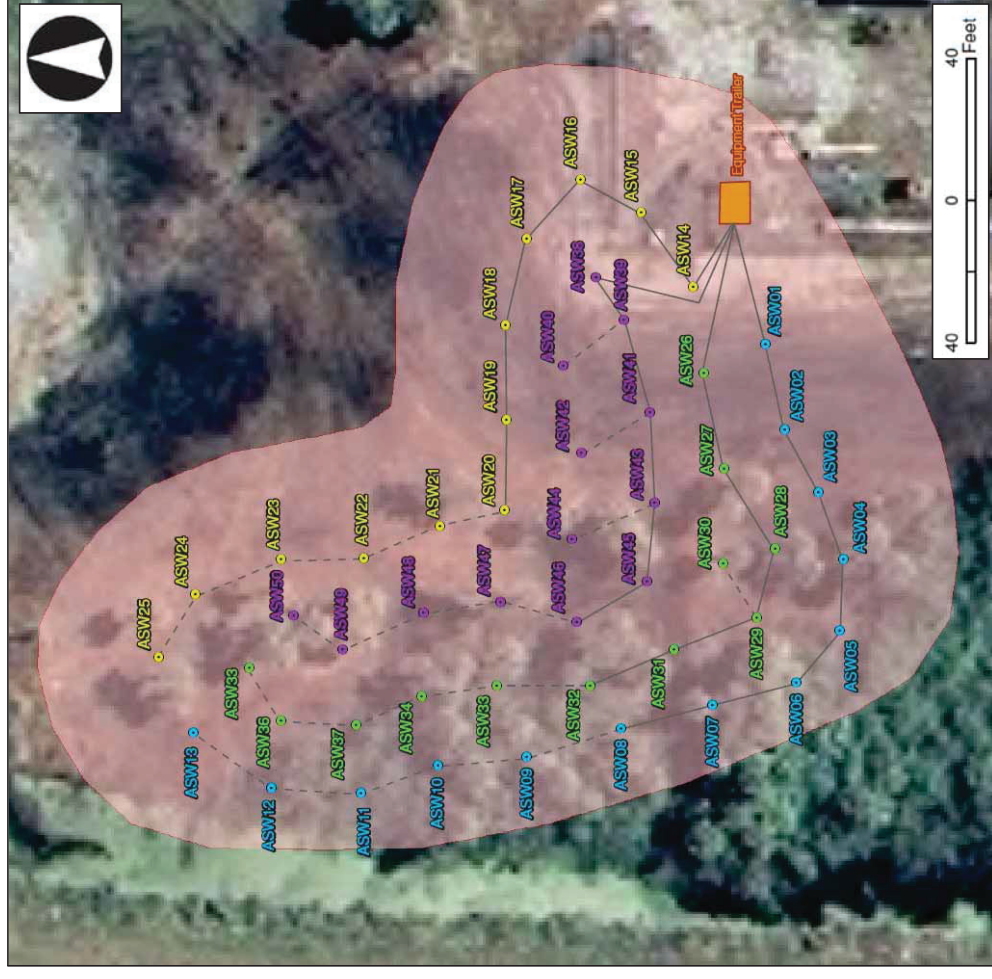


Figure Source: Former Development and Testing Laboratory (FDTL), SWMU NO. 075, Corrective Measures Implementation Work Plan, Tetra Tech NUS, Inc., October 2008

Former Development and Testing Laboratory – Site History

Air sparge system installation and operation

- April 2010: System shutdown after the March 2010 quarterly groundwater sampling results confirmed the December 2009 data
- May 2012: System trailer was removed from the site
- June 2013: Air sparge wells were abandoned and the piping and system components were removed
- December 2009 through May 2014: Quarterly groundwater sampling transitioned to semi-annual after September 2011, and then to annual after September 2012

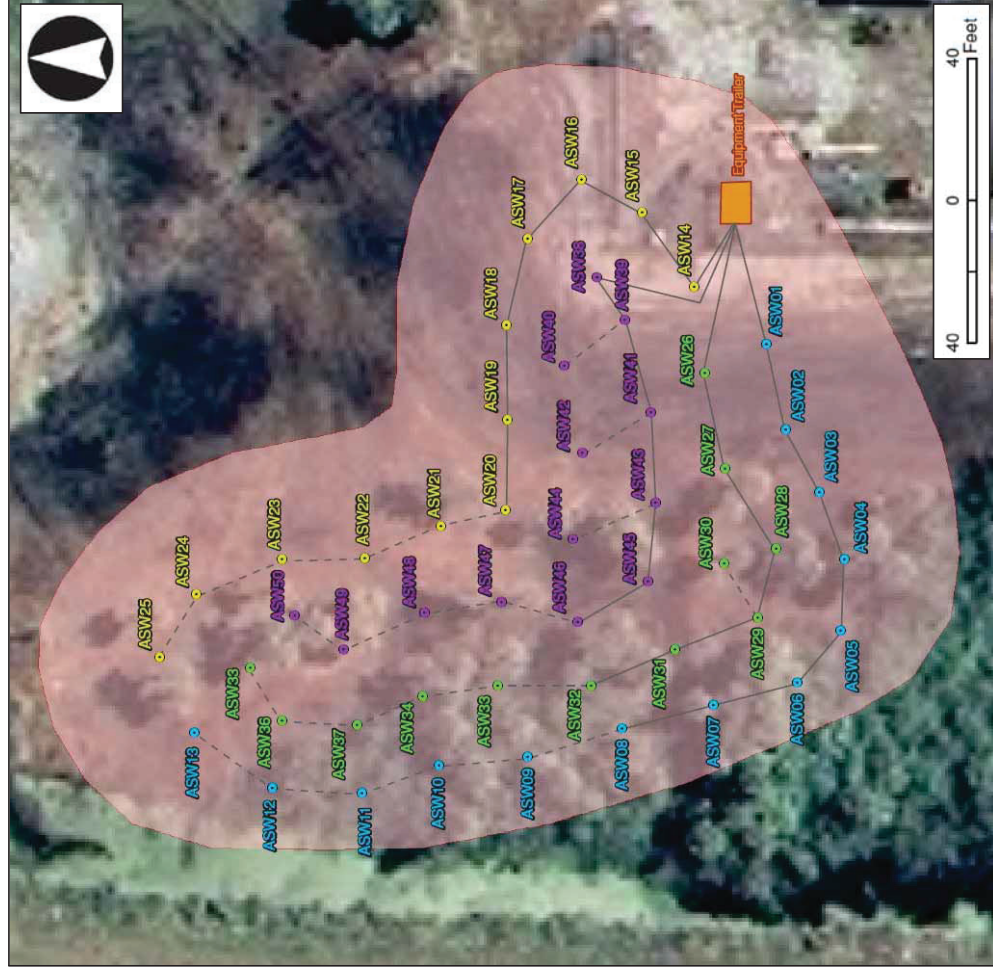
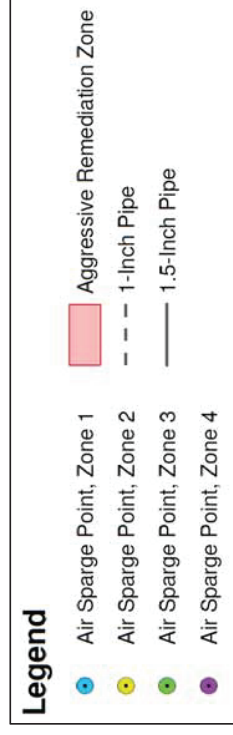


Figure Source: Former Development and Testing Laboratory (FDTL), SWMU NO. 075, Corrective Measures Implementation Work Plan, Tetra Tech NUS, Inc., October 2008

Former Development and Testing Laboratory – Site History

Nov 2014 through Present

- Site was added to the VAB LTM Program in November 2014
- Conduct long-term groundwater monitoring on a biennial frequency
- Per the CMD, remove monitoring wells from the sampling program after two consecutive sampling events with concentrations below GCTLs
- Site COCs are TCE and VC

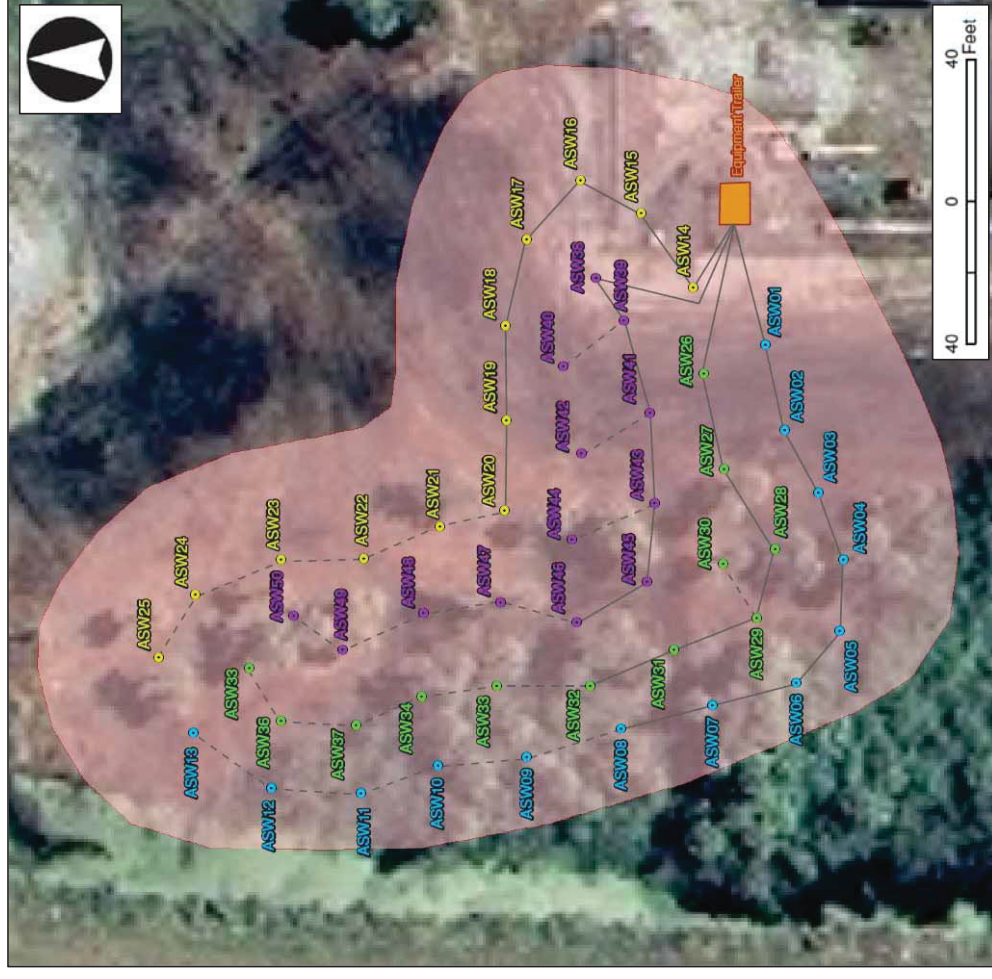


Figure Source: Former Development and Testing Laboratory (FDTL), SWMU NO. 075, Corrective Measures Implementation Work Plan, Tetra Tech NUS, Inc., October 2008

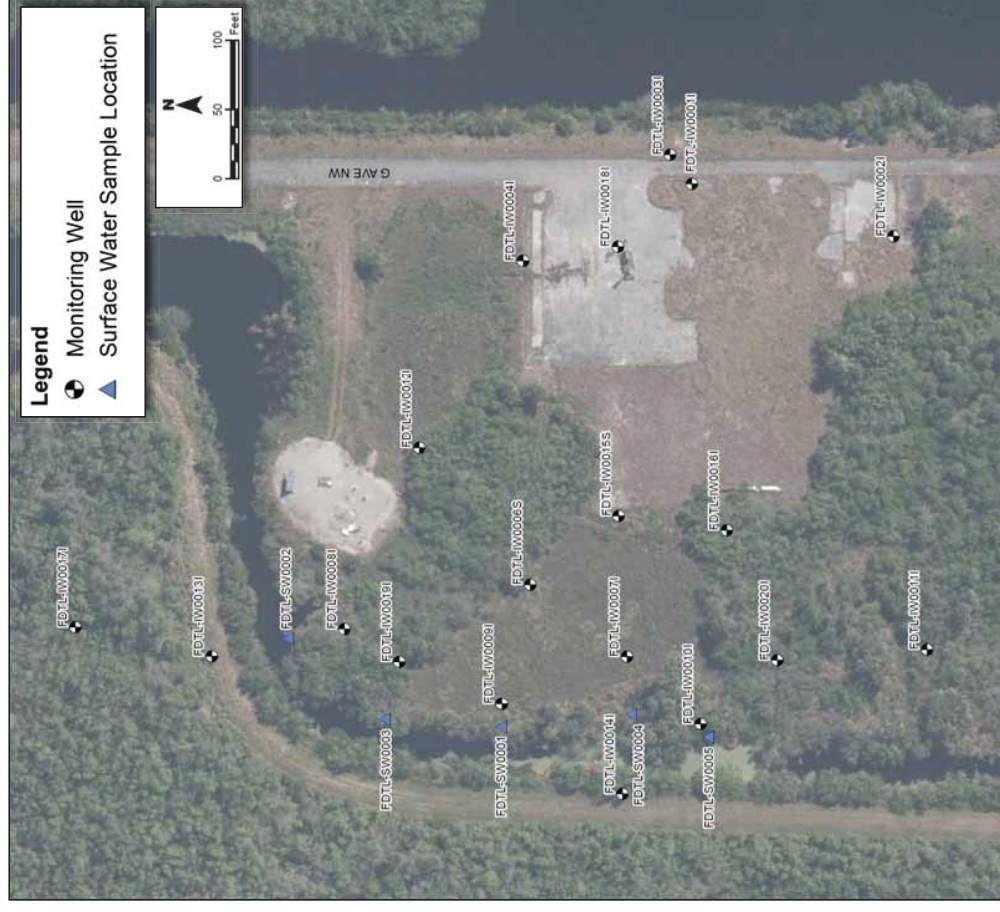
41

Site VOCs

- PCE
- TCE
- 11DCE
- cDCE
- tDCE
- VC

December 2024: Biennial LTM

- Water level measurements at 15 monitoring wells
- 8 monitoring wells sampled
- 5 surface water samples collected
- Samples analyzed for site VOCs



FDTL – December 2024 Groundwater Flow

5 to 15 feet bls

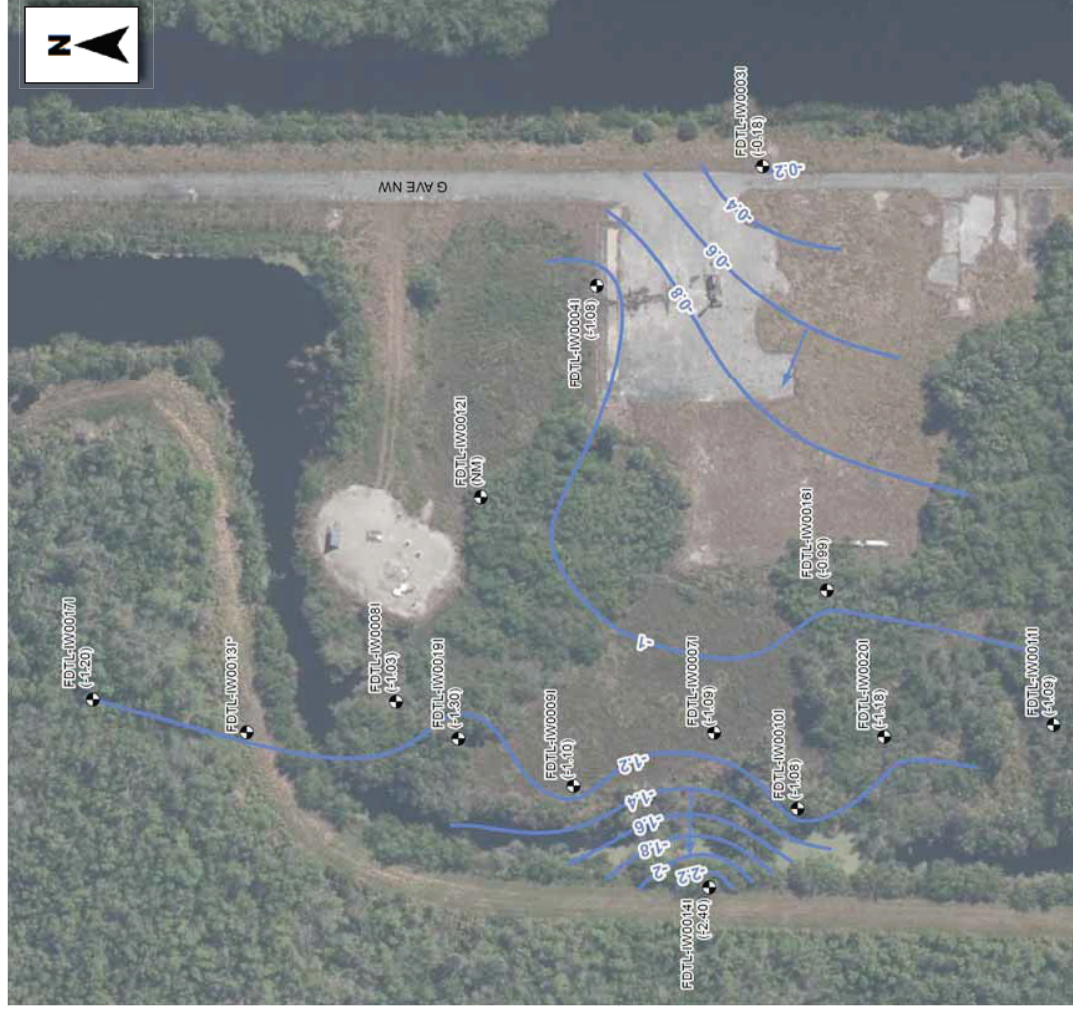
- Flow direction was northwest, which is consistent with historical observations
- Average DTW was 5.49 feet below top of casing



FDTL – December 2024 Groundwater Flow

10 to 25 feet bls

- Flow direction was west, with a northwest component in the east, which is consistent with historical observations
- Average DTW was 4.36 feet below top of casing



FDTL – December 2024 Groundwater Analytical Results

- VC was above the GCTL of 1 µg/L in five monitoring wells IW0015S, IW0007I, IW0008I, IW0010I, and IW0019I
- cDCE was detected in six wells and tDCE was detected in two wells; however, the concentrations were below GCTLs
- PCE, TCE, and 11DCE were not detected
- No site VOCs had concentrations above NADCs

VC Concentrations in Groundwater

(last five events; GCTL = 1 µg/L)

Date	IW0015S	IW0007I	IW0008I	IW0009I	IW0010I	IW0014I	IW0017I	IW0019I
May-16	15	0.50 U	15	1.5	NS	0.50 U	0.50 U	62
Oct-18	22	17	15	0.26 U	NS	0.26 U	0.26 U	55
Jun-20	36.5	17.6	24.8	0.41 U	NS	0.41 U	0.41 U	23.3
May-23	22	42	30	11	12	NS	0.71 U	21
Dec-24	23	21	52	0.71 U	8.5	0.71 U	0.71 U	16

Notes: Detections are **bolded**; GCTL Exceedances are **blue bolded**; NS = Not Sampled; U = The analyte was not detected

FDTL – December 2024 Surface Water Analytical Results

- VC was detected above the State of Florida Surface Water Cleanup Target Level for Freshwater (SWCTL) of 2.4 µg/L at SW00004
- cDCE was detected at one surface water location; however, there is no SWCTL for cDCE at the time of publication of this ADP
- PCE, TCE, 11DCE, or tDCE were not detected in surface water
- No site VOCs had concentrations above NADCs



VC Concentrations in Surface Water

(last two events; SWCTL = 2.4 µg/L)

Date	SW00001	SW00002	SW00003	SW00004	SW00005
May-23	NS	0.71 U	0.71 U	0.71 U	0.71 U
Dec-24	0.71 U	0.71 U	0.71 U	10	0.71 U

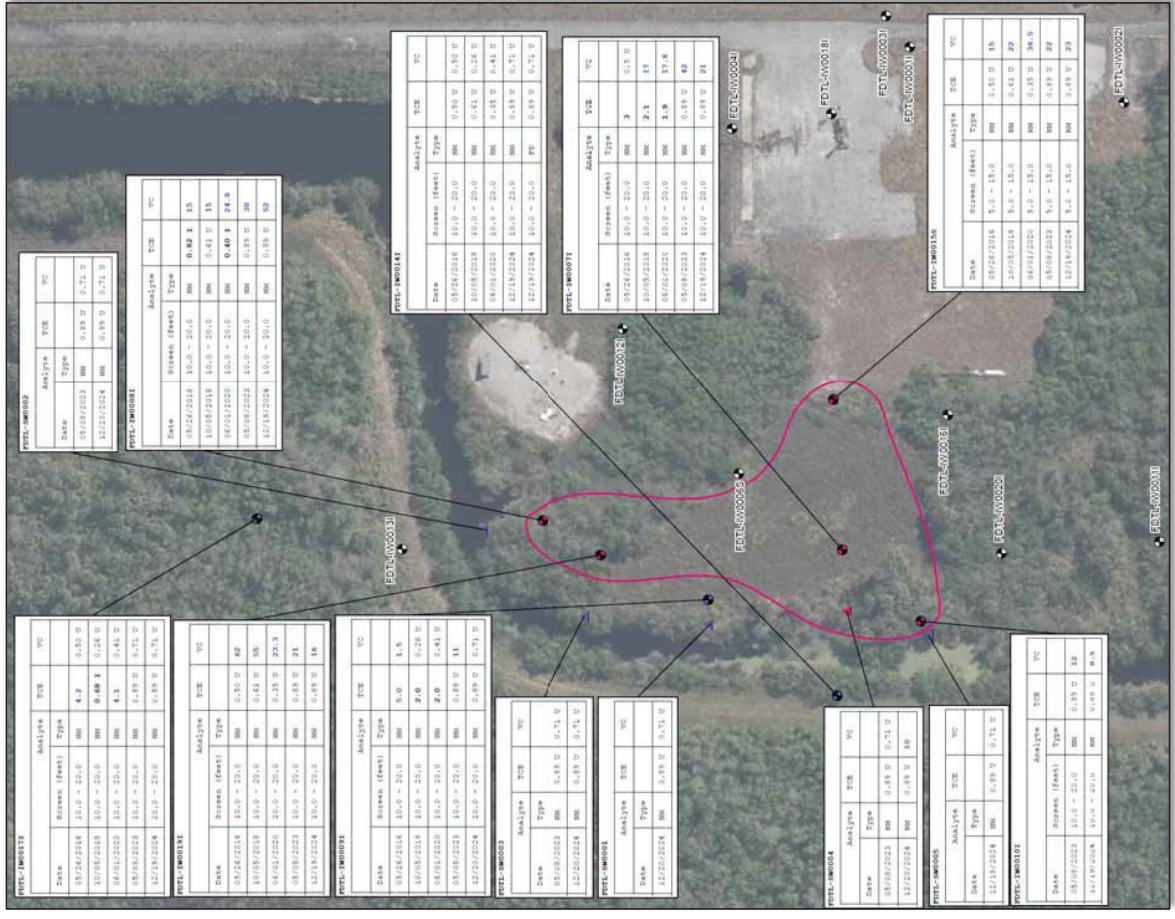
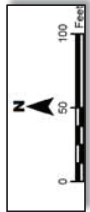
Notes:
Detections are **bolded**
GCTL Exceedances are **blue bolded**
NS = Not Sampled
SWCTL = State of Florida Surface Water Cleanup Target Level for Freshwater
U = The analyte was not detected

FDTL – December 2024 Analytical Results

Legend

- Monitoring Well location exceeds GCTL
- Monitoring Well location does not exceed GCTL
- Surface Water location exceeds SWCTL
- Surface Water location does not exceed SWCTL
- Approximate extent of Vinyl Chloride greater than 1 µg/L
- Location not sampled
- Monitoring Well

Analyte	Acronym	GCTL	NADC	SWCTL
Trichloroethene	TCE	3	300	80.7
Vinyl Chloride	VC	1	100	2.4

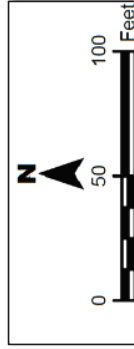


FDTL – December 2024 Surface Water Analytical Results

Legend

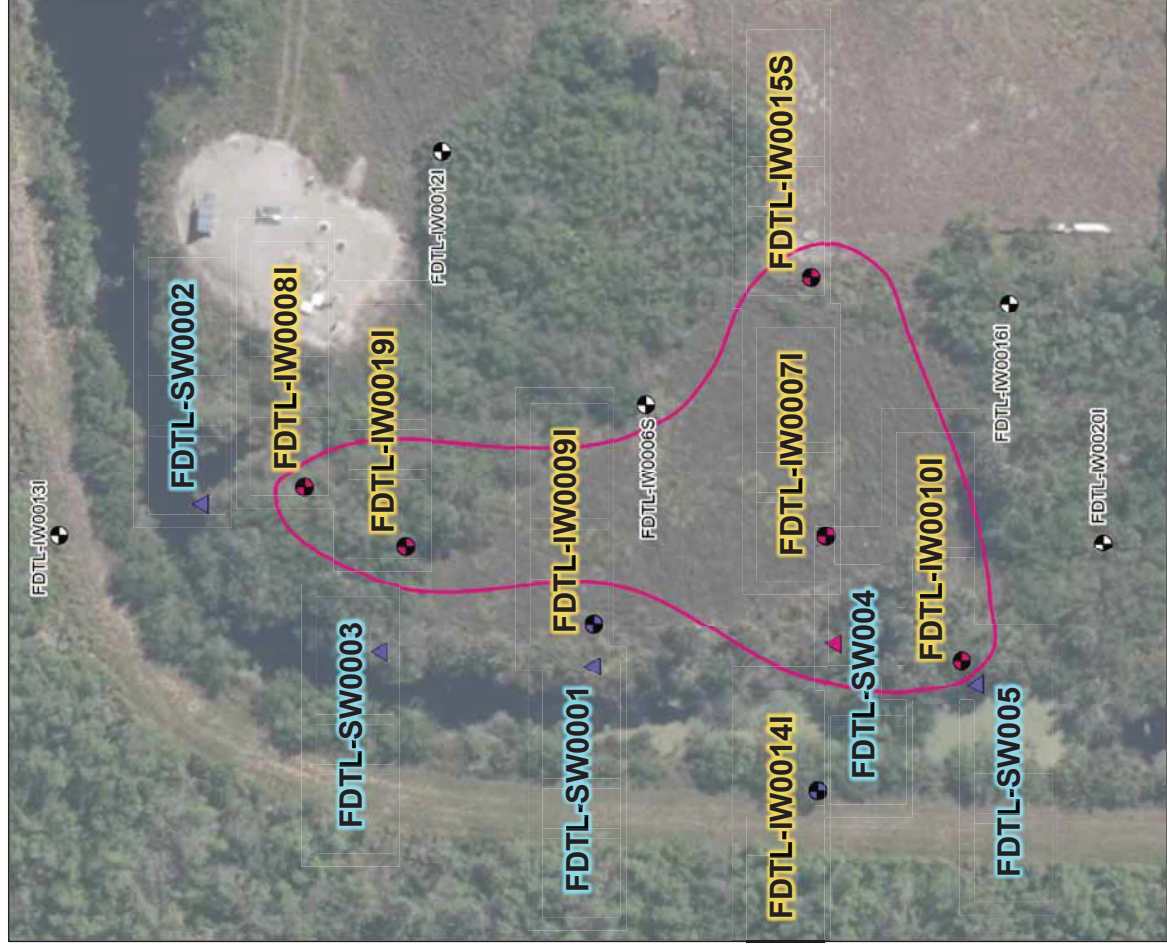
- ▲ Surface Water location exceeds SWCTL
- ▲ Surface Water location does not exceed SWCTL

Analyte	Acronym	SWCTL
Trichloroethene	TCE	80.7
Vinyl Chloride	VC	2.4



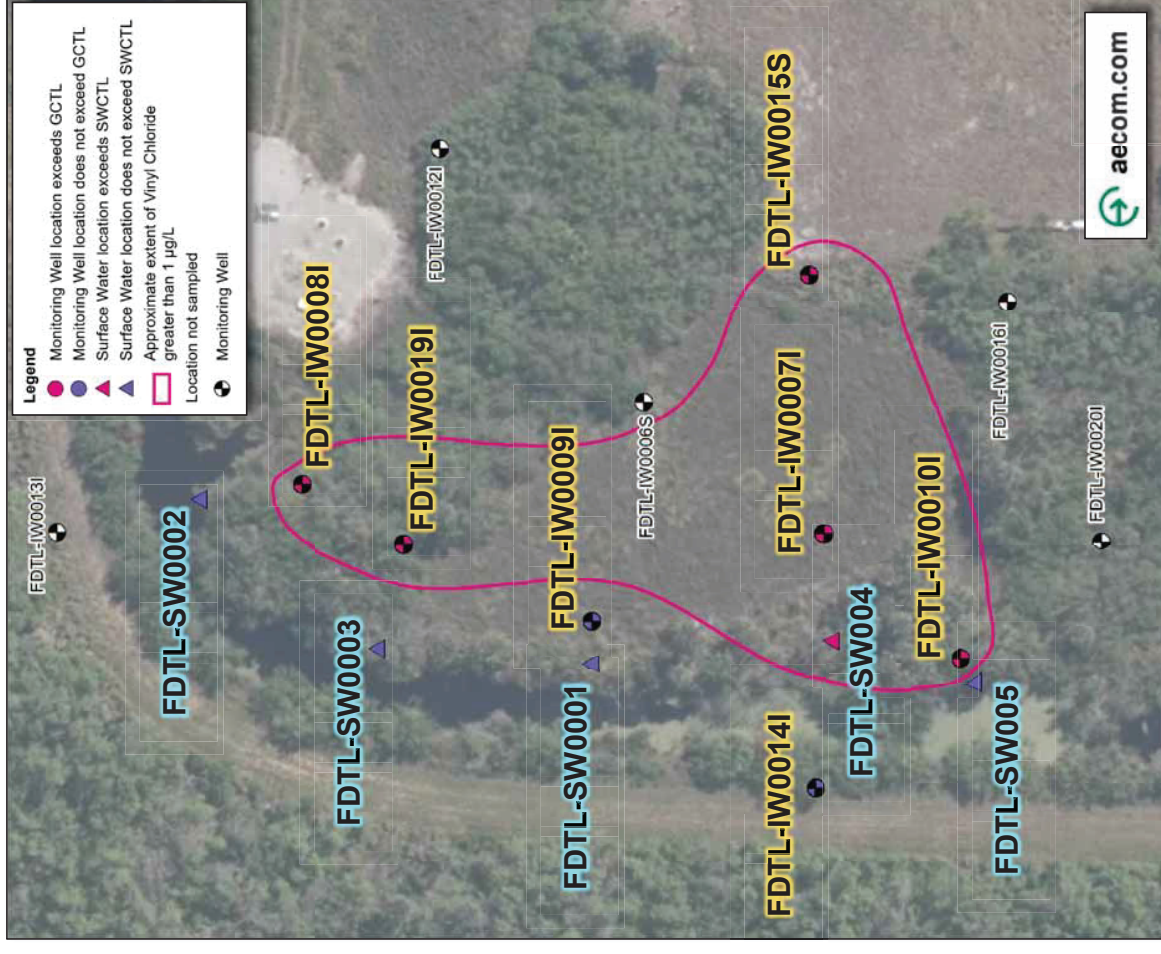
FDTL – December 2024 **Analytical Results**

- Legend**
- Monitoring Well location exceeds GCTL
 - Monitoring Well location does not exceed GCTL
 - Surface Water location exceeds SWCTL
 - Surface Water location does not exceed SWCTL
 - Approximate extent of Vinyl Chloride greater than 1 µg/L
 - Location not sampled
 - Monitoring Well



FDTL – Test Consensus

- Conduct biennial sampling of eight monitoring wells for site VOCs
 - FDTL-IW0015S, FDTL-IW0007I, FDTL-IW0008I, FDTL-IW0009I, FDTL-IW0010I, FDTL-IW0014I, FDTL-IW0017I, and FDTL-IW0019I
- Collect five surface water samples for site VOCs
 - FDTL-SW0001, FDTL-SW0002, FDTL-SW0003, FDTL-SW0004, and FDTL-SW0005
- Collect water level measurements at 17 monitoring wells
- The next sampling event is scheduled for May 2026



FDTL – Test Consensus

Proposed LTM Sampling Plan

Well ID	Screen Interval (feet bls)	Water Levels	Analysis
FDTL-IW0006S	5 to 15	X	
FDTL-IW0015S	5 to 15	X	site VOCs*
FDTL-IW0018I	5 to 15	X	
FDTL-IW0001I	35 to 40		
FDTL-IW0002I	35 to 40		
FDTL-IW0003I	15 to 25	X	
FDTL-IW0004I	15 to 25	X	
FDTL-IW0007I	10 to 20	X	site VOCs*
FDTL-IW0008I	10 to 20	X	site VOCs*
FDTL-IW0009I	10 to 20	X	site VOCs*
FDTL-IW0010I	10 to 20	X	site VOCs*
FDTL-IW0011I	10 to 20	X	
FDTL-IW0012I	10 to 20	X	

Continued on next page.

Notes: *Site VOCs to Analyze: tetrachloroethene, trichloroethene, 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, and vinyl chloride; bls = below land surface

FDTL – Test Consensus

Proposed LTM Sampling Plan (continued)

Well ID	Screen Interval (feet bls)	Water Levels	Analysis
FDTL-IW0013I	10 to 20	X	
FDTL-IW0014I	10 to 20	X	site VOCs*
FDTL-IW0016I	10 to 20	X	
FDTL-IW0017I	10 to 20	X	site VOCs*
FDTL-IW0019I	10 to 20	X	site VOCs*
FDTL-IW0020I	10 to 20	X	
FDTL-SW0001	Surface Water		site VOCs*
FDTL-SW0002	Surface Water		site VOCs*
FDTL-SW0003	Surface Water		site VOCs*
FDTL-SW0004	Surface Water		site VOCs*
FDTL-SW0005	Surface Water		site VOCs*

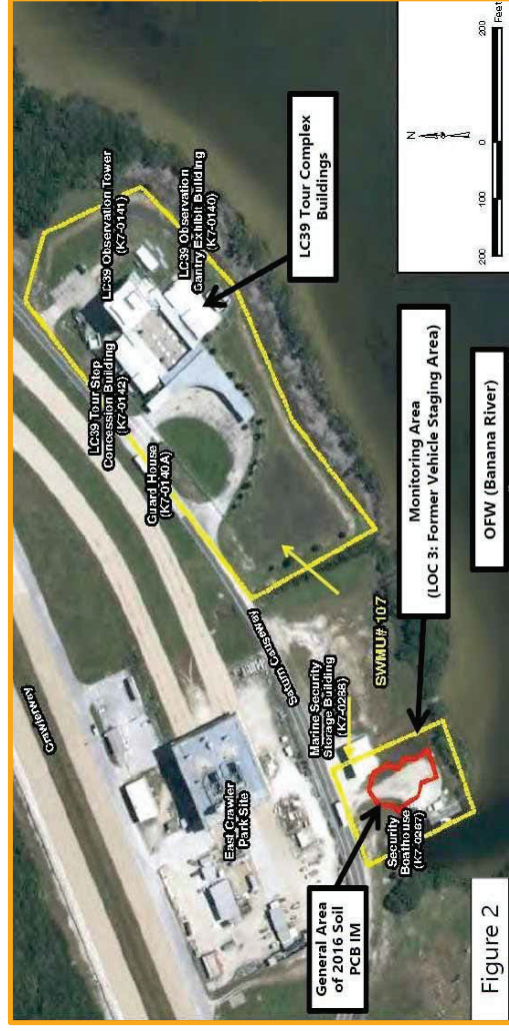
Notes: *Site VOCs to Analyze: tetrachloroethene, trichloroethene, 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, and vinyl chloride; bls = below land surface

**Launch Complex 39
Observation Gantry Area
SWMU 107**

Launch Complex 39 Observation Gantry Area – Site Location

53

- Site is located northeast of the VAB area, along the Saturn Causeway
- Monitored area is the LOC 3 – Former Vehicle Staging Area
- East Crawler Park site, now known as the Mobile Service Structure (MSS) Park site, is to the north
- The Banana River, which is part of the Indian River Lagoon System, is an Outstanding Florida Water (OFW) and is to the south and west
- Site was added to the VAB LTM Program in 2019



Figures Source: LC39 OGA (SWMU 107) – Annual LTM Results (2017-2018), Geosyntec Consultants, March 2018

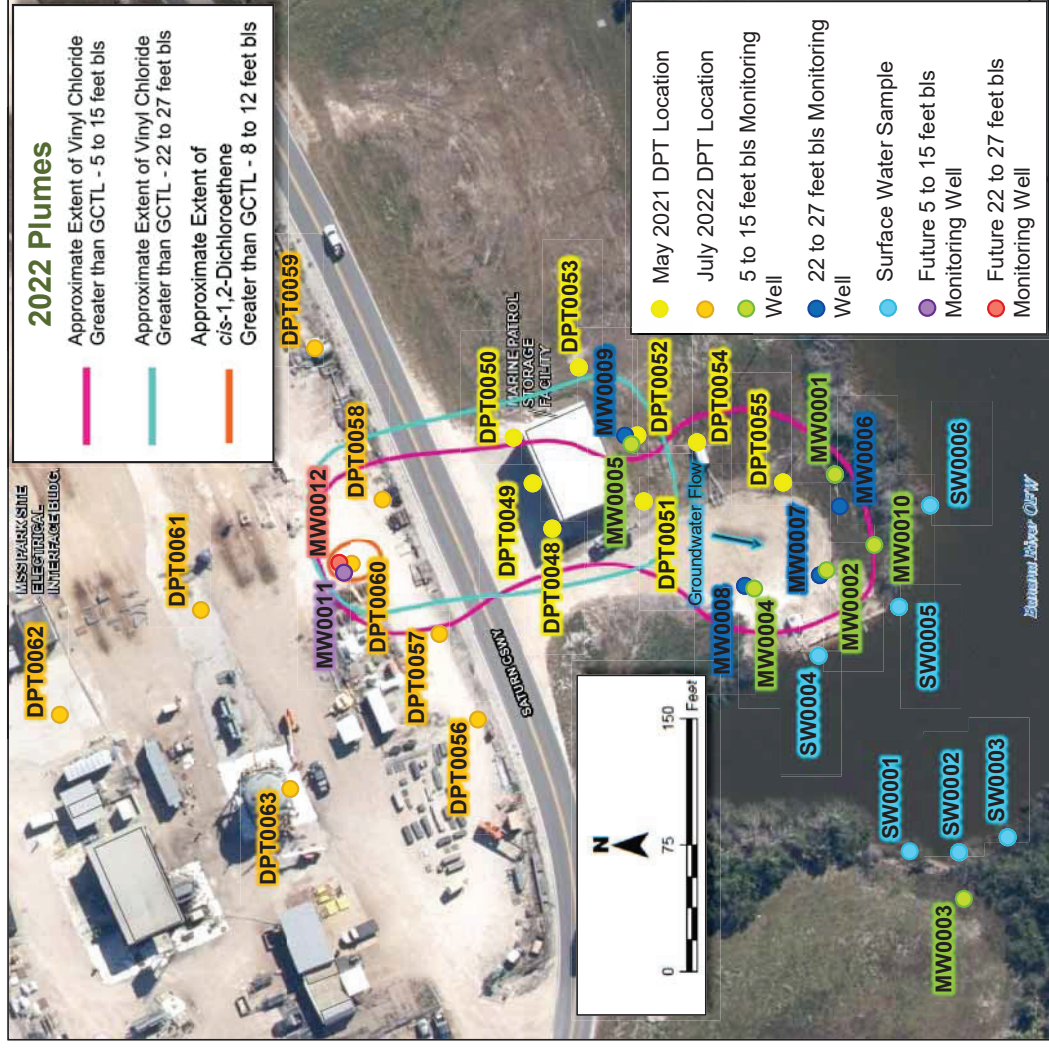
Launch Complex 39 Observation Gantry Area – Site History

May 2021: DPT Groundwater Sampling

- 31 groundwater samples at 8 DPT locations
- 10 samples from seven locations had VC above the GCTL
- No concentrations exceeded GCTLs in samples below 27 feet bls

June 2021: Annual LTM

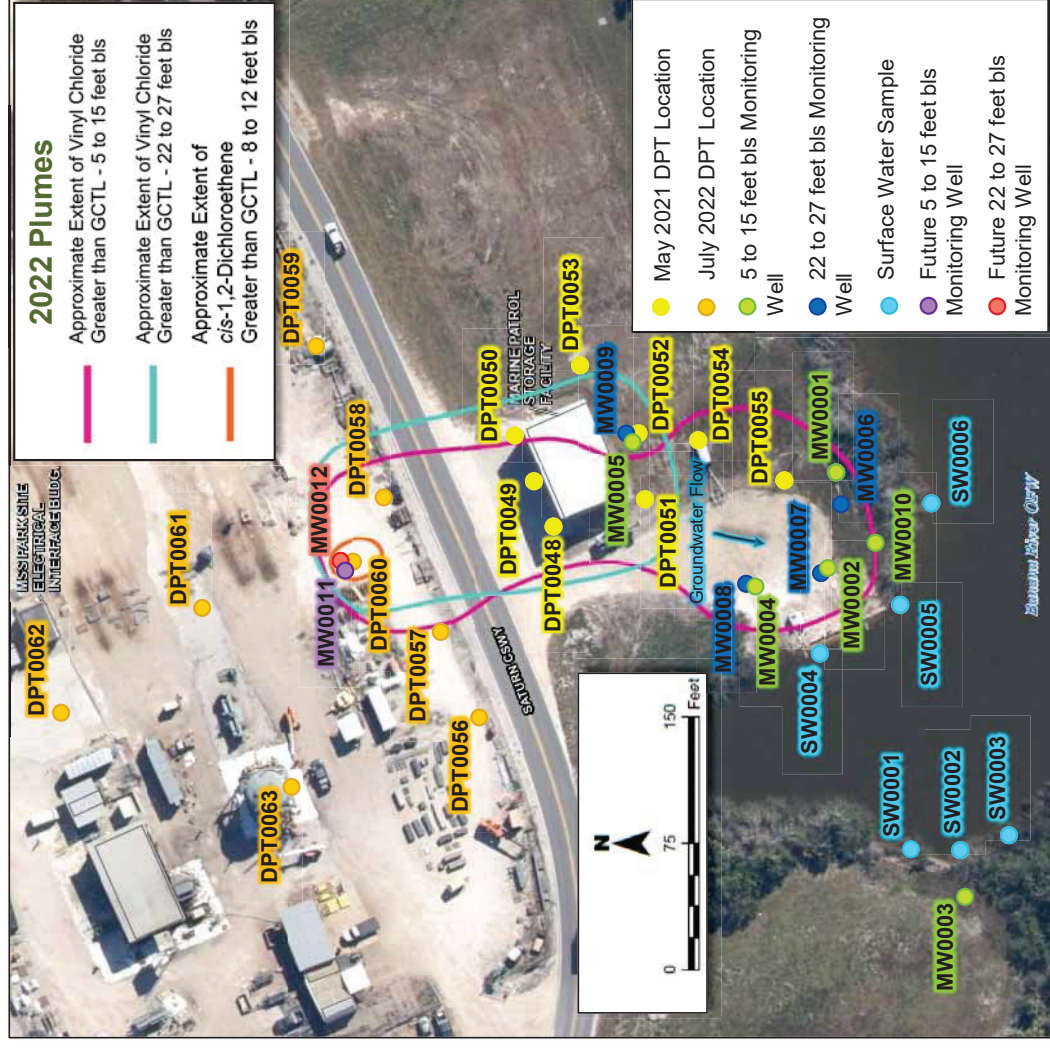
- Six monitoring wells sampled, and three surface water samples collected
- Four monitoring wells, three 5 to 15 feet bls MW0001, MW0002, and MW0004 and one 22 to 27 feet bls MW0009 had VC above the GCTL
- No detections in surface water samples



Launch Complex 39 Observation Gantry Area – Site History

July 2022: DPT Groundwater Sampling

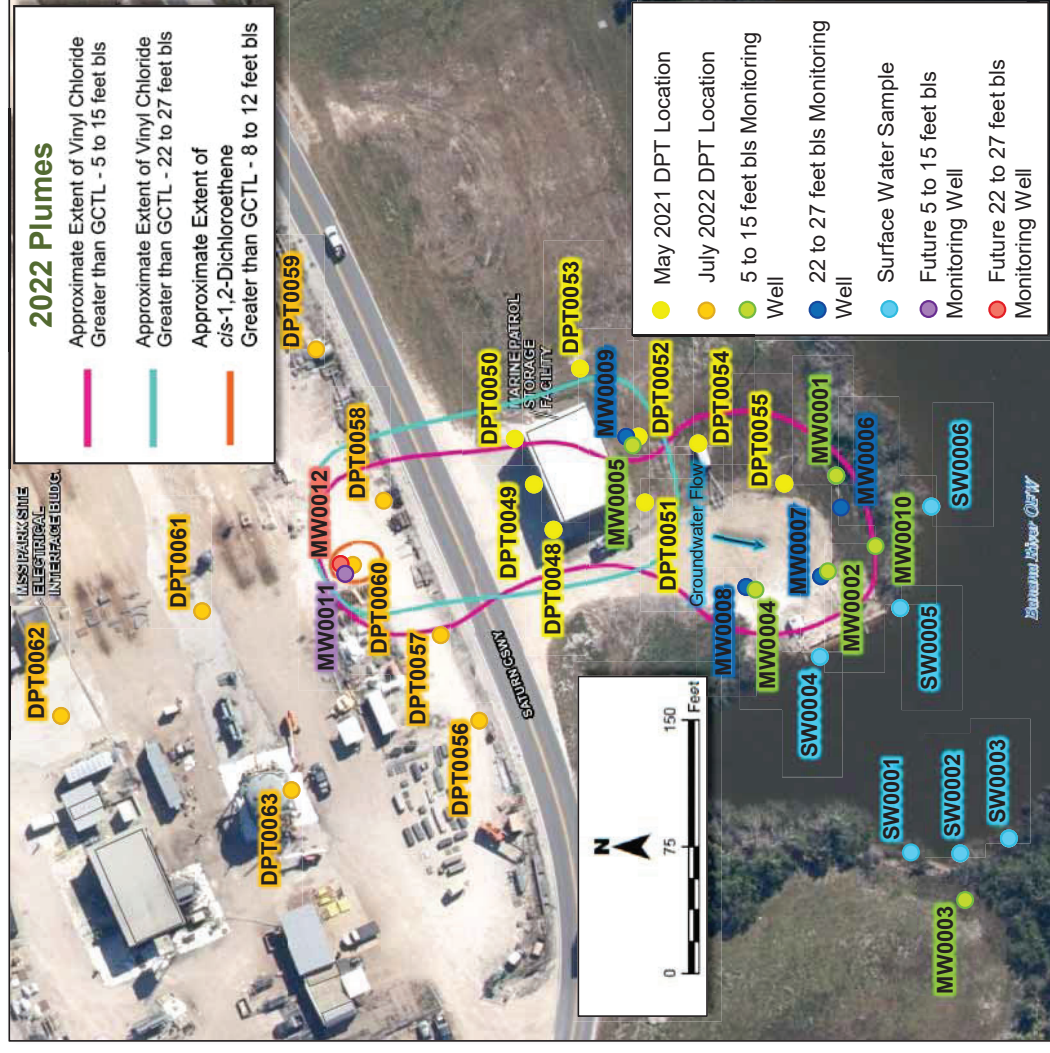
- 37 groundwater samples at 8 DPT locations
- Five samples from two locations, DPT0058 and DPT0060, had VC above the GCTL; 2 at 8 to 12 feet bls, 1 at 13 to 17 feet bls, and 2 at 23 to 27 feet bls
- One sample, DPT0060 at 8 to 12 feet bls, had cDCE above the GCTL
- No concentrations exceeded GCTLs in samples below 27 feet bls



Launch Complex 39 Observation Gantry Area – Site History

May 2023: Annual LTM

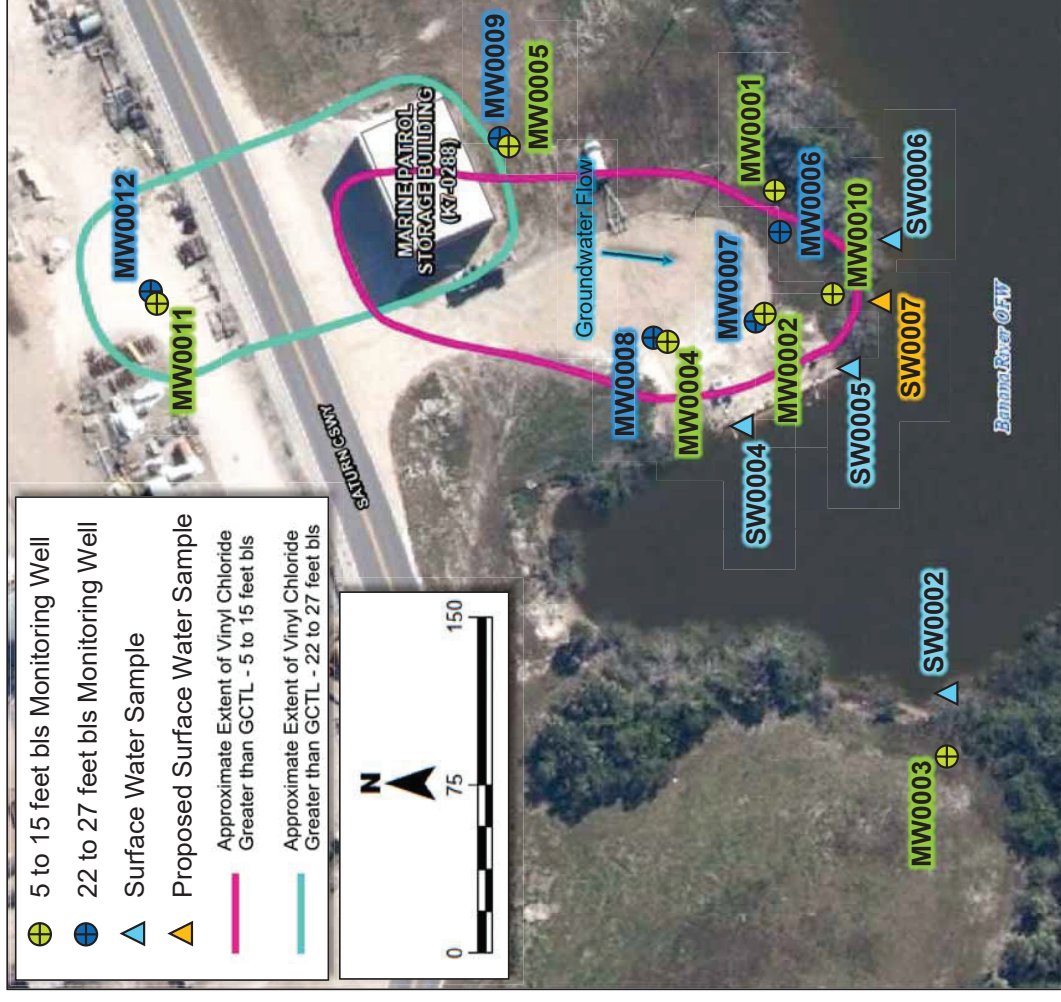
- Monitoring wells MW0011 and MW0012 were not installed because of construction activities that restricted access to the MSS Park Site
- Sampled 10 monitoring wells
- Collected four surface water samples
- TCE, cDCE, and tDCE were detected in several monitoring wells; however, the concentrations were below GCTLs
- VC was not detected
- No detections in the surface water samples



Launch Complex 39 Observation Gantry Area – Site History

February 2024: Annual LTM

- Installed two new monitoring wells MW00011 and MW00012 upgradient of the plumes at the MSS Park Site
- Sampled 12 monitoring wells
- Collected four surface water samples
- VC concentrations were above the GCTL in four monitoring wells: MW00002, MW00004, MW00010, and MW00012
- cDCE and tDCE were detected in several monitoring wells; however, the concentrations were below GCTLs
- TCE was not detected
- No detections in the surface water samples



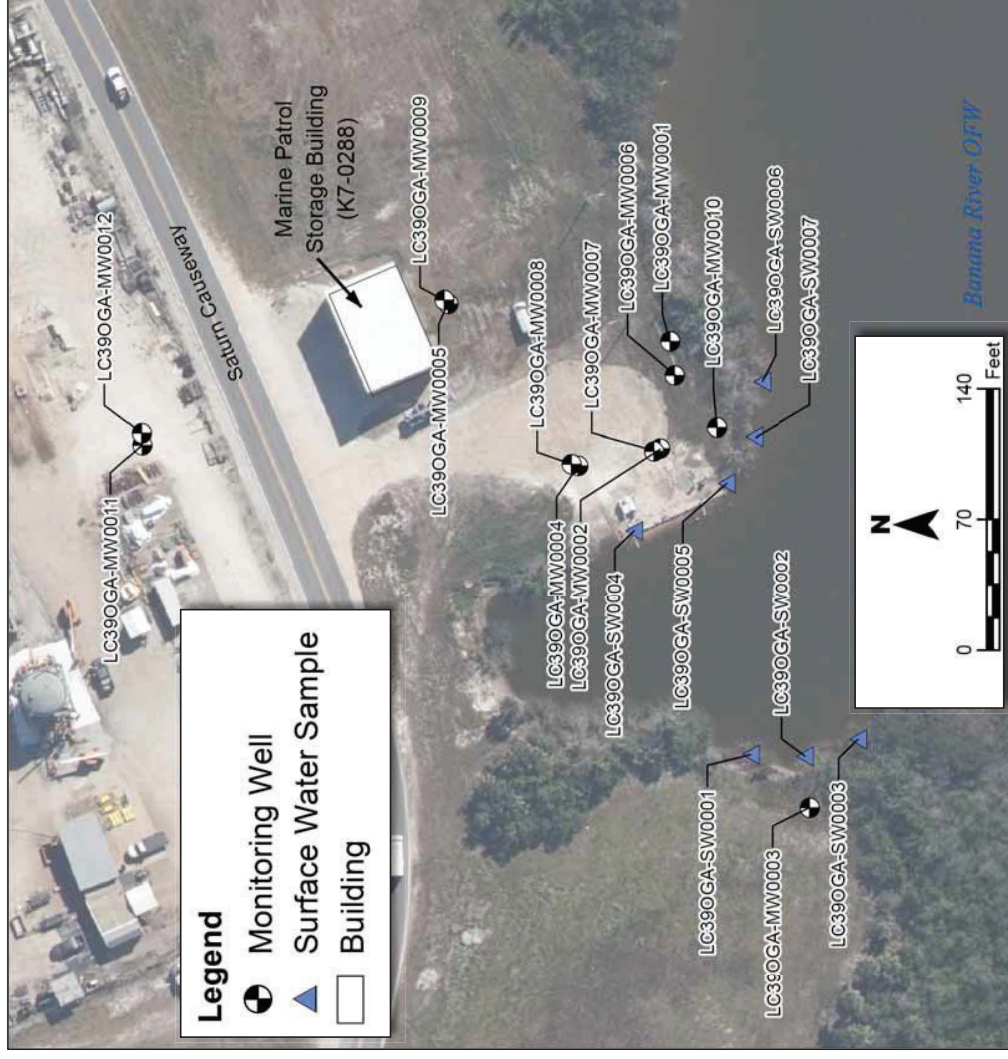
LC390GA – Site Layout and December 2024 Scope of Work

