

Via NC DOT FTS

November 30, 2022

NC DOT Geotechnical Unit
GeoEnvironmental Section
1589 Mail Service Center
Raleigh, North Carolina 27699-1589

Attention: Mr. Ashley Cox, LG

Re: Phase II Investigation Report – Parcel 85
NC DOT State Project No. R-5600
WBS Element No. 45818.1.FR1
Sylva, Jackson County, North Carolina
H&H Job No. ROW-704

Dear Ashley:

Please find the attached PDF copy of the Phase II Investigation report for the Vision Quest Properties, LLC property (Parcel 85) located in Sylva, Jackson County, North Carolina. Please return via DocuSign for final signatures. If you have any questions or need additional information, please contact us at (704) 586-0007.

Sincerely,

Hart & Hickman, PC



David Graham, PG
Senior Project Geologist



Matt Bramblett, PE
Principal

Attachment

Phase II Investigation NC DOT Parcel 85

741 E. Main St.
Sylva, Jackson County
North Carolina

H&H Job No. ROW-704
State Project: R-5600
WBS Element No. 45818.1.FR1
November 30, 2022



SMARTER ENVIRONMENTAL SOLUTIONS

#C-1269 Engineering
#-245 Geology

2923 South Tryon Street, Suite 100
Charlotte, NC 28203
704.586.0007 main

3921 Sunset Ridge Rd , Suite 301
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**Phase II Investigation – Parcel 85
741 E. Main St.
Sylva, Jackson County
North Carolina
H&H Job No. ROW-704**

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Phase II Investigation – Parcel 85
741 E. Main St.
Sylva, Jackson County
North Carolina
H&H Job No. ROW-704

1.0 Introduction and Background

Hart & Hickman, PC (H&H) has prepared this Phase II Investigation (Phase II) report documenting assessment activities performed at the Vision Quest Properties, LLC property (Parcel 85) located at 741 E. Main St. in Sylva, Jackson County, North Carolina. This assessment was conducted on behalf of the North Carolina Department of Transportation (NC DOT) in accordance with H&H's August 17, 2022 proposal.

This assessment was conducted to evaluate the potential for underground storage tank (UST) systems and soil and groundwater impacts on the Parcel 85 property including proposed right-of-way and construction easement areas related to proposed road improvements along E. Main St. (State Project R-5600). This NC DOT road improvement project includes new curb and gutters, storm water drainage piping, sidewalks, etc. The property is currently vacant but was most recently occupied by Bryson Patch Auto Sales. Parcel 85 was previously occupied by an inactive gasoline station (Gas & Groceries). A site location map is included as Figure 1, and a site map is presented as Figure 2. NC DOT's plan sheet depicting Parcel 85 is included in Appendix A.

H&H searched the North Carolina Department of Environmental Quality (NC DEQ) Laserfiche website for incident files and NC DEQ UST databases for the Parcel 85 property address to better target UST system areas and to check for previously reported impacts. NC DEQ Incident No. 28606 was previously associated with the Parcel 85 property. According to the *Phase I Limited Site Assessment (LSA) Report* prepared by Alpha Environmental Sciences, Inc., dated June 11, 2008, one 1,000-gallon kerosene UST, two 10,000-gallon gasoline USTs and associated dispensers were removed from the site in February 2008. Total petroleum hydrocarbons (TPH) were detected above the NC DEQ Action level of 10 mg/kg in three soil samples during UST closure activities. During the 2008 LSA activities, soil samples were collected for risk-based analyses. No target petroleum-related constituents were detected in the soil samples collected at the site during the Phase I LSA

activities. In addition, monitoring well MW-1 was installed near the former UST basin in 2008. A low level concentration of benzene was detected slightly above its 15A NCAC 2L .0202 Groundwater Quality Standard (2L Standard). MW-1 remains in place on Parcel 85. NC DEQ issued a No Further Action status for Incident No. 28606 on June 12, 2008 pending completion and filing of a Notice of Residual Petroleum (NRP) on the property deed. No other information regarding filing of the NRP was available. Pertinent historical environmental documents are included in Appendix B.

The Phase II assessment activities conducted by H&H on Parcel 85 are discussed below.

2.0 Geophysical Survey

Prior to advancing soil borings, H&H reviewed the results of a geophysical survey performed on Parcel 85 by Pyramid Geophysical Services (Pyramid) on September 26 and 27, 2022. Pyramid utilized electromagnetic (EM) induction-metal technology and ground penetrating radar (GPR) technology to identify potential geophysical anomalies and potential USTs at the site. A total of seven EM anomalies were identified at the site. The EM anomalies were attributed to known surface metallic objects, such as reinforced concrete or above-ground metal structures (i.e. drop inlets, metal piles, etc.) that were not characteristic signatures of USTs. The EM/GPR results indicated that no suspected USTs were identified on the targeted survey area Parcel 85. Pyramid's report, including figures depicting the results of the EM/GPR survey, is provided in Appendix C.

3.0 Soil Assessment

3.1 Soil Sampling

H&H contracted with Geologic Exploration, Inc. (GEX) of Statesville, North Carolina to advance soil borings on Parcel 85. On October 14 and 17, 2022, 10 soil borings (SB-85-1 through SB-85-10) were advanced by GEX using a direct push technology (DPT) drill rig. Prior to conducting soil borings, underground utilities were marked by the NC 811 public utility locator and by Pyramid for private underground utilities. Borings were cleared to five feet by hand auger prior to using the DPT rig.

