Revision 0

COLDWATER CREEK JULY 26, 2022 FLOOD EVENT SAMPLING ACTIVITIES REPORT

FUSRAP North St. Louis County Sites
St. Louis, Missouri

February 27, 2023

Prepared by:
HydroGeoLogic, Inc.
St. Louis FUSRAP Sites Office
110 James S. McDonnell Boulevard
Hazelwood, Missouri 63042

For:
U.S. Army Corps of Engineers St. Louis District
FUSRAP Project Office
114 James S. McDonnell Boulevard
Hazelwood, Missouri 63042

Single Award Task Order Contract
Contract Number W912P9-19-D-0011

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Acronyms and Abbreviations

µg	microgram(s)
AEC	U.S. Atomic Energy Commission
cm^2	square centimeters
COC(s)	contaminant(s) of concern
CWC	Coldwater Creek
dpm	disintegrations per minute
EMDAR	*North St. Louis County Sites Annual Environmental Monitoring Data and Analysis Report*
EMICY	*Environmental Monitoring Implementation Plan for the North St. Louis County Sites for Calendar Year 2022*
EMP	Environmental Monitoring Program
EPA	U.S. Environmental Protection Agency
FSSE	Final Status Survey Evaluation
FSSP	Final Status Survey Plan
FUSRAP	Formerly Utilized Sites Remedial Action Program
HGL	HydroGeoLogic, Inc.
IA	Investigation Area
L	Liter
Laboratory	St. Louis FUSRAP Laboratory
MDC	minimum detectable concentration
MED	Manhattan Engineer District
pCi/g	picoCurie(s) per gram
pCi/L	picoCurie(s) per Liter
Ra	radium
Report	Sampling Activities Report
RG(s)	remediation goals
ROD	Record of Decision
SLAPS	St. Louis Airport Site
SOR_N	net sum-of-ratios
Th	thorium
USACE	U.S. Army Corps of Engineers
U	uranium
VP(s)	Vicinity Property(ies)

1.0 Introduction

At the direction of the U.S. Army Corps of Engineers (USACE), HydroGeoLogic, Inc. (HGL) and the USACE Verification Contractor, Leidos, performed soil, water, and smear sampling along the eastern and western floodplain areas adjacent to Coldwater Creek (CWC) from July 27 through July 30, 2022 (see Figure 1). The purpose of the sampling was to assess whether the historic July 26, 2022 CWC Flood Event (flood event) may have caused the migration and redeposition of Manhattan Engineer District (MED)/U.S. Atomic Energy Commission (AEC) radiological contaminants of concern (COCs) at levels above *Record of Decision for the North St. Louis County Sites, St. Louis, Missouri* (ROD) (USACE, 2005) remediation goals (RGs). This flood event was the result of a precipitation event that delivered a record amount of rain (over 9.0 inches in 15 hours, as reported at the St. Louis Lambert International Airport) to the region (National Weather Service, 2022). Because floodwaters tend to entrain soils and redeposit them in areas adjacent to the creek system (the floodplain), the USACE directed HGL and Leidos to collect samples along sections of CWC that were inundated or appeared to have been inundated by floodwaters during this flood event (see Figures 2A through 2J).

This Sampling Activities Report (Report) documents the results of the sampling that was performed in flooded areas adjacent to CWC from Banshee Road to the Missouri River in North St. Louis County, Missouri (the subject area) (see Figure 1). This segment of CWC is part of the St. Louis Airport Site (SLAPS) Vicinity Properties (VPs) Coldwater Creek Properties and is subject to ROD requirements due to its location within the ROD boundaries, as shown on Figure 2-2 of the ROD.

The sampling activities in the subject area (see Section 2.0) were conducted for the St. Louis Formerly Utilized Sites Remedial Action Program (FUSRAP) in accordance with the ROD. The ROD was developed by the USACE in consultation with the U.S. Environmental Protection Agency (EPA) and the State of Missouri, pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act, to address MED/AEC contamination through implementation of the Selected Remedy. The Selected Remedy was deemed necessary to protect public health or welfare and the environment from actual or threatened releases of hazardous substances into the environment.

As defined in the *Final Status Survey Plan for Soils, Structures, and Sediments at the St. Louis FUSRAP Sites, St. Louis, Missouri* (FSSP) (USACE, 2015), the sampling activities at the subject area were performed to obtain sufficient radiological data to evaluate for the potential presence of radiological COCs at levels exceeding ROD remediation criteria. Note that the presence of COCs at concentrations that exceed the ROD remediation criteria in an individual sample or group of samples may not exceed the ROD RGs. The ROD RGs are based on the average concentration of

the SLAPS VPs COCs within the entire population of data above the site background distribution for a 100-square-meter area. The final demonstration that ROD RGs have been met is not within the scope of this Report.

2.0 Sample Collection and Evaluation Methodology

Soil and smear samples were collected from areas adjacent to CWC that were easily accessible and available to the public. Efforts were made during the sampling activities to identify areas where flooding had occurred, and where accumulation of soil from the flood event was evident. The soil and smear sample locations were biased to areas where fine-grained materials (silts and clays) were deposited by the floodwaters as these materials are more likely to harbor radiological COCs. Water samples were collected directly from the creek, both upstream and downstream of two active St. Louis FUSRAP soil remediation areas adjacent to CWC (see Figures 2A and 2B).

2.1 Soil Samples

Numerous flood deposit areas were identified and sampled throughout the subject area (see Figures 2A through 2J and Tables A.1 and A.2 in Appendix A). Surface soil samples were collected from these areas by the sampling crews using pre-cleaned and decontaminated trowels, placed in pre-cleaned and decontaminated bowls, and mixed thoroughly. Once homogenized, the soil samples were placed into sample containers, labeled, and stored in coolers for transport under chain-of-custody to the St. Louis FUSRAP Laboratory (Laboratory). Quality Assurance/Quality Control split and duplicate samples were collected, where flood deposit volumes were sufficient, at a rate of 1 in 20. The Quality Control samples were sent to the Laboratory for analysis of radiological COCs and the Quality Assurance samples were sent to an independent laboratory.

The soil samples that were submitted to the Laboratory were analyzed by gamma and alpha spectroscopy for SLAPS VPs radiological COCs. After completing the analysis, the results were used as the input for interpretation of the analytical results. The gross radiological soil sample results (not corrected for the arithmetic mean site background concentrations) for each sample were imported into a working database. Analytical data tables were then generated (see Table A.3 in Appendix A). This data table contains the gross analytical results and associated net sum-of-ratios (SOR_N) value for each representative surface soil sample (6 inches) after correction for contribution from background. The SOR_N calculations presented in the tables are derived using the following expression from the ROD (USACE, 2005):

$$SOR_{N-surface} = \frac{Ra\text{-}226_N}{5\ pCi/g} + \frac{Th\text{-}230_N}{14\ pCi/g} + \frac{U\text{-}238_N}{50\ pCi/g}$$

Where pCi/g = picoCuries per gram, Ra-226 = radium-226, Th-230 = thorium-230, and U-238 = uranium-238

The calculated SOR_N value for each sample was compared to the ROD RGs to determine if radiological contamination was present. A sample with a SOR_N value greater than 1.0 ($SOR_N > 1.0$) was assumed to be contaminated.

2.2 Smear Samples

A smear sample or smear (also known as a swipe) is a radiation survey technique used to determine levels of removable surface contamination. A cloth or paper wipe is rubbed over a surface (typically an area of 100 square centimeters [cm^2]), followed by analysis with a calibrated scaler paired with an alpha/beta scintillation detector (U.S. Nuclear Regulatory Commission, 2020). The sampling crews identified several locations adjacent to CWC where floodwaters had inundated publicly accessible areas within the floodplain and left residual soil (typically silts) on various surfaces such as park benches, sidewalks, streets, fencing, and equipment (see Table A.2 in Appendix A, and Appendix B). Once the sampling crews identified the surfaces that were exposed to floodwaters, the individual smears were labeled with the appropriate identification number, logged, and carefully rubbed over the surface being sampled. The samples were then analyzed for alpha and beta/gamma contamination.

The flood event also submerged seven pieces of equipment, either government-owned or rented, that were being utilized for support of the FUSRAP North St. Louis County Sites. This equipment included two excavators, a dozer, a roller, a GeoProbe drill rig, and two fuel storage tanks. In addition to smear samples for removable contamination, total contamination surveys (fixed plus removable) were performed on this submerged equipment. Both alpha and beta/gamma contamination surveys were completed by holding the instrument probe above the surface being scanned and moving the respective probes at a rate of 1 to 2 inches per second. All direct readings for these scans were recorded on "Surface Contamination Survey" forms (see Appendix C).

To determine if radiological contamination was present on the sampled surfaces, the calculated smear sample values, in disintegrations per minute (dpm)/100 cm^2, were compared to the ROD RGs for soil on structures. A result with a value greater than 600 dpm/100 cm^2-alpha or 6,000 dpm/100 cm^2-beta is considered contaminated. The applicable ROD RGs for soil on structures are presented below for comparison purposes:

Actinum-227	400 dpm/100 cm^2
Protactinium-231	1,400 dpm/100 cm^2
Radium-226	15,000 dpm/100 cm^2
Radium-228	7,700 dpm/100 cm^2
Thorium-230	6,900 dpm/100 cm^2
Thorium-232	1,300 dpm/100 cm^2
Uranium-234	17,000 dpm/100 cm^2
Uranium-235	16,000 dpm/100 cm^2
Uranium-238	19,000 dpm/100 cm^2

2.3 Water Samples

As part of the Environmental Monitoring Program (EMP) for the FUSRAP North St. Louis County Sites, surface-water monitoring of CWC is required until the creek and areas adjacent to the creek have been remediated. Part of the EMP requirements is to evaluate for presence of radiological parameters within the surface water of the creek. To achieve this, CWC surface water samples are collected and analyzed for radiological COCs (Ra-226, Ra-228, Th-228, Th-230, Th-232, U-234, U-235 and U-238) on a semi-annual basis, in accordance with the *Environmental Monitoring Implementation Plan for the North St. Louis County Sites for Calendar Year 2022* (EMICY) (USACE, 2021, and predecessor versions), to determine if the normal/base-flow conditions of CWC are being affected by COC migration from adjacent remedial excavations. The locations of the 10 monitoring stations are presented in the *North St. Louis County Sites Annual Environmental Monitoring Data and Analysis Report* (EMDAR) *for Calendar Year 2021, St. Louis, Missouri* (USACE, 2022). The results obtained from these surface water samples are used to compare, by trend analysis, with previous results and to calculate total uranium, the latter of which is the only ROD-monitoring guideline for surface water. Beginning in 2019, additional high-flow/high-velocity surface water samples are also being collected from CWC on a semi-annual basis from three of the monitoring stations (CWC002, CWC007, and CWC009).

Surface-water monitoring station CWC002 (see Figure 2A) is located upstream of two St. Louis FUSRAP active remediation areas (Investigation Area [IA]-09: Ballfields and VP-56, see Figures 2A and 2B, respectively), CWC007 is located adjacent to and immediately downstream of the VP-56 area (see Figure 2B), and CWC009 is located approximately 2 miles downstream from the remedial actions (see Figure 2D). Water sampling results from these stations were also tabulated and compared with the base-flow data for the purpose of identifying potential COC migration, through trend analysis, due to high-flow/high-velocity conditions within and adjacent to the creek. Total uranium concentration values were also calculated for both high-flow/high-velocity and base-flow conditions and compared to the maximum contaminant level of 30 micrograms (µg)/Liter (L) as specified in the ROD.

Following the flood event, one unfiltered surface water sample was collected from each of the three monitoring stations CWC002, CWC007, and CWC009. These samples were placed in sample containers and transported under chain-of-custody to the Laboratory in accordance with the EMICY.

Note that this Report only addresses the high-flow surface water samples that were collected following the flood event. For information regarding the semi-annual water sampling results and other surface water samples not discussed herein, refer to the EMDAR.

2.4 Investigation-Derived Waste

Investigation-derived waste generated during the sampling activities was managed in accordance with applicable USACE contractor procedures and the waste minimization guidelines as specified in the FSSP (USACE, 2015). The waste included used smear cloths, decontamination water, disposable personal protective and sampling equipment, and analyzed soil samples and laboratory waste.

3.0 Sample Results and Evaluation

Sampling activities included reviewing aerial photographs, topographic maps, and local news (Fox2now, 2022) accounts to determine the lateral extent of flooding along CWC and the identification of publicly accessible areas for the collection of soil, surface water, and surface smear samples for radiological analysis. Final sample locations were selected by visual identification of recent physical flood remnants (e.g., debris, high-water marks on structures, and floodwater soil deposits). Soil and smear sample locations were then biased to areas where fine-grained materials (silts and clays) were deposited by the recent flooding, as these materials are more likely to harbor radiological COCs. The various sample collection locations are shown on Figures 2A through 2J, and the associated sample logs for the sample locations are included in Appendix C. The analytical results from the collected samples (soil, smears, and water) are presented in Appendix A. The sampling activities began on July 27, 2022 and were completed by July 30, 2022. Additionally, equipment surveys were performed between July 27 and July 29, 2022, on FUSRAP equipment that was submerged during the flood event. The following subsections discuss the results of the flood event sampling efforts.

3.1 Surface Sample Results and Evaluation

As soon as the floodwaters from CWC receded to safe levels, HGL and Leidos sampling crews began collecting surface soil samples and smear samples within the inundated floodplain areas adjacent to CWC. To help expediate the sampling effort, the USACE directed HGL to sample the section of the CWC corridor from Banshee Road to Jana Elementary School, and Leidos to sample the section of the corridor from Jana Elementary School to the Missouri River (see Figure 1). The sampling crews identified numerous flood deposit areas throughout the creek corridor sections. A total of 58 soil samples were collected from surface areas where the floodwaters deposited appreciable amounts of soil, and a total of 218 smear samples were collected from debris and flood-stained areas within the floodplain. Both soil and smear sample locations are depicted on Figures 2A through 2J. Representative photographs from sampled areas are presented in Appendix B, and sample location details are provided on Tables A.1 and A.2 in Appendix A. Copies of the soil sample logs, and smear survey logs, are provided in Appendix C.

As discussed in Section 2.1, soil sampling results were compared to the ROD's surface criteria to determine if radiological COCs were present above RGs. All soil sample analytical results indicated that radiological COC concentrations were below ROD RGs (see Table A.3 in Appendix A). As discussed in Section 2.2, all smear surface samples were analyzed for levels of removable surface radiological contamination. The results for all of the smear samples that were collected were less than the detectors' minimum detectable activity levels for removable radiological contamination (see Table A.4 in Appendix A).

Sampling crews identified seven sample locations within or near the IA-09: Ballfields remediation area that were inundated during the flood event. Smear samples were collected from five of these (locations 26-29, 31-29, 36-29, 31-30, and 1-27), and soil samples were collected from the remaining two locations (SVP259159 and SVP259145) (see Figure 2A). The results for the five surface smear samples were less than the minimum detectable activity levels (see Table A.4 in Appendix A) and the results from the two surface soil samples indicated that radiological COCs were less than ROD RGs (see Table A.3 in Appendix A).

Sampling crews also identified four sample locations near the VP-56 remediation area that were inundated during the flood event. Two of these locations were sampled using smears (locations 21-29 and 16-27), and soil samples were collected from the other two locations (SVP259158 and SVP259148) (see Figure 2B). The results for the two surface smear samples were less than the minimum detectable activity levels (see Table A.4 in Appendix A) and the results from the two surface soil samples indicated that radiological COCs were less than ROD RGs (see Table A.3 in Appendix A).

The soil sample results, including those adjacent to and downgradient from active excavations, did not indicate that migration and redeposition of radiological COCs at concentrations above ROD RGs occurred as a result of the flood event. Similarly, the smear sample results did not indicate that radiological COCs above minimum detectable activity levels were transported by the July 26, 2022 floodwaters and redeposited on downstream surfaces.

3.2 Equipment Smear Sampling Results and Evaluation

As discussed in Section 2.2, seven pieces of government equipment were submerged by the flood event. This equipment was located within and/or immediately adjacent to either the IA-09: Ballfields remediation area or the VP-56 remediation area. Smear samples for removable contamination and direct read measurements for total contamination (fixed plus removable), were performed on the submerged equipment. Sample locations on the submerged equipment were selected by visually identifying areas that were submerged by floodwaters, with emphasis on sampling any identified floodwater deposits (typically silts). The smear sample and direct reading results for each respective piece of government equipment are included in Appendix C.

The smear results for all submerged equipment were less than the minimum detectable activity levels of the instrumentation. The direct readings for the submerged equipment scans indicated that total and removable contamination was not present on the equipment above 600 dpm/100 cm^2 for alpha and 6,000 dpm/100 cm^2 for beta/gamma (see Appendix C). Additionally, direct reading results for total contamination activity levels were less than the clearance levels (American National Standards Institute, 2013), indicating that radiological COCs were not entrained and deposited on the submerged equipment at detectable concentration levels.

3.3 Water Sampling Results and Evaluation

As discussed in Section 2.3, three surface water samples were collected from CWC following the flood event and while the creek was still experiencing high-flow conditions. The results from these samples were used to monitor radiological parameter data for the assessment of COC migration and to calculate total uranium. One unfiltered surface water grab sample was collected and analyzed for radiological parameters from each of the respective high-flow/high-velocity creek monitoring stations: CWC002 (SVP259136), CWC007 (SVP259137), and CWC009 (SVP259138) (see Figures 2A, 2B, and 2D, respectively). The results from these samples have been tabulated and included in Tables A.5-1 and A.5-2 in Appendix A.

Table A.5-2 (Appendix A) is a compilation of the normal/base-flow surface water sample radiological results from March 2011 to the July 2022 flood event. As noted in Table A.5-1 (Appendix A), the radiological results from the flood event for Ra-226, Th-228, and Th-232, in each surface water sample, were below the minimum detectable concentration (MDC) levels of the analysis method, and Th-230 was less than 1.0 picoCurie/Liter (pCi/L). As evident by the results in Table A.5-2, the flood event sample results were comparable to previous/historical normal/base-flow sample results, indicating that radiological COC concentrations did not increase within the creek due to this flood event.

Table A.5-2 (Appendix A) also lists the total uranium values for surface water samples collected during normal/base-flow conditions from March 2011 to the July 2022 flood event. Total uranium is the only ROD guideline for surface-water monitoring and is calculated by summing the concentration values for U-234, U-235, and U-238 (reported in pCi/L) and converting to µg/L. The ROD criterion for total uranium is 30 µg/L (USACE, 2005). The results from the three surface water samples were all significantly less (approximately 15 times lower) than the ROD criterion (see Tables A.5-1 and A.5-2 in Appendix A). These surface water results were comparable to the historical total uranium results, indicating that total uranium concentrations did not increase within the creek due to this flood event.

4.0 Summary and Conclusions

To assess whether the floodwaters from the historic July 26, 2022 flood event may have caused the migration and redeposition of MED/AEC material further downstream, the USACE directed HGL and Leidos to collect soil, smear, and water samples for analysis along publicly accessible sections of CWC that were recently inundated by floodwaters (see Figures 1 through 2J).

The HGL and Leidos sampling teams visually identified multiple areas along the areas of CWC where recent flood deposits (e.g., debris, soil, and watermarks) were evident (see Figures 2A through 2J), and collected 58 soil samples, 218 smear samples, and three (3) surface water samples from areas throughout the 14-mile-stretch of CWC. Additionally, smear samples for removable contamination and direct-read measurements for total contamination (fixed plus removable) were obtained from seven pieces of equipment, either government-owned or rented, that were submerged during the flood event.

- The soil sample results, including those adjacent to and downgradient from active remediation areas, did not indicate that radiological COCs had migrated and been redeposited in downgradient areas at concentrations above ROD RGs (USACE, 2005) as a result of the July 26, 2022 flood event.
- The smear sample results did not indicate that radiological COCs, above minimum detectable levels, were transported by the July 26, 2022 floodwaters and redeposited on downstream surfaces.
- The smear sample results obtained from the submerged equipment did not indicate that radiological COCs were entrained in the July 26, 2022 floodwaters and subsequently deposited on the submerged equipment at detectable levels.
- The water sampling results from the July 26, 2022 floodwaters indicated that total uranium concentrations for the three high-flow surface water samples were approximately 15 times below the ROD criterion concentration value and are at similar concentration values when compared to the historical normal/base-flow total uranium concentration values (see Table A.5-2 in Appendix A). In addition, concentrations of Ra-226, Th-228, and Th-232 were less than the MDC, and Th-230 was less than 1.0 pCi/L. These results are comparable to the normal/base-flow historical results (see Table A.5-1 in Appendix A) and indicate that radiological COCs were not entrained in the floodwaters.

The sampling conducted following the flood event was extensive in design, with the intent to gather sufficient data to assess the migration potential of MED/AEC radiological COCs by flood transportation mechanisms. This sampling event provided a snapshot of an extreme-case scenario, including high flows and near record-high flood levels that inundated active remediation areas. The sampling results described in this Report lead to the conclusion that the July 26, 2022 flood

event did not result in the migration and redeposition of soil with concentrations of radiological COCs above ROD remediation criteria, either within the creek or adjacent floodplain areas.

5.0 References

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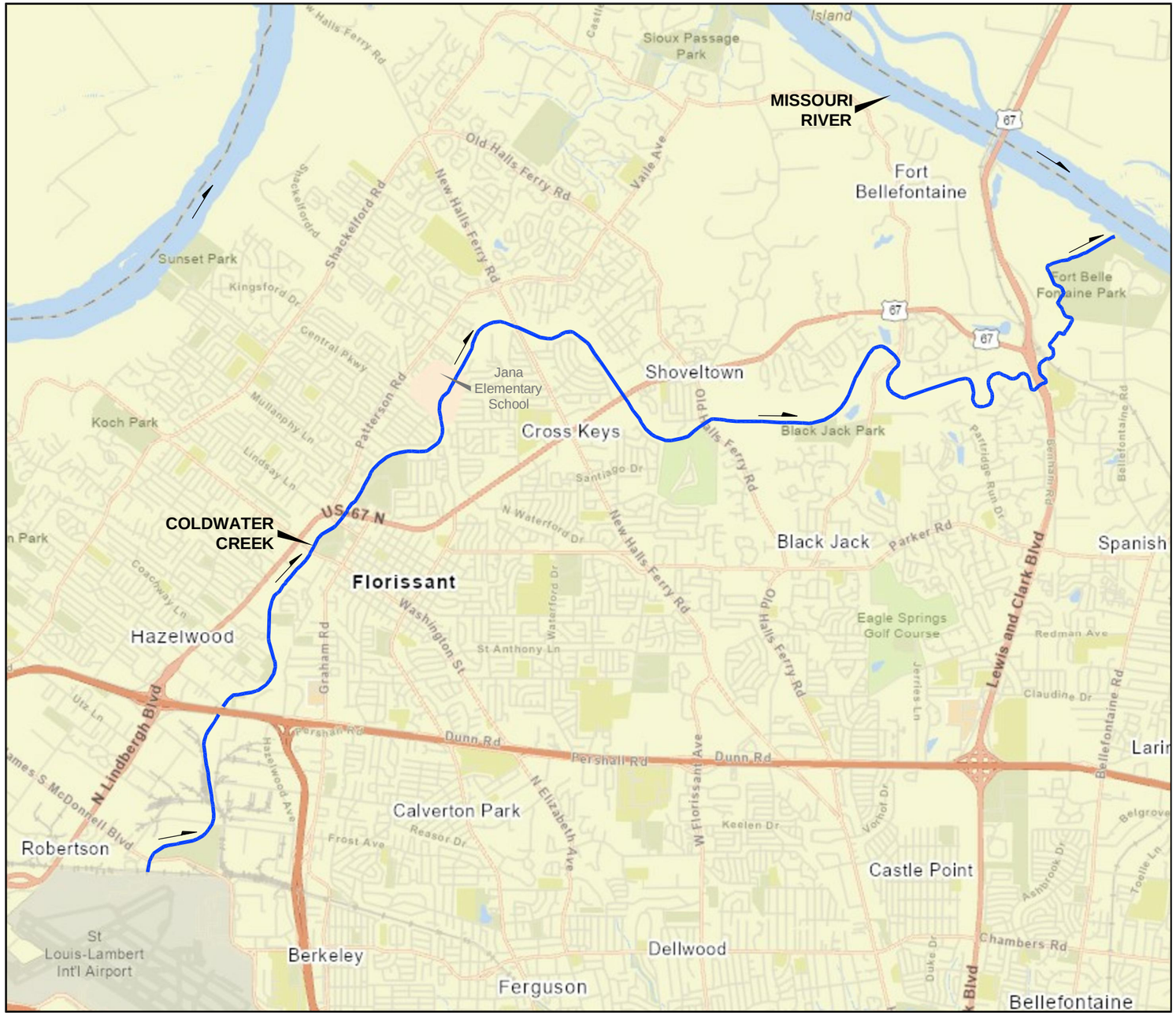
FIGURES

OFFICE STL
Drawing File: 123438-B602



SITE LOCATION MAP

SCALE

0 5,000 10,000 FEET

COLDWATER CREEK JULY 26, 2022 FLOOD EVENT SAMPLING ACTIVITIES REPORT FUSRAP NORTH ST. LOUIS COUNTY SITES ST. LOUIS, MISSOURI

Prepared for:

U.S. ARMY CORPS of ENGINEERS ST. LOUIS DISTRICT

FIGURE TITLE: FIGURE NUMBER:

LEGEND:

CHANNEL FLOW DIRECTION

COLDWATER CREEK

ABBREVIATIONS:

FUSRAP = FORMERLY UTILIZED SITES REMEDIAL ACTION PROGRAM
IA = INVESTIGATION AREA
ID = IDENTIFICATION
NAD = NORTH AMERICAN DATUM
VP = VICINITY PROPERTY

STATE PLANE GRID N (EAST ZONE NAD 83)

Revisions			
Symbol	Descriptions	Date	Approved
0	ISSUED FOR SAMPLING ACTIVITIES REPORT	02/27/23	M. Cummings

HGL HydroGeoLogic, Inc

FUSRAP

Designed by: M. Cummings	COVER SHEET COLDWATER CREEK FROM BANSHEE ROAD TO MISSOURI RIVER U.S. ARMY CORPS OF ENGINEERS FUSRAP NORTH ST. LOUIS COUNTY SITES, ST. LOUIS, MISSOURI		
Drawn by: M. Herzog			
Checked by: M. Cummings	Scale: As Shown	Figure Number: 1	Sheet: –
Approved by: A. Neil DeYong	Drawing File: 123438B602.dwg		Contract No. W912P9-19-D-0011

File: X:\123438\North St. Louis County Sites\Coldwater Creek\2022 Flood Event Sampling\123438B602.dwg
Plot Date/Time: Feb 27, 2023 - 9:43am
Plotted By: mherzog

MATCH LINE (SEE FIGURE 2B)

N LINDBERGH BLVD

AVIATOR DR

30-30

11-27

SVP259147

LATTY AVE

6-27

SVP259146

SEEGER INDUSTRIAL DR

BYASSEE DR

31-30

SVP259159

SVP259145

1-27

FROST AVE

EVA AVE

FROST INDUSTRIAL LN

JAMES S MCDONNELL BLVD

IA-09: BALLFIELDS EXCAVATION AREA

BALLFIELDS

31-29

26-29

36-29

ST. LOUIS AIRPORT SITE

CWC002 (SVP259138)

BANSHEE RD

ST. LOUIS LAMBERT INTERNATIONAL AIRPORT

LEGEND:

- MINOR PUBLIC ROADWAY
- MAJOR PUBLIC ROADWAY
- COLDWATER CREEK
- COLDWATER CREEK 10-YEAR FLOODPLAIN
- ST. LOUIS FUSRAP ACTIVE REMEDIATION AREA
- SVP259147 SOIL SAMPLE LOCATION AND ID
- 11-27 SMEAR SAMPLE LOCATION AND ID
- CWC002 WATER SAMPLE LOCATION AND ID

STATE PLANE GRID (EAST ZONE NAD 83)

N

SCALE

0 500 1000 FEET

Revisions			
Symbol	Descriptions	Date	Approved
0	ISSUED FOR SAMPLING ACTIVITIES REPORT	02/27/23	M. Cummings

HGL HydroGeoLogic, Inc

FUSRAP

Designed by: M. Cummings
Drawn by: M. Herzog
Checked by: M. Cummings
Approved by: A. Neil DeYong

2022 FLOOD EVENT SAMPLE LOCATIONS

COLDWATER CREEK
FROM BANSHEE ROAD TO MISSOURI RIVER
U.S. ARMY CORPS OF ENGINEERS
FUSRAP NORTH ST. LOUIS COUNTY SITES, ST. LOUIS, MISSOURI

Scale: As Shown
Figure Number: 2A
Sheet: –
Drawing File: 123438B602.dwg
Contract No. W912P9-19-D-0011

Drawing File: 123438-B602
OFFICE STL

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Plot Date/Time: Feb 27, 2023 - 9:43am
Plotted By: mherzog

OFFICE STL
Drawing File: 123438-B602

MATCH LINE (SEE FIGURE 2C)

N LINDBERGH BLVD
67
ELMGROVE AVE
ARROW WOOD LN
SUNSET DR
ALMA DR
MARY ROSE CT
ELM GROVE CT
ST CIN LN
FOXMONT DR
FOXTREE DR
TRINITY LN
CALBREATH CT
GRAY BROOKE LN
TAYLOR RD
WILLOW LN
FORDSHIRE LN
WILLOW LN
MCGUIRE LN
SVP259149
16-28
6-28
21-28
SVP259151
SVP259150
19-28
11-28
ST CIN PARK
1-28
46-29
SVP259148
16-27
270
DUNN RD
PERSHALL ROAD
INTERSTATE 270
NORMANDIE CT
HAZELCREST DR
21-29
CWC007 (SVP259137)
SVP259158
VP-56
EXCAVATION AREA
POLSON LN
FORD LN
AVIATOR DR
21-30
22-30
23-30
SVP259160
HEATHER LN
HAZELWOOD AVE
NYFLOT AVE
170
INTERSTATE 170

MATCH LINE (SEE FIGURE 2A)

LEGEND:

- MINOR PUBLIC ROADWAY
- MAJOR PUBLIC ROADWAY
- COLDWATER CREEK
- COLDWATER CREEK 10-YEAR FLOODPLAIN
- ST. LOUIS FUSRAP ACTIVE REMEDIATION AREA
- SVP259148 — SOIL SAMPLE LOCATION AND ID
- 46-29 — SMEAR SAMPLE LOCATION AND ID
- CWC007 — WATER SAMPLE LOCATION AND ID

STATE PLANE GRID
N
(EAST ZONE NAD 83)

SCALE
0 500 1000 FEET

Revisions			
Symbol	Descriptions	Date	Approved
0	ISSUED FOR SAMPLING ACTIVITIES REPORT	02/27/23	M. Cummings

HGL HydroGeoLogic, Inc
FUSRAP

Designed by: M. Cummings
Drawn by: M. Herzog
Checked by: M. Cummings
Approved by: A. Neil DeYong

2022 FLOOD EVENT SAMPLE LOCATIONS

COLDWATER CREEK
FROM BANSHEE ROAD TO MISSOURI RIVER
U.S. ARMY CORPS OF ENGINEERS
FUSRAP NORTH ST. LOUIS COUNTY SITES, ST. LOUIS, MISSOURI

Scale: As Shown
Figure Number: 2B
Sheet: –
Drawing File: 123438B602.dwg
Contract No. W912P9-19-D-0011

File: X:\123438\North St. Louis County Sites\Coldwater Creek\2022 Flood Event Sampling\123438B602.dwg
Plot Date/Time: Feb 27, 2023 - 9:45am
Plotted By: mherzog

OFFICE STL
Drawing File: 123438-B602

MATCH LINE (SEE FIGURE 2D)

MATCH LINE (SEE FIGURE 2B)

CARMELITA LN
GLADIOLA DR
FLORLAND DR
ROSETTA DR
MATERDIE LN
BELLARMINE LN
BORGIA LN
MANRESA LN
HAZELVALLEY DR
INDUSTRIAL LN
N LINDBERGH BLVD
67
WASHINGTON ST
BRUCE DR
REEB LN
CADES COVE
BROWER LN
SLUSSER LN
BROWER CT
BROWER DR
MCGRATH LN
VENETIA CT
BELLM LN
S ST CHARLES ST
ST CHARLES ST
LOUISE CT
ST FERDINAND ST
QUICK DR
WESCOTT DR
ELMDALE CT
ST PIERRE ST
RUE ST CHARLES ST
RUE ST PIERRE ST
ST JEAN ST
N ST JACQUES ST
S JEFFERSON ST
S LAFAYETTE ST
CHALMETTE DR
CHEZ PAREE DR
AVANT DR
STURBRIDGE VILLAGE DR
FLAMINGO DR
PALM DR
RIDGELAWN CT
ST VIRGIL LN
ST EDITH LN
GRAHAM RD
MANION PARK RD
ST WALTER LN
DUCHESNE PARK
MANION PARK

1-29
SVP259156
55-29
41-29
SVP259165
57-29
SVP259164
26-30
15-30
49-29
SVP259162
14-30
13-30
12-30
56-29
11-30
50-29
58-29
SVP259161
7-30
1-30
8-30
3-30
5-30
51-29
27-30

LEGEND:

- MINOR PUBLIC ROADWAY
- MAJOR PUBLIC ROADWAY
- COLDWATER CREEK
- COLDWATER CREEK 10-YEAR FLOODPLAIN
- SVP259165 SOIL SAMPLE LOCATION AND ID
- 13-30 SMEAR SAMPLE LOCATION AND ID

STATE PLANE GRID
N
(EAST ZONE NAD 83)

SCALE
0 500 1000 FEET

Revisions			
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HGL HydroGeoLogic, Inc
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Checked by: M. Cummings
Approved by: A. Neil DeYong

2022 FLOOD EVENT SAMPLE LOCATIONS

COLDWATER CREEK
FROM BANSHEE ROAD TO MISSOURI RIVER
U.S. ARMY CORPS OF ENGINEERS
FUSRAP NORTH ST. LOUIS COUNTY SITES, ST. LOUIS, MISSOURI

Scale: As Shown
Figure Number: 2C
Sheet: –
Drawing File: 123438B602.dwg
Contract No. W912P9-19-D-0011

File: X:\123438\North St. Louis County Sites\Coldwater Creek\2022 Flood Event Sampling\123438B602.dwg
Plot Date/Time: Feb 27, 2023 - 9:43am
Plotted By: mherzog

OFFICE STL
Drawing File: 123438-B602

MATCH LINE (SEE FIGURE 2E)

ASPEN DR
FENMORE DR
TYSON CT
CURTIS CT
LILAC DR
SHIRLENE DR
KATHLEEN CT
MARK TWAIN DR
TYSON DR
CROWDER DR
DANIEL BOONE DR
BABLER DR
VESPER DR
MULLANPHY CT
ANGELUS DR
PATTERSON PLZ
RIVOLI PL
RAVEN LN
SKYLARK DR
WREN DR
FALCON DR
PATTERSON LN
VERSAILLES DR
HUMES LN
RYAN DR
SHERRY CT
CHERRYDALE DR
MYRTLE DR
CROSBY LN
HUNDLEY DR
MARSHALL CT
68-29
69-29
70-29
71-29
73-29
74-29
75-29
72-29
67-29
66-29
61-29
59-29
60-29
28-30
BRAMBLE LN
SPOONWOOD DR
29-30
20-30
SVP259163
19-30
16-30
17-30
CARLA DR
18-30
KAEL LN
KAEL DR
DEBORAH DR
QUEENS DR
KAY DR
BEVERLY DR
BELTOWER DR
51-28
SVP259154
46-28
61-28
SVP259155
56-28
EDNA DR
SALLY DR
RUTH DR
SHARON CT
SHARON DR
LEMONDALE LN
LIMEDALE LN
ORANGEDALE LN
64-29
63-29
62-29
36-28
SVP259153
31-28
SVP259152
26-28
SAINT FERDINAND PARK
PAMELA DR
N NEW FLORISSANT RD
WOODRIDGE LN
ST FERDINAND PARK DR
ST LAURENCE DR
RISSANT DR
FLORYAL DR
REDWOOD DR
MENKE PL
ST FERDINAND PARK DR
LINDSAY LN
RUE ST CHARLES ST
RUE ST DENIS ST
16-29
54-29
11-29
14-29
CWC009 (SVP259138)
6-29
SVP259157
RUE ST ANTOINE ST
ST DENIS ST
ST GEORGE CT
ST PIERRE ST
ST JEAN ST
CHAMPLAIN CT
ST CELESTE DR
67
N LINDBERGH BLVD
N ST JACQUES ST
N JEFFERSON ST
BRIGHTWELL CT

MATCH LINE (SEE FIGURE 2C)

LEGEND:

- MINOR PUBLIC ROADWAY
- MAJOR PUBLIC ROADWAY
- COLDWATER CREEK
- COLDWATER CREEK 10-YEAR FLOODPLAIN
- SVP259154 SOIL SAMPLE LOCATION AND ID
- 61-28 SMEAR SAMPLE LOCATION AND ID
- CWC009 WATER SAMPLE LOCATION AND ID

STATE PLANE GRID
N
(EAST ZONE NAD 83)

SCALE
0 500 1000 FEET

Revisions

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0	ISSUED FOR SAMPLING ACTIVITIES REPORT	02/27/23	M. Cummings

HGL HydroGeoLogic, Inc
FUSRAP

Designed by: M. Cummings
Drawn by: M. Herzog
Checked by: M. Cummings
Approved by: A. Neil DeYong

2022 FLOOD EVENT SAMPLE LOCATIONS

COLDWATER CREEK
FROM BANSHEE ROAD TO MISSOURI RIVER
U.S. ARMY CORPS OF ENGINEERS
FUSRAP NORTH ST. LOUIS COUNTY SITES, ST. LOUIS, MISSOURI

Scale: As Shown
Figure Number: 2D
Sheet: –
Drawing File: 123438B602.dwg
Contract No. W912P9-19-D-0011

File: X:\123438\North St. Louis County Sites\Coldwater Creek\2022 Flood Event Sampling\123438B602.dwg
Plot Date/Time: Feb 27, 2023 - 9:45am
Plotted By: mherzog

OFFICE STL
Drawing File: 123438-B602

SVP242879
GREENWAY CHASE DR
SVP242881
JOST MAIN ST
JOST ESTATES DR
DOMENIQUE LN
SVP259082
SVP259081
BALTIC DR
PATTERSON RD
WILLOW CREEK ESTATES DR
SVP259078
NEW HALLS FERRY RD
SVP259079
CONCORD CT
CONCORD DR
BUCKINGHAM DR
RADCLIFFE DR
KNOLLWOOD LN
RANCHO LN
Jana-1
SUNCREST DR
CHAPEL CROSS DR
CHAPEL VIEW DR
BENNE DR
ROBERT DR
MORRIS DR
Jana-6
CRICKET CT
HILLSDALE LN
SOMERSET DR
CHADWICK DR
CHESHIRE DR
LULA DR
JANA DR
Jana-3
Jana-4
SVP242880
CANTERBURY DR
DARWIN CT
HEATHERTON DR
HUNTINGTON DR
HAMPSHIRE DR
25-30
RETFORD DR
WOODSAGE DR
MOULE DR
24-30
GREENHEATH DR
CASTLEFORD DR
SUSSEX DR
65-29
VERSAILLES DR
ORLEANS LN
SHOREHAM DR
DOVER DR
COUGAR DR
AVON CT
AVON DR

MATCH LINE (SEE FIGURE 2F)

MATCH LINE (SEE FIGURE 2D)

LEGEND:

- MINOR PUBLIC ROADWAY
- MAJOR PUBLIC ROADWAY
- COLDWATER CREEK
- COLDWATER CREEK 10-YEAR FLOODPLAIN
- SVP259078 SOIL SAMPLE LOCATION AND ID
- 25-30 SMEAR SAMPLE LOCATION AND ID

STATE PLANE GRID
N
(EAST ZONE NAD 83)

SCALE
0 500 1000 FEET

Revisions			
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0	ISSUED FOR SAMPLING ACTIVITIES REPORT	02/27/23	M. Cummings

HGL HydroGeoLogic, Inc
FUSRAP

Designed by: M. Cummings
Drawn by: M. Herzog
Checked by: M. Cummings
Approved by: A. Neil DeYong

2022 FLOOD EVENT SAMPLE LOCATIONS

COLDWATER CREEK
FROM BANSHEE ROAD TO MISSOURI RIVER
U.S. ARMY CORPS OF ENGINEERS
FUSRAP NORTH ST. LOUIS COUNTY SITES, ST. LOUIS, MISSOURI

Scale: As Shown
Figure Number: 2E
Sheet: –
Drawing File: 123438B602.dwg
Contract No. W912P9-19-D-0011

File: X:\123438\North St. Louis County Sites\Coldwater Creek\2022 Flood Event Sampling\123438B602.dwg
Plot Date/Time: Feb 27, 2023 - 9:45am
Plotted By: mherzog

OFFICE STL
Drawing File: 123438-B602

MATCH LINE (SEE FIGURE 2E)

NHF-6
NHF-5
ARGONNE FOREST DR
LOGS LN
ARPENT LN
ARPENT LN
MONDOUBLEAU LN
OCEAN VIEW CT
MONSOLS DR
RIVER OAKS DR
CAPE HORN PL
RIVERFRONT CT
CANAL DR
OLD HALLS FERRY RD
ASHBURY MEADOWS DR
BAVILLE CT
CHURCHILL DR
SVP259080
NHF-4
SVP259083
NEW CASTLE DR
N LINDBERGH BLVD
67
GALAXIE DR
SVP245634
WM-7
SVP245633
SVP245632
WM-3
SVP245630
SVP245631
SUNSWEPT PARK DR
SEAVIEW DR
SPRINGTIME LN
SUMMERFIELD LN
DAVEY DR
SUNLAND DR
LE SABRE DR
INVICTA DR
OLD HALLS FERRY RD
BOEING DR
EVAN AIRE DR
CORDIN DR
OHF-1
BELCROFT DR
SVP245635
SVP245638
SEVILLE CT
SVP245636
WM-9
SVP245637
SEVILLE DR
NEW HALLS FERRY RD
NANCY DR
WM-12

MATCH LINE (SEE FIGURE 2G)

LEGEND:

- MINOR PUBLIC ROADWAY
- MAJOR PUBLIC ROADWAY
- COLDWATER CREEK
- COLDWATER CREEK 10-YEAR FLOODPLAIN
- SVP245632 SOIL SAMPLE LOCATION AND ID
- NHF-4 SMEAR SAMPLE LOCATION AND ID

STATE PLANE GRID
N
(EAST ZONE NAD 83)

SCALE
0 500 1000 FEET

Revisions			
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HGL HydroGeoLogic, Inc
FUSRAP

Designed by: M. Cummings
Drawn by: M. Herzog
Checked by: M. Cummings
Approved by: A. Neil DeYong

2022 FLOOD EVENT SAMPLE LOCATIONS

COLDWATER CREEK
FROM BANSHEE ROAD TO MISSOURI RIVER
U.S. ARMY CORPS OF ENGINEERS
FUSRAP NORTH ST. LOUIS COUNTY SITES, ST. LOUIS, MISSOURI

Scale: As Shown
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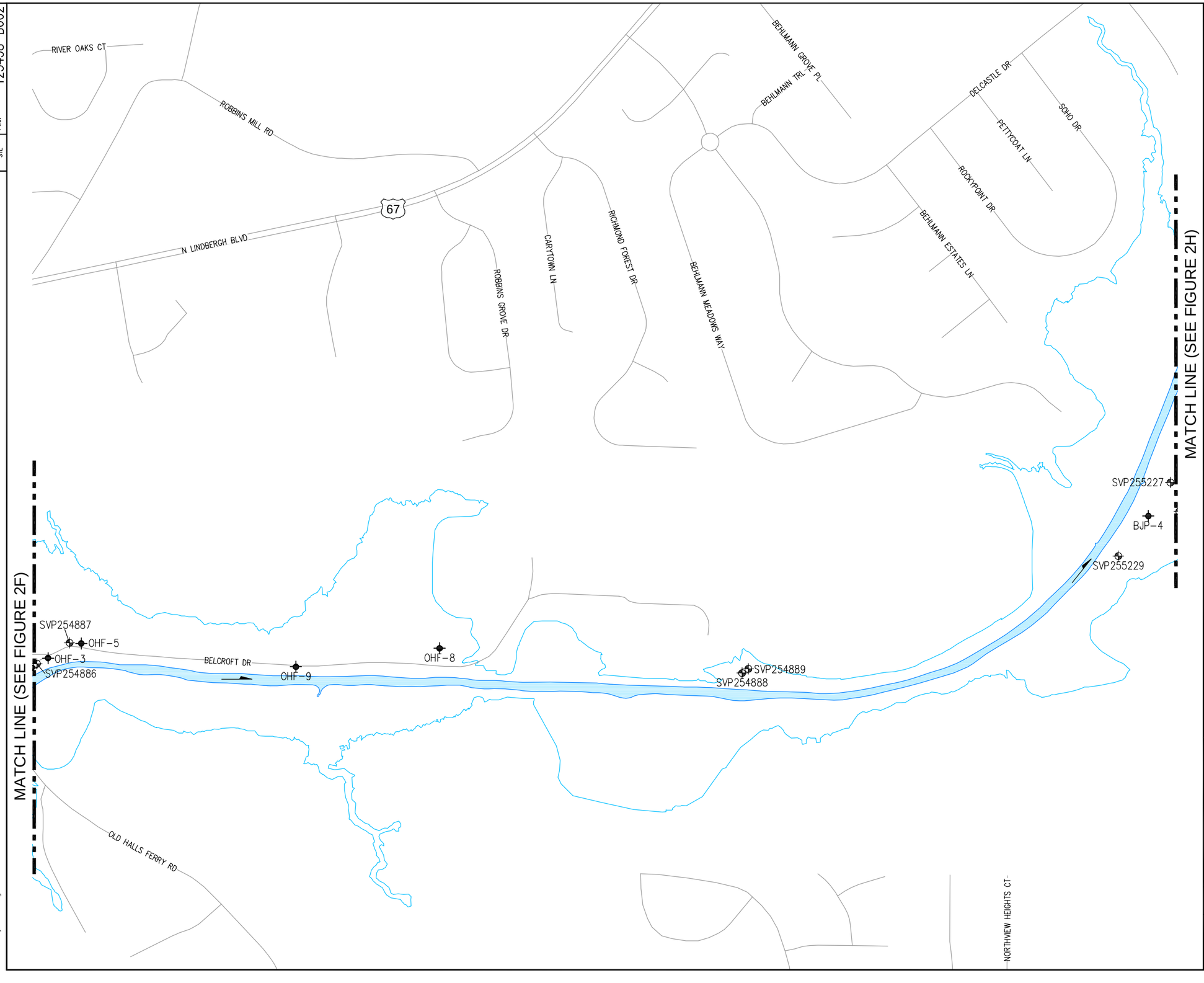
Plotted By: mherzog

OFFICE STL
Drawing File: 123438-B602



LEGEND:

- MINOR PUBLIC ROADWAY
- MAJOR PUBLIC ROADWAY
- COLDWATER CREEK
- COLDWATER CREEK 10-YEAR FLOODPLAIN
- SVP254889 SOIL SAMPLE LOCATION AND ID
- OHF-8 SMEAR SAMPLE LOCATION AND ID

STATE PLANE GRID (EAST ZONE NAD 83)

SCALE
0 500 1000 FEET

Revisions			
Symbol	Descriptions	Date	Approved
0	ISSUED FOR SAMPLING ACTIVITIES REPORT	02/27/23	M. Cummings

