TETRA TECH

23 August 2022

Ms. Ruth Scharr
On Scene Coordinator
Four Penn Center - 1600 John F. Kennedy Boulevard Philadelphia, Pennsylvania 19103

Subject: **After Action Report – Revision 2**
Paint Waste Burial Site
Response Actions and Soil Confirmation Sampling
EPA Contract No. 68-HE-0320-D0003
Technical Direction (TD) No. T601-21-12-004
Document Control No. 0397

Dear Ms. Scharr:

The Tetra Tech, Inc. (Tetra Tech) Superfund Technical Assessment and Response Team (START) is submitting for your review and approval this After Action Report - Revision 2 for the Paint Waste Burial Site, in Rural Retreat, Wythe County, Virginia. This report summarizes the emergency response activities conducted on December 16, 2021, and soil confirmation sampling procedures and analytical results for sampling conducted on January 31, 2022.

If you have any questions regarding this report, please call me at [redacted] or e-mail at [redacted].

Sincerely,

[redacted]

[redacted]
Project Manager

Enclosure (1)

cc: TD File
[redacted], Tetra Tech

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AFTER ACTION REPORT

REVISION 2

PAINT WASTE BURIAL SITE
CONFIRMATION SOIL SAMPLING
RURAL RETREAT, WYTHE COUNTY, VIRGINIA

EPA CONTRACT NO. 68-HE-0320-D0003
TECHNICAL DIRECTION NO. T601-21-12-004
DOCUMENT TRACKING 0397

Prepared For:

U.S. Environmental Protection Agency Region 3
Superfund and Emergency Management Division
Four Penn Center - 1600 John F. Kennedy Boulevard Philadelphia, PA 19103

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August 2022

AFTER ACTION REPORT

REVISION 2

PAINT WASTE BURIAL SITE REMOVAL ACTION
CONFIRMATION SOIL SAMPLING
RURAL RETREAT, VA

[redacted]

Tetra Tech START – TD Project Manager – [redacted] 8/23/2022
Date

[redacted]

Tetra Tech START – Quality Assurance Officer – [redacted] 8/23/2022
Date

RUTH SCHARR Digitally signed by RUTH SCHARR
Date: 2022.08.23 16:36:47 -04'00'

EPA – On-Scene Coordinator – Ruth Scharr Date

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1.0 INTRODUCTION

Under Superfund Technical Assessment and Response Team (START) VI Contract 68-HE-0320-D0003, Technical Directive (TD) No. T601-21-12-004, U.S. Environmental Protection Agency (EPA) Region 3 tasked Tetra Tech, Inc. (Tetra Tech) Superfund Technical Assessment and Response Team (START) to conduct sampling at the Paint Waste Burial Site (the Site) after an emergency response. The purpose of the sampling was to determine whether hazardous substances associated with the buried waste were present in soils surrounding the Site after the removal action had been completed.

This after action report summarizes confirmation sampling activities and analytical results from the soil sampling conducted at the Site on January 31, 2022. This report summarizes Site background information in Section 2.0; outlines emergency response and removal assessment activities in Section 3.0; details removal action activities in Section 4.0; presents analytical results in Section 5.0; and provides conclusions in Section 6.0. References cited in the text are listed in Section 7.0. Figures are provided in Appendix A, sample result tables are provided in Appendix B, a photographic documentation log is provided in Appendix C, and the laboratory analytical reports and data validation reports are included as Attachments A and B, respectively.

2.0 SITE LOCATION AND DESCRIPTION

The Site is a former burial pit area for the illegal disposal of waste paint, paint containers and paint-related products such as coatings, thinners, and solvents (Appendix A, Figure 1). The Site is bounded by residential properties to the north, south, and west; and a residential roadway to the east with residential areas beyond (Appendix A, Figure 2). The former burial area is located on a residential parcel in a rural residential subdivision in which potable water is supplied to the residences by private wells.

3.0 EMERGENCY RESPONSE OVERVIEW

On December 3, 2021, the Virginia Department of Environmental Quality (VADEQ) received a report that paint wastes had been buried in a wooded area on a private residential property, Rural Retreat, Wythe County, Virginia. VADEQ conducted a site visit and identified a location that appeared to have disturbed soils and suspected buried paint waste. VADEQ requested assistance from EPA Region 3 in investigating the Site. EPA and Tetra Tech responded to the Site on December 16, 2021. Elevated photo-ionization detector (PID) volatile organic compound (VOC) readings were detected in the air during air monitoring near the suspected burial location. START and Virginia Department of Emergency Management (VADEM) personnel unearthed several crushed and partly crushed possible paint and solvent containers, and one intact

and partially crushed 3- or 5-gallon metal container in the suspected burial area. START collected a sample of the liquid waste from the container and a soil sample adjacent to buried, crushed containers where PID readings of up to 2,700 parts per million (ppm) were measured.

3.1 EMERGENCY RESPONSE SITE ACTIVITIES

START was tasked by the EPA to conduct air monitoring, groundwater, soil, and waste sampling during the emergency response at the Site. The primary goals of air monitoring were to verify air quality on-site and to ensure that the adjacent residential areas were not being adversely impacted. The primary goals of the sampling activities were to determine the following: to characterize the unknown waste substance buried in the ground; to characterize unknown waste substances that have impacted the native soils; and to characterize possible contamination in groundwater from leaching of unknown wastes through the soils into the karst aquifer below.

The EPA On-Scene Coordinator (OSC) tasked START with the following objectives:

- Provide continuous air monitoring for VOC, carbon monoxide (CO), hydrogen sulfide (H_2S), and percent lower explosive limit (LEL).
- Collect a waste sample, a soil sample, and six groundwater samples from five residential wells surrounding the Site.
- Procure analytical services for characterization of soil, waste, and groundwater samples.
- Document sampling activities and sampling locations via photographs, digital data capture forms, and written field notes.
- Review data validation reports after receipt of final analytical data packages from the laboratory.
- Perform data management using Scribe software and geographic information systems (GIS) mapping.
- Document and summarize the findings in an after action report.

Groundwater results will be discussed further under the removal assessment TD report.

3.2 EMERGENCY RESPONSE INVESTIGATION RESULTS

This section summarizes the analytical results for the samples collected on December 16, 2021, at the Site by START during this emergency response. Samples were shipped to designated laboratories, which included:

- Eurofins Lancaster, Lancaster, Pennsylvania (Tier IV lab) – Soil sample analyzed for VOC.
- Enthalpy Labs, Richmond, Virginia – waste sample analyzed for VOC, SVOC, and metals plus Li and Hg.

3.2.1 ANALYTICAL RESULTS FOR SOIL AND WASTE SAMPLING

The data from the soil and waste samples were not submitted for data validation. Soil and waste samples were used to determine what the constituents of concern were and if concentrations of hazardous constituents in soil exceeded risk-based screening levels.

Preliminary results for the waste and soil samples were received on December 27, 2021, and the results indicated that VOC and SVOC were the primary constituents of concern.

The soil sample contained 1,1,2-trichloroethane (50,000 micrograms per kilogram [µg/kg]), 2-butanone (MEK) (110,000 µg/kg), 2-hexanone (MBK) (48,000 µg/kg), 4-methyl-2-pentanone (MIBK) (2,000,000 µg/kg), acetone (820,000 µg/kg), ethylbenzene (2,900,000 µg/kg), isopropylbenzene (cumene) (80,000 µg/kg), methyl acetate (250,000 µg/kg), methylcyclohexane (7,100 µg/kg), and total xylenes (13,000,000 µg/kg).

The waste sample contained 1,2,4-trimethylbenzene (136,000 µg/kg), MIBK (134,000 µg/kg), ethylbenzene (37,500,000 µg/kg), isopropylbenzene (285,000 µg/kg), total xylenes (197,000,000 µg/kg), and had a flash point of 28 degrees Celsius (82.4 degrees Fahrenheit).

The soil and waste samples exceeded the EPA Protection of Groundwater Risk-Based Soil Screening Levels (SSL) based on a target health quotient (THQ) of 1.0, for the following analytes (EPA 2021):

- 1,1,2-Trichloroethane: EPA SSL: 0.089 µg/kg in soil
- 1,2,4-Trimethylbenzene: EPA SSL: 81 µg/kg in waste
- 2-Hexanone (MBK): EPA SSL: 8.8 µg/kg in soil
- Ethylbenzene: EPA SSL: 1.7 µg/kg in soil and waste
- Isopropylbenzene (cumene): EPA SSL: 740 µg/kg in waste

- M,p-xylenes: EPA SSL: 380 µg/kg in soil and waste
- O-xylene: EPA SSL: 190 µg/kg in soil and waste

The soil sample exceeded the VADEQ protection levels for ecological receptors and groundwater, and beneficial groundwater protection screening levels (SSL) for the following analytes (VADEQ 2012):

- 1,1,2-Trichloroethane: VADEQ SSL: 20.5 µg/kg
- 2-Butanone (MEK): VADEQ SSL: 552 µg/kg
- 2-Hexanone (MBK): VADEQ SSL: 6.45 µg/kg
- 4-Methyl-2-pentanone (MIBK): VADEQ SSL: 164 µg/kg
- Acetone: VADEQ SSL: 1,250 µg/kg
- Ethylbenzene: VADEQ SSL: 16,800 µg/kg
- Isopropylbenzene (cumene): VADEQ SSL: 5,770 µg/kg
- Methyl acetate: VADEQ SSL: 1,770 µg/kg
- O-Xylene: VADEQ SSL: 226,000 µg/kg

The waste sample contained detections for metals including aluminum (6.06 mg/kg), barium (155 mg/kg), calcium (4.82 mg/kg), copper (19.8 mg/kg), iron (7.93 mg/kg), magnesium (30.3 mg/kg), manganese (0.712 mg/kg), mercury (0.029 mg/kg), and zinc (2.20 mg/kg).