Site VOCs

- TCE
- cDCE
- tDCE
- VC

December 2024: Annual LTM

- Collect water level measurements at 11 monitoring wells
- Sample 11 monitoring wells
- Collect four surface water samples
- Analyze samples for site VOCs



LC390GA – February 2024 Groundwater Flow

59

5 to 15 feet bls

- Flow direction was southwest towards the Banana River OFW, which is consistent with historical observations
- Average DTW was 1.78 feet bls



22 to 27 feet bls

- Flow direction was southwest towards the Banana River OFW, which is consistent with historical observations
- Average DTW was 2.15 feet bls



LC39OGA – December 2024 Analytical Results

- TCE, cDCE, and tDCE were detected in several monitoring wells; however, the concentrations were below GCTLs
- VC was not detected
- No concentrations were above NADCs
- No site VOCs were detected in the surface water samples

VC Concentrations in Groundwater (last five events; GCTL = 1 µg/L)

Sample Date	MW0001	MW0002	MW0004	MW0008	MW0009	MW0010	MW0012
Screen Interval	5-15	5-15	5-15	22-27	22-27	5-15	22-27
11/18/2020	0.41 U	0.41 U	0.41 U	NS	8.0	NS	NS
6/30/2021	5.1	13	19	NS	7.6	NS	NS
5/9/2023	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	NS
2/19/2024	0.89 I	3.7	5.1	0.73 I	1.0	5.0	8.5
12/20/2024	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U	0.71 U

Notes: Detections are **bolded**; GCTL Exceedances are **blue bolded**; NS = Not Sampled; Only showing locations with detections from the last five events; U = The analyte was not detected

LC390GA – December 2024 Analytical Results

Legend

●

Monitoring Well

did not exceed GCTL

▲

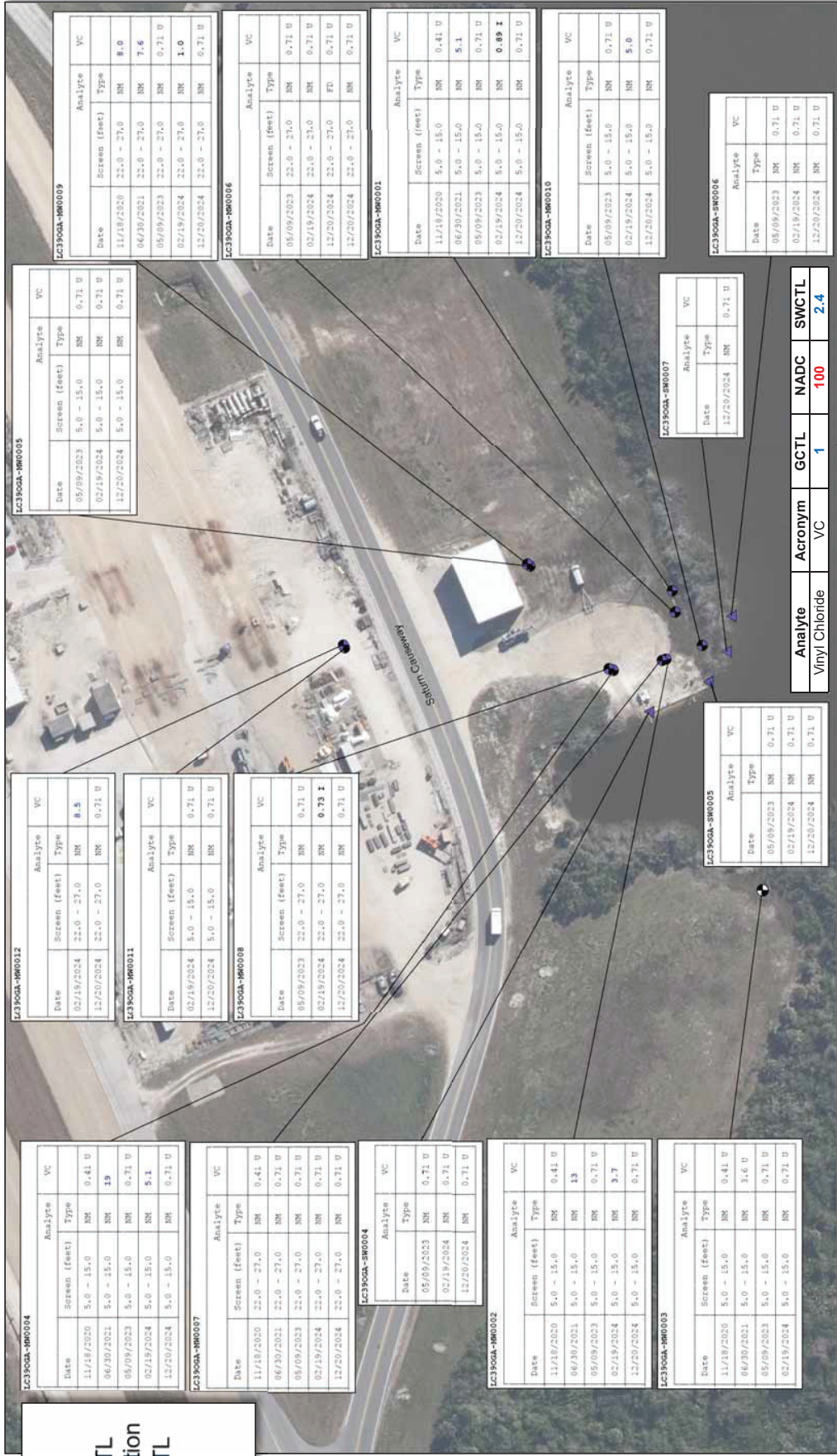
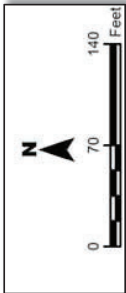
Surface Water location

did not exceed GCTL

Locations not sampled

●

Monitoring Well



Launch Complex 39 Observation Gantry Area – Test Consensus

- Conduct annual sampling of 11 monitoring wells for site VOCs: LC39OGA-MW0001, LC39OGA-MW0002, and LC39OGA-MW0004 through LC39OGA-MW0012
- Collect surface water samples at four locations for site VOCs: LC39OGA-SW0004 through LC39OGA-SW0007
- Collect water level measurements at 11 monitoring wells: LC39OGA-MW0001, LC39OGA-MW0002, and LC39OGA-MW0004 through LC39OGA-MW0012
- The next sampling event is scheduled for November 2025



Launch Complex 39 Observation Gantry Area – Test Consensus

Proposed LTM Plan

Location ID	Screen Interval (feet bls)	Water Levels	Analysis
LC39OGA-MW0001	5 to 15	X	site VOCs*
LC39OGA-MW0002	5 to 15	X	site VOCs*
LC39OGA-MW0004	5 to 15	X	site VOCs*
LC39OGA-MW0005	5 to 15	X	site VOCs*
LC39OGA-MW0006	22 to 27	X	site VOCs*
LC39OGA-MW0007	22 to 27	X	site VOCs*
LC39OGA-MW0008	22 to 27	X	site VOCs*
LC39OGA-MW0009	22 to 27	X	site VOCs*
LC39OGA-MW0010	5 to 15	X	site VOCs*
LC39OGA-MW0011	5 to 15	X	site VOCs*
LC39OGA-MW0012	22 to 27	X	site VOCs*
LC39OGA-SW0004	Surface Water		site VOCs*
LC39OGA-SW0005	Surface Water		site VOCs*
LC39OGA-SW0006	Surface Water		site VOCs*
LC39OGA-SW0007	Surface Water		site VOCs*

Notes: *Site VOCs to Analyze: trichloroethene, *cis*-1,2-dichloroethene, *trans*-1,2-dichloroethene, and vinyl chloride; bls = below land surface

Launch Equipment Shop PRL 051

Launch Equipment Shop – Site Location

Site location and features

- PRL 051 is in the VAB area approximately 0.3 mile southwest of the VAB at the north corner of the LES building (K6-1247)
- The main well field is currently a vacant area covered by grass, but contains many underground utilities
- The LES building (K6-1247) is a manufacturing shop for launch ground support
- A 4,000-gallon underground storage tank (UST) that was used to store diesel fuel was removed from the site in the mid-1990s



Launch Equipment Shop – Site History

2003: LTM of groundwater was initiated

2004: Free product observed in several monitoring wells

2007 and 2009: RegenOx injections

- Soil TRPH decreased, but remained greater than the rSCTL of 5,000 milligrams per kilogram
- TRPH was greater than the GCTL of 5,000 µg/L in groundwater

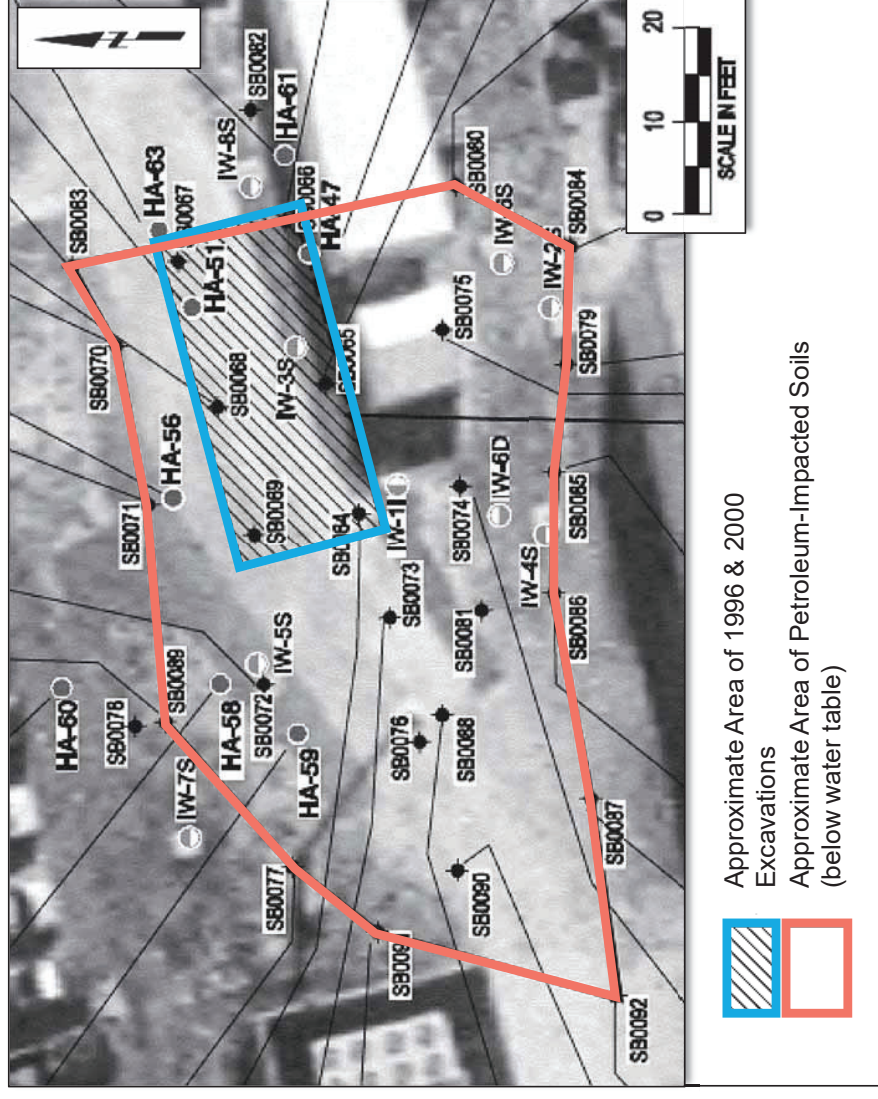


Figure Source: LES PRL No. 51 Interim Measures Work Plan Form, LFR, January 2006, Figure 3

Launch Equipment Shop – Site History

2018: Surficial soil sampling

- Historical saturated soil sample results below 2 feet indicated concentrations of PAHs and TRPH greater than rSCTLs
- 20 samples from 10 locations were analyzed for both PAHs and TRPH
- Intervals sampled: 0 to 0.5 foot bls and 0.5 to 2 feet bls
- PAHs and TRPH concentrations were below rSCTLs
- Soil data were retained, and now that groundwater is below GCTLs NFA for soils will be recommended

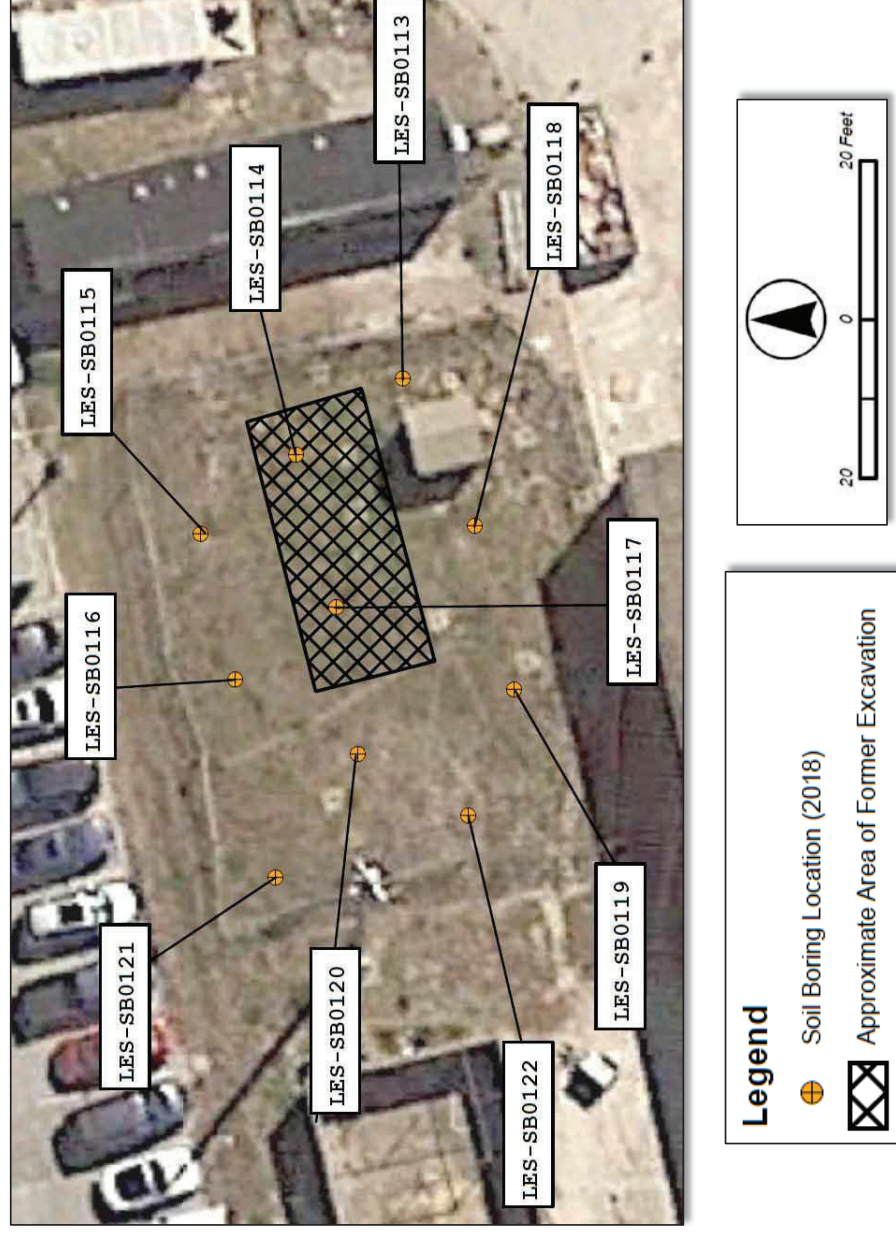


Figure Source: PRL 051 LES Ozone Injection Pilot-Scale Study System Abandonment and Groundwater Monitoring Results, Tetra Tech, April 2019

Launch Equipment Shop – Site History

2010 through 2018: Ozone injection and recirculation

- October 2010: System started
- Groundwater monitoring was continued during system operation
 - September 2015: Discontinued monitoring for PAHs
 - December 2017: Only two wells with TRPH greater than the GCTL
- March 2018: System was shut down
- February 2019: Injection and extraction wells were abandoned
- 2019: Site was added to the VAB LTM program, and the sampling frequency was semi-annual

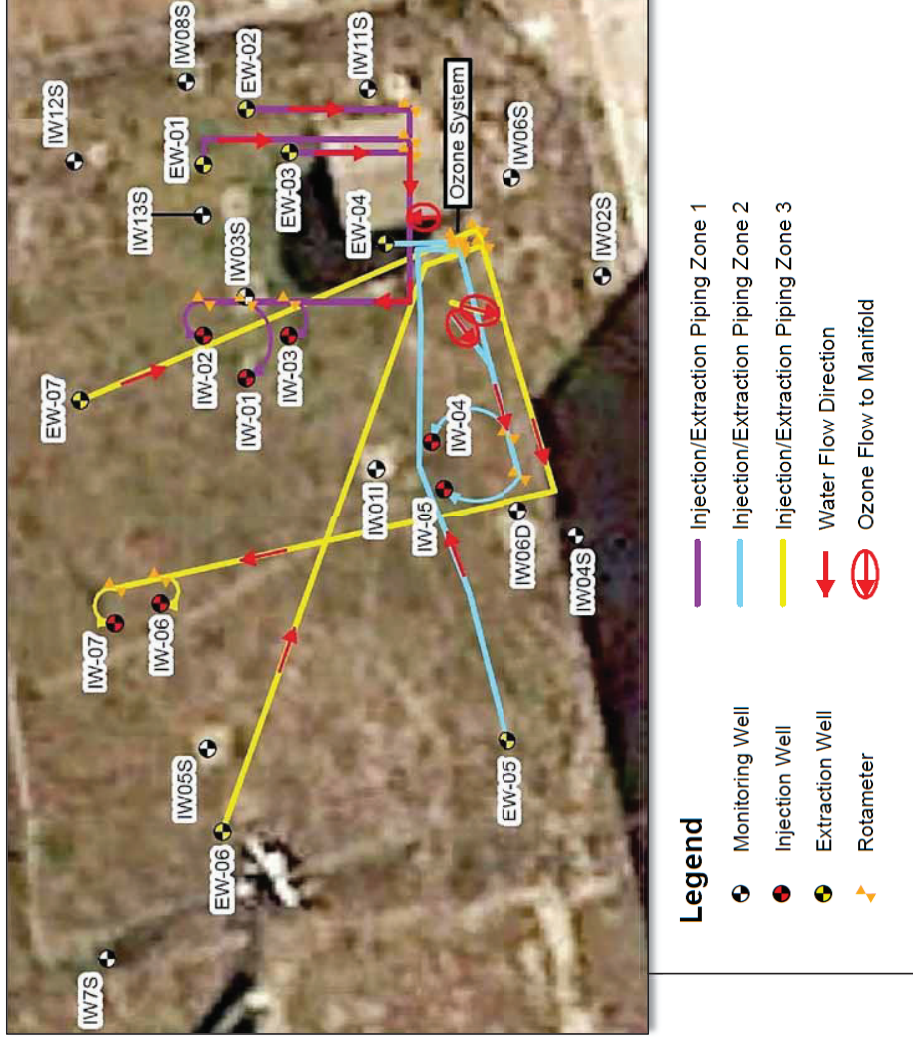
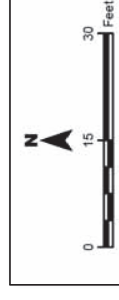
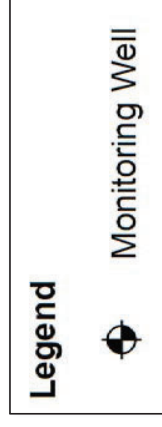


Figure Source: PRL 051 LES Ozone Injection Pilot-Scale System Abandonment and Groundwater Monitoring Results, Tetra Tech, April 2019

Launch Equipment Shop – Site History

2020 to the present: LTM sampling

- Sampled three monitoring wells IW0005S, IW0009S, and IW0011S
- GCTL exceedances for TRPH:
 - June 2020: IW0005S at 7,020 µg/L
 - November 2020: IW0011S at 8,760 µg/L
 - June 2021: None
 - November 2021: IW0011S at 5,200 µg/L
 - May 2023: None
- Sampling frequency was changed to annual following the November 2020 event and then changed to biennial following the May 2023 event



Launch Equipment Shop – Site Layout and December 2024 Scope of Work

Site COC

- TRPH

December 2024: Biennial LTM

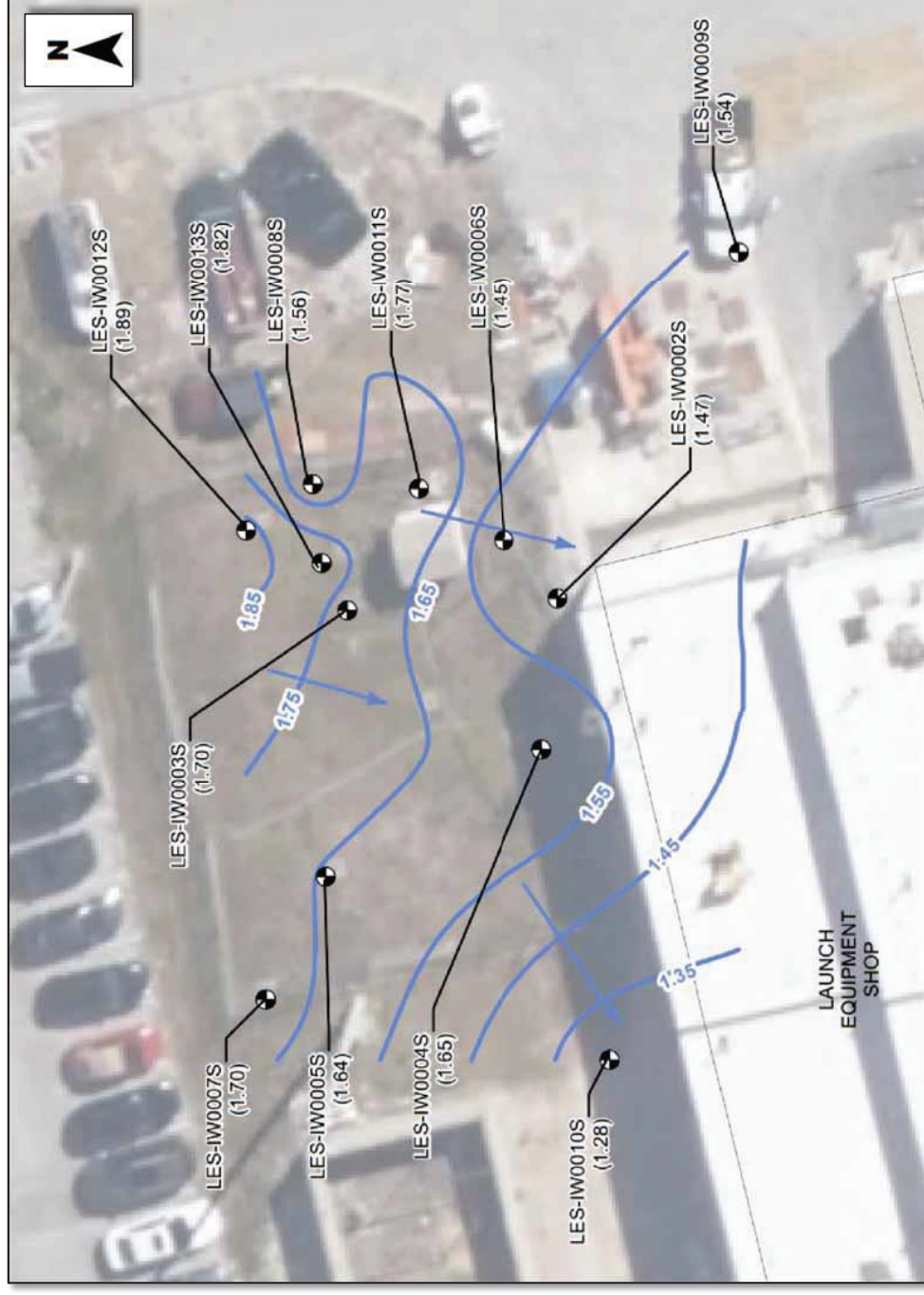
- Collect water level measurements at 12 monitoring wells
- Sample three monitoring wells
- Analyze samples for TRPH



Launch Equipment Shop – December 2024 Groundwater Flow

3 to 15 feet bls

- Flow direction was south-southwest, which is consistent with historical observations
- Average DTW was 5.96 feet bls



Launch Equipment Shop – December 2024 Analytical Results

- TRPH was detected in one monitoring well IW0011S, but was below the GCTL of 5,000 µg/L
- TRPH concentrations have been below the GCTL for two or more consecutive events in all wells sampled

TRPH Concentrations in Groundwater

(last six events; GCTL = 5,000 µg/L)

Sample Date	LES-IW0005S	LES-IW0009S	LES-IW0011S
Screen Interval	25-35	20-30	20-30
6/2/2020	7020	140 U	4570
11/18/2020	1290	268 I	8760
6/30/2021	510 I	100 U	2100
11/23/2021	100 U	100 U	5200
5/10/2023	3900 U	3900 U	3900 U
12/17/2024	340 U	340 U	2700

Notes:

Detections are **bolded**

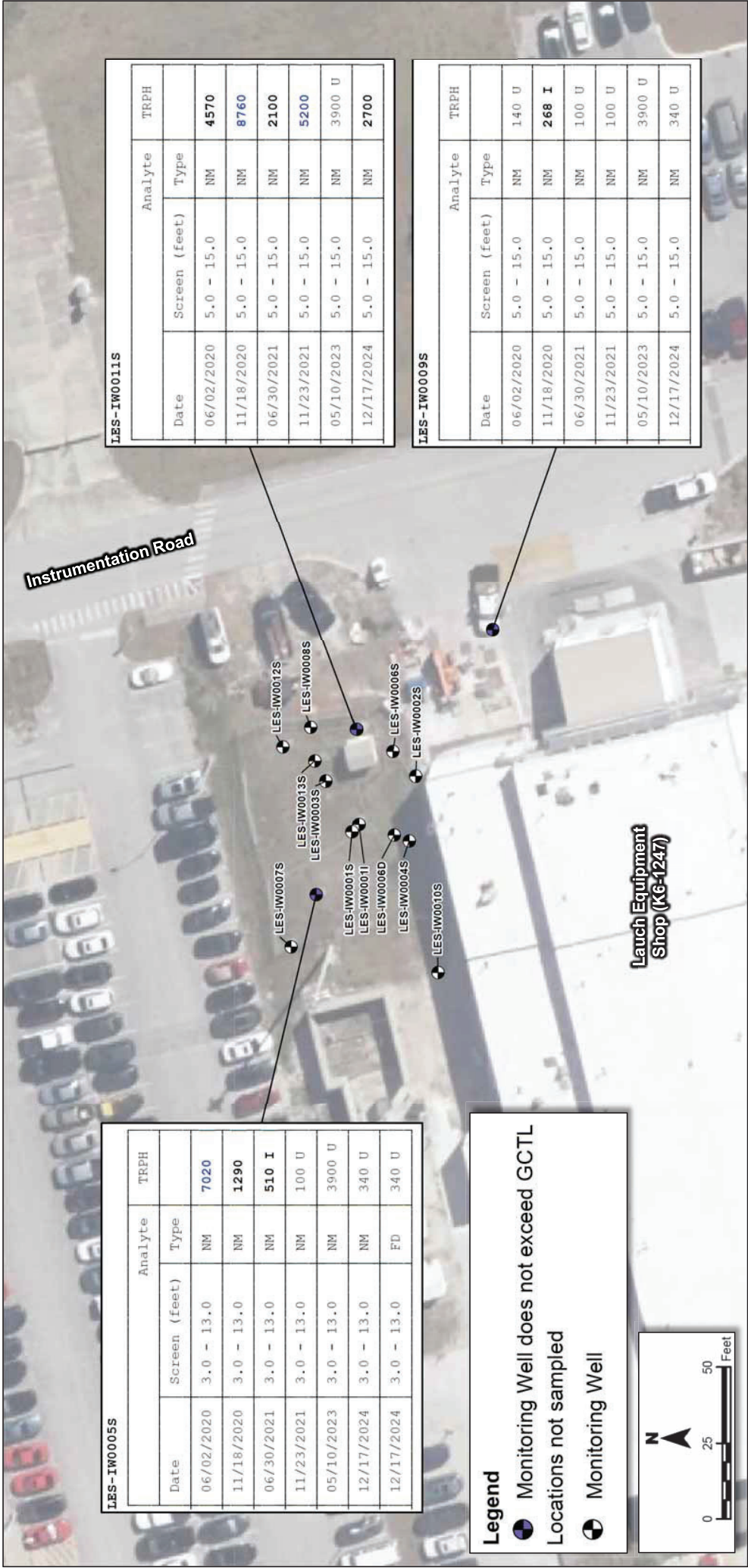
GCTL Exceedances are **blue bolded**

I = The analytical result is greater than or equal to the method detection limit, but less than the practical quantitation limit

NS = Not Sampled

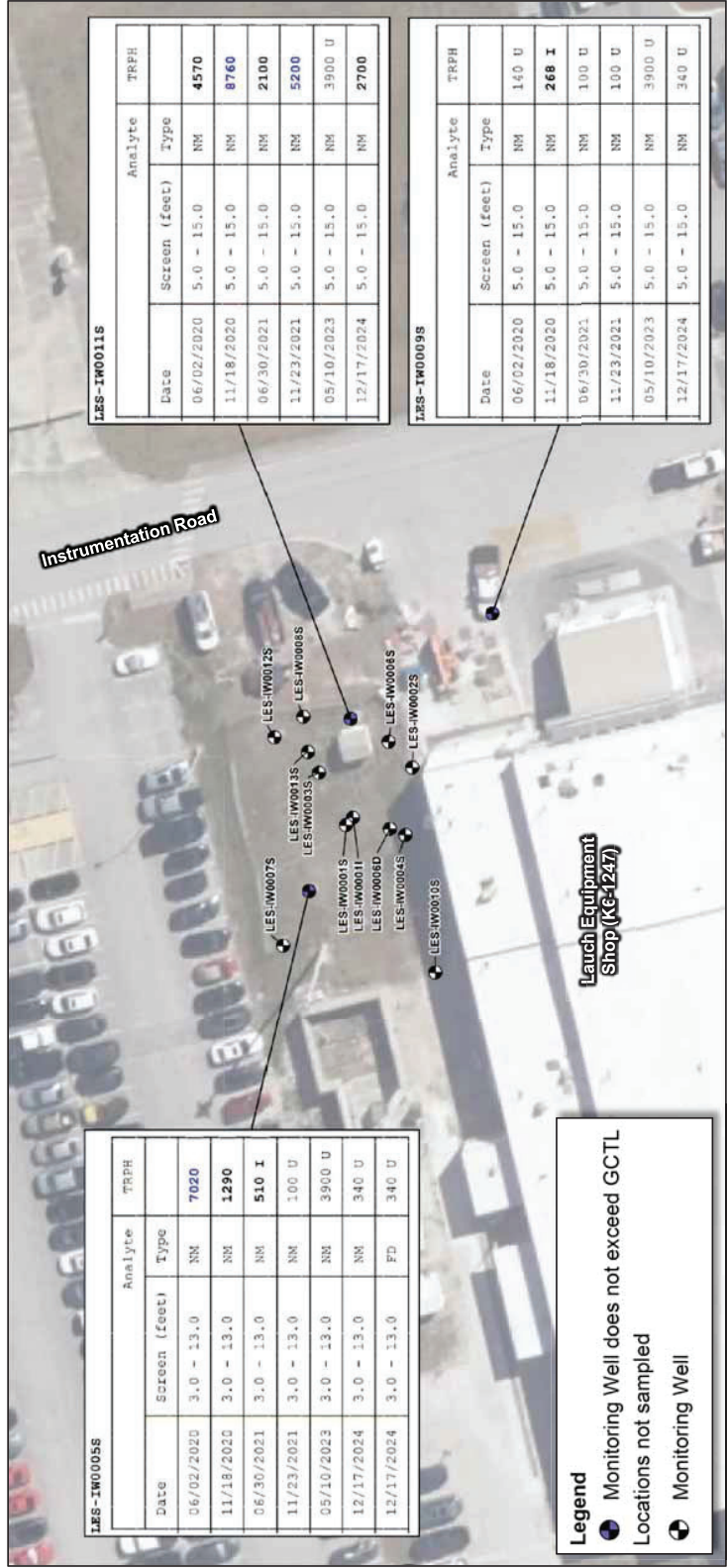
U = The analyte was not detected

Launch Equipment Shop – December 2024 Analytical Results



Launch Equipment Shop – Test Consensus

- NFA is recommended for groundwater based on TRPH concentrations below GCTLs during the last two consecutive sampling events
- NFA is recommended for soils based on the analytical data and recommendations from the 2018 surficial soil sampling



**Shuttle Flight Operations
Contract Generator
Maintenance Facility
SWMU 081**

SFOC Generator Maintenance Facility – Site Location

Site Location

- Located approximately 1 mile south of the VAB area on Contractors Road
- Surrounded by a dry retention pond and then the Component Refurbishment Chemical Analysis and Calibration Facility to the north, forested/wetland areas to the east, wetlands then the Contractors Road Heavy Equipment Area to the south and west

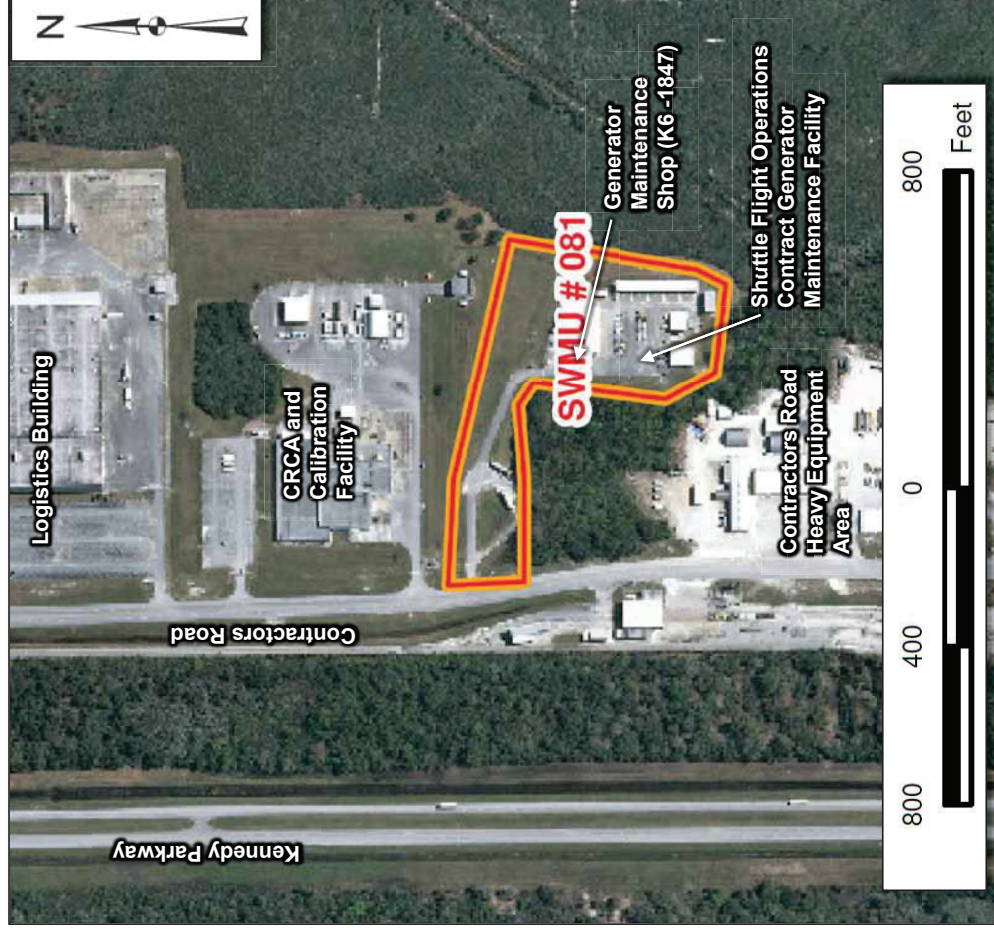


Figure Source: Vehicle Assembly Building Area 2018 Biennial Groundwater Monitoring Results, Geosyntec Consultants, March 2019

SFOC Generator Maintenance Facility – Site Facilities and History

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Site Facilities and Operation History

- Two permanent buildings, four permanent sheds, and one portable storage building
 - Generator Maintenance Shop (K6-1847)
 - Generator Office (K6-1847A)
 - Generator Checkout Shed (K6-1847B)
 - Generator Storage Shed (K6-1847C)
 - Paint, Oil, and Lubricant (POL) Shed (K6-1847D)
 - Equipment Wash Area Shed (K6-1847E)
 - Portable Hazardous Waste Staging Building (K6-1847F)
- Constructed in 1988 and currently still in operation
- Used for maintenance or storage of portable generators, portable diesel fuel storage tanks, new and used batteries, new and used oil

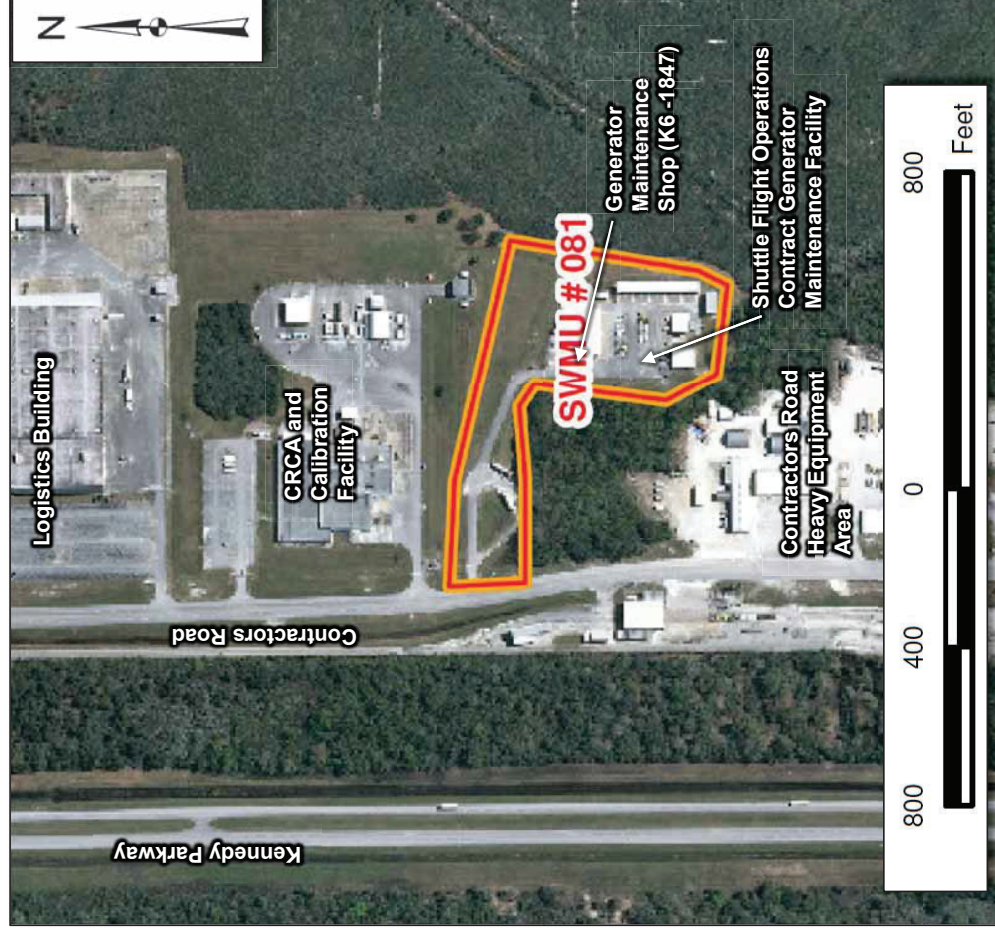


Figure Source: Vehicle Assembly Building Area 2018 Biennial Groundwater Monitoring Results, Geosyntec Consultants, March 2019

SFOC Generator Maintenance Facility – Site History

Initial assessment

- 12 LOCs were identified at the site
- LOC 10 – Former Battery Storage Area is the area covered in this ADP, which had antimony concentrations in groundwater above the GCTL of 6 µg/L

Early 1990s to 1995: LOC 10 Former Battery Storage Area

- Located northeast of the SFOC on the north side of the site access road (grassed berm)
- Used batteries were being stored for recycling and were exposed to the elements with several caps missing
- Stressed vegetation was observed
- Batteries were removed in January 1995

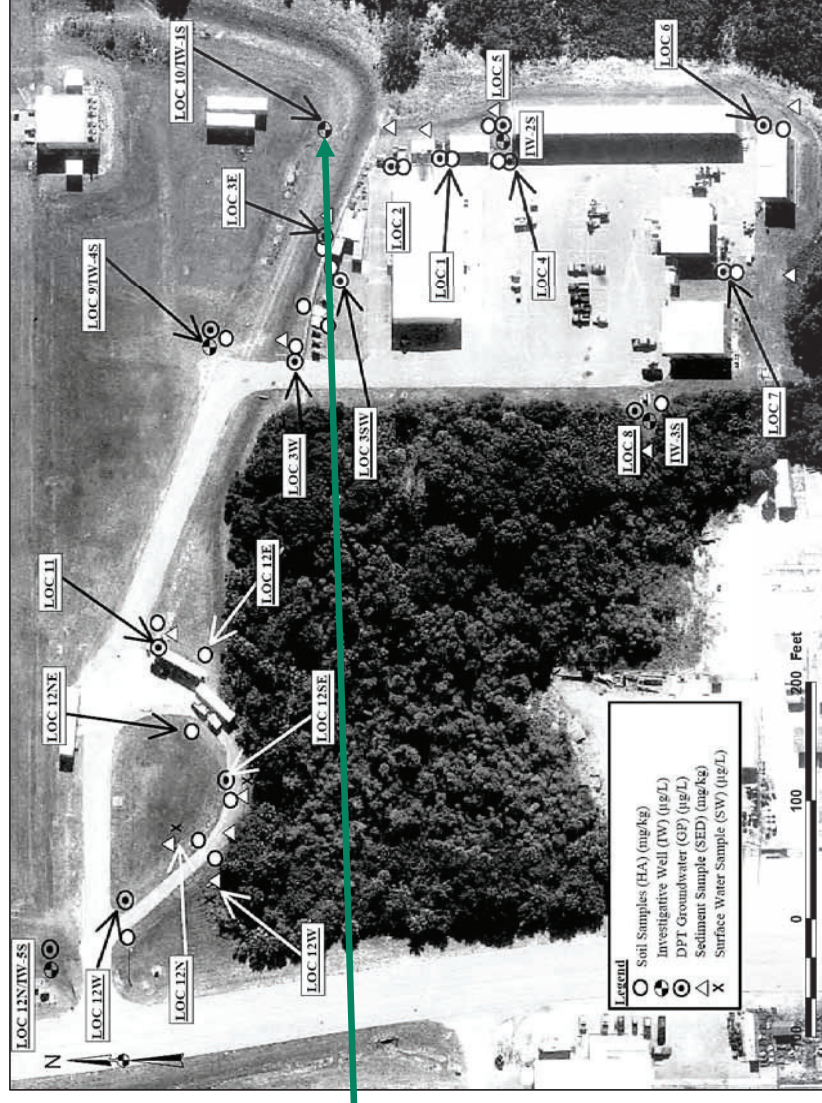


Figure Source: Shuttle Flight Operations Contract (SFOC) Generator Maintenance Facility (GMF) K6-1847
Confirmatory Sampling Report (PRL #80), J-BOSC Environmental Health and Services, April 2002

SFOC Generator Maintenance Facility – Site History

2003 to 2004: LTM Work Plan and RFI

- One monitoring well IW0001S had antimony above screening criteria
- Two monitoring wells IW0001S and IW0004S to be monitored semi-annually for antimony
- The site was added to the VAB LTM in December 2004
- Site COC is antimony

2007: Sampling frequency was changed from semi-annual to annual

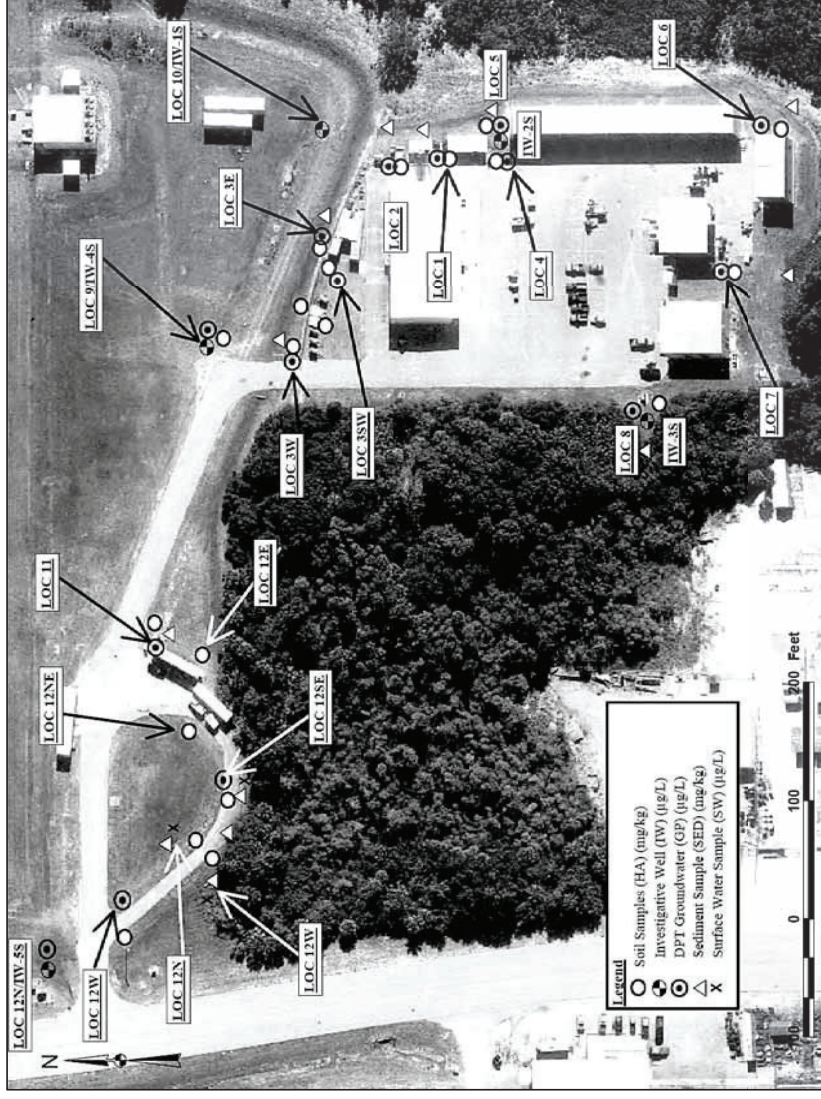


Figure Source: Shuttle Flight Operations Contract (SFOC) Generator Maintenance Facility (GMF) K6-1847
Confirmatory Sampling Report (PRL #80), J-BOSC Environmental Health and Services, April 2002

SFOC Generator Maintenance Facility – Site History

2011 to 2012: VAB Area LUCIP Elimination Project

- SFOC was one of the sites selected
- Land Use Controls (LUCs) were re-evaluated for soils affected by arsenic, benzo(a)pyrene, copper, dibenzo(a,h)anthracene, and TRPH
- Objective was to eliminate LUCs through confirmatory sampling, delineation, and removal of impacted soils, if necessary
- Consensus was reached for the soil LUCIP to be eliminated and NFA for soils at SFOC was approved in December 2014

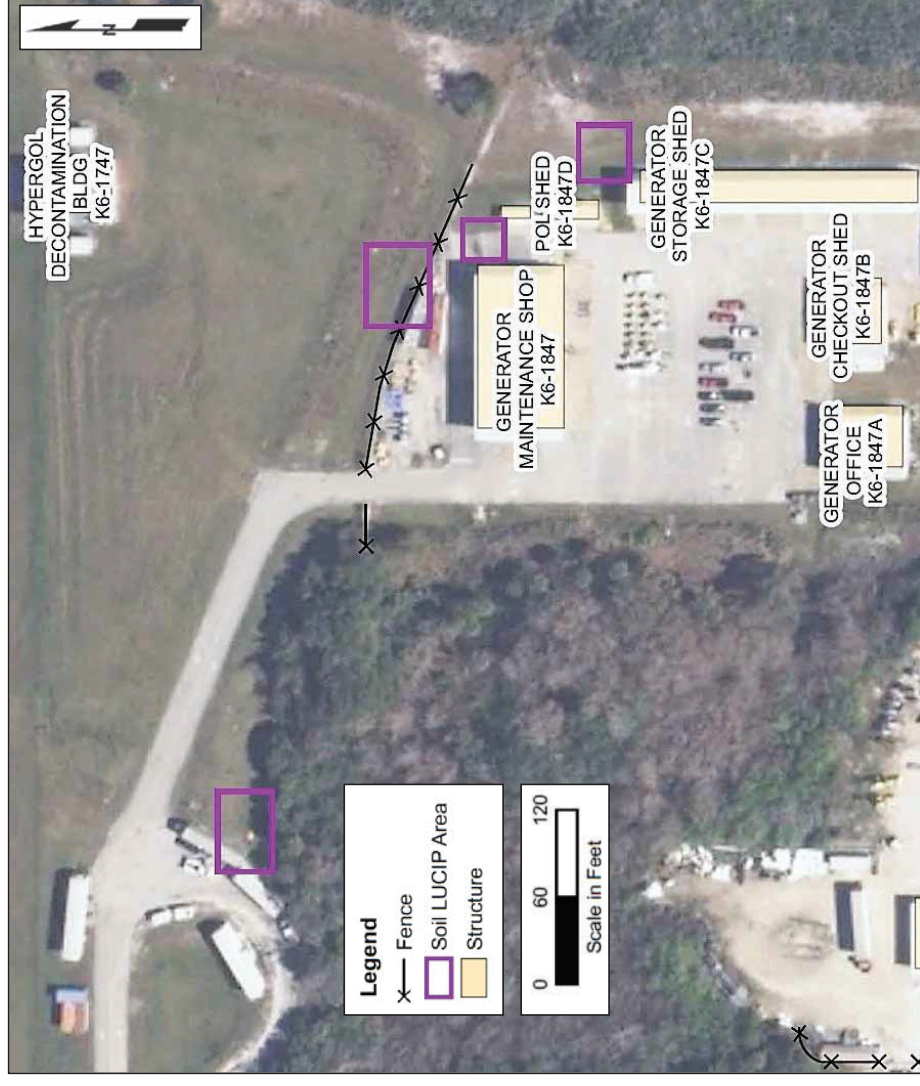


Figure Source: Shuttle Flight Operations Contract Generator Maintenance Facility (SWMU 81) Delineation Sampling Work Plan, Arcadis U.S., Inc., January 2012

SFOC Generator Maintenance Facility – Site History

2015: Sampling frequency

- Changed from annual to biennial

2016 to 2019: Groundwater sampling and antimony in vadose zone soils

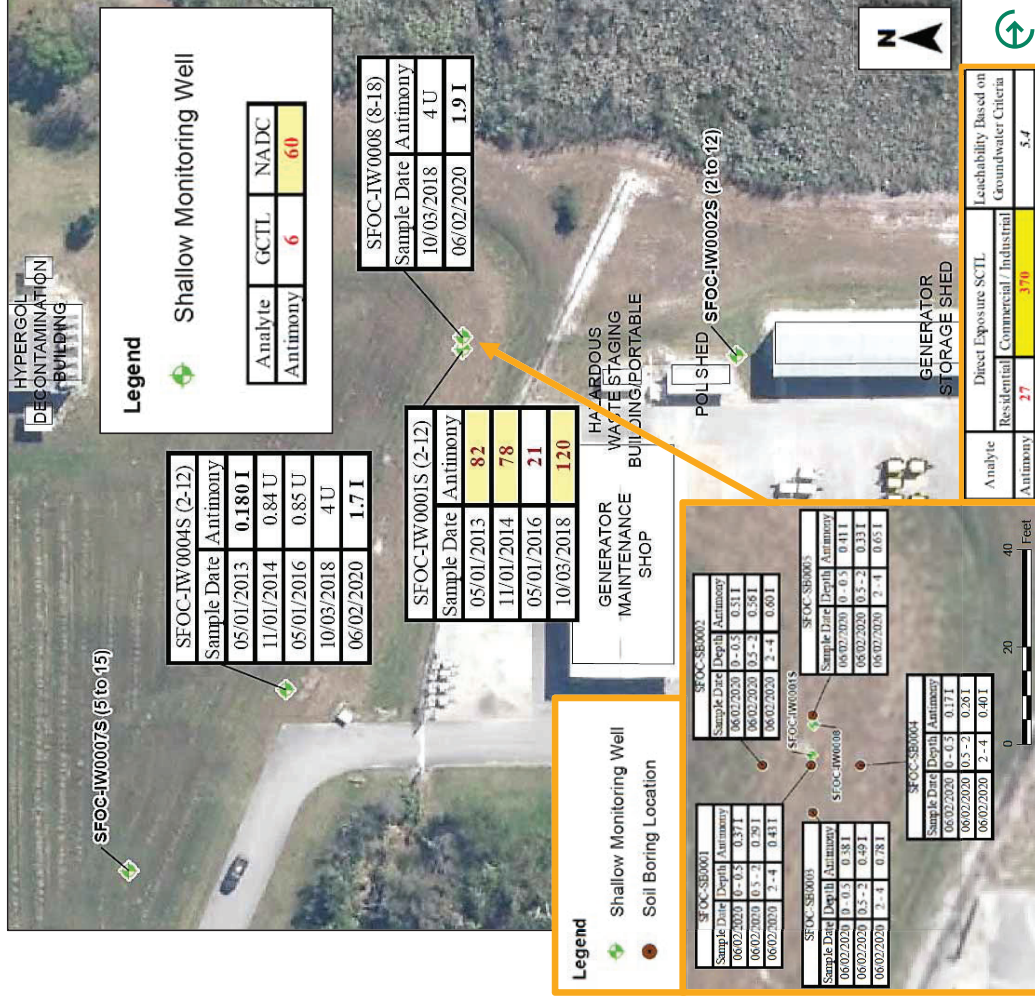
- Due to a correlation with groundwater elevations, antimony appeared to be associated with soils in the smear zone and not representative of aquifer conditions
- Monitoring well IW0008 was installed and screened from 8 to 18 feet bls, which was fully submerged below the water table
- In October 2018, antimony was not detected in IW0008