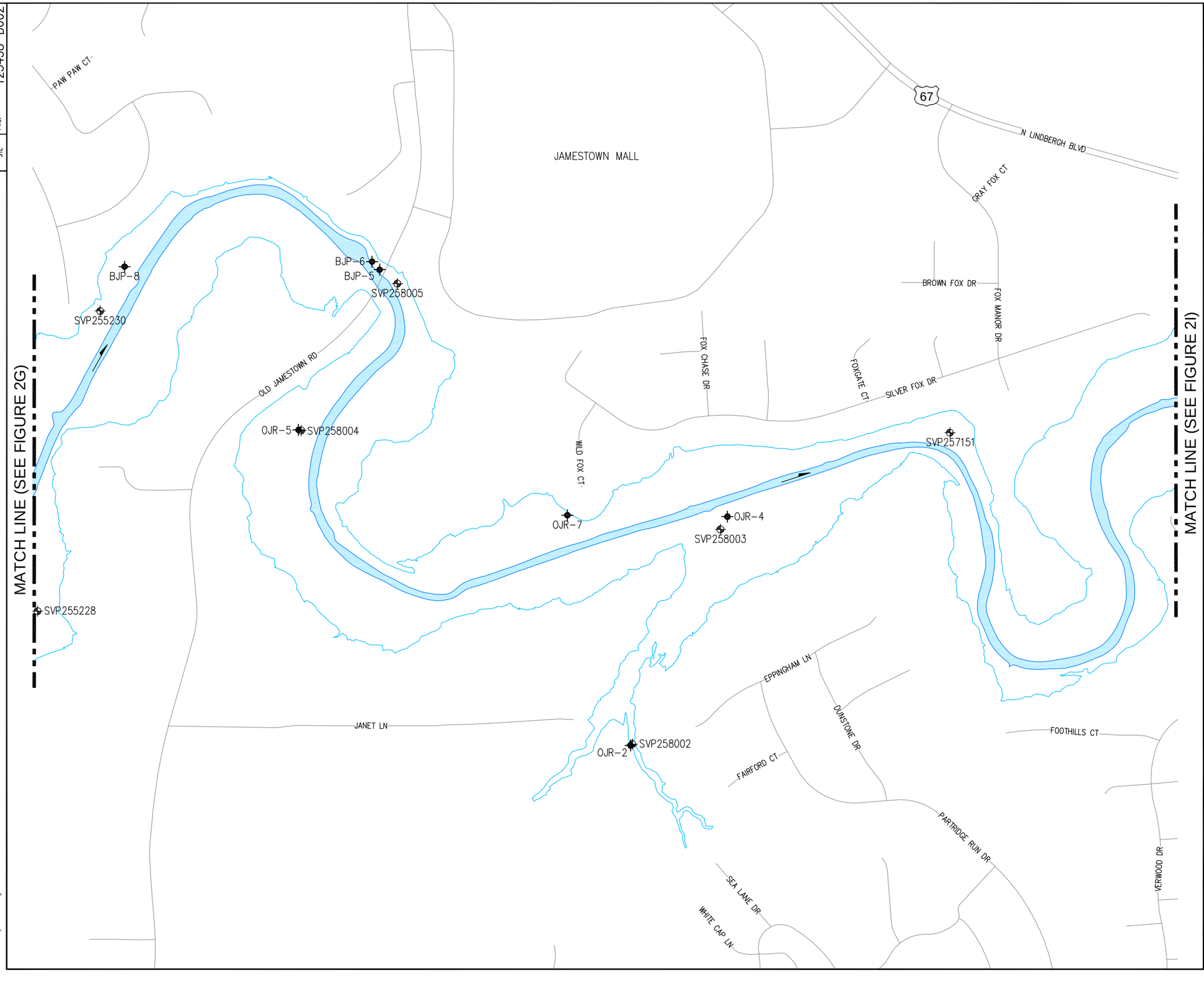
HGL HydroGeoLogic, Inc
FUSRAP

Designed by: M. Cummings	2022 FLOOD EVENT SAMPLE LOCATIONS
Drawn by: M. Herzog	COLDWATER CREEK FROM BANSHEE ROAD TO MISSOURI RIVER U.S. ARMY CORPS OF ENGINEERS FUSRAP NORTH ST. LOUIS COUNTY SITES, ST. LOUIS, MISSOURI
Checked by: M. Cummings	Scale: As Shown; Figure Number: 2G; Sheet: -
Approved by: A. Neil DeYong	Drawing File: 123438B602.dwg; Contract No. W912P9-19-D-0011

File: X:\123438\North St. Louis County Sites\Coldwater Creek\2022 Flood Event Sampling\123438B602.dwg
Plot Date/Time: Feb 27, 2023 - 9:43am
Plotted By: mherzog

OFFICE STL

Drawing File: 123438-B602



LEGEND:

- MINOR PUBLIC ROADWAY
- MAJOR PUBLIC ROADWAY
- COLDWATER CREEK
- COLDWATER CREEK 10-YEAR FLOODPLAIN
- SVP258003 SOIL SAMPLE LOCATION AND ID
- OJR-4 SMEAR SAMPLE LOCATION AND ID

STATE PLANE GRID
N
(EAST ZONE NAD 83)

SCALE
0 500 1000 FEET

Revisions			
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0	ISSUED FOR SAMPLING ACTIVITIES REPORT	02/27/23	M. Cummings

HGL HydroGeoLogic, Inc

FUSRAP

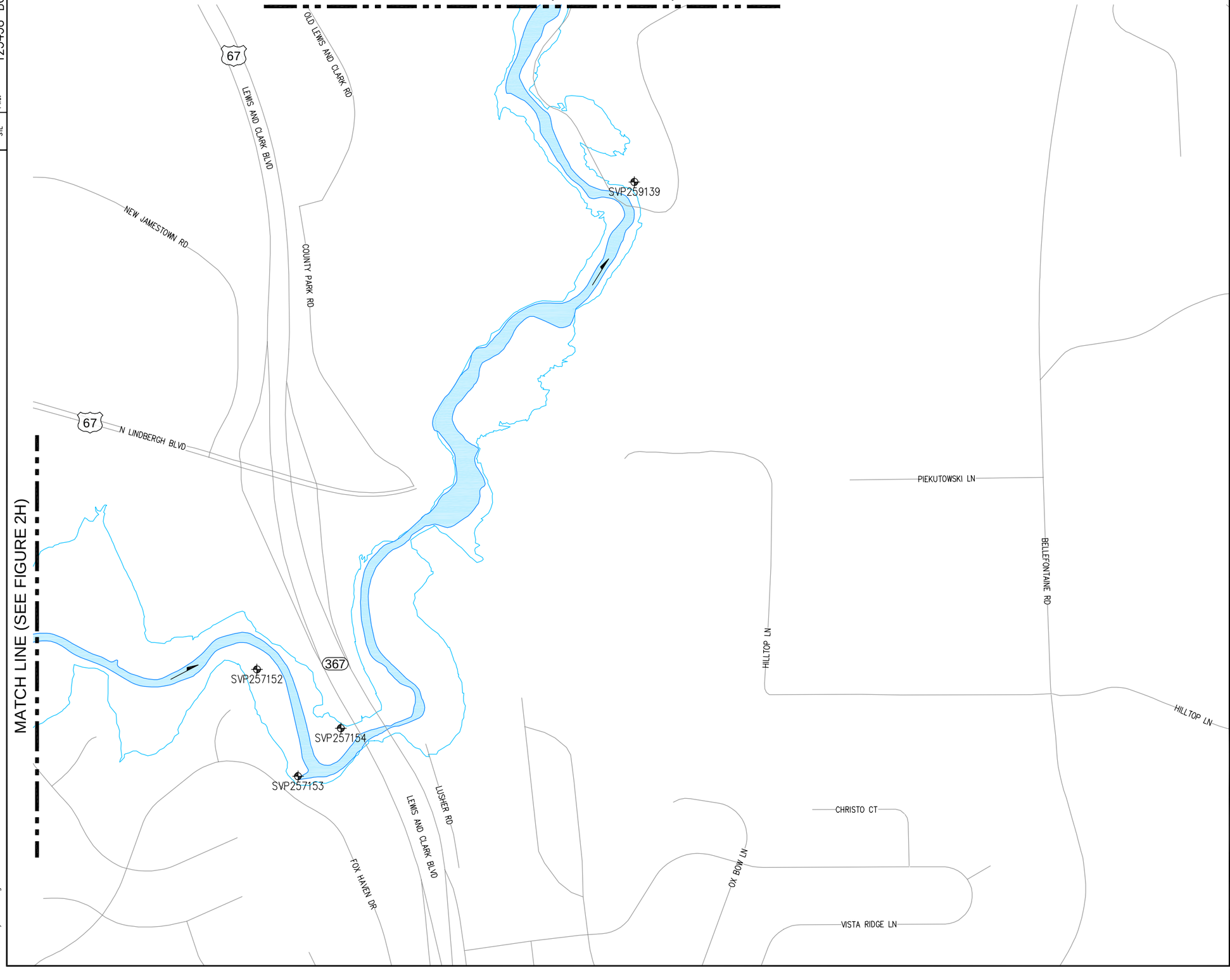
Designed by: M. Cummings	2022 FLOOD EVENT SAMPLE LOCATIONS
Drawn by: M. Herzog	COLDWATER CREEK FROM BANSHEE ROAD TO MISSOURI RIVER U.S. ARMY CORPS OF ENGINEERS FUSRAP NORTH ST. LOUIS COUNTY SITES, ST. LOUIS, MISSOURI
Checked by: M. Cummings	Scale: As Shown; Figure Number: 2H; Sheet: –
Approved by: A. Neil DeYong	Drawing File: 123438B602.dwg; Contract No. W912P9-19-D-0011

File: X:\123438\North St. Louis County Sites\Coldwater Creek\2022 Flood Event Sampling\123438B602.dwg
Plot Date/Time: Feb 27, 2023 - 9:43am
Plotted By: mherzog

OFFICE STL
Drawing File: 123438-B602

MATCH LINE (SEE FIGURE 2J)

MATCH LINE (SEE FIGURE 2H)



LEGEND:

- MINOR PUBLIC ROADWAY
- MAJOR PUBLIC ROADWAY
- COLDWATER CREEK
- COLDWATER CREEK 10-YEAR FLOODPLAIN
- SVP259139 SOIL SAMPLE LOCATION AND ID

STATE PLANE GRID
N
(EAST ZONE NAD 83)

SCALE
0 500 1000 FEET

Revisions

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HGL HydroGeoLogic, Inc
FUSRAP

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Approved by: A. Neil DeYong

2022 FLOOD EVENT SAMPLE LOCATIONS

COLDWATER CREEK
FROM BANSHEE ROAD TO MISSOURI RIVER
U.S. ARMY CORPS OF ENGINEERS
FUSRAP NORTH ST. LOUIS COUNTY SITES, ST. LOUIS, MISSOURI

Scale: As Shown
Figure Number: 2I
Sheet: –
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OFFICE STL
Drawing File: 123438-B602

MISSOURI RIVER

CENTRAL STONE QUARRY

FORT BELLE FONTAINE

367-9

SVP259141

367-7

SVP259140

OLD LEWIS AND CLARK RD

MATCH LINE (SEE FIGURE 2I)

LEGEND:

- MINOR PUBLIC ROADWAY
- MAJOR PUBLIC ROADWAY
- COLDWATER CREEK
- COLDWATER CREEK 10-YEAR FLOODPLAIN
- SVP259141 SOIL SAMPLE LOCATION AND ID
- 367-7 SMEAR SAMPLE LOCATION AND ID

STATE PLANE GRID
N
(EAST ZONE NAD 83)

SCALE
0 500 1000 FEET

Revisions			
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2022 FLOOD EVENT SAMPLE LOCATIONS

COLDWATER CREEK
FROM BANSHEE ROAD TO MISSOURI RIVER
U.S. ARMY CORPS OF ENGINEERS
FUSRAP NORTH ST. LOUIS COUNTY SITES, ST. LOUIS, MISSOURI

Scale: As Shown
Figure Number: 2J
Sheet: –
Drawing File: 123438B602.dwg
Contract No. W912P9-19-D-0011

File: X:\123438\North St. Louis County Sites\Coldwater Creek\2022 Flood Event Sampling\123438B602.dwg
Plot Date/Time: Feb 27, 2023 - 9:43am
Plotted By: mherzog

Appendix A
Sample Locations and Analytical Data Results

Station ID	Sample ID	Date	Easting	Northing	Sample Type	Sample Depth*	Location Descriptor	Sample Area Photograph
SVP259145	SVP259145	27-Jul-22	862858.35	1067083.50	Soil	0.0 - 0.5	Eva/Frost (Shooting Range Entrance)	BA.1
SVP259146	SVP259146	27-Jul-22	863341.79	1067414.80	Soil	0.0 - 0.5	Seeger Drive (West-End)	BA.2
SVP259147	SVP259147	27-Jul-22	862969.84	1068842.16	Soil	0.0 - 0.5	Latty Ave. (cul-de-sac)	BA.3
SVP259148	SVP259148	27-Jul-22	862934.68	1072258.45	Soil	0.0 - 0.5	Archway Memorial Church (Dunn Road)	BA.4
SVP259149	SVP259149	28-Jul-22	865064.54	1074030.35	Soil	0.0 - 0.5	St. Cin Park (Rear Walking Path-1)	BA.5
SVP259150	SVP259150	28-Jul-22	865068.51	1073599.14	Soil	0.0 - 0.5	St. Cin Park (Rear Walking Path-2)	BA.6
SVP259151	SVP259151	28-Jul-22	864982.52	1073636.96	Soil	0.0 - 0.5	St. Cin Park (Basketball Court)	BA.7
SVP259152	SVP259152	28-Jul-22	868903.62	1081000.00	Soil	0.0 - 0.5	St. Ferdinand Park (Parking Lot)	No Photograph Taken
SVP259153	SVP259153	28-Jul-22	868947.51	1081296.65	Soil	0.0 - 0.5	St. Ferdinand Park (Walking Path)	No Photograph Taken
SVP259154	SVP259154	28-Jul-22	869708.04	1082188.00	Soil	0.0 - 0.5	St. Ferdinand Park (Baseball Field Walking Path)	BA.11
SVP259155	SVP259155	28-Jul-22	869902.73	1082054.61	Soil	0.0 - 0.5	St. Ferdinand Park (Playground Area)	BA.14
SVP259156	SVP259156	29-Jul-22	867767.76	1078913.76	Soil	0.0 - 0.5	Florissant Community Garden (Walkway-1)	BA.15
SVP259157	SVP259157	29-Jul-22	867810.70	1079153.16	Soil	0.0 - 0.5	Florissant Community Garden (Walkway-2)	BA.16
SVP259158	SVP259158	29-Jul-22	862684.32	1071430.53	Soil	0.0 - 0.5	VP-56	BA.17
SVP259159	SVP259159	30-Jul-22	862367.49	1067094.75	Soil	0.0 - 0.5	CABKA North America, Byassee Road	No Photograph Taken
SVP259160	SVP259160	30-Jul-22	862108.85	1069689.21	Soil	0.0 - 0.5	Ford Lane	BA.18
SVP259161	SVP259161	30-Jul-22	864977.35	1075707.28	Soil	0.0 - 0.5	Duchesne Park	BA.19
SVP259162	SVP259162	30-Jul-22	866057.93	1077672.85	Soil	0.0 - 0.5	Life Storage Parking Lot (Washington Street)	BA.20
SVP259163	SVP259163	30-Jul-22	872308.48	1082559.46	Soil	0.0 - 0.5	Carol Rogers Way	BA.21
SVP259164	SVP259164	30-Jul-22	866083.34	1078072.95	Soil	0.0 - 0.5	Dierbergs on Lindbergh Rear Parking Lot	No Photograph Taken
SVP259165	SVP259165	30-Jul-22	867374.00	1078474.88	Soil	0.0 - 0.5	CWC Commons Park	No Photograph Taken
SVP242879	SVP242879	28-Jul-22	873928.93	1088966.84	Soil	0.0 - 0.5	Jana-2	No Photograph Taken

Station ID	Sample ID	Date	Easting	Northing	Sample Type	Sample Depth*	Location Descriptor	Sample Area Photograph
SVP242880	SVP242880	28-Jul-22	872339.14	1085443.08	Soil	0.0 - 0.5	Jana-5	BL.19
SVP242881	SVP242881	28-Jul-22	874713.89	1088682.14	Soil	0.0 - 0.5	Jana-7	No Photograph Taken
SVP245630	SVP245630	28-Jul-22	879614.89	1085065.57	Soil	0.0 - 0.5	WM-1	BL.48
SVP245631	SVP245631	28-Jul-22	879739.96	1085075.65	Soil	0.0 - 0.5	WM-2	BL.49
SVP245632	SVP245632	28-Jul-22	879776.68	10885294.18	Soil	0.0 - 0.5	WM-4	BL.51
SVP245633	SVP245633	28-Jul-22	879663.93	1085462.60	Soil	0.0 - 0.5	WM-5	BL.52
SVP245634	SVP245634	28-Jul-22	879595.79	1085594.97	Soil	0.0 - 0.5	WM-6	BL.53
SVP245635	SVP245635	28-Jul-22	883049.05	1083958.63	Soil	0.0 - 0.5	WM-8	BL.55
SVP245636	SVP245636	28-Jul-22	881984.26	1083441.55	Soil	0.0 - 0.5	WM-10	BL.57
SVP245637	SVP245637	28-Jul-22	882381.03	1083529.94	Soil	0.0 - 0.5	WM-11	BL.58
SVP245638	SVP245638	28-Jul-22	880282.31	1083838.96	Soil	0.0 - 0.5	WM-13	BL.59
SVP255227	SVP255227	28-Jul-22	889342.11	1085096.92	Soil	0.0 - 0.5	BJP-1	BL.6
SVP255228	SVP255228	28-Jul-22	889389.32	1084943.34	Soil	0.0 - 0.5	BJP-2	BL.7 and BL.8
SVP255229	SVP255229	28-Jul-22	889064.87	1084705.63	Soil	0.0 - 0.5	BJP-3	BL.9
SVP255230	SVP255230	28-Jul-22	889722.82	1086540.80	Soil	0.0 - 0.5	BJP-7	BL.13
SVP258002	SVP258002	28-Jul-22	892554.70	1084236.18	Soil	0.0 - 0.5	OJR-1	BL.40
SVP258003	SVP258003	28-Jul-22	893023.40	1085378.72	Soil	0.0 - 0.5	OJR-3	BL.42
SVP258004	SVP258004	28-Jul-22	890792.92	1085905.53	Soil	0.0 - 0.5	OJR-6	BL.45
SVP258005	SVP258005	28-Jul-22	891304.57	1086686.89	Soil	0.0 - 0.5	OJR-8	BL.47
SVP259140	SVP259140	28-Jul-22	898225.82	1089921.88	Soil	0.0 - 0.5	Fort Belle Fontaine County Park (367-1)	BL.1
SVP259141	SVP259141	29-Jul-22	899260.55	1090998.36	Soil	0.0 - 0.5	Fort Belle Fontaine County Park (367-2)	BL.2
SVP259139	SVP259139	28-Jul-22	898559.18	1088429.41	Soil	0.0 - 0.5	Fort Belle Fontaine County Park (367-8)	BL.4
SVP254886	SVP254886	28-Jul-22	883310.71	1084132.94	Soil	0.0 - 0.5	OHF-2	BL.32
SVP254887	SVP254887	28-Jul-22	883484.11	1084244.26	Soil	0.0 - 0.5	OHF-4	BL.34
SVP254888	SVP254888	28-Jul-22	887062.56	1084083.38	Soil	0.0 - 0.5	OHF-6	BL.36
SVP254889	SVP254889	28-Jul-22	887096.29	1084105.56	Soil	0.0 - 0.5	OHF-7	BL.37
SVP257151	SVP257151	28-Jul-22	894244.57	1085893.38	Soil	0.0 - 0.5	FMD-1	BL.15
SVP257152	SVP257152	28-Jul-22	896593.21	1085891.64	Soil	0.0 - 0.5	FMD-2	BL.16
SVP257153	SVP257153	28-Jul-22	896806.83	1085335.51	Soil	0.0 - 0.5	FMD-3	BL.17
SVP257154	SVP257154	28-Jul-22	897029.95	1085585.17	Soil	0.0 - 0.5	FMD-4	No Photograph Taken
SVP259078	SVP259078	28-Jul-22	875504.93	1087648.86	Soil	0.0 - 0.5	NHF-1	BL.22
SVP259079	SVP259079	28-Jul-22	876559.31	1087366.60	Soil	0.0 - 0.5	NHF-2	BL.23
SVP259080	SVP259080	28-Jul-22	878336.24	1086904.00	Soil	0.0 - 0.5	NHF-3	BL.24
SVP259081	SVP259081	28-Jul-22	876143.33	1088044.09	Soil	0.0 - 0.5	NHF-7	BL.28
SVP259082	SVP259082	28-Jul-22	875334.04	1088347.45	Soil	0.0 - 0.5	NHF-8	BL.29
SVP259083	SVP259083	28-Jul-22	878011.12	1086685.23	Soil	0.0 - 0.5	NHF-9	BL.30

*Sample Depth is in feet below ground surface.

Date	Station ID	Sample ID	Easting	Northing	Sample Type	Location Descriptor	Photos
27-Jul-22	1-27	Eva/Frost-1	862934	1067060	Smear	Shooting Range	BA.1
		Eva/Frost-2					
		Eva/Frost-3					
		Eva/Frost-4					
		Eva/Frost-5					
27-Jul-22	6-27	Seeger Dr-6	863039	1067929	Smear	Futura Parking Area	No Photograph Taken
		Seeger Dr-7					
		Seeger Dr-8					
		Seeger Dr-9					
		Seeger Dr-10					
27-Jul-22	11-27	Latty Ave-11	862818	1068880	Smear	Turn Around (Cul-de-sac/West end of St.)	BA.3
		Latty Ave-12					
		Latty Ave-13					
		Latty Ave-14					
		Latty Ave-15					
27-Jul-22	16-27	Dunn Rd-16	862997	1072272	Smear	Arch Way Church Parking Lot	BA.4
		Dunn Rd-17					
		Dunn Rd-18					
		Dunn Rd-19					
		Dunn Rd-20					
28-Jul-22	1-28	St. Cin Park-1	864561	1073150	Smear	Rear Walk Path	BAS.5
		St. Cin Park-2					
		St. Cin Park-3					
		St. Cin Park-4					
		St. Cin Park-5					
28-Jul-22	6-28	St. Cin Park-6	865078	1073744	Smear	Rear Walk Path Near Creek	BA.6
		St. Cin Park-7					
		St. Cin Park-8					
		St. Cin Park-9					
		St. Cin Park-10					
28-Jul-22	11-28	St. Cin Park-11	865024	1073598	Smear	Basketball Court	BA.7
		St. Cin Park-12					
		St. Cin Park-13					
		St. Cin Park-14					
		St. Cin Park-15					
28-Jul-22	16-28	St. Cin Park-16	864732	1073749	Smear	Play Ground-1	BA.8
		St. Cin Park-17					
		St. Cin Park-18					
28-Jul-22	19-28	St. Cin Park-19	864808	1073562	Smear	Restroom	No Photograph Taken
		St. Cin Park-20					
28-Jul-22	21-28	St. Cin Park-21	864765	1073656	Smear	Play Ground-2	No Photograph Taken
		St. Cin Park-22					
		St. Cin Park-23					
		St. Cin Park-24					
		St. Cin Park-25					
28-Jul-22	26-28	St. Ferdinand-26	868845	1080828	Smear	Parking Lot	BA.9
		St. Ferdinand-27					
		St. Ferdinand-28					
		St. Ferdinand-29					
		St. Ferdinand-30					

Date	Station ID	Sample ID	Easting	Northing	Sample Type	Location Descriptor	Photos
28-Jul-22	31-28	St. Ferdinand-31	868973	1081108	Smear	Exercise Equipment	BA.10
		St. Ferdinand-32					
		St. Ferdinand-33					
		St. Ferdinand-34					
		St. Ferdinand-35					
28-Jul-22	36-28	St. Ferdinand-36	869050	1081296	Smear	Walking Path	BA.11
		St. Ferdinand-37					
		St. Ferdinand-38					
		St. Ferdinand-39					
		St. Ferdinand-40					
		St. Ferdinand-41					
		St. Ferdinand-42					
		St. Ferdinand-43					
		St. Ferdinand-44					
		St. Ferdinand-45					
28-Jul-22	46-28	St. Ferdinand-46	869692	1082178	Smear	Baseball Field Bleachers	BA.12
		St. Ferdinand-47					
		St. Ferdinand-48					
		St. Ferdinand-49					
		St. Ferdinand-50					
28-Jul-22	51-28	St. Ferdinand-51	869631	1082197	Smear	Baseball Field (Back Stop)	No Photograph Taken
		St. Ferdinand-52					
		St. Ferdinand-53					
		St. Ferdinand-54					
		St. Ferdinand-55					
28-Jul-22	56-28	St. Ferdinand-56	869951	1082043	Smear	Play Ground	BA.14
		St. Ferdinand-57					
		St. Ferdinand-58					
		St. Ferdinand-59					
		St. Ferdinand-60					
28-Jul-22	61-28	St. Ferdinand-61	870058	1082151	Smear	Pavillion	No Photograph Taken
		St. Ferdinand-62					
		St. Ferdinand-63					
		St. Ferdinand-64					
		St. Ferdinand-65					
29-Jul-22	1-29	Florissant-1	867818	1079049	Smear	Community Garden-Pavillion	No Photograph Taken
		Florissant-2					
		Florissant-3					
		Florissant-4					
		Florissant-5					
29-Jul-22	6-29	Florissant-6	867872	1079295	Smear	Community Garden Walking Path	BA.15
		Florissant-7					
		Florissant-8					
		Florissant-9					
		Florissant-10					
29-Jul-22	11-29	St. Dennis Bridge-11	867794	1079760	Smear	Bridge Decking	No Photograph Taken
		St. Dennis Bridge-12					
		St. Dennis Bridge-13					
29-Jul-22	14-29	St. Dennis Bridge-14	867941	1079661	Smear	Bridge Decking	No Photograph Taken
		St. Dennis Bridge-15					

Date	Station ID	Sample ID	Easting	Northing	Sample Type	Location Descriptor	Photos
29-Jul-22	16-29	Lindbergh Bridge-16 Lindbergh Bridge-17 Lindbergh Bridge-18 Lindbergh Bridge-19 Lindbergh Bridge-20	868106	1080155	Smear	Bridge Decking	No Photograph Taken
29-Jul-22	21-29	Pershall Bridge-21 Pershall Bridge-22 Pershall Bridge-23 Pershall Bridge-24 Pershall Bridge-25	862807	1071752	Smear	Bridge Decking	No Photograph Taken
29-Jul-22	26-29	McDonnell Bridge-26 McDonnell Bridge-27 McDonnell Bridge-28 McDonnell Bridge-29 McDonnell Bridge-30	859917	1065622	Smear	Bridge Decking	No Photograph Taken
29-Jul-22	31-29	Ballfields-31 Ballfields-32 Ballfields-33 Ballfields-34 Ballfields-35	860618	1065907	Smear	Rock Work Area	No Photograph Taken
29-Jul-22	36-29	SLAPS Entrance-36 SLAPS Entrance-37 SLAPS Entrance-38 SLAPS Entrance-39 SLAPS Entrance-40	860850	1065598	Smear	West Gate Pavement	No Photograph Taken
29-Jul-22	41-29	W. Washington St. Bridge-41 W. Washington St. Bridge-42 W. Washington St. Bridge-43 W. Washington St. Bridge-44 W. Washington St. Bridge-45	866683	1078577	Smear	Bridge Decking	No Photograph Taken
29-Jul-22	46-29	Normandie Ct-41 Normandie Ct-42 Normandie Ct-43	864387	1072657	Smear	Parking Lot	No Photograph Taken
29-Jul-22	49-29	Bruce Dr.	865952	1077859	Smear	Cul-de-Sac	No Photograph Taken
29-Jul-22	50-29	Industrial Lane	869582	1075782	Smear	Cul-de-Sac	No Photograph Taken
29-Jul-22	51-29	Chez Vant Ct-51 Chez Vant Ct-52 Chez Vant Ct-53	864684	1074877	Smear	Parking Lot	No Photograph Taken
29-Jul-22	54-29	Florissant Meadows Shopping Center-54	867571	1079711	Smear	Parking Lot	No Photograph Taken
29-Jul-22	55-29	Florissant Meadows Shopping Center-55	866792	1078880	Smear	Parking Lot	No Photograph Taken
29-Jul-22	56-29	Schnucks on Lindbergh	864891	1076377	Smear	Parking Lot	No Photograph Taken

Date	Station ID	Sample ID	Easting	Northing	Sample Type	Location Descriptor	Photos
29-Jul-22	57-29	Dierbergs on Lindbergh	866375	1078262	Smear	Parking Lot	No Photograph Taken
29-Jul-22	58-29	Avant Dr.	864130	1075689	Smear	Roadway Pavement	No Photograph Taken
29-Jul-22	59-29	Hundley Dr.	868920	1081869	Smear	Roadway Pavement	No Photograph Taken
29-Jul-22	60-29	Marshall Ct.	863039	1067929	Smear	Roadway Pavement	No Photograph Taken
29-Jul-22	61-29	Myrtle Dr.	869191	1082281	Smear	Roadway Pavement	No Photograph Taken
29-Jul-22	62-29	Lemon Dale	868474	1081009	Smear	Roadway Pavement	No Photograph Taken
29-Jul-22	63-29	Lime Dale	868827	1081732	Smear	Roadway Pavement	No Photograph Taken
29-Jul-22	64-29	Orange Dale	868683	1081413	Smear	Roadway Pavement	No Photograph Taken
29-Jul-22	65-29	Orleans Dr.	869191	1082281	Smear	Roadway Pavement	No Photograph Taken
29-Jul-22	66-29	Apple Blossom Ct.-66	868474	1081009	Smear	Roadway Pavement	No Photograph Taken
29-Jul-22	67-29	Apple Blossom Ct.-67	868608	1081255	Smear	Roadway Pavement	No Photograph Taken
29-Jul-22	68-29	Apple Blossom Ct.-68	868683	1081413	Smear	Roadway Pavement	No Photograph Taken
29-Jul-22	69-29	Humes Lane-69	871798	1084471	Smear	Roadway Pavement	No Photograph Taken
29-Jul-22	70-29	Humes Lane-70	869449	1082479	Smear	Roadway Pavement	No Photograph Taken
29-Jul-22	71-29	Humes Lane-71	869803	1082742	Smear	Roadway Pavement	No Photograph Taken
29-Jul-22	72-29	Humes Lane-72	870187	1082987	Smear	Roadway Pavement	No Photograph Taken
29-Jul-22	73-29	Humes Lane-73	870485	1082984	Smear	Roadway Pavement	No Photograph Taken
29-Jul-22	74-29	Humes Lane-74	865339	1075607	Smear	Roadway Pavement	No Photograph Taken
29-Jul-22	75-29	Versailles Dr.	870801	1083011	Smear	Roadway Pavement	No Photograph Taken
30-Jul-22	1-30	Duchesne Park-1 Duchesne Park-2	865300	1075613	Smear	Pavillion	No Photograph Taken
30-Jul-22	3-30	Duchesne Park-3 Duchesne Park-4A	865355	1075542	Smear	Play Ground	No Photograph Taken
30-Jul-22	5-30	Duchesne Park-5 Duchesne Park-6	865480	1075571	Smear	Parking Lot	No Photograph Taken
30-Jul-22	7-30	Duchesne Park-7	865339	1075607	Smear	Water Fountain	No Photograph Taken
30-Jul-22	8-30	Duchesne Park-8 Duchesne Park-9 Duchesne Park-10	865526	1075591	Smear	Dog Park	No Photograph Taken
30-Jul-22	11-30	Cades Cove-11	865398	1076102	Smear	Roadway Pavement	No Photograph Taken
30-Jul-22	12-30	Cades Cove-12	865394	1076538	Smear	Roadway Pavement	No Photograph Taken

Date	Station ID	Sample ID	Easting	Northing	Sample Type	Location Descriptor	Photos
30-Jul-22	13-30	Cades Cove-13	865769	1076990	Smear	Roadway Pavement	No Photograph Taken
30-Jul-22	14-30	Life Storage-14	866090	1077650	Smear	Parking Lot	BA.20
30-Jul-22	15-30	Life Storage-15	866451	1078096	Smear	Ground Area Near the Creek	No Photograph Taken
30-Jul-22	16-30	Carla Dr.-16	870692	1082401	Smear	Roadway Pavement	No Photograph Taken
30-Jul-22	17-30	Carla Dr.-17	871114	1082334	Smear	Roadway Pavement	No Photograph Taken
30-Jul-22	18-30	Debra Lynn Lane	871553	1082380	Smear	Roadway Pavement	No Photograph Taken
30-Jul-22	19-30	Carole Rogers Way-19	872308	1082517	Smear	Roadway Pavement	BA.21
30-Jul-22	20-30	Carole Rogers Way-20	872298	1082587	Smear	Roadway Pavement	BA.21
30-Jul-22	21-30	Ford Lane-21	862007	1069941	Smear	End of St. Pavement	BA.18
30-Jul-22	22-30	Ford Lane-22	862123	1069819	Smear	End of Street Near CWC and RR Tracks	No Photograph Taken
30-Jul-22	23-30	Ford Lane-23	862081	1069683	Smear	End of Street Near CWC and RR Tracks	No Photograph Taken
30-Jul-22	24-30	Heatherton Dr.-24	872321	1084604	Smear	Roadway Pavement	No Photograph Taken
30-Jul-22	25-30	Heatherton Dr.-25	872484	1084931	Smear	Roadway Pavement	No Photograph Taken
30-Jul-22	26-30	Dierbergs	866171	1078072	Smear	Parking Lot (Lindbergh Shopping Center)	No Photograph Taken
30-Jul-22	27-30	St. Ferdinand Cemetery	865419	1074710	Smear	Archdiocese of St. Louis	No Photograph Taken
30-Jul-22	28-30	Bramble Lane	872409	1083726	Smear	Roadway Pavement	No Photograph Taken
30-Jul-22	29-30	E. Humes Lane	872421	1082929	Smear	Roadway Pavement	No Photograph Taken
30-Jul-22	30-30	Polson Lane	862574	1069367	Smear	Roadway Pavement	No Photograph Taken
30-Jul-22	31-30	Byassee Dr.	862348	1067178	Smear	Roadway Pavement	No Photograph Taken
28-Jul-22	WM-3	WM-3	879626.17	1085128.96	Smear	Parking Lot Urgent Care	BL.50
28-Jul-22	WM-7	WM-7	879651.33	1085503.02	Smear	Driving Range	BL.54
28-Jul-22	WM-9	WM-9	882037.50	1083415.47	Smear	Schaefer Park	BL.56
28-Jul-22	WM-12	WM-12	881246.97	1082993.39	Smear	Pyrenees & Seville Rd.	BL.59
28-Jul-22	OJR-2	OJR-2	892544.78	1084229.12	Smear	Kavanaugh Railing	BL.41
28-Jul-22	OJR-4	OJR-4	893060.64	1085446.36	Smear	Pump House Gas Vent	BL.43
28-Jul-22	OJR-5	OJR-5	890778.29	1085908.20	Smear	Horse Farm Gate	BL.44
28-Jul-22	OJR-7	OJR-7	892209.23	1085454.08	Smear	Wood Step at 14329 Wild Fox Ct.	BL.46
28-Jul-22	NHF-4	NHF-4	877970.30	1086766.84	Smear	Wedge of Wood Swing Set (Plastic)	BL.25
28-Jul-22	NHF-5	NHF-5	878500.11	1088363.21	Smear	Portique Ct.	BL.26
28-Jul-22	NHF-6	NHF-6	878243.75	1088093.85	Smear	Rue de Renard St.	BL.27

Date	Station ID	Sample ID	Easting	Northing	Sample Type	Location Descriptor	Photos
28-Jul-22	Jana-1	Jana-1	872341.29	1087217.38	Smear	Church Playground	BL.18
28-Jul-22	Jana-3	Jana-3	871931.41	1085751.53	Smear	School Playground	No Photograph Taken
28-Jul-22	Jana-4	Jana-4	871955.26	1085571.31	Smear	School Soccer Goal	No Photograph Taken
28-Jul-22	Jana-6	Jana-6	873490.75	1086663.00	Smear	Cricket Court	BL.20
28-Jul-22	BJP-4	BJP-4	889224.71	1084918.71	Smear	Park Bench Church Lot	BL.10
28-Jul-22	BJP-5	BJP-5	891210.00	1086760.91	Smear	Old Jamestown Bridge	BL.11
28-Jul-22	BJP-6	BJP-6	891169.95	1086803.89	Smear	Exposed Pipe/Well	BL.12
28-Jul-22	BJP-8	BJP-8	889852.27	1086777.27	Smear	Treeline on Avocado Lane	BL.14
29-Jul-22	367-7	367-7	897729.63	1090568.01	Smear	Park Bench - West	BL.3
29-Jul-22	367-9	367-9	900168.30	1091449.65	Smear	Park Bench - East	BL.5
29-Jul-22	OHF-1	OHF-1	883282.22	1084111.18	Smear	Fence Post	BL.31
29-Jul-22	OHF-3	OHF-3	883369.61	1084163.22	Smear	Manhole Cover	BL.33
29-Jul-22	OHF-5	OHF-5	883546.08	1084240.94	Smear	Manhole cover	BL.35
29-Jul-22	OHF-8	OHF-8	885452.98	1084215.06	Smear	Trailer Flashing	BL.38
29-Jul-22	OHF-9	OHF-9	884688.50	1084116.74	Smear	Asphalt Road	BL.39

Station ID	Sample ID	Collection Date	Easting	Northing	Ac_227_G			Pa_231_G			Ra_226_G			Ra_228_G			Th_230_G			Th_232_G			U_238_G			SOR_N
					Result	Error	MDC	Result	Error	MDC	Result	Error	MDC	Result	Error	MDC	Result	Error	MDC	Result	Error	MDC	Result	Error	MDC	
SVP242879	SVP242879	7/28/2022	873928.93	1088966.84	-0.34	0.70	1.17	-0.11	2.72	4.76	0.53	0.42	0.41	0.43	0.21	0.25	0.48	0.24	0.13	0.51	0.25	0.13	0.78	0.29	0.18	0.00
SVP242880	SVP242880	7/28/2022	872339.14	1085443.08	-0.05	0.24	0.42	0.18	0.93	1.62	1.00	0.28	0.09	0.82	0.12	0.09	1.30	0.40	0.18	1.00	0.34	0.12	-0.06	0.17	0.90	0.01
SVP242881	SVP242881	7/28/2022	874713.89	1088682.14	0.02	0.21	0.36	0.32	0.80	1.39	1.15	0.30	0.09	0.69	0.10	0.08	1.44	0.42	0.12	1.00	0.34	0.18	0.91	0.19	0.43	0.04
SVP245630	SVP245630	7/28/2022	879614.89	1085065.57	-0.48	10.26	18.60	-26.13	45.00	71.80	0.77	0.46	0.34	3.80	3.98	8.35	1.43	0.43	0.13	1.14	0.38	0.20	1.46	0.46	0.15	0.01
SVP245631	SVP245631	7/28/2022	879739.96	1085075.65	0.25	0.47	0.86	-0.40	1.65	2.82	0.99	0.41	0.22	0.78	0.15	0.18	2.30	0.58	0.13	1.16	0.38	0.13	0.88	0.31	0.13	0.07
	SVP245631-1	7/28/2022	879739.96	1085075.65	-0.27	0.49	0.82	0.53	1.78	3.16	0.68	0.37	0.22	0.83	0.17	0.17	2.04	0.51	0.13	1.02	0.34	0.13	0.92	0.30	0.16	0.04
SVP245632	SVP245632	7/28/2022	879776.68	1085294.18	0.01	0.44	0.77	0.11	1.52	2.67	1.16	0.48	0.25	0.59	0.13	0.15	1.52	0.43	0.18	0.54	0.24	0.17	0.91	0.30	0.15	0.04
SVP245633	SVP245633	7/28/2022	879663.93	1085462.60	0.57	0.61	1.16	-1.13	2.13	3.50	1.09	0.52	0.42	0.75	0.17	0.21	2.20	0.56	0.13	1.03	0.36	0.13	0.95	0.32	0.12	0.08
SVP245634	SVP245634	7/28/2022	879595.79	1085594.97	0.14	0.42	0.77	0.43	1.79	3.18	0.81	0.17	0.07	0.69	0.13	0.17	1.54	0.41	0.14	0.64	0.25	0.12	0.71	0.32	0.22	0.00
SVP245635	SVP245635	7/28/2022	883049.05	1083958.63	0.01	0.30	0.53	0.23	1.23	2.15	1.04	0.31	0.13	0.75	0.13	0.12	1.72	0.43	0.16	0.84	0.29	0.13	1.22	0.71	1.24	0.04
SVP245636	SVP245636	7/28/2022	881984.26	1083441.55	-0.08	0.41	0.70	-1.18	1.27	1.98	0.69	0.16	0.10	0.30	0.13	0.17	0.78	0.30	0.16	0.22	0.16	0.18	0.62	0.29	0.22	0.00
SVP245637	SVP245637	7/28/2022	882381.03	1083529.94	-0.28	0.82	1.39	-1.35	2.74	4.58	1.00	0.22	0.12	0.86	0.20	0.27	1.67	0.45	0.13	0.83	0.30	0.11	1.06	0.40	0.24	0.02
SVP245638	SVP245638	7/28/2022	880282.31	1083838.96	-2.59	3.48	5.53	-4.16	12.39	21.40	0.91	0.20	0.10	1.49	1.37	2.87	0.91	0.31	0.11	0.71	0.27	0.11	1.04	0.38	0.14	0.00
SVP254886	SVP254886	7/28/2022	883310.71	1084132.94	0.02	0.20	0.35	-0.73	0.74	1.19	1.08	0.28	0.08	0.66	0.09	0.08	1.91	0.46	0.13	0.64	0.25	0.12	1.07	0.21	0.41	0.06
	SVP254886-1	7/28/2022	883310.71	1084132.94	0.09	0.18	0.32	0.03	0.71	1.22	1.16	0.30	0.07	0.64	0.09	0.08	1.81	0.46	0.11	0.62	0.25	0.11	1.03	0.20	0.41	0.06
SVP254887	SVP254887	7/28/2022	883484.11	1084244.26	-0.04	0.76	1.34	0.01	2.76	4.79	0.80	0.43	0.26	0.79	0.22	0.28	2.56	0.59	0.13	1.08	0.35	0.15	1.14	0.35	0.13	0.08
SVP254888	SVP254888	7/28/2022	887062.56	1084083.38	0.04	0.13	0.22	0.11	0.49	0.84	0.98	0.24	0.05	0.58	0.07	0.04	2.23	0.51	0.16	0.92	0.30	0.10	0.86	0.15	0.27	0.06
SVP254889	SVP254889	7/28/2022	887096.29	1084105.56	0.00	0.19	0.32	0.29	0.71	1.25	0.92	0.25	0.07	0.49	0.07	0.07	1.91	0.47	0.15	0.62	0.25	0.15	0.70	0.39	0.66	0.03
SVP255227	SVP255227	7/28/2022	889342.11	1085096.92	0.03	0.20	0.34	0.17	0.73	1.26	1.29	0.34	0.08	0.93	0.13	0.09	2.32	0.57	0.12	1.33	0.41	0.19	1.40	0.26	0.43	0.13
	SVP255227-1	7/28/2022	889342.11	1085096.92	0.00	0.20	0.34	-0.69	0.74	1.19	1.01	0.27	0.08	0.72	0.10	0.08	1.87	0.50	0.12	0.77	0.30	0.19	0.80	0.20	0.42	0.04
SVP255228	SVP255228	7/28/2022	889389.32	1084943.34	0.07	0.19	0.33	-0.20	0.66	1.09	0.85	0.23	0.08	0.61	0.10	0.07	2.21	0.58	0.14	0.79	0.32	0.14	0.80	0.19	0.41	0.05
SVP255229	SVP255229	7/28/2022	889064.87	1084705.63	-0.07	0.23	0.39	-0.36	0.82	1.36	1.20	0.32	0.10	0.90	0.12	0.10	2.71	0.69	0.18	1.20	0.43	0.18	1.04	0.24	0.48	0.14
SVP255230	SVP255230	7/28/2022	889722.82	1086540.80	0.20	0.37	0.69	1.04	1.42	2.60	1.03	0.19	0.08	0.90	0.16	0.15	1.51	0.43	0.18	1.00	0.34	0.18	0.93	0.35	0.16	0.02
SVP257151	SVP257151	7/28/2022	894244.57	1085893.38	-0.22	0.78	1.34	1.97	2.59	4.82	1.25	0.54	0.33	0.83	0.19	0.24	1.38	0.45	0.23	0.95	0.37	0.23	0.59	0.26	0.19	0.06
SVP257152	SVP257152	7/28/2022	896593.21	1085891.64	0.19	0.37	0.67	-0.57	1.27	2.12	1.17	0.47	0.21	0.85	0.14	0.14	2.87	0.66	0.13	0.92	0.33	0.13	1.48	0.46	0.22	0.15
SVP257153	SVP257153	7/28/2022	896806.83	1085335.51	0.34	0.34	0.64	0.25	1.28	2.24	0.99	0.30	0.14	0.74	0.12	0.13	1.80	0.47	0.17	1.02	0.34	0.17	0.68	0.35	0.63	0.03
SVP257153	SVP257153-1	7/28/2022	896806.83	1085335.51	-0.22	0.34	0.57	-0.43	1.21	2.03	1.16	0.33	0.14	0.76	0.13	0.13	1.81	0.46	0.14	1.03	0.33	0.11	0.87	0.31	0.77	0.06
SVP257154	SVP257154	7/28/2022	897029.95	1085585.17	0.07	0.33	0.58	-0.37	1.17	1.94	0.96	0.29	0.13	0.68	0.12	0.11	1.50	0.41	0.10	0.67	0.26	0.12	0.92	0.37	0.66	0.00
SVP258002	SVP258002	7/28/2022	892554.70	1084236.18	-0.18	0.44	0.75	-0.46	1.76	3.01	0.69	0.17	0.09	0.30	0.10	0.15	1.34	0.46	0.25	0.48	0.26	0.23	0.75	0.32	0.15	0.00
SVP258003	SVP258003	7/28/2022	893023.40	1085378.72	2.03	2.24	4.32	-1.43	7.89	13.40	1.00	0.19	0.08	1.54	0.80	0.87	1.49	0.41	0.13	0.80	0.29	0.16	1.10	0.38	0.16	0.01
SVP258004	SVP258004	7/28/2022	890792.92	1085905.53	0.83	1.94	3.49	5.77	7.17	13.50	1.06	0.20	0.09	0.83	0.52	0.69	1.05	0.35	0.16	0.84	0.31	0.18	1.03	0.37	0.14	0.02
SVP258005	SVP258005	7/28/2022	891304.57	1086686.89	0.25	0.31	0.57	0.74	1.05	1.89	1.55	0.42	0.13	0.93	0.16	0.12	2.30	0.55	0.14	1.06	0.35	0.12	1.40	0.39	0.60	0.18
SVP259078	SVP259078	7/28/2022	875504.93	1087648.86	-0.03	0.19	0.32	-0.09	0.62	1.06	0.86	0.23	0.07	0.50	0.07	0.06	1.14	0.43	0.17	0.52	0.28	0.17	0.86	0.19	0.40	0.00
	SVP259078-1	7/28/2022	875504.93	1087648.86	-0.15	0.17	0.27	-0.04	0.63	1.07	0.73	0.20	0.07	0.43	0.07	0.07	1.17	0.38	0.16	0.40	0.21	0.14	0.65	0.17	0.37	0.00
SVP259079	SVP259079	7/28/2022	876559.31	1087366.60	-0.10	0.20	0.33	0.54	0.74	1.32	0.97	0.26	0.09	0.79	0.11	0.08	3.45	0.80	0.15	0.86	0.35	0.15	0.99	0.22	0.42	0.14
SVP259080	SVP259080	7/28/2022	878336.24	1086904.00	0.01	0.19	0.33	-0.14	0.68	1.15	0.82	0.23	0.07	0.61	0.09	0.07	2.42	0.60	0.15	0.74	0.30	0.20	0.68	0.18	0.41	0.07
SVP259081	SVP259081	7/28/2022	876143.33	1088044.09	-0.01	0.10	0.17	0.02	0.42	0.71	0.63	0.17	0.04	0.23	0.04	0.04	0.87	0.41	0.21	0.60	0.34	0.21	0.61	0.11	0.22	0.00
SVP259082	SVP259082	7/28/2022	875334.04	1088347.45	0.02	0.13	0.22	0.27	0.48	0.83	0.87	0.23	0.05	0.62	0.08	0.05	2.06	0.54	0.15	0.89	0.33	0.13	0.91	0.16	0.28	0.04
SVP259083	SVP259083	7/28/2022	878011.12	1086685.23	0.04	0.37	0.66	0.33	1.66	2.87	0.91	0.28	0.13	0.59	0.11	0.13	1.46	0.44	0.17	0.81	0.31	0.15	0.84	0.47	0.70	0.00
SVP259139	SVP259139	7/28/2022	898559.18	1088429.41	-0.09	0.12	0.20	-0.16	0.49	0.81	1.19	0.30	0.05	0.84	0.11	0.05	1.96	0.52	0.13	1.04	0.36	0.13	0.97	0.18	0.30	0.08
SVP259140	SVP259140	7/28/2022	898225.82	1089421.88	-0.13	0.38	0.64	0.62	1.24	2.24	1.41	0.40	0.16	0.93	0.17	0.15	1.86	0.49	0.14	1.25	0.39	0.18	1.14	0.44	0.77	0.12
SVP259141	SVP259141	7/29/2022	899260.55	1090998.36	0.23	0.74	1.35	1.06	2.64	4.82	0.21	0.10	0.10	0.18	0.28	0.56	1.32	0.49	0.22	0.11	0.14	0.19	0.50	0.25	0.21	0.00
SVP259145	SVP259145	7/27/2022	862858.35	1067083.50	0.10	0.14	0.25	-0.12	0.52	0.87	1.03	0.26	0.05	0.45	0.07	0.05	1.74	0.50	0.21	0.70	0.30	0.16	0.91	0.17	0.30	0.03
SVP259146	SVP259146	7/27/2022	863341.79	1067414.80	0.06	0.04	0.10	-0.12	0.47	0.79	0.76	0.20	0.05	0.39	0.06	0.05	1.04	0.34	0.12	0.45	0.22	0.12	0.51	0.12	0.26	0.00
SVP259147	SVP259147	7/27/2022	862969.84	1068842.16	-0.01	0.10	0.16	-0.21	0.35	0.58	0.77	0.20	0.03	0.12	0.02	0.03	1.45	0.57	0.36	0.10	0.17	0.36	0.48	0.10	0.21	0.00
SVP259148	SVP259148	7/27/2022	862934.68	1072258.45	-0.10	0.18	0.30	0.34	0.80	1.39	0.89	0.24	0.08	0.60	0.09	0.07	2.54	0.61	0.16	0.91	0.33	0.20	1.03	0.21	0.42	0.07
SVP259149	SVP259149	7/28/2022	865064.54	1074030.35	-0.14	0.20	0.33	-0.03	0.70	1.19	0.97	0.26	0.08	0.66	0.09	0.07	3.51	0.71	0.17	0.72	0.27	0.14	0.77	0.19	0.42	0.15
SVP259150	SVP259150	7/28/2022	865068.51	1073599.14	-0.01	0.13	0.22	-0.18	0.53	0.88	0.90	0.23	0.04	0.64	0.08	0.05	3.23	0.70	0.18	1.00	0.34	0.12	0.82	0.15	0.29	0.12
SVP259151	SVP259151	7/28/2022	864982.52	1073636.96	0.06	0.12	0.21	-0.13	0.48	0.81	0.85	0.22	0.05	0.46	0.06	0.04	1.50	0.43	0.18	0.55	0.24	0.12	0.76	0.15	0.27	0.00
SVP259152	SVP259152	7/28/2022	868903.62	1081000.00	-0.01	0.13	0.21	0.12	0.47	0.80	0.98	0.25	0.05	0.60	0.07	0.05	7.79	1.28	0.11	0.93	0.32	0.18	0.68	0.13	0.29	0.45
SVP259153	SVP259153	7/28/2022	868947.51	1081296.65	-0.02	0.14	0.23	0.29	0.23	0.59	1.13	0.29	0.05	0.77	0.10	0.06	3.03	0.67	0.14	1.02	0.34	0.12	0.79	0.16	0.32	0.14
SVP259154	SVP259154	7/28/2022	869708.04	1082188.00	-0.07	0.20	0.33	0.27	0.71	1.24	0.91	0.25	0.08	0.65	0.10	0.07	5.04	0.95	0.17	0.91	0.33	0.14	0.99	0.20	0.40	0.25
SVP259155	SVP259155	7/28/2022	869902.73	1082054.61	-0.06	0.13	0.21	0.20	0.46	0.79	1.05	0.27	0.05	0.73	0.09	0.05	1.12	0.33	0.12	0.89	0.29	0.15	1.01	0.18	0.27	0.02
SVP259156	SVP259156	7/29/2022	867767.76	1078913.76	-0.02	0.20	0.34	0.33	0.77	1.34	0.76	0.22	0.08	0.58	0.09	0.08	1.67	0.45	0.17	0.85	0.30	0.17	0.76	0.20	0.41	0.01
SVP259157	SVP259157	7/29/2022	867810.70	1079153.16	0.10	0.12	0.22	0.33	0.52	0.90	0.85	0.22	0.05	0.59	0.08	0.05	1.60	0.42	0.16	0.75	0.27	0.11	0.81	0.16	0.27	0.01