Detections of analytes for VOCs are presented in Appendix B, Table 1. Complete analytical results for soil and waste samples are presented in the laboratory data reports in Attachment A.

4.0 REMOVAL ACTION SITE ACTIVITIES

On December 29, 2021, the OSC activated ERRS Contractors to contain the releases of hazardous substances, pollutants, or contaminants and mitigate the threat to public health, welfare, or the environment. ERRS mobilized to the scene and began onsite activities on January 25, 2022. ERRS segregated the excavated media into potentially clean soil, contaminated soil, and waste media. Excavation activities produced 41 cubic yard bags of contaminated soils, eleven (11) cubic yard boxes of paint waste material which included the crushed containers and any soil clinging to the container, and six (6) drums of excavated containers that contained any remaining liquid waste paint or paint related material. The amount of remaining liquid in crushed containers placed in the drums was not able to be quantified. The pit was excavated down to approximately 4 feet in some sections and measured approximately 20 feet in length and 16 feet wide.

Tetra Tech prepared and submitted an FSP for the Site to EPA for review on January 12, 2022. The FSP was approved on January 20, 2022. On January 31, 2022, START conducted soil confirmation sampling activities in accordance with the approved FSP for the Site (Tetra Tech 2022)

START was tasked by the EPA to conduct air monitoring and soil confirmation sampling during the removal action at the Site. The primary goals of air monitoring were to verify air quality on-site and to ensure that the adjacent residential areas were not being adversely impacted during removal activities. The primary goal of the sampling activities was to confirm impacted soils have been removed from the ground. Photographs are provided in the Photographic Documentation Log, Appendix C.

The EPA OSC tasked START with the following objectives:

- Procure analytical services for characterization of soil samples.
- Collect confirmation soil samples for lab analysis to determine if contamination in soil exceeds EPA RML, EPA protection of groundwater screening levels, and VADEQ screening levels.
- Review data validation reports after receipt of final data packages from the laboratory.
- Document and summarize the findings in an after action report.

The field work was conducted in accordance with the EPA-approved Field Sampling Plan (FSP) for Paint Waste Burial Removal Action Site as well as in accordance with START 6 Uniform Federal Policy Quality Assurance Project Plan (UFP-QAPP) (Tetra Tech 2021, 2022) and EPA Contract Laboratory Program (CLP) method requirements (Tetra Tech 2021).

4.1 SOIL SAMPLING

This section discusses the sampling activities that were conducted at the Site on January 31, 2022.

START conducted confirmation soil sampling at the completion of removal action activities. The excavated area measured roughly 20 feet from north to south and 15.5 feet from east to west. The deepest portion measured approximately 4.5 deep on the southern end. The northern end is on the downslope slide and measured less than 2 feet deep. Confirmation soil samples were collected from all six sides and three locations within the floor of the burial pit shown in Figures 3a, b, and c. Sidewall samples were collected approximately 2 to 3 feet below grade surface (bgs). Floor samples were collected at the bottom of the excavation, at depths of 4 to 4.5 feet bgs. Samples were collected with stainless steel trowels and placed into three encore samplers, one 2-ounce (oz.) moisture jar, and two 8-oz. clear wide mouth (CWM) jars with minimal headspace. The soil was not homogenized for VOC samples prior to collection into the encore samplers. Soils were homogenized for SVOC and metals samples prior to collection into sample containers.

Soil samples were analyzed for Target Analyte List (TAL) VOC by contract laboratory program (CLP) method SFAM01.1, SVOC by CLP method SFAM01.1, and TAL metals and mercury using CLP method SFAM01.1.

After START collected the confirmation soil samples, VADEQ personnel placed polyethylene liner in the base of the excavated area. EPA's ERRs contractor backfilled the area with pea gravel to grade level.

4.2 AIR MONITORING

Air monitoring was conducted using a Honeywell RAE Systems MultiRAE Pro portable photoionization detector that allows for continuous multi-threat monitoring with parts per billion (ppb) precision. The MultiRAE was used to measure the volatile organic compounds (VOC), lower explosive limit (LEL), and hydrogen sulfide levels during excavation activities to determine the level of personal protective equipment (PPE) required. Air monitoring was conducted in modified level D PPE. The ERRS crew conducted removal activities in modified level C. The ability to upgrade to full level C and modified level B was available if readings rose above 50 parts per million (ppm) sustained within the breathing zone. START observed readings above 50 ppm sustained for most of the first full day of removal activities. ERRS donned full level C attire consisting of air purifying respirators with combo gas filters, Tyvek coveralls, and chemical resistant boot covers. The remainder of the days spend conducting removal activity required only modified level C absent the APR as VOC levels dropped below 50 ppm sustained.

5.0 ANALYTICAL RESULTS

This section summarizes the analytical results from the sampling event on January 31, 2022. All analytical data were validated by the ESAT contractor under the direction of the EPA Laboratory and Technical Services Branch. Organic data was validated at the Stage 4 (EPA Region 3 designation M3) level in accordance with EPA CLP "National Functional Guidelines for Organic Superfund Methods Data Review," EPA-540-R-20-005 (EPA 2020b). Inorganic data was validated at the Stage 4 (EPA Region 3 designation IM2) level in accordance with EPA CLP "National Functional Guidelines for Inorganic Superfund Methods Data Review," EPA-542-R-20-006 (EPA 2020a). Validated data packages for confirmation soil sampling are included in Attachment B. Analytical detection results can be found in Tables 2, 3, and 4 in Appendix B.

5.1 SOIL CONFIRMATION SAMPLING RESULTS

Samples collected for analysis of VOC and SVOC during the sampling event were analyzed by CLP lab ChemTech Consulting, Mountainside, New Jersey. TAL metals and mercury analysis was completed by CLP lab Pace Analytical Services, West Columbia, South Carolina. Detections of analytes are presented in

Appendix B, Tables 2, 3, and 4. Lab results and data validation packages are presented in Attachments A and B.

5.2 SOIL ANALYTICAL DISCUSSION

Soil confirmation samples were collected from all walls of the excavation pit and floor. A total of six wall samples (SO01S, SO02W, SO03E, SO05W, SO06N, and SO07E) were collected from all six sides. A total of three floor samples (SO04, SO08, and SO09) were collected. One grab sample (SO04) was collected from the floor at the southern, upgradient end of the burial pit and two composite samples (SO08 and SO09) were collected at the northern, downgradient end of the burial pit. VOCs samples collected from SO04, 08, 09, and duplicate SO10 were grab samples from the pit floor and were not composited. The two composite samples were split evenly between the east (SO09) and west (SO08) sections, with five sample points apiece, from the four corners of each section and the center. Sample SO10 was collected as a duplicate of SO09.

A total of eight VOC analytes (acetone, 4-methyl-2-pentanone [MIBK], toluene, ethylbenzene, o-xylene, m,p-xylene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene) were detected in all ten samples.

- 1,2,4-Trimethylbenzene ranged from 3.1 micrograms per kilogram (µg/kg) (SO08) to 99 µg/kg (SO07E)
- 1,3,5-Trimethylbenzene ranged from 1.6 µg/kg (SO08) to 54 µg/kg (SO07E)
- 4-Methyl-2-pentanone (MIBK) ranged from 190 µg/kg (SO07E) to 120,000 µg/kg (SO04)
- Acetone ranged from 60 µg/kg (SO10) to 11,000 µg/kg (SO04)
- Ethylbenzene ranged from 4.8 µg/kg (SO08) to 2,600 µg/kg (SO03E)
- o-Xylene ranged from 9.4 µg/kg (SO02W) to 4,600 µg/kg (SO03E)
- m,p-Xylene ranged from 23 µg/kg (SO08) to 11,000 µg/kg (SO03E)
- Toluene ranged from 4.9 µg/kg (SO08) to 600 µg/kg (SO03E)

2-Butanone (MEK) was present in eight of the ten samples and ranged from 31 µg/kg (SO06N) to 11,000 µg/kg (SO08). Methyl acetate, methyl tert-butyl ether, and 2-hexanone (MBK) were present only in sample SO04 at 34 µg/kg, 14 µg/kg, and 15 µg/kg, respectively. Isopropylbenzene (cumene) was present in six of the ten samples and ranged from 2 µg/kg (SO01S, SO05W) to 21 µg/kg (SO03E).

No samples exceeded EPA Removal Management Levels for Residential Soil, for VOC and SVOC (VADEQ 2022).