SFOC Generator Maintenance Facility – Site History

2020: Biennial Groundwater LTM and Soil Sampling

- Sampled two monitoring wells, IW0004S and IW0008, for antimony
- Collected 15 soil samples from five boring locations adjacent to IW0001S to evaluate antimony in the vadose zone soils; sample intervals were 0 to 0.5 foot bls, 0.5 to 2 feet bls, and 2 to 4 feet bls
- Antimony was detected in both wells sampled, but was below the GCTL
- Antimony was detected in the soil samples at low concentrations, which were below SCTLs
- NFA for antimony in soils was recommended at the site



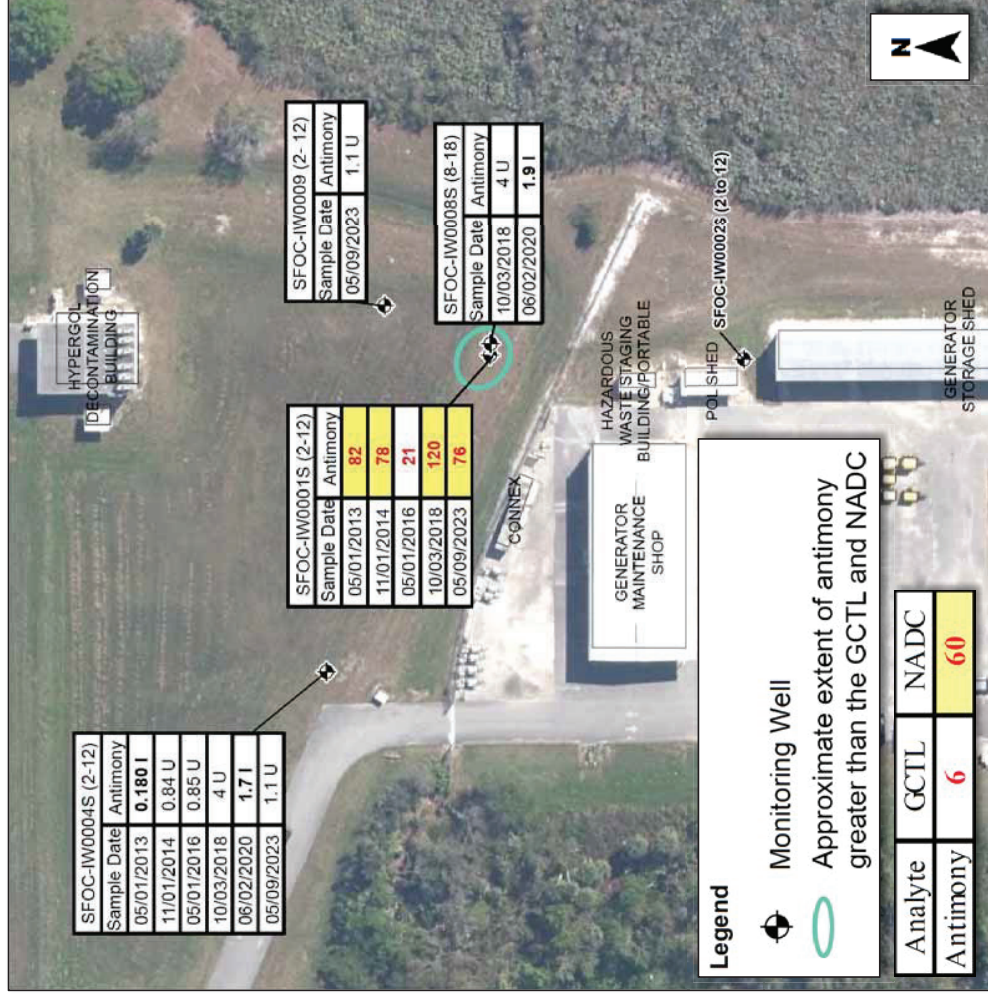
SFOC Generator Maintenance Facility – Site History

2023: Monitoring Well Installation

- Installed one well SFOC-IW0009
- Screened from 2 to 12 feet bls
- Located downgradient of the antimony groundwater plume

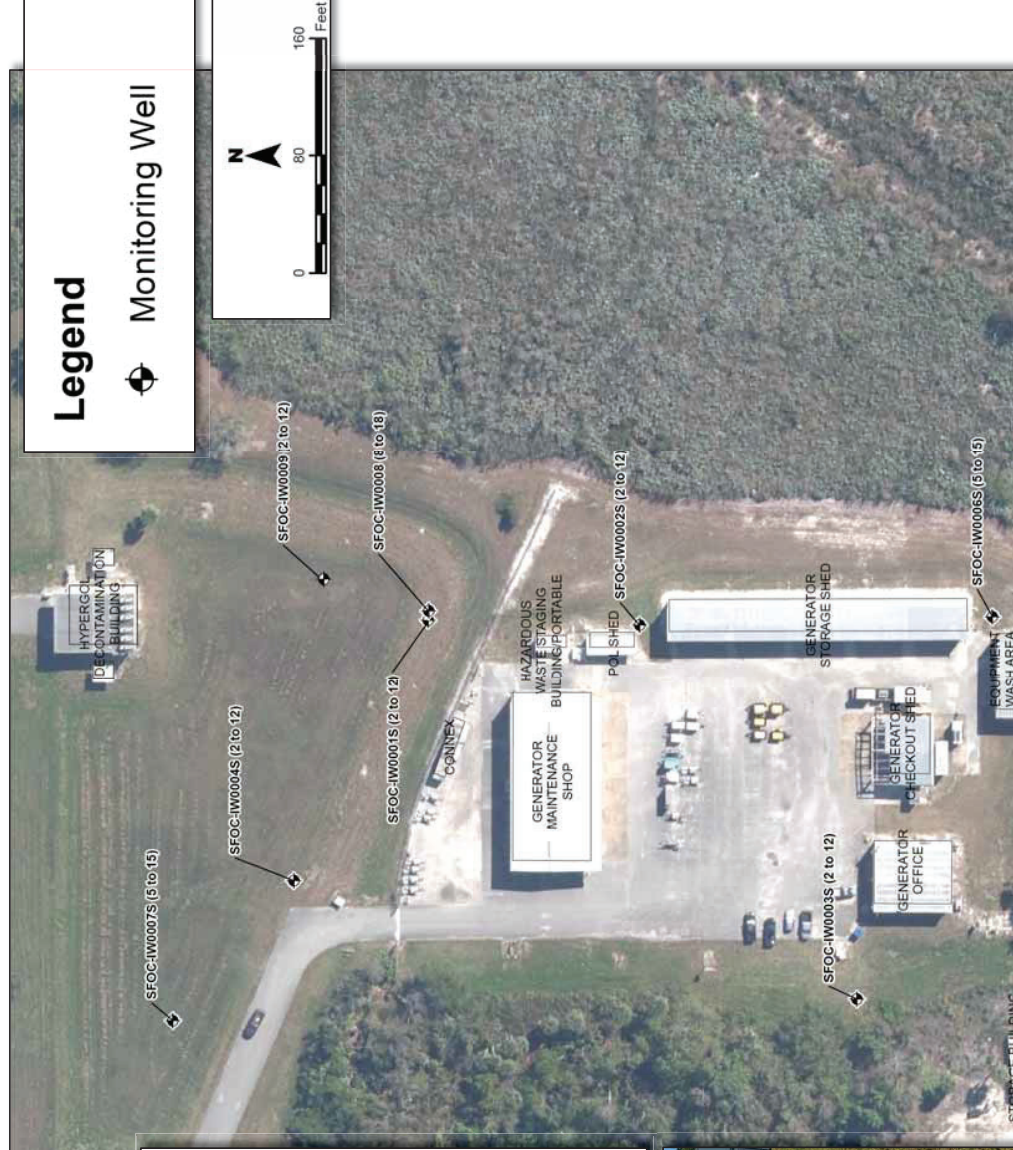
2023: Biennial LTM Sampling

- Sampled three monitoring wells, IW0001S, IW0004S, and IW0009, for antimony
- Antimony was detected in one well, IW0001S, at 76 µg/L, which is above the GCTL of 6 µg/L and above the NADC of 60 µg/L
- No other detections



SFOC – Site Layout and December 2024 Scope of Work

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Site COC

- Antimony

December 2024: Biennial LTM

- Collect water level measurements at nine monitoring wells
- Sample four monitoring wells
- Analyze samples for antimony



SFOC – December 2024 Groundwater Flow

2 to 12 feet bls

- Flow direction in the north, in the IW0001S and antimony plume area, was north-northeast, which is consistent with historical observations
- Flow direction in the south was northwest, which is consistent with recent historical observations
- Average DTW was 3.33 feet bls



SFOC – December 2024 Analytical Results

- Antimony was detected above the GCTL in IW0001S
- Antimony was detected in upgradient well IW0002S, but below the GCTL of 6 µg/L
- Antimony was not detected in downgradient wells IW0004S or IW0009
- No detections of antimony were above the NADC

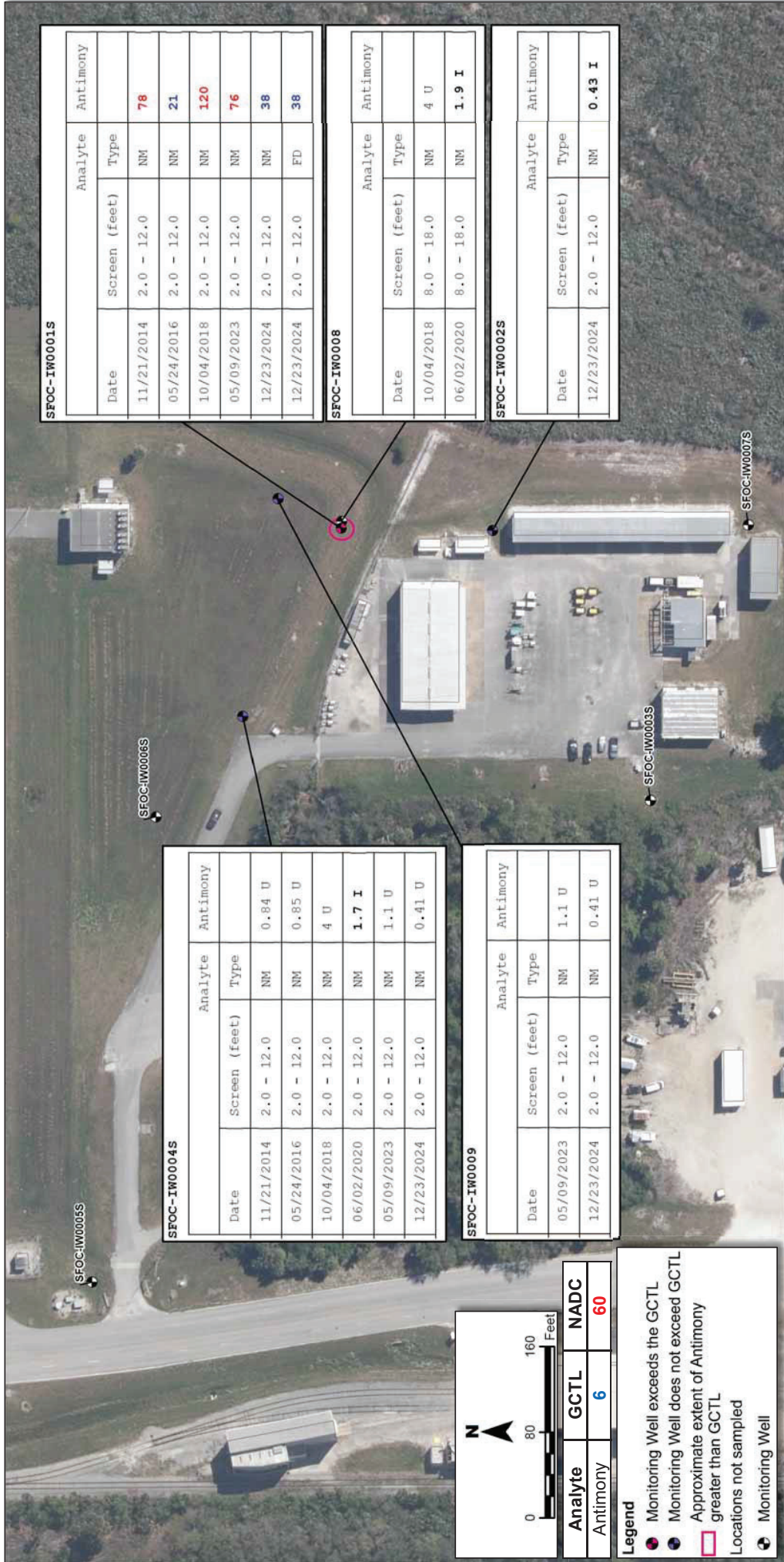
Antimony Concentrations in Groundwater

(last six events; GCTL = 6 µg/L; NADC = 60 µg/L)

Sample Date	SFOC-IW0001S	SFOC-IW0002S	SFOC-IW0004S	SFOC-IW0009
Screen Interval	2-12	2-12	2-12	2-12
11/21/2014	78	NS	0.84 U	NS
05/24/2016	21	NS	0.85 U	NS
10/04/2018	120	NS	4 U	NS
06/02/2020	NS	NS	1.7 I	NS
05/09/2023	76	NS	1.1 U	1.1 U
12/23/2024	38	0.43 I	0.41 U	0.41 U

Notes: Detections are **bolded**; GCTL Exceedances are **blue bolded**; NADC Exceedances are **red bolded**; I = The analytical result is greater than or equal to the method detection limit, but less than the practical quantitation limit; NS = Not Sampled; U = The analyte was not detected

SFOC – December 2024 Analytical Results



SFOC Generator Maintenance Facility – Test Consensus

- Conduct biennial sampling at four monitoring wells for antimony analysis: SFOC-IW00001S, SFOC-IW00002S, SFOC-IW00004S, and SFOC-IW00009
- Continue water level measurements at nine monitoring wells, SFOC-IW00001S through SFOC-IW00009
- The next sampling event is scheduled for May 2026



SFOC Generator Maintenance Facility – Test Consensus

Proposed LTM Plan

Location ID	Screen Interval (feet bls)	Water Levels	Analysis
SFOC-IW0001S	2 to 12	X	Antimony
SFOC-IW0002S	2 to 12	X	Antimony
SFOC-IW0003S	2 to 12	X	
SFOC-IW0004S	2 to 12	X	Antimony
SFOC-IW0005S	2 to 12	X	
SFOC-IW0006S	5 to 15	X	
SFOC-IW0007S	5 to 15	X	
SFOC-IW0008	8 to 18	X	
SFOC-IW0009	2 to 12	X	Antimony

Notes: bls = below land surface

AECOM

Thank You.

Delivering a better world



Meeting Minutes for Thursday June 5, 2025

Attendees:

- | | |
|---------------------------------|---|
| 1. TJ Touran/FDEP | 14. Rob Simcik/Tetra Tech |
| 2. Chris Adkison/NASA | 15. Jennifer Gootee/AECOM |
| 3. Anne Chrest/NASA | 16. Debbie Wilson/Tetra Tech |
| 4. Tammy Clark/NASA | 17. Chad Lee/AECOM |
| 5. Natasha Darre/NASA | 18. Megan Garcia/AECOM |
| 6. Emma Gomez Tovar/NASA | 19. Matthew Zenker/AECOM |
| 7. Deda Johansen/NASA | 20. Jason Bublitz/HGL |
| 8. Mike Deliz/NASA | 21. Howard Fowler/HGL |
| 9. Kristi Francisco/NASA | 22. Linnea King Clark/AECOM |
| 10. Jill Vogel/NEMCON | 23. Tim Jellett/HGL |
| 11. Mark Jonnet/Tetra Tech | 24. Jim Montague/HGL |
| 12. Mark Speranza/Tetra Tech | 25. Jim Langenbach/ Jacobs Geosyntec JV |
| 13. Sarah Damphousse/Tetra Tech | 26. Richard Smith/HGL |

2506-M01 Jill Vogel/NEMCON

Meeting Minutes and Miscellaneous Items

Team consensus was reached that Revision 1 of the meeting minutes and action/decision items for the March 4, 2025, will become final. Team members acknowledged and did not object to the fact that these meeting minutes may become public record as part of a final report at a later date **(2506-D01)**.

2506-M02 TJ Touran/FDEP

Florida Department of Environmental Protection (FDEP) Update:

Discussed changes to personnel assignments.

2506-M03 Anne Chrest/NASA

NASA Kennedy Space Center Remediation Program Update

Introduced new NASA support member, Jill Vogel/NEMCON KSC will submit to FDEP a priority list of Corrective Action Management Plan deliverables for review and approval.

installation for vertical delineation purposes, located based on highest deep DPT detections. In the future, expanded sampling would be useful in the far southeastern Industrial Area.

PFOS exceeds pSWCTL in surface water ranging from 19.1 to 14,000 ng/L, PFOA exceeded the pSWCTL in FS1-SW0001 at 1,200 ng/L. Stormwater sampling results verified drainage pathways and proved reliable in indicating source areas, with PFOS being the most prevalent PFAS compound. Pavement SPLP results indicate potential PFAS sources; recommend additional sampling in FS1 and STP1 concrete and pavement areas to determine extents. Soil results exceed pLSCTLs; recommend horizontal and vertical delineation around multiple areas. Quarterly surface water and groundwater identified PFAS compounds exceeding groundwater screening values, and PFOA and PFOS exceeding pSWCTLs with groundwater to surface water recharge appears to be dominant along the drainage system of the central and southeastern Industrial Area with occasionally surface water to groundwater recharge. In December 2024, the Team reached consensus reached for quarterly sampling locations for 2025, incorporating the northwest Industrial Area, and those efforts have begun.

A Site Assessment Progress Report will document all sampling conducted since 2023 Site Assessment Progress Reports (FS1 and STP1) submittals.

The Team reached consensus to sample locations upstream of STP1-SW1025 (as shown on Slide 24). Any potential sources identified by the stormwater sampling will be investigated via DPT groundwater sampling. If warranted, monitoring wells will be installed **(2506-D13)**.

The Team reached consensus to sample pavement locations (as shown on Slide 27) to determine the extents of the PFAS impacted pavement to support potential interim actions to mitigate PFAS impacts to surrounding media. Samples would be analyzed for PFAS and SPLP PFAS. **(2506-D14)**.

The Team reached consensus to sample soil (as shown on Slide 33) in the area north of the eastern FS1 driveway for horizontal delineation. **(2506-D15)**.

The Team reached consensus to sample soil (as shown on Slide 36) in the STP1 area for horizontal and vertical delineation **(2506-D16)**.

Results: Decision Item 2506-D13 through D16

2506-M10 Chad Lee/AECOM

Vehicle Assembly Building Long Term Monitoring

Objective: Present monitoring results for six sites. Consensus on recommendations for 2025/2026 monitoring plan.

Discussion: This ADP provides a brief background of the Solid Waste Management Unit (SWMU) and Potential Release Location (PRL) sites, and a summary of work performed at the sites in December 2024.

C5 Electrical Substation (C5ES) – SWMU 066:

- Measurement of water levels from 27 monitoring wells to determine groundwater flow direction.
 - Collection of groundwater samples from nine monitoring wells for analysis of site VOCs: tetrachloroethene (PCE), trichloroethene (TCE), 1,1-dichloroethene (11DCE), *cis*-1,2-dichloroethene (*c*DCE), *trans*-1,2-dichloroethene (*t*DCE), and vinyl chloride (VC)
 - Site COCs are PCE, TCE, 11DCE, *c*DCE, *t*DCE, and VC
- Groundwater flow at the site in December 2024, was west in both the 5 to 15 feet below land surface (bls) zone and the 13 to 33 feet bls zone. Analytical results indicate that VC concentrations were above the State of Florida Groundwater Cleanup Target Level (GCTL) of 1 microgram per liter (µg/L) in three monitoring wells C5ES-MW0021, C5ES-MW0022, and C5ES-MW0023. In several monitoring wells, *c*DCE and *t*DCE were detected, but concentrations were below their respective GCTLs of 70 µg/L and 100 µg/L. PCE, TCE, and 11DCE were not detected in the groundwater samples, and no site VOCs had concentrations above the State of Florida Natural Attenuation Default Concentrations (NADCs).

The Team reached consensus to conduct biennial sampling of nine monitoring wells for site VOCs: C5ES-MW0004S, C5ES-MW0004I, C5ES-MW0018S, C5ES-MW0019I, and C5ES-MW0021 through C5ES-MW0025 (**2506-D17**).

The Team reached consensus to collect water level measurements at 27 monitoring wells (**2506-D18**).

The Team reached consensus for the next sampling event to be scheduled for May 2026 (**2506-D19**).

Results: Decision Item 2506-D17 through D19

Fire Station 3 (FS3) – Formerly Fire Station 6 – SWMU 106:

- Measurement of water levels from three monitoring wells to determine groundwater flow direction
- Collection of groundwater samples from three monitoring wells for analysis of VC

- Site COC is VC

Groundwater flow at the site in December 2024, was northeast in the 20 to 35 feet bls zone. Analytical results indicate that VC concentrations were above the GCTL of 1 µg/L in one monitoring well, FS6-MW0003.

The Team reached consensus to conduct annual sampling of three monitoring wells for vinyl chloride analysis: FS6-MW001, FS6-MW0002, and FS6-MW0003 **(2506-D20)**.

The Team reached consensus to collect water level measurements at three monitoring wells **(2506-D21)**.

The Team reached consensus for the next sampling event to be scheduled for November 2025 **(2506-D22)**.

Results: Decision Item 2506-D20 through D22

Former Development and Testing Laboratory (FDTL) – SWMU 075:

- Measurement of water levels from 15 monitoring wells to determine groundwater flow direction
- Collection of groundwater samples from eight monitoring wells for analysis of site VOCs: PCE, TCE, 11DCE, cDCE, tDCE, and VC
- Collection of five surface water samples for analysis of site VOCs
- Site COCs are TCE and VC

Groundwater flow at the site in December 2024, was northwest in the 5 to 15 feet bls zone and west, with a northwest component in the east, in the 10 to 25 feet bls zone. Analytical results indicate that VC concentrations were above the GCTL of 1 µg/L in five monitoring wells FDTL-IW0015S, FDTL-IW0007I, FDTL-IW0008I, FDTL-IW0010I, and FDTL-IW0019I. In six monitoring wells, cDCE was detected, but concentrations were below the GCTL of 70 µg/L. PCE, TCE, and 11DCE were not detected in the groundwater samples. Analytical results also indicate that the VC concentration was above the State of Florida Surface Water Cleanup Target Level for Freshwater Criteria (SWCTL) of 2.4 µg/L in one surface water sample at location FDTL-SW0004, and cDCE was detected in one surface water sample at surface water location FDTL-SW0004, however, there is no SWCTL for cDCE at the time of publication of this ADP. No site VOCs had concentrations above NADCs in groundwater or surface water.

The Team reached consensus to conduct biennial sampling of eight monitoring wells for site VOCs: FDTL-IW0015S, FDTL-IW0007I, FDTL-IW0008I, FDTL-IW0009I, FDTL-IW0010I, FDTL-IW0014I, FDTL-IW0017I, and FDTL-IW0019I **(2506-D23)**.

The Team reached consensus to collect five surface water samples: FDTL-SW0001, FDTL-SW0002, FDTL-SW0003, and FDTL-SW0004, and FDTL-SW0005 **(2506-D24)**.

The Team reached consensus to collect water level measurements at 17 monitoring wells **(2506-D25)**.

The Team reached consensus for the next sampling event to be scheduled for May 2026 **(2506-D26)**.

Results: Decision Item 2506-D23 through D26

Launch Complex 39 Observation Gantry Area (LC39OGA) – SWMU 107:

- Measurement of water levels from 11 monitoring wells to determine groundwater flow direction.
- Collection of groundwater samples from 11 monitoring wells for analysis of site VOCs: TCE, cDCE, tDCE, and VC
- Collection of four surface water samples for analysis of site VOCs
- Site COC is VC

Groundwater flow at the site in December 2024 was southwest in both the 5 to 15 feet bls zone and the 22 to 27 feet bls zone. Analytical results indicate that TCE, cDCE, and tDCE were detected in several monitoring wells; however, the concentrations were below their respective GCTLs of 3 µg/L, 70 µg/L, and 100 µg/L. The site COC, VC, was not detected in groundwater. No site VOCs were detected in surface water.

The Team reached consensus to conduct annual sampling of 11 monitoring wells for site VOCs: LC39OGA-MW0001, LC39OGA-MW0002, and LC39OGA-MW0004 through LC39OGA-MW0012 **(2506-D27)**.

The Team reached consensus to collect surface water samples at four locations, LC39OGA-SW0004, LC39OGA-SW0005, LC39OGA-SW0006, and LC39OGA-SW0007 **(2506-D28)**.

The Team reached consensus to collect water level measurements at 11 monitoring wells, LC39OGA-MW0001, LC39OGA-MW0002, LC39OGA-MW0004 through LC39OGA-MW0012 **(2506-D29)**.

The Team reached consensus for the next sampling event to be scheduled for November 2025 **(2506-D30)**.

Results: Decision Item 2506-D27 through D30

Launch Equipment Shop (LES) – PRL 051:

- Measurement of water levels from 12 monitoring wells to determine groundwater flow direction.
- Collection of groundwater samples from three monitoring wells for analysis of total recoverable petroleum hydrocarbons (TRPH)

Groundwater flow at the site in December 2024 was to the south-southwest. Analytical results indicate that TRPH was detected in one monitoring well, IW0011S, but below the GCTL of 5,000 µg/L. TRPH was not detected in any other wells sampled.

The Team reached consensus that no further action (NFA) is recommended for groundwater based on TRPH concentrations below GCTLs during the last two consecutive sampling events **(2506-D31)**.

The Team reached consensus that NFA is recommended for soils based on the analytical data and recommendations from the 2018 surficial soil sampling **(2506-D32)**

Results: Decision Item 2506-D31 through D32

Shuttle Flight Operations Contract (SFOC) Generator Maintenance Facility – SWMU 081:

- Measurement of water levels from nine monitoring wells to determine groundwater flow direction
- Collection of groundwater samples from four monitoring wells for analysis of antimony

Groundwater flow at the site in December 2024 was north-northeast in the north and northwest in the south. Analytical results indicate the concentration of antimony was above the GCTL of 6 µg/L in one monitoring well, SFOC-IW0001S. No concentrations of antimony were above the NADC.

The Team reached consensus to conduct groundwater sampling at four monitoring wells for antimony analysis: SFOC-IW0001S, SFOC-IW0002S, SFOC-IW0004S, and SFOC-IW0009. Sampling will be every five years. **(2506-D33)**.

The Team reached consensus to conduct continue water level measurements at nine monitoring wells: SFOC-IW0001S through SFOC-IW0009 water level will be measured every five years. **(2506-D34)**.

Results: Decision Item 2506-D33 through D34

APPENDIX B
DAILY FIELD NOTES

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12-16-24 VAB LTM Biennial Event $\frac{b1c}{MP}$
 0630 Devin K + Madan P. arrive at depot
 0730 Mobilize to site (F150, #123 + 905)
 0845 Arrive at F33/F36 weather: 70°F, H₂O

0900 Begin searching for F56-MW0001,
F56-MW0002, F56-MW0003.
1210 Found the three wells, DK leaves
to get supplies to try to sample
MW0001 while MP begins sampling.
1247 F56-MW0002-0250-202426 sampled
1500 Fail to sample ^{remaining well}, will need to redevelop
F56-MW0001 tomorrow.
1530 leave site for the depot
1730 End of day.

20

12-17-24 VARIUM Biennial Event DK/MF
pg 2 of 9
0645 Mobilize to site + stopping by
the depot (2750s, #123 + 905)
0800 Arrive at F3/F56 (Weather: 70's + clear)

0922 Finish redeveloping SFC-MW0001
0935 move to SFOC
0945 Arrive at SFOC to check-in
0950 Begin redeveloping the 4 MWs
1033 Finish redeveloping SFOC-IW0004S
1040 Finish redeveloping SFOC-IW0001S
1104 Finish redeveloping SFOC-IW0002S
1105 Finish redeveloping SFOC-IW0009
1115 Leave SFOC for CCF to drum IPW
then move to LES
1200 Arrive at LES & break for lunch
1220 Begin opening wells for gauging

Well ID	Time	DTW	ID	Time	DTW
IW0007S	1302	5.75	IW0013S	1306	5.65
IW0010S	1310	5.95	IW0006S	1259	6.64
IW0005S	1303	5.65	IW0012S	1256	5.56
IW0004S	1301	6.47	IW0008S	1257	5.84
IW0003S	1304	5.71	IW0011S	1258	5.82
IW0002S	1300	6.78	IW0009S	1308	5.55

1315 Begin sampling 3 MWs

12-18-24 VABJM Biennial Event

P 4 019

DX
MS/DS

0630 Mobilize to site & stop by Aecom depot
0800 Devink, Madan P., Dustin S. arrive
at CSES (weather: 70's + Mostly cloudy)
0830 begin locating & opening wells for gauging
Well ID Time DFW Well ID Time DFW
MW0001S 0931 7.11 MW0012S Not Found
MW0001I 0932 7.32 MW0012I Not Found
MW0002S 0928 5.96 MW0013S 0924 7.06
MW0003S 0936 6.30 MW0013I 0925 7.02
MW0003I 0935 6.28 MW0016S 0945 4.98
MW0004S 0941 6.24 MW0017S 0949 3.19
MW0004I 0941 6.45 MW0019S 0955 3.40
MW0005S 0930 6.41 MW0019I 0940 2.14
MW0006S 0919 7.81 MW0020 0933 6.62
MW0009S 0918 7.71 MW0021 0933 7.05
MW0010S 0938 7.67 MW0022 0934 7.38
MW0010I 0938 7.72 MW0023 0943 2.65
MW0011S 0943 4.67 MW0024 0942 2.29
MW0011I Not Found MW0025 0958 0.81
1000 Begin equipment cal + sampling
1112 CSES-MW0021-010.0-20241218 sampled
1121 CSES-MW0018S-009.5-20241218 sampled
1147 CSES-MW0022-010.0-20241218 sampled
1158 CSES-MW0025-010.0-20241218 sampled
1219 CSES-MW0004S-010.0-20241218 sampled

Dr

12-17-24 VAB LTM Biennial Event

P 3 019

DK/MP

1347 LES-IW0005S-008.0-20241217 sampled
-LES-FD01-20241217 collected
1410 LES-IW0008-010.0-20241217 sampled
-MS/MSD collected
1425 LES-IW0011S-010.0-20241217 sampled
1415 LES-EB01-20241217 collected
1430 Move to CCF to drum IDW
1500 Decide to end day due to rain.
1630 End of day.

Dr

12-18-24 VAB LTM Biennial Event
Pg 5 of 9

DK/MS

1222 CES-MW0024-022.5-20241218 sampled
1240 CES-MW0019I-019.0-20241218 sampled
1247 CES-MW0004I-020.5-20241218 sampled
1257 CES-MW0023-020.0-20241218 sample
1315 Move to FS3/FS6
1325 gauge the 3 MWS & Sample MWS
Well ID Time DTW
MW0001 1327 0.0
MW0002 1330 5.14
MW0003 1340 4.31
1415 FS6-MW0003-025.0-20241218 sampled
1417 FS6-MW0001-030.0-20241218 sampled
1435 move to CCF to drum IDW
1510 Leave NASA for Eurofins
1630 Drop off samples at Eurofins
1700 end of day.

[Signature]

12-19-24 VAB LTM Biennial Event
Pg 6 of 9

DK/MS

0630 Mobilize to site & stop for ice (F150s)
0800 Arrive on site at FDTL (Weather Disturbed)
0830 Begin opening and gauging MWS
ID* Time DTW ID* Time DTW
MW0007I 0832 3.24 MW0006I 0920 4.91
MW0009I 0834 3.21 MW0007I 0925 3.61
MW0009I 0836 4.56 MW0011I 0930 5.22
MW0006S 0845 4.94 MW0009I 0935 5.80
MW0010I 0850 3.75 MW0002I 0940 4.68
MW0014I 0855 6.57 MW0018I 0945 5.35
MW0017I 0900 2.94 MW0005S 0950 6.19
MW0013I 0905 0.65 MW0002I 0955 3.88
MW0005I Not Found
1000 Begin equipment cal and sampling
1056 FDTL-IW0010I-015.0-20241219 sampled
1110 FDTL-IW0005-001.0-20241219 sampled
1138 FDTL-IW0014I-015.0-20241219 sampled
- FDTL-FD01-20241219 collected @ 1141
1235 FDTL-IW0017I-015.0-20241219 sampled
1457 FDTL-IW0007I-015.0-20241219 sampled
1522 FDTL-IW0008I-015.0-20241219 sampled
1532 FDTL-IW0015S-010.0-20241219 sampled
1550 FDTL-IW0014I-015.0-20241219 sampled
1615 Leave site for the day
1745 End of day.

* Well IDs actually begin with "IW"

• MS/MWD collected from IW0015S

[Signature]

12-20-24 VAB UTM Biennial Event DK/MPK
 P 7:05g

0630 Mobilize to site and stop for ice
 (3 F150's)

0600 Arrive at FDTL (Weather: 70's & cloudy)

0830 Begin Sampling

0849 FDTL-SW0001-015.0-20241220 Sampled

0848 FDTL-SW0004-001.0-20241220 Sampled

0859 FDTL-SW0001-001.0-20241220 Sampled

0918 FDTL-SW0003-001.0-20241220 Sampled

0928 FDTL-SW0002-001.0-20241220 Sampled

1020 Move to LC3906A & begin gaging MWS

ID	Time	DTW	ID	Time	DTW
MW0001	0938	0.72	MW0008	0944	1.34
MW0002	0941	0.97	MW0009	0937	1.80
MW0004	0943	1.31	MW0010	0940	1.05
MW0005	0937	1.58	MW0011	0931	5.06
MW0006	0939	1.16	MW0012	0932	5.13
MW0007	0942	1.31			

1030 Begin Sampling MWS & SWS

1017 LC3906A-MW0005-010.0-20241220 Sampled

1020 LC3906A-MW0010-010.0-20241220 Sampled

1051 LC3906A-MW0009-024.5-20241220 Sampled

1117 LC3906A-MW0002-010.0-20241220 Sampled

1118 LC3906A-MW0011-010.0-20241220 Sampled

-MS/MSD collected

1125 LC3906A-MW0001-010.0-20241220 Sampled

12/20/24 VAB UTM Biennial Event DK/MPK
 P 8:05g

1147 LC3906A-MW0012-024.5-20241220 Sampled

1149 LC3906A-MW0007-024.5-20241220 Sampled

1157 LC3906A-MW0006-024.5-20241220 Sampled

-LC3906A-FD01-20241220 collected @ 1130

1216 LC3906A-SW0004-001.0-20241220 Sampled

1224 LC3906A-SW0005-001.0-20241220 Sampled

1227 LC3906A-SW0006-001.0-20241220 Sampled

1227 LC3906A-MW0004-010.0-20241220 Sampled

1232 LC3906A-SW0007-001.0-20241220 Sampled

1259 LC3906A-MW0008-024.5-20241220 Sampled

1315 Move to CLF to drum JDW

1330 Leave NASA, MP to Curafins.

1530 End of day.

[Signature]

12-23-24 VAB LTM Biennial event OK
P 909

0630 Mobilize to site & stop for ice.

0800 arrive at SFOC (weather: 60's & overcast)

0810 Begin gaging event for SFOC

ID	Time	DTW	ID	Time	DTW
Iw00055	0840	1.98	Iw0008	0854	4.95
Iw00075	0847	1.98	Iw0025	0852	3.38
Iw00045	0846	3.06	Iw0025	0848	2.62
Iw0009	0857	2.75	Iw00065	0850	4.38
Iw00015	0855	4.88			

0900 Begin Sampling

0937 SFOC-Iw00015-007.0-20241223 sampled

- SFOC-ID01-20241223 collected @ 0955

0943 SFOC-Iw00075-007.0-20241223 sampled

1037 SFOC-Iw0009-007.0-20241223 sampled

1047 SFOC-Iw00045-007.0-20241223 sampled

- MSF MSD collected

1105 SFOC-EB01-20241223 collected

1110 Move to CF to drum + sample IDW

1120 SFOC-IDW02-20241223 collected from

drum # 231905 (80% full, pH 7.43)

1130 SFOC-IDW01-20241223 collected from

drum # 231904 (80% full, pH 7.17)

1200 Leave NASA for lab + depot.

1430 End of day

[Handwritten signature]

Monitoring Well Redevelopment Log
December 2024
Shuttle Flight Operations Contract Generator Maintenance Facility (SFOC) - SWMU 081

Location ID	Screened Interval (feet bls)	Date	Pumping						Color		Odor	
			Start Time	Stop Time	Volume Purged (gallons)	Duration (minutes)	Pumping Rate (gpm)	Continuous/ Intermittent	Start	End	Start	End
Example Well	2 to 12	09/26/22	12:25	12:35	10	10	1.0	Continuous	gray	none	none	none
SFOC-IW0001S	2 to 12	12/17/24	10:00	10:40	3.5	40	0.09	Continuous	brown	none	none	none
SFOC-IW0002S	2 to 12	12/17/24	10:44	11:04	7.5	20	0.38	Continuous	brown	none	none	none
SFOC-IW0004S	2 to 12	12/17/24	10:03	10:33	7.5	30	0.25	Continuous	brown	none	none	none
SFOC-IW0009	2 to 12	12/17/24	10:45	11:05	2.0	20	0.1	Continuous	brown	none	none	none

Notes:
bls = below land surface
gpm = gallons per minute
SWMU = Solid Waste Management Unit

Monitoring Well Redevelopment Log
December 2024
Former Fire Station Six (FS6) - SWMU 106

Location ID	Screened Interval (feet bls)	Date	Pumping					Color		Odor		
			Start Time	Stop Time	Volume Purged (gallons)	Duration (minutes)	Pumping Rate (gpm)	Continuous/ Intermittent	Start	End	Start	End
Example Well	2 to 12	09/26/22	12:25	12:35	10	10	1.0	Continuous	gray	none	none	none
FS6-MW0001	25 to 35	12/17/24	08:52	09:22	7.5	30	0.25	Continuous	gray	clearish	none	none

Notes:
bls = below land surface
gpm = gallons per minute
SWMU = Solid Waste Management Unit

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APPENDIX C

GROUNDWATER SAMPLING AND CALIBRATION LOGS

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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: C-5 Electrical Substation Facility (SWMU 066)
Project #: 60737568

Sample ID: C5ES-MW0004I-030.5-20241218 Sample Date: 12/18/2024 12:47:00 PM
Well ID: C5ES-MW0004I Sampler: Devin Kehoe
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	2	Static Water Level (ft-BTOC):	6.28
Top of Screen (ft-BTOC):	28.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	33.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	NM	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
12:26 PM	0.08	0.00	0.00	6.28	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
12:38 PM	0.08	0.96	0.96	6.39	7.34	8560.0	0.87	1.80	25.4	-65.3	N/A	Clear	None
12:40 PM	0.08	0.16	1.12	6.39	7.33	8680.0	0.81	1.09	25.5	-65.8	N/A	Clear	None
12:42 PM	0.08	0.16	1.28	6.39	7.34	8771.0	0.88	0.62	25.5	-65.7	N/A	Clear	None
12:44 PM	0.08	0.16	1.44	6.39	7.34	8822.0	0.89	0.14	25.5	-65.5	N/A	Clear	None

Start Purge:	12/18/2024 12:26:00 PM	End Purge:	12/18/2024 12:44:00 PM	Total Volume (gal):	1.44
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: C-5 Electrical Substation Facility (SWMU 066)
Project #: 60737568

Sample ID: C5ES-MW0004S-010.0-20241218 Sample Date: 12/18/2024 12:19:00 PM
Well ID: C5ES-MW0004S Sampler: Devin Kehoe
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	2	Static Water Level (ft-BTOC):	6.24
Top of Screen (ft-BTOC):	5.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	15.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	NM	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
11:51 AM	0.08	0.00	0.00	6.24	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
12:11 PM	0.08	1.60	1.60	6.28	7.02	408.9	0.37	19.46	25.5	-89.2	N/A	Clear	None
12:13 PM	0.08	0.16	1.76	6.28	6.99	408.7	0.43	16.76	25.6	-98.6	N/A	Clear	None
12:15 PM	0.08	0.16	1.92	6.28	6.97	409.2	0.39	15.24	25.4	-102.9	N/A	Clear	None
12:17 PM	0.08	0.16	2.08	6.28	6.97	408.7	0.38	12.27	25.4	-107.1	N/A	Clear	None

Start Purge:	12/18/2024 11:51:00 AM	End Purge:	12/18/2024 12:17:00 PM	Total Volume (gal):	2.08
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: C-5 Electrical Substation Facility (SWMU 066)
Project #: 60737568

Sample ID: C5ES-MW0018S-009.5-20241218 Sample Date: 12/18/2024 11:21:00 AM
Well ID: C5ES-MW0018S Sampler: Dustin Slater
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	2	Static Water Level (ft-BTOC):	3.40
Top of Screen (ft-BTOC):	7.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	12.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	NM	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
10:44 AM	N/A	N/A	0.00	3.40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
11:14 AM	0.05	1.50	1.50	3.97	7.01	535.0	0.17	4.32	23.3	-203.9	0.27	Clear	None
11:16 AM	0.05	0.10	1.60	3.97	7.03	531.0	0.17	3.76	23.3	-203.7	0.27	Clear	None
11:18 AM	0.05	0.10	1.70	3.97	7.04	530.0	0.16	3.21	23.2	-203.8	0.27	Clear	None
11:20 AM	0.05	0.10	1.80	3.97	7.03	528.0	0.16	2.90	23.2	-204.0	0.27	Clear	None

Start Purge:	12/18/2024 10:44:00 AM	End Purge:	12/18/2024 11:20:00 AM	Total Volume (gal):	1.8
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: C-5 Electrical Substation Facility (SWMU 066)
Project #: 60737568

Sample ID: C5ES-MW0019I-018.0-20241218 Sample Date: 12/18/2024 12:40:00 PM
Well ID: C5ES-MW0019I Sampler: Dustin Slater
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	1	Static Water Level (ft-BTOC):	2.14
Top of Screen (ft-BTOC):	13.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	23.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	NM	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
12:13 PM	N/A	N/A	0.00	2.14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
12:33 PM	0.05	0.10	0.10	2.28	7.03	1499.0	0.11	3.60	26.4	-170.5	0.72	Clear	None
12:35 PM	0.05	0.10	0.20	2.28	7.03	1510.0	0.12	2.51	26.6	-170.0	0.74	Clear	None
12:37 PM	0.05	0.10	0.30	2.28	7.03	1531.0	0.14	2.09	26.6	-169.3	0.75	Clear	None
12:39 PM	0.05	0.10	0.40	2.28	7.03	1540.0	0.13	1.78	26.6	-166.6	0.75	Clear	None

Start Purge:	12/18/2024 12:12:00 PM	End Purge:	12/18/2024 12:39:00 PM	Total Volume (gal):	0.4
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: C-5 Electrical Substation Facility (SWMU 066)
Project #: 60737568

Sample ID: C5ES-MW0021-010.0-20241218 Sample Date: 12/18/2024 11:12:00 AM
Well ID: C5ES-MW0021 Sampler: Parsotanm
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	N/A	Static Water Level (ft-BTOC):	7.05
Top of Screen (ft-BTOC):	5.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	15.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	15.00	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
10:45 AM	N/A	N/A	0.00	7.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
11:05 AM	N/A	1.00	1.00	7.07	6.42	635.0	0.24	4.81	25.2	131.7	0.31	Clear	None
11:07 AM	N/A	0.10	1.10	7.07	6.42	635.0	0.21	4.75	25.2	131.5	0.31	Clear	None
11:09 AM	N/A	0.10	1.20	7.07	6.41	636.0	0.19	4.67	25.1	131.3	0.31	Clear	None
11:11 AM	N/A	0.10	1.30	7.07	6.42	635.0	0.15	4.57	25.2	131.0	0.31	Clear	None

Start Purge:	12/18/2024 10:45:00 AM	End Purge:	12/18/2024 11:11:00 AM	Total Volume (gal):	1.3
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: C-5 Electrical Substation Facility (SWMU 066)
Project #: 60737568

Sample ID: C5ES-MW0022-010.0-20241218 Sample Date: 12/18/2024 11:47:00 AM
Well ID: C5ES-MW0022 Sampler: Parsotanm
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	N/A	Static Water Level (ft-BTOC):	7.38
Top of Screen (ft-BTOC):	5.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	15.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	15.00	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
11:20 AM	N/A	N/A	0.00	7.38	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
11:40 AM	N/A	1.00	1.00	7.41	6.52	644.0	0.12	4.62	25.4	124.4	0.31	Clear	None
11:42 AM	N/A	0.10	1.10	7.41	6.52	644.0	0.10	4.55	25.4	121.8	0.31	Clear	None
11:44 AM	N/A	0.10	1.20	7.41	6.51	641.0	0.09	4.42	25.4	118.6	0.31	Clear	None
11:46 AM	N/A	0.10	1.30	7.41	6.51	641.0	0.05	4.36	25.4	115.4	0.31	Clear	None

Start Purge:	12/18/2024 11:20:00 AM	End Purge:	12/18/2024 11:46:00 AM	Total Volume (gal):	1.3
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: C-5 Electrical Substation Facility (SWMU 066)
Project #: 60737568

Sample ID: C5ES-MW0023-010.0-20241218 Sample Date: 12/18/2024 12:57:00 PM
Well ID: C5ES-MW0023 Sampler: Parsotanm
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	N/A	Static Water Level (ft-BTOC):	2.65
Top of Screen (ft-BTOC):	5.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	15.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	15.00	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
12:30 PM	N/A	N/A	0.00	2.65	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
12:50 PM	N/A	1.00	1.00	2.68	7.16	692.0	0.37	8.54	24.8	114.5	0.34	Clear	None
12:52 PM	N/A	0.10	1.10	2.68	7.17	692.0	0.35	8.45	24.8	99.6	0.33	Clear	None
12:54 PM	N/A	0.10	1.20	2.68	7.15	691.0	0.33	8.36	24.8	97.5	0.33	Clear	None
12:56 PM	N/A	0.10	1.30	2.68	7.14	690.0	0.29	8.26	24.8	96.4	0.33	Clear	None

Start Purge:	12/18/2024 12:30:00 PM	End Purge:	12/18/2024 12:56:00 PM	Total Volume (gal):	1.3
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: C-5 Electrical Substation Facility (SWMU 066)
Project #: 60737568

Sample ID: C5ES-MW0024-022.5-20241218 Sample Date: 12/18/2024 12:22:00 PM
Well ID: C5ES-MW0024 Sampler: Parsotanm
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	N/A	Static Water Level (ft-BTOC):	2.29
Top of Screen (ft-BTOC):	20.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	25.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	25.00	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
11:55 AM	0.05	N/A	0.00	2.29	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
12:15 PM	N/A	1.00	1.00	2.31	7.43	3279.0	0.19	15.67	24.6	100.1	1.72	Clear	None
12:17 PM	N/A	0.10	1.10	2.31	7.43	3277.0	0.17	15.61	24.6	94.3	1.71	Clear	None
12:19 PM	N/A	0.10	1.20	2.31	7.42	3275.0	0.15	15.55	24.6	93.6	1.71	Clear	None
12:21 PM	N/A	0.10	1.30	2.31	7.42	3273.0	0.12	15.42	24.6	92.4	1.71	Clear	None

Start Purge:	12/18/2024 11:55:00 AM	End Purge:	12/18/2024 12:21:00 PM	Total Volume (gal):	1.3
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: C-5 Electrical Substation Facility (SWMU 066)
Project #: 60737568

Sample ID: C5ES-MW0025-010.0-20241218 Sample Date: 12/18/2024 11:58:00 AM
Well ID: C5ES-MW0025 Sampler: Dustin Slater
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	N/A	Static Water Level (ft-BTOC):	0.89
Top of Screen (ft-BTOC):	5.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	15.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	NM	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
11:31 AM	N/A	N/A	0.00	0.89	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
11:51 AM	0.05	1.00	1.00	1.45	6.41	365.4	0.21	16.30	22.6	-196.4	0.19	Clear	None
11:53 AM	0.05	0.10	1.10	1.45	6.41	365.1	0.20	14.80	22.6	-196.4	0.18	Clear	None
11:55 AM	0.05	0.10	1.20	1.45	6.43	364.7	0.17	12.90	22.6	-196.5	0.19	Clear	None
11:57 AM	0.05	0.10	1.30	1.45	6.42	364.8	0.17	13.00	22.6	-196.1	0.19	Clear	None

Start Purge:	12/18/2024 11:31:00 AM	End Purge:	12/18/2024 11:57:00 AM	Total Volume (gal):	1.3
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Former Development and Testing Lab (SWMU 075)
Project #: 60737568

Sample ID: FDTL-IW0007I-015.0-20241219 Sample Date: 12/19/2024 2:57:00 PM
Well ID: FDTL-IW0007I Sampler: Madan Parsotan
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	1	Static Water Level (ft-BTOC):	3.24
Top of Screen (ft-BTOC):	10.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	20.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	NM	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
2:30 PM	N/A	N/A	0.00	3.24	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
2:50 PM	N/A	1.00	1.00	3.31	7.45	26133	0.18	13.76	25.4	-42.8	15.94	Clear	None
2:52 PM	N/A	0.10	1.10	3.31	7.44	26146	0.12	13.61	25.4	-41.7	15.94	Clear	None
2:54 PM	N/A	0.10	1.20	3.31	7.43	26145	0.08	13.45	25.3	-42.9	15.94	Clear	None
2:56 PM	N/A	0.10	1.30	3.31	7.44	26156	0.05	13.31	25.4	-41.8	15.94	Clear	None

Start Purge:	12/19/2024 2:30:00 PM	End Purge:	12/19/2024 2:56:00 PM	Total Volume (gal):	1.3
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Former Development and Testing Lab (SWMU 075)
Project #: 60737568

Sample ID: FDTL-IW0008I-015.0-20241219 Sample Date: 12/19/2024 3:22:00 PM
Well ID: FDTL-IW0008I Sampler: Devin Kehoe
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	1	Static Water Level (ft-BTOC):	3.88
Top of Screen (ft-BTOC):	10.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	20.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	NM	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
2:40 PM	0.08	0.00	0.00	3.88	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
3:13 PM	0.00	2.64	2.64	4.01	7.19	21326	0.14	145.00	25.6	-151.6	N/A	Clear	None
3:15 PM	0.08	0.16	2.80	4.01	7.19	21322	0.13	148.00	25.6	-148.3	N/A	Clear	None
3:17 PM	0.08	0.16	2.96	4.01	7.18	21323	0.13	139.00	25.6	-145.7	N/A	Clear	None
3:19 PM	0.08	0.16	3.12	4.01	7.18	21338	0.13	145.00	25.4	-142.8	N/A	Clear	None

Start Purge:	12/19/2024 2:40:00 PM	End Purge:	12/19/2024 3:19:00 PM	Total Volume (gal):	3.12
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Former Development and Testing Lab (SWMU 075)
Project #: 60737568

Sample ID: FDTL-IW0009I-015.0-20241220 Sample Date: 12/20/2024 8:49:00 AM
Well ID: FDTL-IW0009I Sampler: Dustin Slater
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	1	Static Water Level (ft-BTOC):	3.21
Top of Screen (ft-BTOC):	10.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	20.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	NM	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
8:14 AM	N/A	N/A	0.00	3.21	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
8:34 AM	0.05	1.00	1.00	3.46	7.08	17775	0.27	27.80	18.8	-168.4	12.07	Clear	None
8:44 AM	0.05	0.50	1.50	3.46	7.07	17903	0.17	19.50	18.8	-168.4	12.18	Clear	None
8:46 AM	0.05	0.10	1.60	3.46	7.07	17854	0.16	19.30	18.7	-168.6	12.16	Clear	None
8:48 AM	0.05	0.10	1.70	3.46	7.07	17865	0.16	19.20	18.7	-168.1	12.17	Clear	None

Start Purge:	12/20/2024 8:14:00 AM	End Purge:	12/20/2024 8:48:00 AM	Total Volume (gal):	1.7
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Former Development and Testing Lab (SWMU 075)
Project #: 60737568

Sample ID: FDTL-IW0010I-015.0-20241219 Sample Date: 12/19/2024 10:56:00 AM
Well ID: FDTL-IW0010I Sampler: Madan Parsotan
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	1	Static Water Level (ft-BTOC):	3.75
Top of Screen (ft-BTOC):	10.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	20.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	NM	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
10:29 AM	0.05	N/A	0.00	3.75	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10:49 AM	0.05	1.00	1.00	3.81	7.24	22444	0.21	16.92	23.2	117.4	13.70	Clear	None
10:51 AM	N/A	0.10	1.10	3.81	7.24	22523	0.17	16.45	23.2	118.6	13.70	Clear	None
10:53 AM	N/A	0.10	1.20	3.81	7.25	22541	0.16	16.32	23.3	118.8	13.70	Clear	None
10:55 AM	N/A	0.10	1.30	3.81	7.24	22549	0.14	16.32	23.3	117.7	13.70	Clear	None

Start Purge:	12/19/2024 10:29:00 AM	End Purge:	12/19/2024 10:55:00 AM	Total Volume (gal):	1.3
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Former Development and Testing Lab (SWMU 075)
Project #: 60737568

Sample ID: FDTL-IW0014I-015.0-20241219 Sample Date: 12/19/2024 11:38:00 AM
Well ID: FDTL-IW0014I Sampler: Madan Parsotan
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	1	Static Water Level (ft-BTOC):	6.57
Top of Screen (ft-BTOC):	10.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	20.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	NM	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
11:11 AM	N/A	N/A	0.00	6.57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
11:31 AM	N/A	1.00	1.00	6.61	7.23	18056	0.21	9.74	23.7	107.1	10.68	Clear	None
11:33 AM	N/A	0.10	1.10	6.61	7.23	18055	0.19	9.61	23.7	106.5	10.68	Clear	None
11:35 AM	N/A	0.10	1.20	6.61	7.23	18049	0.17	9.45	23.7	107.3	10.69	Clear	None
11:37 AM	N/A	0.10	1.30	6.61	7.23	18045	0.15	9.37	23.6	106.4	10.70	Clear	None