Station ID	Sample ID	Collection Date	Easting	Northing	Ac_227_G			Pa_231_G			Ra_226_G			Ra_228_G			Th_230_G			Th_232_G			U_238_G			SOR_N
					Result	Error	MDC	Result	Error	MDC	Result	Error	MDC	Result	Error	MDC	Result	Error	MDC	Result	Error	MDC	Result	Error	MDC	
SVP259158	SVP259158	7/29/2022	862684.32	1071430.53	-0.05	0.47	0.81	-0.25	1.50	2.56	0.93	0.30	0.18	0.54	0.12	0.17	3.76	0.80	0.20	0.97	0.35	0.20	0.69	0.56	0.89	0.16
SVP259159	SVP259159	7/30/2022	862367.49	1067094.75	-0.05	0.10	0.16	0.28	0.35	0.62	0.72	0.18	0.04	0.17	0.03	0.03	1.37	0.42	0.13	0.22	0.16	0.13	0.40	0.10	0.19	0.00
SVP259160	SVP259160	7/30/2022	862108.85	1069689.21	-0.06	0.09	0.14	0.25	0.31	0.55	0.46	0.12	0.03	0.13	0.02	0.03	0.70	0.27	0.17	0.15	0.12	0.11	0.31	0.08	0.17	0.00
SVP259161	SVP259161	7/30/2022	864977.35	1075707.28	-0.05	0.13	0.22	0.13	0.51	0.88	1.04	0.26	0.06	0.85	0.11	0.06	1.37	0.42	0.20	1.08	0.37	0.19	1.11	0.20	0.30	0.02
SVP259162	SVP259162	7/30/2022	866057.93	1077672.85	-0.02	0.19	0.33	0.11	0.72	1.25	0.85	0.23	0.08	0.51	0.08	0.08	2.03	0.55	0.16	0.77	0.32	0.21	0.70	0.19	0.37	0.04
SVP259163	SVP259163	7/30/2022	872308.48	1082559.46	0.19	0.19	0.35	0.30	0.74	1.29	1.00	0.27	0.09	0.71	0.11	0.08	1.64	0.47	0.20	0.87	0.32	0.13	0.77	0.20	0.42	0.02
SVP259164	SVP259164	7/30/2022	866083.34	1078072.95	0.15	0.18	0.33	-0.67	0.67	1.06	0.60	0.17	0.08	0.42	0.07	0.07	2.31	0.57	0.13	0.82	0.32	0.20	0.53	0.16	0.35	0.06
SVP259165	SVP259165	7/30/2022	867374.00	1078474.88	-0.19	0.20	0.33	-0.16	0.73	1.23	0.81	0.22	0.08	0.54	0.08	0.07	1.70	0.48	0.13	0.80	0.31	0.20	0.85	0.20	0.40	0.02

Notes: Results are in pCi/g (picoCuries per gram)

Some samples had low sample mass affecting the sample error and Minimum Detectable Concentration (MDC). Alpha Spectroscopy for radium (Ra)-226 and uranium (U)-238 was performed for samples affected to achieve an acceptable Minimum Detectable Activity and sample error for evaluation of the SOR_N (net sum-of-ratios).

All samples were collected from the surface.

Ac = actinium; Pa = protactinium; Th = thorium; G = gross

Surface Background Concentrations

Radium-226 = 0.95 pCi/g
Thorium-230 = 1.49 pCi/g
Uranium-238 = 1.08 pCi/g.

		a						b/g					
Number	Station Name	Gross Counts / Minute	Net Counts / Minute	Disintegrations / Minute/100 cm^2	bkg	eff	MDA	Gross Counts / Minute	Net Counts / Minute	Disintegrations / Minute/100 cm^2	bkg	eff	MDA
1-27	Eva/Frost-Shooting Range-1	0	0	0	0.3	0.355	13.77	61	13	30	48	0.44	61.15
2-27	Eva/Frost-Shooting Range-2	0	0	0	0.3	0.355	13.77	38	-10	0	48	0.44	61.15
3-27	Eva/Frost-Shooting Range-3	0	0	0	0.3	0.355	13.77	48	0	0	48	0.44	61.15
4-27	Eva/Frost-Shooting Range-4	0	0	0	0.3	0.355	13.77	56	8	18	48	0.44	61.15
5-27	Eva/Frost-Shooting Range-5	0	0	0	0.3	0.355	13.77	45	-3	0	48	0.44	61.15
6-27	Seeger Drive-1	0	0	0	0.3	0.355	13.77	48	0	0	48	0.44	61.15
7-27	Seeger Drive-2	0	0	0	0.3	0.355	13.77	61	13	30	48	0.44	61.15
8-27	Seeger Drive-3	0	0	0	0.3	0.355	13.77	34	-14	0	48	0.44	61.15
9-27	Seeger Drive-4	0	0	0	0.3	0.355	13.77	49	1	2	48	0.44	61.15
10-27	Seeger Drive-5	0	0	0	0.3	0.355	13.77	65	17	39	48	0.44	61.15
11-27	Latty Avenue-1	1	1	2	0.3	0.355	13.77	40	-8	0	48	0.44	61.15
12-27	Latty Avenue-2	0	0	0	0.3	0.355	13.77	47	-1	0	48	0.44	61.15
13-27	Latty Avenue-3	0	0	0	0.3	0.355	13.77	54	6	14	48	0.44	61.15
14-27	Latty Avenue-4	1	1	2	0.3	0.355	13.77	48	0	0	48	0.44	61.15
15-27	Latty Avenue-5	0	0	0	0.3	0.355	13.77	37	-11	0	48	0.44	61.15
16-27	Archway Church-1	0	0	0	0.3	0.355	13.77	60	12	27	48	0.44	61.15
17-27	Archway Church-2	0	0	0	0.3	0.355	13.77	48	0	0	48	0.44	61.15
18-27	Archway Church-3	1	1	2	0.3	0.355	13.77	40	-8	0	48	0.44	61.15
19-27	Archway Church-4	1	1	2	0.3	0.355	13.77	53	5	11	48	0.44	61.15
20-27	Archway Church-5	0	0	0	0.3	0.355	13.77	40	-8	0	48	0.44	61.15
1-28	St. Cin Park Walk Path-1	0	0	0	0.1	0.355	11.52	59	15	34	44	0.44	58.72
2-28	St. Cin Park Walk Path-2	0	0	0	0.1	0.355	11.52	47	3	7	44	0.44	58.72
3-28	St. Cin Park Walk Path-3	0	0	0	0.1	0.355	11.52	50	6	14	44	0.44	58.72
4-28	St. Cin Park Walk Path-4	0	0	0	0.1	0.355	11.52	44	0	0	44	0.44	58.72
5-28	St. Cin Park Walk Path-5	0	0	0	0.1	0.355	11.52	42	-2	0	44	0.44	58.72
6-28	St. Cin Park Walk Path near CWC-1	0	0	0	0.1	0.355	11.52	37	-7	0	44	0.44	58.72
7-28	St. Cin Park Walk Path near CWC-2	0	0	0	0.1	0.355	11.52	43	-1	0	44	0.44	58.72
8-28	St. Cin Park Walk Path near CWC-3	0	0	0	0.1	0.355	11.52	47	3	7	44	0.44	58.72
9-28	St. Cin Park Walk Path near CWC-4	0	0	0	0.1	0.355	11.52	46	2	5	44	0.44	58.72
10-28	St. Cin Park Walk Path near CWC-5	0	0	0	0.1	0.355	11.52	44	0	0	44	0.44	58.72
11-28	St. Cin Park Basketball Court-1	0	0	0	0.1	0.355	11.52	38	-6	0	44	0.44	58.72
12-28	St. Cin Park Basketball Court-2	1	1	3	0.1	0.355	11.52	48	4	9	44	0.44	58.72
13-28	St. Cin Park Basketball Court-3	0	0	0	0.1	0.355	11.52	46	2	5	44	0.44	58.72
14-28	St. Cin Park Basketball Court-4	0	0	0	0.1	0.355	11.52	38	-6	0	44	0.44	58.72
15-28	St. Cin Park Basketball Court-5	0	0	0	0.1	0.355	11.52	43	-1	0	44	0.44	58.72
16-28	St. Cin Park Playground1-1	0	0	0	0.1	0.355	11.52	43	-1	0	44	0.44	58.72
17-28	St. Cin Park Playground1-2	1	1	3	0.1	0.355	11.52	47	3	7	44	0.44	58.72
18-28	St. Cin Park Playground1-3	0	0	0	0.1	0.355	11.52	51	7	16	44	0.44	58.72

		a						b/g					
Number	Station Name	Gross Counts / Minute	Net Counts / Minute	Disintegrations / Minute/100 cm^2	bkg	eff	MDA	Gross Counts / Minute	Net Counts / Minute	Disintegrations / Minute/100 cm^2	bkg	eff	MDA
19-28	St. Cin Park Restroom-1	0	0	0	0.1	0.355	11.52	41	-3	0	44	0.44	58.72
20-28	St. Cin Park Restroom-2	0	0	0	0.1	0.355	11.52	47	3	7	44	0.44	58.72
21-28	St. Cin Park Playground2-1	0	0	0	0.1	0.355	11.52	48	4	9	44	0.44	58.72
22-28	St. Cin Park Playground2-2	1	1	3	0.1	0.355	11.52	62	18	41	44	0.44	58.72
23-28	St. Cin Park Playground2-3	1	1	3	0.1	0.355	11.52	51	7	16	44	0.44	58.72
24-28	St. Cin Park Playground2-4	1	1	3	0.1	0.355	11.52	48	4	9	44	0.44	58.72
25-28	St. Cin Park Playground2-5	0	0	0	0.1	0.355	11.52	41	-3	0	44	0.44	58.72
26-28	St. Ferdinand Park Parking Lot-1	1	1	3	0.1	0.355	11.52	39	-5	0	44	0.44	58.72
27-28	St. Ferdinand Park Parking Lot-2	1	1	3	0.1	0.355	11.52	38	-6	0	44	0.44	58.72
28-28	St. Ferdinand Park Parking Lot-3	0	0	0	0.1	0.355	11.52	51	7	16	44	0.44	58.72
29-28	St. Ferdinand Park Parking Lot-4	0	0	0	0.1	0.355	11.52	43	-1	0	44	0.44	58.72
30-28	St. Ferdinand Park Parking Lot-5	0	0	0	0.1	0.355	11.52	33	-11	0	44	0.44	58.72
31-28	St. Ferdinand Park Exercise Equipment-1	1	1	3	0.1	0.355	11.52	40	-4	0	44	0.44	58.72
32-28	St. Ferdinand Park Exercise Equipment-2	0	0	0	0.1	0.355	11.52	46	2	5	44	0.44	58.72
33-28	St. Ferdinand Park Exercise Equipment-3	0	0	0	0.1	0.355	11.52	46	2	5	44	0.44	58.72
34-28	St. Ferdinand Park Exercise Equipment-4	0	0	0	0.1	0.355	11.52	52	8	18	44	0.44	58.72
35-28	St. Ferdinand Park Exercise Equipment-5	1	1	3	0.1	0.355	11.52	53	9	20	44	0.44	58.72
36-28	St. Ferdinand Park Walking Path-1	0	0	0	0.1	0.355	11.52	45	1	2	44	0.44	58.72
37-28	St. Ferdinand Park Walking Path-2	0	0	0	0.1	0.355	11.52	43	-1	0	44	0.44	58.72
38-28	St. Ferdinand Park Walking Path-3	1	1	3	0.1	0.355	11.52	39	-5	0	44	0.44	58.72
39-28	St. Ferdinand Park Walking Path-4	1	1	3	0.1	0.355	11.52	42	-2	0	44	0.44	58.72
40-28	St. Ferdinand Park Walking Path-5	0	0	0	0.1	0.355	11.52	44	0	0	44	0.44	58.72
41-28	St. Ferdinand Park Walking Path-6	0	0	0	0.1	0.355	11.52	51	7	16	44	0.44	58.72
42-28	St. Ferdinand Park Walking Path-7	0	0	0	0.1	0.355	11.52	54	10	23	44	0.44	58.72
43-28	St. Ferdinand Park Walking Path-8	0	0	0	0.1	0.355	11.52	60	16	36	44	0.44	58.72
44-28	St. Ferdinand Park Walking Path-9	0	0	0	0.1	0.355	11.52	42	-2	0	44	0.44	58.72
45-28	St. Ferdinand Park Walking Path-10	0	0	0	0.1	0.355	11.52	49	5	11	44	0.44	58.72
46-28	St. Ferdinand Park Baseball Field Bleachers-1	0	0	0	0.1	0.355	11.52	46	2	5	44	0.44	58.72
47-28	St. Ferdinand Park Baseball Field Bleachers-2	0	0	0	0.1	0.355	11.52	47	3	7	44	0.44	58.72
48-28	St. Ferdinand Park Baseball Field Bleachers-3	2	2	5	0.1	0.355	11.52	45	1	2	44	0.44	58.72
49-28	St. Ferdinand Park Baseball Field Bleachers-4	0	0	0	0.1	0.355	11.52	47	3	7	44	0.44	58.72
50-28	St. Ferdinand Park Baseball Field Bleachers-5	0	0	0	0.1	0.355	11.52	37	-7	0	44	0.44	58.72
51-28	St. Ferdinand Park Baseball Field-1	1	1	3	0.1	0.355	11.52	63	19	43	44	0.44	58.72
52-28	St. Ferdinand Park Baseball Field-2	1	1	3	0.1	0.355	11.52	49	5	11	44	0.44	58.72
53-28	St. Ferdinand Park Baseball Field-3	0	0	0	0.1	0.355	11.52	57	13	30	44	0.44	58.72
54-28	St. Ferdinand Park Baseball Field-4	1	1	3	0.1	0.355	11.52	54	10	23	44	0.44	58.72
55-28	St. Ferdinand Park Baseball Field-5	0	0	0	0.1	0.355	11.52	49	5	11	44	0.44	58.72
56-28	St. Ferdinand Park Playground-1	0	0	0	0.1	0.355	11.52	53	9	20	44	0.44	58.72

		a						b/g					
Number	Station Name	Gross Counts / Minute	Net Counts / Minute	Disintegrations / Minute/100 cm^2	bkg	eff	MDA	Gross Counts / Minute	Net Counts / Minute	Disintegrations / Minute/100 cm^2	bkg	eff	MDA
57-28	St. Ferdinand Park Playground-2	0	0	0	0.1	0.355	11.52	46	2	5	44	0.44	58.72
58-28	St. Ferdinand Park Playground-3	2	2	5	0.1	0.355	11.52	36	-8	0	44	0.44	58.72
59-28	St. Ferdinand Park Playground-4	2	2	5	0.1	0.355	11.52	44	0	0	44	0.44	58.72
60-28	St. Ferdinand Park Playground-5	2	2	5	0.1	0.355	11.52	61	17	39	44	0.44	58.72
61-28	St. Ferdinand Park Pavillion-1	0	0	0	0.1	0.355	11.52	58	14	32	44	0.44	58.72
62-28	St. Ferdinand Park Pavillion-2	0	0	0	0.1	0.355	11.52	58	14	32	44	0.44	58.72
63-28	St. Ferdinand Park Pavillion-3	1	1	3	0.1	0.355	11.52	51	7	16	44	0.44	58.72
64-28	St. Ferdinand Park Pavillion-4	2	2	5	0.1	0.355	11.52	51	7	16	44	0.44	58.72
65-28	St. Ferdinand Park Pavillion-5	0	0	0	0.1	0.355	11.52	42	-2	0	44	0.44	58.72
1-29	Florissant Community Garden-1	0	0	0	0.3	0.355	13.77	65	17	39	48	0.44	61.21
2-29	Florissant Community Garden-2	0	0	0	0.3	0.355	13.77	53	5	11	48	0.44	61.21
3-29	Florissant Community Garden-3	0	0	0	0.3	0.355	13.77	57	9	20	48	0.44	61.21
4-29	Florissant Community Garden-4	0	0	0	0.3	0.355	13.77	41	-7	0	48	0.44	61.21
5-29	Florissant Community Garden-5	0	0	0	0.3	0.355	13.77	42	-6	0	48	0.44	61.21
6-29	Florissant Community Garden Walking Path-1	0	0	0	0.3	0.355	13.77	48	0	0	48	0.44	61.21
7-29	Florissant Community Garden Walking Path-2	0	0	0	0.3	0.355	13.77	54	6	14	48	0.44	61.21
8-29	Florissant Community Garden Walking Path-3	0	0	0	0.3	0.355	13.77	35	-13	0	48	0.44	61.21
9-29	Florissant Community Garden Walking Path-4	0	0	0	0.3	0.355	13.77	49	1	2	48	0.44	61.21
10-29	Florissant Community Garden Walking Path-5	0	0	0	0.3	0.355	13.77	59	11	25	48	0.44	61.21
11-29	St. Dennis Bridge-1	0	0	0	0.3	0.355	13.77	60	12	27	48	0.44	61.21
12-29	St. Dennis Bridge-2	0	0	0	0.3	0.355	13.77	56	8	18	48	0.44	61.21
13-29	St. Dennis Bridge-3	0	0	0	0.3	0.355	13.77	44	-4	0	48	0.44	61.21
14-29	St. Dennis Bridge-4	0	0	0	0.3	0.355	13.77	42	-6	0	48	0.44	61.21
15-29	St. Dennis Bridge-5	1	1	2	0.3	0.355	13.77	42	-6	0	48	0.44	61.21
16-29	Lindbergh Bridge-1	0	0	0	0.3	0.355	13.77	46	-2	0	48	0.44	61.21
17-29	Lindbergh Bridge-2	0	0	0	0.3	0.355	13.77	37	-11	0	48	0.44	61.21
18-29	Lindbergh Bridge-3	0	0	0	0.3	0.355	13.77	36	-12	0	48	0.44	61.21
19-29	Lindbergh Bridge-4	0	0	0	0.3	0.355	13.77	34	-14	0	48	0.44	61.21
20-29	Lindbergh Bridge-5	0	0	0	0.3	0.355	13.77	39	-9	0	48	0.44	61.21
21-29	Pershall Road Bridge-1	0	0	0	0.3	0.355	13.77	48	0	0	48	0.44	61.21
22-29	Pershall Road Bridge-2	0	0	0	0.3	0.355	13.77	52	4	9	48	0.44	61.21
23-29	Pershall Road Bridge-3	0	0	0	0.3	0.355	13.77	47	-1	0	48	0.44	61.21
24-29	Pershall Road Bridge-4	1	1	2	0.3	0.355	13.77	40	-8	0	48	0.44	61.21
25-29	Pershall Road Bridge-5	0	0	0	0.3	0.355	13.77	52	4	9	48	0.44	61.21
26-29	McDonnell Boulevard Bridge-1	0	0	0	0.3	0.355	13.77	49	1	2	48	0.44	61.21
27-29	McDonnell Boulevard Bridge-2	0	0	0	0.3	0.355	13.77	43	-5	0	48	0.44	61.21
28-29	McDonnell Boulevard Bridge-3	1	1	2	0.3	0.355	13.77	39	-9	0	48	0.44	61.21
29-29	McDonnell Boulevard Bridge-4	0	0	0	0.3	0.355	13.77	45	-3	0	48	0.44	61.21

		a						b/g					
Number	Station Name	Gross Counts / Minute	Net Counts / Minute	Disintegrations / Minute/100 cm^2	bkg	eff	MDA	Gross Counts / Minute	Net Counts / Minute	Disintegrations / Minute/100 cm^2	bkg	eff	MDA
30-29	McDonnell Boulevard Bridge-5	0	0	0	0.3	0.355	13.77	41	-7	0	48	0.44	61.21
31-29	IA-9 Ballfields-1	1	1	2	0.3	0.355	13.77	44	-4	0	48	0.44	61.21
32-29	IA-9 Ballfields-2	0	0	0	0.3	0.355	13.77	40	-8	0	48	0.44	61.21
33-29	IA-9 Ballfields-3	0	0	0	0.3	0.355	13.77	51	3	7	48	0.44	61.21
34-29	IA-9 Ballfields-4	0	0	0	0.3	0.355	13.77	49	1	2	48	0.44	61.21
35-29	IA-9 Ballfields-5	1	1	2	0.3	0.355	13.77	42	-6	0	48	0.44	61.21
36-29	SLAPS Entrance-1	0	0	0	0.3	0.355	13.77	48	0	0	48	0.44	61.21
37-29	SLAPS Entrance-2	0	0	0	0.3	0.355	13.77	42	-6	0	48	0.44	61.21
38-29	SLAPS Entrance-3	0	0	0	0.3	0.355	13.77	50	2	5	48	0.44	61.21
39-29	SLAPS Entrance-4	0	0	0	0.3	0.355	13.77	41	-7	0	48	0.44	61.21
40-29	SLAPS Entrance-5	0	0	0	0.3	0.355	13.77	45	-3	0	48	0.44	61.21
41-29	W. Washington Street Bridge-1	0	0	0	0.3	0.355	13.77	42	-6	0	48	0.44	61.21
42-29	W. Washington Street Bridge-2	0	0	0	0.3	0.355	13.77	36	-12	0	48	0.44	61.21
43-29	W. Washington Street Bridge-3	0	0	0	0.3	0.355	13.77	45	-3	0	48	0.44	61.21
44-29	W. Washington Street Bridge-4	0	0	0	0.3	0.355	13.77	47	-1	0	48	0.44	61.21
45-29	W. Washington Street Bridge-5	0	0	0	0.3	0.355	13.77	37	-11	0	48	0.44	61.21
46-29	Normandie Court-1	0	0	0	0.3	0.355	13.77	56	8	18	48	0.44	61.21
47-29	Normandie Court-2	0	0	0	0.3	0.355	13.77	52	4	9	48	0.44	61.21
48-29	Normandie Court-3	1	1	2	0.3	0.355	13.77	43	-5	0	48	0.44	61.21
49-29	Bruce Drive	0	0	0	0.3	0.355	13.77	44	-4	0	48	0.44	61.21
50-29	Industrial Lane	0	0	0	0.3	0.355	13.77	58	10	23	48	0.44	61.21
51-29	Chez Vant Court-1	2	2	5	0.3	0.355	13.77	42	-6	0	48	0.44	61.21
52-29	Chez Vant Court-2	0	0	0	0.3	0.355	13.77	42	-6	0	48	0.44	61.21
53-29	Chez Vant Court-3	0	0	0	0.3	0.355	13.77	34	-14	0	48	0.44	61.21
54-29	Florissant Meadows Shopping Center-1	0	0	0	0.3	0.355	13.77	42	-6	0	48	0.44	61.21
55-29	Florissant Meadows Shopping Center-2	0	0	0	0.3	0.355	13.77	39	-9	0	48	0.44	61.21
56-29	Schnucks on Lindbergh	0	0	0	0.3	0.355	13.77	48	0	0	48	0.44	61.21
57-29	Dierbergs on Lindbergh	0	0	0	0.3	0.355	13.77	45	-3	0	48	0.44	61.21
58-29	Avant Drive	0	0	0	0.3	0.355	13.77	36	-12	0	48	0.44	61.21
59-29	Hundley Drive	0	0	0	0.3	0.355	13.77	39	-9	0	48	0.44	61.21
60-29	Marshall Court	0	0	0	0.3	0.355	13.77	50	2	5	48	0.44	61.21
61-29	Myrtle Drive	0	0	0	0.3	0.355	13.77	36	-12	0	48	0.44	61.21
62-29	Lemondale Lane	0	0	0	0.3	0.355	13.77	29	-19	0	48	0.44	61.21
63-29	Limedale Lane	0	0	0	0.3	0.355	13.77	42	-6	0	48	0.44	61.21
64-29	Orangedale Lane	0	0	0	0.3	0.355	13.77	45	-3	0	48	0.44	61.21
65-29	Orleans Drive	0	0	0	0.3	0.355	13.77	52	4	9	48	0.44	61.21
66-29	Apple Blossom Court-1	0	0	0	0.3	0.355	13.77	35	-13	0	48	0.44	61.21
67-29	Apple Blossom Court-2	0	0	0	0.3	0.355	13.77	27	-21	0	48	0.44	61.21

		a						b/g					
Number	Station Name	Gross Counts / Minute	Net Counts / Minute	Disintegrations / Minute/100 cm^2	bkg	eff	MDA	Gross Counts / Minute	Net Counts / Minute	Disintegrations / Minute/100 cm^2	bkg	eff	MDA
68-29	Apple Blossom Court-3	0	0	0	0.3	0.355	13.77	44	-4	0	48	0.44	61.21
69-29	Humes Lane-1	0	0	0	0.3	0.355	13.77	42	-6	0	48	0.44	61.21
70-29	Humes Lane-2	0	0	0	0.3	0.355	13.77	35	-13	0	48	0.44	61.21
71-29	Humes Lane-3	0	0	0	0.3	0.355	13.77	46	-2	0	48	0.44	61.21
72-29	Humes Lane-4	0	0	0	0.3	0.355	13.77	49	1	2	48	0.44	61.21
73-29	Humes Lane-5	0	0	0	0.3	0.355	13.77	37	-11	0	48	0.44	61.21
74-29	Humes Lane-6	0	0	0	0.3	0.355	13.77	51	3	7	48	0.44	61.21
75-29	Versailles Drive	0	0	0	0.3	0.355	13.77	42	-6	0	48	0.44	61.21
1-30	Duchesne Park Pavillion-1	0	0	0	0.3	0.355	13.77	45	-4	0	49	0.44	61.55
2-30	Duchesne Park Pavillion-2	0	0	0	0.3	0.355	13.77	47	-2	0	49	0.44	61.55
3-30	Duchesne Park Playground-1	1	1	2	0.3	0.355	13.77	44	-5	0	49	0.44	61.55
4-30	Duchesne Park Playground-2	1	1	2	0.3	0.355	13.77	39	-10	0	49	0.44	61.55
5-30	Duchesne Park Parking Lot-1	1	1	2	0.3	0.355	13.77	34	-15	0	49	0.44	61.55
6-30	Duchesne Park Parking Lot-2	1	1	2	0.3	0.355	13.77	49	0	0	49	0.44	61.55
7-30	Duchesne Park Water Fountain	1	1	2	0.3	0.355	13.77	53	4	9	49	0.44	61.55
8-30	Duchesne Park Dog Park-1	1	1	2	0.3	0.355	13.77	38	-11	0	49	0.44	61.55
9-30	Duchesne Park Dog Park-2	0	0	0	0.3	0.355	13.77	52	3	7	49	0.44	61.55
10-30	Duchesne Park Dog Park-3	1	1	2	0.3	0.355	13.77	51	2	5	49	0.44	61.55
11-30	Cades Cove-1	0	0	0	0.3	0.355	13.77	43	-6	0	49	0.44	61.55
12-30	Cades Cove-2	0	0	0	0.3	0.355	13.77	47	-2	0	49	0.44	61.55
13-30	Cades Cove-3	1	1	2	0.3	0.355	13.77	38	-11	0	49	0.44	61.55
14-30	Life Storage-1	1	1	2	0.3	0.355	13.77	48	-1	0	49	0.44	61.55
15-30	Life Storage-2	0	0	0	0.3	0.355	13.77	40	-9	0	49	0.44	61.55
16-30	Carla Drive-1	0	0	0	0.3	0.355	13.77	46	-3	0	49	0.44	61.55
17-30	Carla Drive-2	0	0	0	0.3	0.355	13.77	43	-6	0	49	0.44	61.55
18-30	Debra Lynn Lane	0	0	0	0.3	0.355	13.77	43	-6	0	49	0.44	61.55
19-30	Carole Rogers Way-1	0	0	0	0.3	0.355	13.77	42	-7	0	49	0.44	61.55
20-30	Carole Rogers Way-2	0	0	0	0.3	0.355	13.77	47	-2	0	49	0.44	61.55
21-30	Ford Lane-1	0	0	0	0.3	0.355	13.77	44	-5	0	49	0.44	61.55
22-30	Ford Lane-2	1	1	2	0.3	0.355	13.77	36	-13	0	49	0.44	61.55
23-30	Ford Lane-3	1	1	2	0.3	0.355	13.77	43	-6	0	49	0.44	61.55
24-30	Heatherton Drive-1	0	0	0	0.3	0.355	13.77	43	-6	0	49	0.44	61.55
25-30	Heatherton Drive-2	0	0	0	0.3	0.355	13.77	39	-10	0	49	0.44	61.55
26-30	Dierberg's	1	1	2	0.3	0.355	13.77	42	-7	0	49	0.44	61.55
27-30	St. Ferdinand Cemetery	0	0	0	0.3	0.355	13.77	52	3	7	49	0.44	61.55
28-30	Bramble Lane	0	0	0	0.3	0.355	13.77	41	-8	0	49	0.44	61.55
29-30	E. Humes Lane	0	0	0	0.3	0.355	13.77	38	-11	0	49	0.44	61.55
30-30	Polson Lane	0	0	0	0.3	0.355	13.77	50	1	2	49	0.44	61.55

		a						b/g					
Number	Station Name	Gross Counts / Minute	Net Counts / Minute	Disintegrations / Minute/100 cm^2	bkg	eff	MDA	Gross Counts / Minute	Net Counts / Minute	Disintegrations / Minute/100 cm^2	bkg	eff	MDA
31-30	Byassee Drive-1	0	0	0	0.3	0.355	13.77	37	-12	0	49	0.44	61.55
32-30	Byassee Drive-2	0	0	0	0.3	0.355	13.77	40	-9	0	49	0.44	61.55
367-7	Park Bench West	1	1	2	0.3	0.322	15.19	33	-9	0	42	0.402	81.89
367-9	Park Bench East	0	0	0	0.3	0.322	15.19	33	-9	0	42	0.402	81.89
WM-3	Parking Lot Urgent Care	0	0	0	0.3	0.322	15.19	45	3	7	42	0.402	81.89
WM-7	Driving Range	0	0	0	0.3	0.322	15.19	41	-1	0	42	0.402	81.89
WM-9	Schaefer Park	0	0	0	0.3	0.322	15.19	44	2	5	42	0.402	81.89
WM-12	Pyrenees & Seville Road	0	0	0	0.3	0.322	15.19	39	-3	0	42	0.402	81.89
OJR-2	Kavanaugh Railing	0	0	0	0.3	0.322	15.19	44	2	5	42	0.402	81.89
OJR-4	Pump House Gas Vent	0	0	0	0.3	0.322	15.19	50	8	20	42	0.402	81.89
OJR-5	Horse Farm Gate	0	0	0	0.3	0.322	15.19	37	-5	0	42	0.402	81.89
OJR-7	Wood Step 14329 Wild Fox Court	1	1	2	0.3	0.322	15.19	42	0	0	42	0.402	81.89
NHF-4	Wedgewood Swing Set (plastic)	0	0	0	0.3	0.322	15.19	43	1	2	42	0.402	81.89
NHF-5	Partique Court	0	0	0	0.3	0.322	15.19	31	-11	0	42	0.402	81.89
NHF-6	Rue de Renard	0	0	0	0.3	0.322	15.19	34	-8	0	42	0.402	81.89
JANA-1	Church Playground	0	0	0	0.3	0.322	15.19	32	-10	0	42	0.402	81.89
JANA-3	School Playground	0	0	0	0.3	0.322	15.19	40	-2	0	42	0.402	81.89
JANA-4	School Soccer Goal	0	0	0	0.3	0.322	15.19	32	-10	0	42	0.402	81.89
JANA-6	Cricket Court	0	0	0	0.3	0.322	15.19	45	3	7	42	0.402	81.89
BJP-4	Park Bench Church Lot	0	0	0	0.3	0.322	15.19	36	-6	0	42	0.402	81.89
BJP-5	Old Jamestown Bridge	0	0	0	0.3	0.322	15.19	45	3	7	42	0.402	81.89
BJP-6	Exposed Pipe/Well	0	0	0	0.3	0.322	15.19	51	9	22	42	0.402	81.89
BJP-8	Treeline on Avocado	0	0	0	0.3	0.322	15.19	45	3	7	42	0.402	81.89
OHF-1	Fence Post	0	0	0	0.3	0.322	15.19	25	-17	0	42	0.402	81.89
OHF-3	Manhole Cover	0	0	0	0.3	0.322	15.19	36	-6	0	42	0.402	81.89
OHF-5	Manhole Cover	0	0	0	0.3	0.322	15.19	40	-2	0	42	0.402	81.89
OHF-8	Trailer Flashing	0	0	0	0.3	0.322	15.19	36	-6	0	42	0.402	81.89
OHF-9	Asphalt Road	0	0	0	0.3	0.322	15.19	35	-7	0	42	0.402	81.89

NOTE: ALL RESULTS ARE LESS THAN THE DETECTORS' MINIMUM DETECTABLE ACTIVITY (MDA).

a = alpha b = beta; g = gamma; cm^2 = square centimeters; bkg = background; eff = efficiency

Radionuclide Results

Station ID	Sample ID	Collection Date	Easting	Northing	Ra-226			Th-228			Th-230			Th-232		
					Result	Error	MDC	Result	Error	MDC	Result	Error	MDC	Result	Error	MDC
CWC002	CWC259136	7/27/2022	859830	1065173.0	0.226	0.348	0.757	0.277	0.341	0.673	0.925	0.503	0.454	0.0616	0.174	0.453
	CWC259136-DUP	7/27/2022	859830	1065173.0	0.214	0.252	0.412	0.425	0.346	0.447	0.243	0.273	0.447	0	0.172	0.447
CWC007	CWC259137	7/27/2022	862768	1071706.0	0.309	0.316	0.52	0.233	0.288	0.531	0.514	0.382	0.45	-0.0156	0.128	0.33
CWC009	CWC259138	7/27/2022	867509	1079472.2	-0.16	0.212	0.854	0.38	0.327	0.48	0.663	0.397	0.299	0.197	0.229	0.359

Station ID	Sample ID	Collection Date	Easting	Northing	U-234			U-235			U-238			Total U	
					Result	Error	MDC	Result	Error	MDC	Result	Error	MDC	pCi/L	µg/L
CWC002	CWC259136	7/27/2022	859830	1065173.0	0.3	0.286	0.336	-0.0585	0.17	0.563	0.362	0.312	0.334	1.261	1.8626
	CWC259136-DUP	7/27/2022	859830	1065173.0	0.116	0.19	0.351	0	0.23	0.6	0.164	0.233	0.42	1.371	2.0251
CWC007	CWC259137	7/27/2022	862768	1071706.0	0.377	0.335	0.462	-0.0194	0.16	0.412	0.313	0.308	0.461	1.335	1.9719
CWC009	CWC259138	7/27/2022	867509	1079472.2	0.136	0.246	0.538	0.0419	0.178	0.536	0.254	0.274	0.359	1.433	2.1167

Notes: Results for Ra-226, Th-228, Th-230, Th-232, U-234, U-235, and U-238 are in pCi/L (picoCuries per Liter).
Samples are unfiltered.
Ra = radium; Th = thorium; MDC = miniumum detectable concentration; U = uranium; µg/L = micrograms per Liter

Table A.5-2
Coldwater Creek July 26, 2022 Flood Event:
Surface Water Historical Radiological Sample Results Comparison
1 of 1

Monitoring Station ID	Radionuclide	Units	Mar-11	Oct-11	Mar-12	Oct-12	Apr-13	Oct-13	Mar-14	Oct-14	Mar-15	Oct-15	Mar-16	Oct-16	Mar-17	Oct-17	Apr-18	Oct-18	Apr-19	Oct-19	Apr-20	Oct-20	Mar-21	Oct-21	Jul-22 (Flood Event)
CWC002	Total U[a]	µg/L	2.3	3.8	1.9	2	2.43	2.64	4.11	1.53	3.33	2.04	3.15	3.96	3.23	2.4	1.7	1.14	1.94	2.26	4.44	3.91	1.31	2.23	1.86
	Ra-226	pCi/L	<2.14[b]	0.87	<1.47[b]	<1.44[b]	2.15	<2.50[b]	<2.04[b]	<1.30[b]	<1.21[b]	<1.11[b]	<1.35[b]	<1. 25[b]	<1.84[b]	1.33	<1.12[a]	<1.59[a]	<1.34[a]	<1.30[a]	<0.74[a]	<0.78[a]	<0.24[a]	<0.31[a]	<0.76[a]
	Th-228[c]	pCi/L	<0.52[b]	<0.55[b]	<0.59[b]	<0.45[b]	<0.87[b]	<0.53[b]	<0.55[b]	0.25	<0. 46[b]	<0.51[b]	<0.55[b]	<0.45[b]	<0. 30[b]	<0.42[b]	<0.54[a]	<0.46[a]	<0.36[a]	<0.58[a]	<0.58[a]	0.53	<0.48[a]	<0.47[a]	<0.67[a]
	Th-230	pCi/L	<0.52[b]	0.37	0.46	<0.45[b]	1.19	<0.65[b]	0.4	<0.38[b]	<0.46[b]	0.63	0.45	0.37	0.42	<0.42[b]	<0.40[a]	0.45	<0.39[a]	<0.41[a]	<0.60[a]	<0.81[a]	0.57	1.07	0.93
	Th-232	pCi/L	<0.17[b]	<0.20[b]	<0.42[b]	<0.20[b]	<0.32[b]	<0.24[b]	<0.18[b]	<0.17[b]	<0.21[b]	<0.19[b]	<0.20[b]	<0.20[b]	<0.13[b]	<0.19[b]	<0.45[a]	<0.38[a]	<0.33[a]	<0.46[a]	<0.43[a]	<0.81[a]	<0.27[a]	<0.24[a]	<0.45[a]
CWC007	Total U[a]	µg/L	2.6	1.6	1.9	1.3	2.15	5.65	2.06	1.84	4.29	1.69	2.39	2.25	3.25	1.59	3.09	0.89	2.24	1.6	1.85	NS1	3.16	NS1	1.97
	Ra-226	pCi/L	<1.2[b]	<1.4[b]	<1.53[b]	<1.61[b]	1.42	<2.01[b]	<1.54[b]	<0.98[b]	<1.35[b]	0.61	<1.52[b]	<1.06[b]	<0.85[b]	<1.50[b]	<1.50[a]	<1.13[a]	<1.22[a]	<1.01[a]	<0.76[a]	NS1	<0.25[a]	NS1	<0.52[a]
	Th-228[c]	pCi/L	<0.43[b]	<0.40[b]	<0.20[b]	<0.37[b]	<0.80[b]	<0.19[b]	<0.42[b]	<0.89[b]	<0.63[b]	<0.42[b]	<0.49[b]	<0.55[b]	<0.35[b]	<0.50[b]	<0.66[a]	<0.65[a]	<0.49[a]	<0.47[a]	<0.61[a]	NS1	<0.26[a]	NS1	<0.53[a]
	Th-230	pCi/L	0.59	0.4	0.59	0.59	<0.29[b]	0.9	0.67	<0.57[b]	<0.20[b]	<0.42[b]	<0.49[b]	<0.16[b]	<0.44[b]	<0.61[b]	<0.54[a]	<0.40[a]	<0.46[a]	<0.34[a]	<0.41[a]	NS1	<0.67[a]	NS1	0.51
	Th-232	pCi/L	<0.20[b]	<0.18[b]	<0.19[b]	<0.37[b]	<0.29[b]	<0.51[b]	<0.19[b]	<0.26[b]	<0.45[b]	<0.34[b]	<0.49[b]	<0.16[b]	<0.15[b]	<0.23[b]	<0.44[a]	<0.37[a]	<0.31[a]	<0.32[a]	<0.47[a]	NS1	<0.25[a]	NS1	<0.33[a]
CWC009[d]	Total U[a]	µg/L	NA	NA	NA	NA	NA	NA	NA	1.92	3.53	2.47	1.16	2.17	1.6	1.13	2.05	0.88	1.77	1.57	2.83	1.94	2.56	0.89	2.12
	Ra-226	pCi/L								<0.90[b]	<1.04[b]	0.81	<1.4[b]	<1.27[b]	<1.02[b]	<1.02[b]	<1.47[a]	<1.05[a]	<1.02[a]	<1.47[a]	<0.64[a]	<0.71[a]	<0.23[a]	<0.20[a]	<0..85[a]
	Th-228[c]	pCi/L								<0.40[b]	<0.45[b]	<0.46[b]	<0.44[b]	<0.53[b]	0.32	<0.51[b]	<0.51[a]	<0.53[a]	<0.34[a]	<0.43[a]	<0.32[a]	0.74	<0.33[a]	0.88	<0..48[a]
	Th-230	pCi/L								<0.49[b]	<0.45[b]	<0.51[b]	<0.36[b]	0.86	0.51	0.87	<0.48[a]	<0.40[a]	<0.37[a]	<0.34[a]	<0.39[a]	0.85	0.99	1.12	0.66
	Th-232	pCi/L								<0.18[b]	3.33	2.04	3.15	3.96	<0.34[b]	<0.18[b]	<0.48[a]	<0.45[a]	<0.26[a]	<0.31[a]	<0.32[a]	<0.70[a]	<0.23[a]	<0.24[a]	<0.36[a]

a Total U (uranium) is equal to the sum of the concentrations of U isotopes (in pCi/L [picoCuries per Liter]) divided by 0.677, where 0.677 microgram (µg) per PCi is the specific activity for total U, assuming secular equilibrium.
b Reported result is less than the MDC (Minimum Detectable Concentration) and is therefore set equal to the MDC.

c Radium (Ra)-228 rapidly achieves equilibrium with thorium (Th)-228, such that their concentrations are equal.

d Station C009 was established and initially sampled during the second semi-annual event of CY 2014.

Note: Total U (30 µg/L) is the only ROD monitoring guideline for surface water. The other radiological monitoring parameter data are collected to monitor COC migration.
NA – not applicable (No sample was collected during this event, because this station was established in 2014.)
NS1 – no sample, remediation activities at this location prevented sampling in October.