Acetone and 2-butanone (MEK) exceeded their VADEQ Beneficial Fill Groundwater Protection Screening Level of 1,250 µg/kg and 552 µg/kg respectively, at sample locations SO02W, SO04, SO05W, and SO08 (VADEQ 2012). MIBK exceeded the VADEQ Beneficial Fill Groundwater Protection Screening Level of 164 µg/kg at all sample locations (VADEQ 2012). Exceedances can be seen for each sample location for VOC and SVOC in Appendix A, Figures 3a and 3b. Results comparison to EPA RML and Protection of Groundwater SSL, and VADEQ Beneficial Fill Ground Water Protection Screening Levels can be found in Appendix B Table 2.

4-Chloraniline exceeded its VADEQ Beneficial Fill Groundwater Protection Screening Level of 1.59 µg/kg, at sample locations SO02W and SO03E. Naphthalene exceeded its VADEQ Beneficial Fill Groundwater Protection Screening Level of 14.9 µg/kg, at sample locations SO03E and SO07E. Exceedances can be seen for each sample location for SVOC in Appendix A, Figure 3b. Results comparison to EPA RML and Protection of Groundwater SSL, and VADEQ Beneficial Fill Ground Water Protection Screening Levels can be found in Appendix B Table 3.

Arsenic, cobalt, and iron exceeded EPA and VADEQ VRP residential soil screening levels and VADEQ Beneficial Fill Groundwater Protection Screening Levels for all ten samples. Exceedances can be seen for each sample location for metals in Appendix A, Figures 3c. Results comparison to EPA RML and Protection of Groundwater SSL, and VADEQ Beneficial Fill Ground Water Protection Screening Levels can be found in Appendix B Table 4.

Aluminum, chromium, manganese, nickel, and vanadium exceeded one of the three screening levels for all ten samples. Results comparison to EPA RML and Protection of Groundwater SSL, and VADEQ Beneficial Fill Ground Water Protection Screening Levels can be found in Appendix B Table 4.

The metals present in the confirmation soil samples are believed to be naturally occurring metals for the region. Waste samples collected by the ERRS contractor did not present the metals that were present in the soil confirmations samples collected by Tetra Tech.

Soil confirmation sample result detections are presented in Appendix B, Tables and 2, 3, and 4. Complete analytical results are provided in the analytical reports and data validation reports provided as Attachments A and B.

6.0 CONCLUSIONS

During the removal action, START provided on-site coverage to monitor conditions as soils, paint, and paint-related waste products were removed from the burial pit and provided continuous air monitoring for

VOC, CO, H_2S, and percent LEL. Validated results for VOC, SVOC, and metals analysis of the soil confirmation samples confirmed detections for select VOC, SVOC, and metals analytes. It is believed that metals detections in the soil confirmation samples are naturally occurring in the soils and are not from the paint wastes.

EPA anticipates continuing assessment work, including further delineation of contaminants in soils at the Site.

7.0 REFERENCES

Tetra Tech, Inc. (Tetra Tech). 2021. Uniform Federal Policy Program Quality Assurance Project Plan, Environmental Protection Agency (EPA) Region III Superfund Technical Assessment and Response Team (START 6 Contract), Revision 1. August 20.

Tetra Tech. 2022. "Paint Waste Burial Site Removal Action Field Sampling Plan (FSP)" January.

U.S. Environmental Protection Agency (EPA). 2020a. National Functional Guidelines for Inorganic Superfund Methods Data Review. Office of Land and Emergency Management (OLEM) 9240.1-66, EPA-542-R-20-006. November.

EPA. 2020b. National Functional Guidelines for Organic Superfund Methods Data Review. OLEM 9240.0-51, EPA-540-R-20-005. November.

EPA. 2021. Regional Screening Levels (RSLs) – Generic Tables. November.

EPA. 2022. Removal Management Levels (RMLs) – Generic Tables. May.

Virginia Department of Environmental Quality (VADEQ). 2012. Division of Land Protection and Revitalization State-Wide Variance Guidance Memo No. LPR-SW-04-2012 Management of Contaminated Media. July 17.

VADEQ. 2022. Virginia Voluntary Remediation (VRP) Program Screening Levels Based on the Virginia Unified Risk Assessment Module (VURAM) 3.2. January.

APPENDIX A

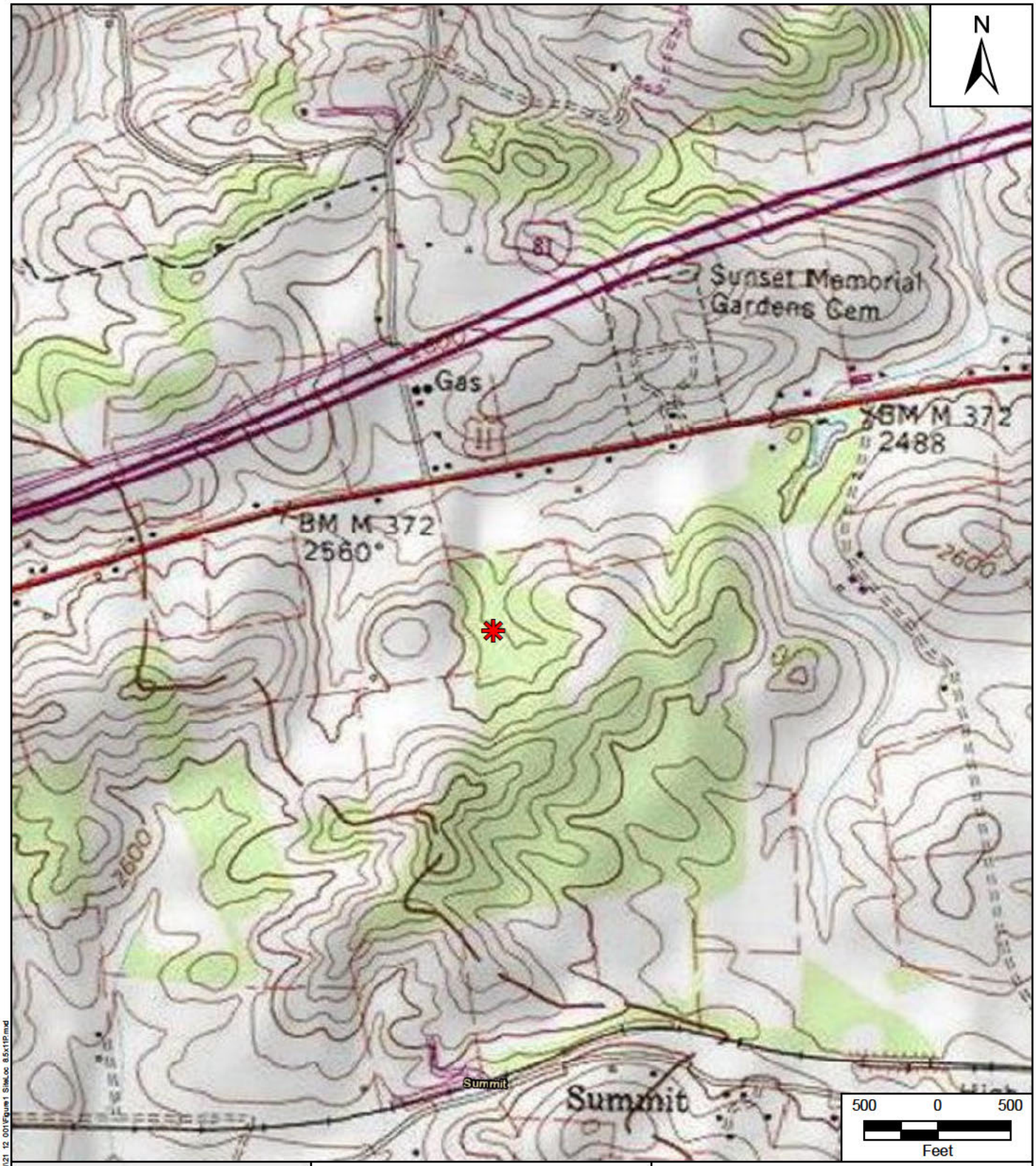
Figure 1 – Site Location Map

Figure 2 – Site Layout Map

Figure 3a – Soil Confirmation Sample Locations and VOC Results

Figure 3b – Soil Confirmation Sample Locations and SVOC Results

Figure 3c – Soil Confirmation Sample Locations and TAL Metals Results



Legend

Site Reference Point

Source: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
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Paint Waste Burial Removal Action Support
Rural Retreat, Wythe County, Virginia

Figure 1

Site Location Map

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Prepared For: EPA R3 START VI | Prepared By: M. Kelly

Date Saved: 02/09/22 | EPA Contract No: 68-HE-032-D0003 | TD No: T601-21-12-001 | Coordinate System: NAD 1983 2011 StatePlane Virginia South FIPS 4502 Ft US