Start Purge:	12/19/2024 11:11:00 AM	End Purge:	12/19/2024 11:37:00 AM	Total Volume (gal):	1.3
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Former Development and Testing Lab (SWMU 075)
Project #: 60737568

Sample ID: FDTL-IW0015S-010.0-20241219 Sample Date: 12/19/2024 3:32:00 PM
Well ID: FDTL-IW0015S Sampler: Madan Parsotan
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	1	Static Water Level (ft-BTOC):	6.19
Top of Screen (ft-BTOC):	5.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	15.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	15.00	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
3:05 PM	N/A	N/A	0.00	6.19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
3:25 PM	N/A	1.00	1.00	6.25	7.31	1586	0.19	5.76	25.2	61.1	0.80	Clear	None
3:27 PM	N/A	0.10	1.10	6.25	7.30	1586	0.15	5.62	25.2	62.4	0.81	Clear	None
3:29 PM	N/A	0.10	1.20	6.25	7.31	1585	0.13	5.51	25.2	64.2	0.81	Clear	None
3:31 PM	N/A	0.10	1.30	6.25	7.31	1584	0.09	5.44	25.3	63.7	0.80	Clear	None

Start Purge:	12/19/2024 3:05:00 PM	End Purge:	12/19/2024 3:31:00 PM	Total Volume (gal):	1.3
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Former Development and Testing Lab (SWMU 075)
Project #: 60737568

Sample ID: FDTL-IW0017I-015.0-20241219 Sample Date: 12/19/2024 12:35:00 PM
Well ID: FDTL-IW0017I Sampler: Madan Parsotan
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	-9999	Static Water Level (ft-BTOC):	2.94
Top of Screen (ft-BTOC):	10.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	20.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	NM	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
12:07 PM	0.05	0.00	0.00	2.94	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
12:27 PM	0.05	1.00	1.00	3.01	7.34	20117	0.10	13.70	23.3	43.3	12.03	Clear	None
12:29 PM	0.05	0.10	1.10	3.01	7.32	20143	0.06	12.30	23.3	40.8	12.03	Clear	None
12:31 PM	0.05	0.10	1.20	3.01	7.32	20154	0.04	14.00	23.3	39.5	12.05	Clear	None
12:33 PM	0.05	0.10	1.30	3.01	7.31	20223	0.05	13.40	23.3	39.9	12.09	Clear	None

Start Purge:	12/19/2024 12:07:00 PM	End Purge:	12/19/2024 12:33:00 PM	Total Volume (gal):	1.3
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Former Development and Testing Lab (SWMU 075)
Project #: 60737568

Sample ID: FDTL-IW0019I-015.0-20241219 Sample Date: 12/19/2024 3:50:00 PM
Well ID: FDTL-IW0019I Sampler: Devin Kehoe
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	-9999	Static Water Level (ft-BTOC):	4.56
Top of Screen (ft-BTOC):	10.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	20.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	NM	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
3:27 PM	0.08	0.00	0.00	4.56	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
3:42 PM	0.08	1.20	1.20	4.68	7.15	27250	0.10	27.20	24.2	-130.9	N/A	Clear	None
3:44 PM	0.08	0.16	1.36	4.68	7.15	27165	0.09	20.70	24.2	-130.6	N/A	Clear	None
3:46 PM	0.08	0.16	1.52	4.68	7.15	27091	0.09	19.40	24.1	-130.3	N/A	Clear	None
3:48 PM	0.08	0.16	1.68	4.68	7.14	27098	0.08	18.00	24.1	-130.2	N/A	Clear	None

Start Purge:	12/19/2024 3:27:00 PM	End Purge:	12/19/2024 3:48:00 PM	Total Volume (gal):	1.68
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SURFACE WATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Former Development and Testing Lab (SWMU 075)
Project #: 60737568

Sample ID: FDTL-SW0001-001.0-20241220 Sample Date: 12/20/2024 8:59:00 AM
Location ID: FDTL-SW0001 Sampler: Madan Parsotan
Location Type: Surface Water Sample Analysis: Select VOCs
Comments:

Field Measurements										
Time	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	TDS (G/L)	Salinity (PSU)	Color (NA)	Odor (NA)
8:56 AM	7.71	2733	1.83	100.0	20.6	154.3	1779	1.42	Clear	None

SURFACE WATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Former Development and Testing Lab (SWMU 075)
Project #: 60737568

Sample ID: FDTL-SW0002-001.0-20241220 Sample Date: 12/20/2024 9:28:00 AM
Location ID: FDTL-SW0002 Sampler: Madan Parsotan
Location Type: Surface Water Sample Analysis: Select VOCs
Comments:

Field Measurements										
Time	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	TDS (G/L)	Salinity (PSU)	Color (NA)	Odor (NA)
9:25 AM	7.57	2739	2.27	N/A	21.0	114.8	1780	1.42	Clear	None

SURFACE WATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Former Development and Testing Lab (SWMU 075)
Project #: 60737568

Sample ID: FDTL-SW0003-001.0-20241220 Sample Date: 12/20/2024 9:18:00 AM
Location ID: FDTL-SW0003 Sampler: Madan Parsotan
Location Type: Surface Water Sample Analysis: Select VOCs
Comments:

Field Measurements										
Time	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	TDS (G/L)	Salinity (PSU)	Color (NA)	Odor (NA)
9:16 AM	7.53	2785	0.92	100.0	20.6	45.1	810	1.45	Clear	None

SURFACE WATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Former Development and Testing Lab (SWMU 075)
Project #: 60737568

Sample ID: FDTL-SW0004-001.0-20241220 Sample Date: 12/20/2024 8:48:00 AM
Location ID: FDTL-SW0004 Sampler: Madan Parsotan
Location Type: Surface Water Sample Analysis: Select VOCs
Comments:

Field Measurements										
Time	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	TDS (G/L)	Salinity (PSU)	Color (NA)	Odor (NA)
8:45 AM	7.61	2724	1.53	100.0	20.5	147.3	1776	1.42	Clear	None

SURFACE WATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Former Development and Testing Lab (SWMU 075)
Project #: 60737568

Sample ID: FDTL-SW0005-001.0-20241219 Sample Date: 12/19/2024 11:10:00 AM
Location ID: FDTL-SW0005 Sampler: Madan Parsotan
Location Type: Surface Water Sample Analysis: Select VOCs
Comments:

Field Measurements										
Time	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	TDS (G/L)	Salinity (PSU)	Color (NA)	Odor (NA)
11:05 AM	7.82	3307	3.01	18.6	22.6	135.7	2122	1.71	Clear	None

GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Fire Station 3 [Formerly Fire Station 6] (SWMU 106)
Project #: 60737568

Sample ID: FS6-MW0001-030.0-20241218 Sample Date: 12/18/2024 2:17:00 PM
Well ID: FS6-MW0001 Sampler: Dustin Slater
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	1	Static Water Level (ft-BTOC):	0.11
Top of Screen (ft-BTOC):	25.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	35.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	NM	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
1:42 PM	N/A	N/A	0.00	0.11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
2:02 PM	0.05	1.00	1.00	0.76	7.29	12761	0.09	21.70	25.5	-171.5	7.25	Clear	None
2:12 PM	0.05	0.50	1.50	0.76	7.30	13250	0.08	17.10	25.4	-177.2	7.59	Clear	None
2:14 PM	0.05	0.10	1.60	0.76	7.30	13318	0.08	16.40	25.4	-177.7	7.64	Clear	None
2:16 PM	0.05	0.10	1.70	0.76	7.30	13365	0.08	14.50	25.4	-178.3	7.67	Clear	None

Start Purge:	12/18/2024 1:41:00 PM	End Purge:	12/18/2024 2:16:00 PM	Total Volume (gal):	1.7
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Fire Station 3 [Formerly Fire Station 6] (SWMU 106)
Project #: 60737568

Sample ID: FS6-MW0002-025.0-20241216 Sample Date: 12/16/2024 12:47:00 PM
Well ID: FS6-MW0002 Sampler: Madan Parsotan
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	1	Static Water Level (ft-BTOC):	5.81
Top of Screen (ft-BTOC):	20.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	30.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	30.00	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
12:00 PM	N/A	N/A	0.00	5.81	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
12:40 PM	N/A	0.10	0.10	5.85	7.75	3048	0.05	17.76	22.7	-255.5	1.60	Clear	None
12:42 PM	N/A	0.10	0.20	5.85	7.76	3049	0.07	17.62	22.8	-255.7	1.60	Clear	None
12:44 PM	N/A	0.10	0.30	5.85	7.75	3048	0.05	17.55	22.7	-254.6	1.60	Clear	None
12:46 PM	N/A	0.10	0.40	5.85	7.75	3051	0.04	17.41	22.6	-252.8	1.60	Clear	None

Start Purge:	12/16/2024 11:58:00 AM	End Purge:	12/16/2024 12:46:00 PM	Total Volume (gal):	0.4
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Fire Station 3 [Formerly Fire Station 6] (SWMU 106)
Project #: 60737568

Sample ID: FS6-MW0003-025.0-20241218 Sample Date: 12/18/2024 2:15:00 PM
Well ID: FS6-MW0003 Sampler: Madan Parsotan
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	1	Static Water Level (ft-BTOC):	4.31
Top of Screen (ft-BTOC):	20.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	30.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	NM	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
2:06 PM	0.08	0.80	0.80	4.36	7.26	25744	1.24	23.80	25.9	-32.3	N/A	Clear	None
2:08 PM	0.08	0.16	0.96	4.36	7.27	25753	1.19	22.60	25.9	-32.3	N/A	Clear	None
2:10 PM	0.08	0.16	1.12	4.36	7.25	25793	1.17	21.40	25.9	-32.3	N/A	Clear	None
2:12 PM	0.08	0.16	1.28	4.36	7.27	25763	1.16	21.60	25.9	-32.3	N/A	Clear	None

Start Purge:	12/18/2024 1:56:00 PM	End Purge:	12/18/2024 2:12:00 PM	Total Volume (gal):	1.28
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Launch Complex 39 Observation Gantry Area (SWMU 107)
Project #: 60737568

Sample ID: LC39OGA-MW0001-010.0-20241220 Sample Date: 12/20/2024 11:25:00 AM
Well ID: LC39OGA-MW0001 Sampler: Dustin Slater
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	1	Static Water Level (ft-BTOC):	0.72
Top of Screen (ft-BTOC):	5.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	15.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	NM	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
10:58 AM	N/A	N/A	0.00	0.72	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
11:18 AM	0.05	1.00	1.00	1.67	7.57	3213	0.24	12.10	24.2	-377.7	1.71	Clear	None
11:20 AM	0.05	0.10	1.10	1.67	7.53	3214	0.23	11.00	24.3	-378.2	1.70	Clear	None
11:22 AM	0.05	0.10	1.20	1.67	7.47	3202	0.26	9.65	24.3	-378.4	1.69	Clear	None
11:24 AM	0.05	0.10	1.30	1.67	7.46	3185	0.29	9.32	24.3	-378.6	1.68	Clear	None

Start Purge:	12/20/2024 10:58:00 AM	End Purge:	12/20/2024 11:24:00 AM	Total Volume (gal):	1.3
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Launch Complex 39 Observation Gantry Area (SWMU 107)
Project #: 60737568

Sample ID: LC39OGA-MW0002-010.0-20241220 Sample Date: 12/20/2024 11:17:00 AM
Well ID: LC39OGA-MW0002 Sampler: Parsotanm
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	1	Static Water Level (ft-BTOC):	0.72
Top of Screen (ft-BTOC):	5.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	15.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	15.00	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
10:50 AM	N/A	N/A	0.00	0.72	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
11:10 AM	N/A	1.00	1.00	2.92	7.65	5727	0.32	16.81	24.5	-80.2	2.97	Clear	None
11:12 AM	N/A	0.10	1.10	2.92	7.63	5719	0.29	16.75	24.5	-80.1	2.97	Clear	None
11:14 AM	N/A	0.10	1.20	2.92	7.65	5710	0.27	16.62	24.5	-80.7	2.96	Clear	None
11:16 AM	N/A	0.10	1.30	2.92	7.63	5707	0.24	16.52	24.6	-80.5	2.95	Clear	None

Start Purge:	12/20/2024 10:50:00 AM	End Purge:	12/20/2024 11:16:00 AM	Total Volume (gal):	1.3
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Launch Complex 39 Observation Gantry Area (SWMU 107)
Project #: 60737568

Sample ID: LC39OGA-MW0004-010.0-20241220 Sample Date: 12/20/2024 12:27:00 PM
Well ID: LC39OGA-MW0004 Sampler: Parsotanm
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	1	Static Water Level (ft-BTOC):	1.31
Top of Screen (ft-BTOC):	5.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	15.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	15.00	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
12:00 PM	N/A	N/A	0.00	1.31	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
12:20 PM	N/A	1.00	1.00	1.75	7.81	1168	0.56	7.81	24.5	-65.2	0.58	Clear	None
12:22 PM	N/A	0.10	1.10	1.75	7.81	1168	0.51	7.67	24.5	-65.6	0.58	Clear	None
12:24 PM	N/A	0.10	1.20	1.75	7.81	1168	0.45	7.52	24.5	-64.6	0.58	Clear	None
12:26 PM	N/A	0.10	1.30	1.75	7.81	1169	0.39	7.34	24.5	-64.2	0.58	Clear	None

Start Purge:	12/20/2024 12:00:00 PM	End Purge:	12/20/2024 12:26:00 PM	Total Volume (gal):	1.3
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Launch Complex 39 Observation Gantry Area (SWMU 107)
Project #: 60737568

Sample ID: LC39OGA-MW0005-010.0-20241220 Sample Date: 12/20/2024 10:17:00 AM
Well ID: LC39OGA-MW0005 Sampler: Dustin Slater
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	1	Static Water Level (ft-BTOC):	1.58
Top of Screen (ft-BTOC):	5.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	15.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	NM	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
9:47 AM	N/A	N/A	0.00	1.58	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
10:07 AM	0.05	1.00	1.00	2.19	7.44	1925	0.09	3.67	23.4	-366.0	1.01	Clear	None
10:10 AM	0.05	0.15	1.15	2.19	7.44	1925	0.09	3.33	23.4	-365.4	1.01	Clear	None
10:13 AM	0.05	0.15	1.30	2.19	7.50	1926	0.10	2.89	23.5	-365.0	1.01	Clear	None
10:16 AM	0.05	0.15	1.45	2.19	7.50	1925	0.11	2.64	23.5	-365.1	1.01	Clear	None

Start Purge:	12/20/2024 9:47:00 AM	End Purge:	12/20/2024 10:16:00 AM	Total Volume (gal):	1.45
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Launch Complex 39 Observation Gantry Area (SWMU 107)
Project #: 60737568

Sample ID: LC39OGA-MW0006-024.5-20241220 Sample Date: 12/20/2024 11:57:00 AM
Well ID: LC39OGA-MW0006 Sampler: Dustin Slater
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	1	Static Water Level (ft-BTOC):	1.16
Top of Screen (ft-BTOC):	22.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	27.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	NM	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
11:30 AM	N/A	N/A	0.00	1.16	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
11:50 AM	0.05	1.00	1.00	1.43	7.16	30108	0.31	6.18	26.1	-82.0	18.18	Clear	None
11:52 AM	0.05	0.10	1.10	1.43	7.16	30032	0.32	5.77	26.0	-382.6	18.23	Clear	None
11:54 AM	0.05	0.10	1.20	1.43	7.15	30019	0.31	5.25	25.9	-383.3	18.24	Clear	None
11:56 AM	0.05	0.10	1.30	1.43	7.15	30000	0.31	4.99	25.9	-383.6	18.25	Clear	None

Start Purge:	12/20/2024 11:30:00 AM	End Purge:	12/20/2024 11:56:00 AM	Total Volume (gal):	1.3
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Launch Complex 39 Observation Gantry Area (SWMU 107)
Project #: 60737568

Sample ID: LC39OGA-MW0007-024.5-20241220 Sample Date: 12/20/2024 11:49:00 AM
Well ID: LC39OGA-MW0007 Sampler: Parsotanm
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	1	Static Water Level (ft-BTOC):	0.97
Top of Screen (ft-BTOC):	22.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	27.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	27.00	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
11:22 AM	N/A	N/A	0.00	0.92	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
11:42 AM	N/A	1.00	1.00	1.62	7.39	28526	0.32	6.67	25.2	-90.7	17.61	Clear	None
11:44 AM	N/A	0.10	1.10	1.62	7.39	28531	0.30	6.55	25.2	-91.2	17.61	Clear	None
11:46 AM	N/A	0.10	1.20	1.62	7.38	28534	0.28	6.41	25.2	-92.6	17.60	Clear	None
11:48 AM	N/A	0.10	1.30	1.62	7.38	28533	0.26	6.27	25.2	-92.8	17.60	Clear	None

Start Purge:	12/20/2024 11:22:00 AM	End Purge:	12/20/2024 11:48:00 AM	Total Volume (gal):	1.3
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Launch Complex 39 Observation Gantry Area (SWMU 107)
Project #: 60737568

Sample ID: LC39OGA-MW0008-024.5-20241220 Sample Date: 12/20/2024 12:59:00 PM
Well ID: LC39OGA-MW0008 Sampler: Parsotanm
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	1	Static Water Level (ft-BTOC):	1.34
Top of Screen (ft-BTOC):	22.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	27.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	27.00	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
12:32 PM	N/A	N/A	0.00	1.34	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
12:52 PM	N/A	1.00	1.00	2.88	6.41	11285	0.35	2.87	28.8	-84.6	6.42	Clear	None
12:54 PM	N/A	0.10	1.10	2.88	6.41	11285	0.32	2.75	24.8	-85.4	6.42	Clear	None
12:56 PM	N/A	0.10	1.20	2.88	6.41	11287	0.29	2.62	24.8	-85.7	6.41	Clear	None
12:58 PM	N/A	0.10	1.30	2.88	6.41	11285	0.25	2.51	24.8	-86.4	6.41	Clear	None

Start Purge:	12/20/2024 12:32:00 PM	End Purge:	12/20/2024 12:58:00 PM	Total Volume (gal):	1.3
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Launch Complex 39 Observation Gantry Area (SWMU 107)
Project #: 60737568

Sample ID: LC39OGA-MW0009-024.5-20241220 Sample Date: 12/20/2024 10:51:00 AM
Well ID: LC39OGA-MW0009 Sampler: Dustin Slater
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	1	Static Water Level (ft-BTOC):	1.80
Top of Screen (ft-BTOC):	22.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	27.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	NM	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
10:24 AM	N/A	N/A	0.00	1.80	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
10:44 AM	0.05	1.00	1.00	2.01	7.70	2005	0.32	6.81	23.7	-274.8	1.05	Clear	None
10:46 AM	0.05	0.10	1.10	2.01	7.78	2011	0.30	6.07	23.6	-276.1	1.06	Clear	None
10:48 AM	0.05	0.10	1.20	2.01	7.78	2023	0.29	5.84	23.7	-277.7	1.06	Clear	None
10:50 AM	0.05	0.10	1.30	2.01	7.77	2033	0.28	5.31	23.7	-279.4	1.07	Clear	None

Start Purge:	12/20/2024 10:24:00 AM	End Purge:	12/20/2024 10:50:00 AM	Total Volume (gal):	1.3
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Launch Complex 39 Observation Gantry Area (SWMU 107)
Project #: 60737568

Sample ID: LC39OGA-MW0010-010.0-20241220 Sample Date: 12/20/2024 10:20:00 AM
Well ID: LC39OGA-MW0010 Sampler: Parsotanm
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	1	Static Water Level (ft-BTOC):	1.05
Top of Screen (ft-BTOC):	5.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	15.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	NM	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
10:15 AM	N/A	N/A	0.00	1.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
10:35 AM	N/A	1.00	1.00	1.35	7.65	2185	0.11	5.76	24.5	-76.6	1.12	Clear	None
10:37 AM	N/A	0.10	1.10	1.35	7.65	2185	0.09	5.62	24.5	-74.2	1.12	Clear	None
10:39 AM	N/A	0.10	1.20	1.35	7.64	2184	0.07	5.51	24.4	-76.7	1.12	Clear	None
10:41 AM	N/A	0.10	1.30	1.35	7.67	2184	0.04	5.35	24.5	77.4	1.12	Clear	None

Start Purge:	12/20/2024 10:15:00 AM	End Purge:	12/20/2024 10:41:00 AM	Total Volume (gal):	1.3
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Launch Complex 39 Observation Gantry Area (SWMU 107)
Project #: 60737568

Sample ID: LC39OGA-MW0011-010.0-20241220 Sample Date: 12/20/2024 11:18:00 AM
Well ID: LC39OGA-MW0011 Sampler: Devin Kehoe
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	1	Static Water Level (ft-BTOC):	4.98
Top of Screen (ft-BTOC):	5.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	15.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	NM	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
10:49 AM	0.08	0.00	0.00	4.98	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
11:09 AM	0.08	1.60	1.60	5.23	7.84	618	0.68	13.00	24.7	57.3	N/A	Clear	None
11:11 AM	0.08	0.16	1.76	5.23	7.83	627	0.61	12.90	24.7	54.6	N/A	Clear	None
11:13 AM	0.08	0.16	1.92	5.23	7.82	657	0.61	12.30	24.8	52.9	N/A	Clear	None
11:15 AM	0.08	0.16	2.08	5.23	7.79	659	0.61	12.80	24.8	52.9	N/A	Clear	None

Start Purge:	12/20/2024 10:49:00 AM	End Purge:	12/20/2024 11:15:00 AM	Total Volume (gal):	2.08
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Launch Complex 39 Observation Gantry Area (SWMU 107)
Project #: 60737568

Sample ID: LC39OGA-MW0012-024.5-20241220 Sample Date: 12/20/2024 11:47:00 AM
Well ID: LC39OGA-MW0012 Sampler: Devin Kehoe
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	1	Static Water Level (ft-BTOC):	5.14
Top of Screen (ft-BTOC):	22.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	27.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	NM	Sample Analysis:	Select VOCs

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
11:27 AM	0.08	0.00	0.00	5.14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
11:39 AM	0.08	0.96	0.96	5.31	7.35	842	0.27	0.00	25.0	-136.5	N/A	Clear	None
11:41 AM	0.08	0.16	1.12	5.31	7.35	847	0.28	7.46	25.1	-136.8	N/A	Clear	None
11:43 AM	0.08	0.16	1.28	5.31	7.34	847	0.28	7.29	25.1	-137.0	N/A	Clear	None
11:45 AM	0.08	0.16	1.44	5.31	7.34	847	0.28	7.26	25.1	-137.5	N/A	Clear	None

Start Purge:	12/20/2024 11:27:00 AM	End Purge:	12/20/2024 11:45:00 AM	Total Volume (gal):	1.44
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SURFACE WATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Launch Complex 39 Observation Gantry Area (SWMU 107)
Project #: 60737568

Sample ID: LC39OGA-SW0004-001.0-20241220 Sample Date: 12/20/2024 12:16:00 PM
Location ID: LC39OGA-SW0004 Sampler: Devin Kehoe
Location Type: Surface Water Sample Analysis: Select VOCs
Comments: ???

Field Measurements										
Time	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	TDS (G/L)	Salinity (PSU)	Color (NA)	Odor (NA)
12:13 PM	8.35	27664	4.93	10.8	22.8	-250.9	18.8	17.86	Clear	None

SURFACE WATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Launch Complex 39 Observation Gantry Area (SWMU 107)
Project #: 60737568

Sample ID: LC39OGA-SW0005-001.0-20241220 Sample Date: 12/20/2024 12:24:00 PM
Location ID: LC39OGA-SW0005 Sampler: Devin Kehoe
Location Type: Surface Water Sample Analysis: Select VOCs
Comments: ???

Field Measurements										
Time	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	TDS (G/L)	Salinity (PSU)	Color (NA)	Odor (NA)
12:21 PM	8.38	27271	6.92	10.1	22.9	-242.1	18.5	17.55	Clear	None

SURFACE WATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Launch Complex 39 Observation Gantry Area (SWMU 107)
Project #: 60737568

Sample ID: LC39OGA-SW0006-001.0-20241220 Sample Date: 12/20/2024 12:27:00 PM
Location ID: LC39OGA-SW0006 Sampler: Devin Kehoe
Location Type: Surface Water Sample Analysis: Select VOCs
Comments: ???

Field Measurements										
Time	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	TDS (G/L)	Salinity (PSU)	Color (NA)	Odor (NA)
12:25 PM	8.40	27645	7.28	22.0	23.3	-233.1	18.6	17.65	Clear	None

SURFACE WATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Launch Complex 39 Observation Gantry Area (SWMU 107)
Project #: 60737568

Sample ID: LC39OGA-SW0007-001.0-20241220 Sample Date: 12/20/2024 12:32:00 PM
Location ID: LC39OGA-SW0007 Sampler: Devin Kehoe
Location Type: Surface Water Sample Analysis: Select VOCs
Comments: ???

Field Measurements										
Time	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	TDS (G/L)	Salinity (PSU)	Color (NA)	Odor (NA)
12:31 PM	8.40	27276	7.13	11.7	22.7	-223.5	18.6	17.64	Clear	None

GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Launch Equipment Shop (PRL 051)
Project #: 60737568

Sample ID: LES-IW0005S-008.0-20241217 Sample Date: 12/17/2024 1:47:00 PM
Well ID: LES-IW0005S Sampler: Madan Parsotan
Location Type: Monitoring Well
Comments: LES-FD01-20241217@13:50

Well Information			
Well Diameter (in):	-9999	Static Water Level (ft-BTOC):	5.75
Top of Screen (ft-BTOC):	3.35	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	13.35	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	13.00	Sample Analysis:	TRPH

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
1:20 PM	N/A	N/A	0.00	5.75	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
1:40 PM	N/A	1.00	1.00	6.82	6.93	455.7	0.31	5.98	26.6	96.6	0.22	Clear	None
1:42 PM	N/A	0.10	1.10	6.82	6.92	461.6	0.25	5.67	26.7	86.2	0.22	Clear	None
1:44 PM	N/A	0.10	1.20	6.82	6.92	462.4	0.21	5.54	26.6	84.1	0.22	Clear	None
1:46 PM	N/A	0.10	1.30	6.82	6.92	462.2	0.15	5.17	26.5	52.8	0.22	Clear	None

Start Purge:	12/17/2024 1:20:00 PM	End Purge:	12/17/2024 1:46:00 PM	Total Volume (gal):	1.3
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Launch Equipment Shop (PRL 051)
Project #: 60737568

Sample ID: LES-IW0009S-010.0-20241217 Sample Date: 12/17/2024 2:10:00 PM
Well ID: LES-IW0009S Sampler: Devin Kehoe
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	-9999	Static Water Level (ft-BTOC):	5.55
Top of Screen (ft-BTOC):	5.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	15.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	NM	Sample Analysis:	TRPH

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
1:42 PM	0.08	0.00	0.00	5.55	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
2:01 PM	0.08	1.52	1.52	5.76	6.75	600.0	1.06	6.60	25.9	-133.3	N/A	Clear	None
2:03 PM	0.08	0.16	1.68	5.76	6.74	604.0	1.02	5.78	25.9	-134.2	N/A	Clear	None
2:05 PM	0.08	0.16	1.84	5.76	6.74	606.0	1.02	6.78	25.9	-134.4	N/A	Clear	None
2:07 PM	0.08	0.16	2.00	5.76	6.73	606.0	1.00	5.15	25.9	-134.8	N/A	Clear	None

Start Purge:	12/17/2024 1:42:00 PM	End Purge:	12/17/2024 2:07:00 PM	Total Volume (gal):	2.00
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: Launch Equipment Shop (PRL 051)
Project #: 60737568

Sample ID: LES-IW0011S-010.0-20241217 Sample Date: 12/17/2024 2:25:00 PM
Well ID: LES-IW0011S Sampler: Madan Parsotan
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	-9999	Static Water Level (ft-BTOC):	5.82
Top of Screen (ft-BTOC):	5.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	15.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	NM	Sample Analysis:	TRPH

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
2:00 PM	0.05	N/A	0.00	5.82	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
2:20 PM	N/A	1.00	1.00	6.42	6.94	789.0	0.11	7.75	26.1	80.7	0.38	Clear	None
2:22 PM	N/A	0.10	1.20	6.42	6.92	788.0	0.07	7.55	26.0	83.7	0.38	Clear	None
2:24 PM	N/A	0.10	1.30	6.42	6.93	787.0	0.05	7.41	26.1	82.4	0.38	Clear	None

Start Purge:	12/17/2024 2:00:00 PM	End Purge:	12/17/2024 2:24:00 PM	Total Volume (gal):	1.3
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: SFOC Generator Shop (SWMU 081)
Project #: 60737568

Sample ID: SFOC-IW0001S-007.0-20241223 Sample Date: 12/23/2024 9:37:00 AM
Well ID: SFOC-IW0001S Sampler: Madan Parsotan
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	-9999	Static Water Level (ft-BTOC):	4.88
Top of Screen (ft-BTOC):	2.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	12.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	12.00	Sample Analysis:	N/A

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
9:10 AM	0.05	N/A	0.00	4.88	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
9:30 AM	N/A	1.00	1.00	4.91	6.58	317.5	1.38	7.65	22.7	-175.6	0.15	Clear	None
9:32 AM	N/A	0.10	1.10	4.91	6.58	317.8	1.32	7.55	22.7	-173.7	0.15	Clear	None
9:34 AM	N/A	0.10	1.20	7.91	6.58	316.3	1.28	7.41	22.7	-172.6	0.15	Clear	None
9:36 AM	N/A	0.10	1.30	4.91	6.58	316.4	1.23	7.31	22.6	-170.5	0.15	Clear	None

Start Purge:	12/23/2024 9:10:00 AM	End Purge:	12/23/2024 9:36:00 AM	Total Volume (gal):	1.3
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: SFOC Generator Shop (SWMU 081)
Project #: 60737568

Sample ID: SFOC-IW0002S-007.0-20241223 Sample Date: 12/23/2024 9:43:00 AM
Well ID: SFOC-IW0002S Sampler: Devin Kehoe
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	-9999	Static Water Level (ft-BTOC):	3.38
Top of Screen (ft-BTOC):	2.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	12.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	NM	Sample Analysis:	N/A

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
9:06 AM	0.05	0.00	0.00	3.38	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
9:34 AM	0.05	1.40	1.40	3.38	6.84	266.3	1.15	7.46	22.4	26.7	N/A	Clear	None
9:36 AM	0.05	0.10	1.50	3.38	6.84	265.2	1.14	5.06	22.3	26.1	N/A	Clear	None
9:38 AM	0.05	0.10	1.60	3.38	6.83	265.7	1.12	5.84	22.3	25.2	N/A	Clear	None
9:40 AM	0.05	0.10	1.70	3.38	6.83	264.9	1.11	5.98	22.3	24.6	N/A	Clear	None

Start Purge:	12/23/2024 9:06:00 AM	End Purge:	12/23/2024 9:40:00 AM	Total Volume (gal):	1.7
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: SFOC Generator Shop (SWMU 081)
Project #: 60737568

Sample ID: SFOC-IW0004S-007.0-20241223 Sample Date: 12/23/2024 10:47:00 AM
Well ID: SFOC-IW0004S Sampler: Devin Kehoe
Location Type: Monitoring Well
Comments: N/A

Well Information			
Well Diameter (in):	-9999	Static Water Level (ft-BTOC):	3.06
Top of Screen (ft-BTOC):	2.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	12.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	NM	Sample Analysis:	N/A

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
10:08 AM	0.05	0.00	0.00	3.06	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
10:38 AM	0.05	1.50	1.50	3.08	5.73	126.7	0.16	6.77	23.1	78.4	N/A	Clear	None
10:40 AM	0.05	0.19	1.69	3.08	5.73	127.4	0.19	5.91	23.1	78.2	N/A	Clear	None
10:42 AM	0.05	0.10	1.79	3.08	5.72	127.6	0.17	5.26	23.1	75.8	N/A	Clear	None
10:44 AM	0.05	0.10	1.89	3.08	5.72	127.4	0.14	5.18	23.0	74.2	N/A	Clear	None

Start Purge:	12/23/2024 10:08:00 AM	End Purge:	12/23/2024 10:44:00 AM	Total Volume (gal):	1.89
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GROUNDWATER SAMPLING LOG



Event: December 2024 LTM
Site Name: SFOC Generator Shop (SWMU 081)
Project #: 60737568

Sample ID: SFOC-IW0009-007.0-20241223 Sample Date: 12/23/2024 10:37:00 AM
Well ID: SFOC-IW0009 Sampler: Madan Parsotan
Location Type: N/A
Comments: N/A

Well Information			
Well Diameter (in):	1	Static Water Level (ft-BTOC):	2.75
Top of Screen (ft-BTOC):	2.00	H/S PID Monitor Reading: (ppm)	0
Bottom of Screen (ft-BTOC):	12.00	Purge/Sample Method:	N/A
Measured Well Depth (ft-BTOC):	12.00	Sample Analysis:	N/A

Purge Information													
Time	Purge Rate (gal/min)	Vol Purged (gal)	Cumul. Vol Purged (gal)	Depth to Water (FT)	pH (S.U.)	COND (US/CM)	DO (MG/L)	Turb (NTU)	Temp (C)	ORP (MV)	Salinity (PSU)	Color (NA)	Odor (NA)
10:10 AM	N/A	N/A	0.00	2.75	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Clear	None
10:30 AM	0.05	1.00	1.00	3.02	5.30	106.7	0.67	5.89	22.7	-414.2	0.06	Clear	None
10:32 AM	N/A	0.10	1.10	3.02	5.31	106.5	0.59	5.79	22.7	-431.8	0.06	Clear	None
10:34 AM	N/A	0.10	1.20	3.02	5.29	105.4	0.56	5.75	22.7	-433.7	0.06	Clear	None
10:36 AM	N/A	0.10	1.30	3.02	5.29	105.5	0.47	5.45	22.6	-435.7	0.06	Clear	None

Start Purge:	12/23/2024 10:10:00 AM	End Purge:	12/23/2024 10:36:00 AM	Total Volume (gal):	1.3
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FIELD INSTRUMENT CALIBRATION RECORDS - CALIBRATION LOG - PRP

Project Site/FacID: VAB LTM/NASA KSC

Calibrated by (Print)/Affiliation: Devin Kehoe/AECOM

Boldly "X" this box if there is qualified data on this page.

TURBIDITY (REFERENCE: DEP SOP FT 1600)

Meter/Instrument Name and Unique ID: Oakton Turbidity Meter

Std=0.1-10 NTU +/-10%

Std=11-40 NTU +/-8%

Std=41-100 NTU +/-6.5%

Std>100 NTU +/-5%

CAL	ICV	CCV	Initials	Date	Time	Standard (NTU)	Exp. Date	Lot #	Response (NTU)	Deviation (%)	Pass or Fail
CAL	ICV	CCV	DK	12-17-24	1235	0	NA	NA	0	0	P F
CAL	ICV	CCV	↓	↓	↓	20	5-25	24002247	20	0	P F
CAL	ICV	CCV	↓	↓	↓	100	5-25	24002248	100	0	P F
CAL	ICV	CCV	↓	↓	↓	400	5-25	22440170	400	0	P F
CAL	ICV	CCV	DK	12-18-24	1150	0	NA	NA	0.04	0.4	P F
CAL	ICV	CCV	↓	↓	↓	20	5-25	24002247	20.6	3.0	P F
CAL	ICV	CCV	↓	↓	↓	100	5-25	24002248	102.1	2.1	P F
CAL	ICV	CCV	↓	↓	↓	400	5-25	22440170	409.6	2.3	P F
CAL	ICV	CCV	↓	12-19-24	1300	0	NA	NA	0.08	0.8	P F
CAL	ICV	CCV	↓	↓	↓	20	5-25	24002247	20.8	4.0	P F
CAL	ICV	CCV	↓	↓	↓	100	5-25	24002248	103.3	3.3	P F
CAL	ICV	CCV	↓	↓	↓	400	5-25	22440170	408.4	2.1	P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F

pH (REFERENCE: DEP SOP FT 1100)

Meter/Instrument Name and Unique ID: YSI Pro Quatro

Acceptance Criteria +/-0.2 SU

CAL	ICV	CCV	Initials	Date	Time	Standard (SU)	Exp. Date	Lot #	Response (SU)	Deviation (SU)	Pass or Fail
CAL	ICV	CCV	DK	12-17-24	1235	4.0	12-24	230605A	4.11	0.11	P F
CAL	ICV	CCV	↓	↓	↓	7.0	3-26	00624B	7.06	0.06	P F
CAL	ICV	CCV	↓	↓	↓	10.0	4-25	231019B	9.98	0.02	P F
CAL	ICV	CCV	DK	12-18-24	1150	4.0	12-24	230605A	4.15	0.15	P F
CAL	ICV	CCV	↓	↓	↓	7.0	3-26	00624B	7.18	0.18	P F
CAL	ICV	CCV	↓	↓	↓	10.0	4-25	231019B	9.87	0.13	P F
CAL	ICV	CCV	DK	12-19-24	1300	4.0	12-24	230605A	4.10	0.10	P F
CAL	ICV	CCV	↓	↓	↓	7.0	3-26	00624B	7.08	0.08	P F
CAL	ICV	CCV	↓	↓	↓	10.0	4-25	231019B	10.03	0.03	P F
CAL	ICV	CCV	DK	12-20-24	0810	4.0	12-24	230605A	4.06	0.06	P F
CAL	ICV	CCV	↓	↓	↓	7.0	3-26	00624B	7.12	0.12	P F
CAL	ICV	CCV	↓	↓	↓	10.0	4-25	231019B	9.97	0.03	P F
CAL	ICV	CCV	DK	12-23-24	0820	4.0	12-24	230605A	4.13	0.13	P F
CAL	ICV	CCV	↓	↓	↓	7.0	3-26	00624B	7.18	0.18	P F
CAL	ICV	CCV	↓	↓	↓	10.0	4-25	231019B	10.09	0.09	P F

Perform ICVs and CCVs only in "READ/RUN" mode.

CAL - Calibration; ICV - Initial Calibration Verification; and, CCV - Continuing Calibration Verification.

Deviation (%) = 100 - ((Response/Standard)*100)

FIELD INSTRUMENT CALIBRATION RECORDS - CALIBRATION LOG - PRP

Project Site/FacID: VAB LTM/NASA KSC

Calibrated by (Print)/Affiliation: Devin Kehoe/AECOM

Boldly "X" this box if there is qualified data on this page.

TURBIDITY (REFERENCE: DEP SOP FT 1600)

Meter/Instrument Name and Unique ID: Oakton Turbidity Meter

Std=0.1-10 NTU +/-10%

Std=11-40 NTU +/-8%

Std=41-100 NTU +/-6.5%

Std>100 NTU +/-5%

CAL	ICV	CCV	Initials	Date	Time	Standard (NTU)	Exp. Date	Lot #	Response (NTU)	Deviation (%)	Pass or Fail
CAL	ICV	CCV	DK	12-20-24	0810	0	NA	NA	0.03	0.3	P F
CAL	ICV	CCV	↓	↓	↓	20	5-25	24002247	20.9	4.5	P F
CAL	ICV	CCV	↓	↓	↓	100	5-25	24002248	104.0	4.0	P F
CAL	ICV	CCV	↓	↓	↓	400	5-25	22440170	408.1	2.0	P F
CAL	ICV	CCV	DK	12-23-24	0820	0	NA	NA	0.06	0.6	P F
CAL	ICV	CCV	↓	↓	↓	20	5-25	24002247	21.1	5.5	P F
CAL	ICV	CCV	↓	↓	↓	100	5-25	24002248	103.8	3.8	P F
CAL	ICV	CCV	↓	↓	↓	400	5-25	22440170	407.6	1.9	P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F

pH (REFERENCE: DEP SOP FT 1100)

Acceptance Criteria +/-0.2 SU

Meter/Instrument Name and Unique ID:

CAL	ICV	CCV	Initials	Date	Time	Standard (SU)	Exp. Date	Lot #	Response (SU)	Deviation (SU)	Pass or Fail
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F

Perform ICVs and CCVs only in "READ/RUN" mode.

CAL - Calibration; ICV - Initial Calibration Verification; and, CCV - Continuing Calibration Verification.

Deviation (%) = 100 - ((Response/Standard)*100)

FIELD INSTRUMENT CALIBRATION RECORDS - CALIBRATION LOG - PRP

Project Site/FacID:

VAB LTM/NASA ICSC

Calibrated by (Print)/Affiliation:

Devin Kehoe/AECOM

Boldly "X" this box if there is qualified data on this page.

Temperature (Quarterly)

Date of Last Temp Verification:

See log book:

DISSOLVED OXYGEN (DO) (REFERENCE: DEP SOP FT 1500)

Acceptance Criteria +/-0.3 mg DO/L

Meter/Instrument Name and Unique ID:

YSI Pro Quatro

CAL	ICV	CCV	Initials	Date	Time	Standard (DO %)	Temp °C	DO Saturation mg/L (100%)**	Response DO (%)	Response mg DO/L	Deviation mg DO/L	Pass or Fail
CAL	ICV	CCV	DK	12-17-24	1240	100%	26.4	8.0855	99.8	8.796	<0.1	P F
CAL	ICV	CCV	DK	12-18-24	1135	100%	22.5	8.660	99.7	8.64	0.02	P F
CAL	ICV	CCV	DK	12-19-24	1305	100%	22.6	8.664	100.3	8.69	<0.1	P F
CAL	ICV	CCV	DK	12-20-24	0815	100%	23.1	8.562	99.9	8.57	<0.1	P F
CAL	ICV	CCV	DK	12-23-24	0825	100%	21.9	8.761	100.4	8.78	<0.1	P F
CAL	ICV	CCV				100%						P F

** See Table FS 2200-2 and/or Table FT 1500-1 for Dissolved Oxygen 100% Saturation (mg/L) corresponding to Temperature.

SPECIFIC CONDUCTANCE (REFERENCE: DEP SOP FT 1200)

Acceptance Criteria +/-5% the standard

Meter/Instrument Name and Unique ID:

See Above

CAL	ICV	CCV	Initials	Date	Time	Standard (µmho/cm)	Exp. Date	Lot #	Response (µmho/cm)	Deviation (%)	Pass or Fail
CAL	ICV	CCV	DK	12-17-24	1245	1413	7-25	240718D	1408	<1.0	P F
CAL	ICV	CCV	↓	↓	↓	100	12-24	231213A	102.3	2.3	P F
CAL	ICV	CCV	DK	12-18-24	1140	1413	7-25	240718D	1364	3.4	P F
CAL	ICV	CCV	↓	↓	↓	100	12-24	231213A	97.1	2.9	P F
CAL	ICV	CCV	DK	12-19-24	1310	1413	7-25	240718D	1379	2.4	P F
CAL	ICV	CCV	↓	↓	↓	100	12-24	231213A	101.9	1.9	P F
CAL	ICV	CCV	DK	12-20-24	0820	1413	7-25	240718D	1393	1.4	P F
CAL	ICV	CCV	↓	↓	↓	100	12-24	231213A	104.3	4.3	P F
CAL	ICV	CCV	DK	12-23-24	0830	1413	7-25	240718D	1386	1.9	P F

OXIDATION-REDUCTION POTENTIAL (ORP)

Acceptance Criteria +/-10 mV

REFERENCE: EPA Region 4, Operating Procedure, Field Measurement of Oxidation-Reduction Potential (ORP)

Meter/Instrument Name and Unique ID:

See Above

CAL	ICV	CCV	Initials	Date	Time	Standard (mV)	Exp. Date	Lot #	Response (mV)	Deviation (mV)	Pass or Fail
CAL	ICV	CCV	DK	12-17-24	1250	238	3-26	21C100633	238.1	0.1	P F
CAL	ICV	CCV	DK	12-18-24	1145	238	3-26	21C100633	237.2	0.8	P F
CAL	ICV	CCV	DK	12-19-24	1315	238	3-26	21C100633	239.1	1.1	P F
CAL	ICV	CCV	DK	12-20-24	0825	238	3-26	21C100633	237.2	0.8	P F
CAL	ICV	CCV	DK	12-23-24	0835	238	3-26	21C100633	237.4	0.6	P F
CAL	ICV	CCV									P F

Perform ICVs and CCVs only in "READ/RUN" mode.

CAL - Calibration; ICV - Initial Calibration Verification; and, CCV - Continuing Calibration Verification.

Deviation (%) = 100 - ((Response/Standard)*100)

FIELD INSTRUMENT CALIBRATION RECORDS - CALIBRATION LOG ~~PRR~~

Project Site/FacID: KSC VAB 2TH

Calibrated by (Print)/Affiliation: Dustin Slater / AFCON

Boldly "X" this box if there is qualified data on this page.

TURBIDITY (REFERENCE: DEP SOP FT 1600)

Meter/Instrument Name and Unique ID: Oakton T100SR

Std=0.1-10 NTU +/-10%

Std=11-40 NTU +/-8%

Std=41-100 NTU +/-6.5%

Std>100 NTU +/-5%

CAL	ICV	CCV	Initials	Date	Time	Standard (NTU)	Exp. Date	Lot #	Response (NTU)	Deviation (%)	Pass or Fail
CAL	ICV	CCV	JS	12/18/24	1000	20			19.97		P F
CAL	ICV	CCV	↓	↓	↓	100			99.5		P F
CAL	ICV	CCV	↓	↓	↓	200			79.6		P F
CAL	ICV	CCV	JS	2/20/24	0745	20			19.93		P F
CAL	ICV	CCV	↓	↓	↓	100			99.7		P F
CAL	ICV	CCV	↓	↓	↓	200			79.4		P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F

pH (REFERENCE: DEP SOP FT 1100)

Acceptance Criteria +/-0.2 SU

Meter/Instrument Name and Unique ID: YSI Pro Quatro s/n 22H104809

CAL	ICV	CCV	Initials	Date	Time	Standard (SU)	Exp. Date	Lot #	Response (SU)	Deviation (SU)	Pass or Fail
CAL	ICV	CCV	JS	12/18/24	1002	7.00	3/26	CSC24B	7.00		P F
CAL	ICV	CCV	↓	↓	↓	4.00	4/25	231019A	4.00		P F
CAL	ICV	CCV	↓	↓	↓	10.00	4/25	231019B	10.00		P F
CAL	ICV	CCV	JS	2/20/24	0747	7.00			7.03		P F
CAL	ICV	CCV	↓	↓	↓	4.00			4.01		P F
CAL	ICV	CCV	↓	↓	↓	10.00			10.05		P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F

Perform ICVs and CCVs only in "READ/RUN" mode.

CAL - Calibration; ICV - Initial Calibration Verification; and, CCV - Continuing Calibration Verification.

Deviation (%) = 100-((Response/Standard)*100)

FIELD INSTRUMENT CALIBRATION RECORDS - CALIBRATION LOG - ~~DRP~~

Project Site/FacID: _____

RSC VAB LTM

Calibrated by (Print)/Affiliation: _____

Austin Slater / AECOM

Boldly "X" this box if there is qualified data on this page.

Temperature (Quarterly)

Date of Last Temp Verification: _____

See log book:

DISSOLVED OXYGEN (DO) (REFERENCE: DEP SOP FT 1500)

Acceptance Criteria +/-0.3 mg DO/L

Meter/Instrument Name and Unique ID: _____

YSI Pro Quatro S/N 224104809

CAL	ICV	CCV	Initials	Date	Time	Standard (DO %)	Temp °C	DO Saturation mg/L (100%)**	Response DO (%)	Response mg DO/L	Deviation mg DO/L	Pass or Fail
<u>CAL</u>	<u>ICV</u>	<u>CCV</u>	<u>DS</u>	<u>12/18/24</u>	<u>1011</u>	<u>100%</u>	<u>24.8°</u>	<u>8.294</u>	<u>100.1%</u>	<u>8.30</u>		P F
<u>CAL</u>	<u>ICV</u>	<u>CCV</u>	<u>DS</u>	<u>12/16/24</u>	<u>0755</u>	<u>100%</u>	<u>22.2°</u>	<u>8.710</u>	<u>100.8%</u>	<u>8.76</u>		P F
<u>CAL</u>	<u>ICV</u>	<u>CCV</u>				<u>100%</u>						P F
<u>CAL</u>	<u>ICV</u>	<u>CCV</u>				<u>100%</u>						P F
<u>CAL</u>	<u>ICV</u>	<u>CCV</u>				<u>100%</u>						P F
<u>CAL</u>	<u>ICV</u>	<u>CCV</u>				<u>100%</u>						P F

** See Table FS 2200-2 and/or Table FT 1500-1 for Dissolved Oxygen 100% Saturation (mg/L) corresponding to Temperature.

SPECIFIC CONDUCTANCE (REFERENCE: DEP SOP FT 1200)

Acceptance Criteria +/-5% the standard

Meter/Instrument Name and Unique ID: _____

YSI Pro Quatro S/N 224104809

CAL	ICV	CCV	Initials	Date	Time	Standard (µmho/cm)	Exp. Date	Lot #	Response (µmho/cm)	Deviation (%)	Pass or Fail
<u>CAL</u>	<u>ICV</u>	<u>CCV</u>	<u>DS</u>	<u>12/18/24</u>	<u>1008</u>	<u>1413</u>	<u>7/25</u>	<u>240180</u>	<u>1413</u>		P F
<u>CAL</u>	<u>ICV</u>	<u>CCV</u>	<u>DS</u>	<u>12/24/24</u>	<u>0753</u>	<u>1413</u>	<u>↓</u>	<u>↓</u>	<u>1417</u>		P F
<u>CAL</u>	<u>ICV</u>	<u>CCV</u>									P F
<u>CAL</u>	<u>ICV</u>	<u>CCV</u>									P F
<u>CAL</u>	<u>ICV</u>	<u>CCV</u>									P F
<u>CAL</u>	<u>ICV</u>	<u>CCV</u>									P F
<u>CAL</u>	<u>ICV</u>	<u>CCV</u>									P F
<u>CAL</u>	<u>ICV</u>	<u>CCV</u>									P F
<u>CAL</u>	<u>ICV</u>	<u>CCV</u>									P F
<u>CAL</u>	<u>ICV</u>	<u>CCV</u>									P F

OXIDATION-REDUCTION POTENTIAL (ORP)

Acceptance Criteria +/-10 mV

REFERENCE: EPA Region 4, Operating Procedure, Field Measurement of Oxidation-Reduction Potential (ORP)

Meter/Instrument Name and Unique ID: _____

YSI Pro Quatro S/N 224104809

CAL	ICV	CCV	Initials	Date	Time	Standard (mV)	Exp. Date	Lot #	Response (mV)	Deviation (mV)	Pass or Fail
<u>CAL</u>	<u>ICV</u>	<u>CCV</u>	<u>DS</u>	<u>12/18/24</u>	<u>1005</u>	<u>231</u>	<u>7/28</u>	<u>23610336</u>	<u>231.0</u>		P F
<u>CAL</u>	<u>ICV</u>	<u>CCV</u>	<u>DS</u>	<u>12/20/24</u>	<u>0750</u>	<u>231</u>	<u>↓</u>	<u>↓</u>	<u>225.7</u>		P F
<u>CAL</u>	<u>ICV</u>	<u>CCV</u>									P F
<u>CAL</u>	<u>ICV</u>	<u>CCV</u>									P F
<u>CAL</u>	<u>ICV</u>	<u>CCV</u>									P F
<u>CAL</u>	<u>ICV</u>	<u>CCV</u>									P F

Perform ICVs and CCVs only in "READ/RUN" mode.

CAL - Calibration; ICV - Initial Calibration Verification; and, CCV - Continuing Calibration Verification.

Deviation (%) = 100-[(Response/Standard)*100]

FIELD INSTRUMENT CALIBRATION RECORDS - CALIBRATION LOG - PRP

Project Site/FacID:

SEOC

Calibrated by (Print)/Affiliation:

MADAN PARSOTAN / AECDM

Boldly "X" this box if there is qualified data on this page.

TURBIDITY (REFERENCE: DEP SOP FT 1600)

Meter/Instrument Name and Unique ID:

Hach 2100Q SN# D00201

Std=0.1-10 NTU +/-10%

Std=11-40 NTU +/-5%

Std=41-100 NTU +/-4.5%

Std=100 NTU +/-5%

CAL	ICV	CCV	Initials	Date	Time	Standard (NTU)	Exp. Date	Lot #	Response (NTU)	Deviation (%)	Pass or Fail
CAL	ICV	CCV	MP	12/19/24	1038	10	—	—	9.98	.2	(P) F
CAL	ICV	CCV	↓	↓	↓	20	—	—	19.95	.25	(P) F
CAL	ICV	CCV	↓	↓	↓	100	—	—	99.97	.03	(P) F
CAL	ICV	CCV	MP	12/20/24	0829	10	—	—	9.97	.3	(P) F
CAL	ICV	CCV	↓	↓	↓	20	—	—	19.99	.05	(P) F
CAL	ICV	CCV	↓	↓	↓	100	—	—	100.04	.04	(P) F
CAL	ICV	CCV	MP	12/23/24	0817	10	—	—	10.0	—	(P) F
CAL	ICV	CCV	↓	↓	↓	20	—	—	19.95	.25	(P) F
CAL	ICV	CCV	↓	↓	↓	100	—	—	99.2	0.80	(P) F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F

pH (REFERENCE: DEP SOP FT 1100)

Acceptance Criteria +/-0.2 SU

Meter/Instrument Name and Unique ID:

YSI Quatro SN# 23E101518

CAL	ICV	CCV	Initials	Date	Time	Standard (SU)	Exp. Date	Lot #	Response (SU)	Deviation (SU)	Pass or Fail
CAL	ICV	CCV	MP	12/19/24	1044	7.00	06/2026	006248	7.00	—	(P) F
CAL	ICV	CCV	↓	↓	↓	4.00	4/25	231019A	4.01	-0.01	(P) F
CAL	ICV	CCV	↓	↓	↓	10.00	04/2025	231019B	10.00	—	(P) F
CAL	ICV	CCV	MP	12/20/24	0833	7.00	6/2026	006248	7.02	.0.02	(P) F
CAL	ICV	CCV	↓	↓	↓	4.00	4/25	231019A	4.03	-0.03	(P) F
CAL	ICV	CCV	↓	↓	↓	10.00	04/2025	231019B	9.97	.03	(P) F
CAL	ICV	CCV	MP	12/23/24	0821	7.00	06/2026	006248	6.98	0.02	(P) F
CAL	ICV	CCV	↓	↓	↓	4.00	4/25	231019A	3.97	0.03	(P) F
CAL	ICV	CCV	↓	↓	↓	10.00	04/2025	231019B	10.05	-0.05	(P) F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F

Perform ICVs and CCVs only in "READ/RUN" mode.