Appendix B
Photolog: July 27 – July 30, 2022 Post-Flood Sampling Areas

Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs

BA.1 – Eva Road /Frost Avenue Shooting Range Entrance

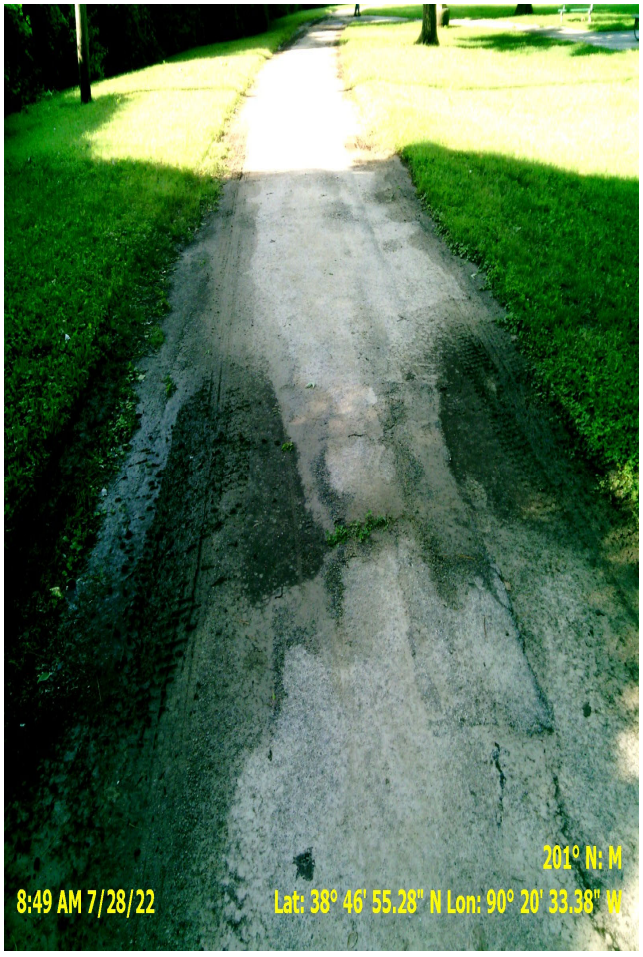
BA.2 – Seeger Dr. (West End)

BA.3 – Latty Ave. (Cul-de-sac)

Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs

BA.4 – Archway Memorial Church

BA.5 – St. Cin Park (Rear Walking Path-1)

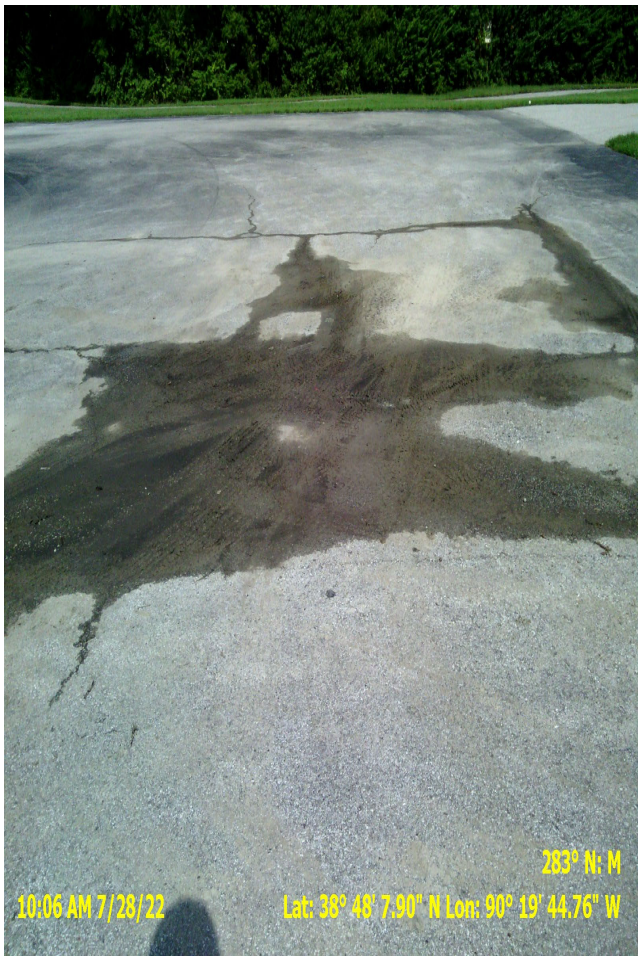


BA.6 – St. Cin Park (Rear Walking Path-2)

Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs

BA.7 – St. Cin Park (Basketball Court)

BA.8 – St. Cin Park (Playground Smear)



BA.9 – St. Ferdinand Park (Parking Lot)

Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs

BA.10 – St. Ferdinand Park (Exercise Area Smear)

BA.11 – St. Ferdinand Park (Walking Path)

BA.12 – St. Ferdinand Park (Baseball Field Smear)

Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs

BA.13 – St. Ferdinand Park (Baseball Field)

BA.14 – St. Ferdinand Park (Playground Area)

BA.15 – Florissant Community Garden (Walkway-1)

Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs

BA.16 – Florissant Community Garden (Walkway-2)

BA.17 – VP-56

Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs

BA.18 – Ford Lane

BA.19 – Duchesne Park

Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs

BA.20 – Life Storage Parking Lot (Washington St.)

BA.21 – Carol Rogers Way

Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs

BL.1 – 371-1

BL.2 – 371-2

BL.3 – 367-7

Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs

BL.4 – 367-8

BL.5 – 367-9

BL.6 – BJP-1

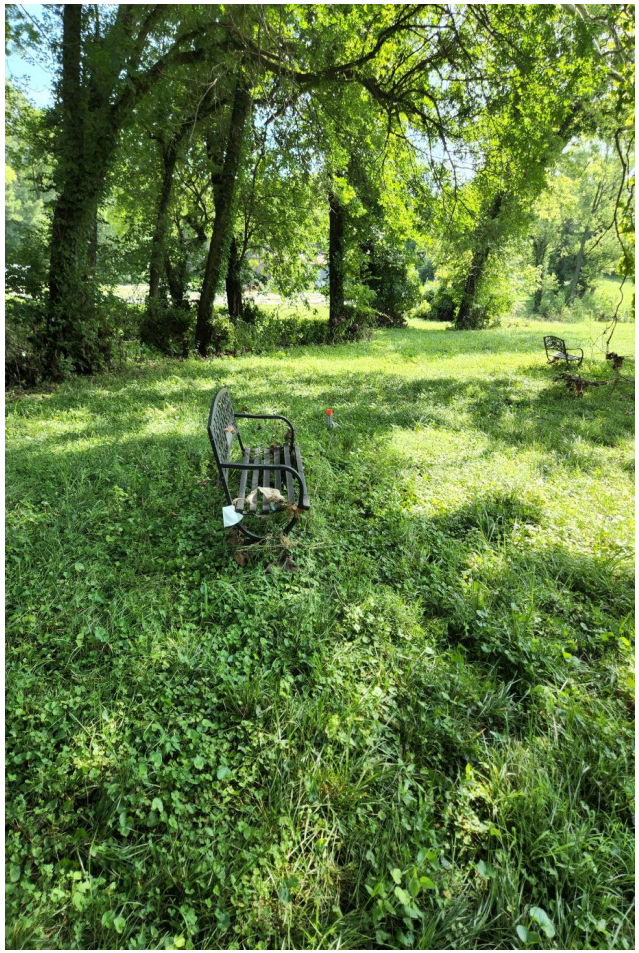
Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs

BL.7 – BJP-2A

BL.8 – BJP-2B

BL.9 – BJP-3

Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs



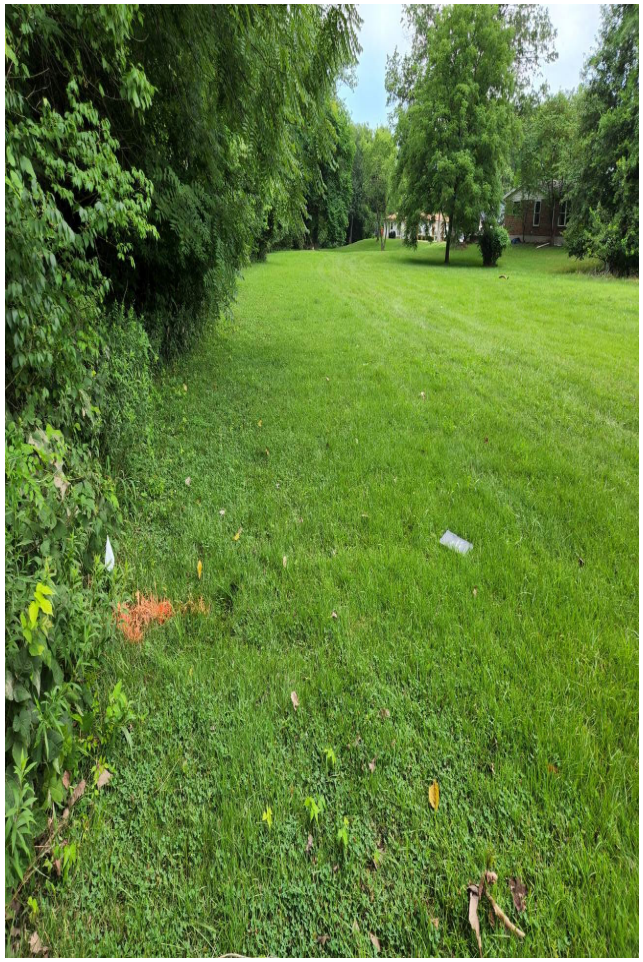
BL.10 – BJP-4

BL.11 – BJP-5

BL.12 – BJP-6

Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs

BL.13 – BJP-7



BL.14 – BJP-8

BL.15 – FMD-1

Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs

BL.16 – FMD-2

BL.17 – FMD-3

BL.18 – Jana-1

Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs

BL.19 – Jana-5

BL.20 – Jana-6

BL.21 – Jana-7

Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs

BL.22 – NHF-1

BL.23 – NHF-2

BL.24 – NHF-3

Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs

BL.25 – NHF-4

BL.26 – NHF-5

BL.27– NHF-6

Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs

BL.28 – NHF-7

BL.29 – NHF-8

BL.30 – NHF-9

October 12, 2022

Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs

BL.31 – OHF-1

BL.32 – OHF-2

BL.33 – OHF-3

October 12, 2022

Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs

BL.34 – OHF-4

BL.35 – OHF-5

BL.36 – OHF-6

October 12, 2022

Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs

BL.37 – OHF-7

BL.38 – OHF-8

BL.39 – OHF-9

October 12, 2022

Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs

BL.40 – OJR-1

BL.41 – OJR-2

BL.42 – OJR-3

October 12, 2022

Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs

BL.43 – OJR-4

BL.44 – OJR-5

BL.45 – OJR-6

October 12, 2022

Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs

BL.46 – OJR-7

BL.47 – OJR-8

BL.48 – WM-1

October 12, 2022

Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs

BL.49 – WM-2

BL.50 – WM-3

BL.51 – WM-4

October 12, 2022

Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs

BL.52 – WM-5

BL.53 – WM-6

BL.54 – WM-7

October 12, 2022

Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs

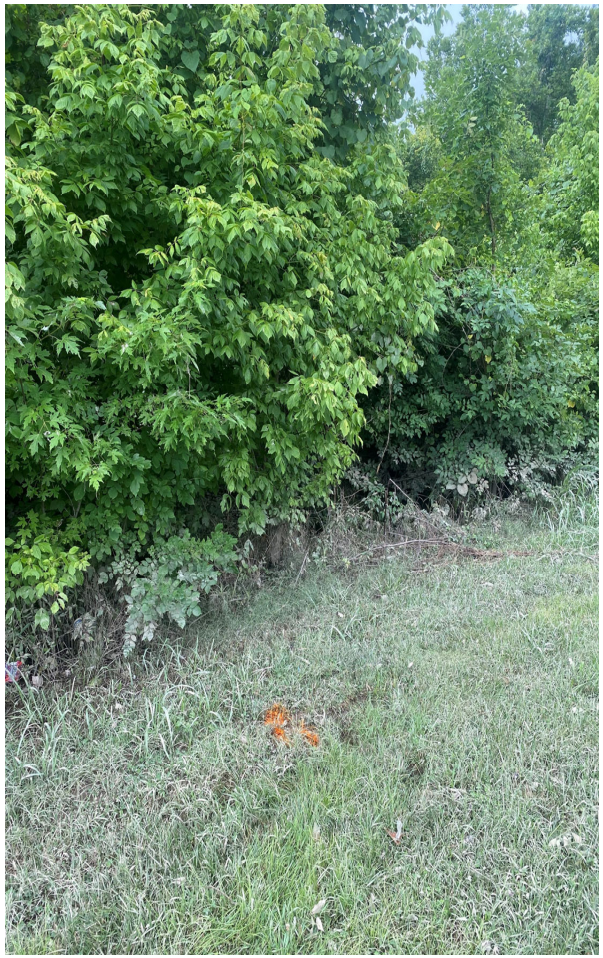
BL.55 – WM-8

BL.56 – WM-9

BL.57 – WM-10

October 12, 2022

Coldwater Creek July 26, 2022 Flood Event
Sample Location Photographs



BL.58 – WM-11

BL.59 – WM-12

BL.60 – WM-13

October 12, 2022

Appendix C
Soil Sample Logs and Removable Contamination Smear Surveys

HGL Coldwater Creek Flood Soil Sample Logbook Entries
Leidos Flood Event Soil Sample Logbook Pages
Leidos Radiological Survey Reports – Smear Samples
HGL Surface Contamination Survey Forms – Smear Samples
HGL Surface Contamination Survey Forms – Construction Equipment Surveys

COC No.:

Collection Date: 7-27-22 Sampling Personnel: AKE Folk

Project Name: NOCO

Weather: 76° Overcast

Property Name / Location: Elvat Frost
Shooting range entrance

Sample Type: Equipment Used: Stainless Steel Bowl & Trowel

Sample ID: ~~NEV 13840 IN~~ DC 8/1/22
SVP 25945

Northing: 1067083.50

Station ID: SVP 25945

Easting: 862858.35

Collection Time: 1330

Sample Collection Method: GRAB

Depth BGS (units): Surface

Sample Volume / # of Containers: 1L/1

Rad Screen (cpm): 4945

Field Instrument Model: 2221/44-10

Serial Number: 161593

Rad Screen BKG (cpm): 5586

Calibration Due Date: 9-23-22

Sampler Signatures:

QA Data Check By:

Comments:

Recorder Signature / Date:

COC No.:

Collection Date: 7-27-22

Sampling Personnel: Alex Folk

Project Name: NORCO

Weather: 79° Overcast

Property Name / Location: LAHY Ave Turn Around

Sample Type:

Equipment Used: Stainless Steel Bowl & Trowel

Sample ID: ~~AFLW 18842SW~~ SVP259147 (initialed 8/1/22)

Northing: 1068842.16

Station ID: SVP259147

Easting: 862969.84

Collection Time: 1410

Sample Collection Method: GRAB

Depth BGS (units): Surface

Sample Volume / # of Containers: 1L/1

Rad Screen (cpm): 4336

Field Instrument Model: 2221/44-10

Serial Number: 161593

Rad Screen BKG (cpm): 4313

Calibration Due Date: 9-23-22

Sampler Signatures: [signature]

QA Data Check By:

Comments:

Recorder Signature / Date:

	COC No.:
Collection Date: 7-28-22	Sampling Personnel: Alex Fick
Project Name: NORCO	
	Weather: 78° Partial Cloudy
Property Name / Location: Saint Cin Park Rear Walking Path - next to creek bank	
Sample Type:	Equipment Used: Stainless Steel Bowl & Trowel
Sample ID: SVP259149	Northing: 1074030.35
Station ID: SVP259149	Easting: 865064.54
Collection Time: 0835	Sample Collection Method: GRAB
Depth BGS (units): Surface	Sample Volume / # of Containers: 1L/1
Rad Screen (cpm): 5652	Field Instrument Model: 2221/44-10
	Serial Number: 101593
Rad Screen BKG (cpm): 5252	Calibration Due Date: 9-23-22
Sampler Signatures: [signature]	QA Data Check By:
	Comments:
Recorder Signature / Date:	

COC No.:

Collection Date: 7-28-22

Sampling Personnel: Alex Futh

Project Name: NORCO

Weather: 79° Partial Cloudy

Property Name / Location: Saint Cin Park Basket Ball Court

Sample Type:

Equipment Used: Stainless Steel Bowl & Trowel

Sample ID: SVP259151

Northing: 1073636.96

Station ID: SVP 259151

Easting: 864982.52

Collection Time: 0910

Sample Collection Method: GRAB

Depth BGS (units): Surface

Sample Volume / # of Containers: 1L/1

Rad Screen (cpm): 5814

Field Instrument Model: 2221/44-10

Serial Number: 161593

Rad Screen BKG (cpm): 5252

Calibration Due Date: 9-23-22

Sampler Signatures: [signature]

QA Data Check By:

Comments:

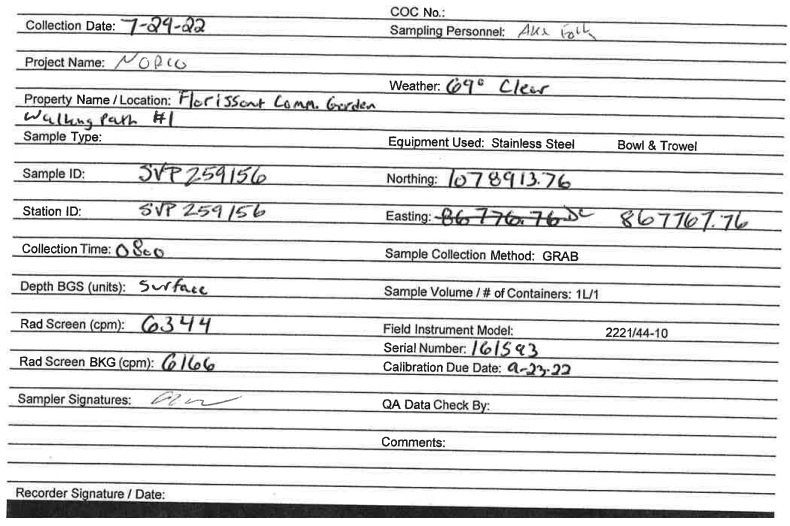
Recorder Signature / Date:

Collection Date: 7-26-22	COC No.:
Project Name: NCRCO	Sampling Personnel: Alex Polk
Property Name / Location: Saint Ferdinand Park Walking Path	Weather: 83° Sunny
Sample Type:	Equipment Used: Stainless Steel Bowl & Trowel
Sample ID: ~~SVP259153~~ DC SVP259153	Northing: 1081296.65
Station ID: SVP259153	Easting: 2689471.51
Collection Time: 1015	Sample Collection Method: GRAB
Depth BGS (units): Surface	Sample Volume / # of Containers: 1L/1
Rad Screen (cpm): 5303	Field Instrument Model: 2221/44-10
Rad Screen BKG (cpm): 5175	Serial Number: 161593
Sampler Signatures:	Calibration Due Date: 9-23-22
	QA Data Check By:
	Comments:
Recorder Signature / Date:	

Appendix C

Collection Date: 7-28-22	COC No.:
	Sampling Personnel: Alex Folk
Project Name: NOR-00	
	Weather: 85° Cloudy
Property Name / Location: Saint Ferdinand Park Playground	
Sample Type:	Equipment Used: Stainless Steel Bowl & Trowel
Sample ID: SVP259155	Northing: 1082054.61
Station ID: SVP259155	Easting: 869902.73
Collection Time: 1400	Sample Collection Method: GRAB
Depth BGS (units): Surface	Sample Volume / # of Containers: 1L/1
Rad Screen (cpm): 5306	Field Instrument Model: 2221/44-10
	Serial Number: 161583
Rad Screen BKG (cpm): 4540	Calibration Due Date: 9-23-22
Sampler Signatures: [redacted]	QA Data Check By:
	Comments:
Recorder Signature / Date: [redacted]	

Appendix C



COC No.:
Collection Date: 7-29-22
Sampling Personnel: Alex Falk
Project Name: NOPCO
Weather: 69° Clear
Property Name / Location: Florissant Comm. Garden Walking Path #1
Sample Type:
Equipment Used: Stainless Steel Bowl & Trowel
Sample ID: SVP259156
Northing: 1078913.76
Station ID: SVP259156
Easting: ~~867767.76~~ 867767.76
Collection Time: 0800
Sample Collection Method: GRAB
Depth BGS (units): Surface
Sample Volume / # of Containers: 1L/1
Rad Screen (cpm): 6344
Field Instrument Model: 2221/44-10
Serial Number: 161583
Rad Screen BKG (cpm): 6166
Calibration Due Date: 9-23-22
Sampler Signatures:
QA Data Check By:
Comments:
Recorder Signature / Date:

Appendix C

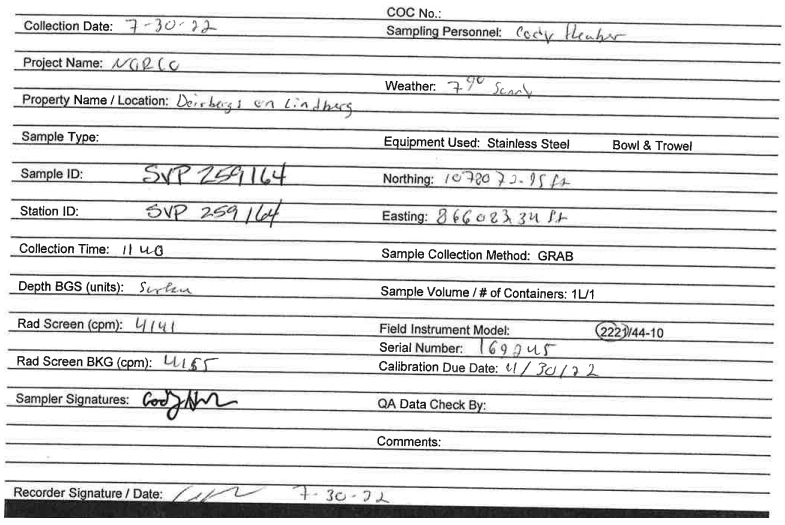
Collection Date: 7-29-22	COC No.:
	Sampling Personnel:
Project Name:	
	Weather: 76° clear
Property Name / Location: VP-56	
Sample Type:	Equipment Used: Stainless Steel Bowl & Trowel
Sample ID: SVP259158	Northing: 1071430.53
Station ID: SVP259158	Easting: 862684.32
Collection Time: 1000	Sample Collection Method: GRAB
Depth BGS (units): Surface	Sample Volume / # of Containers: 1L/1
Rad Screen (cpm): 4384	Field Instrument Model: 2221/44-10
	Serial Number: 161593
Rad Screen BKG (cpm): 4051	Calibration Due Date: 9-23-22
Sampler Signatures:	QA Data Check By:
	Comments:
Recorder Signature / Date:	

Appendix C

Collection Date: 7-30-22	COC No.:
	Sampling Personnel: Cody Hickman
Project Name: NOPCO	
	Weather: 82° cloudy
Property Name / Location: CABKA / Bryant Rd.	
Sample Type:	Equipment Used: Stainless Steel Bowl & Trowel
Sample ID: SWP259159	Northing: 1662694.751 ft
Station ID: SWP259159	Easting: 862367.419 ft
Collection Time: 0745	Sample Collection Method: GRAB
Depth BGS (units): Surface	Sample Volume / # of Containers: 1L/1
Rad Screen (cpm): 4436	Field Instrument Model: 2221/44-10
	Serial Number: 169245
Rad Screen BKG (cpm): 3914	Calibration Due Date: 11/30/22
Sampler Signatures:	QA Data Check By:
	Comments:
Recorder Signature / Date: 7-30-22	

Appendix C

	COC No.:
Collection Date: 7/30/22	Sampling Personnel: Cody Heuber
Project Name: NC12C0	
	Weather: 78° Sunny
Property Name / Location: Life Storage Parking Lot W Washington St.	
Sample Type:	Equipment Used: Stainless Steel Bowl & Trowel
Sample ID: SVP259162	Northing: 1077672.85ft
Station ID: SVP259162	Easting: 866057.93 ft
Collection Time: 1015	Sample Collection Method: GRAB
Depth BGS (units): Surface	Sample Volume / # of Containers: 1L/1
Rad Screen (cpm): 3952	Field Instrument Model: 2221/44-10
	Serial Number: 169245
Rad Screen BKG (cpm): 3906	Calibration Due Date: 11/30/22
Sampler Signatures: [signature]	QA Data Check By:
	Comments:
Recorder Signature / Date: [signature] 7-30-22	



COC No.:
Collection Date: 7-30-22
Sampling Personnel: Cody Hrabe
Project Name: NGRCC
Weather: 79° Sunny
Property Name / Location: Discharge on Lindberg
Sample Type:
Equipment Used: Stainless Steel Bowl & Trowel
Sample ID: SVP 259164
Northing: 10720 22.95 ft
Station ID: SVP 259164
Easting: 866023.34 ft
Collection Time: 11 40
Sample Collection Method: GRAB
Depth BGS (units): Surface
Sample Volume / # of Containers: 1L/1
Rad Screen (cpm): 4141
Field Instrument Model: (2223)/44-10
Serial Number: 169245
Rad Screen BKG (cpm): 4185
Calibration Due Date: 4/30/22
Sampler Signatures: Cody Hrabe
QA Data Check By:
Comments:
Recorder Signature / Date: 7-30-22

Appendix C

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HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SVP242879	
Company Name: Leidos	Drilling Subcontractor: N/A	Logbook ID: FP-820	Sheet 1 of 2

mp 7-28-22

Project: CWC Jana School to New Halls Ferry	Location: Jana-2
Name of Driller: Collin Sansoucie	Station coordinates:
Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment): Stainless Steel (SS) bowl(s), SS trowel(s) with SS hand auger 3in ID or SS sediment sampler with plastic sleeve.	E: 873928.93 N: 1088566.84
Coring Equipment? ☐ Yes ☑ No	Surface Elevation: 496.00
Jackhammer? ☐ Yes ☑ No	Date Start: 7-28-22 Date Complete: 7-28-22
Meter Information / Background Meter Calibration Due	Depth Water Encountered: N/A
44-9 D - 38 cpm 12/27/22	Other Water Measurement(s): N/A
44-10 L - 3278 cpm 10/7/22	COC #: LEQ728220722-07ML
Calibration information maintained by RPM.	

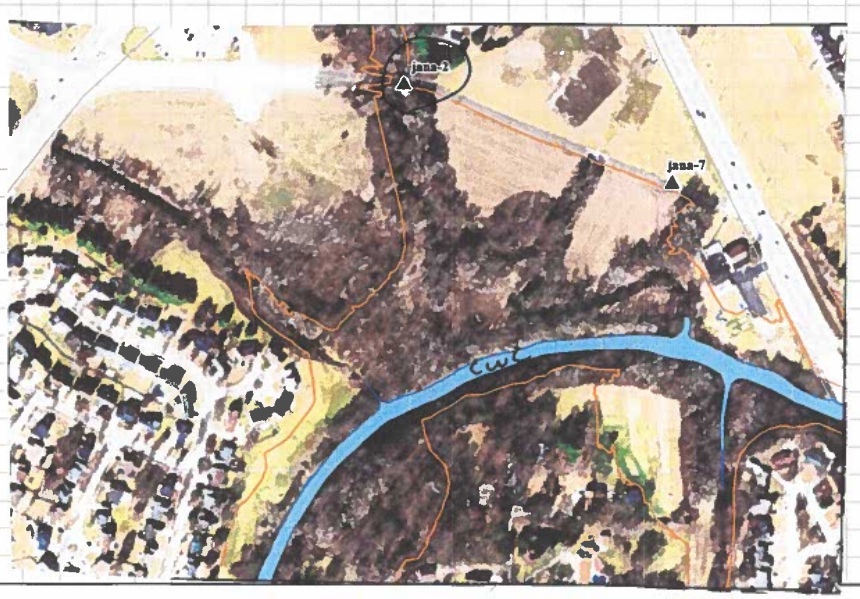
No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	1	0	0	0	0
Borehole Disposition (depth and type of material used for backfill):	Cover Material	Gravel	Soil	Bentonite	Other
	—	—	—	—	—

Additional Notes: NA

Signature of Inspector: [signature]

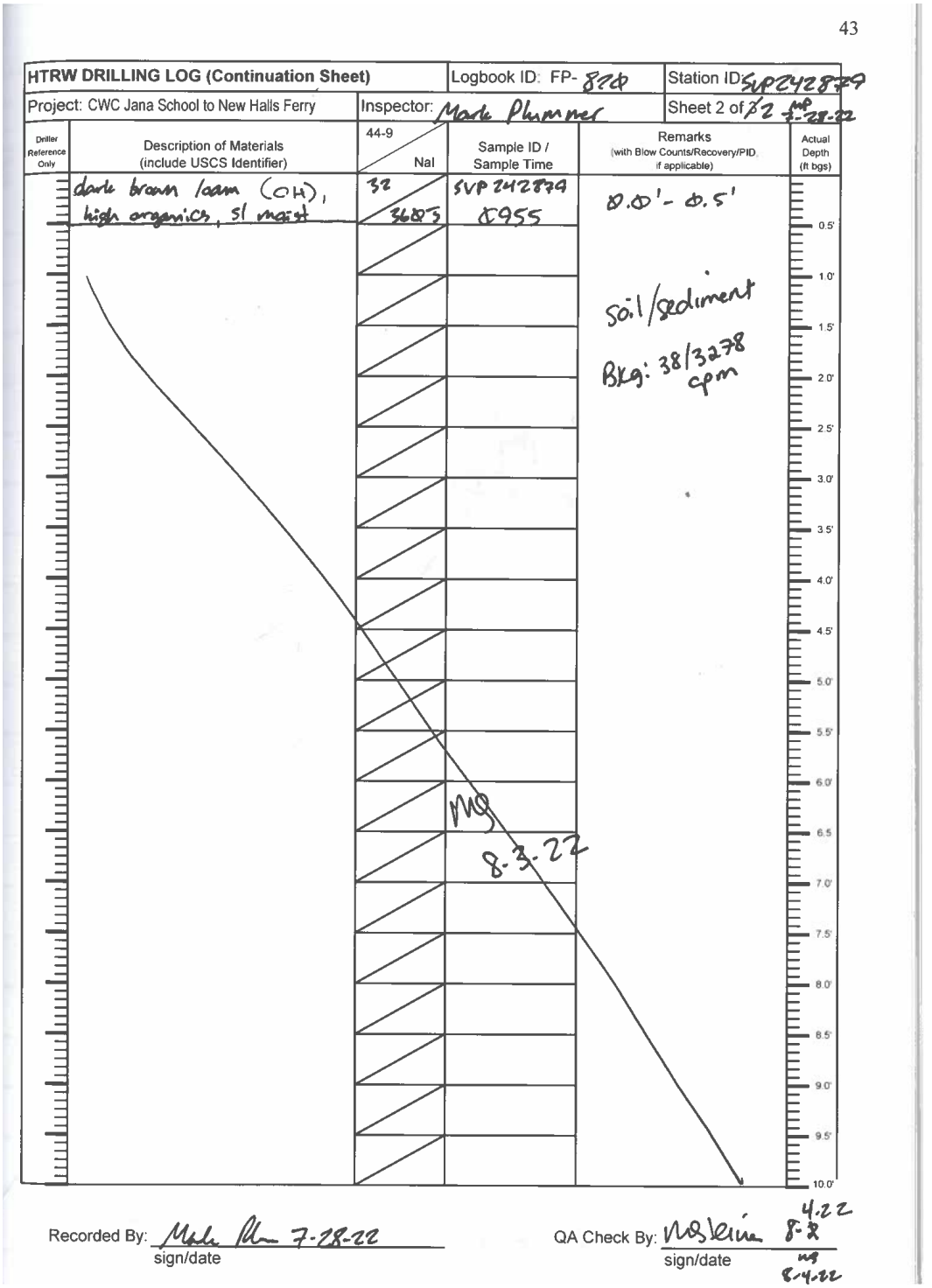
Approx North ⇧ Scale: 1in = 5194 ☐Rough ☑Actual Location/Sketch

Cwc Jana to River Flooding Section 1



Recorded By: [signature] 7-28-22 Sign/Date

QA Check By: MSkinner 8-4-22 Sign/Date



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HTRW DRILLING LOG (Continuation Sheet) | Logbook ID: FP- 870 | Station ID: SVP242879

Project: CWC Jana School to New Halls Ferry | Inspector: Mark Plummer | Sheet 2 of 2 MP 7-28-22

Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 / NaI	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID if applicable)	Actual Depth (ft bgs)
	dark brown loam (OH), high organics, sl moist	32 / 3605	SVP 242879 0955	0.0'-0.5' soil/sediment Bkg: 38/3278 cpm	0.5' 1.0' 1.5' 2.0' 2.5' 3.0' 3.5' 4.0' 4.5' 5.0' 5.5' 6.0' 6.5' 7.0' 7.5' 8.0' 8.5' 9.0' 9.5' 10.0'

MP 8-3-22

Recorded By: Mark Plummer 7-28-22 (sign/date)

QA Check By: MP Klein 8-2 4.22 (sign/date) mp 8-4-22

HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SVP242880	
Company Name: Leidos	Drilling Subcontractor: N/A	Logbook ID: FP-820	Sheet 1 of 2

Project: CWC Jana School to New Halls Ferry	Location: Jana-5
Name of Driller: Collin Sansaucie	Station coordinates: E: 872339.14 N: 1085443.08
Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment): Stainless Steel (SS) bowl(s), SS trowel(s) with SS hand auger 3in ID or SS sediment sampler with plastic sleeve.	Surface Elevation: 492.49
Coring Equipment? ☐ Yes ☑ No	Date Start: 7-28-22 Date Complete: 7-28-22
Jackhammer? ☐ Yes ☑ No	Depth Water Encountered: N/A
Meter Information / Background — Meter Calibration Due	Other Water Measurement(s): N/A
44-9 D - 38 cpm 12/27/22	COC #: LE07282022-07 ML
44-10 L - 3278 cpm 10/7/22	
Calibration information maintained by RPM.	

No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	1	0	0	0	0
Borehole Disposition (depth and type of material used for backfill):	Cover Material	Gravel	Soil	Bentonite	Other
	—	—	—	—	—

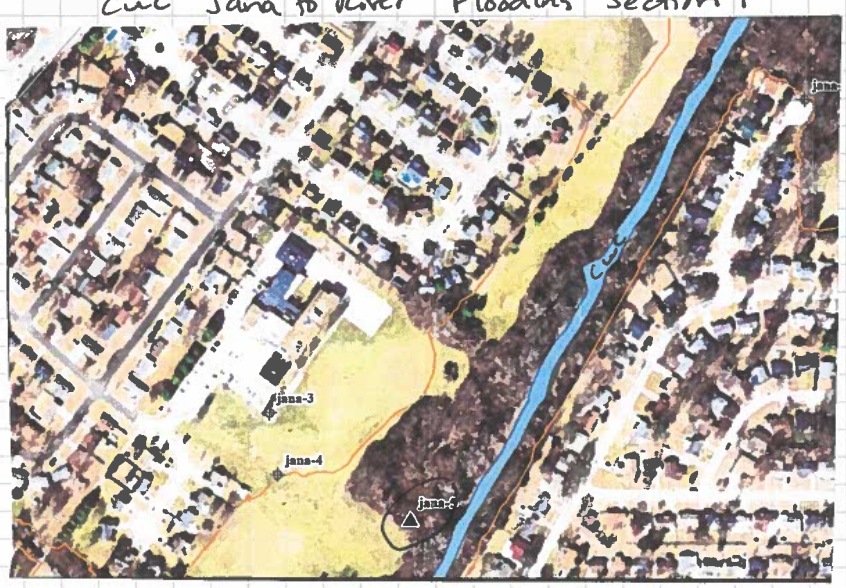
Additional Notes: NA

Signature of Inspector: Mark Rl

Approx North ⇧ Scale: ☐ Rough ☑ Actual

Location/Sketch: 1 inch = 519 ft

CWC Jana to River Flooding Section 1



Recorded By: Mark Rl 7-28-22 (Sign/Date)

QA Check By: MSteiner 8-4-22 (Sign/Date)

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HTRW DRILLING LOG (Continuation Sheet) | Logbook ID: FP- 8260 | Station ID: SVP242880

Project: CWC Jana School to New Halls Ferry | Inspector: Mark Plummer | Sheet 2 of 2 | MP 8-29-22

Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 / NaI	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID, if applicable)	Actual Depth (ft bgs)
	dark brown sandy SILT(ML), saturated, non-plast.	51 / 3601	SVP242880 1035	0.0'-0.5' soil/sediment BKg: 38/3278 cpm	0.5' 1.0' 1.5' 2.0' 2.5' 3.0' 3.5' 4.0' 4.5' 5.0' 5.5' 6.0' 6.5' 7.0' 7.5' 8.0' 8.5' 9.0' 9.5' 10.0'

MP 8-3-22

Recorded By: Mark Plummer 7-28-22
sign/date

QA Check By: MP for Jana 8-4-22
sign/date

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HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SVP242881	
Company Name: Leidos	Drilling Subcontractor: N/A	Logbook ID: FP-820	Sheet 1 of 2

MP 7-28-22

Project: CWC Jana School to New Halls Ferry	Location: Jana-7
Name of Driller: Collin Sansencie	Station coordinates: E: 874713.89 N: 1088682.14
Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment): Stainless Steel (SS) bowl(s), SS trowel(s) with SS hand auger 3in ID or SS sediment sampler with plastic sleeve.	Surface Elevation: 495.54
Coring Equipment? ☐ Yes ☑ No	Date Start: 7-28-22 / Date Complete: 7-28-22
Jackhammer? ☐ Yes ☑ No	
Meter Information / Background — Meter Calibration Due	Depth Water Encountered: N/A
44-9 D - 38 cpm 12/27/22	Other Water Measurement(s): N/A
44-10 L - 3278 cpm 10/7/22	COC #: LED7282022-07ML
Calibration information maintained by RPM.	

No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	1	0	0	0	0

Borehole Disposition (depth and type of material used for backfill):	Cover Material	Gravel	Soil	Bentonite	Other
	—	—	—	—	—

Additional Notes: NA

Signature of Inspector: Mark

Approx North ⇧ Scale: ☐Rough ☑Actual

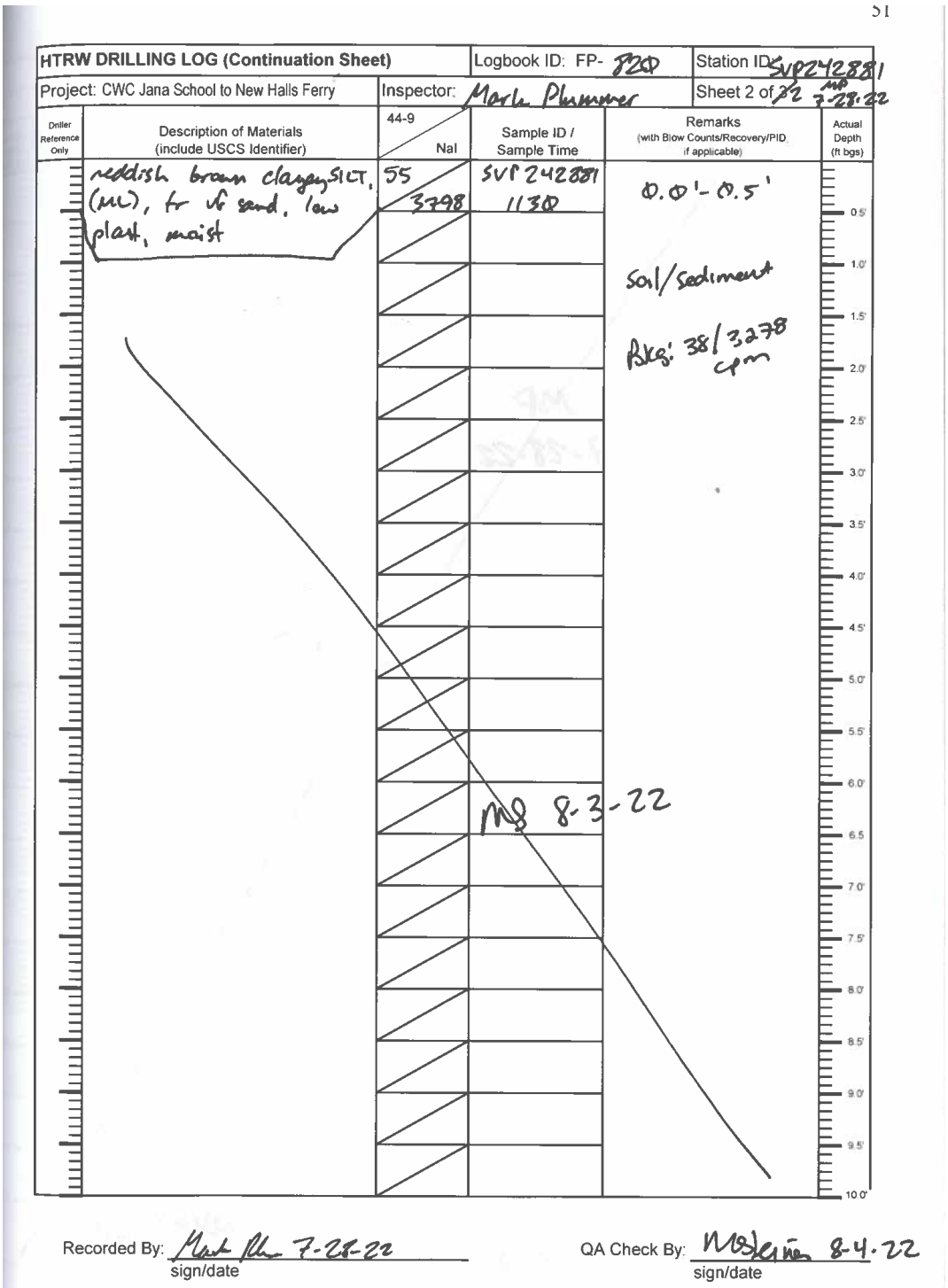
Location/Sketch

1 inch = 519 ft

CWC Jana to River Flooding Section 1

Recorded By: Mark 7-28-22 (Sign/Date)

QA Check By: MSteiner 8.4.22 (Sign/Date)



HTRW DRILLING LOG (Continuation Sheet)

Logbook ID: FP- 8250

Station ID: SVP242881

Project: CWC Jana School to New Halls Ferry

Inspector: Mark Plummer

Sheet 2 of 22

MP 7-28-22

Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 / NaI	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID, if applicable)	Actual Depth (ft bgs)
	reddish brown clayey SILT, (ML), fr vf sand, low plast, moist	55 / 3798	SVP242881 1130	0.0'-0.5' soil/sediment Bkg: 38/3,278 cpm	0.5' 1.0' 1.5' 2.0' 2.5' 3.0' 3.5' 4.0' 4.5' 5.0' 5.5' 6.0' 6.5' 7.0' 7.5' 8.0' 8.5' 9.0' 9.5' 10.0'

MP 8-3-22

Recorded By: Mark Plm 7-28-22
sign/date

QA Check By: MP Plm 8-4-22
sign/date

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HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SVP245630	
Company Name: Leidos	Drilling Subcontractor: Leidos	Logbook ID: FP- 988	Sheet 1 of 2
Project: CWC: Westminster to Old Halls Ferry	Property: CWC - 462	Location: WM-1	

Name of Driller: M. Medina

Station coordinates: E: 8709614.89 N: 10850065.57

Surface Elevation: 488.80

Date Start: 7-28-22 Date Complete: 7-28-22

Depth Water Encountered: —

Other Water Measurement(s): —

COC #: LE07282022-10ML

Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)	
SS bowl(s)/trowel(s)/3" ID hand auger	X Yes ☐ No
Sediment Sampler/Plastic Sleeve?	☐ Yes X No
Geoprobe 3" ID	☐ Yes X No
Coring Equipment	☐ Yes X No
Jackhammer	☐ Yes X No

Meter Information / Background — Meter Calibration Due

44-9 D - 38 cpm 12 / 27 / 22

44-10 L - 3278 cpm 10 / 9 / 22

Calibration information maintained by RPM.