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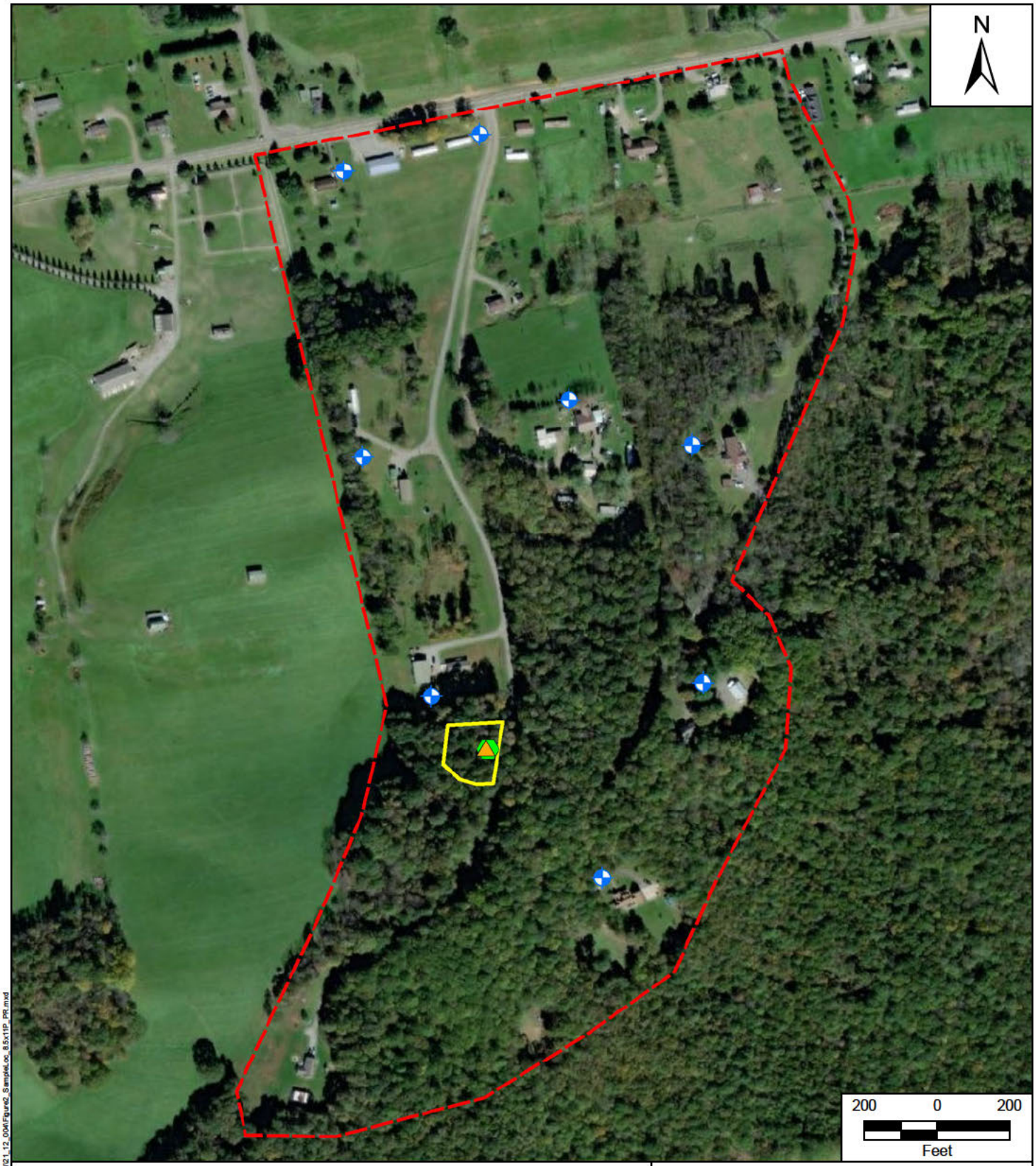

Legend

- Soil Sample
- Waste Sample
- Water Well Sample
- General Site Area
- Approx. Location of Paint Waste

Source: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
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Paint Waste Burial Removal Action Support
Rural Retreat, Wythe County, Virginia

Figure 2

Sample Location map

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Prepared For: EPA R3 START VI | Prepared By: [redacted]

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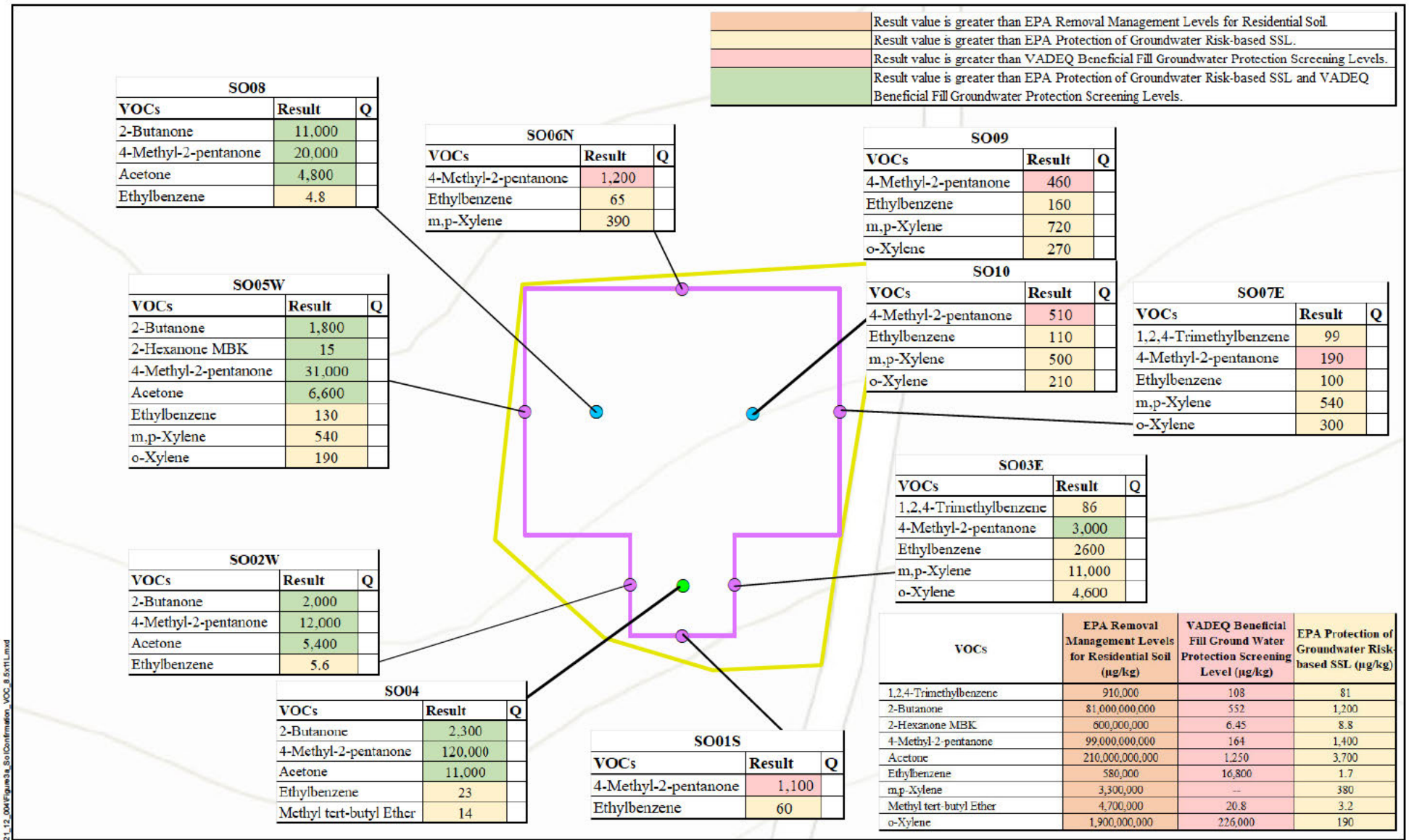
TD No: T601-21-12-004



SO08

VOCs	Result	Q
2-Butanone	11,000	
4-Methyl-2-pentanone	20,000	
Acetone	4,800	
Ethylbenzene	4.8	

SO06N

VOCs	Result	Q
4-Methyl-2-pentanone	1,200	
Ethylbenzene	65	
m,p-Xylene	390	

SO09

VOCs	Result	Q
4-Methyl-2-pentanone	460	
Ethylbenzene	160	
m,p-Xylene	720	
o-Xylene	270	

SO05W

VOCs	Result	Q
2-Butanone	1,800	
2-Hexanone MBK	15	
4-Methyl-2-pentanone	31,000	
Acetone	6,600	
Ethylbenzene	130	
m,p-Xylene	540	
o-Xylene	190	

SO10

VOCs	Result	Q
4-Methyl-2-pentanone	510	
Ethylbenzene	110	
m,p-Xylene	500	
o-Xylene	210	

SO07E

VOCs	Result	Q
1,2,4-Trimethylbenzene	99	
4-Methyl-2-pentanone	190	
Ethylbenzene	100	
m,p-Xylene	540	
o-Xylene	300	

SO03E

VOCs	Result	Q
1,2,4-Trimethylbenzene	86	
4-Methyl-2-pentanone	3,000	
Ethylbenzene	2600	
m,p-Xylene	11,000	
o-Xylene	4,600	