CAL - Calibration; ICV - Initial Calibration Verification; and, CCV - Continuing Calibration Verification.

Deviation (%) = 100 - ((Response/Standard)*100)

FIELD INSTRUMENT CALIBRATION RECORDS - CALIBRATION LOG - PRP

Project Site/Facility:

SFOC

Calibrated by (Print)/Affiliation:

MADAN PARSOTIAN / AECOM

Boldly "X" this box if there is qualified data on this page.

Temperature (Quarterly):

Date of Last Temp Verification:

See log book:

DISSOLVED OXYGEN (DO) (REFERENCE: DEP SOP PT 1500)

Acceptance Criteria +/- 0.3 mg DO/L

Meter/Instrument Name and Unique ID: YSI Quatro SN#23E101518

CAL	ICV	CCV	Initials	Date	Time	Standard (DO %)	Temp °C	DO Saturation mg/L (100%)**	Response DO (%)	Response mg DO/L	Deviation mg DO/L	Pass or Fail
CAL	ICV	CCV	MP	12/19/24	0829	100%	23.5	9.993	99.6	8.510	0.012	P F
CAL	ICV	CCV	↓	12/20/24	0820	100%	18.6	9.352	99.4	9.357	-0.015	P F
CAL	ICV	CCV	MP	12/23/24	0807	100%	20.1	9.074	98.9	9.126	-0.052	P F
CAL	ICV	CCV				100%						P F
CAL	ICV	CCV				100%						P F
CAL	ICV	CCV				100%						P F

** See Table PS 2200-3 and/or Table PT 1500-1 for Dissolved Oxygen 100% Saturation (mg/L) corresponding to Temperature.

SPECIFIC CONDUCTANCE (REFERENCE: DEP SOP PT 1300)

Acceptance Criteria +/- 5% the standard

Meter/Instrument Name and Unique ID: YSI Quatro SN#23E101518

CAL	ICV	CCV	Initials	Date	Time	Standard (umho/cm)	Exp. Date	Lot #	Response (umho/cm)	Deviation (%)	Pass or Fail
CAL	ICV	CCV	MP	12/19/24	1032	100	12/2024	231213A	100	—	P F
CAL	ICV	CCV	↓	↓	↓	1413	01/2025	240718A	1413	—	P F
CAL	ICV	CCV	MP	12/20/24	0823	100	12/2024	231213A	103.2	3.2	P F
CAL	ICV	CCV	↓	↓	↓	1413	01/2025	240718A	1417	0.28	P F
CAL	ICV	CCV	MP	12/23/24	0810	100	12/2024	231213A	102.1	2.1	P F
CAL	ICV	CCV	↓	↓	↓	1413	01/2025	240718A	1400	-21	P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F

OXIDATION-REDUCTION POTENTIAL (ORP)

Acceptance Criteria +/- 10 mV

REFERENCE: EPA Region 4, Operating Procedure, Field Measurement of Oxidation-Reduction Potential (ORP)

Meter/Instrument Name and Unique ID: YSI Quatro SN#23E101518

CAL	ICV	CCV	Initials	Date	Time	Standard (mV)	Exp. Date	Lot #	Response (mV)	Deviation (mV)	Pass or Fail
CAL	ICV	CCV	MP	12/19/24	1055	200 mV	6/25	4011583	200.0 mV	—	P F
CAL	ICV	CCV	MP	12/20/24	0826	↓	↓	4011583	201.6 mV	-1.6	P F
CAL	ICV	CCV	MP	12/23/24	0814	↓	↓	4011583	202.4 mV	-2.4	P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F

Perform ICVs and CCVs only in "READ/RUN" mode.

CAL - Calibration; ICV - Initial Calibration Verification; and, CCV - Continuing Calibration Verification.

Deviation (%) = 100 - ((Response/Standard)*100)

FIELD INSTRUMENT CALIBRATION RECORDS - CALIBRATION LOG - PRP

Project Site/FacID:

(FSG) SWIMMING LES PALOSI

Calibrated by (Print)/Affiliation:

MAHAN PARSONS AECOM

Boldly "X" this box if there is qualified data on this page.

TURBIDITY (REFERENCE: DEP SOP FT 1600)

Meter/Instrument Name and Unique ID: Hach 2100Q SN#D00201

Std=0.1-10 NTU +/-10%

Std=11-40 NTU +/-8%

Std=41-100 NTU +/-4.5%

Std>100 NTU +/-5%

CAL	ICV	CCV	Initials	Date	Time	Standard (NTU)	Exp. Date	Lot #	Response (NTU)	Deviation (%)	Pass or Fail
CAL	ICV	CCV	MAP	12/16/24	1138	10	—	—	9.98	.2	(P) F
CAL	ICV	CCV				20	—	—	19.95	.25	(P) F
CAL	ICV	CCV				100	—	—	99.97	.3	(P) F
CAL	ICV	CCV		12/17/24	1242	10	—	—	19.99	.05	(P) F
CAL	ICV	CCV				20	—	—	100.04	.04	(P) F
CAL	ICV	CCV				100	—	—			P F
CAL	ICV	CCV		12/18/24	1025	10	—	—	9.97		P F
CAL	ICV	CCV				20	—	—	19.95		P F
CAL	ICV	CCV				100	—	—	99.96		P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F

pH (REFERENCE: DEP SOP FT 1100)

Acceptance Criteria +/-0.2 SU

Meter/Instrument Name and Unique ID: YSI Quatro SN#23E101518

CAL	ICV	CCV	Initials	Date	Time	Standard (SU)	Exp. Date	Lot #	Response (SU)	Deviation (SU)	Pass or Fail
CAL	ICV	CCV	MAP	12/16/24	1143	7.00	06/2026	C06248	7.00	—	(P) F
CAL	ICV	CCV				4.00	4/25	231019A	4.00	—	(P) F
CAL	ICV	CCV				10.00	04/2025	231019B	10.00	—	(P) F
CAL	ICV	CCV			1147	7.00	6/2026	C06248	7.01	-0.01	(P) F
CAL	ICV	CCV				4.00	4/25	231019A	4.02	-0.02	(P) F
CAL	ICV	CCV				10.00	04/2025	231019B	9.98	0.02	(P) F
CAL	ICV	CCV		12/17/24	1245	7.00	06/2026	C06248	7.02	-0.02	(P) F
CAL	ICV	CCV				4.00	4/25	231019A	4.03	-0.03	(P) F
CAL	ICV	CCV				10.00	04/2025	231019B	9.97	.03	(P) F
CAL	ICV	CCV	MAP	12/18/24	1028	7.00	06/26	C06248	7.02	—	(P) F
CAL	ICV	CCV				4.00	4/25	231019A	3.98	—	(P) F
CAL	ICV	CCV				10.00	04/25	231019B	9.97	—	(P) F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F
CAL	ICV	CCV									P F

Perform ICVs and CCVs only in "READ/RUN" mode.

CAL - Calibration; ICV - Initial Calibration Verification; and, CCV - Continuing Calibration Verification.

Deviation (%) = 100 - ((Response/Standard)*100)

FIELD INSTRUMENT CALIBRATION RECORDS - CALIBRATION LOG - PRP

Project Site/FacID:

(ES6) SWMA106 / LES PALO51

Calibrated by (Print)/Affiliation:

MADAN PARSOTIAN / AECOM

Boldly "X" this box if there is qualified data on this page.

Temperature (Quarterly)

Date of Last Temp Verification:

See log book:

DISSOLVED OXYGEN (DO) (REFERENCE: DEP SOP FT 1500)

Acceptance Criteria ± 0.3 mg DO/L

Meter/Instrument Name and Unique ID: YSI Quatro SN#23E101518

CAL	ICV	CCV	Initials	Date	Time	Standard (DO %)	Temp °C	DO Saturation mg/L (100%)**	Response DO (%)	Response mg DO/L	Deviation mg DO/L	Pass or Fail
CAL	ICV	CCV	MP	12/16/24	1125	100%	18.5	9.371	99.4	9.371	—	P F
CAL	ICV	CCV	↓	↓	1126	100%	18.6	9.352	99.5	9.352	—	P F
CAL	ICV	CCV	↓	12/17/24	1235	100%	27.3	7.926	99.9	7.912	0.014	P F
CAL	ICV	CCV	MP	12/18/24	1020	100%	22.7	8.627	99.4	8.601	—	P F
CAL	ICV	CCV	↓	↓	↓	100%	—	—	—	—	—	P F
CAL	ICV	CCV	↓	↓	↓	100%	—	—	—	—	—	P F

** See Table FS 2200-2 and/or Table FT 1500-1 for Dissolved Oxygen 100% Saturation (mg/L) corresponding to Temperature.

SPECIFIC CONDUCTANCE (REFERENCE: DEP SOP FT 1200)

Acceptance Criteria $\pm 5\%$ the standard

Meter/Instrument Name and Unique ID: YSI Quatro SN#23E101518

CAL	ICV	CCV	Initials	Date	Time	Standard (umho/cm)	Exp. Date	Lot #	Response (umho/cm)	Deviation (%)	Pass or Fail
CAL	ICV	CCV	MP	12/16/24	1138	100	12/2024	231213A	100	—	P F
CAL	ICV	CCV	↓	↓	↓	1413	01/2025	240718A	1413	—	P F
CAL	ICV	CCV	↓	↓	1132	100	12/2024	231213A	102.1	2.1	P F
CAL	ICV	CCV	↓	↓	↓	1413	01/2025	240718A	1417	0.28	P F
CAL	ICV	CCV	↓	12/17/24	1237	100	12/2024	231213A	103.2	3.2	P F
CAL	ICV	CCV	↓	↓	↓	1413	01/2025	240718A	1410	-0.21	P F
CAL	ICV	CCV	MP	12/18/24	1031	100	—	—	—	—	P F
CAL	ICV	CCV	↓	↓	↓	1413	—	—	—	—	P F
CAL	ICV	CCV	↓	↓	↓	—	—	—	—	—	P F

OXIDATION-REDUCTION POTENTIAL (ORP)

Acceptance Criteria ± 10 mV

REFERENCE: EPA Region 4, Operating Procedure, Field Measurement of Oxidation-Reduction Potential (ORP)

Meter/Instrument Name and Unique ID: YSI Quatro SN#23E101518

CAL	ICV	CCV	Initials	Date	Time	Standard (mV)	Exp. Date	Lot #	Response (mV)	Deviation (mV)	Pass or Fail
CAL	ICV	CCV	MP	12/16/24	1135	200mV	6/25	4011583	200.0mV	—	P F
CAL	ICV	CCV	↓	↓	1136	↓	↓	↓	201.2mV	-1.2	P F
CAL	ICV	CCV	↓	12/17/24	1240	↓	↓	↓	199.6mV	0.4	P F
CAL	ICV	CCV	MP	12/18/24	1035	200mV	6/25	4011583	201.4mV	—	P F
CAL	ICV	CCV	↓	↓	↓	—	—	—	—	—	P F
CAL	ICV	CCV	↓	↓	↓	—	—	—	—	—	P F

Perform ICVs and CCVs only in "READ/RUN" mode.

CAL - Calibration; ICV - Initial Calibration Verification; and, CCV - Continuing Calibration Verification.

Deviation (%) = $100 - ((\text{Response}/\text{Standard}) * 100)$

APPENDIX D

LABORATORY ANALYTICAL REPORTS

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chad Lee
AECOM Technical Services Inc
150 North Orange Avenue
Suite 200
Orlando, Florida 32801

Generated 12/30/2024 10:03:13 AM

JOB DESCRIPTION

NASA KSC VAB LTM - C5ES

JOB NUMBER

670-53608-1

Eurofins Orlando

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southeast, LLC Project Manager.

Authorization



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Authorized for release by
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Definitions/Glossary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM - C5ES

Job ID: 670-53608-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
U	Indicates that the compound was analyzed for but not detected.

Glossary

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

Case Narrative

Client: AECOM Technical Services Inc
Project: NASA KSC VAB LTM - C5ES

Job ID: 670-53608-1

Job ID: 670-53608-1

Eurofins Orlando

Job Narrative 670-53608-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 12/18/2024 4:30 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.1°C.

GC/MS VOA

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

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Detection Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM - C5ES

Job ID: 670-53608-1

Client Sample ID: C5ES-MW0004S-010.0-20241218

Lab Sample ID: 670-53608-1

No Detections.

Client Sample ID: C5ES-MW0004I-030.5-20241218

Lab Sample ID: 670-53608-2

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.53	I	1.0	0.53	ug/L	1		8260D	Total/NA

Client Sample ID: C5ES-MW0018S-009.5-20241218

Lab Sample ID: 670-53608-3

No Detections.

Client Sample ID: C5ES-MW0019I-018.0-20241218

Lab Sample ID: 670-53608-4

No Detections.

Client Sample ID: C5ES-MW0021-010.0-20241218

Lab Sample ID: 670-53608-5

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	7.6		1.0	0.53	ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	2.1		1.0	0.73	ug/L	1		8260D	Total/NA
Vinyl chloride	14		1.0	0.71	ug/L	1		8260D	Total/NA

Client Sample ID: C5ES-MW0022-010.0-20241218

Lab Sample ID: 670-53608-6

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	2.8		1.0	0.53	ug/L	1		8260D	Total/NA
Vinyl chloride	3.4		1.0	0.71	ug/L	1		8260D	Total/NA

Client Sample ID: C5ES-MW0023-010.0-20241218

Lab Sample ID: 670-53608-7

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	2.2		1.0	0.71	ug/L	1		8260D	Total/NA

Client Sample ID: C5ES-MW0024-022.5-20241218

Lab Sample ID: 670-53608-8

No Detections.

Client Sample ID: C5ES-MW0025-010.0-20241218

Lab Sample ID: 670-53608-9

No Detections.

Client Sample ID: C5ES-TB01-20241218

Lab Sample ID: 670-53608-10

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM - C5ES

Job ID: 670-53608-1

Client Sample ID: C5ES-MW0004S-010.0-20241218

Lab Sample ID: 670-53608-1

Date Collected: 12/18/24 12:19

Matrix: Water

Date Received: 12/18/24 16:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			12/27/24 13:30	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/27/24 13:30	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/27/24 13:30	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/27/24 13:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		40 - 146					12/27/24 13:30	1
4-Bromofluorobenzene (Surr)	100		41 - 142					12/27/24 13:30	1
Dibromofluoromethane (Surr)	96		53 - 146					12/27/24 13:30	1

Client Sample ID: C5ES-MW0004I-030.5-20241218

Lab Sample ID: 670-53608-2

Date Collected: 12/18/24 12:47

Matrix: Water

Date Received: 12/18/24 16:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	0.53	I	1.0	0.53	ug/L			12/27/24 14:58	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/27/24 14:58	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/27/24 14:58	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/27/24 14:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		40 - 146					12/27/24 14:58	1
4-Bromofluorobenzene (Surr)	99		41 - 142					12/27/24 14:58	1
Dibromofluoromethane (Surr)	95		53 - 146					12/27/24 14:58	1

Client Sample ID: C5ES-MW0018S-009.5-20241218

Lab Sample ID: 670-53608-3

Date Collected: 12/18/24 11:21

Matrix: Water

Date Received: 12/18/24 16:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			12/27/24 15:15	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/27/24 15:15	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/27/24 15:15	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/27/24 15:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		40 - 146					12/27/24 15:15	1
4-Bromofluorobenzene (Surr)	100		41 - 142					12/27/24 15:15	1
Dibromofluoromethane (Surr)	97		53 - 146					12/27/24 15:15	1

Client Sample ID: C5ES-MW0019I-018.0-20241218

Lab Sample ID: 670-53608-4

Date Collected: 12/18/24 12:40

Matrix: Water

Date Received: 12/18/24 16:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			12/27/24 15:33	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/27/24 15:33	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/27/24 15:33	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/27/24 15:33	1

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Client Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM - C5ES

Job ID: 670-53608-1

Client Sample ID: C5ES-MW0019I-018.0-20241218

Lab Sample ID: 670-53608-4

Date Collected: 12/18/24 12:40

Matrix: Water

Date Received: 12/18/24 16:30

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		40 - 146		12/27/24 15:33	1
4-Bromofluorobenzene (Surr)	100		41 - 142		12/27/24 15:33	1
Dibromofluoromethane (Surr)	97		53 - 146		12/27/24 15:33	1

Client Sample ID: C5ES-MW0021-010.0-20241218

Lab Sample ID: 670-53608-5

Date Collected: 12/18/24 11:12

Matrix: Water

Date Received: 12/18/24 16:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	7.6		1.0	0.53	ug/L			12/27/24 15:50	1
trans-1,2-Dichloroethene	2.1		1.0	0.73	ug/L			12/27/24 15:50	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/27/24 15:50	1
Vinyl chloride	14		1.0	0.71	ug/L			12/27/24 15:50	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Toluene-d8 (Surr)	98		40 - 146		12/27/24 15:50	1			
4-Bromofluorobenzene (Surr)	98		41 - 142		12/27/24 15:50	1			
Dibromofluoromethane (Surr)	96		53 - 146		12/27/24 15:50	1			

Client Sample ID: C5ES-MW0022-010.0-20241218

Lab Sample ID: 670-53608-6

Date Collected: 12/18/24 11:47

Matrix: Water

Date Received: 12/18/24 16:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	2.8		1.0	0.53	ug/L			12/27/24 16:08	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/27/24 16:08	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/27/24 16:08	1
Vinyl chloride	3.4		1.0	0.71	ug/L			12/27/24 16:08	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Toluene-d8 (Surr)	99		40 - 146		12/27/24 16:08	1			
4-Bromofluorobenzene (Surr)	100		41 - 142		12/27/24 16:08	1			
Dibromofluoromethane (Surr)	97		53 - 146		12/27/24 16:08	1			

Client Sample ID: C5ES-MW0023-010.0-20241218

Lab Sample ID: 670-53608-7

Date Collected: 12/18/24 12:57

Matrix: Water

Date Received: 12/18/24 16:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			12/27/24 16:25	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/27/24 16:25	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/27/24 16:25	1
Vinyl chloride	2.2		1.0	0.71	ug/L			12/27/24 16:25	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Toluene-d8 (Surr)	100		40 - 146		12/27/24 16:25	1			
4-Bromofluorobenzene (Surr)	97		41 - 142		12/27/24 16:25	1			
Dibromofluoromethane (Surr)	97		53 - 146		12/27/24 16:25	1			

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Client Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM - C5ES

Job ID: 670-53608-1

Client Sample ID: C5ES-MW0024-022.5-20241218

Lab Sample ID: 670-53608-8

Date Collected: 12/18/24 12:22

Matrix: Water

Date Received: 12/18/24 16:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			12/27/24 16:43	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/27/24 16:43	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/27/24 16:43	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/27/24 16:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		40 - 146					12/27/24 16:43	1
4-Bromofluorobenzene (Surr)	98		41 - 142					12/27/24 16:43	1
Dibromofluoromethane (Surr)	97		53 - 146					12/27/24 16:43	1

Client Sample ID: C5ES-MW0025-010.0-20241218

Lab Sample ID: 670-53608-9

Date Collected: 12/18/24 11:58

Matrix: Water

Date Received: 12/18/24 16:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			12/27/24 17:00	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/27/24 17:00	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/27/24 17:00	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/27/24 17:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		40 - 146					12/27/24 17:00	1
4-Bromofluorobenzene (Surr)	100		41 - 142					12/27/24 17:00	1
Dibromofluoromethane (Surr)	96		53 - 146					12/27/24 17:00	1

Client Sample ID: C5ES-TB01-20241218

Lab Sample ID: 670-53608-10

Date Collected: 12/18/24 08:00

Matrix: Water

Date Received: 12/18/24 16:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			12/27/24 14:40	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/27/24 14:40	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/27/24 14:40	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/27/24 14:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		40 - 146					12/27/24 14:40	1
4-Bromofluorobenzene (Surr)	99		41 - 142					12/27/24 14:40	1
Dibromofluoromethane (Surr)	97		53 - 146					12/27/24 14:40	1

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Surrogate Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM - C5ES

Job ID: 670-53608-1

Method: 8260D - Volatile Organic Compounds by GC/MS
Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
Lab Sample ID	Client Sample ID	TOL (40-146)	BFB (41-142)	DBFM (53-146)
670-53608-1	C5ES-MW0004S-010.0-20241218	97	100	96
670-53608-1 MS	C5ES-MW0004S-010.0-20241218	99	98	98
670-53608-1 MSD	C5ES-MW0004S-010.0-20241218	98	99	98
670-53608-2	C5ES-MW0004I-030.5-20241218	98	99	95
670-53608-3	C5ES-MW0018S-009.5-20241218	99	100	97
670-53608-4	C5ES-MW0019I-018.0-20241218	100	100	97
670-53608-5	C5ES-MW0021-010.0-20241218	98	98	96
670-53608-6	C5ES-MW0022-010.0-20241218	99	100	97
670-53608-7	C5ES-MW0023-010.0-20241218	100	97	97
670-53608-8	C5ES-MW0024-022.5-20241218	98	98	97
670-53608-9	C5ES-MW0025-010.0-20241218	99	100	96
670-53608-10	C5ES-TB01-20241218	100	99	97
LCS 670-128879/4	Lab Control Sample	97	101	97
MB 670-128879/7	Method Blank	99	97	96
Surrogate Legend				
TOL = Toluene-d8 (Surr)				
BFB = 4-Bromofluorobenzene (Surr)				
DBFM = Dibromofluoromethane (Surr)				

QC Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM - C5ES

Job ID: 670-53608-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 670-128879/7

Matrix: Water

Analysis Batch: 128879

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	0.53	g	1.0	0.53	24/L			11/07/24, 13:13	1
trans-1,2-Dichloroethene	0.73	g	1.0	0.73	24/L			11/07/24, 13:13	1
Trichloroethene	0.89	g	1.0	0.89	24/L			11/07/24, 13:13	1
Vinyl chloride	0.71	g	1.0	0.71	24/L			11/07/24, 13:13	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		74 - 071		06/25/25 03:03	0
7-Bromofluorobenzene (Surr)	9/		70 - 076		06/25/25 03:03	0
Dibromofluoromethane (Surr)	91		53 - 071		06/25/25 03:03	0

Lab Sample ID: LCS 670-128879/4

Matrix: Water

Analysis Batch: 128879

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
cis-1,2-Dichloroethene	0.00	19.4		24/L		97	56 - 108
trans-1,2-Dichloroethene	0.00	19.4		24/L		97	5, - 13,
Trichloroethene	0.00	19.5		24/L		98	60 - 135
Vinyl chloride	0.00	17.7		24/L		89	00 - 167

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	9/		74 - 071
7-Bromofluorobenzene (Surr)	040		70 - 076
Dibromofluoromethane (Surr)	9/		53 - 071

Lab Sample ID: 670-53608-1 MS

Matrix: Water

Analysis Batch: 128879

Client Sample ID: C5ES-MW0004S-010.0-20241218

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
cis-1,2-Dichloroethene	0.53	g	0.00	18.4		24/L		90	56 - 108
trans-1,2-Dichloroethene	0.73	g	0.00	18.8		24/L		90	5, - 13,
Trichloroethene	0.89	g	0.00	18.1		24/L		91	60 - 135
Vinyl chloride	0.71	g	0.00	19.0		24/L		96	00 - 167

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	99		74 - 071
7-Bromofluorobenzene (Surr)	98		70 - 076
Dibromofluoromethane (Surr)	98		53 - 071

Lab Sample ID: 670-53608-1 MSD

Matrix: Water

Analysis Batch: 128879

Client Sample ID: C5ES-MW0004S-010.0-20241218

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
cis-1,2-Dichloroethene	0.53	g	0.00	19.5		24/L		98	56 - 108	6	17
trans-1,2-Dichloroethene	0.73	g	0.00	19.1		24/L		95	5, - 13,		00
Trichloroethene	0.89	g	0.00	19.1		24/L		96	60 - 135	6	00

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QC Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM - C5ES

Job ID: 670-53608-1

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

Lab Sample ID: 670-53608-1 MSD					Client Sample ID: C5ES-MW0004S-010.0-20241218							
Matrix: Water					Prep Type: Total/NA							
Analysis Batch: 128879												
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit	
Vinyl chloride	0.071	g	0.000	18.08		24/L		9,	0.0 - 167	U	U	
Surrogate	MSD %Recovery	MSD Qualifier	Limits									
Toluene-d8 (Surr)	98		74 - 071									
7-Bromofluorobenzene (Surr)	99		70 - 076									
Dibromofluoromethane (Surr)	98		53 - 071									

QC Association Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM - C5ES

Job ID: 670-53608-1

GC/MS VOA

Analysis Batch: 128879

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-53608-1	C5ES-MW0004S-010.0-20241218	Total/NA	Water	8260D	
670-53608-2	C5ES-MW0004I-030.5-20241218	Total/NA	Water	8260D	
670-53608-3	C5ES-MW0018S-009.5-20241218	Total/NA	Water	8260D	
670-53608-4	C5ES-MW0019I-018.0-20241218	Total/NA	Water	8260D	
670-53608-5	C5ES-MW0021-010.0-20241218	Total/NA	Water	8260D	
670-53608-6	C5ES-MW0022-010.0-20241218	Total/NA	Water	8260D	
670-53608-7	C5ES-MW0023-010.0-20241218	Total/NA	Water	8260D	
670-53608-8	C5ES-MW0024-022.5-20241218	Total/NA	Water	8260D	
670-53608-9	C5ES-MW0025-010.0-20241218	Total/NA	Water	8260D	
670-53608-10	C5ES-TB01-20241218	Total/NA	Water	8260D	
MB 670-128879/7	Method Blank	Total/NA	Water	8260D	
LCS 670-128879/4	Lab Control Sample	Total/NA	Water	8260D	
670-53608-1 MS	C5ES-MW0004S-010.0-20241218	Total/NA	Water	8260D	
670-53608-1 MSD	C5ES-MW0004S-010.0-20241218	Total/NA	Water	8260D	

Lab Chronicle

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM - C5ES

Job ID: 670-53608-1

Client Sample ID: C5ES-MW0004S-010.0-20241218

Lab Sample ID: 670-53608-1

Date Collected: 12/18/24 12:19

Matrix: Water

Date Received: 12/18/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	128879	ES	EET ORL	12/27/24 13:30

Client Sample ID: C5ES-MW0004I-030.5-20241218

Lab Sample ID: 670-53608-2

Date Collected: 12/18/24 12:47

Matrix: Water

Date Received: 12/18/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	128879	ES	EET ORL	12/27/24 14:58

Client Sample ID: C5ES-MW0018S-009.5-20241218

Lab Sample ID: 670-53608-3

Date Collected: 12/18/24 11:21

Matrix: Water

Date Received: 12/18/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	128879	ES	EET ORL	12/27/24 15:15

Client Sample ID: C5ES-MW0019I-018.0-20241218

Lab Sample ID: 670-53608-4

Date Collected: 12/18/24 12:40

Matrix: Water

Date Received: 12/18/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	128879	ES	EET ORL	12/27/24 15:33

Client Sample ID: C5ES-MW0021-010.0-20241218

Lab Sample ID: 670-53608-5

Date Collected: 12/18/24 11:12

Matrix: Water

Date Received: 12/18/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	128879	ES	EET ORL	12/27/24 15:50

Client Sample ID: C5ES-MW0022-010.0-20241218

Lab Sample ID: 670-53608-6

Date Collected: 12/18/24 11:47

Matrix: Water

Date Received: 12/18/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	128879	ES	EET ORL	12/27/24 16:08

Client Sample ID: C5ES-MW0023-010.0-20241218

Lab Sample ID: 670-53608-7

Date Collected: 12/18/24 12:57

Matrix: Water

Date Received: 12/18/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	128879	ES	EET ORL	12/27/24 16:25

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Lab Chronicle

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM - C5ES

Job ID: 670-53608-1

Client Sample ID: C5ES-MW0024-022.5-20241218
Date Collected: 12/18/24 12:22
Date Received: 12/18/24 16:30

Lab Sample ID: 670-53608-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	128879	ES	EET ORL	12/27/24 16:43

Client Sample ID: C5ES-MW0025-010.0-20241218
Date Collected: 12/18/24 11:58
Date Received: 12/18/24 16:30

Lab Sample ID: 670-53608-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	128879	ES	EET ORL	12/27/24 17:00

Client Sample ID: C5ES-TB01-20241218
Date Collected: 12/18/24 08:00
Date Received: 12/18/24 16:30

Lab Sample ID: 670-53608-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	128879	ES	EET ORL	12/27/24 14:40

Laboratory References:

EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

Accreditation/Certification Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM - C5ES

Job ID: 670-53608-1

Laboratory: Eurofins Orlando

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Florida	NELAP	E83018	06-30-25

1
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Method Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM - C5ES

Job ID: 670-53608-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET ORL
5030C	Purge and Trap	SW846	EET ORL

Protocol References:

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

Laboratory References:

EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

Sample Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM - C5ES

Job ID: 670-53608-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
670-53608-1	C5ES-MW0004S-010.0-20241218	Water	12/18/24 12:19	12/18/24 16:30
670-53608-2	C5ES-MW0004I-030.5-20241218	Water	12/18/24 12:47	12/18/24 16:30
670-53608-3	C5ES-MW0018S-009.5-20241218	Water	12/18/24 11:21	12/18/24 16:30
670-53608-4	C5ES-MW0019I-018.0-20241218	Water	12/18/24 12:40	12/18/24 16:30
670-53608-5	C5ES-MW0021-010.0-20241218	Water	12/18/24 11:12	12/18/24 16:30
670-53608-6	C5ES-MW0022-010.0-20241218	Water	12/18/24 11:47	12/18/24 16:30
670-53608-7	C5ES-MW0023-010.0-20241218	Water	12/18/24 12:57	12/18/24 16:30
670-53608-8	C5ES-MW0024-022.5-20241218	Water	12/18/24 12:22	12/18/24 16:30
670-53608-9	C5ES-MW0025-010.0-20241218	Water	12/18/24 11:58	12/18/24 16:30
670-53608-10	C5ES-TB01-20241218	Water	12/18/24 08:00	12/18/24 16:30

481 Newburyport Avenue
Altamonte Springs, FL 32701
Phone: 407-339-5984 Fax: 407-339-5985

Chain of Custody Record



Client Information		Lab PM: Dynicki, Kaitlin		Carrier Tracking No(s): 670-24376-10424.1	
Client Contact: Chad Lee		E-Mail: kaitlin.dylnicki@et.eurofinsus.com		Page: Page 1 of 1	
Company: AECOM Technical Services Inc		PWSID:		Job #:	
Address: 150 North Orange Avenue Suite 200		Due Date Requested:		Analysis Requested	
City: Orlando		TAT Requested (days): Standard			
State, Zip: FL, 32801		Compliance Project: Δ Yes Δ No			
Phone: 864-650-4338		PO #: 60737568.1.12 / PO Requested			
Email: chad.lee@aecom.com		WO #: 60737568.1.12			
Project Name: NASA KSC VAB LTM		Project #: 67006146			
Site: CS Electrical Station		SSOW#:			
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, G=grab, O=oil, A=air)
C5ES-MW0004S-010.0-20241218	12-18-24	1219	G	Water	
C5ES-MW0004I-030.5-20241218	12-18-24	1247	G	Water	
C5ES-MW0018S-009.5-20241218	12-18-24	1121	G	Water	
C5ES-MW0019I-018.0-20241218	12-18-24	1240	G	Water	
C5ES-MW0021-010.0-20241218	12-18-24	1144	G	Water	
C5ES-MW0022-010.0-20241218	12-18-24	1147	G	Water	
C5ES-MW0023-010.0-20241218	12-18-24	1257	G	Water	
C5ES-MW0024-022.5-20241218	12-18-24	1222	G	Water	
C5ES-MW0025-010.0-20241218	12-18-24	1158	G	Water	
C5ES-TB01-20241218	12-18-24	0800	G	Water	
Possible Hazard Identification		Poison B		Radiological	
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant		☐ Unknown		☐ Unknown	
Deliverable Requested: I, II, III, IV, Other (specify)		Date:		Time:	
Empty Kit Relinquished by:		Date:		Time:	
Relinquished by: [Signature]		Date/Time: 12-18-24 1630		Company: [Signature]	
Relinquished by:		Date/Time:		Company:	
Relinquished by:		Date/Time:		Company:	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks	

Login Sample Receipt Checklist

Client: AECOM Technical Services Inc

Job Number: 670-53608-1

Login Number: 53608

List Source: Eurofins Orlando

List Number: 1

Creator: Bittle, David W

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



ANALYTICAL REPORT

PREPARED FOR

Attn: Chad Lee
AECOM Technical Services Inc
150 North Orange Avenue
Suite 200
Orlando, Florida 32801

Generated 12/31/2024 10:42:56 AM

JOB DESCRIPTION

NASA KSC - VAB LTM Program FDTL
Former Development Testing Lab (FDTL)

JOB NUMBER

670-53789-1

Eurofins Orlando

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southeast, LLC Project Manager.

Authorization



Generated
12/31/2024 10:42:56 AM

Authorized for release by
Kaitlin Dylnicki, Project Manager
kaitlin.dylnicki@et.eurofinsus.com
(407)339-5984

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Definitions/Glossary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC - VAB LTM Program FDTL

Job ID: 670-53789-1
SDG: Former Development Testing Lab (FDTL)

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
U	Indicates that the compound was analyzed for but not detected.

Glossary

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

Case Narrative

Client: AECOM Technical Services Inc
Project: NASA KSC - VAB LTM Program FDTL

Job ID: 670-53789-1

Job ID: 670-53789-1

Eurofins Orlando

Job Narrative 670-53789-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 12/20/2024 3:05 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.2°C.

GC/MS VOA

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

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Detection Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC - VAB LTM Program FDTL

Job ID: 670-53789-1
SDG: Former Development Testing Lab (FDTL)

Client Sample ID: FDTL-IW0015S-010.0-20241219

Lab Sample ID: 670-53789-1

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.0		1.0	0.53	ug/L	1		8260D	Total/NA
Vinyl chloride	23		1.0	0.71	ug/L	1		8260D	Total/NA

Client Sample ID: FDTL-IW0007I-015.0-20241219

Lab Sample ID: 670-53789-2

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	10		1.0	0.53	ug/L	1		8260D	Total/NA
Vinyl chloride	21		1.0	0.71	ug/L	1		8260D	Total/NA

Client Sample ID: FDTL-IW0008I-015.0-20241219

Lab Sample ID: 670-53789-3

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	21		1.0	0.53	ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	0.95	I	1.0	0.73	ug/L	1		8260D	Total/NA
Vinyl chloride	52		1.0	0.71	ug/L	1		8260D	Total/NA

Client Sample ID: FDTL-IW0009I-015.0-20241220

Lab Sample ID: 670-53789-4

No Detections.

Client Sample ID: FDTL-IW0010I-015.0-20241219

Lab Sample ID: 670-53789-5

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	8.1		1.0	0.53	ug/L	1		8260D	Total/NA
Vinyl chloride	8.5		1.0	0.71	ug/L	1		8260D	Total/NA

Client Sample ID: FDTL-IW0014I-015.0-20241219

Lab Sample ID: 670-53789-6

No Detections.

Client Sample ID: FDTL-IW0017I-015.0-20241219

Lab Sample ID: 670-53789-7

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	3.9		1.0	0.53	ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	0.92	I	1.0	0.73	ug/L	1		8260D	Total/NA

Client Sample ID: FDTL-IW0019I-015.0-20241219

Lab Sample ID: 670-53789-8

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.5		1.0	0.53	ug/L	1		8260D	Total/NA
Vinyl chloride	16		1.0	0.71	ug/L	1		8260D	Total/NA

Client Sample ID: FDTL-SW0001-001.0-20241220

Lab Sample ID: 670-53789-9

No Detections.

Client Sample ID: FDTL-SW0002-001.0-20241220

Lab Sample ID: 670-53789-10

No Detections.

Client Sample ID: FDTL-SW0003-001.0-20241220

Lab Sample ID: 670-53789-11

No Detections.

Client Sample ID: FDTL-SW0004-001.0-20241220

Lab Sample ID: 670-53789-12

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	6.2		1.0	0.53	ug/L	1		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Orlando

Detection Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC - VAB LTM Program FDTL

Job ID: 670-53789-1
SDG: Former Developement Testing Lab (FDTL)

Client Sample ID: FDTL-SW0004-001.0-20241220 (Continued)

Lab Sample ID: 670-53789-12

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	10		1.0	0.71	ug/L	1		8260D	Total/NA

Client Sample ID: FDTL-SW0005-001.0-20241219

Lab Sample ID: 670-53789-13

No Detections.

Client Sample ID: FDTL-TB01-20241219

Lab Sample ID: 670-53789-14

No Detections.

Client Sample ID: FDTL-FD01-20241219

Lab Sample ID: 670-53789-15

No Detections.

Client Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC - VAB LTM Program FDTL

Job ID: 670-53789-1
SDG: Former Development Testing Lab (FDTL)

Client Sample ID: FDTL-IW0015S-010.0-20241219

Lab Sample ID: 670-53789-1

Date Collected: 12/19/24 15:32

Matrix: Water

Date Received: 12/20/24 15:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.94	U	1.0	0.94	ug/L			12/30/24 14:06	1
cis-1,2-Dichloroethene	1.0		1.0	0.53	ug/L			12/30/24 14:06	1
Tetrachloroethene	0.76	U	1.0	0.76	ug/L			12/30/24 14:06	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/30/24 14:06	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 14:06	1
Vinyl chloride	23		1.0	0.71	ug/L			12/30/24 14:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		40 - 146					12/30/24 14:06	1
4-Bromofluorobenzene (Surr)	103		41 - 142					12/30/24 14:06	1
Dibromofluoromethane (Surr)	102		53 - 146					12/30/24 14:06	1

Client Sample ID: FDTL-IW0007I-015.0-20241219

Lab Sample ID: 670-53789-2

Date Collected: 12/19/24 14:57

Matrix: Water

Date Received: 12/20/24 15:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.94	U	1.0	0.94	ug/L			12/30/24 15:47	1
cis-1,2-Dichloroethene	10		1.0	0.53	ug/L			12/30/24 15:47	1
Tetrachloroethene	0.76	U	1.0	0.76	ug/L			12/30/24 15:47	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/30/24 15:47	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 15:47	1
Vinyl chloride	21		1.0	0.71	ug/L			12/30/24 15:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		40 - 146					12/30/24 15:47	1
4-Bromofluorobenzene (Surr)	101		41 - 142					12/30/24 15:47	1
Dibromofluoromethane (Surr)	103		53 - 146					12/30/24 15:47	1

Client Sample ID: FDTL-IW0008I-015.0-20241219

Lab Sample ID: 670-53789-3

Date Collected: 12/19/24 15:22

Matrix: Water

Date Received: 12/20/24 15:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.94	U	1.0	0.94	ug/L			12/30/24 16:06	1
cis-1,2-Dichloroethene	21		1.0	0.53	ug/L			12/30/24 16:06	1
Tetrachloroethene	0.76	U	1.0	0.76	ug/L			12/30/24 16:06	1
trans-1,2-Dichloroethene	0.95 I		1.0	0.73	ug/L			12/30/24 16:06	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 16:06	1
Vinyl chloride	52		1.0	0.71	ug/L			12/30/24 16:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		40 - 146					12/30/24 16:06	1
4-Bromofluorobenzene (Surr)	105		41 - 142					12/30/24 16:06	1
Dibromofluoromethane (Surr)	103		53 - 146					12/30/24 16:06	1

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Client Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC - VAB LTM Program FDTL

Job ID: 670-53789-1
SDG: Former Development Testing Lab (FDTL)

Client Sample ID: FDTL-IW0009I-015.0-20241220

Lab Sample ID: 670-53789-4

Date Collected: 12/20/24 08:49

Matrix: Water

Date Received: 12/20/24 15:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.94	U	1.0	0.94	ug/L			12/30/24 16:26	1
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			12/30/24 16:26	1
Tetrachloroethene	0.76	U	1.0	0.76	ug/L			12/30/24 16:26	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/30/24 16:26	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 16:26	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/30/24 16:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		40 - 146		12/30/24 16:26	1
4-Bromofluorobenzene (Surr)	105		41 - 142		12/30/24 16:26	1
Dibromofluoromethane (Surr)	103		53 - 146		12/30/24 16:26	1

Client Sample ID: FDTL-IW0010I-015.0-20241219

Lab Sample ID: 670-53789-5

Date Collected: 12/19/24 10:56

Matrix: Water

Date Received: 12/20/24 15:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.94	U	1.0	0.94	ug/L			12/30/24 16:46	1
cis-1,2-Dichloroethene	8.1		1.0	0.53	ug/L			12/30/24 16:46	1
Tetrachloroethene	0.76	U	1.0	0.76	ug/L			12/30/24 16:46	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/30/24 16:46	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 16:46	1
Vinyl chloride	8.5		1.0	0.71	ug/L			12/30/24 16:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		40 - 146		12/30/24 16:46	1
4-Bromofluorobenzene (Surr)	101		41 - 142		12/30/24 16:46	1
Dibromofluoromethane (Surr)	102		53 - 146		12/30/24 16:46	1

Client Sample ID: FDTL-IW0014I-015.0-20241219

Lab Sample ID: 670-53789-6

Date Collected: 12/19/24 11:38

Matrix: Water

Date Received: 12/20/24 15:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.94	U	1.0	0.94	ug/L			12/30/24 17:05	1
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			12/30/24 17:05	1
Tetrachloroethene	0.76	U	1.0	0.76	ug/L			12/30/24 17:05	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/30/24 17:05	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 17:05	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/30/24 17:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		40 - 146		12/30/24 17:05	1
4-Bromofluorobenzene (Surr)	100		41 - 142		12/30/24 17:05	1
Dibromofluoromethane (Surr)	104		53 - 146		12/30/24 17:05	1

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Client Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC - VAB LTM Program FDTL

Job ID: 670-53789-1
SDG: Former Development Testing Lab (FDTL)

Client Sample ID: FDTL-IW0017I-015.0-20241219

Lab Sample ID: 670-53789-7

Date Collected: 12/19/24 12:35

Matrix: Water

Date Received: 12/20/24 15:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.94	U	1.0	0.94	ug/L			12/30/24 17:25	1
cis-1,2-Dichloroethene	3.9		1.0	0.53	ug/L			12/30/24 17:25	1
Tetrachloroethene	0.76	U	1.0	0.76	ug/L			12/30/24 17:25	1
trans-1,2-Dichloroethene	0.92	I	1.0	0.73	ug/L			12/30/24 17:25	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 17:25	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/30/24 17:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		40 - 146		12/30/24 17:25	1
4-Bromofluorobenzene (Surr)	102		41 - 142		12/30/24 17:25	1
Dibromofluoromethane (Surr)	103		53 - 146		12/30/24 17:25	1

Client Sample ID: FDTL-IW0019I-015.0-20241219

Lab Sample ID: 670-53789-8

Date Collected: 12/19/24 15:50

Matrix: Water

Date Received: 12/20/24 15:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.94	U	1.0	0.94	ug/L			12/30/24 17:44	1
cis-1,2-Dichloroethene	1.5		1.0	0.53	ug/L			12/30/24 17:44	1
Tetrachloroethene	0.76	U	1.0	0.76	ug/L			12/30/24 17:44	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/30/24 17:44	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 17:44	1
Vinyl chloride	16		1.0	0.71	ug/L			12/30/24 17:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		40 - 146		12/30/24 17:44	1
4-Bromofluorobenzene (Surr)	100		41 - 142		12/30/24 17:44	1
Dibromofluoromethane (Surr)	104		53 - 146		12/30/24 17:44	1

Client Sample ID: FDTL-SW0001-001.0-20241220

Lab Sample ID: 670-53789-9

Date Collected: 12/20/24 08:59

Matrix: Water

Date Received: 12/20/24 15:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.94	U	1.0	0.94	ug/L			12/30/24 18:04	1
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			12/30/24 18:04	1
Tetrachloroethene	0.76	U	1.0	0.76	ug/L			12/30/24 18:04	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/30/24 18:04	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 18:04	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/30/24 18:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		40 - 146		12/30/24 18:04	1
4-Bromofluorobenzene (Surr)	100		41 - 142		12/30/24 18:04	1
Dibromofluoromethane (Surr)	103		53 - 146		12/30/24 18:04	1

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Client Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC - VAB LTM Program FDTL

Job ID: 670-53789-1
SDG: Former Development Testing Lab (FDTL)

Client Sample ID: FDTL-SW0002-001.0-20241220

Lab Sample ID: 670-53789-10

Date Collected: 12/20/24 09:28

Matrix: Water

Date Received: 12/20/24 15:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.94	U	1.0	0.94	ug/L			12/30/24 18:23	1
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			12/30/24 18:23	1
Tetrachloroethene	0.76	U	1.0	0.76	ug/L			12/30/24 18:23	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/30/24 18:23	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 18:23	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/30/24 18:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		40 - 146		12/30/24 18:23	1
4-Bromofluorobenzene (Surr)	99		41 - 142		12/30/24 18:23	1
Dibromofluoromethane (Surr)	99		53 - 146		12/30/24 18:23	1

Client Sample ID: FDTL-SW0003-001.0-20241220

Lab Sample ID: 670-53789-11

Date Collected: 12/20/24 09:18

Matrix: Water

Date Received: 12/20/24 15:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.94	U	1.0	0.94	ug/L			12/30/24 18:43	1
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			12/30/24 18:43	1
Tetrachloroethene	0.76	U	1.0	0.76	ug/L			12/30/24 18:43	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/30/24 18:43	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 18:43	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/30/24 18:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		40 - 146		12/30/24 18:43	1
4-Bromofluorobenzene (Surr)	106		41 - 142		12/30/24 18:43	1
Dibromofluoromethane (Surr)	101		53 - 146		12/30/24 18:43	1

Client Sample ID: FDTL-SW0004-001.0-20241220

Lab Sample ID: 670-53789-12

Date Collected: 12/20/24 08:48

Matrix: Water

Date Received: 12/20/24 15:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.94	U	1.0	0.94	ug/L			12/30/24 19:03	1
cis-1,2-Dichloroethene	6.2		1.0	0.53	ug/L			12/30/24 19:03	1
Tetrachloroethene	0.76	U	1.0	0.76	ug/L			12/30/24 19:03	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/30/24 19:03	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 19:03	1
Vinyl chloride	10		1.0	0.71	ug/L			12/30/24 19:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		40 - 146		12/30/24 19:03	1
4-Bromofluorobenzene (Surr)	103		41 - 142		12/30/24 19:03	1
Dibromofluoromethane (Surr)	101		53 - 146		12/30/24 19:03	1

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Client Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC - VAB LTM Program FDTL

Job ID: 670-53789-1
SDG: Former Development Testing Lab (FDTL)

Client Sample ID: FDTL-SW0005-001.0-20241219

Lab Sample ID: 670-53789-13

Date Collected: 12/19/24 11:10

Matrix: Water

Date Received: 12/20/24 15:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.94	U	1.0	0.94	ug/L			12/30/24 19:22	1
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			12/30/24 19:22	1
Tetrachloroethene	0.76	U	1.0	0.76	ug/L			12/30/24 19:22	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/30/24 19:22	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 19:22	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/30/24 19:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		40 - 146		12/30/24 19:22	1
4-Bromofluorobenzene (Surr)	102		41 - 142		12/30/24 19:22	1
Dibromofluoromethane (Surr)	101		53 - 146		12/30/24 19:22	1

Client Sample ID: FDTL-TB01-20241219

Lab Sample ID: 670-53789-14

Date Collected: 12/19/24 08:00

Matrix: Water

Date Received: 12/20/24 15:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.94	U	1.0	0.94	ug/L			12/30/24 19:42	1
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			12/30/24 19:42	1
Tetrachloroethene	0.76	U	1.0	0.76	ug/L			12/30/24 19:42	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/30/24 19:42	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 19:42	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/30/24 19:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		40 - 146		12/30/24 19:42	1
4-Bromofluorobenzene (Surr)	105		41 - 142		12/30/24 19:42	1
Dibromofluoromethane (Surr)	102		53 - 146		12/30/24 19:42	1

Client Sample ID: FDTL-FD01-20241219

Lab Sample ID: 670-53789-15

Date Collected: 12/19/24 11:41

Matrix: Water

Date Received: 12/20/24 15:05

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	0.94	U	1.0	0.94	ug/L			12/30/24 20:01	1
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			12/30/24 20:01	1
Tetrachloroethene	0.76	U	1.0	0.76	ug/L			12/30/24 20:01	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/30/24 20:01	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 20:01	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/30/24 20:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		40 - 146		12/30/24 20:01	1
4-Bromofluorobenzene (Surr)	106		41 - 142		12/30/24 20:01	1
Dibromofluoromethane (Surr)	104		53 - 146		12/30/24 20:01	1

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Surrogate Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC - VAB LTM Program FDTL

Job ID: 670-53789-1
SDG: Former Development Testing Lab (FDTL)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		TOL (40-146)	BFB (41-142)	DBFM (53-146)
670-53789-1	FDTL-IW0015S-010.0-20241219	98	103	102
670-53789-1 MS	FDTL-IW0015S-010.0-20241219	99	98	104
670-53789-1 MSD	FDTL-IW0015S-010.0-20241219	98	95	103
670-53789-2	FDTL-IW0007I-015.0-20241219	99	101	103
670-53789-3	FDTL-IW0008I-015.0-20241219	100	105	103
670-53789-4	FDTL-IW0009I-015.0-20241220	99	105	103
670-53789-5	FDTL-IW0010I-015.0-20241219	100	101	102
670-53789-6	FDTL-IW0014I-015.0-20241219	99	100	104
670-53789-7	FDTL-IW0017I-015.0-20241219	99	102	103
670-53789-8	FDTL-IW0019I-015.0-20241219	98	100	104
670-53789-9	FDTL-SW0001-001.0-20241220	98	100	103
670-53789-10	FDTL-SW0002-001.0-20241220	99	99	99
670-53789-11	FDTL-SW0003-001.0-20241220	97	106	101
670-53789-12	FDTL-SW0004-001.0-20241220	100	103	101
670-53789-13	FDTL-SW0005-001.0-20241219	100	102	101
670-53789-14	FDTL-TB01-20241219	100	105	102
670-53789-15	FDTL-FD01-20241219	100	106	104
LCS 670-129114/4	Lab Control Sample	98	96	103
MB 670-129114/7	Method Blank	99	105	101

Surrogate Legend

TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane (Surr)

QC Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC - VAB LTM Program FDTL

Job ID: 670-53789-1
SDG: Former Development Testing Lab (FDTL)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 670-129114/7

Matrix: Water

Analysis Batch: 129114

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	040U	u	140	040U	2g/L			1, /30/, U 13:U7	1
cis-1., -Dichloroethene	0453	u	140	0453	2g/L			1, /30/, U 13:U7	1
Tetrachloroethene	0476	u	140	0476	2g/L			1, /30/, U 13:U7	1
trans-1., -Dichloroethene	0473	u	140	0473	2g/L			1, /30/, U 13:U7	1
Trichloroethene	0489	u	140	0489	2g/L			1, /30/, U 13:U7	1
Vinyl chloride	0471	u	140	0471	2g/L			1, /30/, U 13:U7	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		40 - 146		12/30/24 13:47	1
4-Bromofluorobenzene (Surr)	105		41 - 142		12/30/24 13:47	1
Dibromofluoromethane (Surr)	101		53 - 146		12/30/24 13:47	1

Lab Sample ID: LCS 670-129114/4

Matrix: Water

Analysis Batch: 129114

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	, 040	1745		2g/L		88	U7 - 139
cis-1., -Dichloroethene	, 040	1941		2g/L		95	56 - 1, 8
Tetrachloroethene	, 040	, 040U		2g/L		10,	60 - 1U7
trans-1., -Dichloroethene	, 040	1743		2g/L		86	5U - 13U
Trichloroethene	, 040	, 045		2g/L		10,	6, - 135
Vinyl chloride	, 040	, , 46		2g/L		113	, 0 - 167

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	98		40 - 146
4-Bromofluorobenzene (Surr)	96		41 - 142
Dibromofluoromethane (Surr)	103		53 - 146

Lab Sample ID: 670-53789-1 MS

Matrix: Water

Analysis Batch: 129114

Client Sample ID: FDTL-IW0015S-010.0-20241219

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	040U	u	, 040	1945		2g/L		97	U8 - 139
cis-1., -Dichloroethene	140		, 040	, 048		2g/L		99	56 - 1, 8
Tetrachloroethene	0476	u	, 040	, 145		2g/L		108	60 - 1U7
trans-1., -Dichloroethene	0473	u	, 040	1749		2g/L		90	5U - 13U
Trichloroethene	0489	u	, 040	, 040U		2g/L		10,	6, - 135
Vinyl chloride	, 3		, 040	U843		2g/L		1, U	, 0 - 167

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	99		40 - 146
4-Bromofluorobenzene (Surr)	98		41 - 142
Dibromofluoromethane (Surr)	104		53 - 146

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QC Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC - VAB LTM Program FDTL

Job ID: 670-53789-1
SDG: Former Development Testing Lab (FDTL)

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

Lab Sample ID: 670-53789-1 MSD				Client Sample ID: FDTL-IW0015S-010.0-20241219							
Matrix: Water				Prep Type: Total/NA							
Analysis Batch: 129114											
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits		Limit
1,1-Dichloroethene	040U	u	, 040	194		2g/L		96	09 - 139	1	16
cis-1., -Dichloroethene	140		, 040	, 140		2g/L		101	56 - 1, 8	,	17
Tetrachloroethene	0476	u	, 040	, 140		2g/L		109	60 - 107	,	, 1
trans-1., -Dichloroethene	0473	u	, 040	184		2g/L		91	50 - 130	1	, 0
Trichloroethene	0489	u	, 040	, 040		2g/L		100	6, - 135	,	, 0
Vinyl chloride	, 3		, 040	084		2g/L		1, 5	, 0 - 167	0	, 0
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
Toluene-d8 (Surr)	98		40 - 146								
4-Bromofluorobenzene (Surr)	95		41 - 142								
Dibromofluoromethane (Surr)	103		53 - 146								

QC Association Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC - VAB LTM Program FDTL

Job ID: 670-53789-1
SDG: Former Development Testing Lab (FDTL)