No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	1 + 7-28-22 KW	1 + 7-28-22 KW	—	—	—

Borehole Disposition (depth and type of material used for backfill):	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
	—	—	—	—	—

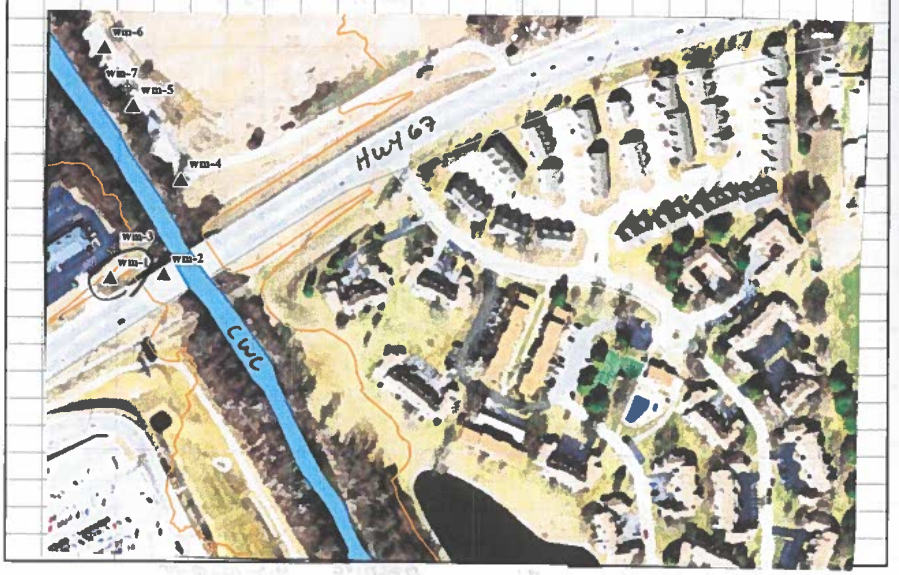
Additional Notes: Drainage ditch at urgent care

Signature of Inspector: Katie Winkle

Approx North

Scale: ☐ Rough Scale ☑ Actual Scale 0" 0.5" 1" 1 inch ≈ 399 feet

Location/Sketch: 8-2-22 CWC Dana Rd to River Flooding Section 3



Recorded By: Katie Winkle 7.28.22 Sign/Date

QA Check By: MStein 8.2.22 Sign/Date

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HTRW DRILLING LOG (Continuation Sheet) | Logbook ID: FP- 988 | Station ID: SVP245630

Project: CWC: Westminster to Old Halls Ferry | Location: WM-1 | Sheet 2 of 2

Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 / NaI	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID, if applicable)	Actual Depth (ft bgs)
	gray silt (ML)	51 / 3359	SVP245630 0845	QC-MS 8-2-22 0-0.5ft	0.5'
	Terminate @ 0.5ft				1.0'
					1.5'
					2.0'
					2.5'
					3.0'
					3.5'
					4.0'
					4.5'
					5.0'
					5.5'
				7.28.22 KW	6.0'
				sediment	6.5'
				Bkg: 38/3278 cpm	7.0'
					7.5'
					8.0'
					8.5'
					9.0'
					9.5'
					10.0'

Recorded By: Katie Winkel 7.28.22
(Inspector) Sign/Date

QA Check By: MSteiner 8.2.22
Sign/Date

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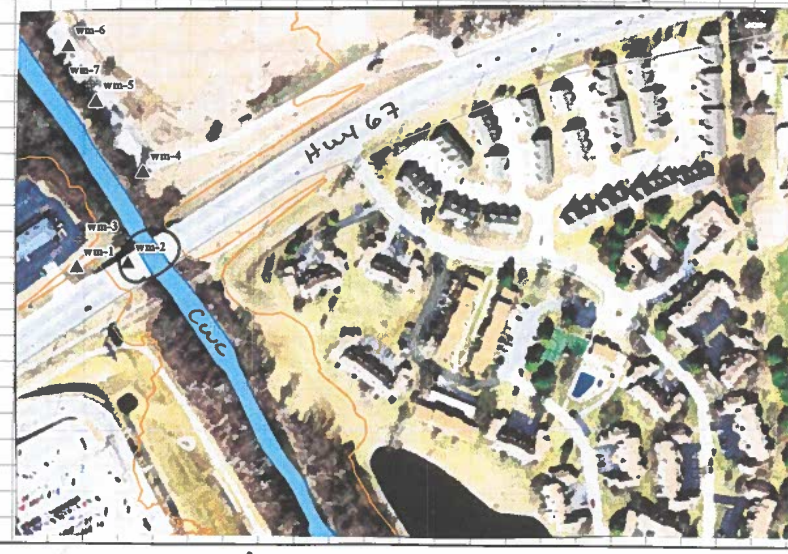
HTRW DRILLING LOG		District: St. Louis USACE		Station ID: SVP245631	
Company Name: Leidos		Drilling Subcontractor: Leidos		Logbook ID: FP-988	Sheet 1 of 2
Project: CWC: Westminster to Old Halls Ferry		Property: CWC Corr.		Location: WM-2	
Name of Driller: M.Medina				Station coordinates:	
Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)	SS bowl(s)/trowel(s)/3" ID hand auger: ☑ Yes ☐ No			E: 879739.96 N: 1085075.65	
	Sediment Sampler/Plastic Sleeve? ☐ Yes ☑ No			Surface Elevation: 483.41	
	Geoprobe 3" ID ☐ Yes ☑ No				
	Coring Equipment ☐ Yes ☑ No			Date Start: 7.28.22	Date Complete: 7.28.22
	Jackhammer ☐ Yes ☑ No				
Meter Information / Background		Meter Calibration Due		Depth Water Encountered: —	
44-9 D - 38 cpm		12 / 27 / 22		Other Water Measurement(s): —	
44-10 L - 3278 cpm		10 / 7 / 22		COC #: LE072822-10ML	
Calibration information maintained by RPM.					
No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	1 KMS 8.2.22	1	—	—	—
Borehole Disposition (depth and type of material used for backfill):	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
	—	—	—	—	—
Additional Notes: under bridge next to walmart				Signature of Inspector:	

Approx North ⇧ Scale: ☐ Rough Scale ☑ Actual Scale 0" 0.5" 1" 1 inch ≈ 399 feet

Location/Sketch: CWC Jana to River Flooding Section 3



Recorded By: [signature] 7.28.22 Sign/Date

QA Check By: MSteiner 8.2.22 Sign/Date

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HTRW DRILLING LOG (Continuation Sheet) | Logbook ID: FP-988 | Station ID: SVP245631

Project. CWC: Westminster to Old Halls Ferry | Location: WM-2 | Sheet 2 of 2

Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 / NaI	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID if applicable)	Actual Depth (ft bgs)
	Dark gray SiH (ML) brown 7.28.22 KW	56 / 3717	SVP245631 0852	0-0.5 ft +QA/QC	0.5'
	Terminate @ 0.5ft				1.0'
					1.5'
					2.0'
					2.5'
					3.0'
					3.5'
					4.0'
					4.5'
					5.0'
					5.5'
					6.0'
					6.5'
					7.0'
					7.5'
					8.0'
					8.5'
					9.0'
					9.5'
					10.0'

7.28.22 KW

sediment

Bkg: 38/3278 cpm

Recorded By: Kati Kirkl 7.28.22
(Inspector) Sign/Date

QA Check By: MSlevin 8.2.22
Sign/Date

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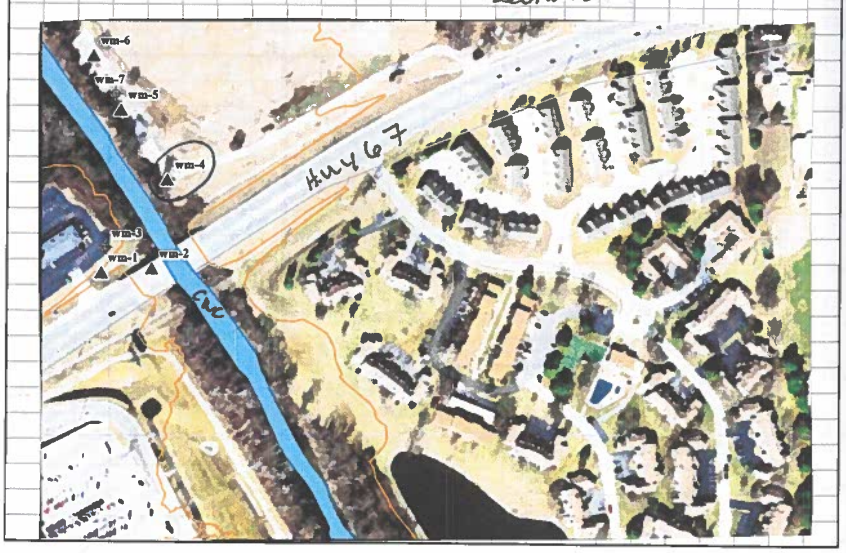
HTRW DRILLING LOG		District: St. Louis USACE		Station ID: SVP245632	
Company Name: Leidos		Drilling Subcontractor: Leidos		Logbook ID: FP-988	Sheet 1 of 2
Project: CWC: Westminster to Old Halls Ferry		Property: CWC-470		Location: WM-4	
Name of Driller: M.Medina		Station coordinates:			
Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)	SS bowl(s)/trowel(s)/3" ID hand auger: X Yes ☐ No	E: 879776.68 N: 1085294.18			
	Sediment Sampler/Plastic Sleeve? ☐ Yes X No	Surface Elevation: 485.19			
	Geoprobe 3" ID ☐ Yes X No	Date Start: 7.28.22	Date Complete: 7.28.22		
	Coring Equipment ☐ Yes X No				
	Jackhammer ☐ Yes X No				
Meter Information / Background	Meter Calibration Due	Depth Water Encountered: —			
44-9 D - 38 cpm	12 / 27 / 22	Other Water Measurement(s): —			
44-10 L - 3278 cpm	10 / 7 / 22	COC #: LE07282022-10ML			
Calibration information maintained by RPM.					
No. of Samples of Each Type	Rad Samples: 1	QA/QC Samples: —	Archive Samples: —	VOC: —	Metals: —
Borehole Disposition (depth and type of material used for backfill):	Cover Material (Asphalt/Concrete): —	Gravel: —	Soil: —	Bentonite: —	Other: —
Additional Notes: Driving Range			Signature of Inspector:		

Approx North

Scale: 0" 0.5" 1"
☐ Rough Scale
☑ Actual Scale
1 inch ≈ 399 feet

Location/Sketch: CWC Jana to River Flooding Section 3



Recorded By: Katie Wolf 7.28.22 (Sign/Date)

QA Check By: MSteiner 8.2.22 (Sign/Date)

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HTRW DRILLING LOG (Continuation-Sheet) | Logbook ID: FP- 988 | Station ID: SVP245632

Project: CWC: Westminster to Old Halls Ferry | Location: WM-4 | Sheet 2 of 2

Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 / NaI	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID, if applicable)	Actual Depth (ft bgs)
	Dark gray clayey silt (ML)	44 / 3526	SVP245632 0932	0-0.5ft	0.5'
	Terminate @ 0.5ft				1.0'
					1.5'
					2.0'
					2.5'
					3.0'
					3.5'
					4.0'
					4.5'
					5.0'
					5.5'
					6.0'
					6.5'
					7.0'
					7.5'
					8.0'
					8.5'
					9.0'
					9.5'
					10.0'

7.28.22 KW

sediment

Bkg: 38/3278 cpm

Recorded By: Kati Winfrey 7.28.22
(Inspector) Sign/Date

QA Check By: M Stevens 8.2.22
Sign/Date

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HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SVP245633	
Company Name: Leidos	Drilling Subcontractor: Leidos	Logbook ID: FP-988	Sheet 1 of 2
Project: CWC: Westminster to Old Halls Ferry	Property: CWC-470	Location: WM-5	

Name of Driller: M. Meding

Station coordinates: E: 879663.93 N: 1085462.60

Surface Elevation: 486.06

Date Start: 7.28.22 Date Complete: 7.28.22

Depth Water Encountered: –

Other Water Measurement(s): –

COC #: LEO7282022-10ML

Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)	
SS bowl(s)/trowel(s)/3" ID hand auger	☒ Yes ☐ No
Sediment Sampler/Plastic Sleeve?	☐ Yes ☒ No
Geoprobe 3" ID	☐ Yes ☒ No
Coring Equipment	☐ Yes ☒ No
Jackhammer	☐ Yes ☒ No

Meter Information / Background		Meter Calibration Due
44-9 D - 38	cpm	12 / 27 / 22
44-10 L - 3278	cpm	10 / 7 / 22

Calibration information maintained by RPM.

No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	1	–	–	–	–

Borehole Disposition (depth and type of material used for backfill):	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
	–	–	–	–	–

Additional Notes: Driving Range

Signature of Inspector: Katie Wiff

Approx North ⇧

Scale: ☐ Rough Scale ☒ Actual Scale 0" 0.5" 1" — 1 inch ≈ 399 feet

Location/Sketch: CWC Jana to River Flooding Section 3

Recorded By: Katie Wiff 7.28.22 (Sign/Date)

QA Check By: MSteiner 8.2.22 (Sign/Date)

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HTRW DRILLING LOG (Continuation Sheet) | Logbook ID: FP-98 | Station ID: SVP245633

Project: CWC: Westminster to Old Halls Ferry | Location: WM-5 | Sheet 2 of 2

Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 / NaI	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID, if applicable)	Actual Depth (ft bgs)
	dark gray clayey silt (ML)	38 / 3501	SVP245633 0937	0-0.5ft	0.5'
	terminate@0.5ft				1.0'
					1.5'
					2.0'
					2.5'
					3.0'
					3.5'
					4.0'
					4.5'
					5.0'
					5.5'
					6.0'
				Sediment	6.5'
				Bkg: 38/3278cpm	7.0'
					7.5'
					8.0'
					8.5'
					9.0'
					9.5'
					10.0'

7.28.22 KW

Recorded By: [signature] 7.28.22
(Inspector) Sign/Date

QA Check By: [signature] 8.2.22
Sign/Date

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HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SVP245634	
Company Name: Leidos	Drilling Subcontractor: Leidos	Logbook ID: FP-988	Sheet 1 of 2
Project: CWC: Westminster to Old Halls Ferry	Property: CWC-470	Location: WM-6	

Name of Driller: M. Medina

Station coordinates: E: 879595.79 N: 1085594.97

Surface Elevation: 486.35

Date Start: 7.28.22 Date Complete: 7.28.22

Depth Water Encountered: —

Other Water Measurement(s): —

COC #: LE07282022-10ML

Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)	
SS bowl(s)/trowel(s)/3" ID hand auger	X Yes ☐ No
Sediment Sampler/Plastic Sleeve?	☐ Yes X No
Geoprobe 3" ID	☐ Yes X No
Coring Equipment	☐ Yes X No
Jackhammer	☐ Yes X No

Meter Information / Background		Meter Calibration Due
44-9 D - 38	cpm	12 / 23 / 22
44-10 L - 3278	cpm	10 / 7 / 22

Calibration information maintained by RPM.

No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	1	—	—	—	—

Borehole Disposition (depth and type of material used for backfill):	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
	—	—	—	—	—

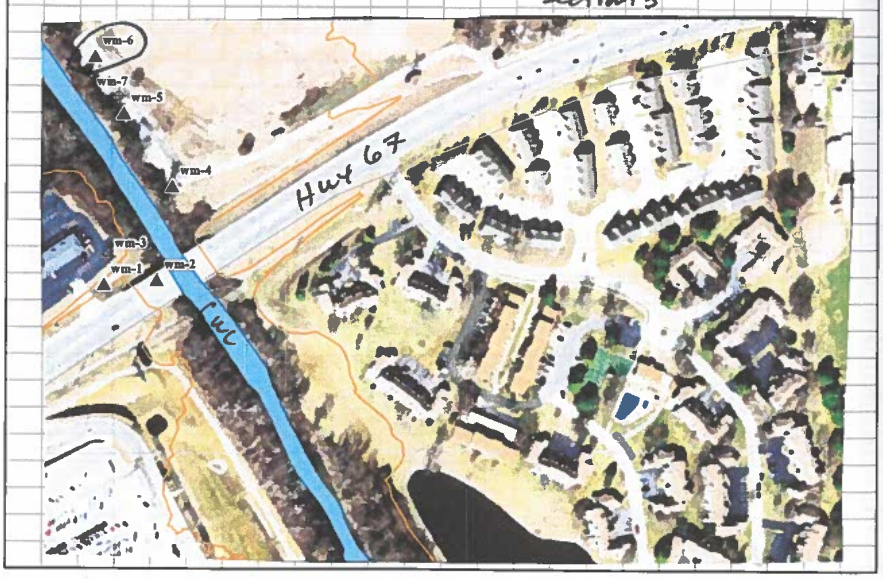
Additional Notes: Driving Range

Signature of Inspector:

Approx North

Scale: ☐ Rough Scale ☒ Actual Scale 0" 0.5" 1" 1 inch ≈ 399 feet

Location/Sketch: CWC Jana to River Flooding Section 3



Recorded By: [signature] 7.28.22 Sign/Date

QA Check By: MS Leines 8.2.22 Sign/Date

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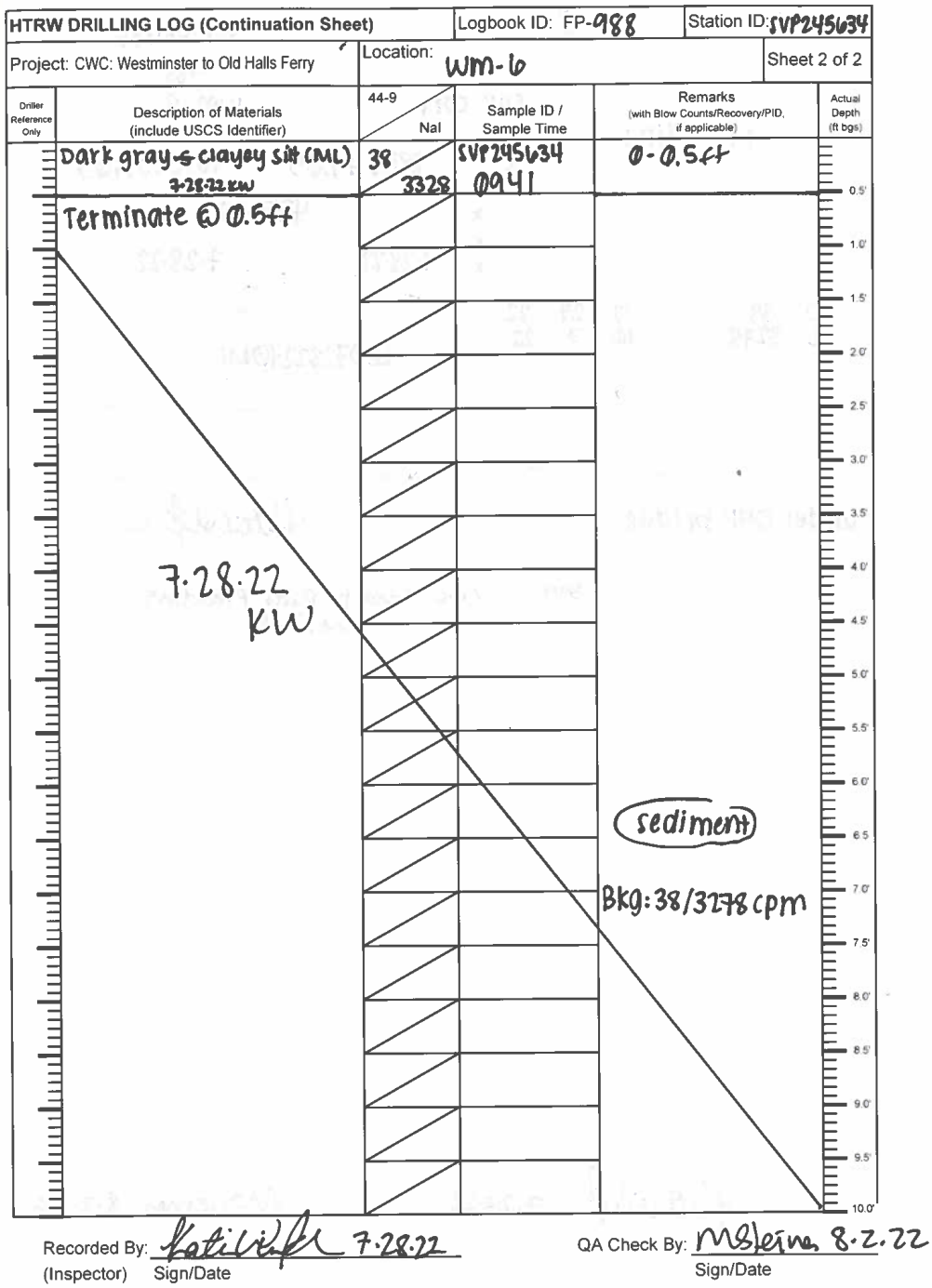
HTRW DRILLING LOG (Continuation Sheet)
Logbook ID: FP-988
Station ID: SVP245634
Project: CWC: Westminster to Old Halls Ferry
Location: WM-6
Sheet 2 of 2
Driller Reference Only
Description of Materials (include USCS Identifier)
44-9 / NaI
Sample ID / Sample Time
Remarks (with Blow Counts/Recovery/PID, if applicable)
Actual Depth (ft bgs)
Dark gray clayey silt (ML)
7-28-22 KW
38 / 3328
SVP245634 0941
0-0.5ft
Terminate @ 0.5ft
7.28.22 KW
sediment
Bkg: 38/3278 cpm
0.5'
1.0'
1.5'
2.0'
2.5'
3.0'
3.5'
4.0'
4.5'
5.0'
5.5'
6.0'
6.5'
7.0'
7.5'
8.0'
8.5'
9.0'
9.5'
10.0'
Recorded By: 7.28.22
(Inspector) Sign/Date
QA Check By: 8.2.22
Sign/Date

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HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SVP245635	
Company Name: Leidos	Drilling Subcontractor: Leidos	Logbook ID: FP-988	Sheet 1 of 2
Project: CWC: Westminster to Old Halls Ferry	Property: CWC Corr	Location: WM-8	

Name of Driller: M. Medina

Station coordinates: E: 883049.05 N: 1083958.163

Surface Elevation: 477.52

Date Start: 7.28.22 Date Complete: 7.28.22

Depth Water Encountered: —

Other Water Measurement(s): —

COC #: LE072822-ØML

Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)	
SS bowl(s)/trowel(s)/3" ID hand auger	X Yes ☐ No
Sediment Sampler/Plastic Sleeve?	☐ Yes X No
Geoprobe 3" ID	☐ Yes X No
Coring Equipment	☐ Yes X No
Jackhammer	☐ Yes X No

Meter Information / Background — Meter Calibration Due

44-9 D - 38 cpm 12 / 27 / 22

44-10 L - 3278 cpm 10 / 7 / 22

Calibration information maintained by RPM.

No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	1	—	—	—	—

Borehole Disposition (depth and type of material used for backfill):	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
	—	—	—	—	—

Additional Notes: under OHF bridge

Signature of Inspector: Katie Winkler

Approx North ⇧

Scale: ☐ Rough Scale ☑ Actual Scale 0" 0.5" 1" 1 inch = 399 feet

Location/Sketch: CWC Jana to River Flooding Section 3

Recorded By: Katie Winkler 7.28.22 Sign/Date

QA Check By: MSteiner 8.2.22 Sign/Date

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HTRW DRILLING LOG (Continuation Sheet) | Logbook ID: FP-988 | Station ID: SVP245635

Project: CWC: Westminster to Old Halls Ferry | Location: WM-6 | Sheet 2 of 2

Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 / NaI	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID if applicable)	Actual Depth (ft bgs)
	Dark gray clayey silt (ML)	41 / 3697	SVP246635 1028	0-0.5 ft	0.5'
	Terminate @ 0.5 ft				1.0'
					1.5'
					2.0'
					2.5'
					3.0'
					3.5'
					4.0'
					4.5'
					5.0'
					5.5'
					6.0'
				Sediment	6.5'
				Bkg: 38/3278 cpm	7.0'
					7.5'
					8.0'
					8.5'
					9.0'
					9.5'
					10.0'

7.28.22 KW

Recorded By: [signature] 7.28.22
(Inspector) Sign/Date

QA Check By: MStein 8.2.22
Sign/Date

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HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SVP245636	
Company Name: Leidos	Drilling Subcontractor: Leidos	Logbook ID: FP-988	Sheet 1 of 2
Project: CWC: Westminster to Old Halls Ferry	Property: CWC-485	Location: WM-10	

Name of Driller: M. Medina

Station coordinates: E: 881984.26 N: 1083441.55

Surface Elevation: 478.22

Date Start: 7-28-22 Date Complete: 7-28-22

Depth Water Encountered: –

Other Water Measurement(s): –

COC #: LE07292022-05ML

Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)	
SS bowl(s)/trowel(s)/3" ID hand auger	X Yes ☐ No
Sediment Sampler/Plastic Sleeve?	☐ Yes X No
Geoprobe 3" ID	☐ Yes X No
Coring Equipment	☐ Yes X No
Jackhammer	☐ Yes X No

Meter Information / Background — Meter Calibration Due

44-9 D - 38 cpm 12 / 27 / 22

44-10 L - 3278 cpm 10 / 7 / 22

Calibration information maintained by RPM.

No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	1	–	–	–	–

Borehole Disposition (depth and type of material used for backfill):	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
	–	–	–	–	–

Additional Notes: Parking lot at Schaefer Bend County Park

Signature of Inspector: Kati Wilfer

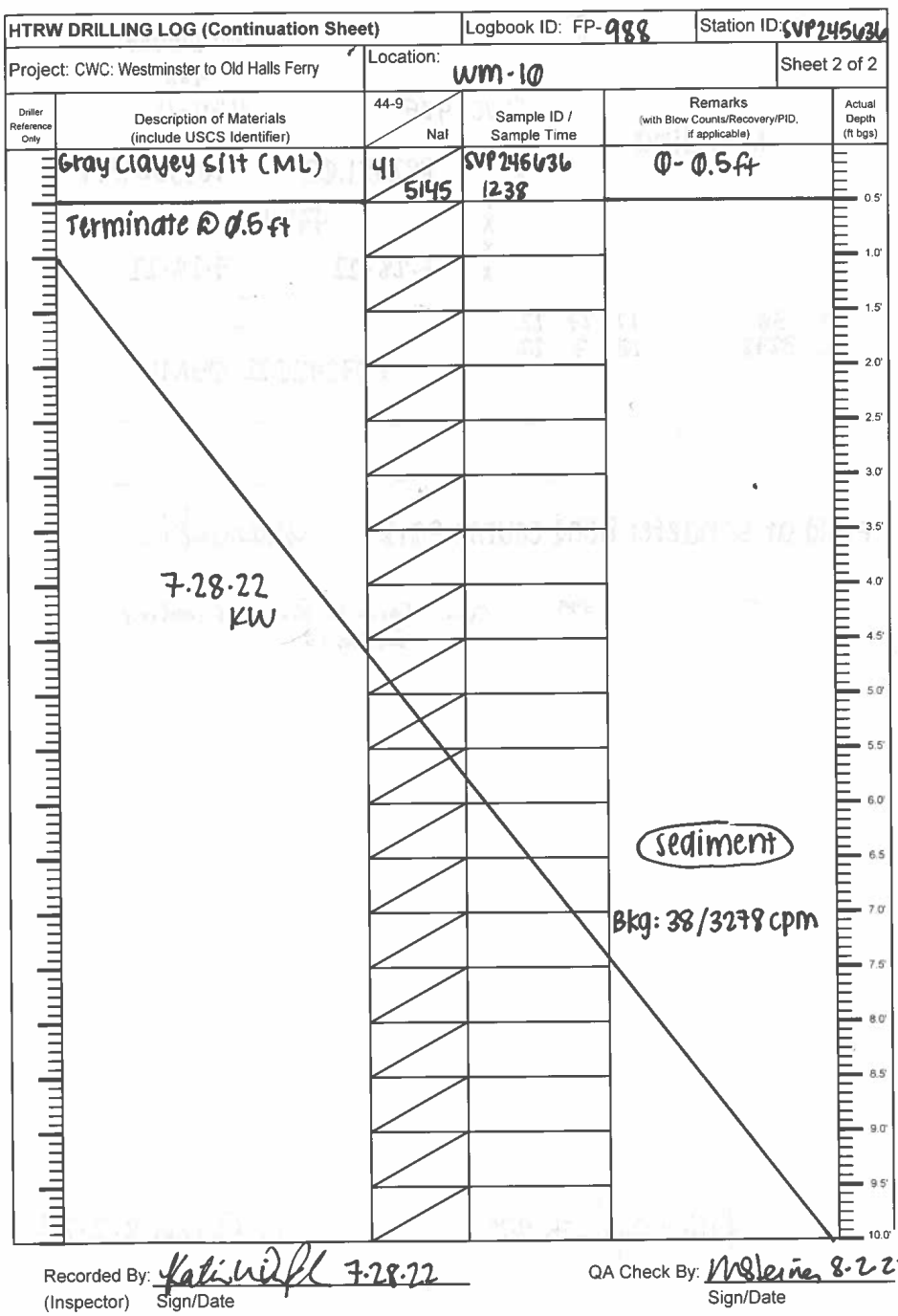
Approx North

Scale: ☐ Rough Scale ☒ Actual Scale 0" 0.5" 1" 1 inch ≈ 399 feet

Location/Sketch: CWC Jana to River Flooding Section 3

Recorded By: Kati Wilfer 7.28.22 Sign/Date

QA Check By: MSteiner 8.2.22 Sign/Date



HTRW DRILLING LOG (Continuation Sheet)

Logbook ID: FP-988

Station ID: SVP246636

Project: CWC: Westminster to Old Halls Ferry

Location: WM-10

Sheet 2 of 2

Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 / Nal	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID, if applicable)	Actual Depth (ft bgs)
	Gray clayey silt (ML)	41 / 5145	SVP246636 1238	0 - 0.5 ft	0.5'
	Terminate @ 0.5 ft				1.0'
					1.5'
					2.0'
					2.5'
					3.0'
					3.5'
					4.0'
					4.5'
					5.0'
					5.5'
					6.0'
					6.5'
					7.0'
					7.5'
					8.0'
					8.5'
					9.0'
					9.5'
					10.0'

7.28.22 KW

sediment

Bkg: 38/3278 cpm

Recorded By: Katie Wilfl 7.28.22
(Inspector) Sign/Date

QA Check By: MBlevins 8.2.22
Sign/Date

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HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SVP245637	
Company Name: Leidos	Drilling Subcontractor: Leidos	Logbook ID: FP-988	Sheet 1 of 2
Project: CWC: Westminster to Old Halls Ferry	Property: CWC-485	Location: WM-11	

Name of Driller: M.Medina		Station coordinates: E: 882381.03 N 1083529.94
Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)	SS bowl(s)/trowel(s)/3" ID hand auger ☒ Yes ☐ No	
	Sediment Sampler/Plastic Sleeve? ☐ Yes ☒ No	Surface Elevation: 476.52
	Geoprobe 3" ID ☐ Yes ☒ No	
	Coring Equipment ☐ Yes ☒ No	Date Start: 7·28·22 / Date Complete: 7·28·22
	Jackhammer ☐ Yes ☒ No	

Meter Information / Background	Meter Calibration Due	
44-9 D - 38 cpm	12/27/22	Depth Water Encountered: —
44-10 L - 3278 cpm	10/7/22	Other Water Measurement(s): —
Calibration information maintained by RPM.		COC #: LE07292022-05ML

	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
No. of Samples of Each Type	1	—	—	—	—

	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
Borehole Disposition (depth and type of material used for backfill):	—	—	—	—	—

Additional Notes: Field at Schaefer Bend County Park

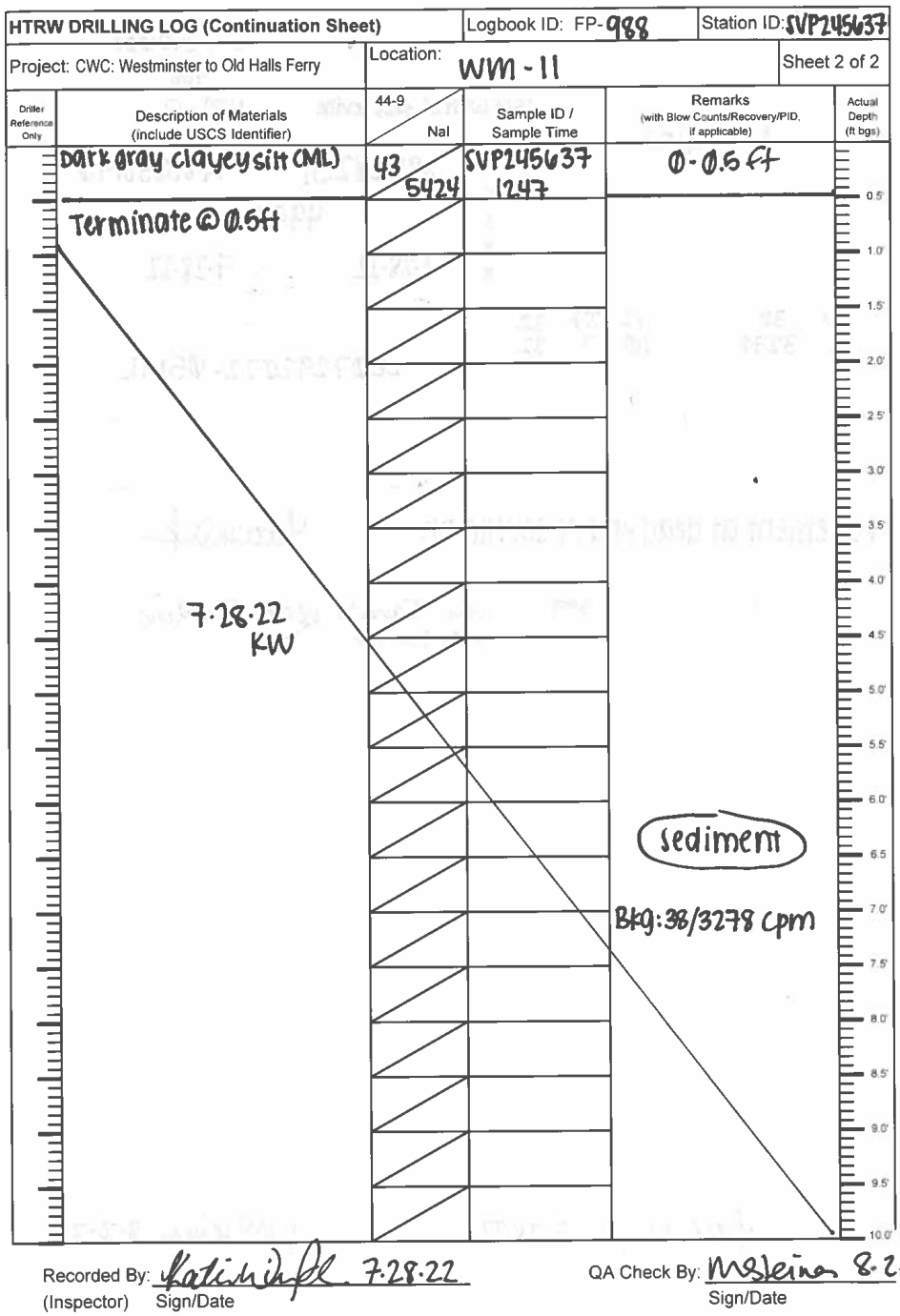
Signature of Inspector: [signature]

Approx North ⇧ | Scale: 0" 0.5" 1" ☐ Rough Scale ☒ Actual Scale 1 inch ≈ 399 feet

Location/Sketch: CWC Jana to River Flooding Section 3

Recorded By: [signature] 7·28·22 Sign/Date

QA Check By: [signature] 8·2·22 Sign/Date



HTRW DRILLING LOG (Continuation Sheet) | Logbook ID: FP-988 | Station ID: SVP245637

Project: CWC: Westminster to Old Halls Ferry | Location: WM-11 | Sheet 2 of 2

Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 / NaI	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID, if applicable)	Actual Depth (ft bgs)
	Dark gray clayey silt (ML)	43 / 5424	SVP245637 1247	0-0.5 ft	0.5'
	Terminate @ 0.5ft				1.0'
					1.5'
					2.0'
					2.5'
					3.0'
					3.5'
					4.0'
					4.5'
					5.0'
					5.5'
					6.0'
					6.5'
					7.0'
					7.5'
					8.0'
					8.5'
					9.0'
					9.5'
					10.0'

7.28.22 KW

sediment

Bkg: 38/3278 cpm

Recorded By: Katie Inkpen 7.28.22
(Inspector) Sign/Date

QA Check By: MSteiner 8.2.22
Sign/Date

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HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SVP245638	
Company Name: Leidos	Drilling Subcontractor: Leidos	Logbook ID: FP-988	Sheet 1 of 2
Project: CWC: Westminster to Old Halls Ferry	Property: 15ft West of 3025 Seville	Location: WM-13	

Name of Driller: M. Meding

Station coordinates: E: 880282.31 N: 1083838.96

Surface Elevation: 499.51

Date Start: 7.28.22 Date Complete: 7.28.22

Depth Water Encountered: —

Other Water Measurement(s): —

COC #: LE07292022-05ML

Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)	
SS bowl(s)/trowel(s)/3" ID hand auger	X Yes ☐ No
Sediment Sampler/Plastic Sleeve?	☐ Yes X No
Geoprobe 3" ID	☐ Yes X No
Coring Equipment	☐ Yes X No
Jackhammer	☐ Yes X No

Meter Information / Background	Meter Calibration Due
44-9 D - 38 cpm	12 / 27 / 22
44-10 L - 3278 cpm	10 / 7 / 22

Calibration information maintained by RPM.

No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	1	—	—	—	—

Borehole Disposition (depth and type of material used for backfill):	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
	—	—	—	—	—

Additional Notes: Pavement at dead end of Seville Dr.

Signature of Inspector: Katie Winkel

Approx North

Scale: ☐ Rough Scale ☑ Actual Scale 0" 0.5" 1" 1 inch ≈ 391 feet

Location/Sketch: CWC Jana to River Flooding Section 3

Recorded By: Katie Winkel 7.28.22 (Sign/Date)

QA Check By: MSteiner 8.2.22 (Sign/Date)

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HTRW DRILLING LOG (Continuation Sheet)		Logbook ID: FP-988		Station ID: SVP245638	
Project: CWC: Westminster to Old Halls Ferry		Location: WM-13			Sheet 2 of 2
Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 / NaI	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID, if applicable)	Actual Depth (ft bgs)
	light brown silt (ML)	51 / 5278	SVP245638 1345	0-0.5ft	0.5'
	Terminate @ 0.5ft				1.0'
	7.28.22 KW			sediment	1.5' – 10.0'
				Bkg: 38/3278cpm	

Recorded By: Kate Wil... 7.28.22 (Inspector) Sign/Date

QA Check By: MSkine 8.2.22 Sign/Date

22

HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SWP254886
Company Name: Leidos	Drilling Subcontractor: Leidos	Logbook ID: FP-1865 Sheet 1 of 2
Project: CWC: Old Halls Ferry to Black Jack Park	Property: MSD/CWC 499	Location: OHF-2

Name of Driller: Dylan Bicwald

Station coordinates: E: 883310.71 N: 1084132.94

Surface Elevation: 482.86

Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)	
	SS bowl(s)/trowel(s)/3" ID hand auger ☐ Yes ☐ No
	Sediment Sampler/Plastic Sleeve? ☐ Yes ☐ No
	Geoprobe 3" ID ☐ Yes ☐ No
	Coring Equipment ☐ Yes ☐ No
	Jackhammer ☐ Yes ☐ No

Date Start: 7-28-22 Date Complete: 7-28-22

Depth Water Encountered: NA

Other Water Measurement(s): NA

COC #: LE07282022-08mL

Meter Information / Background	Meter Calibration Due
44-9 F - 37 cpm	4 / 7 / 23
44-10 J-1 5057 cpm	12 / 22 / 22

Calibration information maintained by RPM.

No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	1	1	—	—	—

Borehole Disposition (depth and type of material used for backfill):	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
	—	—	—	—	—

Additional Notes: NA.

Signature of Inspector:

Approx North

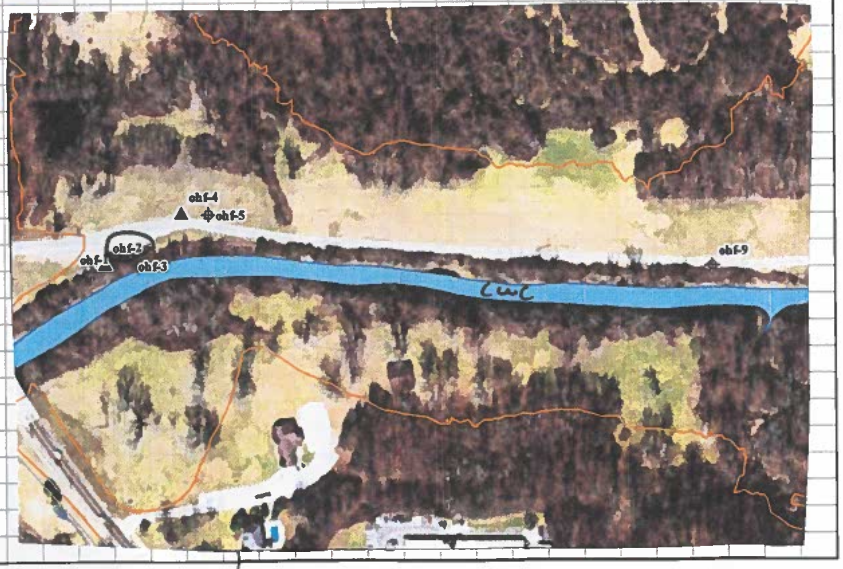
Scale: 0" 0.5" 1"

☐ Rough Scale

☒ Actual Scale

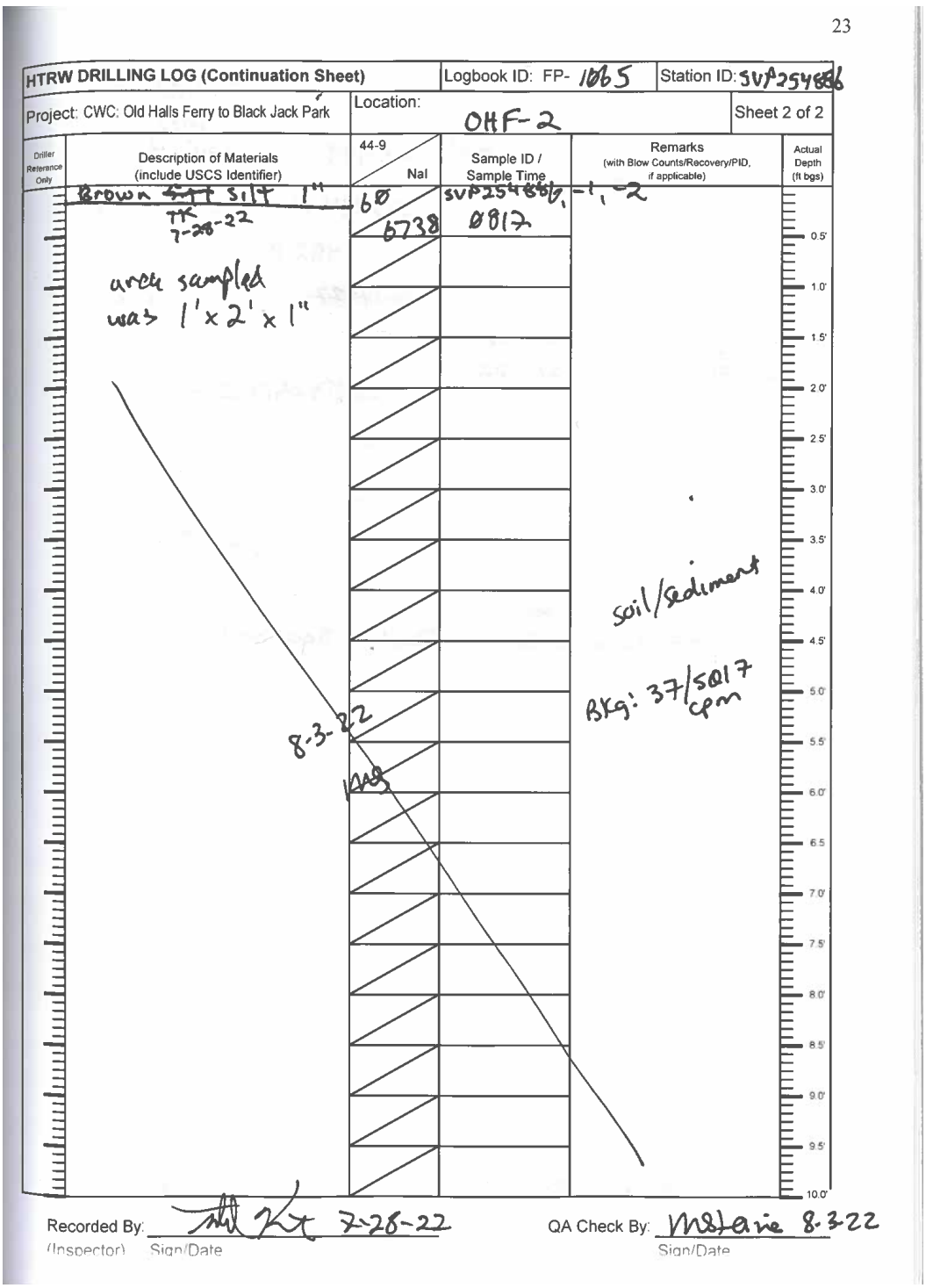
1 inch ≈ 399 feet

Location/Sketch: CWC Jana to River Flooding Section 4



Recorded By: 7-28-22 (Sign/Date)

QA Check By: MSteiner 8-3-22 (Sign/Date)



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HTRW DRILLING LOG (Continuation Sheet) | Logbook ID: FP- 1065 | Station ID: SVP254886

Project: CWC: Old Halls Ferry to Black Jack Park | Location: OHF-2 | Sheet 2 of 2

Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 NaI	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID, if applicable)	Actual Depth (ft bgs)
	Brown ~~Silty~~ Silt 1" TK 7-28-22	60 6738	SVP254886, -1, -2 0817		0.5'
	area sampled was 1'x2'x1"				1.0'
					1.5'
					2.0'
					2.5'
					3.0'
					3.5'
				soil/sediment	4.0'
					4.5'
	8-3-22			Bkg: 37/5017 cpm	5.0'
					5.5'
					6.0'
					6.5'
					7.0'
					7.5'
					8.0'
					8.5'
					9.0'
					9.5'
					10.0'

Recorded By: [signature] 7-28-22
(Inspector) Sign/Date

QA Check By: Melanie 8.3.22
Sign/Date

24

HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SVP254887	
Company Name: Leidos	Drilling Subcontractor: Leidos	Logbook ID: FP-1005	Sheet 1 of 2
Project: CWC: Old Halls Ferry to Black Jack Park	Property: MSD/CWC499	Location: OHF-4	

Name of Driller: Dylan Bicwald		Station coordinates:	
Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)	SS bowl(s)/trowel(s)/3" ID hand auger ☐ Yes ☐ No	E: 883484.11	N: 1084244.26
	Sediment Sampler/Plastic Sleeve? ☐ Yes ☐ No	Surface Elevation: 482.86	
	Geoprobe 3" ID ☐ Yes ☐ No	Date Start: 7-26-22	Date Complete: 7-29-22
	Coring Equipment ☐ Yes ☐ No		
	Jackhammer ☐ Yes ☐ No		

Meter Information / Background	Meter Calibration Due	Depth Water Encountered: —	
44-9 F - 37 cpm	4 / 2 / 23	Other Water Measurement(s): —	
44-10 J-1 50(7 cpm	12 / 22 / 22	COC #: LED7282022-08ML	
Calibration information maintained by RPM.			

No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	1	—	—	—	—
Borehole Disposition (depth and type of material used for backfill):	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
	—	—	—	—	—

Additional Notes: NA

Signature of Inspector: [signature]

Approx North ⇧

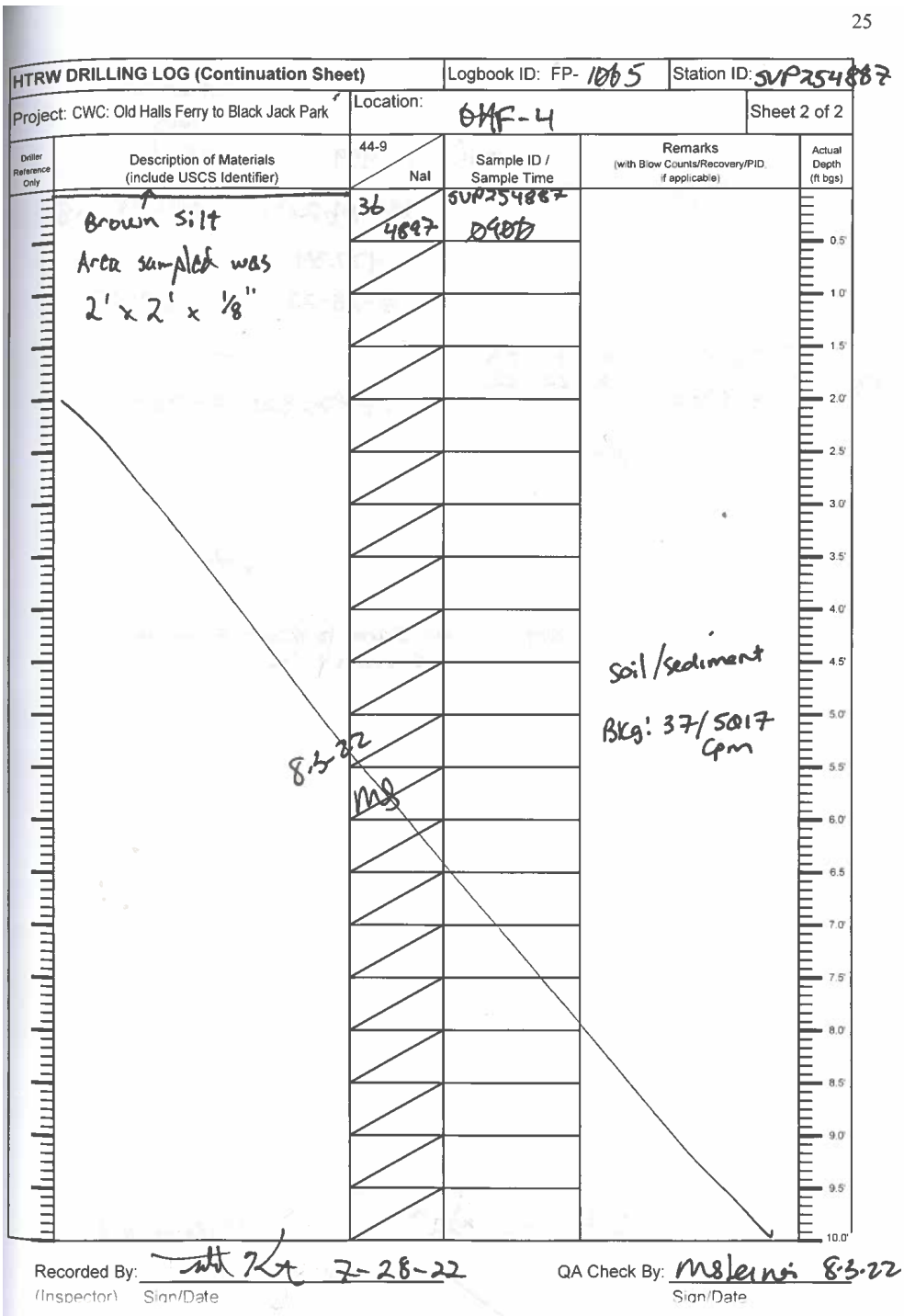
Scale: 0" 0.5" 1"
☐ Rough Scale
☑ Actual Scale 1 inch ≈ 399 feet

Location/Sketch:

CWC Jana to River Flooding Section 4

Recorded By: [signature] 7-28-22 (Sign/Date)

QA Check By: MGleiman 8-3-22 (Sign/Date)



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HTRW DRILLING LOG (Continuation Sheet) | Logbook ID: FP- 1005 | Station ID: SVP254887

Project: CWC: Old Halls Ferry to Black Jack Park | Location: OHF-4 | Sheet 2 of 2

Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 / NaI	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID if applicable)	Actual Depth (ft bgs)
	Brown Silt Area sampled was 2' x 2' x 1/8"	36 4897	SVP254887 0900	Soil/Sediment Bkg: 37/5017 cpm 8.3.22 MS	0.5'–10.0'

Recorded By: [signature] 7-28-22
(Inspector) Sign/Date

QA Check By: MS [signature] 8.3.22
Sign/Date

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HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SVP271888	
Company Name: Leidos	Drilling Subcontractor: Leidos	Logbook ID: FP-1065	Sheet 1 of 2
Project: CWC: Old Halls Ferry to Black Jack Park	Property: MSD / CWC 499	Location: OHF-6	

Name of Driller: Dylan Bicwald

Station coordinates: E: 887062.56 N: 1084083.38

Surface Elevation: 427.34

Date Start: 7-28-22 Date Complete: 7-28-22

Depth Water Encountered: —

Other Water Measurement(s): —

COC #: LE07282022-08ML

Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)

SS bowl(s)/trowel(s)/3" ID hand auger	☐ Yes ☐ No
Sediment Sampler/Plastic Sleeve?	☐ Yes ☐ No
Geoprobe 3" ID	☐ Yes ☐ No
Coring Equipment	☐ Yes ☐ No
Jackhammer	☐ Yes ☐ No

Meter Information / Background — Meter Calibration Due

44-9 F - 3743 cpm 4 / 7 / 23

44-10 J-1 5012 cpm 12 / 22 / 22

7-28-22

Calibration information maintained by RPM.