SO02W

VOCs	Result	Q
2-Butanone	2,000	
4-Methyl-2-pentanone	12,000	
Acetone	5,400	
Ethylbenzene	5.6	

SO04

VOCs	Result	Q
2-Butanone	2,300	
4-Methyl-2-pentanone	120,000	
Acetone	11,000	
Ethylbenzene	23	
Methyl tert-butyl Ether	14	

SO01S

VOCs	Result	Q
4-Methyl-2-pentanone	1,100	
Ethylbenzene	60	

VOCs	EPA Removal Management Levels for Residential Soil (µg/kg)	VADEQ Beneficial Fill Ground Water Protection Screening Level (µg/kg)	EPA Protection of Groundwater Risk-based SSL (µg/kg)
1,2,4-Trimethylbenzene	910,000	108	81
2-Butanone	81,000,000,000	552	1,200
2-Hexanone MBK	600,000,000	6.45	8.8
4-Methyl-2-pentanone	99,000,000,000	164	1,400
Acetone	210,000,000,000	1,250	3,700
Ethylbenzene	580,000	16,800	1.7
m,p-Xylene	3,300,000	--	380
Methyl tert-butyl Ether	4,700,000	20.8	3.2
o-Xylene	1,900,000,000	226,000	190

Legend

- Composite Sample
- Floor Grab Sample
- Sidewall Grab Sample
- Sidewall
- Approx. Location of Paint Waste

Notes

EPA = Environmental Protection Agency
VADEQ = Virginia Department of Environmental Quality.
Results in µg/kg = micro-grams per kilogram.
SSL = Soil Screening Level
VOC = Volatile organic compound.
Q = Qualifier.

N

30 0 30

Feet

Source: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Paint Waste Site
Rural Retreat, Wythe County, Virginia

Figure 3a
Soil Confirmation Samples and VOCs Results

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Prepared For: EPA R3 START VI | Prepared By: M. Kelly

Date Saved: 05/06/22 | EPA Contract No: 68-HE-032-D0003 | TD No: T601-21-12-004

Coordinate System: NAD 1963 2011 StatePlane Virginia South FIPS 4502 Ft US

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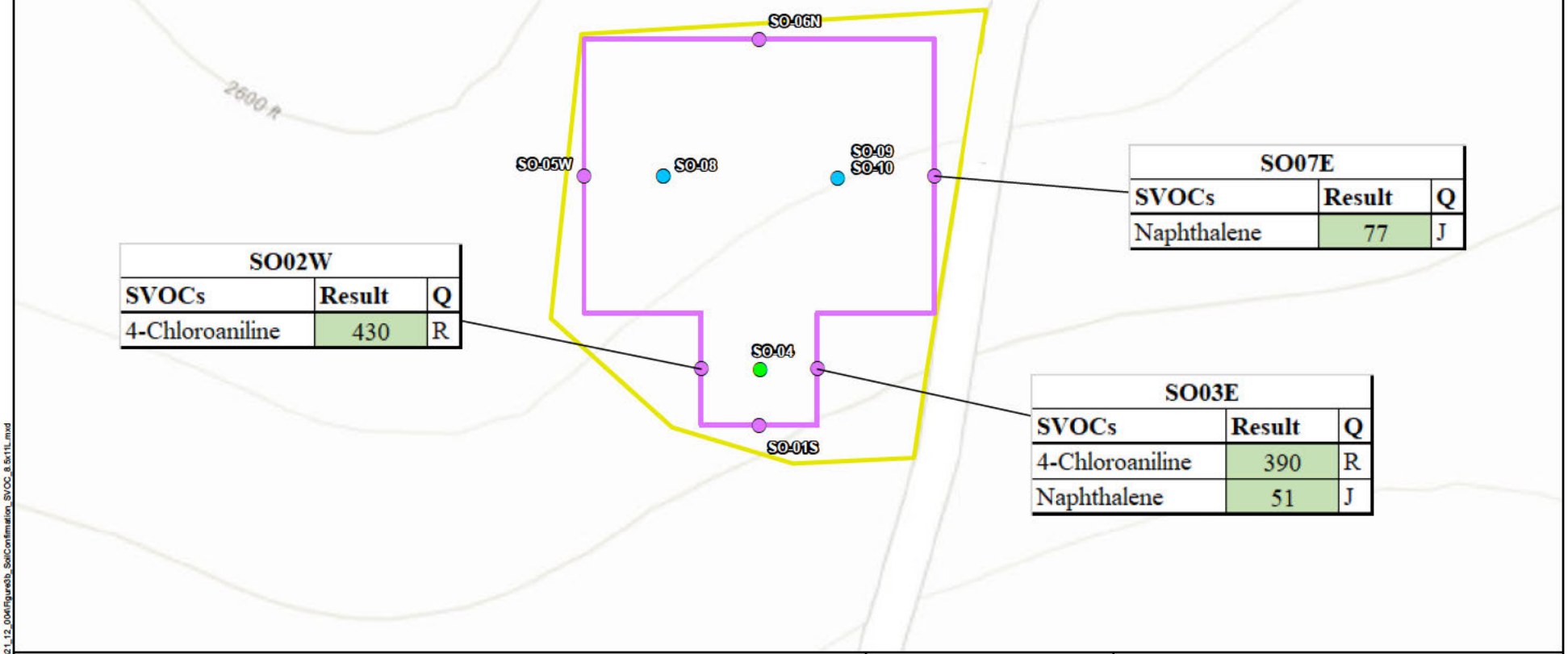
SVOCs	EPA Removal Management Levels for Residential Soil (µg/kg)	VADEQ Beneficial Fill Ground Water Protection Screening Level (µg/kg)	EPA Protection of Groundwater Risk-based SSL (µg/kg)
4-Chloroaniline	32,000	1.59	0.16
Naphthalene	200,000	14.9	0.38

	Result value is greater than EPA Removal Management Levels for Residential Soil.
	Result value is greater than EPA Protection of Groundwater Risk-based SSL.
	Result value is greater than VADEQ Beneficial Fill Groundwater Protection Screening Levels.
	Result value is greater than EPA Protection of Groundwater Risk-based SSL and VADEQ Beneficial Fill Groundwater Protection Screening Levels.



SO07E		
SVOCs	Result	Q
Naphthalene	77	J

SO02W		
SVOCs	Result	Q
4-Chloroaniline	430	R

SO03E		
SVOCs	Result	Q
4-Chloroaniline	390	R
Naphthalene	51	J

Legend

- Composite Sample
- Floor Grab Sample
- Sidewall Grab Sample
- Sidewall
- Approx. Location of Paint Waste

Notes

EPA = Environmental Protection Agency
VADEQ = Virginia Department of Environmental Quality. RSL = Regional Screening Level.
Results in µg/kg = micro-grams per kilogram.
SVOC = Semi-volatile organic compound.
SSL = Soil Screening Level
Q = Qualifier.
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
R = Result biased high