GC/MS VOA

Analysis Batch: 129114

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-53789-1	FDTL-IW0015S-010.0-20241219	Total/NA	Water	8260D	
670-53789-2	FDTL-IW0007I-015.0-20241219	Total/NA	Water	8260D	
670-53789-3	FDTL-IW0008I-015.0-20241219	Total/NA	Water	8260D	
670-53789-4	FDTL-IW0009I-015.0-20241220	Total/NA	Water	8260D	
670-53789-5	FDTL-IW0010I-015.0-20241219	Total/NA	Water	8260D	
670-53789-6	FDTL-IW0014I-015.0-20241219	Total/NA	Water	8260D	
670-53789-7	FDTL-IW0017I-015.0-20241219	Total/NA	Water	8260D	
670-53789-8	FDTL-IW0019I-015.0-20241219	Total/NA	Water	8260D	
670-53789-9	FDTL-SW0001-001.0-20241220	Total/NA	Water	8260D	
670-53789-10	FDTL-SW0002-001.0-20241220	Total/NA	Water	8260D	
670-53789-11	FDTL-SW0003-001.0-20241220	Total/NA	Water	8260D	
670-53789-12	FDTL-SW0004-001.0-20241220	Total/NA	Water	8260D	
670-53789-13	FDTL-SW0005-001.0-20241219	Total/NA	Water	8260D	
670-53789-14	FDTL-TB01-20241219	Total/NA	Water	8260D	
670-53789-15	FDTL-FD01-20241219	Total/NA	Water	8260D	
MB 670-129114/7	Method Blank	Total/NA	Water	8260D	
LCS 670-129114/4	Lab Control Sample	Total/NA	Water	8260D	
670-53789-1 MS	FDTL-IW0015S-010.0-20241219	Total/NA	Water	8260D	
670-53789-1 MSD	FDTL-IW0015S-010.0-20241219	Total/NA	Water	8260D	

Lab Chronicle

Client: AECOM Technical Services Inc
Project/Site: NASA KSC - VAB LTM Program FDTL

Job ID: 670-53789-1
SDG: Former Development Testing Lab (FDTL)

Client Sample ID: FDTL-IW0015S-010.0-20241219

Lab Sample ID: 670-53789-1

Date Collected: 12/19/24 15:32

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129114	AAM	EET ORL	12/30/24 14:06

Client Sample ID: FDTL-IW0007I-015.0-20241219

Lab Sample ID: 670-53789-2

Date Collected: 12/19/24 14:57

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129114	AAM	EET ORL	12/30/24 15:47

Client Sample ID: FDTL-IW0008I-015.0-20241219

Lab Sample ID: 670-53789-3

Date Collected: 12/19/24 15:22

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129114	AAM	EET ORL	12/30/24 16:06

Client Sample ID: FDTL-IW0009I-015.0-20241220

Lab Sample ID: 670-53789-4

Date Collected: 12/20/24 08:49

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129114	AAM	EET ORL	12/30/24 16:26

Client Sample ID: FDTL-IW0010I-015.0-20241219

Lab Sample ID: 670-53789-5

Date Collected: 12/19/24 10:56

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129114	AAM	EET ORL	12/30/24 16:46

Client Sample ID: FDTL-IW0014I-015.0-20241219

Lab Sample ID: 670-53789-6

Date Collected: 12/19/24 11:38

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129114	AAM	EET ORL	12/30/24 17:05

Client Sample ID: FDTL-IW0017I-015.0-20241219

Lab Sample ID: 670-53789-7

Date Collected: 12/19/24 12:35

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129114	AAM	EET ORL	12/30/24 17:25

Lab Chronicle

Client: AECOM Technical Services Inc
Project/Site: NASA KSC - VAB LTM Program FDTL

Job ID: 670-53789-1
SDG: Former Development Testing Lab (FDTL)

Client Sample ID: FDTL-IW0019I-015.0-20241219

Lab Sample ID: 670-53789-8

Date Collected: 12/19/24 15:50

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129114	AAM	EET ORL	12/30/24 17:44

Client Sample ID: FDTL-SW0001-001.0-20241220

Lab Sample ID: 670-53789-9

Date Collected: 12/20/24 08:59

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129114	AAM	EET ORL	12/30/24 18:04

Client Sample ID: FDTL-SW0002-001.0-20241220

Lab Sample ID: 670-53789-10

Date Collected: 12/20/24 09:28

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129114	AAM	EET ORL	12/30/24 18:23

Client Sample ID: FDTL-SW0003-001.0-20241220

Lab Sample ID: 670-53789-11

Date Collected: 12/20/24 09:18

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129114	AAM	EET ORL	12/30/24 18:43

Client Sample ID: FDTL-SW0004-001.0-20241220

Lab Sample ID: 670-53789-12

Date Collected: 12/20/24 08:48

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129114	AAM	EET ORL	12/30/24 19:03

Client Sample ID: FDTL-SW0005-001.0-20241219

Lab Sample ID: 670-53789-13

Date Collected: 12/19/24 11:10

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129114	AAM	EET ORL	12/30/24 19:22

Client Sample ID: FDTL-TB01-20241219

Lab Sample ID: 670-53789-14

Date Collected: 12/19/24 08:00

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129114	AAM	EET ORL	12/30/24 19:42

Lab Chronicle

Client: AECOM Technical Services Inc
Project/Site: NASA KSC - VAB LTM Program FDTL

Job ID: 670-53789-1
SDG: Former Developement Testing Lab (FDTL)

Client Sample ID: FDTL-FD01-20241219
Date Collected: 12/19/24 11:41
Date Received: 12/20/24 15:05

Lab Sample ID: 670-53789-15
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129114	AAM	EET ORL	12/30/24 20:01

Laboratory References:
EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

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Accreditation/Certification Summary

Client: AECOM Technical Services Inc

Job ID: 670-53789-1

Project/Site: NASA KSC - VAB LTM Program FDTL

SDG: Former Developement Testing Lab (FDTL)

Laboratory: Eurofins Orlando

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Florida	NELAP	E83018	06-30-25

- 1
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- 9
- 10
- 11
- 12
- 13
- 14
- 15

Method Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC - VAB LTM Program FDTL

Job ID: 670-53789-1
SDG: Former Developement Testing Lab (FDTL)

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET ORL
5030C	Purge and Trap	SW846	EET ORL

Protocol References:

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

Laboratory References:

EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

Sample Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC - VAB LTM Program FDTL

Job ID: 670-53789-1
SDG: Former Development Testing Lab (FDTL)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
670-53789-1	FDTL-IW0015S-010.0-20241219	Water	12/19/24 15:32	12/20/24 15:05
670-53789-2	FDTL-IW0007I-015.0-20241219	Water	12/19/24 14:57	12/20/24 15:05
670-53789-3	FDTL-IW0008I-015.0-20241219	Water	12/19/24 15:22	12/20/24 15:05
670-53789-4	FDTL-IW0009I-015.0-20241220	Water	12/20/24 08:49	12/20/24 15:05
670-53789-5	FDTL-IW0010I-015.0-20241219	Water	12/19/24 10:56	12/20/24 15:05
670-53789-6	FDTL-IW0014I-015.0-20241219	Water	12/19/24 11:38	12/20/24 15:05
670-53789-7	FDTL-IW0017I-015.0-20241219	Water	12/19/24 12:35	12/20/24 15:05
670-53789-8	FDTL-IW0019I-015.0-20241219	Water	12/19/24 15:50	12/20/24 15:05
670-53789-9	FDTL-SW0001-001.0-20241220	Water	12/20/24 08:59	12/20/24 15:05
670-53789-10	FDTL-SW0002-001.0-20241220	Water	12/20/24 09:28	12/20/24 15:05
670-53789-11	FDTL-SW0003-001.0-20241220	Water	12/20/24 09:18	12/20/24 15:05
670-53789-12	FDTL-SW0004-001.0-20241220	Water	12/20/24 08:48	12/20/24 15:05
670-53789-13	FDTL-SW0005-001.0-20241219	Water	12/19/24 11:10	12/20/24 15:05
670-53789-14	FDTL-TB01-20241219	Water	12/19/24 08:00	12/20/24 15:05
670-53789-15	FDTL-FD01-20241219	Water	12/19/24 11:41	12/20/24 15:05

Login Sample Receipt Checklist

Client: AECOM Technical Services Inc

Job Number: 670-53789-1

SDG Number: Former Developement Testing Lab (FDTL)

Login Number: 53789

List Source: Eurofins Orlando

List Number: 1

Creator: Contreras, Steven

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



ANALYTICAL REPORT

PREPARED FOR

Attn: Chad Lee
AECOM Technical Services Inc.
150 North Orange Avenue
Suite 200
Orlando, Florida 32801

Generated 1/28/2025 3:50:32 PM Revision 1

JOB DESCRIPTION

NASA KSC VAB LTM - FS3

JOB NUMBER

670-53610-1

Eurofins Orlando

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southeast, LLC Project Manager.

Authorization



Authorized for release by
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Revision 1

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Definitions/Glossary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC VAB LTM - FS3

Job ID: 670-53610-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.

Glossary

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

Case Narrative

Client: AECOM Technical Services Inc.
Project: NASA KSC VAB LTM - FS3

Job ID: 670-53610-1

Job ID: 670-53610-1

Eurofins Orlando

Job Narrative 670-53610-1

REVISION

The report being provided is a revision of the original report sent on 12/27/2024. The report (revision 1) is being revised due to update to include dashes in the sample ID to match the chain of custody.

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 12/18/2024 4:30 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C.

GC/MS VOA

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

Eurofins Orlando

Detection Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC VAB LTM - FS3

Job ID: 670-53610-1

Client Sample ID: FS6-MW0001-030.0-20241218

Lab Sample ID: 670-53610-1

No Detections.

Client Sample ID: FS6-MW0002-025.0-20241216

Lab Sample ID: 670-53610-2

No Detections.

Client Sample ID: FS6-MW0003-025.0-20241218

Lab Sample ID: 670-53610-3

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	1.8		1.0	0.71	ug/L	1		8260D	Total/NA

Client Sample ID: FS6-TB01-20241216

Lab Sample ID: 670-53610-4

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC VAB LTM - FS3

Job ID: 670-53610-1

Client Sample ID: FS6-MW0001-030.0-20241218

Lab Sample ID: 670-53610-1

Date Collected: 12/18/24 14:17

Matrix: Water

Date Received: 12/18/24 16:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/26/24 15:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107		40 - 146					12/26/24 15:10	1
4-Bromofluorobenzene (Surr)	102		41 - 142					12/26/24 15:10	1
Dibromofluoromethane (Surr)	111		53 - 146					12/26/24 15:10	1

Client Sample ID: FS6-MW0002-025.0-20241216

Lab Sample ID: 670-53610-2

Date Collected: 12/16/24 12:47

Matrix: Water

Date Received: 12/18/24 16:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/26/24 16:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		40 - 146					12/26/24 16:20	1
4-Bromofluorobenzene (Surr)	99		41 - 142					12/26/24 16:20	1
Dibromofluoromethane (Surr)	107		53 - 146					12/26/24 16:20	1

Client Sample ID: FS6-MW0003-025.0-20241218

Lab Sample ID: 670-53610-3

Date Collected: 12/18/24 14:15

Matrix: Water

Date Received: 12/18/24 16:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	1.8		1.0	0.71	ug/L			12/26/24 16:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		40 - 146					12/26/24 16:38	1
4-Bromofluorobenzene (Surr)	102		41 - 142					12/26/24 16:38	1
Dibromofluoromethane (Surr)	107		53 - 146					12/26/24 16:38	1

Client Sample ID: FS6-TB01-20241216

Lab Sample ID: 670-53610-4

Date Collected: 12/16/24 08:00

Matrix: Water

Date Received: 12/18/24 16:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/26/24 16:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	106		40 - 146					12/26/24 16:55	1
4-Bromofluorobenzene (Surr)	101		41 - 142					12/26/24 16:55	1
Dibromofluoromethane (Surr)	110		53 - 146					12/26/24 16:55	1

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Surrogate Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC VAB LTM - FS3

Job ID: 670-53610-1

Method: 8260D - Volatile Organic Compounds by GC/MS
Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	TOL	BFB	DBFM					
		(40-146)	(41-142)	(53-146)					
670-53610-1	FS6-MW0001-030.0-20241218	107	102	111					
670-53610-1 MS	FS6-MW0001-030.0-20241218	98	96	102					
670-53610-1 MSD	FS6-MW0001-030.0-20241218	99	97	99					
670-53610-2	FS6-MW0002-025.0-20241216	106	99	107					
670-53610-3	FS6-MW0003-025.0-20241218	106	102	107					
670-53610-4	FS6-TB01-20241216	106	101	110					
LCS 670-128693/4	Lab Control Sample	104	96	106					
MB 670-128693/7	Method Blank	107	103	107					
Surrogate Legend									
TOL = Toluene-d8 (Surr)									
BFB = 4-Bromofluorobenzene (Surr)									
DBFM = Dibromofluoromethane (Surr)									

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC VAB LTM - FS3

Job ID: 670-53610-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 670-128693/7

Matrix: Water

Analysis Batch: 128693

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/26/24 14:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107		40 - 146					12/26/24 14:25	1
4-Bromofluorobenzene (Surr)	103		41 - 142					12/26/24 14:25	1
Dibromofluoromethane (Surr)	107		53 - 146					12/26/24 14:25	1

Lab Sample ID: LCS 670-128693/4

Matrix: Water

Analysis Batch: 128693

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	20.0	19.5		ug/L		98	20 - 167
Surrogate	%Recovery	Qualifier	Limits				
Toluene-d8 (Surr)	104		40 - 146				
4-Bromofluorobenzene (Surr)	96		41 - 142				
Dibromofluoromethane (Surr)	106		53 - 146				

Lab Sample ID: 670-53610-1 MS

Matrix: Water

Analysis Batch: 128693

Client Sample ID: FS6-MW0001-030.0-20241218

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	0.71	U	20.0	19.5		ug/L		97	20 - 167
Surrogate	%Recovery	Qualifier	Limits						
Toluene-d8 (Surr)	98		40 - 146						
4-Bromofluorobenzene (Surr)	96		41 - 142						
Dibromofluoromethane (Surr)	102		53 - 146						

Lab Sample ID: 670-53610-1 MSD

Matrix: Water

Analysis Batch: 128693

Client Sample ID: FS6-MW0001-030.0-20241218

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Vinyl chloride	0.71	U	20.0	19.9		ug/L		99	20 - 167	2	24
Surrogate	%Recovery	Qualifier	Limits								
Toluene-d8 (Surr)	99		40 - 146								
4-Bromofluorobenzene (Surr)	97		41 - 142								
Dibromofluoromethane (Surr)	99		53 - 146								

Eurofins Orlando

QC Association Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC VAB LTM - FS3

Job ID: 670-53610-1

GC/MS VOA

Analysis Batch: 128693

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-53610-1	FS6-MW0001-030.0-20241218	Total/NA	Water	8260D	
670-53610-2	FS6-MW0002-025.0-20241216	Total/NA	Water	8260D	
670-53610-3	FS6-MW0003-025.0-20241218	Total/NA	Water	8260D	
670-53610-4	FS6-TB01-20241216	Total/NA	Water	8260D	
MB 670-128693/7	Method Blank	Total/NA	Water	8260D	
LCS 670-128693/4	Lab Control Sample	Total/NA	Water	8260D	
670-53610-1 MS	FS6-MW0001-030.0-20241218	Total/NA	Water	8260D	
670-53610-1 MSD	FS6-MW0001-030.0-20241218	Total/NA	Water	8260D	

Lab Chronicle

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC VAB LTM - FS3

Job ID: 670-53610-1

Client Sample ID: FS6-MW0001-030.0-20241218

Lab Sample ID: 670-53610-1

Date Collected: 12/18/24 14:17

Matrix: Water

Date Received: 12/18/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	128693	AAM	EET ORL	12/26/24 15:10

Client Sample ID: FS6-MW0002-025.0-20241216

Lab Sample ID: 670-53610-2

Date Collected: 12/16/24 12:47

Matrix: Water

Date Received: 12/18/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	128693	AAM	EET ORL	12/26/24 16:20

Client Sample ID: FS6-MW0003-025.0-20241218

Lab Sample ID: 670-53610-3

Date Collected: 12/18/24 14:15

Matrix: Water

Date Received: 12/18/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	128693	AAM	EET ORL	12/26/24 16:38

Client Sample ID: FS6-TB01-20241216

Lab Sample ID: 670-53610-4

Date Collected: 12/16/24 08:00

Matrix: Water

Date Received: 12/18/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	128693	AAM	EET ORL	12/26/24 16:55

Laboratory References:

EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

Accreditation/Certification Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC VAB LTM - FS3

Job ID: 670-53610-1

Laboratory: Eurofins Orlando

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Florida	NELAP	E83018	06-30-25

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Method Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC VAB LTM - FS3

Job ID: 670-53610-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET ORL
5030C	Purge and Trap	SW846	EET ORL

Protocol References:

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

Laboratory References:

EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

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15

Sample Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC VAB LTM - FS3

Job ID: 670-53610-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
670-53610-1	FS6-MW0001-030.0-20241218	Water	12/18/24 14:17	12/18/24 16:30
670-53610-2	FS6-MW0002-025.0-20241216	Water	12/16/24 12:47	12/18/24 16:30
670-53610-3	FS6-MW0003-025.0-20241218	Water	12/18/24 14:15	12/18/24 16:30
670-53610-4	FS6-TB01-20241216	Water	12/16/24 08:00	12/18/24 16:30

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Login Sample Receipt Checklist

Client: AECOM Technical Services Inc.

Job Number: 670-53610-1

Login Number: 53610

List Number: 1

Creator: James2, Michael

List Source: Eurofins Orlando

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



ANALYTICAL REPORT

PREPARED FOR

Attn: Chad Lee
AECOM Technical Services Inc
150 North Orange Avenue
Suite 200
Orlando, Florida 32801

Generated 12/31/2024 10:02:50 AM

JOB DESCRIPTION

NASA KSC VAB LTM LC39OGA

JOB NUMBER

670-53802-1

Eurofins Orlando

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southeast, LLC Project Manager.

Authorization



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12/31/2024 10:02:50 AM

Authorized for release by
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(407)339-5984

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Definitions/Glossary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM LC39OGA

Job ID: 670-53802-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
U	Indicates that the compound was analyzed for but not detected.

Glossary

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

Case Narrative

Client: AECOM Technical Services Inc
Project: NASA KSC VAB LTM LC39OGA

Job ID: 670-53802-1

Job ID: 670-53802-1

Eurofins Orlando

Job Narrative 670-53802-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 12/20/2024 3:05 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 5.2°C.

GC/MS VOA

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

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Detection Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM LC39OGA

Job ID: 670-53802-1

Client Sample ID: LC39OGA-MW0001-010.0-20241220

Lab Sample ID: 670-53802-1

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
trans-1,2-Dichloroethene	11		1.0	0.73	ug/L	1		8260D	Total/NA

Client Sample ID: LC39OGA-MW0002-010.0-20241220

Lab Sample ID: 670-53802-2

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
trans-1,2-Dichloroethene	2.6		1.0	0.73	ug/L	1		8260D	Total/NA

Client Sample ID: LC39OGA-MW0004-010.0-20241220

Lab Sample ID: 670-53802-3

No Detections.									
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Client Sample ID: LC39OGA-MW0005-010.0-20241220

Lab Sample ID: 670-53802-4

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.94	I	1.0	0.53	ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	3.8		1.0	0.73	ug/L	1		8260D	Total/NA

Client Sample ID: LC39OGA-MW0006-024.5-20241220

Lab Sample ID: 670-53802-5

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.59	I	1.0	0.53	ug/L	1		8260D	Total/NA

Client Sample ID: LC39OGA-MW0007-024.5-20241220

Lab Sample ID: 670-53802-6

No Detections.									
----------------	--	--	--	--	--	--	--	--	--

Client Sample ID: LC39OGA-MW0008-024.5-20241220

Lab Sample ID: 670-53802-7

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.0		1.0	0.53	ug/L	1		8260D	Total/NA

Client Sample ID: LC39OGA-MW0009-024.5-20241220

Lab Sample ID: 670-53802-8

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.4		1.0	0.53	ug/L	1		8260D	Total/NA

Client Sample ID: LC39OGA-MW0010-010.0-20241220

Lab Sample ID: 670-53802-9

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
trans-1,2-Dichloroethene	3.1		1.0	0.73	ug/L	1		8260D	Total/NA

Client Sample ID: LC39OGA-MW0011-010.0-20241220

Lab Sample ID: 670-53802-10

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	6.3		1.0	0.53	ug/L	1		8260D	Total/NA
Trichloroethene	1.3		1.0	0.89	ug/L	1		8260D	Total/NA

Client Sample ID: LC39OGA-MW0012-024.5-20241220

Lab Sample ID: 670-53802-11

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.7		1.0	0.53	ug/L	1		8260D	Total/NA

Client Sample ID: LC39OGA-FD01-20241220

Lab Sample ID: 670-53802-12

No Detections.									
----------------	--	--	--	--	--	--	--	--	--

This Detection Summary does not include radiochemical test results.

Eurofins Orlando

Detection Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM LC39OGA

Job ID: 670-53802-1

Client Sample ID: LC39OGA-SW0004-001.0-20241220

Lab Sample ID: 670-53802-13

No Detections.

Client Sample ID: LC39OGA-SW0005-001.0-20241220

Lab Sample ID: 670-53802-14

No Detections.

Client Sample ID: LC39OGA-SW0006-001.0-20241220

Lab Sample ID: 670-53802-15

No Detections.

Client Sample ID: LC39OGA-SW0007-001.0-20241220

Lab Sample ID: 670-53802-16

No Detections.

Client Sample ID: LC39OGA-TB01-20241220

Lab Sample ID: 670-53802-17

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM LC390GA

Job ID: 670-53802-1

Client Sample ID: LC3FTW. -2 4 0001-010M-909r 1990

Lab Sample ID: 670-53809-1

Date Ccldedte/ : 19000r 11:95

2 atxio: 4 atex

Date Redeihe/ : 19000r 15:05

2 etVc/ : S4 8r6 8960D - Oclatile T xganid Ccmpcun/ s by WC2 S

. nalyte	Result	Pualuex	GPL	2 DL	z nit	D	Gxepaxe/	. nalyAe/	Dil Qad
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			12/30/24 19:20	1
trans-1,2-Dichloroethene	11		1.0	0.73	ug/L			12/30/24 19:20	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 19:20	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/30/24 19:20	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Toluene-d8 (Surr)	977		47 - 940		9107014 9/ 317	9			
4-: roB orhuoro of enbene (Surr)	/ z		49 - 941		9107014 9/ 317	9			
Dif roB orhuoroB ethane (Surr)	/ z		52 - 940		9107014 9/ 317	9			

Client Sample ID: LC3FTW. -2 4 0009-010M-909r 1990

Lab Sample ID: 670-53809-9

Date Ccldedte/ : 19000r 11:17

2 atxio: 4 atex

Date Redeihe/ : 19000r 15:05

2 etVc/ : S4 8r6 8960D - Oclatile T xganid Ccmpcun/ s by WC2 S

. nalyte	Result	Pualuex	GPL	2 DL	z nit	D	Gxepaxe/	. nalyAe/	Dil Qad
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			12/30/24 19:37	1
trans-1,2-Dichloroethene	9M		1.0	0.73	ug/L			12/30/24 19:37	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 19:37	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/30/24 19:37	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Toluene-d8 (Surr)	977		47 - 940		9107014 9/ 32z	9			
4-: roB orhuoro of enbene (Surr)	/ 0		49 - 941		9107014 9/ 32z	9			
Dif roB orhuoroB ethane (Surr)	/ 5		52 - 940		9107014 9/ 32z	9			

Client Sample ID: LC3FTW. -2 4 000r-010M-909r 1990

Lab Sample ID: 670-53809-3

Date Ccldedte/ : 19000r 19:97

2 atxio: 4 atex

Date Redeihe/ : 19000r 15:05

2 etVc/ : S4 8r6 8960D - Oclatile T xganid Ccmpcun/ s by WC2 S

. nalyte	Result	Pualuex	GPL	2 DL	z nit	D	Gxepaxe/	. nalyAe/	Dil Qad
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			12/30/24 19:55	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/30/24 19:55	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 19:55	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/30/24 19:55	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Toluene-d8 (Surr)	//		47 - 940		9107014 9/ 355	9			
4-: roB orhuoro of enbene (Surr)	//		49 - 941		9107014 9/ 355	9			
Dif roB orhuoroB ethane (Surr)	/ 8		52 - 940		9107014 9/ 355	9			

Client Sample ID: LC3FTW. -2 4 0005-010M-909r 1990

Lab Sample ID: 670-53809-r

Date Ccldedte/ : 19000r 10:17

2 atxio: 4 atex

Date Redeihe/ : 19000r 15:05

2 etVc/ : S4 8r6 8960D - Oclatile T xganid Ccmpcun/ s by WC2 S

. nalyte	Result	Pualuex	GPL	2 DL	z nit	D	Gxepaxe/	. nalyAe/	Dil Qad
dis-1,2-Dichloroethene	0Mr	I	1.0	0.53	ug/L			12/30/24 20:12	1
trans-1,2-Dichloroethene	3M		1.0	0.73	ug/L			12/30/24 20:12	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 20:12	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/30/24 20:12	1

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Client Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM LC390GA

Job ID: 670-53802-1

Client Sample ID: LC3FTW. -2 4 0005-010M-909r 1990

Lab Sample ID: 670-53809-r

Date Collected: 19/00/0r 10:17

2 atxio: 4 atex

Date Redeihel: 19/00/0r 15:05

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	977		47 - 940		91027014 1731	9
4-: roB orhuorof enbene (Surr)	//		49 - 941		91027014 1731	9
Dif roB orhuoroB ethane (Surr)	/8		52 - 940		91027014 1731	9

Client Sample ID: LC3FTW. -2 4 0006-09r M-909r 1990

Lab Sample ID: 670-53809-5

Date Collected: 19/00/0r 11:57

2 atxio: 4 atex

Date Redeihel: 19/00/0r 15:05

2 etVc/ : S4 8r6 8960D - Oclatile Txganid Ccmpcun/ s by WCv2 S

. nalyte	Result	Pualiuex	GPL	2 DL	z nit	D	Gxepaxe/	. nalyAe/	Dil Qad
dis-1f9-DidVlcxcetVene	0MF I		1.0	0.53	ug/L			12/30/24 20:30	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/30/24 20:30	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 20:30	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/30/24 20:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	/8		47 - 940		91027014 1737	9
4-: roB orhuorof enbene (Surr)	/z		49 - 941		91027014 1737	9
Dif roB orhuoroB ethane (Surr)	/z		52 - 940		91027014 1737	9

Client Sample ID: LC3FTW. -2 4 0007-09r M-909r 1990

Lab Sample ID: 670-53809-6

Date Collected: 19/00/0r 11:rF

2 atxio: 4 atex

Date Redeihel: 19/00/0r 15:05

2 etVc/ : S4 8r6 8960D - Oclatile Txganid Ccmpcun/ s by WCv2 S

. nalyte	Result	Pualiuex	GPL	2 DL	z nit	D	Gxepaxe/	. nalyAe/	Dil Qad
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			12/30/24 20:47	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/30/24 20:47	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 20:47	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/30/24 20:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	//		47 - 940		91027014 1734z	9
4-: roB orhuorof enbene (Surr)	/8		49 - 941		91027014 1734z	9
Dif roB orhuoroB ethane (Surr)	/8		52 - 940		91027014 1734z	9

Client Sample ID: LC3FTW. -2 4 0008-09r M-909r 1990

Lab Sample ID: 670-53809-7

Date Collected: 19/00/0r 19:5F

2 atxio: 4 atex

Date Redeihel: 19/00/0r 15:05

2 etVc/ : S4 8r6 8960D - Oclatile Txganid Ccmpcun/ s by WCv2 S

. nalyte	Result	Pualiuex	GPL	2 DL	z nit	D	Gxepaxe/	. nalyAe/	Dil Qad
dis-1f9-DidVlcxcetVene	1M		1.0	0.53	ug/L			12/30/24 21:05	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/30/24 21:05	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 21:05	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/30/24 21:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	/8		47 - 940		91027014 19375	9
4-: roB orhuorof enbene (Surr)	/8		49 - 941		91027014 19375	9
Dif roB orhuoroB ethane (Surr)	/0		52 - 940		91027014 19375	9

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Client Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM LC390GA

Job ID: 670-53802-1

Client Sample ID: LC3FTW. -2 4 000F-09r M-909r 1990

Lab Sample ID: 670-53809-8

Date Collected: 19/00/0r 10:51

2 atxio: 4 atex

Date Redeixe: 19/00/0r 15:05

2 etVc/ : S4 8r6 8960D - Oclatile T xganid Ccmpcun/ s by WC2 S

. nalyte	Result	PualUex	GPL	2 DL	z nit	D	Gxepaxe/	. nalyAe/	Dil Qad
dis-1f9-DidVlcxcetVene	1M		1.0	0.53	ug/L			12/30/24 21:22	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/30/24 21:22	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 21:22	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/30/24 21:22	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Toluene-d8 (Surr)	977		47 - 940		9107014 19311	9			
4-: roB orhuoro of enbene (Surr)	/ z		49 - 941		9107014 19311	9			
Dif roB orhuoroB ethane (Surr)	/ 8		52 - 940		9107014 19311	9			

Client Sample ID: LC3FTW. -2 4 0010-010M-909r 1990

Lab Sample ID: 670-53809-F

Date Collected: 19/00/0r 10:90

2 atxio: 4 atex

Date Redeixe: 19/00/0r 15:05

2 etVc/ : S4 8r6 8960D - Oclatile T xganid Ccmpcun/ s by WC2 S

. nalyte	Result	PualUex	GPL	2 DL	z nit	D	Gxepaxe/	. nalyAe/	Dil Qad
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			12/30/24 21:40	1
trans-1f9-DidVlcxcetVene	3M		1.0	0.73	ug/L			12/30/24 21:40	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 21:40	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/30/24 21:40	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Toluene-d8 (Surr)	979		47 - 940		9107014 19317	9			
4-: roB orhuoro of enbene (Surr)	/ 0		49 - 941		9107014 19317	9			
Dif roB orhuoroB ethane (Surr)	//		52 - 940		9107014 19317	9			

Client Sample ID: LC3FTW. -2 4 0011-010M-909r 1990

Lab Sample ID: 670-53809-10

Date Collected: 19/00/0r 11:18

2 atxio: 4 atex

Date Redeixe: 19/00/0r 15:05

2 etVc/ : S4 8r6 8960D - Oclatile T xganid Ccmpcun/ s by WC2 S

. nalyte	Result	PualUex	GPL	2 DL	z nit	D	Gxepaxe/	. nalyAe/	Dil Qad
dis-1f9-DidVlcxcetVene	6M		1.0	0.53	ug/L			12/30/24 17:52	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/30/24 17:52	1
idVlcxcetVene	1M		1.0	0.89	ug/L			12/30/24 17:52	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/30/24 17:52	1
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Toluene-d8 (Surr)	977		47 - 940		9107014 9z31	9			
4-: roB orhuoro of enbene (Surr)	977		49 - 941		9107014 9z31	9			
Dif roB orhuoroB ethane (Surr)	/ 5		52 - 940		9107014 9z31	9			

Client Sample ID: LC3FTW. -2 4 0019-09r M-909r 1990

Lab Sample ID: 670-53809-11

Date Collected: 19/00/0r 11:r 7

2 atxio: 4 atex

Date Redeixe: 19/00/0r 15:05

2 etVc/ : S4 8r6 8960D - Oclatile T xganid Ccmpcun/ s by WC2 S

. nalyte	Result	PualUex	GPL	2 DL	z nit	D	Gxepaxe/	. nalyAe/	Dil Qad
dis-1f9-DidVlcxcetVene	1M		1.0	0.53	ug/L			12/30/24 21:57	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/30/24 21:57	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 21:57	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/30/24 21:57	1

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Client Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM LC390GA

Job ID: 670-53802-1

Client Sample ID: LC3FTW. -2 4 0019-09r M-909r 1990

Lab Sample ID: 670-53809-11

Date Collected: 19/00/0r 11:17

2 atxio: 4 atex

Date Redeihel: 19/00/0r 15:05

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	//		47 - 940		91027014 1935z	9
4-: roB orhuorof enbene (Surr)	//		49 - 941		91027014 1935z	9
Dif roB orhuoroB ethane (Surr)	/0		52 - 940		91027014 1935z	9

Client Sample ID: LC3FTW. -QD01-909r 1990

Lab Sample ID: 670-53809-19

Date Collected: 19/00/0r 11:30

2 atxio: 4 atex

Date Redeihel: 19/00/0r 15:05

2 etVc/ : S4 8r6 8960D - Oclatile Txganid Ccmpcun/ s by WCv2 S

. nalyte	Result	PualilUex	GPL	2 DL	z nit	D	Gxepaxe/	. nalyAe/	Dil Qad
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			12/30/24 22:15	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/30/24 22:15	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 22:15	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/30/24 22:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	977		47 - 940		91027014 1135	9
4-: roB orhuorof enbene (Surr)	/z		49 - 941		91027014 1135	9
Dif roB orhuoroB ethane (Surr)	//		52 - 940		91027014 1135	9

Client Sample ID: LC3FTW. -S4 000r -001M-909r 1990

Lab Sample ID: 670-53809-13

Date Collected: 19/00/0r 19:16

2 atxio: 4 atex

Date Redeihel: 19/00/0r 15:05

2 etVc/ : S4 8r6 8960D - Oclatile Txganid Ccmpcun/ s by WCv2 S

. nalyte	Result	PualilUex	GPL	2 DL	z nit	D	Gxepaxe/	. nalyAe/	Dil Qad
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			12/30/24 22:32	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/30/24 22:32	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 22:32	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/30/24 22:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	/8		47 - 940		91027014 1131	9
4-: roB orhuorof enbene (Surr)	/8		49 - 941		91027014 1131	9
Dif roB orhuoroB ethane (Surr)	/8		52 - 940		91027014 1131	9

Client Sample ID: LC3FTW. -S4 0005-001M-909r 1990

Lab Sample ID: 670-53809-1r

Date Collected: 19/00/0r 19:9r

2 atxio: 4 atex

Date Redeihel: 19/00/0r 15:05

2 etVc/ : S4 8r6 8960D - Oclatile Txganid Ccmpcun/ s by WCv2 S

. nalyte	Result	PualilUex	GPL	2 DL	z nit	D	Gxepaxe/	. nalyAe/	Dil Qad
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			12/30/24 22:50	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/30/24 22:50	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 22:50	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/30/24 22:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	977		47 - 940		91027014 1137	9
4-: roB orhuorof enbene (Surr)	/8		49 - 941		91027014 1137	9
Dif roB orhuoroB ethane (Surr)	//		52 - 940		91027014 1137	9

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Client Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM LC39OGA

Job ID: 670-53802-1

Client Sample ID: LC3FTW. -S4 0006-001M-909r 1990

Lab Sample ID: 670-53809-15

Date Collected: 19/00/0r 19:97

2 atxio: 4 atex

Date Redeihel: 19/00/0r 15:05

2 etVc/ : S4 8r6 8960D - Oclatile T xganid Ccmpcun/ s by WCv S

. nalyte	Result	Pualillex	GPL	2 DL	z nit	D	Gxepaxe/	. nalyAe/	Dil Qad
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			12/30/24 23:07	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/30/24 23:07	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 23:07	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/30/24 23:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	977		47 - 940		9107014 1237z	9
4-: roB orluorof enbene (Surr)	/ 5		49 - 941		9107014 1237z	9
Dif roB orluoroB ethane (Surr)	/ 8		52 - 940		9107014 1237z	9

Client Sample ID: LC3FTW. -S4 0007-001M-909r 1990

Lab Sample ID: 670-53809-16

Date Collected: 19/00/0r 19:39

2 atxio: 4 atex

Date Redeihel: 19/00/0r 15:05

2 etVc/ : S4 8r6 8960D - Oclatile T xganid Ccmpcun/ s by WCv S

. nalyte	Result	Pualillex	GPL	2 DL	z nit	D	Gxepaxe/	. nalyAe/	Dil Qad
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			12/30/24 23:25	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/30/24 23:25	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 23:25	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/30/24 23:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	/ 8		47 - 940		9107014 12315	9
4-: roB orluorof enbene (Surr)	/ /		49 - 941		9107014 12315	9
Dif roB orluoroB ethane (Surr)	/ 0		52 - 940		9107014 12315	9

Client Sample ID: LC3FTW. -, B01-909r 1990

Lab Sample ID: 670-53809-17

Date Collected: 19/00/0r 0F:00

2 atxio: 4 atex

Date Redeihel: 19/00/0r 15:05

2 etVc/ : S4 8r6 8960D - Oclatile T xganid Ccmpcun/ s by WCv S

. nalyte	Result	Pualillex	GPL	2 DL	z nit	D	Gxepaxe/	. nalyAe/	Dil Qad
cis-1,2-Dichloroethene	0.53	U	1.0	0.53	ug/L			12/30/24 19:02	1
trans-1,2-Dichloroethene	0.73	U	1.0	0.73	ug/L			12/30/24 19:02	1
Trichloroethene	0.89	U	1.0	0.89	ug/L			12/30/24 19:02	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			12/30/24 19:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	/ /		47 - 940		9107014 9/ 31	9
4-: roB orluorof enbene (Surr)	/ /		49 - 941		9107014 9/ 31	9
Dif roB orluoroB ethane (Surr)	/ 5		52 - 940		9107014 9/ 31	9

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Surrogate Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM LC39OGA

Job ID: 670-53802-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		TOL (40-146)	BFB (41-142)	DBFM (53-146)
670-53802-1	LC39OGA-MW0001-010.0-2024122	100	97	97
670-53802-2	LC39OGA-MW0002-010.0-202 41220	100	96	95
670-53802-3	LC39OGA-MW0004-010.0-202 41220	99	99	98
670-53802-4	LC39OGA-MW0005-010.0-202 41220	100	99	98
670-53802-5	LC39OGA-MW0006-024.5-202 41220	98	97	97
670-53802-6	LC39OGA-MW0007-024.5-202 41220	99	98	98
670-53802-7	LC39OGA-MW0008-024.5-202 41220	98	98	96
670-53802-8	LC39OGA-MW0009-024.5-202 41220	100	97	98
670-53802-9	LC39OGA-MW0010-010.0-202 41220	101	96	99
670-53802-10	LC39OGA-MW0011-010.0-202 41220	100	100	95
670-53802-10 MS	LC39OGA-MW0011-010.0-202 41220	98	99	96
670-53802-10 MSD	LC39OGA-MW0011-010.0-202 41220	99	99	99
670-53802-11	LC39OGA-MW0012-024.5-202 41220	99	99	96
670-53802-12	LC39OGA-FD01-20241220	100	97	99
670-53802-13	LC39OGA-SW0004-001.0-202 41220	98	98	98
670-53802-14	LC39OGA-SW0005-001.0-202 41220	100	98	99
670-53802-15	LC39OGA-SW0006-001.0-202 41220	100	95	98
670-53802-16	LC39OGA-SW0007-001.0-202 41220	98	99	96
670-53802-17	LC39OGA-TB01-20241220	99	99	95
LCS 670-129198/4	Lab Control Sample	98	99	97
MB 670-129198/7	Method Blank	98	98	97

Surrogate Legend

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

QC Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM LC390GA

Job ID: 670-53802-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 670-129198/7

Matri4: x ater

Analysis Batch: 129198

Client Sample ID: Method Blank

Wep Pye: Potal/TN

Nnalyte	MB Result	MB QualiUer	WQL	MDL	z nit	D	Wepared	NnalyFed	Dil Aac
cis-1.2-Dichloroethene	0053	u	100	0053	g4/L			12/30/2, 17:3,	1
trans-1.2-Dichloroethene	0073	u	100	0073	g4/L			12/30/2, 17:3,	1
Trichloroethene	0089	u	100	0089	g4/L			12/30/2, 17:3,	1
Vinyl chloride	0071	u	100	0071	g4/L			12/30/2, 17:3,	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		74 - 071		062 4267 03:/ 7	0
7-Bromofluorobenzene (Surr)	98		70 - 076		062 4267 03:/ 7	0
Dibromofluoromethane (Surr)	93		5/ - 071		062 4267 03:/ 7	0

Lab Sample ID: LCS 670-129198/f

Matri4: x ater

Analysis Batch: 129198

Client Sample ID: Lab Control Sample

Wep Pye: Potal/TN

Nnalyte	Spike Ndded	LCS Result	LCS QualiUer	z nit	D	%Rec	%Rec Limits
cis-1.2-Dichloroethene	2000	180		g4/L		92	56 - 128
trans-1.2-Dichloroethene	2000	170		g4/L		89	5, - 13,
Trichloroethene	2000	180		g4/L		91	62 - 135
Vinyl chloride	2000	190		g4/L		95	20 - 167

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	98		74 - 071
7-Bromofluorobenzene (Surr)	99		70 - 076
Dibromofluoromethane (Surr)	93		5/ - 071

Lab Sample ID: 670-35802-10 MS

Matri4: x ater

Analysis Batch: 129198

Client Sample ID: LC590GN-Mx 0011-010.0-202f 1220

Wep Pye: Potal/TN

Nnalyte	Sample Result	Sample QualiUer	Spike Ndded	MS Result	MS QualiUer	z nit	D	%Rec	%Rec Limits
cis-1.2-Dichloroethene	603		2000	2, 0		g4/L		93	56 - 128
trans-1.2-Dichloroethene	0073	u	2000	190		g4/L		97	5, - 13,
Trichloroethene	103		2000	210		g4/L		102	62 - 135
Vinyl chloride	0071	u	2000	180		g4/L		92	20 - 167

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	98		74 - 071
7-Bromofluorobenzene (Surr)	99		70 - 076
Dibromofluoromethane (Surr)	91		5/ - 071

Lab Sample ID: 670-35802-10 MSD

Matri4: x ater

Analysis Batch: 129198

Client Sample ID: LC590GN-Mx 0011-010.0-202f 1220

Wep Pye: Potal/TN

Nnalyte	Sample Result	Sample QualiUer	Spike Ndded	MSD Result	MSD QualiUer	z nit	D	%Rec	%Rec Limits	RWD	Limit
cis-1.2-Dichloroethene	603		2000	250		g4/L		93	56 - 128	0	17
trans-1.2-Dichloroethene	0073	u	2000	200		g4/L		101	5, - 13,		20
Trichloroethene	103		2000	210		g4/L		101	62 - 135	1	20

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QC Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM LC39OGA

Job ID: 670-53802-1

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

Lab Sample ID: 670-35802-10 MSD					Client Sample ID: LC59OGN-Mx 0011-010.0-202f 1220							
Matrix: x ater					Wep Pye: Potal/TN							
Analysis Batch: 129198												
Nalyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	z nit	D	%Rec	%Rec Limits	RWD	RWD Limit	
Vinyl chloride	0.71	u	20.0	19.0		g4/L		95	20 - 167	3	2,	
Surrogate	MSD %Recovery	MSD Qualifier	Limits									
Toluene-d8 (Surr)	99		74 - 071									
7-Bromofluorobenzene (Surr)	99		70 - 076									
Dibromofluoromethane (Surr)	99		5/ - 071									

QC Association Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM LC39OGA

Job ID: 670-53802-1

GC/MS VOA

Analysis Batch: 129198

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-53802-1	LC39OGA-MW0001-010.0-20241220	Total/NA	Water	8260D	
670-53802-2	LC39OGA-MW0002-010.0-20241220	Total/NA	Water	8260D	
670-53802-3	LC39OGA-MW0004-010.0-20241220	Total/NA	Water	8260D	
670-53802-4	LC39OGA-MW0005-010.0-20241220	Total/NA	Water	8260D	
670-53802-5	LC39OGA-MW0006-024.5-20241220	Total/NA	Water	8260D	
670-53802-6	LC39OGA-MW0007-024.5-20241220	Total/NA	Water	8260D	
670-53802-7	LC39OGA-MW0008-024.5-20241220	Total/NA	Water	8260D	
670-53802-8	LC39OGA-MW0009-024.5-20241220	Total/NA	Water	8260D	
670-53802-9	LC39OGA-MW0010-010.0-20241220	Total/NA	Water	8260D	
670-53802-10	LC39OGA-MW0011-010.0-20241220	Total/NA	Water	8260D	
670-53802-11	LC39OGA-MW0012-024.5-20241220	Total/NA	Water	8260D	
670-53802-12	LC39OGA-FD01-20241220	Total/NA	Water	8260D	
670-53802-13	LC39OGA-SW0004-001.0-20241220	Total/NA	Water	8260D	
670-53802-14	LC39OGA-SW0005-001.0-20241220	Total/NA	Water	8260D	
670-53802-15	LC39OGA-SW0006-001.0-20241220	Total/NA	Water	8260D	
670-53802-16	LC39OGA-SW0007-001.0-20241220	Total/NA	Water	8260D	
670-53802-17	LC39OGA-TB01-20241220	Total/NA	Water	8260D	
MB 670-129198/7	Method Blank	Total/NA	Water	8260D	
LCS 670-129198/4	Lab Control Sample	Total/NA	Water	8260D	
670-53802-10 MS	LC39OGA-MW0011-010.0-20241220	Total/NA	Water	8260D	
670-53802-10 MSD	LC39OGA-MW0011-010.0-20241220	Total/NA	Water	8260D	

Lab Chronicle

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM LC39OGA

Job ID: 670-53802-1

Client Sample ID: LC39OGA-MW0001-010.0-20241220

Lab Sample ID: 670-53802-1

Date Collected: 12/20/24 11:25

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129198	ES	EET ORL	12/30/24 19:20

Client Sample ID: LC39OGA-MW0002-010.0-20241220

Lab Sample ID: 670-53802-2

Date Collected: 12/20/24 11:17

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129198	ES	EET ORL	12/30/24 19:37

Client Sample ID: LC39OGA-MW0004-010.0-20241220

Lab Sample ID: 670-53802-3

Date Collected: 12/20/24 12:27

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129198	ES	EET ORL	12/30/24 19:55

Client Sample ID: LC39OGA-MW0005-010.0-20241220

Lab Sample ID: 670-53802-4

Date Collected: 12/20/24 10:17

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129198	ES	EET ORL	12/30/24 20:12

Client Sample ID: LC39OGA-MW0006-024.5-20241220

Lab Sample ID: 670-53802-5

Date Collected: 12/20/24 11:57

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129198	ES	EET ORL	12/30/24 20:30

Client Sample ID: LC39OGA-MW0007-024.5-20241220

Lab Sample ID: 670-53802-6

Date Collected: 12/20/24 11:49

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129198	ES	EET ORL	12/30/24 20:47

Client Sample ID: LC39OGA-MW0008-024.5-20241220

Lab Sample ID: 670-53802-7

Date Collected: 12/20/24 12:59

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129198	ES	EET ORL	12/30/24 21:05

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Lab Chronicle

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM LC39OGA

Job ID: 670-53802-1

Client Sample ID: LC39OGA-MW0009-024.5-20241220

Lab Sample ID: 670-53802-8

Date Collected: 12/20/24 10:51

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129198	ES	EET ORL	12/30/24 21:22

Client Sample ID: LC39OGA-MW0010-010.0-20241220

Lab Sample ID: 670-53802-9

Date Collected: 12/20/24 10:20

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129198	ES	EET ORL	12/30/24 21:40

Client Sample ID: LC39OGA-MW0011-010.0-20241220

Lab Sample ID: 670-53802-10

Date Collected: 12/20/24 11:18

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129198	ES	EET ORL	12/30/24 17:52

Client Sample ID: LC39OGA-MW0012-024.5-20241220

Lab Sample ID: 670-53802-11

Date Collected: 12/20/24 11:47

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129198	ES	EET ORL	12/30/24 21:57

Client Sample ID: LC39OGA-FD01-20241220

Lab Sample ID: 670-53802-12

Date Collected: 12/20/24 11:30

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129198	ES	EET ORL	12/30/24 22:15

Client Sample ID: LC39OGA-SW0004-001.0-20241220

Lab Sample ID: 670-53802-13

Date Collected: 12/20/24 12:16

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129198	ES	EET ORL	12/30/24 22:32

Client Sample ID: LC39OGA-SW0005-001.0-20241220

Lab Sample ID: 670-53802-14

Date Collected: 12/20/24 12:24

Matrix: Water

Date Received: 12/20/24 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129198	ES	EET ORL	12/30/24 22:50

Eurofins Orlando

Lab Chronicle

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM LC39OGA

Job ID: 670-53802-1

Client Sample ID: LC39OGA-SW0006-001.0-20241220
Date Collected: 12/20/24 12:27
Date Received: 12/20/24 15:05

Lab Sample ID: 670-53802-15
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129198	ES	EET ORL	12/30/24 23:07

Client Sample ID: LC39OGA-SW0007-001.0-20241220
Date Collected: 12/20/24 12:32
Date Received: 12/20/24 15:05

Lab Sample ID: 670-53802-16
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129198	ES	EET ORL	12/30/24 23:25

Client Sample ID: LC39OGA-TB01-20241220
Date Collected: 12/20/24 09:00
Date Received: 12/20/24 15:05

Lab Sample ID: 670-53802-17
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129198	ES	EET ORL	12/30/24 19:02

Laboratory References:

EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

Accreditation/Certification Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM LC39OGA

Job ID: 670-53802-1

Laboratory: Eurofins Orlando

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Florida	NELAP	E83018	06-30-25

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Method Summary

Ident AEOL MT cnhat dSi r nvsonPlt h
j vo/nhA ch: KEr E Vr I BEL W T W 34M2 E

Job ID: 670-53801-C

Method	Method Description	Protocol	Laboratory
8160D	BoiSAin MypSt dI ou doyt GP bR2I N r	r g 8n6	OOc M=W
5030I	j yvpn St GcvSd	r g 8n6	OOc M=W

Protocol References:

r g 8n6 " FcnPAT nAoGP , ovOsSiySA p r oieGg SPAn9j aRPnSINI anu dSi T nAoGP9caeGOGAot 9Kosnu bnvC486 Et GIAP UdGSAIP.

Laboratory References:

OOc M=W" Oyvofo P M MiSt G9n8CKnwbyvRlovAEsnt yn9EiASu of A r dvt pP9, W3170C9cOW(m07)334-548m

Sample Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM LC39OGA

Job ID: 670-53802-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
670-53802-1	LC39OGA-MW0001-010.0-20241220	Water	12/20/24 11:25	12/20/24 15:05
670-53802-2	LC39OGA-MW0002-010.0-20241220	Water	12/20/24 11:17	12/20/24 15:05
670-53802-3	LC39OGA-MW0004-010.0-20241220	Water	12/20/24 12:27	12/20/24 15:05
670-53802-4	LC39OGA-MW0005-010.0-20241220	Water	12/20/24 10:17	12/20/24 15:05
670-53802-5	LC39OGA-MW0006-024.5-20241220	Water	12/20/24 11:57	12/20/24 15:05
670-53802-6	LC39OGA-MW0007-024.5-20241220	Water	12/20/24 11:49	12/20/24 15:05
670-53802-7	LC39OGA-MW0008-024.5-20241220	Water	12/20/24 12:59	12/20/24 15:05
670-53802-8	LC39OGA-MW0009-024.5-20241220	Water	12/20/24 10:51	12/20/24 15:05
670-53802-9	LC39OGA-MW0010-010.0-20241220	Water	12/20/24 10:20	12/20/24 15:05
670-53802-10	LC39OGA-MW0011-010.0-20241220	Water	12/20/24 11:18	12/20/24 15:05
670-53802-11	LC39OGA-MW0012-024.5-20241220	Water	12/20/24 11:47	12/20/24 15:05
670-53802-12	LC39OGA-FD01-20241220	Water	12/20/24 11:30	12/20/24 15:05
670-53802-13	LC39OGA-SW0004-001.0-20241220	Water	12/20/24 12:16	12/20/24 15:05
670-53802-14	LC39OGA-SW0005-001.0-20241220	Water	12/20/24 12:24	12/20/24 15:05
670-53802-15	LC39OGA-SW0006-001.0-20241220	Water	12/20/24 12:27	12/20/24 15:05
670-53802-16	LC39OGA-SW0007-001.0-20241220	Water	12/20/24 12:32	12/20/24 15:05
670-53802-17	LC39OGA-TB01-20241220	Water	12/20/24 09:00	12/20/24 15:05

(1) **AA**=Ambient air, **AQ**=Air quality control, **ASB**=Asbestos, **CK**=Caulk, **DS**=Storm drain sediment, **GS**=Soil gas, **IC**=IDW Concrete, **MA**=Mastic, **PC**=Paint Chips, **SC**=Cement/Concrete, **SE**=Sediment, **SL**=Sludge, **SO**=Soil, **SQ**=Soil/Soil quality control, **SSD**=Subsurface sediment, **SW**=Surface water (< 6 in), **SW**=Swab or wipe, **TA**=Animal tissue, **TP**=Plant tissue, **TQ**=Tissue quality control, **WG**=Ground water, **WL**=Lachate, **WO**=Ocean water, **WP**=Drinking water, **WQ**=Water quality control, **WR**=Ground water effluent, **WS**=Surface water, **WU**=Storm water, **WW**=Waste water

(2) **Sample Type:** **AB**=Ambient Blk, **EB**=Equipment Blk, **FB**=Field Blk, **FD**=Field Duplicate Sample, **IDW**=Investigative-Derived Waste, **MIS**=Incremental Sampling Methodology, **N**=Normal Environmental Sample, **TB**=Trip Blk

(3) **Preservative added:** 4 **DEG** C-Cool to 4 degrees, **Dark**=Store in Darkness, store cool at 4 degrees, **H2SO4**=Hydrogen sulfate, **H3PO4**=Phosphoric acid, **H3PO4**=Adjust to pH < 2 with sulfuric acid, **HCl**=Adjust to pH < 2 with hydrochloric acid, **HNaO4**=Sodium bisulfate preservation, **HN03**=Adjust to pH < 2 with nitric acid, **MeOH**=Methanol preservation, **Na2O3S2**=Sodium thiosulfate, **Na2O3S2** 3/gal=Add 3 mL 10% sodium thiosulfate per 1-gal, **Na2O3S2** 4/4oz=4 drops of 10% sodium thiosulfate to 4 oz, **NaHSO4**=Adjust to pH < 2 with sodium hydrogen sulfate, **NaOH**=Adjust to pH > 12 with sodium hydroxide, **NaOH** > 9=Adjust to pH > 9 with sodium hydroxide, **VitC** 0.6/500=0.6 g of ascorbic acid to 500mLs, **ZnAct**=Adjust to pH > 9 with zinc acetate to 500mLs, **ZnAct**+**NaOH** > 9=Zinc acetate and NaOH to pH > 9; store cool at 4C. If **NO preservative** added leave blank

Rev 4/13

Login Sample Receipt Checklist

Client: AECOM Technical Services Inc

Job Number: 670-53802-1

Login Number: 53802

List Source: Eurofins Orlando

List Number: 1

Creator: Contreras, Steven

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



ANALYTICAL REPORT

PREPARED FOR

Attn: Chad Lee
AECOM Technical Services Inc.
150 North Orange Avenue
Suite 200
Orlando, Florida 32801

Generated 1/23/2025 1:15:35 PM Revision 1

JOB DESCRIPTION

NASA KSC VAB LTM - LES

JOB NUMBER

670-53607-1

Eurofins Orlando

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southeast, LLC Project Manager.