6233

No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	1	—	—	—	—

Borehole Disposition (depth and type of material used for backfill):	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
	—	—	—	—	—

Additional Notes: NA

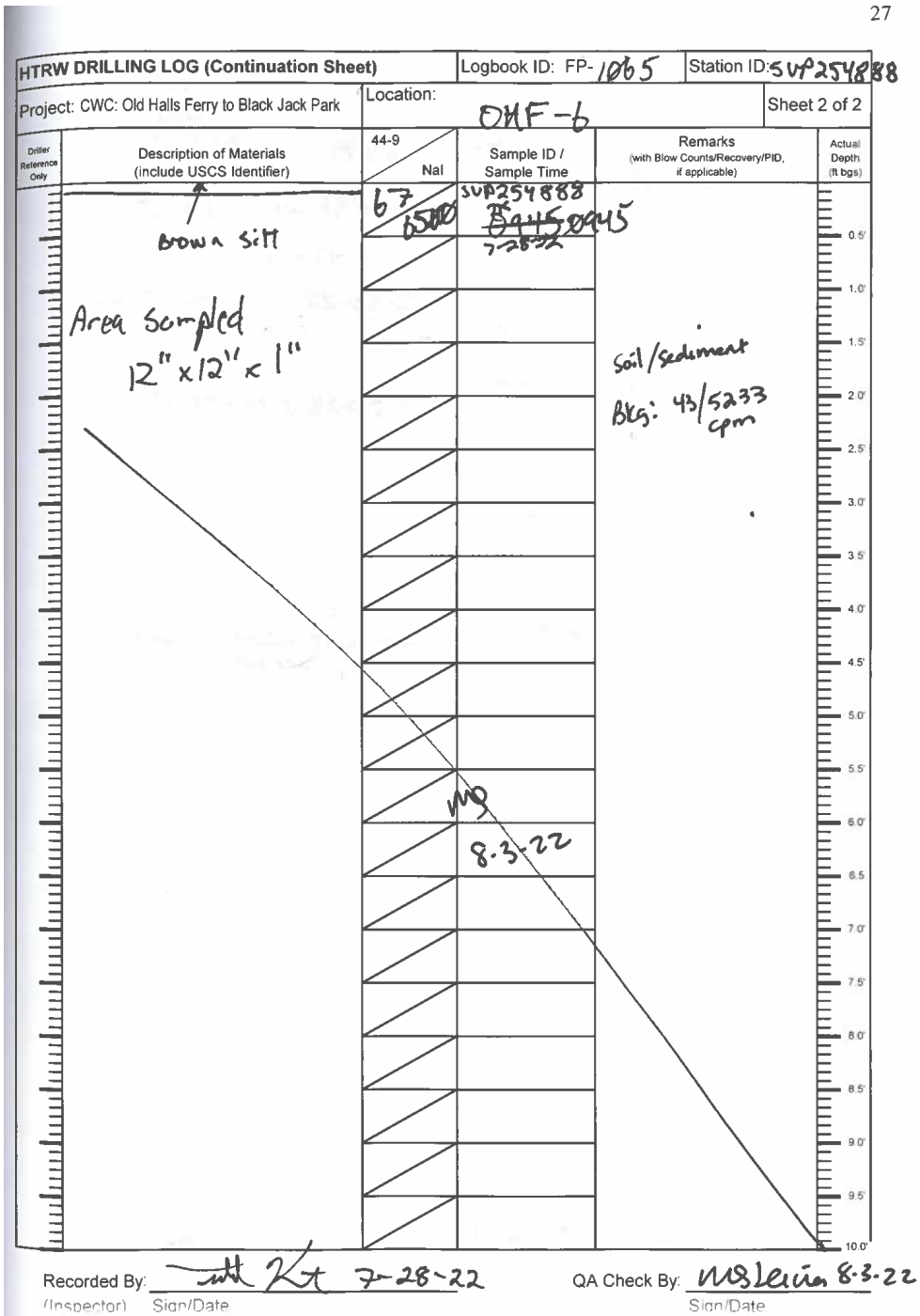
Signature of Inspector:

Approx North ⇧ Scale: ☐ Rough Scale ☒ Actual Scale 0" 0.5" 1" 1 inch = 399 feet

Location/Sketch: CWC Jana to River Flooding Section 4

Recorded By: [signature] 7-28-22 Sign/Date

QA Check By: MSleiva 8-3-22 Sign/Date


HTRW DRILLING LOG (Continuation Sheet)
Logbook ID: FP-1065
Station ID: SUP254888
Project: CWC: Old Halls Ferry to Black Jack Park
Location: OHF-6
Sheet 2 of 2
Driller Reference Only
Description of Materials (include USCS Identifier)
44-9
NaI
Sample ID / Sample Time
Remarks (with Blow Counts/Recovery/PID, if applicable)
Actual Depth (ft bgs)
Brown silt
Area sampled
12" x 12" x 1"
SUP254888
0945
7-28-22
Soil/Sediment
Bkg: 43/5233 cpm
MS
8.3.22
0.5'
1.0'
1.5'
2.0'
2.5'
3.0'
3.5'
4.0'
4.5'
5.0'
5.5'
6.0'
6.5'
7.0'
7.5'
8.0'
8.5'
9.0'
9.5'
10.0'
Recorded By: 7-28-22
(Inspector) Sign/Date
QA Check By: 8.3.22
Sign/Date

28

HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SUP254889
Company Name: Leidos	Drilling Subcontractor: Leidos	Logbook ID: FP-1065 Sheet 1 of 2
Project: CWC: Old Halls Ferry to Black Jack Park	Property: MSD/cwc499	Location: OHF-7

Name of Driller: Dylan Bienald		Station coordinates: E: 887096.29 N: 1084105.56
Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)	SS bowl(s)/trowel(s)/3" ID hand auger ☐ Yes ☐ No	
	Sediment Sampler/Plastic Sleeve? ☐ Yes ☐ No	Surface Elevation: 477.33
	Geoprobe 3" ID ☐ Yes ☐ No	
	Coring Equipment ☐ Yes ☐ No	Date Start: 7-28-22 Date Complete: 7-28-22
	Jackhammer ☐ Yes ☐ No	
Meter Information / Background	Meter Calibration Due	Depth Water Encountered: —
44-9 F-43 cpm	4/7/23	Other Water Measurement(s): —
44-10 J-1 5233 cpm	12/22/22	COC #: LE0772820722-DBML
Calibration information maintained by RPM.		

No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	1	—	—	—	—
Borehole Disposition (depth and type of material used for backfill):	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
	—	—	—	—	—

Additional Notes: NA

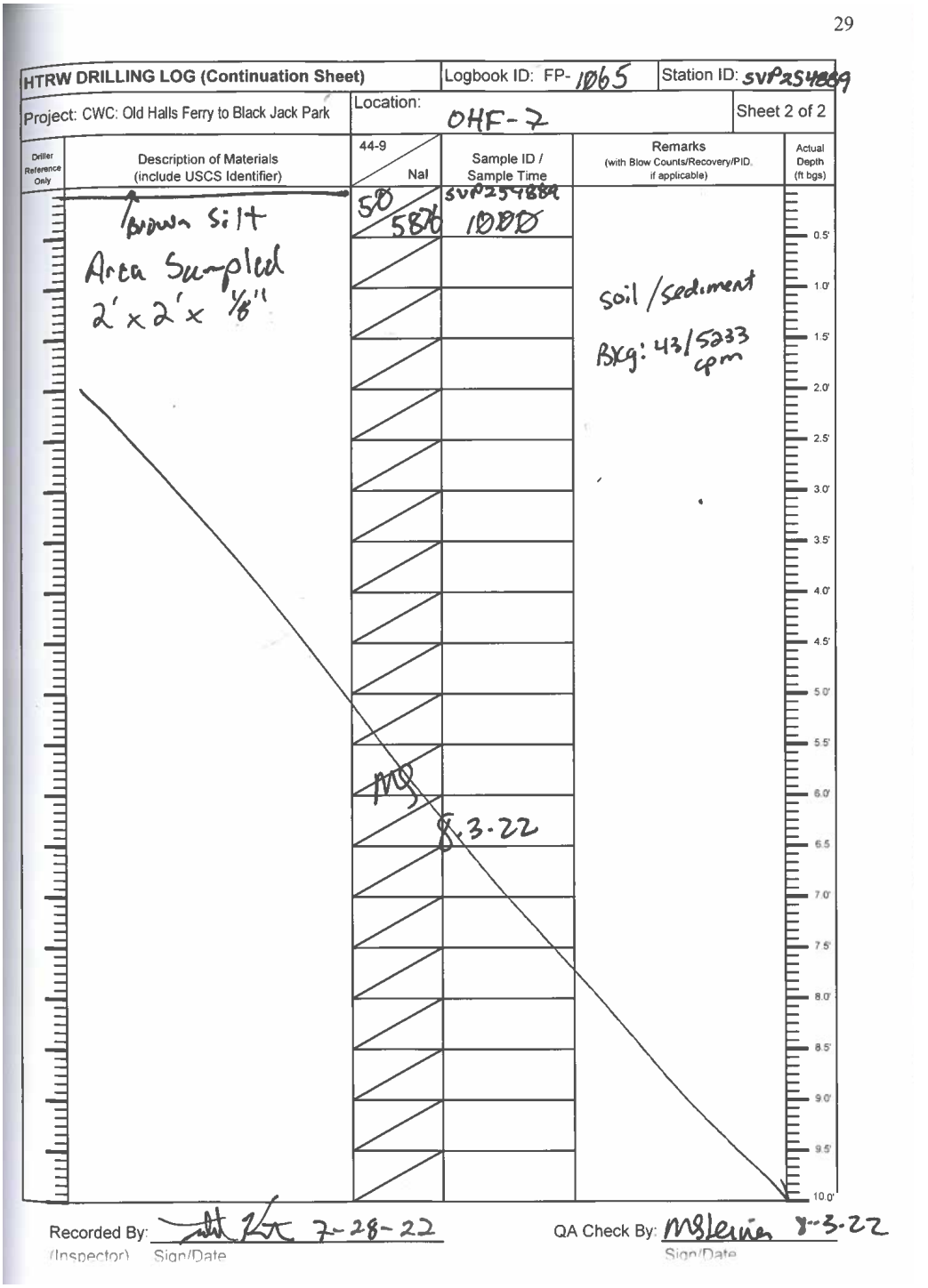
Signature of Inspector: [signature] KA

Approx North ⇧ Scale: ☐ Rough Scale ☒ Actual Scale 0" 0.5" 1" 1 inch ≈ 399 feet

Location/Sketch: cwc Sara to River Floodings Section 4

Recorded By: [signature] 7-28-22 Sign/Date

QA Check By: MBJeima 8-3-22 Sign/Date



HTRW DRILLING LOG (Continuation Sheet) | Logbook ID: FP- 1065 | Station ID: SVP254889

Project: CWC: Old Halls Ferry to Black Jack Park | Location: OHF-7 | Sheet 2 of 2

Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 / NaI	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID, if applicable)	Actual Depth (ft bgs)
	Brown Silt	50 / 58%	SVP254889 1000	soil / sediment	0.5'
	Area Sampled 2'x2'x 1/8"			BKg: 43/5233 cpm	1.0'
					1.5'
					2.0'
					2.5'
					3.0'
					3.5'
					4.0'
					4.5'
					5.0'
					5.5'
	MS				6.0'
	8.3.22				6.5
					7.0'
					7.5'
					8.0'
					8.5'
					9.0'
					9.5'
					10.0'

Recorded By: [signature] 7-28-22
(Inspector) Sign/Date

QA Check By: MSlevin 8-3-22
Sign/Date

14

HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SVP255227
Company Name: Leidos	Drilling Subcontractor: Leidos	Logbook ID: FP- 1030 Sheet 1 of 2
Project: CWC Black Jack Park-Old Jamestown Rd	Property: CWC-512	Location: BJP-1

Name of Driller: Jared King		Station coordinates:
Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)	SS bowl(s)/trowel(s)/3" ID hand auger ☑ Yes ☐ No	E: 889342.11 N: 1085096.92
	Sediment Sampler/Plastic Sleeve? ☐ Yes ☑ No	Surface Elevation: 475.34
	Geoprobe 3" ID ☐ Yes ☑ No	
	Coring Equipment ☐ Yes ☑ No	Date Start: 7-28-22 Date Complete: 7-28-22
	Jackhammer ☐ Yes ☑ No	

Meter Information / Background	Meter Calibration Due	Depth Water Encountered: N/A
44-9 D - 38 cpm	12/27/22	Other Water Measurement(s): N/A
44-10 L - 3278 cpm	10/7/22	COC #: LE0728 2022-006ML
Calibration information maintained by RPM.		

No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	1	1	0	—	—
Borehole Disposition (depth and type of material used for backfill):	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
	—	—	N/A	N/A	—

Additional Notes: NA

Signature of Inspector: David W. Gaya

Approx North

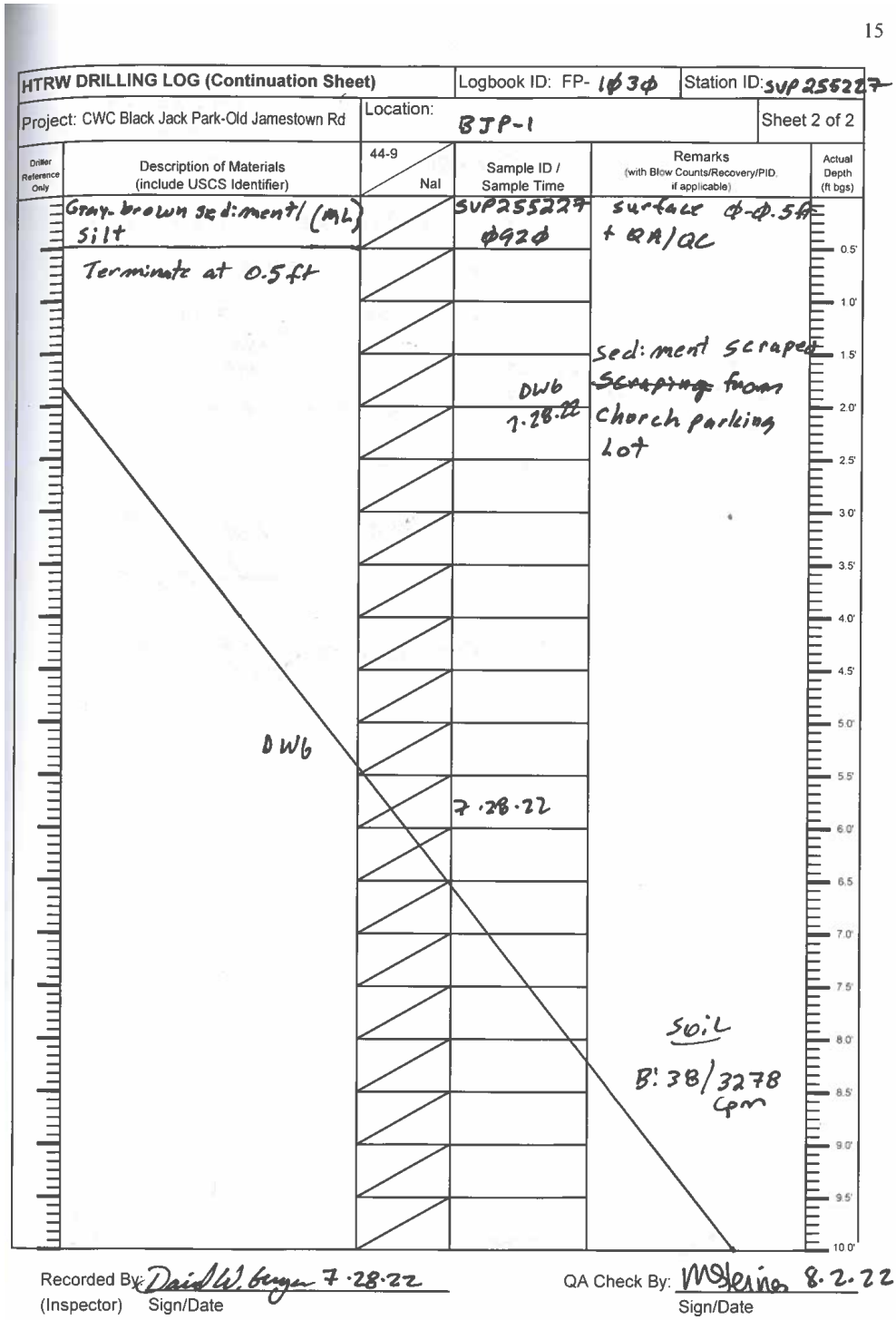
Scale: ☐ Rough Scale ☑ Actual Scale 0" 0.5" 1" 1 inch ≈ 359 feet

Location/Sketch: CWC Jana to River Flooding Section 5

Recorded By: David W. Gaya 7-28-22 Sign/Date

QA Check By: MSteina 8.2.22 Sign/Date

15


HTRW DRILLING LOG (Continuation Sheet)
Logbook ID: FP- 1ϕ3ϕ
Station ID: SUP255227
Project: CWC Black Jack Park-Old Jamestown Rd
Location: BJP-1
Sheet 2 of 2
Driller Reference Only
Description of Materials (include USCS Identifier)
44-9 / NaI
Sample ID / Sample Time
Remarks (with Blow Counts/Recovery/PID, if applicable)
Actual Depth (ft bgs)
Gray-brown sediment/ (ML) silt
SUP255227 ϕ92ϕ
surface ϕ-ϕ.5ft + QA/QC
Terminate at 0.5 ft
sediment scraped
Scrapings from
DW6 7.28.22
Church parking lot
DW6
7.28.22
soil
B: 3B/3278 qm
0.5'
1.0'
1.5'
2.0'
2.5'
3.0'
3.5'
4.0'
4.5'
5.0'
5.5'
6.0'
6.5'
7.0'
7.5'
8.0'
8.5'
9.0'
9.5'
10.0'
Recorded By: David W. Berger 7.28.22
(Inspector) Sign/Date
QA Check By: MSkerina 8.2.22
Sign/Date

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HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SUP255228	
Company Name: Leidos	Drilling Subcontractor: Leidos	Logbook ID: FP-1030	Sheet 1 of 2
Project: CWC Black Jack Park-Old Jamestown Rd	Property: CWC-512	Location: BJP-2	

Name of Driller: Jared King		Station coordinates:	
Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)	SS bowl(s)/trowel(s)/3" ID hand auger ☑ Yes ☐ No	E: 889389.32	N: 1084943.34
	Sediment Sampler/Plastic Sleeve? ☐ Yes ☑ No	Surface Elevation: 474.01	
	Geoprobe 3" ID ☐ Yes ☑ No	Date Start: 7.28.22	Date Complete: 7.28.22
	Coring Equipment ☐ Yes ☑ No		
	Jackhammer ☐ Yes ☑ No		
Meter Information / Background	Meter Calibration Due	Depth Water Encountered: N/A	
44-9 D - 38 cpm	12/27/22	Other Water Measurement(s): N/A	
44-10 L - 3278 cpm	10/7/22	COC #: LE07282022-06ML	
Calibration information maintained by RPM.			

No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	1	0	—	—	—
Borehole Disposition (depth and type of material used for backfill):	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
	—	—	N/A	N/A	—

Additional Notes: NA

Signature of Inspector: David W. Boyer

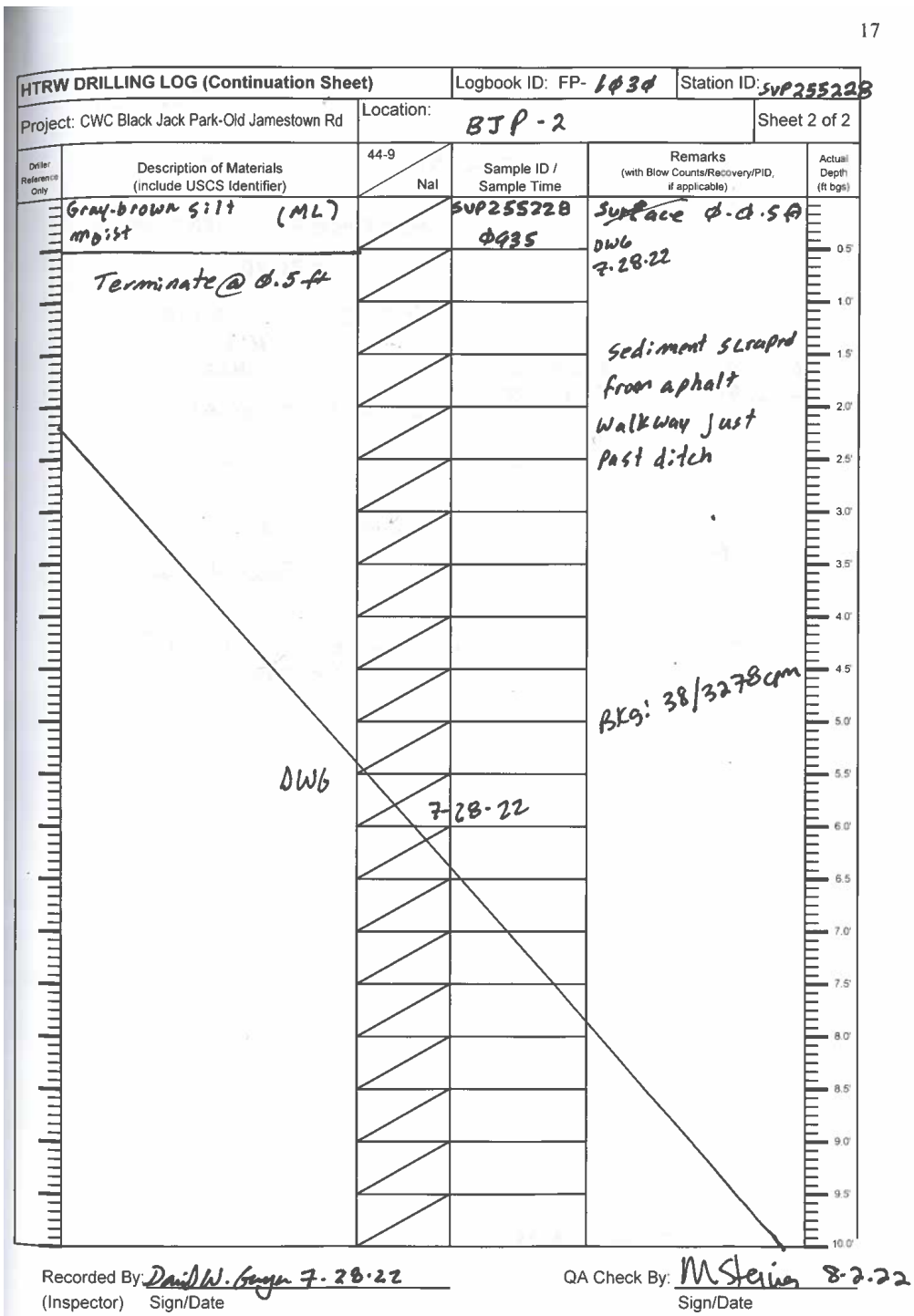
Approx North

Scale: ☐ Rough Scale ☑ Actual Scale 0" 0.5" 1" 1 inch ≈ 359 feet

Location/Sketch: CWC Santa to River Flooding Section 5

Recorded By: David W. Boyer 7.28.22 Sign/Date

QA Check By: MDeLeina 8.2.22 Sign/Date



HTRW DRILLING LOG (Continuation Sheet)

Logbook ID: FP- 1030

Station ID: SVP255228

Project: CWC Black Jack Park-Old Jamestown Rd

Location: BJP-2

Sheet 2 of 2

Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 NaI	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID, if applicable)	Actual Depth (ft bgs)
	Gray-brown silt (ML) moist		SVP255228 0935	Surface 0-0.5ft DW6 7.28.22	0.5'
	Terminate @ 0.5 ft				1.0'
				Sediment scraped from aphalt walkway just past ditch	1.5'
					2.0'
					2.5'
					3.0'
					3.5'
					4.0'
					4.5'
				BKG: 38/3278cpm	5.0'
	DW6				5.5'
			7-28-22		6.0'
					6.5'
					7.0'
					7.5'
					8.0'
					8.5'
					9.0'
					9.5'
					10.0'

Recorded By: David W. Geyer 7.28.22
(Inspector) Sign/Date

QA Check By: M Steiner 8.2.22
Sign/Date

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HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SVP255229	
Company Name: Leidos	Drilling Subcontractor: Leidos	Logbook ID: FP-1036	Sheet 1 of 2
Project: CWC Black Jack Park-Old Jamestown Rd	Property: CWC-512	Location: BJP-3	

Name of Driller: Jared King		Station coordinates:	
Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)	SS bowl(s)/trowel(s)/3" ID hand auger ☑ Yes ☐ No	E: 889064.87	N: 1034705.63
	Sediment Sampler/Plastic Sleeve? ☐ Yes ☑ No	Surface Elevation: 476.28	
	Geoprobe 3" ID ☐ Yes ☑ No		
	Coring Equipment ☐ Yes ☑ No	Date Start: 7-28-22	Date Complete: 7-28-22
	Jackhammer ☐ Yes ☑ No		
Meter Information / Background	Meter Calibration Due	Depth Water Encountered: N/A	
44-9 D - 38 cpm	12/27/22	Other Water Measurement(s): N/A	
44-10 L - 3270 cpm	10/7/22	COC #: LE07282022-06ML	
Calibration information maintained by RPM.			

No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	1	0	0	—	—
Borehole Disposition (depth and type of material used for backfill):	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
	—	—	N/A	N/A	—

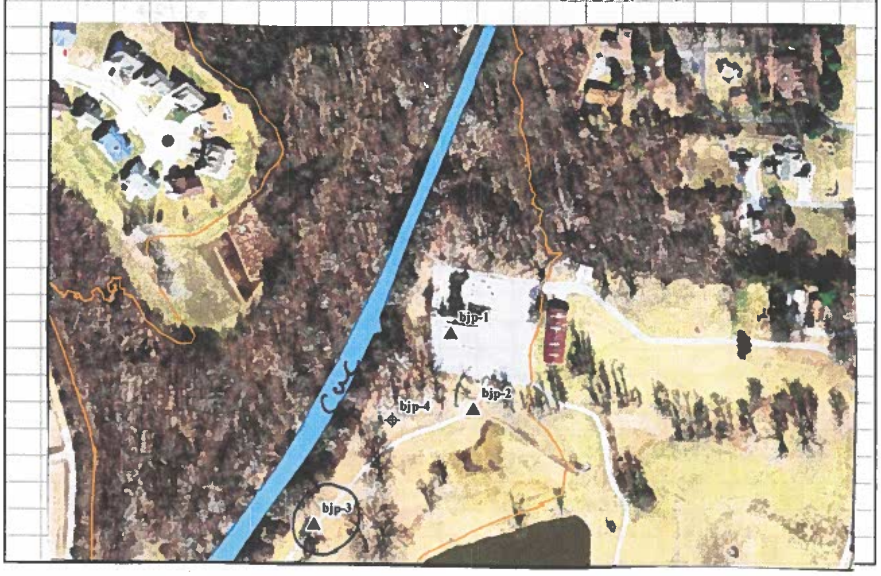
Additional Notes: NA

Signature of Inspector: David W. Berger

Approx North ⇧

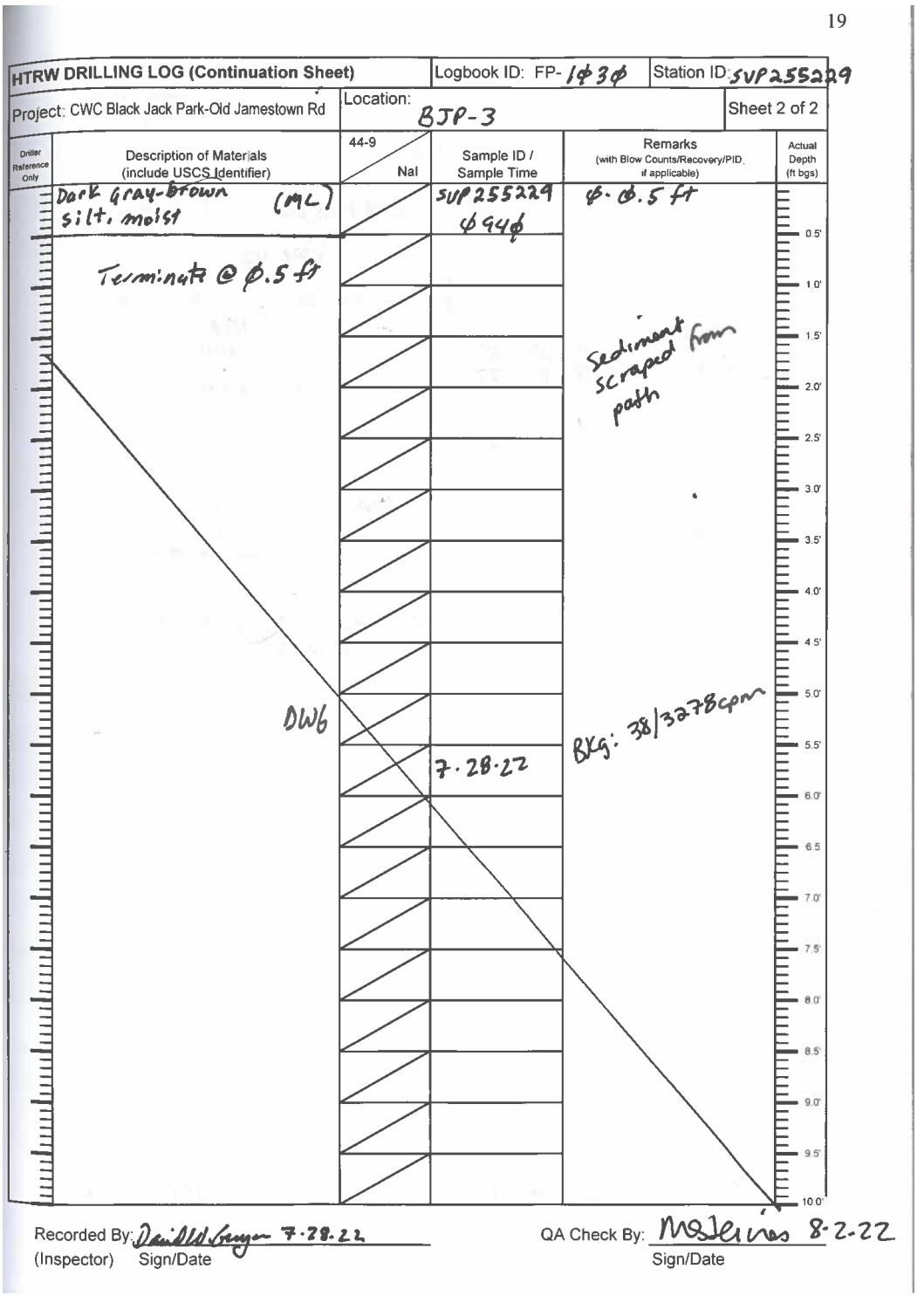
Scale: ☐ Rough Scale ☑ Actual Scale — 0" 0.5" 1" — 1 inch ≈ 359 feet

Location/Sketch: CWC Jana to River Flooding Section 5



Recorded By: David W. Berger 7-28-22 (Sign/Date)

QA Check By: MSlevin 8-2-22 (Sign/Date)



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HTRW DRILLING LOG (Continuation Sheet) | Logbook ID: FP-1φ3φ | Station ID: SVP255229

Project: CWC Black Jack Park-Old Jamestown Rd | Location: BJP-3 | Sheet 2 of 2

Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 / NaI	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID, if applicable)	Actual Depth (ft bgs)
	Dark gray-brown silt, moist (ML)		SVP255229 φ94φ	φ-0.5 ft	0.5'
	Terminate @ 0.5 ft				1.0'
				Sediment scraped from path	1.5'
					2.0'
					2.5'
					3.0'
					3.5'
					4.0'
					4.5'
	DW6			BKg: 38/3278cpm	5.0'
			7.28.22		5.5'
					6.0'
					6.5'
					7.0'
					7.5'
					8.0'
					8.5'
					9.0'
					9.5'
					10.0'

Recorded By: Daniel Sawyer 7.28.22
(Inspector) Sign/Date

QA Check By: MSteines 8-2-22
Sign/Date

20

HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SVP255230	
Company Name: Leidos	Drilling Subcontractor: Leidos	Logbook ID: FP-1030	Sheet 1 of 2
Project: CWC Black Jack Park-Old Jamestown Rd	Property: CWC-521	Location: BJP-7	

Name of Driller: Jared King		Station coordinates: E: 889722.82 N: 1086546.80	
Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)	SS bowl(s)/trowel(s)/3" ID hand auger ☑ Yes ☐ No		
	Sediment Sampler/Plastic Sleeve? ☐ Yes ☑ No	Surface Elevation: 474.42	
	Geoprobe 3" ID ☐ Yes ☑ No		
	Coring Equipment ☐ Yes ☑ No	Date Start: 7-28-22	Date Complete: 7-28-22
	Jackhammer ☐ Yes ☑ No		
Meter Information / Background	Meter Calibration Due	Depth Water Encountered: N/A	
44-9 D - 38 cpm	12/27/22	Other Water Measurement(s): N/A	
44-10 L - 327B cpm	10/7/22	COC #: LE0729022-03ML	
Calibration information maintained by RPM			

No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	1	0	0	—	—
Borehole Disposition (depth and type of material used for backfill):	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
	—	—	N/A	N/A	—

Additional Notes: NA

Signature of Inspector: [signature]

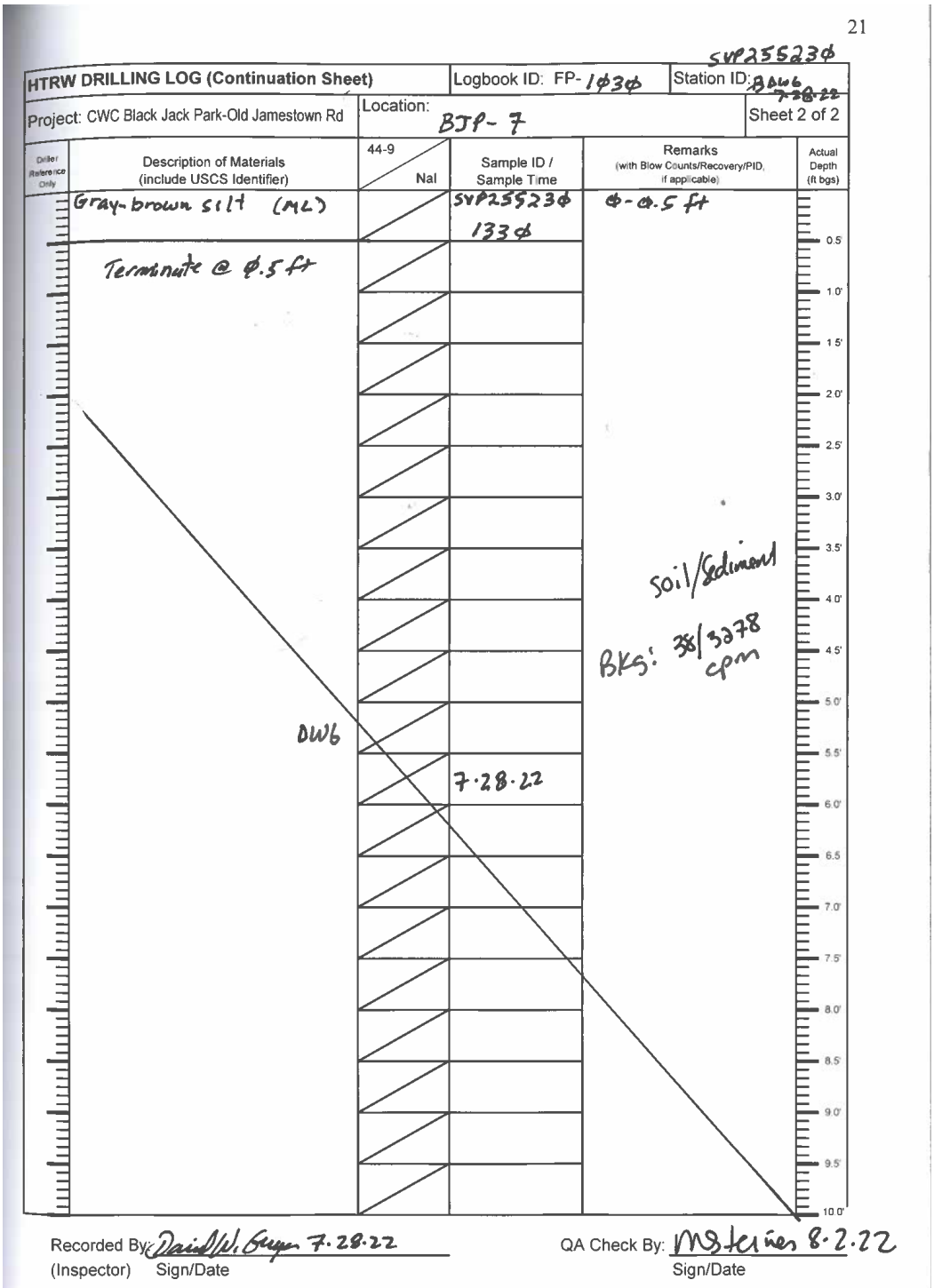
Approx North

Scale: 0" 0.5" 1"
☐ Rough Scale
☑ Actual Scale 1 inch ≈ 359 feet

Location/Sketch: CWC Jana to River Flooding Section 5

Recorded By: David W. Gray 7-28-22
Sign/Date

QA Check By: M. Stevens 8.2.22
Sign/Date



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SVP25523Φ

HTRW DRILLING LOG (Continuation Sheet) | Logbook ID: FP-1Φ3Φ | Station ID: ~~DW6 7-28-22~~

Project: CWC Black Jack Park-Old Jamestown Rd | Location: BJP-7 | Sheet 2 of 2

Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 NaI	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID, if applicable)	Actual Depth (ft bgs)
	Gray-brown silt (ML)		SVP25523Φ 1330	Φ-Φ.5 ft	0.5
	Terminate @ Φ.5 ft				1.0
					1.5
					2.0
					2.5
					3.0
				soil/Sediment	3.5
					4.0
				BKG: 38/3278 cpm	4.5
					5.0
	DW6				5.5
			7.28.22		6.0
					6.5
					7.0
					7.5
					8.0
					8.5
					9.0
					9.5
					10.0

Recorded By: David W. Gregg 7.28.22
(Inspector) Sign/Date

QA Check By: MStevens 8.2.22
Sign/Date

8

MS 8.2.22

HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SVP257IS1	
Company Name: Leidos	Drilling Subcontractor: Leidos	Logbook ID: FP- 0071	Sheet 1 of 2
Project: CWC Fox Manor Drive to Highway 367	Property: CWC-563	Location: FMD-1	

Name of Driller: Colton Dyer

Station coordinates: E: 894244.57 N: 1085893.38

Surface Elevation: 467.25

Date Start: 7-28-22 Date Complete: 7-28-22

Depth Water Encountered: N/A

Other Water Measurement(s): N/A

COC #: LE07282022-05ML

Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)		
	SS bowl(s)/trowel(s)/3" ID hand auger	X Yes ☐ No
	Sediment Sampler/Plastic Sleeve?	☐ Yes X No
	Geoprobe 3" ID	☐ Yes X No
	Coring Equipment	☐ Yes X No
	Jackhammer	☐ Yes X No

Meter Information / Background — Meter Calibration Due

44-9 D - 38 cpm — 12/27/22

44-10 L - 3278 cpm — 10/7/22

Calibration information maintained by RPM.

No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	1	Ø	Ø	—	—
Borehole Disposition (depth and type of material used for backfill):	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
	—	—	—	—	—

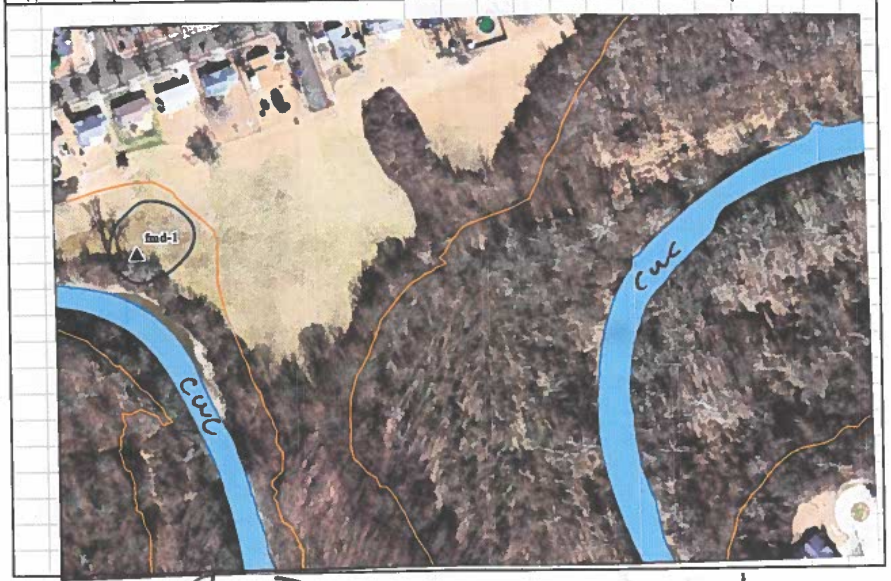
Additional Notes: Sediment sampling

Signature of Inspector:

Approx North

Scale: ☐ Rough Scale ☒ Actual Scale — 0" 0.5" 1" — 1 inch ≈ 279 feet

Location/Sketch: CWC Jana to River Flooding Section 7



Recorded By: Sign/Date 7-28-22

QA Check By: MSteiner 8.2.22 Sign/Date

9

SVP257151

HTRW DRILLING LOG (Continuation Sheet) | Logbook ID: FP-1071 | Station ID: ~~SVP257~~ BE 7-28-22

Project: CWC Fox Manor Drive to Highway 367 | Location: FMD-1 | Sheet 2 of 2

Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 / NaI	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID, if applicable)	Actual Depth (ft bgs)
	CLAYEY SILT (ML), V. soft, wet, brown, roots	43 / 3553	SVP257151 0905	@ surface (0.0-0.5')	0.5'
	-Terminate boring @ 0.5' BGS				1.0'
					1.5'
					2.0'
					2.5'
				Sediment	3.0'
					3.5'
				BKG: 38/3278cpm	4.0'
					4.5'
			BE 7-28-22		5.0'
					5.5'
					6.0'
					6.5'
					7.0'
					7.5'
					8.0'
					8.5'
					9.0'
					9.5'
					10.0'

Recorded By: (Inspector) Sign/Date 7-28-22

QA Check By: MSkerins 8.2.22 Sign/Date

10

HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SYP257162
Company Name: Leidos	Drilling Subcontractor: Leidos	Logbook ID: FP- 1671 Sheet 1 of 2
Project: CWC Fox Manor Drive to Highway 367	Property: CWC-572	Location: FMD-2

Name of Driller: Coltyn Dyer

Station coordinates: E: 896593.21 N: 1085891.64

Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)

SS bowl(s)/trowel(s)/3" ID hand auger	☒ Yes ☐ No
Sediment Sampler/Plastic Sleeve?	☐ Yes ☒ No
Geoprobe 3" ID	☐ Yes ☒ No
Coring Equipment	☐ Yes ☒ No
Jackhammer	☐ Yes ☒ No

Surface Elevation: 457.76

Date Start: 7-28-22 Date Complete: 7-28-22

Meter Information / Background — Meter Calibration Due

44-9 D - 38 cpm 12/27/22

44-10 L - 3279 cpm 10/7/22

Calibration information maintained by RPM.

Depth Water Encountered: N/A

Other Water Measurement(s): N/A

COC #: LE07282022-05ML

No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
		Ø	Ø	—	—

Borehole Disposition (depth and type of material used for backfill):	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
	—	—	—	—	—

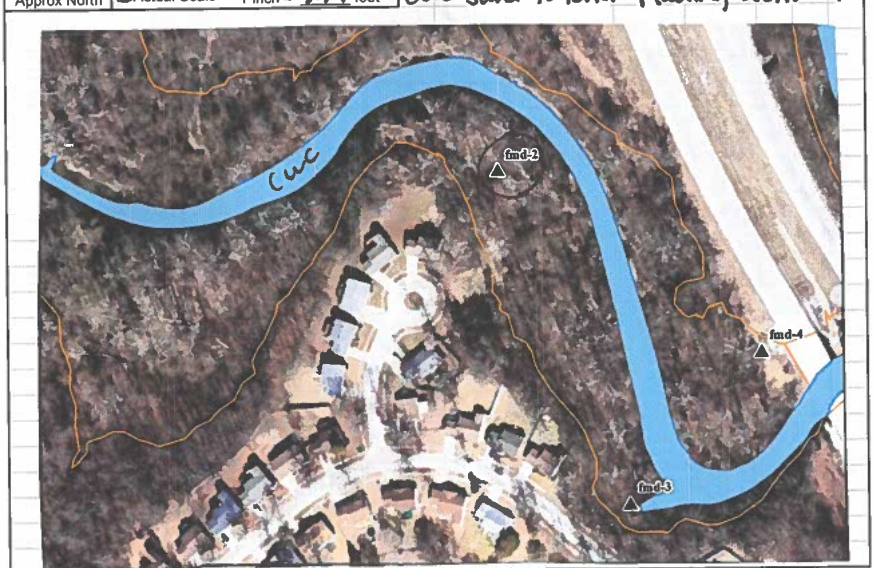
Additional Notes: Sediment sampling

Signature of Inspector:

Approx North

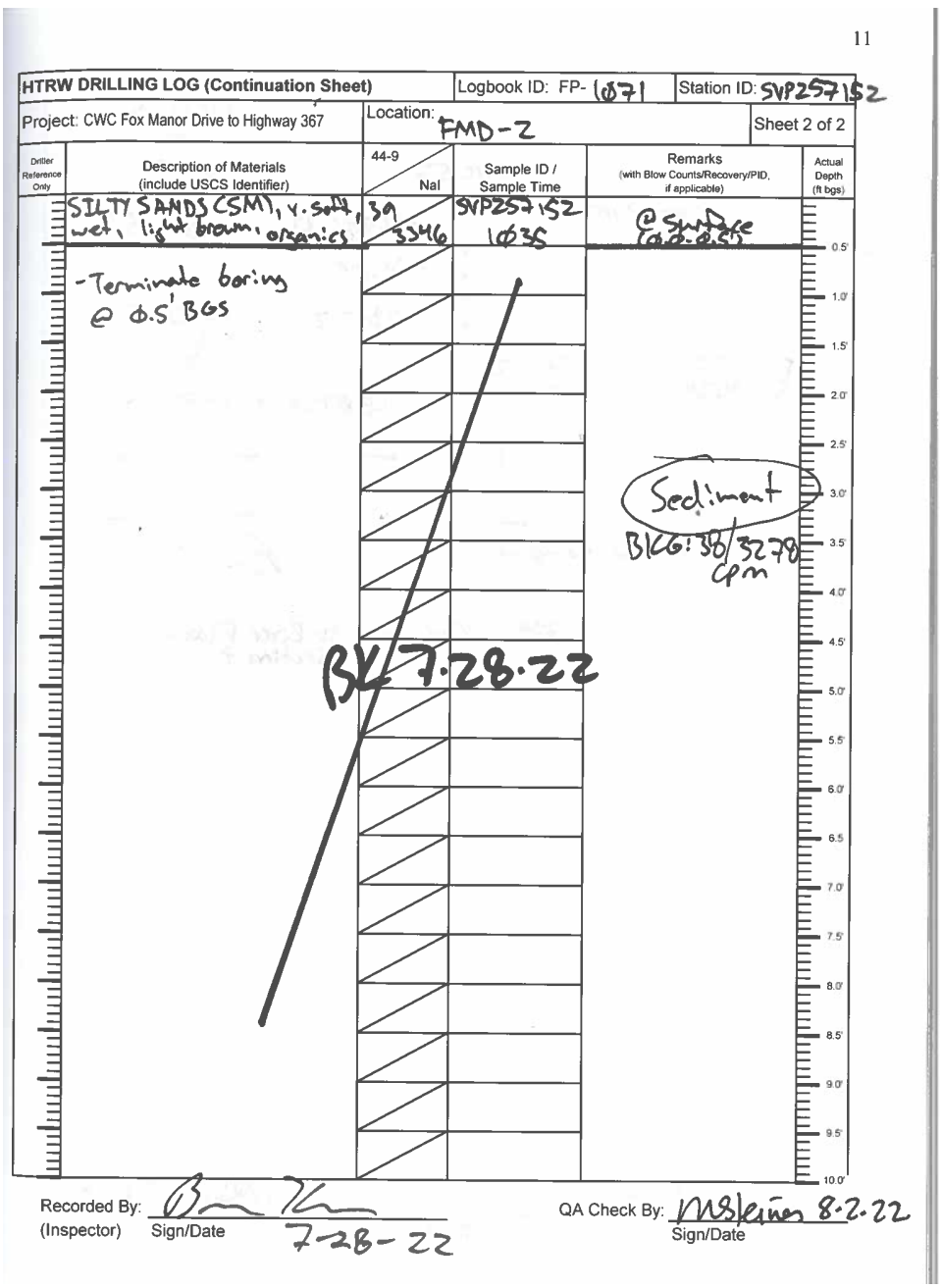
Scale: ☐ Rough Scale ☒ Actual Scale 0" 0.5" 1" 1 inch ≈ 279 feet

Location/Sketch: CWC Jana to River Flooding Section 7



Recorded By: Sign/Date 7-28-22

QA Check By: MSteiner 8.2.22 Sign/Date



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HTRW DRILLING LOG (Continuation Sheet) | Logbook ID: FP- (Ø71 | Station ID: SVP257152

Project: CWC Fox Manor Drive to Highway 367 | Location: FMD-2 | Sheet 2 of 2

Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 / NaI	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID, if applicable)	Actual Depth (ft bgs)
	SILTY SANDS (SM), v. soft, wet, light brown, organics	39 / 3346	SVP257152 1Ø35	@ Surface for 0-0.5'	0.5'
	-Terminate boring @ Ø.5' BGS				1.0'
					1.5'
					2.0'
					2.5'
				Sediment BKG: 38/3278 cpm	3.0'
					3.5'
					4.0'
	BK 7.28.22				4.5'
					5.0'
					5.5'
					6.0'
					6.5'
					7.0'
					7.5'
					8.0'
					8.5'
					9.0'
					9.5'
					10.0'

Recorded By: (Inspector) Sign/Date 7-28-22

QA Check By: MS Levins 8.2.22 Sign/Date

14

HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SVP25764 (7-28-22)
Company Name: Leidos	Drilling Subcontractor: Leidos	Logbook ID: FP-1071 — Sheet 1 of 2
Project: CWC Fox Manor Drive to Highway 367	Property: CWC.576	Location: FMD-4

Name of Driller: Coltyn Dyer	Station coordinates: E: 897029.95 N: 1085585.17
Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment): SS bowl(s)/trowel(s)/3" ID hand auger: ☑ Yes ☐ No; Sediment Sampler/Plastic Sleeve: ☐ Yes ☑ No; Geoprobe 3" ID: ☐ Yes ☑ No; Coring Equipment: ☐ Yes ☑ No; Jackhammer: ☐ Yes ☑ No	Surface Elevation: 455.21
	Date Start: 7-28-22 — Date Complete: 7-28-22
Meter Information / Background — Meter Calibration Due	Depth Water Encountered: N/A
44-9 F - 27 cpm — 4/7/23	Other Water Measurement(s): N/A
44-10 S - 4624 cpm — 2/10/23	COC #: LE07282022-05 ML
Calibration information maintained by RPM.	