N

30 0 30

Feet

Paint Waste Site
Rural Retreat, Wythe County, Virginia

Figure 3b
Soil Confirmation Samples and SVOCs Results

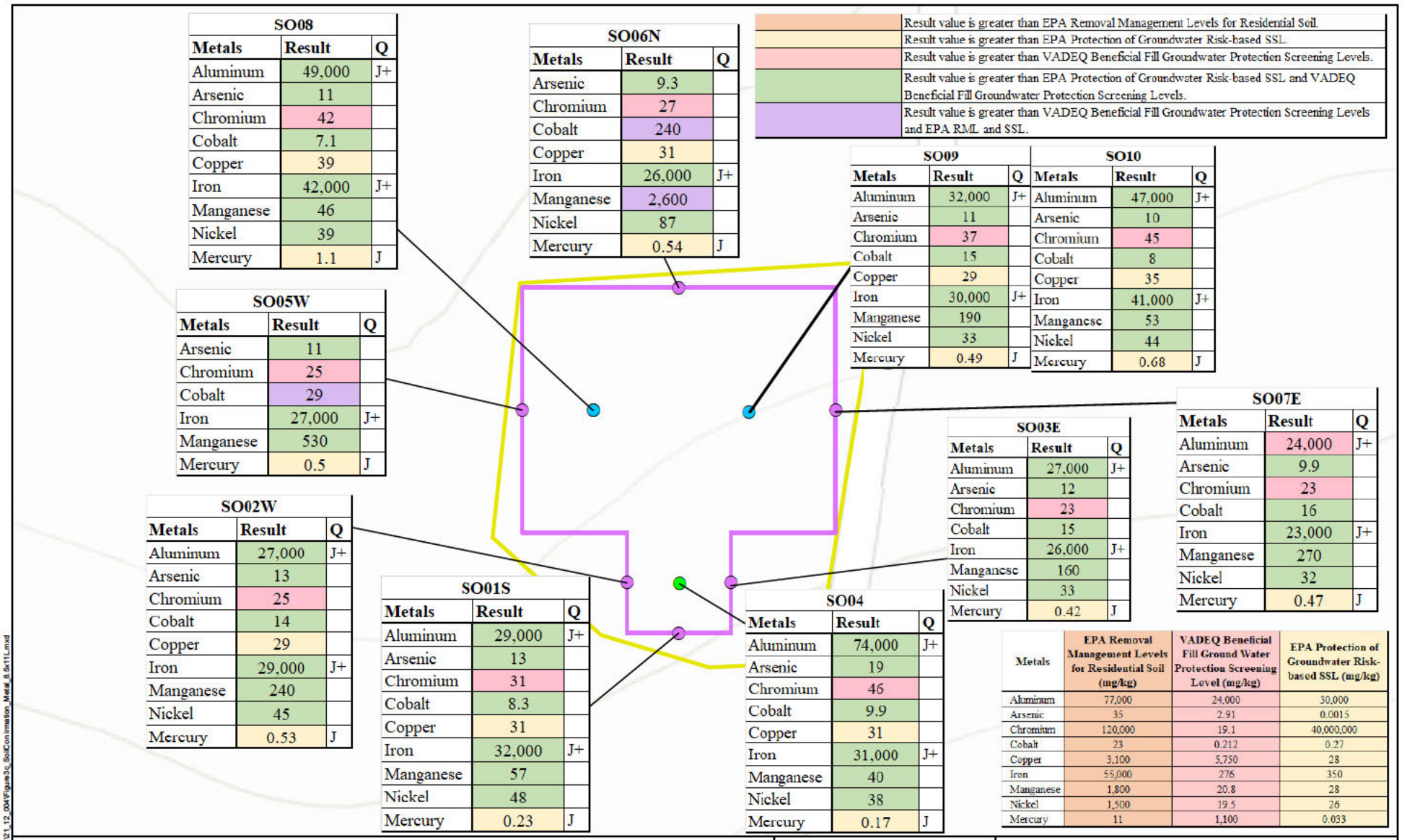
TETRA TECH

Prepared For EPA R3 START VI | Prepared By M. Kelly

Source Sources Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Date Saved 08/05/22 | EPA Contract No 68-HE-032-D0003 | TD No T601-21-12-004 | Coordinate System NAD 1963 2011 StatePlane Virginia South FIPS 4502 Ft US

File Path S:\06_Technical_Documents\903-4_START_R3\01121_12_004\Figure3b_SoilConfirmation_SVOC_8.5x11L.mxd



	Result value is greater than EPA Removal Management Levels for Residential Soil.
	Result value is greater than EPA Protection of Groundwater Risk-based SSL.
	Result value is greater than VADEQ Beneficial Fill Groundwater Protection Screening Levels.
	Result value is greater than EPA Protection of Groundwater Risk-based SSL and VADEQ Beneficial Fill Groundwater Protection Screening Levels.
	Result value is greater than VADEQ Beneficial Fill Groundwater Protection Screening Levels and EPA RML and SSL.

SO08

Metals	Result	Q
Aluminum	49,000	J+
Arsenic	11	
Chromium	42	
Cobalt	7.1	
Copper	39	
Iron	42,000	J+
Manganese	46	
Nickel	39	
Mercury	1.1	J

SO06N

Metals	Result	Q
Arsenic	9.3	
Chromium	27	
Cobalt	240	
Copper	31	
Iron	26,000	J+
Manganese	2,600	
Nickel	87	
Mercury	0.54	J

SO09

Metals	Result	Q
Aluminum	32,000	J+
Arsenic	11	
Chromium	37	
Cobalt	15	
Copper	29	
Iron	30,000	J+
Manganese	190	
Nickel	33	
Mercury	0.49	J

SO10

Metals	Result	Q
Aluminum	47,000	J+
Arsenic	10	
Chromium	45	
Cobalt	8	
Copper	35	
Iron	41,000	J+
Manganese	53	
Nickel	44	
Mercury	0.68	J

SO05W

Metals	Result	Q
Arsenic	11	
Chromium	25	
Cobalt	29	
Iron	27,000	J+
Manganese	530	
Mercury	0.5	J

SO07E

Metals	Result	Q
Aluminum	24,000	J+
Arsenic	9.9	
Chromium	23	
Cobalt	16	
Iron	23,000	J+
Manganese	270	
Nickel	32	
Mercury	0.47	J

SO03E

Metals	Result	Q
Aluminum	27,000	J+
Arsenic	12	
Chromium	23	
Cobalt	15	
Iron	26,000	J+
Manganese	160	
Nickel	33	
Mercury	0.42	J

SO02W

Metals	Result	Q
Aluminum	27,000	J+
Arsenic	13	
Chromium	25	
Cobalt	14	
Copper	29	
Iron	29,000	J+
Manganese	240	
Nickel	45	
Mercury	0.53	J

SO01S

Metals	Result	Q
Aluminum	29,000	J+
Arsenic	13	
Chromium	31	
Cobalt	8.3	
Copper	31	
Iron	32,000	J+
Manganese	57	
Nickel	48	
Mercury	0.23	J

SO04

Metals	Result	Q
Aluminum	74,000	J+
Arsenic	19	
Chromium	46	
Cobalt	9.9	
Copper	31	
Iron	31,000	J+
Manganese	40	
Nickel	38	
Mercury	0.17	J

Metals	EPA Removal Management Levels for Residential Soil (mg/kg)	VADEQ Beneficial Fill Ground Water Protection Screening Level (mg/kg)	EPA Protection of Groundwater Risk-based SSL (mg/kg)
Aluminum	77,000	24,000	30,000
Arsenic	35	2.91	0.0015
Chromium	120,000	19.1	40,000,000
Cobalt	23	0.212	0.27
Copper	3,100	5,750	28
Iron	55,000	276	350
Manganese	1,800	20.8	28
Nickel	1,500	19.5	26
Mercury	11	1,100	0.033

Legend

- Composite Sample
- Floor Grab Sample
- Sidewall Grab Sample
- Sidewall
- Approx. Location of Paint Waste

Notes

EPA = Environmental Protection Agency
VADEQ = Virginia Department of Environmental Quality.
SSL = Soil Screening Level
Results in mg/kg = milligrams per kilogram.
Q = Qualifier.
J+ = The result is an estimated quantity that may be estimated high. The associated numerical value is the approximate concentration of the analyte in the sample.

N

30 0 30

Feet

Paint Waste Site
Rural Retreat, Wythe County, Virginia

Figure 3c
Soil Confirmation Samples and Metal Results

TETRA TECH

Prepared For EPA R3 START VI | Prepared By M. Kelly

Source Sources Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Date Saved 05/06/22 | EPA Contract No 68-HE-032-D0003 | TD No T601-21-12-004

Coordinate System NAD 1963 2011 StatePlane Virginia South FIPS 4502 Ft US

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APPENDIX B

Table 1 – VOC Detections - Removal Assessment Soil and Waste Sample Results

Table 2 – VOC Detections - Soil Confirmation Sample Results

Table 3 – SVOC Detections - Soil Confirmation Sample Results

Table 4 – TAL Metals Detections - Soil Confirmation Sample Results

Table 01 - VOC Detections - Removal Assessment Soil and Waste Sample Results
Paint Waste Burial Site Removal Action
December 16, 2021 Sampling Event

Sample ID:	EPA Removal Management Levels for Residential Soil (µg/kg)	VADEQ Beneficial Fill Ground Water Protection Screening Level (µg/kg)	EPA Protection of Groundwater Risk-based SSL (µg/kg)	Waste 01		S01	
CLP Sample Number:				C0VD1		C0VD2	
Units:				µg/kg		µg/kg	
Sample Date:				12/16/2021		12/16/2021	
Sample Type:				Field Sample		Field Sample	
VOCs				Result	Q	Result	Q
1,1,2-Trichloroethane	4,500	20.5	0.089	100,000,000	U	50,000	J
1,2,4-Trimethylbenzene	910,000	108	81	136,000,000		--	
2-Butanone	81,000,000	552	1,200	100,000,000	U	110,000	
2-Hexanone MBK	600,000	6.45	8.8	100,000,000	U	48,000	J
4-Methyl-2-pentanone	99,000,000	164	1,400	134,000,000		2,000,000	
Acetone	210,000,000	1,250	3,700	100,000,000	U	820,000	
Ethylbenzene	580,000	16,800	1.7	37,500,000,000		2,900,000	
Isopropylbenzene	5,800,000	5,770	740	285,000,000		80,000	
m,p-Xylene	3,300,000	--	380	15,600,000,000		10,000,000	
Methyl Acetate	230,000,000	1,770	4,100	100,000,000	U	250,000	
Methylcyclohexane	--	54,400	--	100,000,000	U	7,100	J
o-Xylene	1,900,000	226,000	190	40,600,000,000		2,600,000	
Styrene	18,000,000	4,880	1,300	100,000,000	U	77,000	
Toluene	15,000,000	11,900	760	208,000,000		880,000	

Notes:
Virginia Voluntary Remediation (VRP) Program Screening Levels
Based on the Virginia Unified Risk Assessment Model (VURAM) 3.2
January, 2022

Result value is greater than EPA Removal Management Levels for Residential Soil
Result value is greater than EPA Protection of Groundwater Risk-based SSL
Result value is greater than VADEQ Beneficial Fill Groundwater Protection Screening Levels.
Result value is greater than EPA Protection of Groundwater Risk-based SSL and VADEQ Beneficial Fill Groundwater Protection Screening Levels
Result value is greater than EPA Removal Management Levels for Residential Soils and EPA Protection of Groundwater Risk-based SSL
Result value is greater than VADEQ Beneficial Fill Groundwater Protection Screening Levels and EPA RML and SSL

Abbreviations
CRDL = Contract Required Detection Limit
CRQL = Contract Required Quantitation Limit
EPA = Environmental Protection Agency
µg/kg = micrograms per kilogram
RSL - Regional Screening Level
S = Soil
VADEQ= Virginia Deparment of Environmental Quality

Data Validation Qualifiers:
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
U= The substance or analyte was analyzed for, but no quantifiable concentration was found at or above the CRDL or CRQL.