Authorization



Authorized for release by
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Revision 1

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Definitions/Glossary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC VAB LTM - LES

Job ID: 670-53607-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
F	Indicates that the compound was analyzed but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
f	Listed under the "Detected" column to indicate that the result is reported on a "Not Detected" basis.
g %	Percent Recovery
CRL	Contains Free Lipid
CRF	Column Flow in "Frit"
CNR	Contains No Free Lipid
DE%	Duplicate Error Ratio (normalized absolute difference)
Dil Rac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, %A, %E, IN	Indicates a Dilution, %Analysis, %Extraction, or additional Initial details/anion analysis of the sample
DLC	Decision Level Concentration (%Attached is/w)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recorded environmental Maximum Contaminant Level
MDA	Minimum Detectable Activity (%Attached is/w)
MDC	Minimum Detectable Concentration (%Attached is/w)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reported limit (or MDL or EDL is shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
%E%	Relative Error Ratio (%Attached is/w)
%L	"Reported" Limit or Requested Limit (%Attached is/w)
%PD	Relative Percent Difference, a measure of the relative difference between two points
TER	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: AECOM Technical Services Inc.
Project: NASA KSC VAB LTM - LES

Job ID: 670-53607-1

Job ID: 670-53607-1

Eurofins Orlando

Job Narrative 670-53607-1

REVISION

The report being provided is a revision of the original report sent on 12/26/2024. The report (revision 1) is being revised due to update of sample date to match the chain of custody.

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 12/18/2024 4:30 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.7°C.

GC Semi VOA

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

Eurofins Orlando

Detection Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC VAB LTM - LES

Job ID: 670-53607-1

Client Sample ID: LES-IW0005S-008.0-20241217

Lab Sample ID: 670-53607-1

No Detections.

Client Sample ID: LES-IW0009S-010.0-20241217

Lab Sample ID: 670-53607-2

No Detections.

Client Sample ID: LES-IW0011S-010.0-20241217

Lab Sample ID: 670-53607-3

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Petroleum Hydrocarbons (C8-C40)	2700		1000	340	ug/L	1		FL-PRO	Total/NA

Client Sample ID: LES-FD01-20241217

Lab Sample ID: 670-53607-4

No Detections.

Client Sample ID: LES-EB01-20241217

Lab Sample ID: 670-53607-5

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC VAB LTM - LES

Job ID: 670-53607-1

Client Sample ID: LES-IW0005S-008.0-20241217

Lab Sample ID: 670-53607-1

Date Collected: 12/17/24 13:47

Matrix: Water

Date Received: 12/18/24 16:30

Method: FL-DEP FL-PRO - Florida - Petroleum Range Organics (GC)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Petroleum Hydrocarbons (C8-C40)	340	U	1000	340	ug/L		12/19/24 19:47	12/20/24 12:44	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -terphenyl (Surr)	105		66 - 139				12/19/24 19:47	12/20/24 12:44	1
C35 (Surr)	89		40 - 129				12/19/24 19:47	12/20/24 12:44	1

Client Sample ID: LES-IW0009S-010.0-20241217

Lab Sample ID: 670-53607-2

Date Collected: 12/17/24 14:10

Matrix: Water

Date Received: 12/18/24 16:30

Method: FL-DEP FL-PRO - Florida - Petroleum Range Organics (GC)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Petroleum Hydrocarbons (C8-C40)	340	U	1000	340	ug/L		12/19/24 19:47	12/20/24 13:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -terphenyl (Surr)	106		66 - 139				12/19/24 19:47	12/20/24 13:06	1
C35 (Surr)	96		40 - 129				12/19/24 19:47	12/20/24 13:06	1

Client Sample ID: LES-IW0011S-010.0-20241217

Lab Sample ID: 670-53607-3

Date Collected: 12/17/24 14:25

Matrix: Water

Date Received: 12/18/24 16:30

Method: FL-DEP FL-PRO - Florida - Petroleum Range Organics (GC)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Petroleum Hydrocarbons (C8-C40)	2700		1000	340	ug/L		12/19/24 19:47	12/20/24 14:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -terphenyl (Surr)	104		66 - 139				12/19/24 19:47	12/20/24 14:12	1
C35 (Surr)	91		40 - 129				12/19/24 19:47	12/20/24 14:12	1

Client Sample ID: LES-FD01-20241217

Lab Sample ID: 670-53607-4

Date Collected: 12/17/24 13:50

Matrix: Water

Date Received: 12/18/24 16:30

Method: FL-DEP FL-PRO - Florida - Petroleum Range Organics (GC)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Petroleum Hydrocarbons (C8-C40)	340	U	1000	340	ug/L		12/19/24 19:47	12/20/24 11:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -terphenyl (Surr)	103		66 - 139				12/19/24 19:47	12/20/24 11:04	1
C35 (Surr)	95		40 - 129				12/19/24 19:47	12/20/24 11:04	1

Client Sample ID: LES-EB01-20241217

Lab Sample ID: 670-53607-5

Date Collected: 12/17/24 14:15

Matrix: Water

Date Received: 12/18/24 16:30

Method: FL-DEP FL-PRO - Florida - Petroleum Range Organics (GC)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Petroleum Hydrocarbons (C8-C40)	340	U	1000	340	ug/L		12/19/24 19:47	12/20/24 11:22	1

Eurofins Orlando

Client Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC VAB LTM - LES

Job ID: 670-53607-1

Client Sample ID: LES-EB01-20241217
Date Collected: 12/17/24 14:15
Date Received: 12/18/24 16:30

Lab Sample ID: 670-53607-5
Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o- terphenyl (Surr)	105		66 - 139	12/19/24 19:47	12/20/24 11:22	1
C35 (Surr)	96		40 - 129	12/19/24 19:47	12/20/24 11:22	1

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Surrogate Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC VAB LTM - LES

Job ID: 670-53607-1

Method: FL-PRO - Florida - Petroleum Range Organics (GC)
Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	OTP	C-35
		(66-139)	(40-129)
670-53607-1	LES-IW0005S-008.0-20241217	105	89
670-53607-2	LES-IW0009S-010.0-20241217	106	96
670-53607-2 MS	LES-IW0009S-010.0-20241217	92	81
670-53607-2 MSD	LES-IW0009S-010.0-20241217	93	89
670-53607-3	LES-IW0011S-010.0-20241217	104	91
670-53607-4	LES-FD01-20241217	103	95
670-53607-5	LES-EB01-20241217	105	96
LCS 670-128074/2-A	Lab Control Sample	101	92
LCSD 670-128074/3-A	Lab Control Sample Dup	95	89
MB 670-128074/1-A	Method Blank	100	91
Surrogate Legend			
OTP = o- terphenyl (Surr)			
C-35 = C35 (Surr)			

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC VAB LTM - LES

Job ID: 670-53607-1

Method: FL-PRO - Florida - Petroleum Range Organics (GC)

Lab Sample ID: MB 670-128074/1-A

Matrix: Water

Analysis Batch: 128142

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 128074

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Petroleum Hydrocarbons (TPH)	3HD	d	1000	3HD	4 (/L)		18/1/24 8H 1):H7	18/80/8H 10:31	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-terphenyl (Surr)	100		66 - 139	12/19/24 19:47	12/20/24 10:31	1
C35 (Surr)	91		40 - 129	12/19/24 19:47	12/20/24 10:31	1

Lab Sample ID: LCS 670-128074/2-A

Matrix: Water

Analysis Batch: 128142

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 128074

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Petroleum Hydrocarbons (TPH)	15500	1H700		4 (/L)		)5	55 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-terphenyl (Surr)	101		66 - 139
C35 (Surr)	92		40 - 129

Lab Sample ID: LCSD 670-128074/3-A

Matrix: Water

Analysis Batch: 128142

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 128074

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Petroleum Hydrocarbons (TPH)	15500	1H300		4 (/L)		)3	55 - 130	3	HD

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
o-terphenyl (Surr)	95		66 - 139
C35 (Surr)	89		40 - 129

Lab Sample ID: 670-53607-2 MS

Matrix: Water

Analysis Batch: 128142

Client Sample ID: LES-IW0009S-010.0-20241217

Prep Type: Total/NA

Prep Batch: 128074

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Petroleum Hydrocarbons (TPH)	3HD	d	15500	13500		4 (/L)		m7	55 - 185

Surrogate	MS %Recovery	MS Qualifier	Limits
o-terphenyl (Surr)	92		66 - 139
C35 (Surr)	81		40 - 129

E4rofins Orlan2o

QC Sample Results

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC VAB LTM - LES

Job ID: 670-53607-1

Method: FL-PRO - Florida - Petroleum Range Organics (GC) (Continued)

Lab Sample ID: 670-53607-2 MSD				Client Sample ID: LES-IW0009S-010.0-20241217							
Matrix: Water				Prep Type: Total/NA							
Analysis Batch: 128142				Prep Batch: 128074							
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limits
Total Petroleum Hydrocarbons (TPH)	340	d	15500	14100		µg/L		1	55 - 185	H	H
				MSD %Recovery	MSD Qualifier	Limits					
Surrogate	%Recovery	Qualifier	Limits								
o-terphenyl (Surr)	93		66 - 139								
C35 (Surr)	89		40 - 129								

QC Association Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC VAB LTM - LES

Job ID: 670-53607-1

GC Semi VOA

Prep Batch: 128074

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-53607-1	LES-IW0005S-008.0-20241217	Total/NA	Water	3511	
670-53607-2	LES-IW0009S-010.0-20241217	Total/NA	Water	3511	
670-53607-3	LES-IW0011S-010.0-20241217	Total/NA	Water	3511	
670-53607-4	LES-FD01-20241217	Total/NA	Water	3511	
670-53607-5	LES-EB01-20241217	Total/NA	Water	3511	
MB 670-128074/1-A	Method Blank	Total/NA	Water	3511	
LCS 670-128074/2-A	Lab Control Sample	Total/NA	Water	3511	
LCSD 670-128074/3-A	Lab Control Sample Dup	Total/NA	Water	3511	
670-53607-2 MS	LES-IW0009S-010.0-20241217	Total/NA	Water	3511	
670-53607-2 MSD	LES-IW0009S-010.0-20241217	Total/NA	Water	3511	

Analysis Batch: 128142

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-53607-1	LES-IW0005S-008.0-20241217	Total/NA	Water	FL-PRO	128074
670-53607-2	LES-IW0009S-010.0-20241217	Total/NA	Water	FL-PRO	128074
670-53607-3	LES-IW0011S-010.0-20241217	Total/NA	Water	FL-PRO	128074
MB 670-128074/1-A	Method Blank	Total/NA	Water	FL-PRO	128074
LCS 670-128074/2-A	Lab Control Sample	Total/NA	Water	FL-PRO	128074
LCSD 670-128074/3-A	Lab Control Sample Dup	Total/NA	Water	FL-PRO	128074
670-53607-2 MS	LES-IW0009S-010.0-20241217	Total/NA	Water	FL-PRO	128074
670-53607-2 MSD	LES-IW0009S-010.0-20241217	Total/NA	Water	FL-PRO	128074

Analysis Batch: 128145

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-53607-4	LES-FD01-20241217	Total/NA	Water	FL-PRO	128074
670-53607-5	LES-EB01-20241217	Total/NA	Water	FL-PRO	128074

Lab Chronicle

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC VAB LTM - LES

Job ID: 670-53607-1

Client Sample ID: LES-IW0005S-008.0-20241217

Lab Sample ID: 670-53607-1

Date Collected: 12/17/24 13:47

Matrix: Water

Date Received: 12/18/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	PreF	3511			1y8072	JC	EET O9 L	1y/1R/y2 1R:27
Total/NA	Anal4sis	=L-P9 O		1	1y812y	J9	EET O9 L	1y/y0/y2 1y:22

Client Sample ID: LES-IW0009S-010.0-20241217

Lab Sample ID: 670-53607-2

Date Collected: 12/17/24 14:10

Matrix: Water

Date Received: 12/18/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	PreF	3511			1y8072	JC	EET O9 L	1y/1R/y2 1R:27
Total/NA	Anal4sis	=L-P9 O		1	1y812y	J9	EET O9 L	1y/y0/y2 13:06

Client Sample ID: LES-IW0011S-010.0-20241217

Lab Sample ID: 670-53607-3

Date Collected: 12/17/24 14:25

Matrix: Water

Date Received: 12/18/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	PreF	3511			1y8072	JC	EET O9 L	1y/1R/y2 1R:27
Total/NA	Anal4sis	=L-P9 O		1	1y812y	J9	EET O9 L	1y/y0/y2 12:1y

Client Sample ID: LES-FD01-20241217

Lab Sample ID: 670-53607-4

Date Collected: 12/17/24 13:50

Matrix: Water

Date Received: 12/18/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	PreF	3511			1y8072	JC	EET O9 L	1y/1R/y2 1R:27
Total/NA	Anal4sis	=L-P9 O		1	1y8125	J9	EET O9 L	1y/y0/y2 11:02

Client Sample ID: LES-EB01-20241217

Lab Sample ID: 670-53607-5

Date Collected: 12/17/24 14:15

Matrix: Water

Date Received: 12/18/24 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	PreF	3511			1y8072	JC	EET O9 L	1y/1R/y2 1R:27
Total/NA	Anal4sis	=L-P9 O		1	1y8125	J9	EET O9 L	1y/y0/y2 11:yy

Laboratory References:

EET O9 L u Ef rodns Orlan, ow281 Nep bf r4Fort Avenf ewAltamonte SFringsw=L 3y701wTEL (207)33R-5R82

Ef rodns Orlan, o

Accreditation/Certification Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC VAB LTM - LES

Job ID: 670-53607-1

Laboratory: Eurofins Orlando

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Florida	NELAP	E83018	06-30-25

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Method Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC VAB LTM - LES

Job ID: 670-53607-1

Method	Method Description	Protocol	Laboratory
FL-PRO	Florida - Petroleum Range Organics (GC)	FL-DEP	EET ORL
3511	Microextraction of Organic Compounds	SW846	EET ORL

Protocol References:

FL-DEP = State Of Florida Department Of Environmental Protection, Florida Administrative Code.

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

Laboratory References:

EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

Sample Summary

Client: AECOM Technical Services Inc.
Project/Site: NASA KSC VAB LTM - LES

Job ID: 670-53607-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
670-53607-1	LES-IW0005S-008.0-20241217	Water	12/17/24 13:47	12/18/24 16:30
670-53607-2	LES-IW0009S-010.0-20241217	Water	12/17/24 14:10	12/18/24 16:30
670-53607-3	LES-IW0011S-010.0-20241217	Water	12/17/24 14:25	12/18/24 16:30
670-53607-4	LES-FD01-20241217	Water	12/17/24 13:50	12/18/24 16:30
670-53607-5	LES-EB01-20241217	Water	12/17/24 14:15	12/18/24 16:30



Login Sample Receipt Checklist

Client: AECOM Technical Services Inc.

Job Number: 670-53607-1

Login Number: 53607

List Number: 1

Creator: James2, Michael

List Source: Eurofins Orlando

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



ANALYTICAL REPORT

PREPARED FOR

Attn: Chad Lee
AECOM Technical Services Inc
150 North Orange Avenue
Suite 200
Orlando, Florida 32801

Generated 12/31/2024 12:44:36 PM

JOB DESCRIPTION

NASA KSC VAB LTM SFOC & IDW

JOB NUMBER

670-53900-1

Eurofins Orlando

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southeast, LLC Project Manager.

Authorization



Generated
12/31/2024 12:44:36 PM

Authorized for release by
Kaitlin Dylnicki, Project Manager
kaitlin.dylnicki@et.eurofinsus.com
(407)339-5984

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Definitions/Glossary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.

HPLC/IC

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.

LCMS

Qualifier	Qualifier Description
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
U	Indicates that the compound was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
U	Indicates that the compound was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.

Glossary

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

Eurofins Orlando

Definitions/Glossary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

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Case Narrative

Client: AECOM Technical Services Inc
Project: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

Job ID: 670-53900-1

Eurofins Orlando

Job Narrative 670-53900-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 12/23/2024 2:23 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.3°C.

GC/MS VOA

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

GC Semi VOA

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

HPLC/IC

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

PFAS

Method 1633: The following samples were diluted due to the nature of the sample matrix: SFOC-IDW01-20241223 (670-53900-7) and SFOC-IDW02-20241223 (670-53900-8) at 2x. Elevated reporting limits (RLs) are provided.

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

Metals

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

General Chemistry

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

Eurofins Orlando

Detection Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

Client Sample ID: SFOC-IW0001S-007.0-20241223

Lab Sample ID: 670-53900-1

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	38		2.0	0.41	ug/L	1		6020B	Total Recoverable

Client Sample ID: SFOC-IW0002S-007.0-20241223

Lab Sample ID: 670-53900-2

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.43	I	2.0	0.41	ug/L	1		6020B	Total Recoverable

Client Sample ID: SFOC-IW0004S-007.0-20241223

Lab Sample ID: 670-53900-3

No Detections.									
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Client Sample ID: SFOC-IW0009-007.0-20241223

Lab Sample ID: 670-53900-4

No Detections.									
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Client Sample ID: SFOC-FD01-20241223

Lab Sample ID: 670-53900-5

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	38		2.0	0.41	ug/L	1		6020B	Total Recoverable

Client Sample ID: SFOC-EB01-20241223

Lab Sample ID: 670-53900-6

No Detections.									
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Client Sample ID: SFOC-IDW01-20241223

Lab Sample ID: 670-53900-7

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perfluorobutanoic acid (PFBA) - DL	260		8.0	2.0	ng/L	1		1633	Total/NA
Perfluorohexanoic acid (PFHxA) - DL	2.6	I	4.0	0.20	ng/L	1		1633	Total/NA
Perfluorooctanoic acid (PFOA) - DL	3.6	I	4.0	1.0	ng/L	1		1633	Total/NA
Perfluorodecanoic acid (PFDA) - DL	1.4	I	4.0	0.20	ng/L	1		1633	Total/NA
Perfluorobutanesulfonic acid (PFBS) - DL	10		4.0	1.0	ng/L	1		1633	Total/NA
Perfluorohexanesulfonic acid (PFHxS) - DL	3.7	I	4.0	1.0	ng/L	1		1633	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	11		4.0	1.0	ng/L	1		1633	Total/NA
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) - DL	2.1	I	8.0	1.0	ng/L	1		1633	Total/NA
Antimony	8.9		2.0	0.41	ug/L	1		6020B	Total Recoverable
Total Phosphorus as P	180		100	40	ug/L	1		365.4	Total/NA

Client Sample ID: SFOC-IDW02-20241223

Lab Sample ID: 670-53900-8

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.1		1.0	0.53	ug/L	1		8260D	Total/NA
Perfluorobutanoic acid (PFBA) - DL	44		8.0	2.0	ng/L	1		1633	Total/NA
Perfluorohexanoic acid (PFHxA) - DL	6.2		4.0	0.20	ng/L	1		1633	Total/NA
Perfluoroheptanoic acid (PFHpA) - DL	4.5		4.0	1.0	ng/L	1		1633	Total/NA
Perfluorooctanoic acid (PFOA) - DL	11		4.0	1.0	ng/L	1		1633	Total/NA
Perfluorononanoic acid (PFNA) - DL	1.8	I	4.0	0.20	ng/L	1		1633	Total/NA
Perfluorobutanesulfonic acid (PFBS) - DL	1.8	I	4.0	1.0	ng/L	1		1633	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Orlando

Detection Summary

Client: AECOM Technical Services Inc

Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

Client Sample ID: SFOC-IDW02-20241223 (Continued)

Lab Sample ID: 670-53900-8

Analyte	Result	Qualifier	PQL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Perfluoropentanesulfonic acid (PFPeS) - DL	2.4	I	4.0	0.20	ng/L	1			1633	Total/NA
Perfluorohexanesulfonic acid (PFHxS) - DL	23		4.0	1.0	ng/L	1			1633	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	31		4.0	1.0	ng/L	1			1633	Total/NA
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS) - DL	4.7	I	8.0	1.0	ng/L	1			1633	Total/NA
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS) - DL	2.9	I	8.0	1.0	ng/L	1			1633	Total/NA
Total Phosphorus as P	200		100	40	ug/L	1			365.4	Total/NA

Client Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

Client Sample ID: SFOC-IW0001S-007.0-20241223

Lab Sample ID: 670-53900-1

Date Collected: 12/23/24 09:37

Matrix: Water

Date Received: 12/23/24 14:23

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	38		my0	0y21	. u/L		1m/n6/n2 09:59	1m/n6/n2 19:17	1

Client Sample ID: SFOC-IW0002S-007.0-20241223

Lab Sample ID: 670-53900-2

Date Collected: 12/23/24 09:43

Matrix: Water

Date Received: 12/23/24 14:23

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.43	I	my0	0y21	. u/L		1m/n6/n2 09:59	1m/n6/n2 19:n0	1

Client Sample ID: SFOC-IW0004S-007.0-20241223

Lab Sample ID: 670-53900-3

Date Collected: 12/23/24 10:47

Matrix: Water

Date Received: 12/23/24 14:23

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anti4 onR	0y21	g	my0	0y21	. u/L		1m/n6/n2 09:59	1m/n6/n2 19:11	1

Client Sample ID: SFOC-IW0009-007.0-20241223

Lab Sample ID: 670-53900-4

Date Collected: 12/23/24 10:37

Matrix: Water

Date Received: 12/23/24 14:23

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anti4 onR	0y21	g	my0	0y21	. u/L		1m/n6/n2 09:59	1m/n6/n2 19:nn	1

Client Sample ID: SFOC-FD01-20241223

Lab Sample ID: 670-53900-5

Date Collected: 12/23/24 09:55

Matrix: Water

Date Received: 12/23/24 14:23

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	38		my0	0y21	. u/L		1m/n6/n2 09:59	1m/n6/n2 19:n8	1

Client Sample ID: SFOC-EB01-20241223

Lab Sample ID: 670-53900-6

Date Collected: 12/23/24 11:05

Matrix: Water

Date Received: 12/23/24 14:23

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anti4 onR	0y21	g	my0	0y21	. u/L		1m/n6/n2 09:59	1m/n6/n2 19:31	1

Client Sample ID: SFOC-IDW01-20241223

Lab Sample ID: 670-53900-7

Date Collected: 12/23/24 11:30

Matrix: Water

Date Received: 12/23/24 14:23

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1f1-Dichloroethene	0y2	g	1y0	0y2	. u/L			1m/30/n2 n8:2m	1
cis-1fmDichloroethene	0y3	g	1y0	0y3	. u/L			1m/30/n2 n8:2m	1
Tetrachloroethene	0y76	g	1y0	0y76	. u/L			1m/30/n2 n8:2m	1
trans-1fmDichloroethene	0y73	g	1y0	0y73	. u/L			1m/30/n2 n8:2m	1

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Client Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

Client Sample ID: SFOC-IDW01-20241223

Lab Sample ID: 670-53900-7

Date Collected: 12/23/24 11:30

Matrix: Water

Date Received: 12/23/24 14:23

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	0y89	g	1y0	0y89	. u/L	-		1m30/n2 n8:2m	1
Vinyl chloride	0y71	g	1y0	0y71	. u/L	-		1m30/n2 n8:2m	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		40 - 146					12/30/24 23:42	1
4-Bromofluorobenzene (Surr)	97		41 - 142					12/30/24 23:42	1
Dibromofluoromethane (Surr)	97		53 - 146					12/30/24 23:42	1

Method: FL-DEP FL-PRO - Florida - Petroleum Range Organics (GC)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Petroleum Hydrocarbons (C8-C20H)	320	g	1000	320	. u/L	-	1m1n6/n2 19:18	1m1n7/n2 1m07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-terphenyl (Surr)	113		66 - 139				12/26/24 19:18	12/27/24 12:07	1
C35 (Surr)	102		40 - 129				12/26/24 19:18	12/27/24 12:07	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	n00	g	200	n00	. u/L	-		1m1n8/n2 19:27	1

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS - DL

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	260		8y0	m00	nu/L	-	1m30/n2 09:17	1m30/n2 19:02	1
Perd. oro, entanoic aci(xPFPeAH	1y0	g	2y0	1y0	nu/L	-	1m30/n2 09:17	1m30/n2 19:02	1
Perfluorohexanoic acid (PFHxA)	2.6	I	2y0	0ym0	nu/L	-	1m30/n2 09:17	1m30/n2 19:02	1
Perd. orohe, tanoic aci(xPF) , AH	1y0	g	2y0	1y0	nu/L	-	1m30/n2 09:17	1m30/n2 19:02	1
Perfluorooctanoic acid (PFOA)	3.6	I	2y0	1y0	nu/L	-	1m30/n2 09:17	1m30/n2 19:02	1
Perd. orononanoic aci(xPFNAH	0ym0	g	2y0	0ym0	nu/L	-	1m30/n2 09:17	1m30/n2 19:02	1
Perfluorodecanoic acid (PFDA)	1.4	I	2y0	0ym0	nu/L	-	1m30/n2 09:17	1m30/n2 19:02	1
Perd. oro. n(ecanoic aci(xPFgnAH	1y0	g	2y0	1y0	nu/L	-	1m30/n2 09:17	1m30/n2 19:02	1
Perd. oro(o(ecanoic aci(xPFDoAH	1y0	g	2y0	1y0	nu/L	-	1m30/n2 09:17	1m30/n2 19:02	1
Perd. orotri(ecanoic aci(xPFTrDAH	1y0	g	2y0	1y0	nu/L	-	1m30/n2 09:17	1m30/n2 19:02	1
Perd. orotetra(ecanoic aci(xPFATAH	1y0	g	2y0	1y0	nu/L	-	1m30/n2 09:17	1m30/n2 19:02	1
Perfluorobutanesulfonic acid (PFBS)	10		2y0	1y0	nu/L	-	1m30/n2 09:17	1m30/n2 19:02	1
Perd. oro, entanes. ldnic aci(xPFPeSH	0ym0	g	2y0	0ym0	nu/L	-	1m30/n2 09:17	1m30/n2 19:02	1
Perfluorohexanesulfonic acid (PFHxS)	3.7	I	2y0	1y0	nu/L	-	1m30/n2 09:17	1m30/n2 19:02	1
Perd. orohe, tanes. ldnic aci(xPF) , SH	0ym0	g	2y0	0ym0	nu/L	-	1m30/n2 09:17	1m30/n2 19:02	1
Perfluorooctanesulfonic acid (PFOS)	11		2y0	1y0	nu/L	-	1m30/n2 09:17	1m30/n2 19:02	1
Perd. orononanes. ldnic aci(xPFNSH	0ym0	g	2y0	0ym0	nu/L	-	1m30/n2 09:17	1m30/n2 19:02	1
Perd. oro(o(ecanes. ldnic aci(xPFDoSH	1y0	g	2y0	1y0	nu/L	-	1m30/n2 09:17	1m30/n2 19:02	1
1) f1) fm) fm) -Perd. orohepane s. ldnic aci(x2:mFTSH	1y0	g	8y0	1y0	nu/L	-	1m30/n2 09:17	1m30/n2 19:02	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	2.1	I	8y0	1y0	nu/L	-	1m30/n2 09:17	1m30/n2 19:02	1
1) f1) fm) fm) -Perd. oro(ecanes. ldnic aci(x8:mFTSH	1y0	g	8y0	1y0	nu/L	-	1m30/n2 09:17	1m30/n2 19:02	1

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Client Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

Client Sample ID: SFOC-IDW01-20241223

Lab Sample ID: 670-53900-7

Date Collected: 12/23/24 11:30

Matrix: Water

Date Received: 12/23/24 14:23

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS - DL (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perd. orooctanes. lðna4 i(e xPFOSAH	0yñ0	g	2y0	0yñ0	nu/L		1m/30/m2 09:17	1m/30/m2 19:02	1
N-4 ethR, erd. orooctane s. lðna4 i(e xNMeFOSAH	1y0	g	2y0	1y0	nu/L		1m/30/m2 09:17	1m/30/m2 19:02	1
N-ethR, erd. orooctane s. lðna4 i(e xNEtFOSAH	1y0	g	2y0	1y0	nu/L		1m/30/m2 09:17	1m/30/m2 19:02	1
N-4 ethR, erd. orooctanes. lðna4 i(oa cetic aci(xNMeFOSAAH	1y0	g	2y0	1y0	nu/L		1m/30/m2 09:17	1m/30/m2 19:02	1
N-ethR, erd. orooctanes. lðna4 i(oac etic aci(xNEtFOSAAH	1y0	g	2y0	1y0	nu/L		1m/30/m2 09:17	1m/30/m2 19:02	1
N-4 ethR, erd. orooctane s. lðna4 i(oethanol xNMeFOSEH	2y0	g	n0	2y0	nu/L		1m/30/m2 09:17	1m/30/m2 19:02	1
N-ethR, erd. orooctane s. lðna4 i(oethanol xNEtFOSEH	2y0	g	n0	2y0	nu/L		1m/30/m2 09:17	1m/30/m2 19:02	1
) epad. oro, ro, Rene Opi(e Di4 er Aci(x) FPO-DAH	1y0	g	3y0	1y0	nu/L		1m/30/m2 09:17	1m/30/m2 19:02	1
2f8-Diopa-3) -, erd. orononanoic aci(xADONAH	1y0	g	2y0	1y0	nu/L		1m/30/m2 09:17	1m/30/m2 19:02	1
Perd. oro-2-4 ethopRb. tanoic aci(xPFMBAH	1y0	g	2y0	1y0	nu/L		1m/30/m2 09:17	1m/30/m2 19:02	1
Nonad. oro-3f6-(iopahe, tanoic aci(xNFD) AH	1y0	g	2y0	1y0	nu/L		1m/30/m2 09:17	1m/30/m2 19:02	1
9-Chlorohepa(ecad. oro-3-opanonan e-1-s. lðnic aci(x9CI-PF3ONSH	1y0	g	2y0	1y0	nu/L		1m/30/m2 09:17	1m/30/m2 19:02	1
11-Chloroeicosad. oro-3-opa. n(ecan e-1-s. lðnic aci(x11CI-PF3Og (SH	1y5	g	2y0	1y5	nu/L		1m/30/m2 09:17	1m/30/m2 19:02	1
Perd. oro xmethopRethaneHs. lðnic aci(xPFEESAH	1y0	g	2y0	1y0	nu/L		1m/30/m2 09:17	1m/30/m2 19:02	1
3-Perd. oro, ro, R, ro, anoiic aci(x3:3 FTCAH	m0	g	8y0	m0	nu/L		1m/30/m2 09:17	1m/30/m2 19:02	1
3-Perd. oro, entR, ro, anoiic aci(x5:3 FTCAH	5y2	g	n0	5y2	nu/L		1m/30/m2 09:17	1m/30/m2 19:02	1
3-Perd. orohe, tR, ro, anoiic aci(x7:3 FTCAH	5y2	g	n0	5y2	nu/L		1m/30/m2 09:17	1m/30/m2 19:02	1
Perd. oro(ecanes. lðnic aci(xPFDSH	0yñ0	g	2y0	0yñ0	nu/L		1m/30/m2 09:17	1m/30/m2 19:02	1
Perd. oro-3-4 ethopR ro, anoiic aci(xPFMPAH	1y0	g	2y0	1y0	nu/L		1m/30/m2 09:17	1m/30/m2 19:02	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	91.6		5 - 130	12/30/24 09:17	12/30/24 19:04	1
13C5 PFPeA	76.9		40 - 130	12/30/24 09:17	12/30/24 19:04	1
13C5 PFHxA	91.8		40 - 130	12/30/24 09:17	12/30/24 19:04	1
13C4 PFHpA	85.1		40 - 130	12/30/24 09:17	12/30/24 19:04	1
13C8 PFOA	86.3		40 - 130	12/30/24 09:17	12/30/24 19:04	1
13C9 PFNA	94.5		40 - 130	12/30/24 09:17	12/30/24 19:04	1
13C6 PFDA	84.5		40 - 130	12/30/24 09:17	12/30/24 19:04	1
13C7 PFUnA	80.3		30 - 130	12/30/24 09:17	12/30/24 19:04	1
13C2 PFDoA	71.5		10 - 130	12/30/24 09:17	12/30/24 19:04	1
13C2 PFTeDA	81.9		10 - 130	12/30/24 09:17	12/30/24 19:04	1
13C3 PFBS	112		40 - 135	12/30/24 09:17	12/30/24 19:04	1
13C3 PFHxS	114		40 - 130	12/30/24 09:17	12/30/24 19:04	1
13C8 PFOS	88.7		40 - 130	12/30/24 09:17	12/30/24 19:04	1
13C8 FOSA	95.2		40 - 130	12/30/24 09:17	12/30/24 19:04	1
d3-NMeFOSAA	84.7		40 - 170	12/30/24 09:17	12/30/24 19:04	1
d5-NEtFOSAA	76.9		25 - 135	12/30/24 09:17	12/30/24 19:04	1

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Client Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

Client Sample ID: SFOC-IDW01-20241223

Lab Sample ID: 670-53900-7

Date Collected: 12/23/24 11:30

Matrix: Water

Date Received: 12/23/24 14:23

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS - DL (Continued)

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
M2-4:2 FTS	135		40 - 200	12/30/24 09:17	12/30/24 19:04	1
M2-6:2 FTS	103		40 - 200	12/30/24 09:17	12/30/24 19:04	1
M2-8:2 FTS	85.1		40 - 300	12/30/24 09:17	12/30/24 19:04	1
13C3 HFPO-DA	87.9		40 - 130	12/30/24 09:17	12/30/24 19:04	1
d7-N-MeFOSE-M	72.0		10 - 130	12/30/24 09:17	12/30/24 19:04	1
d9-N-EtFOSE-M	74.4		10 - 130	12/30/24 09:17	12/30/24 19:04	1
d5-NEtPFOSA	59.0		10 - 130	12/30/24 09:17	12/30/24 19:04	1
d3-NMePFOSA	72.7		10 - 130	12/30/24 09:17	12/30/24 19:04	1

Method: SW846 6020B - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	8.9		mg	0.21	u/L		12/30/24 09:59	12/30/24 19:33	1

General Chemistry

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Phosphorus as P (EPA 365.4)	180		100	20	u/L		12/30/24 10:57	12/30/24 13:00	1

Client Sample ID: SFOC-IDW02-20241223

Lab Sample ID: 670-53900-8

Date Collected: 12/23/24 11:20

Matrix: Water

Date Received: 12/23/24 14:23

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1f1-Dichloroethene	0y92	g	1y0	0y92	. u/L			1m31/m2 00:00	1
cis-1,2-Dichloroethene	1.1		1y0	0y53	. u/L			1m31/m2 00:00	1
Tetrachloroethene	0y76	g	1y0	0y76	. u/L			1m31/m2 00:00	1
trans-1fmDichloroethene	0y73	g	1y0	0y73	. u/L			1m31/m2 00:00	1
Trichloroethene	0y89	g	1y0	0y89	. u/L			1m31/m2 00:00	1
VinR chlori(e	0y71	g	1y0	0y71	. u/L			1m31/m2 00:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		40 - 146					12/31/24 00:00	1
4-Bromofluorobenzene (Surr)	99		41 - 142					12/31/24 00:00	1
Dibromofluoromethane (Surr)	98		53 - 146					12/31/24 00:00	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	1000	g	1000	1000	u/L			12/30/24 19:35	5

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS - DL

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorobutanoic acid (PFBA)	44		8.0	1.0	nu/L		12/30/24 09:17	12/30/24 19:19	1
Perfluoropentanoic acid (PFPeA)	1.0	g	2.0	1.0	nu/L		12/30/24 09:17	12/30/24 19:19	1
Perfluorohexanoic acid (PFHxA)	6.2		2.0	0.10	nu/L		12/30/24 09:17	12/30/24 19:19	1
Perfluoroheptanoic acid (PFHpA)	4.5		2.0	1.0	nu/L		12/30/24 09:17	12/30/24 19:19	1
Perfluorooctanoic acid (PFOA)	11		2.0	1.0	nu/L		12/30/24 09:17	12/30/24 19:19	1
Perfluorononanoic acid (PFNA)	1.8	I	2.0	0.10	nu/L		12/30/24 09:17	12/30/24 19:19	1
Perfluorodecanoic acid (PFDA)	0.10	g	2.0	0.10	nu/L		12/30/24 09:17	12/30/24 19:19	1
Perfluoroundecanoic acid (PFUnA)	1.0	g	2.0	1.0	nu/L		12/30/24 09:17	12/30/24 19:19	1
Perfluorododecanoic acid (PFDoA)	1.0	g	2.0	1.0	nu/L		12/30/24 09:17	12/30/24 19:19	1
Perfluorotridecanoic acid (PFTriDA)	1.0	g	2.0	1.0	nu/L		12/30/24 09:17	12/30/24 19:19	1

E. rodns Orlan(o

Client Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

Client Sample ID: SFOC-IDW02-20241223

Lab Sample ID: 670-53900-8

Date Collected: 12/23/24 11:20

Matrix: Water

Date Received: 12/23/24 14:23

Method: EPA 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS - DL (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perd. orotetra(ecanoic aci(xPFTAH	1y0	g	2y0	1y0	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
Perfluorobutanesulfonic acid (PFBS)	1.8	I	2y0	1y0	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
Perfluoropentanesulfonic acid (PFPeS)	2.4	I	2y0	0ym0	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
Perfluorohexanesulfonic acid (PFHxS)	23		2y0	1y0	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
Perd. orohe, tanes. lðnic aci(xPF) , SH	0ym0	g	2y0	0ym0	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
Perfluorooctanesulfonic acid (PFOS)	31		2y0	1y0	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
Perd. orononanes. lðnic aci(xPFNSH	0ym0	g	2y0	0ym0	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
Perd. oro(o(ecanes. lðnic aci(xPFDoSH	1y0	g	2y0	1y0	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
1) f1) fm) fm) -Perd. orohepane s. lðnic aci(x2:mFTSH	1y0	g	8y0	1y0	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
1H,1H,2H,2H-Perfluorooctane sulfonic acid (6:2 FTS)	4.7	I	8y0	1y0	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
1H,1H,2H,2H-Perfluorodecane sulfonic acid (8:2 FTS)	2.9	I	8y0	1y0	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
Perd. orooctanes. lðna4 i(e xPFOSA	0ym0	g	2y0	0ym0	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
N-4 ethR, erd. orooctane s. lðna4 i(e xNMeFOSA	1y0	g	2y0	1y0	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
N-ethR, erd. orooctane s. lðna4 i(e xNEtFOSA	1y0	g	2y0	1y0	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
N-4 ethR, erd. orooctanes. lðna4 i(oa cetic aci(xNMeFOSAAH	1y0	g	2y0	1y0	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
N-ethR, erd. orooctanes. lðna4 i(oac etic aci(xNEtFOSAAH	1y0	g	2y0	1y0	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
N-4 ethR, erd. orooctane s. lðna4 i(oethanol xNMeFOSEH	2y0	g	n0	2y0	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
N-ethR, erd. orooctane s. lðna4 i(oethanol xNEtFOSEH	2y0	g	n0	2y0	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
) epad. oro, ro, Rene Opi(e Di4 er Aci(x) FPO-DAH	1y0	g	3y0	1y0	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
2f8-Diopa-3) -, erd. orononanoic aci(xADONAH	1y0	g	2y0	1y0	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
Perd. oro-2-4 ethopRb. tanoic aci(xPFMBAH	1y0	g	2y0	1y0	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
Nonad. oro-3f6-(iopahe, tanoic aci(xNFD) AH	1y0	g	2y0	1y0	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
9-Chlorohepa(ecad. oro-3-opanonan e-1-s. lðnic aci(x9Cl-PF3ONSH	1y0	g	2y0	1y0	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
11-Chloroeicosad. oro-3-opa. n(ecan e-1-s. lðnic aci(x11Cl-PF3Og(SH	1y5	g	2y0	1y5	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
Perd. oro xmethopRethaneHs. lðnic aci(xPFEE	1y0	g	2y0	1y0	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
3-Perd. oro, ro, R, ro, anoi(aci(x3:3 FTCAH	my0	g	8y0	my0	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
3-Perd. oro, entR, ro, anoi(aci(x5:3 FTCAH	5y2	g	n0	5y2	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
3-Perd. orohe, tR, ro, anoi(aci(x7:3 FTCAH	5y2	g	n0	5y2	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
Perd. oro(ecanes. lðnic aci(xPFDSH	0ym0	g	2y0	0ym0	nu/L		1m130/m2 09:17	1m130/m2 19:19	1
Perd. oro-3-4 ethopR ro, anoi(aci(xPFMPAH	1y0	g	2y0	1y0	nu/L		1m130/m2 09:17	1m130/m2 19:19	1

E. rodns Orlan(o

Client Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

Client Sample ID: SFOC-IDW02-20241223

Lab Sample ID: 670-53900-8

Date Collected: 12/23/24 11:20

Matrix: Water

Date Received: 12/23/24 14:23

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFBA	100		5 - 130	12/30/24 09:17	12/30/24 19:19	1
13C5 PFPeA	85.4		40 - 130	12/30/24 09:17	12/30/24 19:19	1
13C5 PFHxA	96.5		40 - 130	12/30/24 09:17	12/30/24 19:19	1
13C4 PFHpA	87.4		40 - 130	12/30/24 09:17	12/30/24 19:19	1
13C8 PFOA	90.0		40 - 130	12/30/24 09:17	12/30/24 19:19	1
13C9 PFNA	102		40 - 130	12/30/24 09:17	12/30/24 19:19	1
13C6 PFDA	92.1		40 - 130	12/30/24 09:17	12/30/24 19:19	1
13C7 PFUnA	88.4		30 - 130	12/30/24 09:17	12/30/24 19:19	1
13C2 PFDoA	83.4		10 - 130	12/30/24 09:17	12/30/24 19:19	1
13C2 PFTeDA	97.4		10 - 130	12/30/24 09:17	12/30/24 19:19	1
13C3 PFBS	120		40 - 135	12/30/24 09:17	12/30/24 19:19	1
13C3 PFHxS	118		40 - 130	12/30/24 09:17	12/30/24 19:19	1
13C8 PFOS	93.4		40 - 130	12/30/24 09:17	12/30/24 19:19	1
13C8 FOSA	90.7		40 - 130	12/30/24 09:17	12/30/24 19:19	1
d3-NMeFOSAA	86.8		40 - 170	12/30/24 09:17	12/30/24 19:19	1
d5-NEtFOSAA	77.6		25 - 135	12/30/24 09:17	12/30/24 19:19	1
M2-4:2 FTS	134		40 - 200	12/30/24 09:17	12/30/24 19:19	1
M2-6:2 FTS	110		40 - 200	12/30/24 09:17	12/30/24 19:19	1
M2-8:2 FTS	95.1		40 - 300	12/30/24 09:17	12/30/24 19:19	1
13C3 HFPO-DA	91.4		40 - 130	12/30/24 09:17	12/30/24 19:19	1
d7-N-MeFOSE-M	78.8		10 - 130	12/30/24 09:17	12/30/24 19:19	1
d9-N-EtFOSE-M	81.7		10 - 130	12/30/24 09:17	12/30/24 19:19	1
d5-NEtPFOSA	67.1		10 - 130	12/30/24 09:17	12/30/24 19:19	1
d3-NMePFOSA	85.4		10 - 130	12/30/24 09:17	12/30/24 19:19	1

General Chemistry

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Phosphorus as P (EPA 365.4)	200		100	20	. u/L		1m1n6/n2 1m35	1m1n7/n2 1m2m	1

E. rodns Orlan(o

Surrogate Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
Lab Sample ID	Client Sample ID	TOL (40-146)	BFB (41-142)	DBFM (53-146)
670-53802-A-10 MS	Matrix Spike	98	99	96
670-53802-A-10 MSD	Matrix Spike Duplicate	99	99	99
670-53900-7	SFOC-IDW01-20241223	102	97	97
670-53900-8	SFOC-IDW02-20241223	99	99	98
LCS 670-129198/4	Lab Control Sample	98	99	97
MB 670-129198/7	Method Blank	98	98	97
Surrogate Legend				
TOL = Toluene-d8 (Surr)				
BFB = 4-Bromofluorobenzene (Surr)				
DBFM = Dibromofluoromethane (Surr)				

Method: FL-PRO - Florida - Petroleum Range Organics (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	OTP (66-139)	C-35 (40-129)
670-53900-7	SFOC-IDW01-20241223	113	102
LCS 670-128820/2-A	Lab Control Sample	98	85
LCSD 670-128820/3-A	Lab Control Sample Dup	116	103
MB 670-128820/1-A	Method Blank	94	86
Surrogate Legend			
OTP = o- terphenyl (Surr)			
C-35 = C35 (Surr)			

Isotope Dilution Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (5-130)	PFPeA (40-130)	13C5PHA (40-130)	C4PFHA (40-130)	C8PFOA (40-130)	C9PFNA (40-130)	C6PFDA (40-130)	13C7PUA (30-130)
670-53900-7 - DL	SFOC-IDW01-20241223	91.6	76.9	91.8	85.1	86.3	94.5	84.5	80.3
670-53900-8 - DL	SFOC-IDW02-20241223	100	85.4	96.5	87.4	90.0	102	92.1	88.4
LCS 680-870772/2-A	Lab Control Sample	107	84.1	95.2	86.7	89.0	104	90.0	91.7
LCSD 680-870772/3-A	Lab Control Sample Dup	108	83.4	95.1	87.1	88.0	100	89.6	91.9
MB 680-870772/1-A	Method Blank	106	78.4	91.5	80.3	86.5	95.7	88.3	97.5

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDaA (10-130)	PFTDA (10-130)	C3PFBS (40-135)	C3PFHS (40-130)	C8PFOS (40-130)	PFOSA (40-130)	d3NMFOS (40-170)	d5NEFOS (25-135)
670-53900-7 - DL	SFOC-IDW01-20241223	71.5	81.9	112	114	88.7	95.2	84.7	76.9
670-53900-8 - DL	SFOC-IDW02-20241223	83.4	97.4	120	118	93.4	90.7	86.8	77.6
LCS 680-870772/2-A	Lab Control Sample	90.3	87.0	118	116	96.7	94.9	104	92.6
LCSD 680-870772/3-A	Lab Control Sample Dup	87.4	83.5	113	112	95.5	93.7	93.0	87.4
MB 680-870772/1-A	Method Blank	93.5	82.2	110	114	90.9	106	102	101

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	M242FTS (40-200)	M262FTS (40-200)	M282FTS (40-300)	HFPODA (40-130)	NMFM (10-130)	NEFM (10-130)	d5NPFSA (10-130)	d3NMFSA (10-130)
670-53900-7 - DL	SFOC-IDW01-20241223	135	103	85.1	87.9	72.0	74.4	59.0	72.7
670-53900-8 - DL	SFOC-IDW02-20241223	134	110	95.1	91.4	78.8	81.7	67.1	85.4
LCS 680-870772/2-A	Lab Control Sample	112	123	121	95.8	78.9	79.5	57.6	71.2
LCSD 680-870772/3-A	Lab Control Sample Dup	110	121	113	99.0	84.8	81.3	58.4	68.0
MB 680-870772/1-A	Method Blank	162	161	137	85.2	66.4	68.3	47.7	58.2

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
C6PFDA = 13C6 PFDA
13C7PUA = 13C7 PFUnA
PFDaA = 13C2 PFDaA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS
PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
HFPODA = 13C3 HFPO-DA
NMFM = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
d5NPFSA = d5-NEtPFOSA
d3NMFSA = d3-NMePFOSA

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Isotope Dilution Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Matrix: Water

Prep Type: Total/NA

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFBA (25-130)	PFPeA (40-130)	13C5PHA (40-130)	C4PFHA (40-130)	C8PFOA (40-130)	C9PFNA (40-130)	C6PFDA (40-130)	13C7PUA (30-130)
LLCS 680-870772/4-A	Lab Control Sample	101	77.9	86.6	79.6	82.6	97.9	85.0	86.0

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	PFDoA (10-130)	PFTDA (10-130)	C3PFBS (40-135)	C3PFHS (40-130)	C8PFOS (40-130)	PFOSA (40-130)	d3NMFOS (40-170)	d5NEFOS (25-135)
LLCS 680-870772/4-A	Lab Control Sample	83.4	78.8	110	106	92.1	90.1	90.0	85.5

		Percent Isotope Dilution Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	M242FTS (40-200)	M262FTS (40-200)	M282FTS (40-300)	HFPODA (40-130)	NMFM (10-130)	NEFM (10-130)	d5NPFSA (10-130)	d3NMFSA (10-130)
LLCS 680-870772/4-A	Lab Control Sample	105	119	112	88.6	83.4	81.4	60.3	74.1

Surrogate Legend

PFBA = 13C4 PFBA
PFPeA = 13C5 PFPeA
13C5PHA = 13C5 PFHxA
C4PFHA = 13C4 PFHpA
C8PFOA = 13C8 PFOA
C9PFNA = 13C9 PFNA
C6PFDA = 13C6 PFDA
13C7PUA = 13C7 PFUnA
PFDoA = 13C2 PFDoA
PFTDA = 13C2 PFTeDA
C3PFBS = 13C3 PFBS
C3PFHS = 13C3 PFHxS
C8PFOS = 13C8 PFOS
PFOSA = 13C8 FOSA
d3NMFOS = d3-NMeFOSAA
d5NEFOS = d5-NEtFOSAA
M242FTS = M2-4:2 FTS
M262FTS = M2-6:2 FTS
M282FTS = M2-8:2 FTS
HFPODA = 13C3 HFPO-DA
NMFM = d7-N-MeFOSE-M
NEFM = d9-N-EtFOSE-M
d5NPFSA = d5-NEtPFOSA
d3NMFSA = d3-NMePFOSA

QC Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SF0C & IDW

Job ID: 670-53900-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 670-129198/7

Matrix: Water

Analysis Batch: 129198

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1m-Dichloroethene	0y92	.	1y0	0y92	ug/L			14/30/42 17:32	1
cis-1m-Dichloroethene	0y53	.	1y0	0y53	ug/L			14/30/42 17:32	1
Tetrachloroethene	0y76	.	1y0	0y76	ug/L			14/30/42 17:32	1
trans-1m-Dichloroethene	0y73	.	1y0	0y73	ug/L			14/30/42 17:32	1
Trichloroethene	0yF9	.	1y0	0yF9	ug/L			14/30/42 17:32	1
Vin8l chlorif e	0y71	.	1y0	0y71	ug/L			14/30/42 17:32	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	18		02 - 406		4/ 3 23 0 4Bm0	4
0-f rob ozuoro9en7ene (Surr)	18		04 - 40/		4/ 3 23 0 4Bm0	4
Di9rob ozuorob ethane (Surr)	1B		5: - 406		4/ 3 23 0 4Bm0	4

Lab Sample ID: LCS 670-129198/4

Matrix: Water

Analysis Batch: 129198

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1m-Dichloroethene	40y0	19y2		ug/L		97	27 - 139
cis-1m-Dichloroethene	40y0	1Ry2		ug/L		94	56 - 14R
Tetrachloroethene	40y0	1Ry9		ug/L		95	60 - 127
trans-1m-Dichloroethene	40y0	17y9		ug/L		R9	52 - 132
Trichloroethene	40y0	1Ry9		ug/L		92	64 - 135
Vin8l chlorif e	40y0	19y1		ug/L		95	40 - 167

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	18		02 - 406
0-f rob ozuoro9en7ene (Surr)	11		04 - 40/
Di9rob ozuorob ethane (Surr)	1B		5: - 406

Lab Sample ID: 670-53802-A-10 MS

Matrix: Water

Analysis Batch: 129198

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1m-Dichloroethene	0y92	.	40y0	40y6		ug/L		103	29 - 139
cis-1m-Dichloroethene	6y8	.	40y0	42y9		ug/L		93	56 - 14R
Tetrachloroethene	0y76	.	40y0	19yR		ug/L		99	60 - 127
trans-1m-Dichloroethene	0y73	.	40y0	19y2		ug/L		97	52 - 132
Trichloroethene	1y8	.	40y0	41yR		ug/L		104	64 - 135
Vin8l chlorif e	0y71	.	40y0	1Ry2		ug/L		94	40 - 167

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	18		02 - 406
0-f rob ozuoro9en7ene (Surr)	11		04 - 40/
Di9rob ozuorob ethane (Surr)	16		5: - 406

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QC Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

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

Lab Sample ID: 670-53802-A-10 MSD

Matrix: Water

Analysis Batch: 129198

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1m-Dichloroethene	0y92	.	40y0	40y9		ug/L		105	29 - 139	4	16
cis-1m-Dichloroethene	6y8		40y0	45y0		ug/L		93	56 - 14R	0	17
Tetrachloroethene	0y76	.	40y0	41y5		ug/L		107	60 - 127	R	41
trans-1m-Dichloroethene	0y73	.	40y0	40y4		ug/L		101	52 - 132	2	40
Trichloroethene	1y8		40y0	41y5		ug/L		101	64 - 135	1	40
Vinyl chloride	0y71	.	40y0	19y0		ug/L		95	40 - 167	3	42
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
Toluene-d8 (Surr)	11		02 - 406								
o-rob oduroene (Surr)	11		04 - 40/								
Dirob oduroethane (Surr)	11		5: - 406								

Method: FL-PRO - Florida - Petroleum Range Organics (GC)

Lab Sample ID: MB 670-128820/1-A

Matrix: Water

Analysis Batch: 128864

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 128820

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Petroleum () 8f rocarbons	320	.	1000	320	ug/L		14/46/42 19:1R	14/47/42 10:03	1
xCR-C20H									
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-terphenyl (Surr)	10		66 - 4: 1				4/ 3 63 0 41m8	4/ 3 B3 0 42m8	4
C: 5 (Surr)	86		02 - 4/ 1				4/ 3 63 0 41m8	4/ 3 B3 0 42m8	4

Lab Sample ID: LCS 670-128820/2-A

Matrix: Water

Analysis Batch: 128864

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 128820

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Petroleum () 8f rocarbons	15500	13700		ug/L		R9	55 - 130		
xCR-C20H									
Surrogate	LCS %Recovery	LCS Qualifier	Limits						
o-terphenyl (Surr)	18		66 - 4: 1						
C: 5 (Surr)	85		02 - 4/ 1						

Lab Sample ID: LCSD 670-128820/3-A

Matrix: Water

Analysis Batch: 128864

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 128820

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Petroleum () 8f rocarbons	15500	16200		ug/L		106	55 - 130	1R	20
xCR-C20H									
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
o-terphenyl (Surr)	446		66 - 4: 1						

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QC Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