No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	\	Ø	Ø	—	—
Borehole Disposition (depth and type of material used for backfill):	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
	—	—	—	—	—

Additional Notes: Sediment sampling

Signature of Inspector:

Approx North

Scale: ☐ Rough Scale ☑ Actual Scale — 0" 0.5" 1" — 1 inch ≈ 279 feet

Location/Sketch: CWC Jana to River Flooding Section 7

Recorded By: Sign/Date 7-28-22

QA Check By: MGlenn 8.2.22 Sign/Date

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HTRW DRILLING LOG (Continuation Sheet) | Logbook ID: FP- 1071 | Station ID: SVP257154

Project: CWC Fox Manor Drive to Highway 367 | Location: FMD-4 | Sheet 2 of 2

Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 / NaI	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID, if applicable)	Actual Depth (ft bgs)
	SILTY SANDS (SM), soft, brown, organics, roots	48 / 4701	SVP257154 1300	@ surface (0.0-0.5')	
	-Terminated boring @ 0.5' BGS				
		BKG 7.28.22		Sediment BKG: 27/4624 cpm	

0.5' 1.0' 1.5' 2.0' 2.5' 3.0' 3.5' 4.0' 4.5' 5.0' 5.5' 6.0' 6.5' 7.0' 7.5' 8.0' 8.5' 9.0' 9.5' 10.0'

Recorded By: (Inspector) Sign/Date 7-28-22

QA Check By: MStevens 8.2.22 Sign/Date

42

HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SUP25B003	
Company Name: Leidos	Drilling Subcontractor: Leidos	Logbook ID: FP-1062	Sheet 1 of 2
Project: CWC Old Jamestown Rd-Fox Manor Dr	Property: CWC-538	Location: OJR-3	

Name of Driller: M. Coppotelli, N. Cassetti		Station coordinates: E: 893023.40 N: 1085378.72
Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)	SS bowl(s)/trowel(s)/3" ID hand auger ☒ Yes ☐ No	
	Sediment Sampler/Plastic Sleeve? ☐ Yes ☒ No	Surface Elevation: 468.26
	Geoprobe 3" ID ☐ Yes ☒ No	
	Coring Equipment ☐ Yes ☒ No	Date Start: 7.28.22 / Date Complete: 7.28.22
	Jackhammer ☐ Yes ☒ No	
Meter Information / Background	Meter Calibration Due	Depth Water Encountered: —
44-9 D - 38 cpm	12/27/22	Other Water Measurement(s): —
44-10 L - 3278 cpm	10/7/22	COC #: LE072822022-09ML
Calibration information maintained by RPM.		

No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	1	—	—	—	—
Borehole Disposition (depth and type of material used for backfill):	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
	—	—	—	—	—

Additional Notes: MAN HOLE COVER @ PUMP HOUSE

Signature of Inspector: Mark Coppotelli

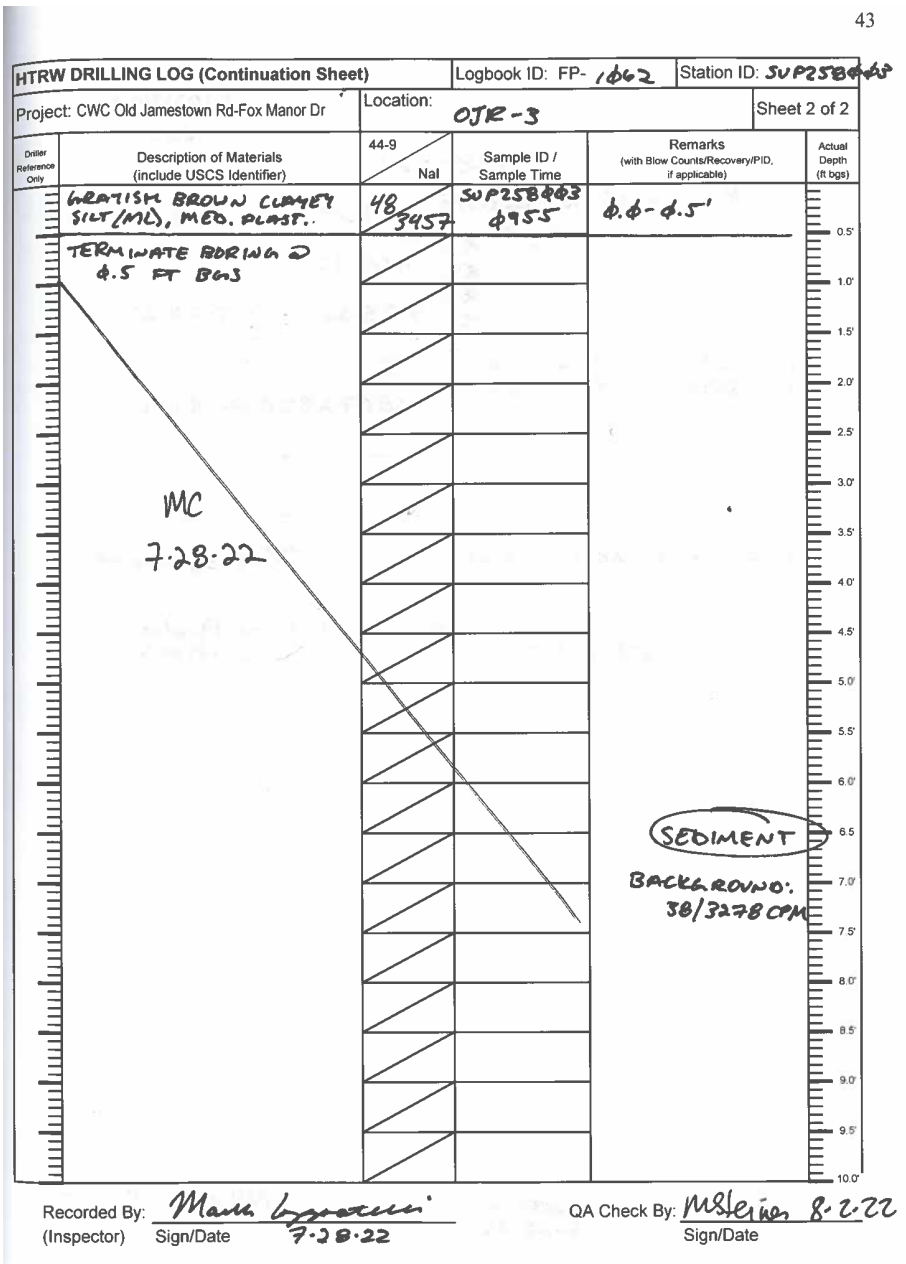
Approx North

Scale: 0" 0.5" 1"
☐ Rough Scale
☒ Actual Scale
1 inch ≈ ~~120~~ 359 ft feet

Location/Sketch:
8.2.22 MS CWC Janato River Flooding Section 6

Recorded By: Mark Coppotelli 7.28.22
Sign/Date

QA Check By: MSJames 8.2.22
Sign/Date



HTRW DRILLING LOG (Continuation Sheet) | Logbook ID: FP- 1062 | Station ID: SUP25BOOO3

Project: CWC Old Jamestown Rd-Fox Manor Dr | Location: OJR-3 | Sheet 2 of 2

Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 / NaI	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID, if applicable)	Actual Depth (ft bgs)
	BRITISH BROWN CLAYEY SILT (ML), MED. PLAST.	48 / 3457	SUP25BOOO3 0955	0.0-0.5'	0.5'
	TERMINATE BORING @ 0.5 FT BGS				1.0'
					1.5'
					2.0'
					2.5'
					3.0'
					3.5'
					4.0'
					4.5'
					5.0'
					5.5'
					6.0'
				SEDIMENT	6.5'
				BACKGROUND: 38/3278 CPM	7.0'
					7.5'
					8.0'
					8.5'
					9.0'
					9.5'
					10.0'

MC 7.28.22

Recorded By: (Inspector) Mark Lyons Sign/Date 7.28.22

QA Check By: MSlevin 8.2.22 Sign/Date

44

HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SUP25BΦΦ4	
Company Name: Leidos	Drilling Subcontractor: Leidos	Logbook ID: FP-1Φ62	Sheet 1 of 2
Project: CWC Old Jamestown Rd-Fox Manor Dr	Property: CWC-524	Location: OJR-6	

Name of Driller: M. Cappatelli, N. Casserotti

Station coordinates: E: 89Φ792.92 N: 1Φ859Φ5.53

Surface Elevation: 469.Φ7

Date Start: 7.28.22 Date Complete: 7.28.22

Depth Water Encountered: —

Other Water Measurement(s): —

COC #: LEΦ7282Φ22-ΦΦ9ML

Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)	
SS bowl(s)/trowel(s)/3" ID hand auger	☒ Yes ☐ No
Sediment Sampler/Plastic Sleeve?	☐ Yes ☒ No
Geoprobe 3" ID	☐ Yes ☒ No
Coring Equipment	☐ Yes ☒ No
Jackhammer	☐ Yes ☒ No

Meter Information / Background — Meter Calibration Due

44-9 D - 38 cpm 12/27/22

44-10 L - 3278 cpm 10/7/22

Calibration information maintained by RPM.

No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	1	—	—	—	—

Borehole Disposition (depth and type of material used for backfill):	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
	—	—	—	—	—

Additional Notes: OJR HORSE FARM & GATE

Signature of Inspector: Mark Cappatelli

Approx North ⇧

Scale: ☐ Rough Scale ☒ Actual Scale 0" 0.5" 1" 1 inch ≈ ~~120~~ 359 feet

MJ 8.2.22

Location/Sketch: CWC Jana to River Flooding Section 6

Recorded By: Mark Cappatelli Sign/Date 7.28.22

QA Check By: MSteines 8.2.22 Sign/Date

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HTRW DRILLING LOG (Continuation Sheet)		Logbook ID: FP-1062		Station ID: SUP25B004	
Project: CWC Old Jamestown Rd-Fox Manor Dr		Location: OJR-6			Sheet 2 of 2
Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 / NaI	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID, if applicable)	Actual Depth (ft bgs)
	BROWN CLAYEY SILT (ML), MIXED SANDS, MED. PLAST	33 / 3357	SUP25B004 1020	0.0-0.5'	0.5'
	TERMINATE BORING @ 0.5 FT BGS				1.0'
					1.5'
					2.0'
					2.5'
	MC 7.28.22				3.0'
					3.5'
					4.0'
					4.5'
					5.0'
					5.5'
					6.0'
				SEDIMENT	6.5
				BACKGROUND: 38/3278 CPM	7.0'
					7.5'
					8.0'
					8.5'
					9.0'
					9.5'
					10.0'

Recorded By: (Inspector) [signature] 7.28.22 Sign/Date

QA Check By: [signature] 8.2.22 Sign/Date

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HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SUP258005	
Company Name: Leidos	Drilling Subcontractor: Leidos	Logbook ID: FP-1062	Sheet 1 of 2
Project: CWC Old Jamestown Rd-Fox Manor Dr	Property: CWC-544	Location: OJR-8	

Name of Driller: M. Coppotelli; N. Casserotti		Station coordinates:	
Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)	SS bowl(s)/trowel(s)/3" ID hand auger ☒ Yes ☐ No	E: 891304.57	N: 1086686.89
	Sediment Sampler/Plastic Sleeve? ☐ Yes ☒ No	Surface Elevation: 467.21	
	Geoprobe 3" ID ☐ Yes ☒ No		
	Coring Equipment ☐ Yes ☒ No	Date Start: 7-28-22	Date Complete: 7-28-22
	Jackhammer ☐ Yes ☒ No		

Meter Information / Background	Meter Calibration Due	
44-9 D - 38 cpm	12 / 27 / 22	Depth Water Encountered: ———
44-10 L - 3278 cpm	10 / 7 / 22	Other Water Measurement(s): ———
Calibration information maintained by RPM.		COC #: LE07292022-04MC

	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
No. of Samples of Each Type	1	—	—	—	—

	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
Borehole Disposition (depth and type of material used for backfill):	—	—	—	—	—

Additional Notes: DRAINAGE ON NE SIDE OF OJ[?]F BRIDGE BY MALL

Signature of Inspector: Mark Coppotelli

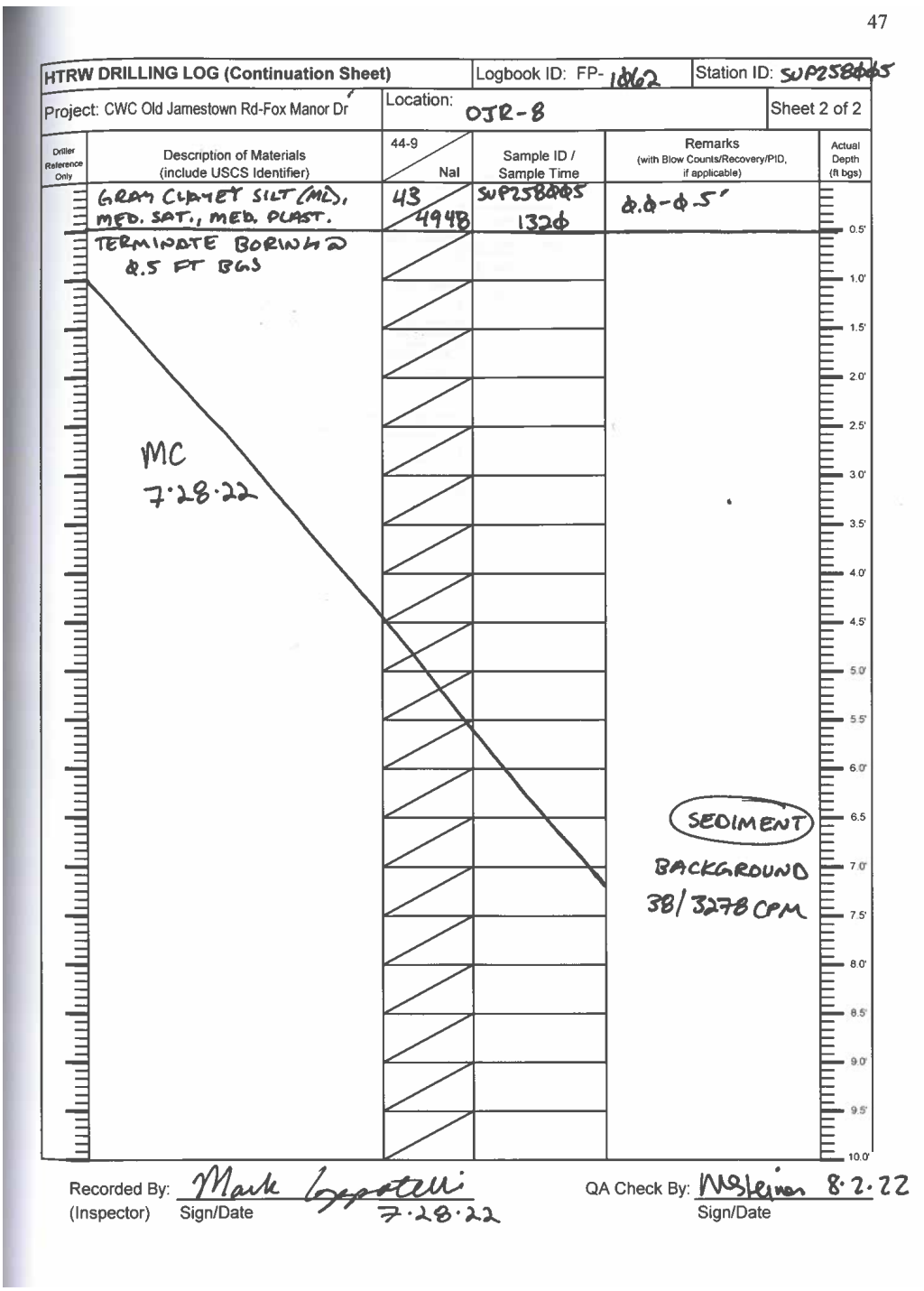
Approx North ⇧

Scale: 0" 0.5" 1"
☐ Rough Scale
☒ Actual Scale 1 inch ≈ ~~127~~ feet
MB 8-2-22 359 feet

Location/Sketch: CWC Jana to River Flooding Section 6

Recorded By: Mark Coppotelli 7-28-22
Sign/Date

QA Check By: MBleiner 8-2-22
Sign/Date



HTRW DRILLING LOG (Continuation Sheet) | Logbook ID: FP-1062 | Station ID: SWP258005

Project: CWC Old Jamestown Rd-Fox Manor Dr | Location: OJR-8 | Sheet 2 of 2

Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 / NaI	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID, if applicable)	Actual Depth (ft bgs)
	GRAY CLAYEY SILT (ML), MED. SAT., MED. PLAST.	43 / 4948	SWP258005 1320	0.0-0.5'	0.5'
	TERMINATE BORING @ 0.5 FT BGS				1.0'
					1.5'
					2.0'
					2.5'
					3.0'
					3.5'
					4.0'
					4.5'
					5.0'
					5.5'
					6.0'
				SEDIMENT BACKGROUND 38/3278 CPM	6.5
					7.0'
					7.5'
					8.0'
					8.5'
					9.0'
					9.5'
					10.0'

MC 7.28.22

Recorded By: Mark Lopatelli 7.28.22 (Inspector) Sign/Date

QA Check By: MSteiner 8.2.22 Sign/Date

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HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SVP259@78	
Company Name: Leidos	Drilling Subcontractor: Leidos	Logbook ID: FP- 1075	Sheet 1 of 3
Project: CWC: New Halls Ferry to Westminster	Property: NHF Road outer edge	Location: NHF-1	

Name of Driller: R. Robinson

Station coordinates: E: 875504.93 N: 1087648.86

Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)	
SS bowl(s)/trowel(s)/3" ID hand auger	X Yes ☐ No
Sediment Sampler/Plastic Sleeve?	☐ Yes X No
Geoprobe 3" ID	☐ Yes X No
Coring Equipment	☐ Yes X No
Jackhammer	☐ Yes X No

Surface Elevation: 490.13

Date Start: 7.28.22 Date Complete: 7.28.22

Depth Water Encountered: —

Other Water Measurement(s): —

COC #: LE07282022-04 ML 8.4.22

Meter Information / Background — Meter Calibration Due

44-9 D - 38 cpm 12/27/22

44-10 L - 3278 cpm 3/24/23

Calibration information maintained by RPM.

No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	1	—	—	—	—

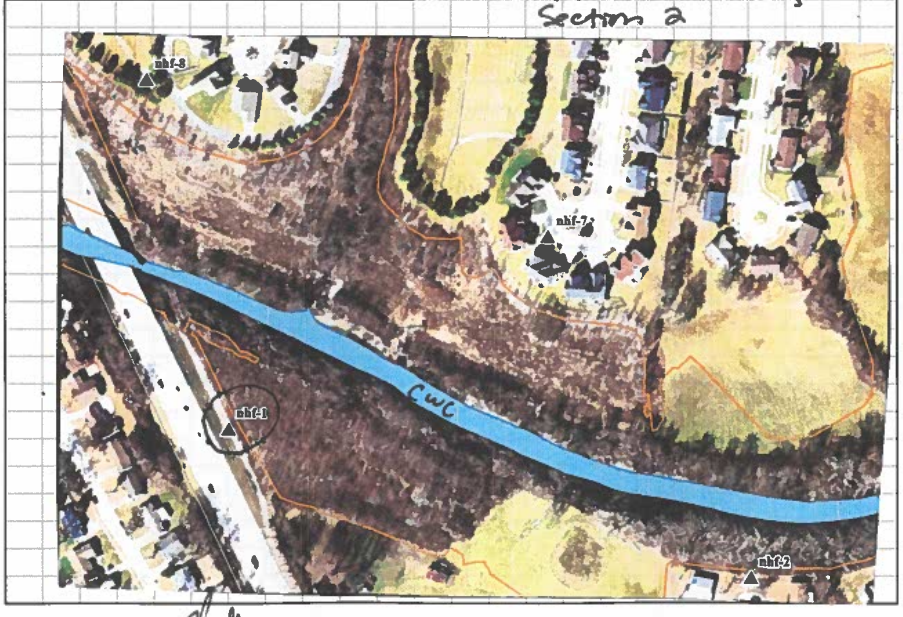
Borehole Disposition (depth and type of material used for backfill):	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
	—	—	—	—	—

Additional Notes: NA

Signature of Inspector:

Approx North ⇧ Scale: ☐ Rough Scale ☑ Actual Scale 0" 0.5" 1" 1 inch ≈ 359 feet

Location/Sketch: Cwc Jana to River Flooding Section 2



Recorded By: 7.28.22 (Sign/Date)

QA Check By: MSlevin 8.4.22 (Sign/Date)

FUSRAP HTRW Drilling Log Template - 02-2020

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HTRW DRILLING LOG (Continuation Sheet) | Logbook ID: FP-1075 | Station ID: SVPZ59078

Project: CWC: New Halls Ferry to Westminster | Location: NHF-1 | Sheet 2 of 3

Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 / NaI	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID, if applicable)	Actual Depth (ft bgs)
	Gray clayey silt, sands, low plast. organics (ML)	48 / 3619	SVPZ59078 0804	0.0-0.5ft	0.5'
	Terminate @0.5ft				1.0'
					1.5'
					2.0'
					2.5'
					3.0'
					3.5'
					4.0'
			7.28.22		4.5'
					5.0'
					5.5'
					6.0'
					6.5'
				7.28.22 bkgd: 38/5278 Gamma	7.0'
					7.5'
				So.1	8.0'
					8.5'
					9.0'
					9.5'
					10.0'

Recorded By: 7.28.22
(Inspector) Sign/Date

QA Check By: 8.4.22
Sign/Date

FUSRAP HTRW Drilling Log - 02-2020 Template

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HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SVP2590890
Company Name: Leidos	Drilling Subcontractor: Leidos	Logbook ID: FP- 1075 Sheet 1 of 3
Project: CWC: New Halls Ferry to Westminster	Property: CwC 434	Location: NHF2

Name of Driller: R. Robinson

Station coordinates: E: 876559.31 N: 1087366.60

Surface Elevation: 494.57

Date Start: 7.28.22 Date Complete: 7.28.22

Depth Water Encountered: —

Other Water Measurement(s): —

COC #: LE0728220022-0411L

Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)

SS bowl(s)/trowel(s)/3" ID hand auger	☒ Yes ☐ No
Sediment Sampler/Plastic Sleeve?	☐ Yes ☒ No
Geoprobe 3" ID	☐ Yes ☒ No
Coring Equipment	☐ Yes ☒ No
Jackhammer	☐ Yes ☒ No

Meter Information / Background — Meter Calibration Due

44-9 D - 38 cpm — 12 / 27 / 22

44-10 L - 3278 cpm — 3 / 24 / 23

Calibration information maintained by RPM.

No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	1	—	—	—	—

Borehole Disposition (depth and type of material used for backfill):	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
	—	—	—	—	—

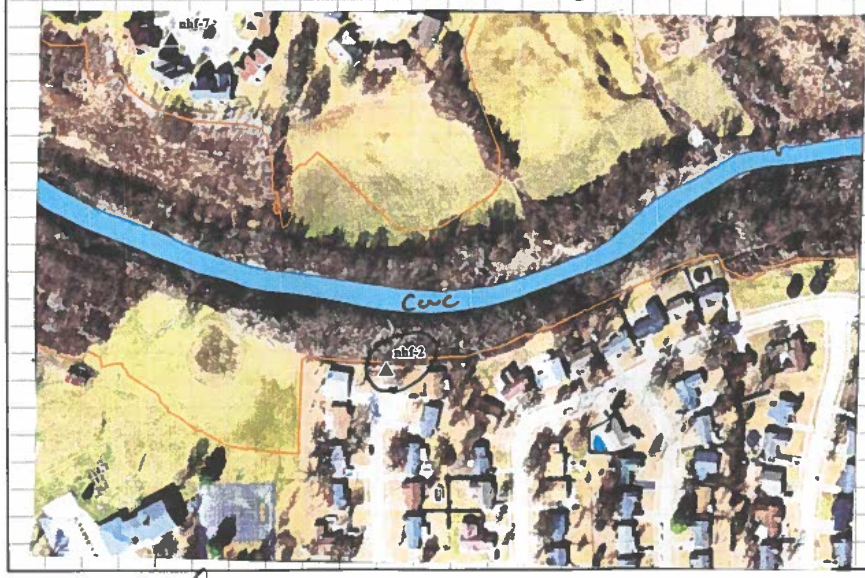
Additional Notes: NA

Signature of Inspector:

Approx North

Scale: ☐ Rough Scale ☒ Actual Scale — 0" 0.5" 1" — 1 inch ≈ 359 feet

Location/Sketch: CwC Jana to River Flooding Section 2



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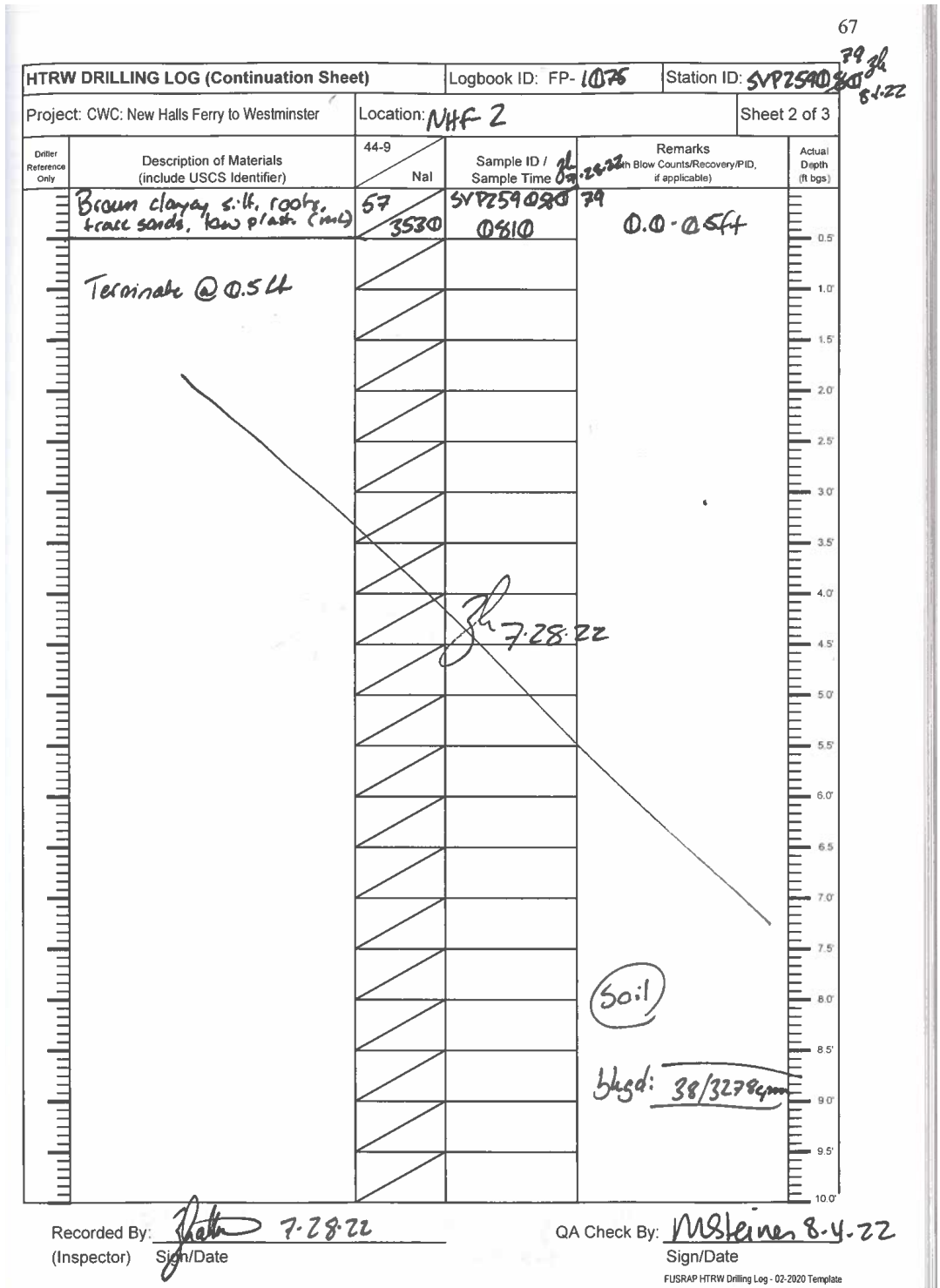
QA Check By: [signature] 8-4-22 (Sign/Date)

FUSRAP HTRW Drilling Log Template - 02-2020



67

79 JL 8.1.22

HTRW DRILLING LOG (Continuation Sheet) | Logbook ID: FP- 1076 | Station ID: SVP259080 80

Project: CWC: New Halls Ferry to Westminster | Location: NHF 2 | Sheet 2 of 3

Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 / NaI	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID, if applicable)	Actual Depth (ft bgs)
	Brown clayey s.lt, roots, trace sands, low plast. (ML)	57 / 3530	SVP259080 0810	79 0.0-0.5ft	0.5'
	Terminate @ 0.5 ft				1.0'
			JL 7.28.22		1.5'
					2.0'
					2.5'
					3.0'
					3.5'
					4.0'
					4.5'
					5.0'
					5.5'
					6.0'
					6.5'
					7.0'
					7.5'
				Soil	8.0'
				Wgd: 38/3278gm	8.5'
					9.0'
					9.5'
					10.0'

Recorded By: JL 7.28.22
(Inspector) Sign/Date

QA Check By: MSteiner 8.4.22
Sign/Date

FUSRAP HTRW Drilling Log - 02-2020 Template

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HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SVP259080	
Company Name: Leidos	Drilling Subcontractor: Leidos	Logbook ID: FP- 1075	Sheet 1 of 3
Project: CWC: New Halls Ferry to Westminster	Property: CWC 447	Location: 3 NHF-3	

Name of Driller: R. Robinson		Station coordinates:	
Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)	SS bowl(s)/trowel(s)/3" ID hand auger: X Yes ☐ No	E: 878336.24	N: 1086904.00
	Sediment Sampler/Plastic Sleeve? ☐ Yes X No	Surface Elevation: 487.50	
	Geoprobe 3" ID ☐ Yes X No		
	Coring Equipment ☐ Yes X No	Date Start: 7.28.22	Date Complete: 7.28.22
	Jackhammer ☐ Yes X No		

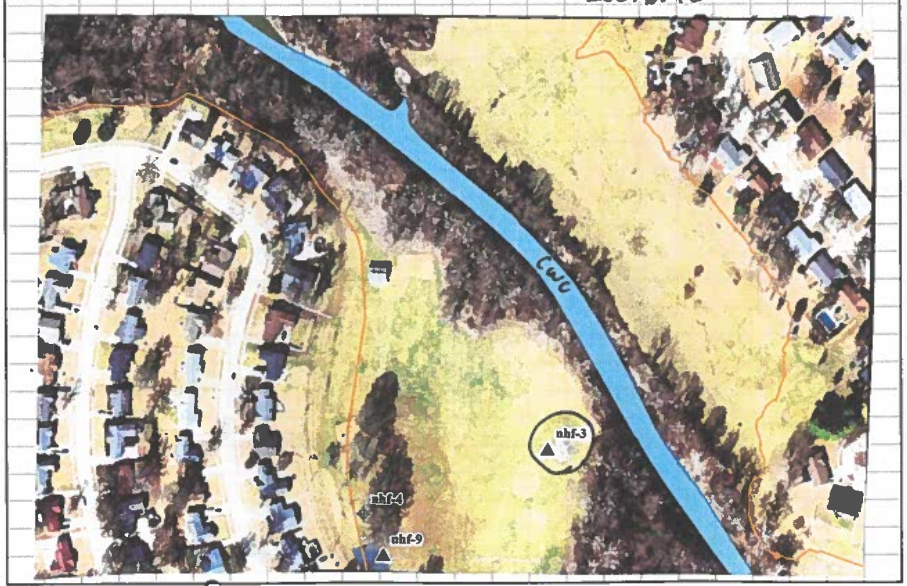
Meter Information / Background		Meter Calibration Due	Depth Water Encountered: —		
44-9 D - 38 cpm		12 / 27 / 22	Other Water Measurement(s): —		
44-10 L - 3278 cpm		8 / 24 / 23	COC #: LE07282022-04ML		
Calibration information maintained by RPM.					
No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	1	—	—	—	—
Borehole Disposition (depth and type of material used for backfill):	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
	—	—	—	—	—

Additional Notes: NA

Signature of Inspector: [signature]

Approx North ⇧ Scale: ☐ Rough Scale ☒ Actual Scale 0" 0.5" 1" 1 inch ≈ 359 feet

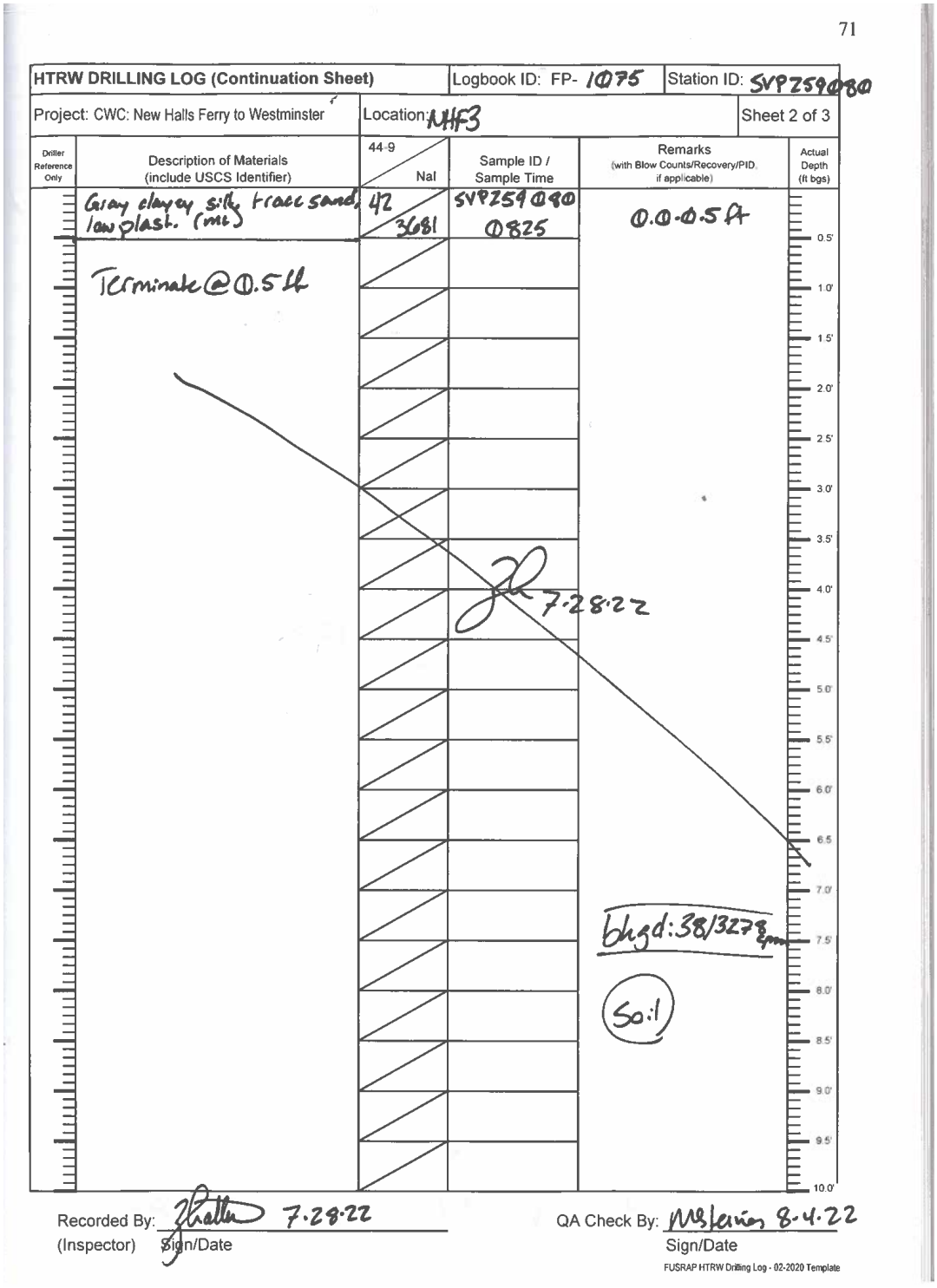
Location/Sketch: CWC Jana to River Flooding Section 2



Recorded By: [signature] 7.28.22 Sign/Date

QA Check By: [signature] 8.4.22 Sign/Date

FUSRAP HTRW Drilling Log Template - 02-2020



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HTRW DRILLING LOG (Continuation Sheet) | Logbook ID: FP- 1075 | Station ID: SVPZ59@80

Project: CWC: New Halls Ferry to Westminster | Location: NHF3 | Sheet 2 of 3

Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 / NaI	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID, if applicable)	Actual Depth (ft bgs)
	Gray clayey silt, trace sand, low plast. (ML)	42 / 3681	SVPZ59@80 0825	0.0-0.5 ft	0.5'
	Terminate @ 0.5 ft				1.0'
					1.5'
					2.0'
					2.5'
					3.0'
					3.5'
				7.28.22	4.0'
					4.5'
					5.0'
					5.5'
					6.0'
					6.5'
					7.0'
				bkgd: 38/3278 cpm	7.5'
				Soil	8.0'
					8.5'
					9.0'
					9.5'
					10.0'

Recorded By: 7.28.22
(Inspector) Sign/Date

QA Check By: 8.4.22
Sign/Date

FUSRAP HTRW Drilling Log - 02-2020 Template

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HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SVP259081	
Company Name: Leidos	Drilling Subcontractor: Leidos	Logbook ID: FP-1075	Sheet 1 of 3
Project: CWC: New Halls Ferry to Westminster	Property: Jost Estates Drive	Location: 7' NHF-7	

Name of Driller: R. Robinson		Station coordinates: NB 8-4-22 E: 876143.33 N: 1088044.09
Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)	SS bowl(s)/trowel(s)/3" ID hand auger ☒ Yes ☐ No	
	Sediment Sampler/Plastic Sleeve? ☐ Yes ☒ No	Surface Elevation: 504.91
	Geoprobe 3" ID ☐ Yes ☒ No	
	Coring Equipment ☐ Yes ☒ No	Date Start: 7-28-22 / Date Complete: 7-28-22
	Jackhammer ☐ Yes ☒ No	

Meter Information / Background	Meter Calibration Due	
		Depth Water Encountered: —
44-9 D - 38 cpm	12 / 27 / 22	Other Water Measurement(s): —
44-10 L - 3278 cpm	3 / 24 / 23	COC #: LE07282022-04ML
Calibration information maintained by RPM.		

No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	1	—	—	—	—

Borehole Disposition (depth and type of material used for backfill):	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
	—	—	—	—	—

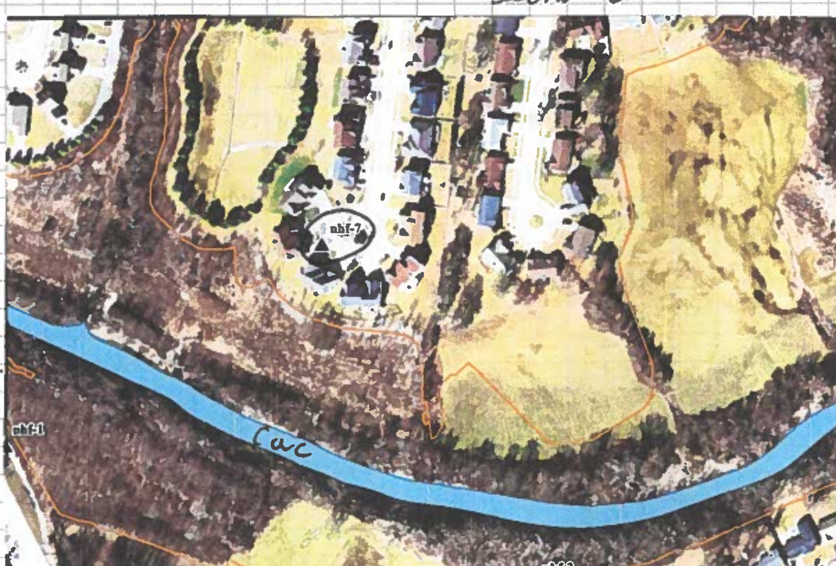
Additional Notes: NA

Signature of Inspector: [signature]

Approx North

Scale: 0" 0.5" 1"
☐ Rough Scale
☒ Actual Scale 1 inch ≈ 359 feet

Location/Sketch: cwc Sava to River Flooding Section 2



Recorded By: [signature] 7-28-22
Sign/Date

QA Check By: [signature] 8-4-22
Sign/Date

FUSRAP HTRW Drilling Log Template - 02-2020

75

HTRW DRILLING LOG (Continuation Sheet) | Logbook ID: FP-1075 | Station ID: SVP259081

Project: CWC: New Halls Ferry to Westminster | Location: NHF-7 | Sheet 2 of 3

Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 / Nal	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID if applicable)	Actual Depth (ft bgs)
	Sands & fines, trace gravel (SM)	39 / 3529	SVP259081 0940	0.0-0.5ft	0.5'
	Terminate @ 0.5ft				1.0'
					1.5'
					2.0'
					2.5'
					3.0'
				7.28.22	3.5'
					4.0'
					4.5'
					5.0'
					5.5'
					6.0'
					6.5
				bkgd: 38/3276ppm	7.0'
				7.28.22	7.5'
				bkgd.	8.0'
				Soil	8.5'
					9.0'
					9.5'
					10.0'

Recorded By: _____ 7.28.22
(Inspector) Sign/Date

QA Check By: _____ 8.4.22
Sign/Date

FUSRAP HTRW Drilling Log - 02-2020 Template

78

HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SVP259@82
Company Name: Leidos	Drilling Subcontractor: Leidos	Logbook ID: FP-1075 Sheet 1 of 3
Project: CWC: New Halls Ferry to Westminster	Property: CWC 428	Location: S NHF-8 MS 8-4-22

Name of Driller: R. Robertson

Station coordinates: E: 875334.04 N: 1048347.45

Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)		
	SS bowl(s)/trowel(s)/3" ID hand auger	X Yes ☐ No
	Sediment Sampler/Plastic Sleeve?	☐ Yes X No
	Geoprobe 3" ID	☐ Yes X No
	Coring Equipment	☐ Yes X No
	Jackhammer	☐ Yes X No

Surface Elevation: 495.46

Date Start: 7.28.22 Date Complete: 7.28.22

Meter Information / Background — Meter Calibration Due

44-9 D - 38 cpm 12 / 27 / 22

44-10 L - 3274 cpm 3 / 24 / 23

Calibration information maintained by RPM.