Table 02 - VOC Detections Soil Confirmation Sample Results
Paint Waste Burial Site Removal Action
January 30, 2022 Sampling Event

Sample ID:	EPA Removal Management Levels for Residential Soil (µg/kg)	VADEQ Beneficial Fill Ground Water Protection Screening Level (µg/kg)	EPA Protection of Groundwater Risk-based SSL (µg/kg)	SO01S		SO02W		SO03E		SO04		SO05W		SO06N		SO07E		SO08		SO09		SO10	
CLP Sample Number:				C0VE2		C0VE3		C0VE4		C0VE5		C0VE6		C0VE8		C0VF1		C0VF2		C0VF3		C0VF4	
Units:				µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg	
Sample Date:				1/31/2022		1/31/2022		1/31/2022		1/31/2022		1/31/2022		1/31/2022		1/31/2022		1/31/2022		1/31/2022		1/31/2022	
Sample Type:				Field Sample		Field Sample		Field Sample		Field Sample		Field Sample		Field Sample		Field Sample		Field Sample		Field Sample		Field Duplicate	
VOCs				Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
1,2,4-Trimethylbenzene	910,000	108	81	10		6	J	86		6	J	8		13		99		3	J	22		15	
1,3,5-Trimethylbenzene	810,000	334	87	7 1	J	2	J	42		2 8	J	4 6	J	10		54		1 6	J	12		7 6	
2-Butanone	81,000,000,000	552	1,200	55		2,000		480		2,300		1,800		31		67		11,000		16	U	15	U
2-Hexanone MBK	600,000,000	6 45	8 8	17	U	14	U	15	U	31	U	15		18	U	16	U	23	U	16	U	15	U
4-Methyl-2-pentanone	99,000,000,000	164	1,400	1,100		12,000		3,000		120,000		31,000		1,200		190		20,000		460		510	
Acetone	210,000,000,000	1,250	3,700	340		5,400		940		11,000		6,600		150		690		4,800		71		60	
Ethylbenzene	580,000	16,800	1 7	60		5 6	J	2600	J	23		130		65		100		4 8	J	160		110	
Isopropylbenzene	5,800,000	5,770	740	1 7	J	7 1	U	21		16	U	2	J	4 5	J	8 2		12	U	3 1	J	2 1	J
m,p-Xylene	3,300,000	--	380	310		24		11,000		120		540		390		540		23		720		500	
Methyl Acetate	230,000,000,000	1,770	4,100	8 5	U	7 1	U	7 3	U	34		6 5	U	8 8	U	7 9	U	12	U	8 1	U	7 6	U
Methyl tert-butyl Ether	4,700,000	20 8	3 2	9	U	7	U	7	U	14	J	7	U	9	U	8	U	12	U	8	U	8	U
Methylcyclohexane	--	54,400	--	8 5	U	7 1	U	11		16	U	6 5	U	8 8	U	7 9	U	12	U	8 1	U	7 6	U
o-Xylene	1,900,000,000	226,000	190	140		9 4		4,600	J	58		190		160		300		12		270		210	
Toluene	15,000,000,000	11,900	760	37		6	J	600	J	20		230		31		26		4 9	J	220		180	

Notes:
Virginia Voluntary Remediation (VRP) Program Screening Levels
Based on the Virginia Unified Risk Assessment Model (VURAM) 3 2
January, 2022

Result value is greater than EPA Removal Management Levels for Residential Soil
Result value is greater than EPA Protection of Groundwater Risk-based SSL
Result value is greater than VADEQ Beneficial Fill Groundwater Protection Screening Levels
Result value is greater than EPA Protection of Groundwater Risk-based SSL and VADEQ Beneficial Fill Groundwater Protection Screening Levels
Result value is greater than EPA Removal Management Levels for Residential Soils and EPA Protection of Groundwater Risk-based SSL
Result value is greater than VADEQ Beneficial Fill Groundwater Protection Screening Levels and EPA RML and SSL

Abbreviations
CRDL = Contract Required Detection Limit
CRQL = Contract Required Quantitation Limit
E = East
µg/kg = micrograms per kilogram
N = North
S= South
SO = Soil
VADEQ= Virginia Deparment of Environmental Quality
W = West

Data Validation Qualifiers:
J = The result is an estimated quantity The associated numerical value is the approximate concentration of the analyte in the sample
U= The substance or analyte was analyzed for, but no quantifiable concentration was found at or above the CRDL or CRQL

Table 03 - SVOC Detections Soil Confirmation Sample Results
Paint Waste Burial Site Removal Action
January 30, 2022 Sampling Event

Sample ID:	EPA Removal Management Levels for Residential Soil (µg/kg)	VADEQ Beneficial Fill Ground Water Protection Screening Level (µg/kg)	EPA Protection of Groundwater Risk-based SSL (µg/kg)	SO01S		SO02W		SO03E		SO04		SO05W		SO06N		SO07E		SO08		SO09		SO10	
CLP Sample Number:				C0VE2		C0VE3		C0VE4		C0VE5		C0VE6		C0VE8		C0VF1		C0VF2		C0VF3		C0VF4	
Units:				µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg		µg/kg	
Sample Date:				1/31/2022		1/31/2022		1/31/2022		1/31/2022		1/31/2022		1/31/2022		1/31/2022		1/31/2022		1/31/2022		1/31/2022	
Sample Type:				Field Sample		Field Sample		Field Sample		Field Sample		Field Sample		Field Sample		Field Sample		Field Sample		Field Sample		Field Sample	
SVOCs				Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
4-Chloroaniline	32,000	1 59	0 16	450	U	430	R	390	R	520	U	410	U	390	U	410	U	490	U	450	U	490	U
Acetophenone	7,800,00	472	580	61	J	200	J	280	J	520	U	120	J	120	J	260	J	490	U	150	J	490	U
Anthracene	18,000,000	185,000	58,000	230	U	220	U	200	U	270	U	210	U	200	U	47	J	250	U	230	U	250	U
Benzaldehyde	7,800,000	407	4 1	450	U	430	U	390	U	520	U	410	U	390	U	410	U	490	U	80	J	490	U
Benzo(a)anthracene	110,000	644	11	230	U	220	U	200	U	270	U	210	U	200	U	120	J	250	U	230	U	250	U
Benzo(a)pyrene	11,000	8,870	29	230	U	220	U	200	U	270	U	210	U	200	U	95	J	250	U	230	U	250	U
Benzo(b)fluoranthene	110,000	1,820	300	230	U	220	U	200	U	270	U	210	U	200	U	120	J	250	U	230	U	250	U
Benzo(g,h,i)perylene	--	19,400,000	--	230	U	220	U	200	U	270	U	210	U	200	U	64	J	250	U	230	U	250	U
Benzo(k)fluoranthene	1,100,000	18,200	2,900	230	U	220	U	200	U	270	U	210	U	200	U	43	J	250	U	230	U	250	U
Chrysene	11,000,000	64,400	9,000	230	U	220	U	200	U	270	U	210	U	200	U	160	J	250	U	230	U	250	U
Fluoranthene	7,200,000	278,000	89,000	230	U	220	U	48	J	270	U	210	U	200	U	250		250	U	230	U	250	U
Indeno(1,2,3-cd)pyrene	110,000	5,160	980	230	U	220	U	200	U	270	U	210	U	200	U	50	J	250	U	230	U	250	U
Naphthalene	200,000	14 9	0 38	230	U	220	U	51	J	270	U	210	U	200	U	77	J	250	U	230	U	250	U
Phenanthrene	--	160,000	--	230	U	220	U	63	J	270	U	210	U	200	U	320		250	U	230	U	250	U
Phenol	57,000,000	1,190	3,300	64	J	81	J	390	U	78	J	71	J	59	J	77	J	68	J	70	J	76	J

Notes:
Virginia Voluntary Remediation (VRP) Program Screening Levels
Based on the Virginia Unified Risk Assessment Model (VURAM) 3 2
January, 2022

Result value is greater than EPA Removal Management Levels for Residential Soil
Result value is greater than EPA Protection of Groundwater Risk-based SSL
Result value is greater than VADEQ Beneficial Fill Groundwater Protection Screening Levels
Result value is greater than EPA Protection of Groundwater Risk-based SSL and VADEQ Beneficial Fill Groundwater Protection Screening Levels
Result value is greater than EPA Removal Management Levels for Residential Soils and EPA Protection of Groundwater Risk-based SSL
Result value is greater than VADEQ Beneficial Fill Groundwater Protection Screening Levels and EPA RML and SSL