Method: FL-PRO - Florida - Petroleum Range Organics (GC) (Continued)

Lab Sample ID: LCSD 670-128820/3-A
Matrix: Water
Analysis Batch: 128864

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 128820

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
C: 5 (Surr)	42:		02 - 4/ 1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 670-128428/37
Matrix: Water
Analysis Batch: 128428

Client Sample ID: Method Blank
Prep Type: Total/NA

	MB	MB								
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Nitrate as N	400	.	200	400	ug/L			14/43/42 15:29	1	

Lab Sample ID: MB 670-128428/6
Matrix: Water
Analysis Batch: 128428

Client Sample ID: Method Blank
Prep Type: Total/NA

	MB	MB								
Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac	
Nitrate as N	400	.	200	400	ug/L			14/43/42 09:20	1	

Lab Sample ID: LCS 670-128428/35
Matrix: Water
Analysis Batch: 128428

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

			Spike	LCS	LCS				%Rec	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	
Nitrate as N			4000	4170		ug/L		10R	90 - 110	

Lab Sample ID: LCSD 670-128428/36
Matrix: Water
Analysis Batch: 128428

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

			Spike	LCSD	LCSD				%Rec		RPD
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Nitrate as N			4000	4150		ug/L		10R	90 - 110	1	40

Lab Sample ID: 670-53840-A-1 MS
Matrix: Water
Analysis Batch: 128428

Client Sample ID: Matrix Spike
Prep Type: Total/NA

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Nitrate as N	400	.	5000	5510		ug/L		110	RD - 140	

Lab Sample ID: 670-53840-A-1 MSD
Matrix: Water
Analysis Batch: 128428

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Nitrate as N	400	.	5000	5510		ug/L		110	RD - 140	0	40

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QC Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS

Lab Sample ID: MB 680-870772/1-A

Matrix: Water

Analysis Batch: 870836

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 870772

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perduorobutanoic acif xPFBAH	1y0	.	2y0	1y0	ng/L		14/30/42 09:17	14/30/42 16:25	1
Perduoro, entanoic acif xPFPeAH	0y50	.	4y0	0y50	ng/L		14/30/42 09:17	14/30/42 16:25	1
Perduorohepanoic acif xPF) pAH	0y10	.	4y0	0y10	ng/L		14/30/42 09:17	14/30/42 16:25	1
Perduorohe, tanoic acif xPF) , AH	0y50	.	4y0	0y50	ng/L		14/30/42 09:17	14/30/42 16:25	1
Perduorooctanoic acif xPFOAH	0y50	.	4y0	0y50	ng/L		14/30/42 09:17	14/30/42 16:25	1
Perduorononanoic acif xPFNAH	0y10	.	4y0	0y10	ng/L		14/30/42 09:17	14/30/42 16:25	1
Perduorof ecanoic acif xPFDAH	0y10	.	4y0	0y10	ng/L		14/30/42 09:17	14/30/42 16:25	1
Perduorounf ecanoic acif xPF. nAH	0y50	.	4y0	0y50	ng/L		14/30/42 09:17	14/30/42 16:25	1
Perduorof of ecanoic acif xPFDoAH	0y50	.	4y0	0y50	ng/L		14/30/42 09:17	14/30/42 16:25	1
Perduorotrif ecanoic acif xPFTrDAH	0y50	.	4y0	0y50	ng/L		14/30/42 09:17	14/30/42 16:25	1
Perduorotetraf ecanoic acif xPFTAH	0y50	.	4y0	0y50	ng/L		14/30/42 09:17	14/30/42 16:25	1
Perduorobutanesulðnic acif xPFBSH	0y50	.	4y0	0y50	ng/L		14/30/42 09:17	14/30/42 16:25	1
Perduoro, entanesulðnic acif xPFPeSH	0y10	.	4y0	0y10	ng/L		14/30/42 09:17	14/30/42 16:25	1
Perduorohepanesulðnic acif xPF) pSH	0y50	.	4y0	0y50	ng/L		14/30/42 09:17	14/30/42 16:25	1
Perduorohe, tanesulðnic acif xPF) , SH	0y10	.	4y0	0y10	ng/L		14/30/42 09:17	14/30/42 16:25	1
Perduorooctanesulðnic acif xPFOSH	0y50	.	4y0	0y50	ng/L		14/30/42 09:17	14/30/42 16:25	1
Perduorononanesulðnic acif xPFNSH	0y10	.	4y0	0y10	ng/L		14/30/42 09:17	14/30/42 16:25	1
Perduorof of ecanesulðnic acif xPFDoSH	0y50	.	4y0	0y50	ng/L		14/30/42 09:17	14/30/42 16:25	1
1) rñ) rñ) rñ) -Perduorohepane sulðnic acif x2:4 FTSH	0y50	.	2y0	0y50	ng/L		14/30/42 09:17	14/30/42 16:25	1
1) rñ) rñ) rñ) -Perduorooctane sulðnic acif x6:4 FTSH	0y50	.	2y0	0y50	ng/L		14/30/42 09:17	14/30/42 16:25	1
1) rñ) rñ) rñ) -Perduorof ecane sulðnic acif xR4 FTSH	0y50	.	2y0	0y50	ng/L		14/30/42 09:17	14/30/42 16:25	1
Perduorooctanesulðna(if e xPFOSA	0y10	.	4y0	0y10	ng/L		14/30/42 09:17	14/30/42 16:25	1
N-(eth8l, erduorooctane sulðna(if e xNMeFOSA	0y50	.	4y0	0y50	ng/L		14/30/42 09:17	14/30/42 16:25	1
N-eth8l, erduorooctane sulðna(if e xNEtFOSA	0y50	.	4y0	0y50	ng/L		14/30/42 09:17	14/30/42 16:25	1
N-(eth8l, erduorooctanesulðna(if oa cetic acif xNMeFOSA	0y50	.	4y0	0y50	ng/L		14/30/42 09:17	14/30/42 16:25	1
N-eth8l, erduorooctanesulðna(if oac etic acif xNEtFOSA	0y50	.	4y0	0y50	ng/L		14/30/42 09:17	14/30/42 16:25	1
N-(eth8l, erduorooctane sulðna(if oethanol xNMeFOSE	4y0	.	10	4y0	ng/L		14/30/42 09:17	14/30/42 16:25	1
N-eth8l, erduorooctane sulðna(if oethanol xNEtFOSE	4y0	.	10	4y0	ng/L		14/30/42 09:17	14/30/42 16:25	1
) epaduoro, ro, 8lene Opif e Di(er Acif x) FPO-DAH	0y50	.	1y5	0y50	ng/L		14/30/42 09:17	14/30/42 16:25	1
2rñ-Diopa-3) -, erduorononanoic acif xADONAH	0y50	.	4y0	0y50	ng/L		14/30/42 09:17	14/30/42 16:25	1
Perduoro-2-(ethop8butanoic acif xPFMBAH	0y50	.	4y0	0y50	ng/L		14/30/42 09:17	14/30/42 16:25	1
Nonaduoro-3rñ-f iopahe, tanoic acif xNFD) AH	0y50	.	4y0	0y50	ng/L		14/30/42 09:17	14/30/42 16:25	1
9-Chlorohepaf ecaduoro-3-opanonan e-1-sulðnic acif x9CI-PF3ONSH	0y50	.	4y0	0y50	ng/L		14/30/42 09:17	14/30/42 16:25	1
11-Chloroeicosaduoro-3-opaunf ecan e-1-sulðnic acif x11CI-PF3O. f SH	0y75	.	4y0	0y75	ng/L		14/30/42 09:17	14/30/42 16:25	1

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QC Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: MB 680-870772/1-A

Matrix: Water

Analysis Batch: 870836

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 870772

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perduoro x4-ethop8ethaneHsulbñic acif xPFEEAH	0y50	.	4y0	0y50	ng/L		14/30/42 09:17	14/30/42 16:25	1
3-Perduoro, ro, 8l, ro, anoi acif x3:3 FTCAH	1y0	.	2y0	1y0	ng/L		14/30/42 09:17	14/30/42 16:25	1
3-Perduoro, ent8l, ro, anoi acif x5:3 FTCAH	4y7	.	10	4y7	ng/L		14/30/42 09:17	14/30/42 16:25	1
3-Perduorohe, t8l, ro, anoi acif x7:3 FTCAH	4y7	.	10	4y7	ng/L		14/30/42 09:17	14/30/42 16:25	1
Perduorof ecanesulbñic acif xPFDSH	0y10	.	4y0	0y10	ng/L		14/30/42 09:17	14/30/42 16:25	1
Perduoro-3-(ethop8, ro, anoi acif xPFMPAH	0y50	.	4y0	0y50	ng/L		14/30/42 09:17	14/30/42 16:25	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4: C0 PFf A	426		5 - 4: 2	4/ 3 23 0 21mB	4/ 3 23 0 46mB5	4
4: C5 PFPeA	B8.0		02 - 4: 2	4/ 3 23 0 21mB	4/ 3 23 0 46mB5	4
4: C5 PFHxA	14.5		02 - 4: 2	4/ 3 23 0 21mB	4/ 3 23 0 46mB5	4
4: C0 PFHpA	82.:		02 - 4: 2	4/ 3 23 0 21mB	4/ 3 23 0 46mB5	4
4: C8 PFOA	86.5		02 - 4: 2	4/ 3 23 0 21mB	4/ 3 23 0 46mB5	4
4: C1 PFNA	15.B		02 - 4: 2	4/ 3 23 0 21mB	4/ 3 23 0 46mB5	4
4: C6 PFDA	88.:		02 - 4: 2	4/ 3 23 0 21mB	4/ 3 23 0 46mB5	4
4: CB PFUnA	1B.5		: 2 - 4: 2	4/ 3 23 0 21mB	4/ 3 23 0 46mB5	4
4: C/ PFDaA	1: .5		42 - 4: 2	4/ 3 23 0 21mB	4/ 3 23 0 46mB5	4
4: C/ PFTeDA	8/ ./		42 - 4: 2	4/ 3 23 0 21mB	4/ 3 23 0 46mB5	4
4: C: PFf S	442		02 - 4: 5	4/ 3 23 0 21mB	4/ 3 23 0 46mB5	4
4: C: PFHxS	440		02 - 4: 2	4/ 3 23 0 21mB	4/ 3 23 0 46mB5	4
4: C8 PFOS	12.1		02 - 4: 2	4/ 3 23 0 21mB	4/ 3 23 0 46mB5	4
4: C8 FOSA	426		02 - 4: 2	4/ 3 23 0 21mB	4/ 3 23 0 46mB5	4
d: -NMeFOSAA	42/		02 - 4B2	4/ 3 23 0 21mB	4/ 3 23 0 46mB5	4
d5-NEtFOSAA	424		/ 5 - 4: 5	4/ 3 23 0 21mB	4/ 3 23 0 46mB5	4
M/ -0m FTS	46/		02 - / 22	4/ 3 23 0 21mB	4/ 3 23 0 46mB5	4
M/ -6m FTS	464		02 - / 22	4/ 3 23 0 21mB	4/ 3 23 0 46mB5	4
M/ -8m FTS	4: B		02 - : 22	4/ 3 23 0 21mB	4/ 3 23 0 46mB5	4
4: C: HFPO-DA	85./		02 - 4: 2	4/ 3 23 0 21mB	4/ 3 23 0 46mB5	4
dB-N-MeFOSE-M	66.0		42 - 4: 2	4/ 3 23 0 21mB	4/ 3 23 0 46mB5	4
d1-N-EtFOSE-M	68.:		42 - 4: 2	4/ 3 23 0 21mB	4/ 3 23 0 46mB5	4
d5-NEtPFOSA	0B.B		42 - 4: 2	4/ 3 23 0 21mB	4/ 3 23 0 46mB5	4
d: -NMePFOSA	58./		42 - 4: 2	4/ 3 23 0 21mB	4/ 3 23 0 46mB5	4

Lab Sample ID: LCS 680-870772/2-A

Matrix: Water

Analysis Batch: 870836

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 870772

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perduorobutanoic acif xPFBAH	76yR	65y8		ng/L		R5	70 - 120
Perduoro, entanoic acif xPFPeAH	3R2	36y4		ng/L		92	65 - 135
Perduorohepanoic acif xPF) pAH	19y4	15y7		ng/L		R4	70 - 125
Perduorohe, tanoic acif xPF) , AH	19y4	17y8		ng/L		90	70 - 150
Perduorooctanoic acif xPFOAH	19y4	15yR		ng/L		R4	70 - 150
Perduorononanoic acif xPFNAH	19y4	15y8		ng/L		R0	70 - 150
Perduorof ecanoic acif xPFDAH	19y4	16y0		ng/L		R3	70 - 120

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QC Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SF0C & IDW

Job ID: 670-53900-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCS 680-870772/2-A

Matrix: Water

Analysis Batch: 870836

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 870772

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perfluorooctanoic acid	19y4	16y6		ng/L		R7	70 - 125
PF ₆ nAH							
Perfluorooctanoic acid	19y4	16y4		ng/L		R2	70 - 120
PFDoAH							
Perfluorotrianoic acid	19y4	15y1		ng/L		7R	65 - 120
PFTrDAH							
Perfluorotetraanoic acid	19y4	16yR		ng/L		RR	60 - 120
PFtAH							
Perfluorobutanesulfonic acid	17y0	13yR		ng/L		R1	60 - 125
PFBSH							
Perfluoro, octanesulfonic acid	1Ry0	15y7		ng/L		R7	65 - 120
PFPeSH							
Perfluoroheptanesulfonic acid	17y5	13yR		ng/L		79	65 - 125
PFpSH							
Perfluoroheptanesulfonic acid	1Ry8	12y5		ng/L		79	70 - 150
PFpSH							
Perfluorooctanesulfonic acid	17y9	13y4		ng/L		72	55 - 150
PFOSH							
Perfluorononanesulfonic acid	1Ry5	12y6		ng/L		79	65 - 125
PFNSH							
Perfluorooctanesulfonic acid	1Ry6	11y7		ng/L		63	50 - 125
PFDoSH							
1) n) n) n) -Perfluoroheptanesulfonic acid x2:4 FTSH	74y0	57yR		ng/L		R0	70 - 125
1) n) n) n) -Perfluorooctanesulfonic acid x6:4 FTSH	73y1	64yR		ng/L		R6	65 - 155
1) n) n) n) -Perfluorooctanesulfonic acid xR4 FTSH	73y7	62y5		ng/L		RR	60 - 150
Perfluorooctanesulfonic acid (if e	19y4	15y9		ng/L		R3	70 - 125
PFOSA							
N-(ethyl, erduorooctane	19y4	16y5		ng/L		R6	60 - 150
sulfonic acid (if e xNMeFOSA							
N-ethyl, erduorooctane	19y4	19y7		ng/L		104	65 - 125
sulfonic acid (if e xNEtFOSA							
N-(ethyl, erduorooctanesulfonic acid (if acetic acid xNMeFOSA	19y4	15y8		ng/L		R0	50 - 120
AAH							
N-ethyl, erduorooctanesulfonic acid (i	19y4	16yR		ng/L		R7	70 - 125
f acetic acid xNEtFOSA							
N-(ethyl, erduorooctane	194	177		ng/L		94	70 - 125
sulfonic acid (if oethanol xNMeFOSEH							
N-ethyl, erduorooctane	194	153		ng/L		79	70 - 135
sulfonic acid (if oethanol xNEtFOSEH							
) epaduoro, ro, 8lene Opif e	76yR	6R6		ng/L		R9	70 - 120
Di(er Acif x) FPO-DAH							
2tr-Diopa-3) -, erduorononanoic	74y7	70y7		ng/L		97	65 - 125
acid xADONAH							
Perfluoro-2-(ethop8butanoic	3Ry2	32yR		ng/L		91	60 - 150
acid xPFMBAH							
Nonaduoro-3r6-f iopahe, tanoic	3Ry2	47y5		ng/L		74	50 - 150
acid xNFD) AH							
9-Chlorohepaf ecaduoro-3-opan	71y7	50y4		ng/L		70	70 - 155
onane-1-sulfonic							
acid x9Cl-PF3ONSH							
11-Chloroeicosaaduoro-3-opaunf	74y5	50y8		ng/L		69	55 - 160
ecane-1-sulfonic acid							
x11Cl-PF3O. f SH							

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QC Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCS 680-870772/2-A

Matrix: Water

Analysis Batch: 870836

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 870772

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perduoro x4-ethop8ethaneH	32y8	4RyR		ng/L		R2	70 - 120
sulbñic acif xPFEEAH							
3-Perduoro, ro, 8l, ro, anoic acif	95yR	76y0		ng/L		79	65 - 130
x3:3 FTCAH							
3-Perduoro, ent8l, ro, anoic acif	279	3R9		ng/L		R1	70 - 135
x5:3 FTCAH							
3-Perduorohe, t8l, ro, anoic acif	279	379		ng/L		79	50 - 125
x7:3 FTCAH							
Perduorof ecanesulbñic acif	1Ry5	12y0		ng/L		76	60 - 125
xPFDSH							
Perduoro-3-(ethop8, ro, anoic acif xPFMPAH	3Ry2	46y0		ng/L		6R	55 - 120

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
4: C0 PFf A	42B		5 - 4: 2
4: C5 PFPeA	80.4		02 - 4: 2
4: C5 PFHxA	15./		02 - 4: 2
4: C0 PFHpA	86.B		02 - 4: 2
4: C8 PFOA	81.2		02 - 4: 2
4: C1 PFNA	420		02 - 4: 2
4: C6 PFDA	12.2		02 - 4: 2
4: CB PFUnA	14.B		: 2 - 4: 2
4: C/ PFDoA	12.:		42 - 4: 2
4: C/ PFTeDA	8B.2		42 - 4: 2
4: C: PFf S	448		02 - 4: 5
4: C: PFHxS	446		02 - 4: 2
4: C8 PFOS	16.B		02 - 4: 2
4: C8 FOSA	10.1		02 - 4: 2
d: -NMeFOSAA	420		02 - 4B2
d5-NEtFOSAA	1/ .6		/ 5 - 4: 5
M/ -0th FTS	44/		02 - / 22
M/ -6th FTS	4/ :		02 - / 22
M/ -8th FTS	4/ 4		02 - : 22
4: C: HFPO-DA	15.8		02 - 4: 2
dB-N-MeFOSE-M	B8.1		42 - 4: 2
d1-N-EtFOSE-M	B1.5		42 - 4: 2
d5-NEtPFOSA	5B.6		42 - 4: 2
d: -NMePFOSA	B4./		42 - 4: 2

Lab Sample ID: LCSD 680-870772/3-A

Matrix: Water

Analysis Batch: 870836

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 870772

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	
							Limits	RPD	Limit	
Perduorobutanoic acif xPFBAH	76yR	69y1		ng/L		90	70 - 120	6	30	
Perduoro, entanoic acif xPFPeAH	3Ry2	20y6		ng/L		106	65 - 135	11	30	
Perduorohepanoic acif xPF) pAH	19y4	16y7		ng/L		R7	70 - 125	6	30	
Perduorohe, tanoic acif xPF) , AH	19y4	19y1		ng/L		99	70 - 150	10	30	
Perduorooctanoic acif xPFOAH	19y4	17y2		ng/L		91	70 - 150	10	30	
Perduoronanoic acif xPFNAH	19y4	16y5		ng/L		R6	70 - 150	7	30	

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QC Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCSD 680-870772/3-A

Matrix: Water

Analysis Batch: 870836

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 870772

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perduorof ecanoic acif xPFDAAH	19y4	17y4		ng/L		90	70 - 120	R	30
Perduorounf ecanoic acif	19y4	17yR		ng/L		93	70 - 125	7	30
xPF. nAH									
Perduorof of ecanoic acif	19y4	17y5		ng/L		91	70 - 120	R	30
xPFDoAH									
Perduorotrif ecanoic acif	19y4	16y2		ng/L		R5	65 - 120	R	30
xPFTrDAH									
Perduorotetraf ecanoic acif	19y4	17y7		ng/L		94	60 - 120	5	30
xPFTAH									
Perduorobutanesulbnc acif	17y0	15yR		ng/L		93	60 - 125	12	30
xPFBSH									
Perduoro, entanesulbnc acif	1Ry0	16y9		ng/L		92	65 - 120	R	30
xPFPeSH									
Perduorohepanesulbnc acif	17y5	15y2		ng/L		RR	65 - 125	11	30
xPF) pSH									
Perduorohe, tanesulbnc acif	1Ry8	15yR		ng/L		R6	70 - 150	9	30
xPF) , SH									
Perduorooctanesulbnc acif	17y9	13yR		ng/L		7R	55 - 150	5	30
xPFOSH									
Perduorononanesulbnc acif	1Ry5	16y8		ng/L		RR	65 - 125	11	30
xPFNSH									
Perduorof of ecanesulbnc acif	1Ry6	14y5		ng/L		67	50 - 125	6	30
xPFDoSH									
1) r4) r4) r4) -Perduorohepane sulbnc acif x2:4 FTSH	74y0	60y2		ng/L		R2	70 - 125	2	30
1) r4) r4) r4) -Perduorooctane sulbnc acif x6:4 FTSH	73y1	62y8		ng/L		RR	65 - 155	4	30
1) r4) r4) r4) -Perduorof ecanesulbnc acif xR4 FTSH	73y7	71y9		ng/L		9R	60 - 150	11	30
Perduorooctanesulbna(if e	19y4	17y5		ng/L		91	70 - 125	10	30
xPFOSA									
N-(eth8l, erduorooctane sulbna(if e xNMeFOSA	19y4	19y8		ng/L		100	60 - 150	16	30
N-eth8l, erduorooctane sulbna(if e xNetFOSA	19y4	41y7		ng/L		113	65 - 125	10	30
N-(eth8l, erduorooctanesulbna (if oacetic acif xNMeFOSA	19y4	17y0		ng/L		R9	50 - 120	11	30
N-eth8l, erduorooctanesulbna(i f oacetic acif xNetFOSA	19y4	19y1		ng/L		100	70 - 125	13	30
N-(eth8l, erduorooctane sulbna(if oethanol xNMeFOSE	194	17R		ng/L		93	70 - 125	1	30
N-eth8l, erduorooctane sulbna(if oethanol xNetFOSE	194	164		ng/L		R2	70 - 135	6	30
) epaduoro, ro, 8lene Opif e	76yR	71y9		ng/L		92	70 - 120	5	30
Di(er Acif x) FPO-DAH									
2rR-Diopa-3) -, erduorononanoic acif xADONAH	74y7	72y2		ng/L		104	65 - 125	5	30
Perduoro-2-(ethop8butanoic acif xPFMBAH	3Ry2	3Ry0		ng/L		99	60 - 150	9	30
Nonaduoro-3r6-f iopahe, tanoic acif xNFD) AH	3Ry2	49y8		ng/L		76	50 - 150	6	30
9-Chlorohepaf ecaduoro-3-opan onane-1-sulbnc acif x9Cl-PF3ONSH	71y7	53y8		ng/L		72	70 - 155	6	30

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QC Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SF0C & IDW

Job ID: 670-53900-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LCSD 680-870772/3-A

Matrix: Water

Analysis Batch: 870836

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 870772

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
11-Chloroeicosaduoro-3-opaunf	74y6	50y6		ng/L		70	55 - 160	0	30
ecane-1-suldbnic acif									
x11Cl-PF3O. f SH									
Perduoro x4-ethop8ethaneH	32y8	34y1		ng/L		92	70 - 120	11	30
suldbnic acif xPFEEAH									
3-Perduoro, ro, 8l, ro, anoic acif	95yR	R2y4		ng/L		RR	65 - 130	10	30
x3:3 FTCAH									
3-Perduoro, ent8l, ro, anoic acif	279	207		ng/L		R5	70 - 135	5	30
x5:3 FTCAH									
3-Perduorohe, t8l, ro, anoic acif	279	215		ng/L		R7	50 - 125	9	30
x7:3 FTCAH									
Perduorof ecanesuldbnic acif	1Ry6	12y6		ng/L		79	60 - 125	2	30
xPFDSH									
Perduoro-3-(ethop8, ro, anoic acif xPFMPAH	3Ry2	47y7		ng/L		74	55 - 120	6	30

Isotope Dilution	%Recovery	Qualifier	Limits
4: C0 PFf A	428		5 - 4: 2
4: C5 PFPeA	8: .0		02 - 4: 2
4: C5 PFHxA	15.4		02 - 4: 2
4: C0 PFHpA	8B.4		02 - 4: 2
4: C8 PFOA	88.2		02 - 4: 2
4: C1 PFNA	422		02 - 4: 2
4: C6 PFDA	81.6		02 - 4: 2
4: CB PFUnA	14.1		: 2 - 4: 2
4: C/ PFDoA	8B.0		42 - 4: 2
4: C/ PFTeDA	8: .5		42 - 4: 2
4: C: PFf S	44:		02 - 4: 5
4: C: PFHxS	44/		02 - 4: 2
4: C8 PFOS	15.5		02 - 4: 2
4: C8 FOSA	1: .B		02 - 4: 2
d: -NMeFOSAA	1: .2		02 - 4B2
d5-NEtFOSAA	8B.0		/ 5 - 4: 5
M/-0m FTS	442		02 - / 22
M/-6m FTS	4/ 4		02 - / 22
M/-8m FTS	44:		02 - : 22
4: C: HFPO-DA	11.2		02 - 4: 2
dB-N-MeFOSE-M	80.8		42 - 4: 2
d1-N-EtFOSE-M	84.:		42 - 4: 2
d5-NEtPFOSA	58.0		42 - 4: 2
d: -NMePFOSA	68.2		42 - 4: 2

Lab Sample ID: LLCS 680-870772/4-A

Matrix: Water

Analysis Batch: 870836

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 870772

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perduorobutanoic acif xPFBAH	10y4	Ry73		ng/L		R5	70 - 120
Perduoro, entanoic acif xPFPeAH	5y14	2y2		ng/L		96	65 - 135
Perduorohepanoic acif xPF) pAH	4y66	4y84		ng/L		91	70 - 125
Perduorohe, tanoic acif xPF) , AH	4y66	4y8R		ng/L		93	70 - 150

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QC Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SF0C & IDW

Job ID: 670-53900-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LLCS 680-870772/4-A

Matrix: Water

Analysis Batch: 870836

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 870772

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
Perduorooctanoic acid xPFOAH	4y66	4y40		ng/L		R6	70 - 150
Perduorononanoic acid xPFNAH	4y66	4y0R		ng/L		R1	70 - 150
Perduorofecanoic acid xPFDAH	4y66	4y17		ng/L		R5	70 - 120
Perduorounfecanoic acid xPF. nAH	4y66	4y82		ng/L		91	70 - 125
Perduorofecanoic acid xPFDoAH	4y66	4y10		ng/L		R4	70 - 120
Perduorotriecanoic acid xPFTriDAH	4y66	1y91 I		ng/L		75	65 - 120
Perduorotetraecanoic acid xPFTAH	4y66	4y19		ng/L		R6	60 - 120
Perduorobutanesulfoic acid xPFBSH	4y47	1yR7 I		ng/L		R4	60 - 125
Perduoro, entanesulfoic acid xPFPeSH	4y21	4y02		ng/L		R5	65 - 120
Perduorohepanesulfoic acid xPF) pSH	4y83	4y14		ng/L		91	65 - 125
Perduorohe, tanesulfoic acid xPF) , SH	4y22	4y02		ng/L		R2	70 - 150
Perduorooctanesulfoic acid xPFOSH	4y8R	1y50 I		ng/L		63	55 - 150
Perduorononanesulfoic acid xPFNSH	4y26	1y93 I		ng/L		7R	65 - 125
Perduorofecanesulfoic acid xPFDoSH	4y2R	1y64 I		ng/L		65	50 - 125
1) nA) nA) nA) -Perduorohepane sulfoic acid x2:4 FTSH	9y61	Ry04		ng/L		R3	70 - 125
1) nA) nA) nA) -Perduorooctane sulfoic acid x6:4 FTSH	9y75	Ry26		ng/L		R7	65 - 155
1) nA) nA) nA) -Perduorofecane sulfoic acid xR4 FTSH	9yR3	9y00		ng/L		94	60 - 150
Perduorooctanesulfoic acid (if e xPFOSAH	4y66	4y41		ng/L		R6	70 - 125
N-(ethyl, erduorooctane sulfoic acid (if e xNMeFOSAH	4y66	4y42		ng/L		R7	60 - 150
N-ethyl, erduorooctane sulfoic acid (if e xNEtFOSAH	4y66	4y2R		ng/L		97	65 - 125
N-(ethyl, erduorooctanesulfoic acid (if acetic acid xNMeFOSAAH	4y66	4y44		ng/L		R7	50 - 120
N-ethyl, erduorooctanesulfoic acid (if acetic acid xNEtFOSAAH	4y66	4y44		ng/L		R7	70 - 125
N-(ethyl, erduorooctane sulfoic acid (if ethanol xNMeFOSEH	45y6	44y4		ng/L		R7	70 - 125
N-ethyl, erduorooctane sulfoic acid (if ethanol xNEtFOSEH	45y6	40y6		ng/L		R0	70 - 135
) epaduoro, ro, 8lene Opif e Di(er Acif x) FPO-DAH	10y4	9y89		ng/L		94	70 - 120
2RDiopa-3) -, erduorononanoic acid xADONAH	9y69	9y53		ng/L		9R	65 - 125
Perduoro-2-(ethop8butanoic acid xPFMBAH	5y14	2y65		ng/L		91	60 - 150
Nonaduoro-3R6-f iopahe, tanoic acid xNFD) AH	5y14	3y5R		ng/L		70	50 - 150

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QC Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

Method: 1633 - Per- and Polyfluoroalkyl Substances by LC/MS/MS (Continued)

Lab Sample ID: LLCS 680-870772/4-A

Matrix: Water

Analysis Batch: 870836

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 870772

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	%Rec Limits
9-Chloroheptadecanoic acid	9y66	6y71		ng/L		70	70 - 155
11-Chloroeicosanoic acid	9y67	6y64		ng/L		6R	55 - 160
Perfluorooctanoic acid	2y57	2y00		ng/L		RR	70 - 120
3-Perfluorooctanoic acid	14yR	9y60		ng/L		75	65 - 130
3-Perfluorooctanoic acid	63y9	50yR		ng/L		79	70 - 135
3-Perfluorooctanoic acid	63y9	50y5		ng/L		79	50 - 125
Perfluorodecanoic acid	4y27	1yR7	I	ng/L		76	60 - 125
Perfluorodecanoic acid	5y14	3y60		ng/L		6R	55 - 120

Isotope Dilution	LLCS %Recovery	LLCS Qualifier	Limits
4: C0 PFf A	424		/ 5 - 4: 2
4: C5 PFPeA	BB.1		02 - 4: 2
4: C5 PFHxA	86.6		02 - 4: 2
4: C0 PFHpA	B1.6		02 - 4: 2
4: C8 PFOA	8/. 6		02 - 4: 2
4: C1 PFNA	1B.1		02 - 4: 2
4: C6 PFDA	85.2		02 - 4: 2
4: CB PFUnA	86.2		: 2 - 4: 2
4: C/ PFDoA	8: .0		42 - 4: 2
4: C/ PFTeDA	B8.8		42 - 4: 2
4: C: PFf S	442		02 - 4: 5
4: C: PFHxS	426		02 - 4: 2
4: C8 PFOS	1/. 4		02 - 4: 2
4: C8 FOSA	12.4		02 - 4: 2
d: -NMeFOSAA	12.2		02 - 4B2
d5-NEtFOSAA	85.5		/ 5 - 4: 5
M/-0th FTS	425		02 - / 22
M/-6th FTS	441		02 - / 22
M/-8th FTS	44/		02 - : 22
4: C: HFPO-DA	88.6		02 - 4: 2
dB-N-MeFOSE-M	8: .0		42 - 4: 2
d1-N-EtFOSE-M	84.0		42 - 4: 2
d5-NEtPFOSA	62.:		42 - 4: 2
d: -NMePFOSA	B0.4		42 - 4: 2

QC Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 670-128712/3-A
Matrix: Water
Analysis Batch: 128862

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 128712

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anti(on8	0y87	.	1yR	0y87	ug/L		14/46/42 09:59	14/46/42 1R5R	1

Lab Sample ID: LCS 670-128712/1-A
Matrix: Water
Analysis Batch: 128862

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 128712

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Anti(on8	100	101		ug/L		101	RD - 140

Lab Sample ID: LCSD 670-128712/2-A
Matrix: Water
Analysis Batch: 128862

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 128712

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Anti(on8	100	101		ug/L		101	RD - 140	0	40

Lab Sample ID: 670-53900-3 MS
Matrix: Water
Analysis Batch: 128862

Client Sample ID: SFOC-IW0004S-007.0-20241223
Prep Type: Total Recoverable
Prep Batch: 128712

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Anti(on8	0y21	.	111	107		ug/L		96	75 - 145

Lab Sample ID: 670-53900-3 MSD
Matrix: Water
Analysis Batch: 128862

Client Sample ID: SFOC-IW0004S-007.0-20241223
Prep Type: Total Recoverable
Prep Batch: 128712

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Anti(on8	0y21	.	111	113		ug/L		104	75 - 145	6	40

Method: 365.4 - Phosphorus, Total

Lab Sample ID: MB 670-128744/12-A
Matrix: Water
Analysis Batch: 128968

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 128744

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Phos, horus as P	20	.	100	20	ug/L		14/46/42 14:35	14/47/42 14:12	1

Lab Sample ID: LCS 670-128744/11-A
Matrix: Water
Analysis Batch: 128968

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 128744

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Phos, horus as P	1500	1600		ug/L		107	90 - 110

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QC Sample Results

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

Method: 365.4 - Phosphorus, Total (Continued)

Lab Sample ID: 660-140043-C-1-A MS

Matrix: Water

Analysis Batch: 128968

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 128744

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Phos, horus as P	1R0		1500	1750		ug/L		102	R5 - 115

Lab Sample ID: 660-140043-C-1-B MSD

Matrix: Water

Analysis Batch: 128968

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 128744

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Phos, horus as P	1R0		1500	1730		ug/L		103	R5 - 115	1	40

Lab Sample ID: MB 670-128747/2-A

Matrix: Water

Analysis Batch: 128968

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 128747

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Phos, horus as P	20	.	100	20	ug/L		14/46/42 14:57	14/47/42 14:26	1

Lab Sample ID: LCS 670-128747/1-A

Matrix: Water

Analysis Batch: 128968

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 128747

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Phos, horus as P	1500	1590		ug/L		106	90 - 110

Lab Sample ID: 670-53906-E-3-A MS

Matrix: Water

Analysis Batch: 128968

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 128747

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Phos, horus as P	20	.	1500	1240		ug/L		95	R5 - 115

Lab Sample ID: 670-53906-E-3-B MSD

Matrix: Water

Analysis Batch: 128968

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 128747

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Phos, horus as P	20	.	1500	1240		ug/L		95	R5 - 115	0	40

QC Association Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

GC/MS VOA

Analysis Batch: 129198

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-53900-7	SFOC-IDW01-20241223	Total/NA	Water	8260D	
670-53900-8	SFOC-IDW02-20241223	Total/NA	Water	8260D	
MB 670-129198/7	Method Blank	Total/NA	Water	8260D	
LCS 670-129198/4	Lab Control Sample	Total/NA	Water	8260D	
670-53802-A-10 MS	Matrix Spike	Total/NA	Water	8260D	
670-53802-A-10 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

GC Semi VOA

Prep Batch: 128820

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-53900-7	SFOC-IDW01-20241223	Total/NA	Water	3511	
MB 670-128820/1-A	Method Blank	Total/NA	Water	3511	
LCS 670-128820/2-A	Lab Control Sample	Total/NA	Water	3511	
LCSD 670-128820/3-A	Lab Control Sample Dup	Total/NA	Water	3511	

Analysis Batch: 128864

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-53900-7	SFOC-IDW01-20241223	Total/NA	Water	FL-PRO	128820
MB 670-128820/1-A	Method Blank	Total/NA	Water	FL-PRO	128820
LCS 670-128820/2-A	Lab Control Sample	Total/NA	Water	FL-PRO	128820
LCSD 670-128820/3-A	Lab Control Sample Dup	Total/NA	Water	FL-PRO	128820

HPLC/IC

Analysis Batch: 128428

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-53900-7	SFOC-IDW01-20241223	Total/NA	Water	300.0	
670-53900-8	SFOC-IDW02-20241223	Total/NA	Water	300.0	
MB 670-128428/37	Method Blank	Total/NA	Water	300.0	
MB 670-128428/6	Method Blank	Total/NA	Water	300.0	
LCS 670-128428/35	Lab Control Sample	Total/NA	Water	300.0	
LCSD 670-128428/36	Lab Control Sample Dup	Total/NA	Water	300.0	
670-53840-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
670-53840-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

LCMS

Prep Batch: 870772

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-53900-7 - DL	SFOC-IDW01-20241223	Total/NA	Water	1633	
670-53900-8 - DL	SFOC-IDW02-20241223	Total/NA	Water	1633	
MB 680-870772/1-A	Method Blank	Total/NA	Water	1633	
LCS 680-870772/2-A	Lab Control Sample	Total/NA	Water	1633	
LCSD 680-870772/3-A	Lab Control Sample Dup	Total/NA	Water	1633	
LLCS 680-870772/4-A	Lab Control Sample	Total/NA	Water	1633	

Analysis Batch: 870836

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-53900-7 - DL	SFOC-IDW01-20241223	Total/NA	Water	1633	870772
670-53900-8 - DL	SFOC-IDW02-20241223	Total/NA	Water	1633	870772
MB 680-870772/1-A	Method Blank	Total/NA	Water	1633	870772

Eurofins Orlando

QC Association Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

LCMS (Continued)

Analysis Batch: 870836 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-870772/2-A	Lab Control Sample	Total/NA	Water	1633	870772
LCSD 680-870772/3-A	Lab Control Sample Dup	Total/NA	Water	1633	870772
LLCS 680-870772/4-A	Lab Control Sample	Total/NA	Water	1633	870772

Metals

Prep Batch: 128712

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-53900-1	SFOC-IW0001S-007.0-20241223	Total Recoverable	Water	3005A	
670-53900-2	SFOC-IW0002S-007.0-20241223	Total Recoverable	Water	3005A	
670-53900-3	SFOC-IW0004S-007.0-20241223	Total Recoverable	Water	3005A	
670-53900-4	SFOC-IW0009-007.0-20241223	Total Recoverable	Water	3005A	
670-53900-5	SFOC-FD01-20241223	Total Recoverable	Water	3005A	
670-53900-6	SFOC-EB01-20241223	Total Recoverable	Water	3005A	
670-53900-7	SFOC-IDW01-20241223	Total Recoverable	Water	3005A	
MB 670-128712/3-A	Method Blank	Total Recoverable	Water	3005A	
LCS 670-128712/1-A	Lab Control Sample	Total Recoverable	Water	3005A	
LCSD 670-128712/2-A	Lab Control Sample Dup	Total Recoverable	Water	3005A	
670-53900-3 MS	SFOC-IW0004S-007.0-20241223	Total Recoverable	Water	3005A	
670-53900-3 MSD	SFOC-IW0004S-007.0-20241223	Total Recoverable	Water	3005A	

Analysis Batch: 128862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-53900-1	SFOC-IW0001S-007.0-20241223	Total Recoverable	Water	6020B	128712
670-53900-2	SFOC-IW0002S-007.0-20241223	Total Recoverable	Water	6020B	128712
670-53900-3	SFOC-IW0004S-007.0-20241223	Total Recoverable	Water	6020B	128712
670-53900-4	SFOC-IW0009-007.0-20241223	Total Recoverable	Water	6020B	128712
670-53900-5	SFOC-FD01-20241223	Total Recoverable	Water	6020B	128712
670-53900-6	SFOC-EB01-20241223	Total Recoverable	Water	6020B	128712
670-53900-7	SFOC-IDW01-20241223	Total Recoverable	Water	6020B	128712
MB 670-128712/3-A	Method Blank	Total Recoverable	Water	6020B	128712
LCS 670-128712/1-A	Lab Control Sample	Total Recoverable	Water	6020B	128712
LCSD 670-128712/2-A	Lab Control Sample Dup	Total Recoverable	Water	6020B	128712
670-53900-3 MS	SFOC-IW0004S-007.0-20241223	Total Recoverable	Water	6020B	128712
670-53900-3 MSD	SFOC-IW0004S-007.0-20241223	Total Recoverable	Water	6020B	128712

General Chemistry

Prep Batch: 128744

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-53900-8	SFOC-IDW02-20241223	Total/NA	Water	365.2/365.3/365	
MB 670-128744/12-A	Method Blank	Total/NA	Water	365.2/365.3/365	
LCS 670-128744/11-A	Lab Control Sample	Total/NA	Water	365.2/365.3/365	
660-140043-C-1-A MS	Matrix Spike	Total/NA	Water	365.2/365.3/365	
660-140043-C-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	365.2/365.3/365	

Prep Batch: 128747

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-53900-7	SFOC-IDW01-20241223	Total/NA	Water	365.2/365.3/365	
MB 670-128747/2-A	Method Blank	Total/NA	Water	365.2/365.3/365	
LCS 670-128747/1-A	Lab Control Sample	Total/NA	Water	365.2/365.3/365	
670-53906-E-3-A MS	Matrix Spike	Total/NA	Water	365.2/365.3/365	

Eurofins Orlando

QC Association Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

General Chemistry (Continued)

Prep Batch: 128747 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-53906-E-3-B MSD	Matrix Spike Duplicate	Total/NA	Water	365.2/365.3/365	

Analysis Batch: 128968

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
670-53900-7	SFOC-IDW01-20241223	Total/NA	Water	365.4	128747
670-53900-8	SFOC-IDW02-20241223	Total/NA	Water	365.4	128744
MB 670-128744/12-A	Method Blank	Total/NA	Water	365.4	128744
MB 670-128747/2-A	Method Blank	Total/NA	Water	365.4	128747
LCS 670-128744/11-A	Lab Control Sample	Total/NA	Water	365.4	128744
LCS 670-128747/1-A	Lab Control Sample	Total/NA	Water	365.4	128747
660-140043-C-1-A MS	Matrix Spike	Total/NA	Water	365.4	128744
660-140043-C-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	365.4	128744
670-53906-E-3-A MS	Matrix Spike	Total/NA	Water	365.4	128747
670-53906-E-3-B MSD	Matrix Spike Duplicate	Total/NA	Water	365.4	128747

Lab Chronicle

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

Client Sample ID: SFOC-IW0001S-007.0-20241223

Lab Sample ID: 670-53900-1

Date Collected: 12/23/24 09:37

Matrix: Water

Date Received: 12/23/24 14:23

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			128712	JR	EET ORL	12/26/24 09:59
Total Recoverable	Analysis	6020B		1	128862	AS	EET ORL	12/26/24 19:17

Client Sample ID: SFOC-IW0002S-007.0-20241223

Lab Sample ID: 670-53900-2

Date Collected: 12/23/24 09:43

Matrix: Water

Date Received: 12/23/24 14:23

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			128712	JR	EET ORL	12/26/24 09:59
Total Recoverable	Analysis	6020B		1	128862	AS	EET ORL	12/26/24 19:20

Client Sample ID: SFOC-IW0004S-007.0-20241223

Lab Sample ID: 670-53900-3

Date Collected: 12/23/24 10:47

Matrix: Water

Date Received: 12/23/24 14:23

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			128712	JR	EET ORL	12/26/24 09:59
Total Recoverable	Analysis	6020B		1	128862	AS	EET ORL	12/26/24 19:11

Client Sample ID: SFOC-IW0009-007.0-20241223

Lab Sample ID: 670-53900-4

Date Collected: 12/23/24 10:37

Matrix: Water

Date Received: 12/23/24 14:23

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			128712	JR	EET ORL	12/26/24 09:59
Total Recoverable	Analysis	6020B		1	128862	AS	EET ORL	12/26/24 19:22

Client Sample ID: SFOC-FD01-20241223

Lab Sample ID: 670-53900-5

Date Collected: 12/23/24 09:55

Matrix: Water

Date Received: 12/23/24 14:23

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			128712	JR	EET ORL	12/26/24 09:59
Total Recoverable	Analysis	6020B		1	128862	AS	EET ORL	12/26/24 19:28

Client Sample ID: SFOC-EB01-20241223

Lab Sample ID: 670-53900-6

Date Collected: 12/23/24 11:05

Matrix: Water

Date Received: 12/23/24 14:23

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total Recoverable	Prep	3005A			128712	JR	EET ORL	12/26/24 09:59
Total Recoverable	Analysis	6020B		1	128862	AS	EET ORL	12/26/24 19:31

Lab Chronicle

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

Client Sample ID: SFOC-IDW01-20241223

Lab Sample ID: 670-53900-7

Date Collected: 12/23/24 11:30

Matrix: Water

Date Received: 12/23/24 14:23

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129198	ES	EET ORL	12/30/24 23:42
Total/NA	Prep	3511			128820	EH	EET ORL	12/26/24 19:18
Total/NA	Analysis	FL-PRO		1	128864	MM	EET ORL	12/27/24 12:07
Total/NA	Analysis	300.0		1	128428	YGS	EET ORL	12/23/24 19:47
Total/NA	Prep	1633	DL		870772	STS	EET SAV	12/30/24 09:17
Total/NA	Analysis	1633	DL	1	870836	SW	EET SAV	12/30/24 19:04
Total Recoverable	Prep	3005A			128712	JR	EET ORL	12/26/24 09:59
Total Recoverable	Analysis	6020B		1	128862	AS	EET ORL	12/26/24 19:33
Total/NA	Prep	365.2/365.3/365			128747	DGS	EET ORL	12/26/24 12:57
Total/NA	Analysis	365.4		1	128968	LD	EET ORL	12/27/24 13:00

Client Sample ID: SFOC-IDW02-20241223

Lab Sample ID: 670-53900-8

Date Collected: 12/23/24 11:20

Matrix: Water

Date Received: 12/23/24 14:23

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	129198	ES	EET ORL	12/31/24 00:00
Total/NA	Analysis	300.0		5	128428	YGS	EET ORL	12/23/24 19:35
Total/NA	Prep	1633	DL		870772	STS	EET SAV	12/30/24 09:17
Total/NA	Analysis	1633	DL	1	870836	SW	EET SAV	12/30/24 19:19
Total/NA	Prep	365.2/365.3/365			128744	DGS	EET ORL	12/26/24 12:35
Total/NA	Analysis	365.4		1	128968	LD	EET ORL	12/27/24 12:42

Laboratory References:

EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Accreditation/Certification Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

Laboratory: Eurofins Orlando

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Florida	NELAP	E83018	06-30-25

Laboratory: Eurofins Savannah

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Florida	NELAP	E87052	06-30-25

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16

Method Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET ORL
FL-PRO	Florida - Petroleum Range Organics (GC)	FL-DEP	EET ORL
300.0	Anions, Ion Chromatography	EPA	EET ORL
1633	Per- and Polyfluoroalkyl Substances by LC/MS/MS	EPA	EET SAV
6020B	Metals (ICP/MS)	SW846	EET ORL
365.4	Phosphorus, Total	EPA	EET ORL
1633	Solid-Phase Extraction (SPE)	EPA	EET SAV
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	EET ORL
3511	Microextraction of Organic Compounds	SW846	EET ORL
365.2/365.3/365	Phosphorus, Total	EPA	EET ORL
5030C	Purge and Trap	SW846	EET ORL

Protocol References:

EPA = US Environmental Protection Agency

FL-DEP = State Of Florida Department Of Environmental Protection, Florida Administrative Code.

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

Laboratory References:

EET ORL = Eurofins Orlando, 481 Newburyport Avenue, Altamonte Springs, FL 32701, TEL (407)339-5984

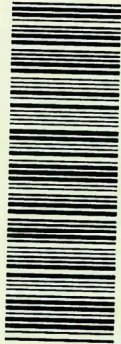
EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Sample Summary

Client: AECOM Technical Services Inc
Project/Site: NASA KSC VAB LTM SFOC & IDW

Job ID: 670-53900-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
670-53900-1	SFOC-IW0001S-007.0-20241223	Water	12/23/24 09:37	12/23/24 14:23
670-53900-2	SFOC-IW0002S-007.0-20241223	Water	12/23/24 09:43	12/23/24 14:23
670-53900-3	SFOC-IW0004S-007.0-20241223	Water	12/23/24 10:47	12/23/24 14:23
670-53900-4	SFOC-IW0009-007.0-20241223	Water	12/23/24 10:37	12/23/24 14:23
670-53900-5	SFOC-FD01-20241223	Water	12/23/24 09:55	12/23/24 14:23
670-53900-6	SFOC-EB01-20241223	Water	12/23/24 11:05	12/23/24 14:23
670-53900-7	SFOC-IDW01-20241223	Water	12/23/24 11:30	12/23/24 14:23
670-53900-8	SFOC-IDW02-20241223	Water	12/23/24 11:20	12/23/24 14:23



670-53900 Chain of Custody

CHAIN OF CUSTODY AND ANALYTICAL REQUEST RECORD			
Project Name:	NASA KSC - VAB LTM Program	COC No.	Page: 1 of 1
Site Location:	Shuttle Flight Operations Contract Generator Maintenance Facility (SFOC)	PO No.	TBD
TO No.:	80KSC024F117	Send Invoice To:	Instructions in MSA # 195-245-8-GV03
Devin Kehoe / (919) 943-3797	AECOM Project Manager: Chad Lee	Deliver Sample Kits To:	AECOM Depot, 523 13th Street, Orlando
		Deliver Samples To:	Eurofins Orlando

Sample Analysis Requested (Enter number of containers for each test)									
Lab ID	Sample ID (sys_samp_code)	Location ID (sys_loc_code)	Date (YYYYMMDD)	Time (Military) (hhmm)	Matrix Code (1)	Sample Type (2)	G-Grab C=Comp	(3)	HN03
	SFOC-1W0001S-007.0-20241223	SFOC-1W0001S	20241223	0937	WG	N	G	1	1
	SFOC-1W0002S-007.0-20241223	SFOC-1W0002S	20241223	0943	WG	N	G	1	1
	SFOC-1W0004S-007.0-20241223	SFOC-1W0004S	20241223	1047	WG	N	G	3A	3A
	SFOC-1W0009-007.0-20241223	SFOC-1W0009	20241223	1037	WG	N	G	1	1
	SFOC-FD01-20241223	SFOC-FD01	20241223	0955	WG	FD	G	1	1
	SFOC-EB01-20241223	SFOC-EB01	20241223	1105	WQ	EB	G	1	1
	SFOC-IDW01-20241223	SFOC-IDW01	20241223	1130	WG	N	G	1	1
	SFOC-IDW02-20241223	SFOC-IDW02	20241223	1120	WG	N	G	7	7

Field Comments:		Lab Comments:		Sample Shipment and Delivery Details	
Report only per QAPP WS #15-23		1.5 / 1.3°C		Number of coolers in shipment:	
Relinquished by (signature):		Received by (signature):		Samples Iced? (check) Yes ☒ No ☐	
1. M. Parsotan		4/23/24		Shipping Company:	
2.		1423		Tracking No:	
3.				Date Shipped:	

(1) AA= Ambient air, AQ= Air quality control, ASB= Asbestos, CK= Caulk, DS= Storm drain sediment, GS= Soil gas, IC= IDW Concrete, IDD= IDW Solid, IDS= IDW soil, IDW= IDW water, LF= Free Product, MA= Mastic, PC= Paint Chips, SC= Cement/Concrete, SE= Sediment, SL= Sludge, SO= Soil, SQ= Soil/Solid quality control, SSD= Subsurface sediment, SU= Surface soil (<6 in), SW= Swab or wipe, TA= Animal tissue, TP= Tissue quality control, TQ= Tissue quality control, WG= Ground water, WL= Leachate, WO= Ocean water, WP= Drinking water, WQ= Water quality control, WR= Ground water effluent, WS= Surface water, WU= Storm water, WW= Waste water

(2) Sample Type: AB= Ambient Bk, EB= Equipment Bk, FB= Field Bk, FD= Field Duplicate Sample, IDW= Investigative-Derived Waste, MTS= Incremental Sampling Methodology, N= Normal Environmental Sample, TB= Trip Bk

(3) Preservative added: 4 DEG C= Cool to 4 degrees, Dark= Store in Darkness, store cool at 4 degrees C, H2SO4 <2= Adjust to pH < 2 with sulfuric acid, H3PO4 <2= Adjust to pH < 2 with phosphoric acid, H3PO4 <2= Adjust to pH < 2 with phosphoric acid, HCl <2= Adjust to pH < 2 with hydrochloric acid, HNO3 <2= Adjust to pH < 2 with nitric acid, MeOH= Methanol preservation, Na2O3S2 3/gal= Add 3 ml 10% sodium thiosulfate per gal, Na2O3S2 4/4oz= 4 drops of 10% sodium thiosulfate to 4 oz, NaHSO4 <2= Adjust to pH < 2 with sodium hydrogen sulfate, NaOH >9= Adjust to pH > 9 with sodium hydroxide, NaOH >12= Adjust to pH > 12 with sodium hydroxide, NaOH >12= Adjust to pH > 12 with sodium hydroxide, VRC 0.6/500= Add 0.6 g of ascorbic acid to 500mLs, ZnAct 2/500= Add 2 mL of zinc acetate to 500mLs, ZnAct+NaOH >9= Zinc acetate and NaOH to pH>9, store cool at 4C. If NO preservative added leave blank

Rev 4/13

Ver: 10/10/2022/31/2024

Login Sample Receipt Checklist

Client: AECOM Technical Services Inc

Job Number: 670-53900-1

Login Number: 53900

List Source: Eurofins Orlando

List Number: 1

Creator: Lavardera, Angelina

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

Login Sample Receipt Checklist

Client: AECOM Technical Services Inc

Job Number: 670-53900-1

Login Number: 53900

List Number: 2

Creator: Lincoln, Alyssa

List Source: Eurofins Savannah

List Creation: 12/27/24 12:17 PM

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

APPENDIX E

RIS COMPLETION TICKETS

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Data Checker

Completion Ticket

On 4/24/2025 at 5:37 PM the following files were submitted to Tetra Tech

COMPLETION_AECOM_VAB_20250424.txt

LITHOLOGY_AECOM_VAB_20250424.txt

LOCATION_AECOM_VAB_20250424.txt

PROJECT_AECOM_VAB_20250424.txt

RESULT_AECOM_VAB_20250424.txt

SAMPLE_AECOM_VAB_20250424.txt

WATER_AECOM_VAB_20250424.txt

The following comment was provided with this submission:

**Hello TT! Attached are the KEDDs for the VAB LTM December 2024 GW sampling event.
Please let me know if you have any questions. thanks! Jen Chastain**

If you need to identify this session at a later date you may use the Ticket Key:

TetraTechExternalClientsProtectedDataRepository2025424_2535024527_kedd_AECOM

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