Depth Water Encountered: —

Other Water Measurement(s): —

COC #: LE07282022-04ML

No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	1	—	—	—	—

Borehole Disposition (depth and type of material used for backfill):	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
	-	-	-	-	-

Additional Notes: NA

Signature of Inspector:

Approx North

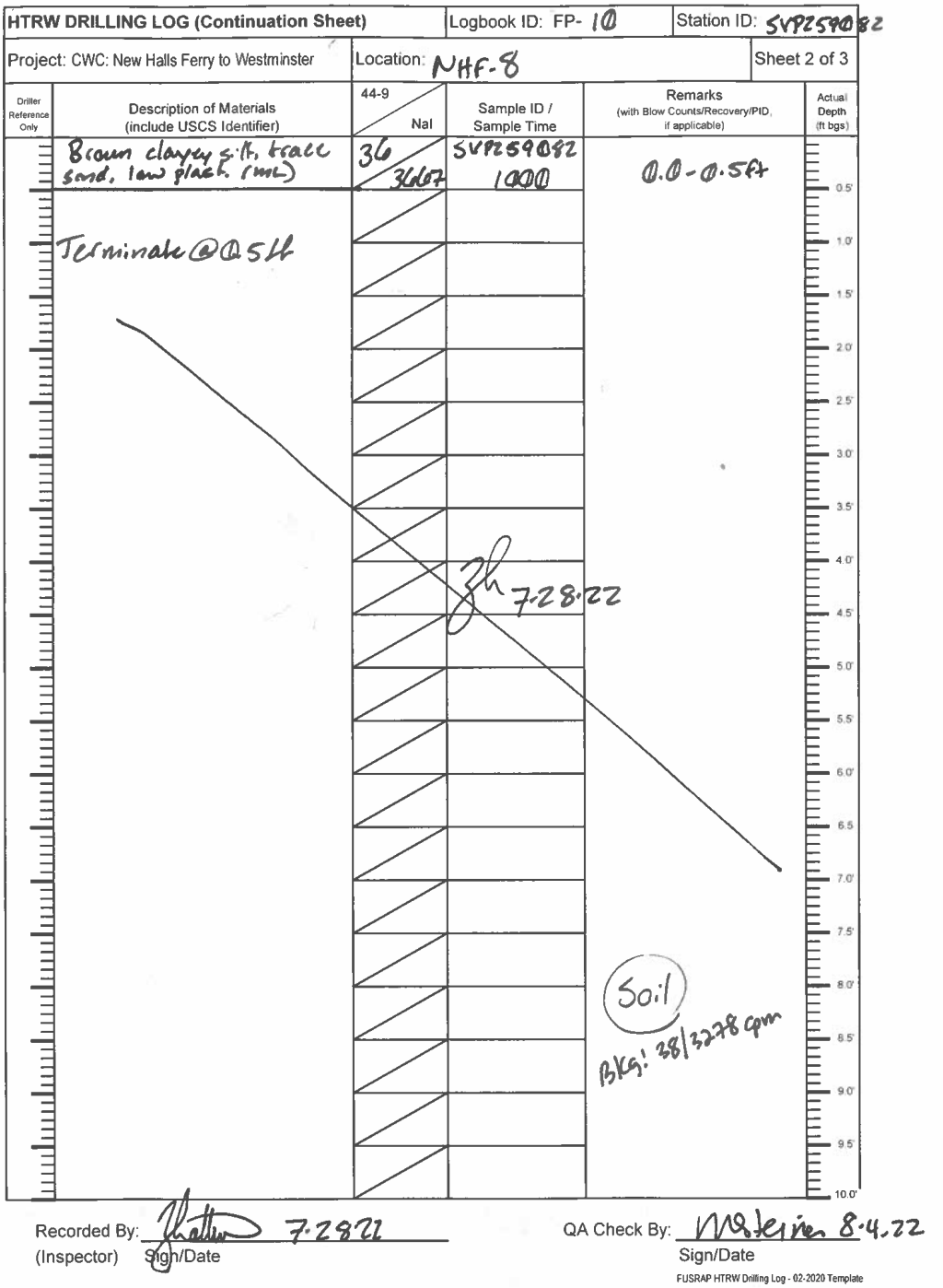
Scale: ☐ Rough Scale ☑ Actual Scale 0" 0.5" 1" 1 inch ≈ 359 feet

Location/Sketch: CWC Jana to River Flooding Section 2

Recorded By: 7.28.22 Sign/Date

QA Check By: 8.4.22 Sign/Date

FUSRAP HTRW Drilling Log Template - 02-2020



HTRW DRILLING LOG (Continuation Sheet) | Logbook ID: FP- 10 | Station ID: SVP259082

Project: CWC: New Halls Ferry to Westminster | Location: NHF-8 | Sheet 2 of 3

Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 / NaI	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID, if applicable)	Actual Depth (ft bgs)
	Brown clayey silt, trace sand, low plast. (ML)	36 / 3667	SVP259082 1000	0.0-0.5ft	0.5'
	Terminate @ 0.5ft				1.0'
					1.5'
					2.0'
					2.5'
					3.0'
					3.5'
					4.0'
					4.5'
					5.0'
					5.5'
					6.0'
					6.5'
					7.0'
					7.5'
				Soil BKG: 38/3278 cpm	8.0'
					8.5'
					9.0'
					9.5'
					10.0'

7-28-22

Recorded By: 7-28-22
(Inspector) Sign/Date

QA Check By: 8-4-22
Sign/Date

FUSRAP HTRW Drilling Log - 02-2020 Template

82

HTRW DRILLING LOG	District: St. Louis USACE	Station ID: SVP259083
Company Name: Leidos	Drilling Subcontractor: Leidos	Logbook ID: FP- 1075 Sheet 1 of 3
Project: CWC: New Halls Ferry to Westminster	Property: CWC-447	Location: NHF-9

Name of Driller: R. Robinson

Station coordinates: E: 878011.12 N: 1086685.23

Surface Elevation: 488.05

Date Start: 7.28.22 Date Complete: 7.28.22

Depth Water Encountered: —

Other Water Measurement(s): —

COC #: LE 07292022-01ML

Types of Drilling & Sampling Equipment Used (include sizes of drilling equipment)	
SS bowl(s)/trowel(s)/3" ID hand auger	☒ Yes ☐ No
Sediment Sampler/Plastic Sleeve?	☐ Yes ☒ No
Geoprobe 3" ID	☐ Yes ☒ No
Coring Equipment	☐ Yes ☒ No
Jackhammer	☐ Yes ☒ No

Meter Information / Background		Meter Calibration Due
44-9 D - 38	cpm	12 / 27 / 22
44-10 L - 3278	cpm	3 / 24 / 23

Calibration information maintained by RPM.

No. of Samples of Each Type	Rad Samples	QA/QC Samples	Archive Samples	VOC	Metals
	1	—	—	—	—

Borehole Disposition (depth and type of material used for backfill):	Cover Material (Asphalt/Concrete)	Gravel	Soil	Bentonite	Other
	—	—	—	—	—

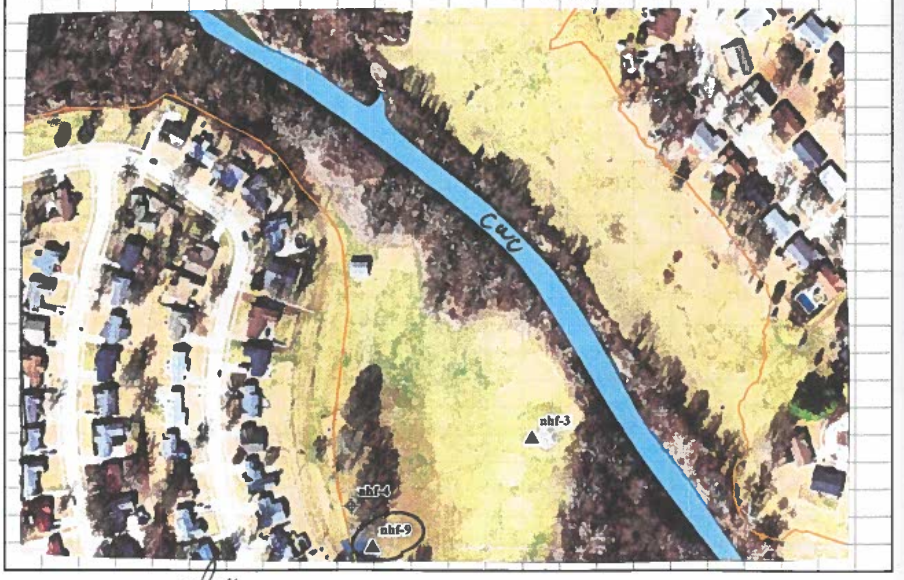
Additional Notes: NA

Signature of Inspector:

Approx North

Scale: ☐ Rough Scale ☒ Actual Scale 0" 0.5" 1" 1 inch ≈ 359 feet

Location/Sketch: CWC Jana to River Flooding Section 2



Recorded By: [signature] 7.28.22 Sign/Date

QA Check By: MSteiner 8-4-22 Sign/Date

FUSRAP HTRW Drilling Log Template - 02-2020

83

HTRW DRILLING LOG (Continuation Sheet) | Logbook ID: FP- 1075 | Station ID: SVPZ590083

Project: CWC: New Halls Ferry to Westminster | Location: NHF-9 | Sheet 2 of 3

Driller Reference Only	Description of Materials (include USCS Identifier)	44-9 / NaI	Sample ID / Sample Time	Remarks (with Blow Counts/Recovery/PID, if applicable)	Actual Depth (ft bgs)
	Brown clayey silt, trace sand, (ML)	GI / 4960	SVPZ590083 / 1240	0.0-0.5ft	0.5'
	Terminate @ 0.5ft				1.0'
					1.5'
					2.0'
					2.5'
					3.0'
					3.5'
				7.28.22	4.0'
					4.5'
					5.0'
					5.5'
					6.0'
					6.5'
				Blgd: 38/3278cpm	7.0'
					7.5'
				50:1	8.0'
					8.5'
					9.0'
					9.5'
					10.0'

Recorded By: 7.28.22
(Inspector) Sign/Date

QA Check By: 8-4-22
Sign/Date

FUSRAP HTRW Drilling Log - 02-2020 Template

Radiological Monitoring — HP-11, Rev. 1, Attachment 1

LEIDOS RADIOLOGICAL SURVEY REPORT CC-072922-02

SURVEY LOCATION: St. Louis FUSRAP Sites		HSWP: R-22-001.0	Page 1 of 1
PURPOSE OF SURVEY: Contamination Control		DATE: 7-29-22	TIME: 0900

Instrument Type(s): (√ if used)	Detector Area (cm²)	Serial Number: meter	Serial Number: detector	Cal. Due Date: meter	Cal. Due Date: detector	Background: (CPM) Alpha (α)	Background: (CPM) Beta (βγ)	Efficiency (%) Alpha (α)	Efficiency (%) Beta (βγ)
☒ Ludlum 2929/43-10-1 B2	N/A	180825	194700	9-27-22	9-27-22	0.3	42	32.2	40.2
☐ Ludlum 2360/43-89 N/A	125					N/A			
☐ Ludlum 2221/44-9 N/A	15.5								
☐ Micro-R N/A	N/A								

Contamination Limits: (dpm/100 cm²)	Removable α 20	Removable βγ 1000	Total α 100	Total βγ 5000	BKG
Instrument MDA: (dpm/100 cm²)	α MDA 15	βγ MDA 82	α MDA N/A	βγ MDA N/A	N/A

Sample No.	Description/Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM βγ Removable	Net CPM βγ Removable	dpm/100cm² βγ Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM βγ Total	Net CPM βγ Total	dpm/100cm² βγ Total	mR/hour or µR/hour
1	367-7 park bench-west	1	1	<MDA	33	0	<MDA							
2	367-9 park bench-east	0	0	<MDA	33	0	<MDA				N/A			
3														
4														
5														
6														
7		N/A												
8														
9														
10														

REMARKS: **Notify RPM if any Administrative Limits are exceeded.** Smears from ~~37~~ 7-29-22 KW 367 to Missouri River on surfaces from flood on 7-26-22

TECHNICIAN(S) SIGNATURE/DATE: [signature] / ~~7~~ 8-1-22 [signature] / 8-2-22

REVIEWER SIGNATURE/DATE: [signature] / ~~8-2-22~~ 7-29-22 KW

Radiological Monitoring — HP-11, Rev. 1, Attachment 1

LEIDOS RADIOLOGICAL SURVEY REPORT CC-072822-04

SURVEY LOCATION: St. Louis FUSRAP Sites | HSWP: 12-22-0001.0 | Page 1 of 1
PURPOSE OF SURVEY: Contamination Control | DATE: 7-28-22 | TIME: 1417

Instrument Type(s): (√ if used)	Detector Area (cm²)	Serial Number: meter	Serial Number: detector	Cal. Due Date: meter	Cal. Due Date: detector	Background: (CPM) Alpha (α)	Background: (CPM) Beta (βγ)	Efficiency (%) Alpha (α)	Efficiency (%) Beta (βγ)
☑ Ludlum 2929/43-10-1 B2	N/A	180825	194700	9-27-22	9-27-22	0.3	42	32.2	40.2
☐ Ludlum 2360/43-89	125								
☐ Ludlum 2221/44-9	15.5								
☐ Micro-R	N/A								

						BKG
Contamination Limits: (dpm/100 cm²)	Removable α 20	Removable βγ 1000	Total α 100	Total βγ 5000		
Instrument MDA: (dpm/100 cm²)	α MDA 15	βγ MDA 82	α MDA NA	βγ MDA NA		NA

Sample No.	Description/Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM βγ Removable	Net CPM βγ Removable	dpm/100cm² βγ Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM βγ Total	Net CPM βγ Total	dpm/100cm² βγ Total	mR/hour or µR/hour
1	WM-3 parking lot Urgent care	0	0	<MDA	45	3	<MDA							
2	WM-7 Driving Range	0	0	<MDA	41	0	<MDA							
3	WM-9 Schaefer Park	0	0	<MDA	44	2	<MDA							
4	WM-12 Pyrenees x Seville Rd	0	0	<MDA	39	0	<MDA							
5														
6														
7														
8														
9														
10														

N/A

REMARKS: **Notify RPM if any Administrative Limits are exceeded.** Smears from Westminster to Old Halls Ferry (Euc WM)
Smears on Surfaces from flood on 7-26-22

TECHNICIAN(S) SIGNATURE/DATE: [signature] / 7-28-22 [signature] / 8-2-22

REVIEWER SIGNATURE/DATE: [signature] / 8-22-22

Radiological Monitoring — HP-11, Rev. 1, Attachment 1

LEIDOS RADIOLOGICAL SURVEY REPORT CC-072822-06

SURVEY LOCATION: St. Louis FUSRAP Sites | HSWP: R-22-0010 | Page 1 of 1
PURPOSE OF SURVEY: Contamination Control | DATE: 7-28-22 | TIME: 1440

Instrument Type(s): (√ if used)	Detector Area (cm²)	Serial Number: meter	Serial Number: detector	Cal. Due Date: meter	Cal. Due Date: detector	Background: (CPM) Alpha (α)	Background: (CPM) Beta (βγ)	Efficiency (%) Alpha (α)	Efficiency (%) Beta (βγ)
☑ Ludlum 2929/43-10-1 B2	N/A	180825	194700	9-27-22	9-27-22	0.3	42	32.2	40.2
☐ Ludlum 2360/43-89	125				NA				
☐ Ludlum 2221/44-9	15.5								
☐ Micro-R	N/A								

						BKG
Contamination Limits: (dpm/100 cm²)	Removable α 20	Removable βγ 1000	Total α 100	Total βγ 5000		
Instrument MDA: (dpm/100 cm²)	α MDA 15	βγ MDA 82	α MDA NA	βγ MDA NA		NA

Sample No.	Description/Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM βγ Removable	Net CPM βγ Removable	dpm/100cm² βγ Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM βγ Total	Net CPM βγ Total	dpm/100cm² βγ Total	mR/hour or µR/hour
1	OJR-2 Kavanaugh railing	0	0	<MDA	44	2	<MDA							
2	OJR-4 pump house gas vent	0	0		50	8								
3	OJR-5 Horse Farm gate	0	0		37	0								
4	OJR-7 Wood step 14329 Wild Fox Ct	1	1		42	0								
5														
6											NA			
7		NA												
8														
9														
10														

REMARKS: **Notify RPM if any Administrative Limits are exceeded.** Smears from Old Jamestown Road to Fox Manor (~~OJR~~ OJR) 7-28-22
Smears taken on Surfaces from flood on 7-26-22

TECHNICIAN(S) SIGNATURE/DATE: MQ Leiron 7-28-22 8-2-22

REVIEWER SIGNATURE/DATE: 8-2-22

Radiological Monitoring — HP-11, Rev. 1, Attachment 1

LEIDOS RADIOLOGICAL SURVEY REPORT CC-072822-01

SURVEY LOCATION: St. Louis FUSRAP Sites | HSWP: R-22-001.0 | Page 1 of 1
PURPOSE OF SURVEY: Contamination Control | DATE: 7.28.22 | TIME: 1104

Instrument Type(s): (√ if used)	Detector Area (cm²)	Serial Number: meter	Serial Number: detector	Cal. Due Date: meter	Cal. Due Date: detector	Background: (CPM) Alpha (α)	Background: (CPM) Beta (βγ)	Efficiency (%) Alpha (α)	Efficiency (%) Beta (βγ)
☑ Ludlum 2929/43-10-1 B2	N/A	180825	194700	9.27.22	9.27.22	0.3	42	32.2	40.2
☐ Ludlum 2360/43-89	125					NA			
☐ Ludlum 2221/44-9	15.5								
☐ Micro-R	N/A								

Contamination Limits: (dpm/100 cm²)	Removable α 20	Removable βγ 1000	Total α 100	Total βγ 5000	BKG
Instrument MDA: (dpm/100 cm²)	α MDA 15	βγ MDA 82	α MDA NA	βγ MDA NA	NA

Sample No.	Description/Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM βγ Removable	Net CPM βγ Removable	dpm/100cm² βγ Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM βγ Total	Net CPM βγ Total	dpm/100cm² βγ Total	mR/hour or µR/hour
1	NHF-4 - Wedgewood Swing Set (plastic)	0	0	<MDA	43	1	<MDA							
2	NHF-5 - Portside Ct.	0	0		31	0								
3	NHF-6 - Rue de Renard St	0	0		34	0								
4														
5											NA			
6		NA												
7														
8														
9														
10														

REMARKS: **Notify RPM if any Administrative Limits are exceeded.** Smears from New Halls Ferry to Westminster-CWC (NHF)

TECHNICIAN(S) SIGNATURE/DATE: MSlein 8-1-22 8-2-22

REVIEWER SIGNATURE/DATE: 8-2-22 8-2-22

Radiological Monitoring — HP-11, Rev. 1, Attachment 1

LEIDOS RADIOLOGICAL SURVEY REPORT CC-072822-03

SURVEY LOCATION: St. Louis FUSRAP Sites | HSWP: 12-22-001.0 | Page 1 of 1
PURPOSE OF SURVEY: Contamination Control | DATE: 7.28-22 | TIME: 1402

Instrument Type(s): (√ if used)	Detector Area (cm²)	Serial Number: meter	Serial Number: detector	Cal. Due Date: meter	Cal. Due Date: detector	Background: (CPM) Alpha (α)	Background: (CPM) Beta (βγ)	Efficiency (%) Alpha (α)	Efficiency (%) Beta (βγ)
☑ Ludlum 2929/43-10-1 B2	N/A	180825	194700	9.27.22	9-27-22	0.3	42	32.2	40.2
☐ Ludlum 2360/43-89	125								
☐ Ludlum 2221/44-9	15.5					N/A			
☐ Micro-R	N/A								

Contamination Limits: (dpm/100 cm²)	Removable α 20	Removable βγ 1000	Total α 100	Total βγ 5000	BKG
Instrument MDA: (dpm/100 cm²)	α MDA 15	βγ MDA 82	α MDA NA	βγ MDA NA	NA

Sample No.	Description/Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM βγ Removable	Net CPM βγ Removable	dpm/100cm² βγ Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM βγ Total	Net CPM βγ Total	dpm/100cm² βγ Total	mR/hour or µR/hour
1	Jana-1 Church playground	0	0	<MDA	32	0	<MDA							
2	Jana-3 School playground	0	0		40	0								
3	Jana-4 School Soccer goal	0	0		32	0								
4	Jana-6 Cricket court	0	0		45	3								
5														
6														
7		N/A												
8														
9														
10														

REMARKS: **Notify RPM if any Administrative Limits are exceeded.** Smears from Jana School to New Halls Ferry (CUC Jana) taken on objects subject to CUC flood on 7-26-22

TECHNICIAN(S) SIGNATURE/DATE: [signature] / 7-28-22 [signature] / 8-2-22

REVIEWER SIGNATURE/DATE: [signature] / 8-2-22

Radiological Monitoring — HP-11, Rev. 1, Attachment 1

LEIDOS RADIOLOGICAL SURVEY REPORT CC-0728-22-05

SURVEY LOCATION: St. Louis FUSRAP Sites | HSWP: R-22-0001.0 | Page 1 of 1
PURPOSE OF SURVEY: Contamination Control | DATE: 7-28-22 | TIME: 1423

Instrument Type(s): (√ if used)	Detector Area (cm²)	Serial Number: meter	Serial Number: detector	Cal. Due Date: meter	Cal. Due Date: detector	Background: (CPM) Alpha (α)	Background: (CPM) Beta (βγ)	Efficiency (%) Alpha (α)	Efficiency (%) Beta (βγ)
☑ Ludlum 2929/43-10-1 B2	N/A	180825	194700	9-27-22	9-27-22	0.3	42	32.2	40.2
☐ Ludlum 2360/43-89	125					N/A			
☐ Ludlum 2221/44-9	15.5								
☐ Micro-R	N/A								

Contamination Limits: (dpm/100 cm²)	Removable α 20	Removable βγ 1000	Total α 100	Total βγ 5000	BKG
Instrument MDA: (dpm/100 cm²)	α MDA 15	βγ MDA 82	α MDA NA	βγ MDA NA	NA

Sample No.	Description/Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM βγ Removable	Net CPM βγ Removable	dpm/100cm² βγ Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM βγ Total	Net CPM βγ Total	dpm/100cm² βγ Total	mR/hour or µR/hour
1	BJP-4 park bench church lot	0	0	<MDA	36	0	<MDA							
2	BJP-5 old Jamestown Bridge	0	0		45	3								
3	BJP-6 exposed pipe/well	0	0		51	9								
4	BJP-8 treeline on Avocado	0	0		45	3								
5														
6														
7														
8														
9														
10														

REMARKS: **Notify RPM if any Administrative Limits are exceeded.** Smears from Black Jack Park to Old Jamestown (BJP)
Smears taken on surfaces from flood on 7-26-22

TECHNICIAN(S) SIGNATURE/DATE: MSteiner 7-28-22 8-2-22
REVIEWER SIGNATURE/DATE: 8-2-22

Radiological Monitoring HP-11, Rev. 1, Attachment 1

LEIDOS RADIOLOGICAL SURVEY REPORT

LL-072922-03 TK 7-29-22

SURVEY LOCATION: St Louis FUSRAP Sites	HSWP: R-22-0001.0	Page 1 of 1
PURPOSE OF SURVEY: Contamination Control	DATE: 7-29-22	TIME: 1350

Instrument Type(s): (√ if used)	Detector Area (cm²)	Serial Number: meter	Serial Number: detector	Cal. Due Date: meter	Cal. Due Date: detector	Background: (CPM) Alpha (α)	Background: (CPM) Beta (βγ)	Efficiency (%) Alpha (α)	Efficiency (%) Beta (βγ)
☒ Ludlum 2929/43-10-1 B2	N/A	180825	194700	9-27-22	9-27-22	0.3	42	32.2	40.2
☐ Ludlum 2360/43-89 NA	125								
☐ Ludlum 2221/44-9 NA	15.5								
☐ Micro-R NA	N/A								

						BKG
Contamination Limits: (dpm/100 cm²)	Removable α 20	Removable βγ 1000	Total α 100	Total βγ 5000		
Instrument MDA: (dpm/100 cm²)	α MDA 15	βγ MDA 82	α MDA NA	βγ MDA NA		NA

Sample No.	Description/Location	Gross CPM α Removable	Net CPM α Removable	dpm/100cm² α Removable	Gross CPM βγ Removable	Net CPM βγ Removable	dpm/100cm² βγ Removable	Gross CPM α Total	Net CPM α Total	dpm/100cm² α Total	Gross CPM βγ Total	Net CPM βγ Total	dpm/100cm² βγ Total	mR/hour or µR/hour
1	OHF-1 Fence post	0	0	<MDA	25	0	<MDA							
2	OHF-3 Manhole cover	0	0	↓	36	0	↓							
3	OHF-5 Manhole cover	0	0		40	0								
4	OHF-8 Trailer flashing	0	0		36	0								
5	OHF-9 Asphalt Road	0	0		35	0								
6														
7														
8														
9														
10														

NA

REMARKS: **Notify RPM if any Administrative Limits are exceeded.** Smears from Old Halls Ferry to Black Jack Park (CWC OHF) on surfaces from Flood 7-26-22

TECHNICIAN(S) SIGNATURE/DATE: [signature] 7-29-22 MPeiver 8-2-22

REVIEWER SIGNATURE/DATE: [signature] 8-2-22

AVESI

SURFACE CONTAMINATION SURVEY FORM

Page 1 of 1

DATE	PURPOSE	SURVEYOR SIGNATURE	SURVEY LOG #
7-27-22	Informational		22-07-213

No.	Area Surveyed	Direct Reading				Removable Readings			
		Alpha / 100 cm²		Beta-Gamma/100 cm²		Alpha / 100 cm²		Beta-Gamma/100 cm²	
		Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM
1	EVA/Frost Shooting Range					0	0	61	30
2	"					0	0	38	0
3						0	0	48	0
4						0	0	56	18
5						0	0	45	0
6	Seeger Dr Dead End					0	0	48	0
7						0	0	61	30
8						0	0	34	0
9						0	0	49	2
10						0	0	65	39
11	Latty Ave Turn Around					1	2	40	0
12						0	0	47	0
13						0	0	54	14
14						1	2	48	0
15						0	0	37	0
16	Dunn Rd - Arch Way Cemetery					0	0	60	27
17						0	0	48	0
18						1	2	40	0
19						1	2	53	11
20						0	0	40	0

Comments: EVA/Frost Shooting Range Entrance

Seeger Dr - Dead End

Latty Ave - Turn Around

Dunn Rd - Arch Way Memorial center parking

LA

Survey Instrument Data	Direct		Removable	
	Alpha	Beta Gamma	Alpha	Beta Gamma
Scaler Model	2360		2929	
Serial #			167846	
Cal Due Date			11-22-22	
Probe Model	43-89		43-10-1	
Serial #			174309	
Cal Due Date			11-22-22	
Bkg Counts			3	420
Bkg Count Time	5	5	10	10
Bkg CPM			0.3	42
Efficiency/100 cm2			0.355	0.440
Area Cor. Factor	1.25	1.25	1	1
Smpl Count Time	1	1	1	1
MDA			14	61

SUPERVISOR SIGNATURE

DATE 7/27/22

AVESI

SURFACE CONTAMINATION SURVEY FORM

Page 1 of 3

DATE	PURPOSE	SURVEYOR SIGNATURE	SURVEY LOG #
7-28-22	Informational	Cody [illegible]	22-07-230

No.	Area Surveyed	Direct Reading				Removable Readings			
		Alpha / 100 cm²		Beta-Gamma/100 cm²		Alpha / 100 cm²		Beta-Gamma/100 cm²	
		Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM
1	St. Cin Park - Rear Walk Path					0	0	59	34
2						0	0	47	7
3						0	0	50	14
4						0	0	44	0
5						0	0	42	0
6	Rear Walk Path Near Creek					0	0	37	0
7						0	0	43	0
8						0	0	47	7
9						0	0	46	5
10						0	0	44	0
11	Basketball Court					0	0	38	0
12						1	3	48	9
13						0	0	46	5
14						0	0	38	0
15						0	0	43	0
16	Play Ground					0	0	43	0
17						1	3	47	7
18						0	0	51	16
19	Restroom Area					0	0	41	0
20						0	0	47	7

Comments: Coldwater Creek Flood water

Survey Instrument Data	Direct		Removable	
	Alpha	Beta Gamma	Alpha	Beta Gamma
Scaler Model	2360		2929	
Serial #			167840	
Cal Due Date			11-22-22	
Probe Model	43-89		43-10-1	
Serial #			174809	
Cal Due Date			11-22-22	
Bkg Counts			1	438
Bkg Count Time	5	5	10	10
Bkg CPM			0.1	44
Efficiency/100 cm2			0.355	0.440
Area Cor. Factor	1.25	1.25	1	1
Smpl Count Time	1	1	1	1
MDA			12	59

SUPERVISOR SIGNATURE [signature] DATE 7/28/2022

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SURFACE CONTAMINATION SURVEY FORM

DATE	PURPOSE	SURVEYOR SIGNATURE	SURVEY LOG #
7-28-22	Informational	Cody [illegible]	22-07-230

No.	Area Surveyed	Direct Reading				Removable Readings			
		Alpha / 100 cm²		Beta-Gamma/100 cm²		Alpha / 100 cm²		Beta-Gamma/100 cm²	
		Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM
21	St. Lin Park – Playground					0	0	48	9
22						1	3	62	41
23						1	3	51	16
24						1	3	48	9
25						0	0	41	0
26	St. Ferdinand – Parking Lot					1	3	39	0
27						1	3	38	0
28						0	0	51	16
29						0	0	43	0
30						0	0	33	0
31	Exercise Equipment					1	3	40	0
32						0	0	46	5
33						0	0	46	5
34						0	0	52	18
35						1	3	53	20
36	Walking Path					0	0	45	2
37						0	0	43	0
38						1	3	39	0
39						1	3	42	0
40						0	0	44	0
41						0	0	51	16
42						0	0	54	23
43						0	0	60	36
44						0	0	42	0
45						0	0	49	11
46	Baseball Field Bleachers					0	0	46	5
47						0	0	47	7
48						2	5	45	2
49						0	0	47	7
50						0	0	37	0

Comments: Coldwater Creek Floodwater

SUPERVISOR SIGNATURE David Cowell DATE 7/28/2022

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SURFACE CONTAMINATION SURVEY FORM

DATE	PURPOSE	SURVEYOR SIGNATURE	SURVEY LOG #
7-28-22	Informational	Cody H	22-07-230

No.	Area Surveyed	Direct Reading				Removable Readings			
		Alpha / 100 cm²		Beta-Gamma/100 cm²		Alpha / 100 cm²		Beta-Gamma/100 cm²	
		Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM
51	St. Ferdinand - Baseball Field					1	3	63	43
52						1	3	49	11
53						0	0	57	30
54						1	3	54	23
55						0	0	49	11
56	Play Ground					0	0	53	20
57						0	0	46	5
58						2	5	36	0
59						2	5	44	0
60						2	5	61	39
61	Pavallion					0	0	58	32
62						0	0	58	32
63						1	3	51	16
64						2	5	51	16
65						0	0	42	0

Comments: Cold water Creek Flood Water

SUPERVISOR SIGNATURE David Powell

DATE 7/28/2022

AVESI

SURFACE CONTAMINATION SURVEY FORM

DATE	PURPOSE	SURVEYOR SIGNATURE	SURVEY LOG #
7-29-22	Informational	Cody [illegible]	22-07-231

No.	Area Surveyed	Direct Reading				Removable Readings			
		Alpha / 100 cm²		Beta-Gamma/100 cm²		Alpha / 100 cm²		Beta-Gamma/100 cm²	
		Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM
1	Florissant Comm Garden					0	0	65	39
2						0	0	53	11
3						0	0	57	20
4						0	0	41	0
5						0	0	42	0
6	Wainey Park					0	0	48	0
7						0	0	54	14
8						0	0	35	0
9						0	0	49	2
10						0	0	59	25
11	St. Dennis Bridge					0	0	60	27
12						0	0	56	18
13						0	0	44	0
14						0	0	42	0
15						1	2	42	0
16	Lindbergh Bridge					0	0	46	0
17						0	0	37	0
18						0	0	36	0
19						0	0	34	0
20						0	0	39	0

Comments: Coldwater Creek Flood Water Survey (Informational)

Survey Instrument Data	Direct		Removable	
	Alpha	Beta Gamma	Alpha	Beta Gamma
Scaler Model	2360		2929	
Serial #			167840	
Cal Due Date			11-22-22	
Probe Model	43-89		43-10-1	
Serial #			174809	
Cal Due Date			11-22-22	
Bkg Counts			3	481
Bkg Count Time	5	5	10	10
Bkg CPM			0.3	48
Efficiency/100 cm2			0.355	0.440
Area Cor. Factor	1.25	1.25	1	1
Smpl Count Time	1	1	1	1
MDA			14	61

SUPERVISOR SIGNATURE David Cowell

DATE 7/29/2022

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SURFACE CONTAMINATION SURVEY FORM

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DATE	PURPOSE	SURVEYOR SIGNATURE	SURVEY LOG #
7-29-22	Informational		22-07-231

No.	Area Surveyed	Direct Reading				Removable Readings			
		Alpha / 100 cm²		Beta-Gamma/100 cm²		Alpha / 100 cm²		Beta-Gamma/100 cm²	
		Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM
21	Pershall Bridge					0	0	48	0
22						0	0	52	9
23						0	0	47	0
24						1	2	40	0
25						0	0	52	9
26	McDonnell Bridge					0	0	49	2
27						0	0	43	0
28						1	2	39	0
29						0	0	45	0
30						0	0	41	0
31	Ballfields					1	2	44	0
32						0	0	40	0
33						0	0	51	7
34						0	0	49	2
35						1	2	42	0
36	SLAPS Entrances					0	0	48	0
37						0	0	42	0
38						0	0	50	5
39						0	0	41	0
40						0	0	45	0
41	W. Washington St. Bridge					0	0	42	0
42						0	0	36	0
43						0	0	45	0
44						0	0	47	0
45						0	0	37	0
46	Normandie CT.					0	0	56	18
47						0	0	52	9
48						1	2	43	0
49	Bruce Dr.					0	0	44	0
50	Industrial Ln.					0	0	58	23

Comments: Cold water Creek Flood water

SUPERVISOR SIGNATURE David Powell DATE 7/29/2022

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SURFACE CONTAMINATION SURVEY FORM

DATE	PURPOSE	SURVEYOR SIGNATURE	SURVEY LOG #
7-29-22	Informational	Cody [illegible]	22-07-231

No.	Area Surveyed	Direct Reading				Removable Readings			
		Alpha / 100 cm²		Beta-Gamma/100 cm²		Alpha / 100 cm²		Beta-Gamma/100 cm²	
		Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM
51	Chez Vant CT.					2	5	42	0
52	"					0	0	42	0
53	"					0	0	34	0
54	Florrissant Meadows Shopping Center					0	0	42	0
55	"					0	0	39	0
56	Schnucks on Lindbergh					0	0	48	0
57	Dierbergs on Lindbergh					0	0	45	0
58	Advant Dr.					0	0	36	0
59	Hundley Dr.					0	0	39	0
60	Marshall Ct.					0	0	50	5
61	Myrtle Dr.					0	0	36	0
62	Lenondale					0	0	29	0
63	Linedale					0	0	42	0
64	Orangedale					0	0	45	0
65	Orleans Dr.					0	0	52	9
66	Apple Blossom Ct.					0	0	35	0
67	[redacted]					0	0	27	0
68	"					0	0	44	0
69	Humes Ln.					0	0	42	0
70	"					0	0	35	0
71	"					0	0	46	0
72	"					0	0	49	2
73	"					0	0	37	0
74	"					1	2	51	7
75	Versailles Dr.					0	0	42	0

Comments: Coldwater Creek Flood Water

SUPERVISOR SIGNATURE David Cowell DATE 7/29/2022

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SURFACE CONTAMINATION SURVEY FORM

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DATE	PURPOSE	SURVEYOR SIGNATURE	SURVEY LOG #
7-30-22	Informational		22-07-232

No.	Area Surveyed	Direct Reading				Removable Readings			
		Alpha / 100 cm²		Beta-Gamma/100 cm²		Alpha / 100 cm²		Beta-Gamma/100 cm²	
		Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM
1	Duchesne Park – Pavallion					0	0	45	0
2	"					0	0	47	0
3	Playground					1	2	44	0
4	"					1	2	39	0
5	Parking Lot					1	2	34	0
6	"					1	2	49	0
7	Water Fountain					1	2	53	9
8	Dog Park					1	2	38	0
9	"					0	0	52	7
10	"					1	2	51	5
11	Cades Cove					0	0	43	0
12	"					0	0	47	0
13	"					1	2	38	0
14	Life Storage					1	2	48	0
15	"					0	0	40	0
16	Carla Dr.					0	0	46	0
17	"					0	0	43	0
18	Debra Lynn Ln.					0	0	43	0
19	Carole Rogers Way					0	0	42	0
20	"					0	0	47	0

Comments: Coldwater Creek Floodwater Event

Survey Instrument Data	Direct		Removable	
	Alpha	Beta Gamma	Alpha	Beta Gamma
Scaler Model	2360		2929	
Serial #			167840	
Cal Due Date			11-22-22	
Probe Model	43-89		43-10-1	
Serial #			174809	
Cal Due Date			11-22-22	
Bkg Counts			3	487
Bkg Count Time	5	5	10	10
Bkg CPM			0.3	49
Efficiency/100 cm2			0.355	0.440
Area Cor. Factor	1.25	1.25	1	1
Smpl Count Time	1	1	1	1
MDA			14	62

SUPERVISOR SIGNATURE David Cowell DATE 7/30/2022

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SURFACE CONTAMINATION SURVEY FORM

Page 2 of 2

DATE	PURPOSE	SURVEYOR SIGNATURE	SURVEY LOG #
7-30-22	Informational	Cody W	22-07-232

No.	Area Surveyed	Direct Reading				Removable Readings			
		Alpha / 100 cm²		Beta-Gamma/100 cm²		Alpha / 100 cm²		Beta-Gamma/100 cm²	
		Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM
21	Ford Lane					0	0	44	0
22	↓					1	2	36	0
23	↓					1	2	43	0
24	Heatherton Dr.					0	0	43	0
25	↓					0	0	39	0
26	Dierbergs					1	2	42	0
27	St. Ferdinand Cemetary					0	0	52	7
28	Bramble Ln.					0	0	41	0
29	E. Humes Ln.					0	0	38	0
30	Polson Ln.					0	0	50	2
31	Byassee Dr.					0	0	37	0
32	↓					0	0	40	0

Comments: Coldwater Creek Flooding Event

SUPERVISOR SIGNATURE: [signature] DATE: 7/30/2022

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SURFACE CONTAMINATION SURVEY FORM

Page 1 of 1

DATE	PURPOSE	SURVEYOR SIGNATURE	SURVEY LOG #
7-27-22	Informational		22-07-194

No.	Area Surveyed	Direct Reading				Removable Readings			
		Alpha / 100 cm²		Beta-Gamma/100 cm²		Alpha / 100 cm²		Beta-Gamma/100 cm²	
		Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM
1	Left Track	17	77	142	13	0	0	44	0
2	Right Track	11	48	182	142	1	2	47	0
3	Front Blade	8	34	160	71	2	5	37	0
4		1	1	135	0	0	0	58	23
5	Body	8	34	124	0	0	0	48	0
6	Back Blade	17	77	184	148	1	2	42	0
7	Seat	1	1	173	113	0	0	42	0
8	Floor	3	10	136	0	0	0	43	0
9	Controls	3	10	134	0	0	0	57	20
10	Engine Compt.	2	6	111	0	0	0	45	0
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

Comments: John Deere Dozer

model # - 650K

S.N.# - 1T0650KKTLF385373

Survey Instrument Data	Direct		Removable	
	Alpha	Beta Gamma	Alpha	Beta Gamma
Scaler Model	2360		2929	
Serial #	156379		67840	
Cal Due Date	9-15-22		11-22-22	
Probe Model	43-89		43-10-1	
Serial #	166655		174809	
Cal Due Date	9-15-22		11-22-22	
Bkg Counts	4	690	3	480
Bkg Count Time	5	5	10	10
Bkg CPM	0.8	138	0.3	48
Efficiency/100 cm2	0.169	0.248	0.355	0.440
Area Cor. Factor	1.25	1.25	1	1
Smpl Count Time	1	1	1	1
MDA	29	146	14	61

SUPERVISOR SIGNATURE

DATE 7/27/22

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SURFACE CONTAMINATION SURVEY FORM

Page 1 of 1

DATE	PURPOSE	SURVEYOR SIGNATURE	SURVEY LOG #
7-27-22	Informational		22-07-195

No.	Area Surveyed	Direct Reading				Removable Readings			
		Alpha / 100 cm²		Beta-Gamma/100 cm²		Alpha / 100 cm²		Beta-Gamma/100 cm²	
		Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM
1	Body	5	20	135	0	0	0	38	0
2		27	124	207	223	0	0	33	0
3		17	77	187	158	0	0	46	0
4		11	48	206	219	0	0	43	0
5	Left Tire	5	20	152	45	0	0	41	0
6	Right Tire	3	10	162	77	1	2	52	9
7	Pump	9	39	144	19	1	2	42	0
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

Comments: Non-Highway Diesel Fuel Tank

Survey Instrument Data	Direct		Removable	
	Alpha	Beta Gamma	Alpha	Beta Gamma
Scalar Model	2360		2929	
Serial #	156379		67840	
Cal Due Date	9-15-22		11-22-22	
Probe Model	43-89		43-10-1	
Serial #	166655		174809	
Cal Due Date	9-15-22		11-22-22	
Bkg Counts	4	690	3	480
Bkg Count Time	5	5	10	10
Bkg CPM	0.8	138	0.3	48
Efficiency/100 cm2	0.169	0.248	0.355	0.440
Area Cor. Factor	1.25	1.25	1	1
Smpl Count Time	1	1	1	1
MDA	29	146	14	61

SUPERVISOR SIGNATURE

DATE 7/27/22

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SURFACE CONTAMINATION SURVEY FORM

Page 1 of 1

DATE	PURPOSE	SURVEYOR SIGNATURE	SURVEY LOG #
7-27-22	Informational		22-07-196

No.	Area Surveyed	Direct Reading				Removable Readings			
		Alpha / 100 cm²		Beta-Gamma/100 cm²		Alpha / 100 cm²		Beta-Gamma/100 cm²	
		Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM
1	Roller	11	48	139	3	3	8	51	7
2	Roller Frame	18	81	161	74	2	5	43	0
3	Left Tire	13	58	193	177	0	0	46	0
4	Right Tire	31	143	211	235	1	2	43	0
5	Body	2	6	103	0	1	2	34	0
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

Comments: Cat Roller

Model#- CS54B

S.N.# CATCS54BKC5501284

Survey Instrument Data	Direct		Removable	
	Alpha	Beta Gamma	Alpha	Beta Gamma
Scaler Model	2360		2929	
Serial #	156379		67840	
Cal Due Date	9-15-22		1-22-22	
Probe Model	43-89		43-10-1	
Serial #	166655		174809	
Cal Due Date	9-15-22		1-22-22	
Bkg Counts	4	690	3	480
Bkg Count Time	5	5	10	10
Bkg CPM	0.8	138	0.3	48
Efficiency/100 cm2	0.169	0.248	0.355	0.440
Area Cor. Factor	1.25	1.25	1	1
Smpl Count Time	1	1	1	1
MDA	29	146	14	61

SUPERVISOR SIGNATURE

DATE 7/27/22

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SURFACE CONTAMINATION SURVEY FORM

Page 1 of 1

DATE	PURPOSE	SURVEYOR SIGNATURE	SURVEY LOG #
7-27-22	Informational		22-07-197

No.	Area Surveyed	Direct Reading				Removable Readings			
		Alpha / 100 cm²		Beta-Gamma/100 cm²		Alpha / 100 cm²		Beta-Gamma/100 cm²	
		Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM
1	Left Track	7	29	166	90	0	0	53	11
2	Right Track	5	20	112	0	0	0	41	0
3	Boom	4	15	108	0	0	0	47	0
4	Bucket	2	6	109	0	1	2	59	25
5	Engine Compartment	0	0	103	0	1	2	41	0
6	Body	3	10	155	55	0	0	44	0
7	Floor	0	0	130	0	0	0	48	0
8	Seat	1	1	134	0	0	0	51	7
9	Controls	2	6	143	16	0	0	35	0
10	Air Filter	0	0	138	0	1	2	43	0
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

Comments: Case - mini Excavator

S.N. - DAC080KLNMS6B2681

Model # - CX80C

Survey Instrument Data	Direct		Removable	
	Alpha	Beta Gamma	Alpha	Beta Gamma
Scaler Model	2360		2929	
Serial #	156379		67840	
Cal Due Date	9-15-22		1-22-22	
Probe Model	43-89		43-10-1	
Serial #	166655		74809	
Cal Due Date	9-15-22		1-22-22	
Bkg Counts	4	690	3	480
Bkg Count Time	5	5	10	10
Bkg CPM	0.8	138	0.3	48
Efficiency/100 cm²	0.169	0.248	0.355	0.440
Area Cor Factor	1.25	1.25	1	1
Smpl Count Time	1	1	1	1
MDA	29	146	14	61

SUPERVISOR SIGNATURE

DATE 7/27/22

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SURFACE CONTAMINATION SURVEY FORM

Page 1 of 1

DATE	PURPOSE	SURVEYOR SIGNATURE	SURVEY LOG #
7-27-22	Informational		22-07-198

No.	Area Surveyed	Direct Reading				Removable Readings			
		Alpha / 100 cm²		Beta-Gamma/100 cm²		Alpha / 100 cm²		Beta-Gamma/100 cm²	
		Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM
1	Left Track	10	44	193	177	1	2	48	0
2	Right Track	8	34	174	116	0	0	34	0
3	Body	4	15	194	181	0	0	43	0
4	Engine Compartment	23	105	283	468	1	2	48	0
5	Floor	4	15	146	26	0	0	50	5
6	Seat	0	0	154	52	0	0	43	0
7	Controls	3	10	130	0	0	0	67	43
8	Air Filter	10	44	203	210	0	0	35	0
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

Comments: T.R. Sany ~~Ext~~ Excavator

Model # - SY 235C LC

S.N. - SY023BBA8138

Survey Instrument Data	Direct		Removable	
	Alpha	Beta Gamma	Alpha	Beta Gamma
Scaler Model	2360		2929	
Serial #	156379		67840	
Cal Due Date	9-15-22		1-22-22	
Probe Model	43-89		43-10-1	
Serial #	166655		174809	
Cal Due Date	9-15-22		1-22-22	
Bkg Counts	4	690	3	480
Bkg Count Time	5	5	10	10
Bkg CPM	0.8	138	0.3	48
Efficiency/100 cm2	0.169	0.248	0.355	0.440
Area Cor. Factor	1.25	1.25	1	1
Smpl Count Time	1	1	1	1
MDA	29	146	14	61

SUPERVISOR SIGNATURE

DATE 7/27/22

AVESI

SURFACE CONTAMINATION SURVEY FORM

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DATE	PURPOSE	SURVEYOR SIGNATURE	SURVEY LOG #
7.27.22	Unrestricted Release		22.07.212

No.	Area Surveyed	Direct Reading				Removable Readings			
		Alpha / 100 cm²		Beta-Gamma/100 cm²		Alpha / 100 cm²		Beta-Gamma/100 cm²	
		Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM
1	Tracks Left	2	1	193	67	8	22	51	7
2	" Right	11	43	280	332	0	0	49	2
3	Blade	12	47	203	97	2	3	42	0
4	Controls	6	20	190	58	2	3	57	20
5	Boom	13	52	148	0	8	22	48	0
6	"	2	1	201	91	10	27	67	43
7	"	3	4	154	0	3	8	45	0
8	"	8	29	166	0	1	2	58	23
9	Hammer	2	1	184	40	2	3	39	0
10	Hoses	4	10	172	0	3	8	41	0
11	"	13	52	164	0	2	5	51	7
12	"	8	29	149	0	12	33	55	16
13	Air Intake	12	47	210	119	4	10	53	11
14	" Filter	4	10	206	106	2	3	43	0
15	Remot Box	5	15	181	30	1	2	59	25
16	Cable	13	52	156	0	3	8	41	0
17									
18									
19									
20									

Comments: Geoprobe 7822DT

Model # GH6350

S.N # 10332 (78221710053)

Survey Instrument Data	Direct		Removable	
	Alpha	Beta Gamma	Alpha	Beta Gamma
Scaler Model	2360		2929	
Serial #	163858		167840	
Cal Due Date	11.1.23		11.22.22	
Probe Model	43-89		43-10-1	
Serial #	167710		174809	
Cal Due Date	11.1.22		11.22.22	
Bkg Counts	9	855	3	480
Bkg Count Time	5	5	10	10
Bkg CPM	1.8	171	0.3	48
Efficiency/100 cm2	0.172	0.243	0.355	0.440
Area Cor. Factor	1.25	1.25	1	1
Smpl Count Time	1	1	1	1
MDA	34	152	14	41

SUPERVISOR SIGNATURE

DATE 7/27/22

AVESI

SURFACE CONTAMINATION SURVEY FORM

Page 1 of 1

DATE	PURPOSE	SURVEYOR SIGNATURE	SURVEY LOG #
7-28-22	Unrestricted Release		22-07-229

No.	Area Surveyed	Direct Reading				Removable Readings			
		Alpha / 100 cm²		Beta-Gamma/100 cm²		Alpha / 100 cm²		Beta-Gamma/100 cm²	
		Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM	Gross CPM	Net DPM
1	Tank Body	5	20	135	0	0	0	38	0
2	"	27	124	207	223	0	0	33	0
3	"	17	77	187	158	0	0	46	0
4	"	11	48	206	219	0	0	43	0
5	Left Tire	5	20	152	45	0	0	41	0
6	Right Tire	3	10	162	77	1	2	52	9
7	Pump	9	39	144	19	1	2	42	0
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

Comments: Non-Highway Diesel Tank on Trailer - VP-56

Survey Instrument Data	Direct		Removable	
	Alpha	Beta Gamma	Alpha	Beta Gamma
Scaler Model	2360		2929	
Serial #	156379		167840	
Cal Due Date	9-15-22		11-22-22	
Probe Model	43-89		43-10-1	
Serial #	166655		174809	
Cal Due Date	9-15-22		11-22-22	
Bkg Counts	4	690	1	438
Bkg Count Time	5	5	10	10
Bkg CPM	0.8	138	0.1	44
Efficiency/100 cm2	0.169	0.248	0.355	0.440
Area Cor. Factor	1.25	1.25	1	1
Smpl Count Time	1	1	1	1
MDA	29	146	12	59

SUPERVISOR SIGNATURE [signature] DATE 7/29/2022