Abbreviations
CRDL = Contract Required Detection Limit
CRQL = Contract Required Quantitation Limit
E = East
EPA = Environmental Protection Agency
mg/kg = milligrams per kilogram
N = North
RSL - Regional Screening Level
S= South
SO = Soil
VADEQ= Virginia Deparment of Environmental Quality
W = West

Data Validation Qualifiers:
J = The result is an estimated quantity The associated numerical value is the approximate concentration of the analyte in the sample
U = The substance or analyte was analyzed for, but no quantifiable concentration was found at or above the CRDL or CRQL
R = Unreliable result, analyte may or may not be present in the sample

Table 04 - TAL Metals Detections Soil Confirmation Sample Results
Paint Waste Burial Site Removal Action
January 30, 2022 Sampling Event

Sample ID:	EPA Removal Management Levels for Residential Soil (mg/kg)	VADEQ Beneficial Fill Ground Water Protection Screening Level (mg/kg)	EPA Protection of Groundwater Risk-based SSL (mg/kg)	SO01S		SO02W		SO03E		SO04		SO05W		SO06N		SO07E		SO08		SO09		SO10	
CLP Sample Number:				MC0VE2		MC0VE3		MC0VE4		MC0VE5		MC0VE6		MC0VE8		MC0VF1		MC0VF2		MC0VF3		MC0VF4	
Units:				mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
Sample Date:				1/31/2022		1/31/2022		1/31/2022		1/31/2022		1/31/2022		1/31/2022		1/31/2022		1/31/2022		1/31/2022		1/31/2022	
Sample Type:				Field Sample		Field Sample		Field Sample		Field Sample		Field Sample		Field Sample		Field Sample		Field Sample		Field Sample		Field Sample	
Metals				Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Aluminum	77,000	24,000	30,000	29,000	J+	27,000	J+	27,000	J+	74,000	J+	18,000	J+	22,000	J+	24,000	J+	49,000	J+	32,000	J+	47,000	J+
Antimony	31	2 71	0 35	8 2	UJ	6 8	U	6 6	U	8 9	U	6 5	U	7 4	U	7 1	U	7 5	U	7 9	U	7	U
Arsenic	35	2 91	0 0015	13		13		12		19		11		9 3		9 9		11		11		10	
Barium	15,000	822	160	24	J	41		56		68		31		37		51		37		32		35	
Beryllium	160	31 6	19	1 3		1 1		0 97		1 6		0 76		0 87		0 98		1 8		1 3		1 8	
Cadmium	7	3 75	0 14	0 69	U	0 57	U	0 55	U	0 74	U	0 54	U	0 62	U	0 59	U	0 63	U	0 66	U	0 58	U
Calcium	--	--	--	100	J	140	J	210	J	98	J	93	J	120	J	140	J	120	J	120	J	110	J
Chromium	120,000	19 1	40,000,000	31		25		23		46		25		27		23		42		37		45	
Cobalt	23	0 212	0 27	8 3		14		15		9 9		29		240		16		7 1		15		8	
Copper	3,100	5,750	28	31		29		26		31		18		31		23		39		29		35	
Iron	55,000	276	350	32,000	J+	29,000	J+	26,000	J+	31,000	J+	27,000	J+	26,000	J+	23,000	J+	42,000	J+	30,000	J+	41,000	J+
Lead	400	135	--	17	J	18		18		24		19		23		17		22		18		20	
Magnesium	--	--	--	1,500		1,500		1,600		21,000		1,000		1,300		1,600		2,000		1,800		2,000	
Manganese	1,800	20 8	28	57		240		160		40		530		2,600		270		46		190		53	
Nickel	1,500	19 5	26	48		45		33		38		19		87		32		39		33		44	
Potassium	--	--	--	850		920		840		11,000		640		780		830		1,400		1,100		1,500	
Vanadium	390	78	86	61		58		54		77		53		55		50		67		59		69	
Zinc	23,000	292	370	120		130		130		230		68		140		100		150		130		150	
Mercury	11	1,100	0 033	0 23	J	0 53	J	0 42	J	0 17	J	0 5	J	0 54	J	0 47	J	1 1	J	0 49	J	0 68	J

Notes:
Virginia Voluntary Remediation (VRP) Program Screening Levels
Based on the Virginia Unified Risk Assessment Model (VURAM) 3 2
January, 2022

Result value is greater than EPA Removal Management Levels for Residential Soil
Result value is greater than EPA Protection of Groundwater Risk-based SSL
Result value is greater than VADEQ Beneficial Fill Groundwater Protection Screening Levels
Result value is greater than EPA Protection of Groundwater Risk-based SSL and VADEQ Beneficial Fill Groundwater Protection Screening Levels
Result value is greater than EPA Removal Management Levels for Residential Soils and EPA Protection of Groundwater Risk-based SSL
Result value is greater than VADEQ Beneficial Fill Groundwater Protection Screening Levels and EPA RML and SSL

Abbreviations
CRDL = Contract Required Detection Limit
CRQL = Contract Required Quantitation Limit
E = East
U S EPA = United States Environmental Protection Agency
mg/kg = milligrams per kilogram
N = North
RSL = Regional Screening Level
S = South
SO = Soil
VADEQ = Virginia Deparment of Environmental Quality
W = West

Data Validation Qualifiers:
J = The result is an estimated quantity The associated numerical value is the approximate concentration of the analyte in the sample
J+ = The result is an estimated quantity that may be estimated high The associated numerical value is the approximate concentration of the analyte in the sample
U = The substance or analyte was analyzed for, but no quantifiable concentration was found at or above the CRDL or CRQL

APPENDIX C

Photographic Documentation Log

Photo No. 1; Taken on 01/26/2022 at 08:47 by START_[redacted] ([redacted]). Facing west (W). Burial pit setup for excavation.

Photo No. 2; Taken on 01/26/2022 at 10:44 by START_[redacted]. Looking down at pit. Blue and red paint waste visible within the soils of the pit.

Photo No. 3; Taken on 01/26/2022 at 11:23 by START_[redacted]. Facing East (E). Paint waste visible within the soils of the pit.

Photo No. 4; Taken on 01/26/2022 at 15:37 by START_[redacted]. Looking at debris material. Partially crushed waste paint can.

Photo No. 5; Taken on 01/27/2022 at 09:13 by START_[redacted]. Facing North (N). Filling cubic yard bags with soils.

Photo No. 6; Taken on 01/27/2022 at 09:56 by START_[redacted]. Facing Southwest (SW). Excavation of waste burial pit in progress.

Photo No. 7; Taken on 01/27/2022 at 11:22 by START [redacted]. Facing Northwest (NW). Excavation of waste burial pit in progress.

Photo No. 8; Taken on 01/27/2022 at 14:27 by START [redacted]. Looking down at the pit. Excavation of waste burial pit in progress.

Photo No. 9; Taken on 01/28/2022 at 09:20 by START_[redacted]. Facing N. Excavation of waste burial pit in progress, loading soil bags.

Photo No. 10; Taken on 01/28/2022 at 11:07 by START_[redacted]. Facing E. Excavation of waste burial pit in progress, loading soil bags, and removing waste paint containers from soils.

Photo No. 11; Taken on 01/28/2022 at 13:16 by START_[redacted]. Facing SW. Excavation of waste burial pit in progress, loading soil bags. Less impacted soils can be seen.

Photo No. 12; Taken on 01/28/2022 at 14:42 by START_[redacted]. Facing SW. Less impacted soils can be seen.

Photo No. 13; Taken on 01/28/2022 at 14:45 by START_[redacted]. Facing N. Arrangement of soil bags along Oak Park Lane.

Photo No. 14; Taken on 01/28/2022 at 14:45 by START_[redacted]. Facing W. Arrangement of liquid waste drums and waste container boxes along Oak Park Lane.

Photo No. 15; Taken on 01/28/2022 at 14:45 by START[redacted]. Facing NW. Arrangement of liquid waste drums and waste container boxes along Oak Park Lane.

Photo No. 16; Taken on 01/28/2022 at 14:59 by START_[redacted]. Facing S. Less impacted soils can be seen. Excavation work completed.

Photo No. 17; Taken on 01/31/22 at 09:05 by START [redacted] ([redacted]). Facing W. Arrangement of liquid waste drums and waste container boxes along Oak Park Lane.

Photo No. 18; Taken on 01/31/22 at 09:05 by START_[redacted]. Facing NW. Arrangement of liquid waste drums and waste container boxes along Oak Park Lane.

Photo No. 19; Taken on 01/31/22 at 14:21 by START_[redacted]. Facing W. Backfilled excavation pit, with polyethylene liner, filled with pea gravel to grade surface.

Photo No. 20; Taken on 01/31/22 at 14:21 by START_[redacted]. Facing W. Backfilled excavation pit, with polyethylene liner, filled with pea gravel to grade surface.

Attachments A and B have been removed due to confidential business information (CBI). Information contained within attachments A and B can be requested from the EPA On-Scene Coordinator (OSC) through a Freedom of Information Act (FOIA) request.

ATTACHMENT A

Laboratory Analytical Reports

ATTACHMENT B

Data Validation Reports