The soil borings were advanced to depths ranging from 8 to 15 ft below ground surface (bgs). Shallow groundwater was encountered approximately 4 to 7 ft bgs across the site at the time of our assessment. A temporary monitoring well was installed in a boring adjacent to soil boring SB-85-9 to evaluate shallow groundwater (see Section 4.0). To facilitate the selection of soil samples for laboratory analysis, soil from each boring was field screened continuously for the presence of volatile organic compounds (VOCs) with a photoionization detector (PID). Additionally, H&H observed the soil for visual and olfactory indications of impacts. Based on field screening, there were indications of potential impacts in borings SB-85-8 through SB-85-10. PID readings were significantly higher near the capillary fringe near the water table in borings SB-85-8 through SB-85-10. Soil samples were collected at various depths between 0 ft to 2 ft and 4 ft to 6 ft bgs. Soil boring logs are included in Appendix D. GPS coordinate data for the soil borings and temporary/existing monitoring wells are summarized in Table 1, and the boring locations are shown on Figure 2.

H&H submitted a total of ten soil samples from borings SB-85-1 through SB-85-10 for laboratory analysis. The soil samples were placed into laboratory-supplied sample containers using nitrile glove-covered hands. The containers were then labeled as to content, analyses requested, sample date and time, and sampler's name. The samples were placed in an iced cooler upon collection and were submitted to Red Lab, LLC of Wilmington, NC under standard chain-of-custody protocol for analysis of TPH as gasoline-range organics (GRO) and diesel-range organics (DRO) using QED ultraviolet fluorescence (UVF) technology. Soil sample depths and analytical results are summarized in Table 2. Laboratory analytical data sheets and chain-of-custody documentation are provided in Appendix E. The analytical results are discussed below.

Upon completion of soil sampling activities, the soil borings were filled with bentonite pellets and patched with concrete or asphalt to match the existing surface.

3.2 Soil Analytical Results

Concentrations of TPH DRO (ranging from 0.69 mg/kg to 21.7 mg/kg) and TPH GRO (ranging from 1.8 mg/kg to 12.6 mg/kg) were detected in soil samples collected from borings SB-85-3, SB-85-4, SB-85-6, SB-85-7, and SB-85-9. The DRO and GRO concentrations do not exceed the NC DEQ Action Levels of 100 mg/kg and 50 mg/kg, respectively. TPH DRO and GRO data are depicted on Figure 2.

Although laboratory analytical results indicate potential soil impacts below NC DEQ Action Levels in borings SB-85-8 through SB-85-10, PID readings from these borings indicate the potential for soil impacts near the water table. The elevated PID readings are likely due to impacted groundwater and historical groundwater table fluctuations creating a contamination smear zone near the water table. If impacted soil is encountered near Parcel 85 during the NC DOT construction activities, it should be properly managed and disposed at a permitted facility.

4.0 Groundwater Assessment

4.1 Groundwater Sampling

Based on the elevated PID readings measured near the water table in boring SB-85-9, temporary monitoring well TMW-1 was installed adjacent to this boring location.

The temporary well boring was advanced using the DPT macrocore sampler. The temporary monitoring well was installed to a total depth of 14 ft bgs with 4 ft of one-inch diameter PVC well casing, and 10 ft of 0.010-inch slotted pre-packed PVC well screen set to bracket the water table. Additional sand filter pack was placed from the bottom of the well boring to approximately 1 ft above the top of the well screen, and a bentonite seal was placed above the sand.

Once the monitoring well was installed, H&H developed the well by removing a minimum of 3 to 5 well volumes. After development activities, the well was allowed to equilibrate, and an electronic water level indicator was used to measure the depth to groundwater relative to the top

of ground surface. The depth to water was approximately 5.6 ft bgs in TMW-1. Monitoring well construction data and water level data are included in Table 3.

A groundwater sample was collected from the temporary well utilizing low-flow/low stress purging techniques using a peristaltic pump and dedicated polyethylene tubing. Groundwater was removed at a rate no greater than 200 milliliters per minute. H&H utilized a water quality meter to collect measurements of pH, temperature, dissolved oxygen, oxidation reduction potential (ORP), turbidity, and specific conductivity at various intervals during the purging process. Purging was considered complete when the parameters stabilized ($\text{pH} \pm 0.1$ SU, conductivity varied no more than 5%), or the well was purged dry.

The groundwater sample was collected directly into laboratory-supplied sample containers. The sample was delivered to Waypoint Analytical under standard chain of custody protocol for analysis of VOCs by EPA Method 8260 and polynuclear aromatic hydrocarbons (PAHs) using EPA Method 8270. The groundwater sample analytical results are summarized in Table 4. A Groundwater Sampling Record is included in Appendix F.

Upon completion of groundwater sampling activities, the temporary groundwater monitoring well was abandoned in accordance with NC DEQ guidelines and the surface was patched with asphalt to match the existing surface. The well boring log, well construction record, and well abandonment record are included in Appendix D.

4.2 Groundwater Analytical Results

Low level concentrations of VOCs including n-butylbenzene and sec-butylbenzene were detected in the groundwater sample collected from TMW-1 below their respective 2L Standards. PAHs were not detected.

NC DEQ regulations allow construction dewatering to surface water if surface water standards are not contravened. In addition, there can be no seepage on the water to be discharged. As such, the groundwater concentrations noted above were also compared to the NC Water Quality Standards for Surface Water (2B Standards). The nearest discharge is to a Class C/Trout surface

water body (Cope Creek). Based on the classification of the receiving water body downgradient of the site, concentrations detected in groundwater were compared to criteria applicable for Class C and Trout surface water. Per NC Division of Water Resources (DWR) guidance (NC DWR Surface Water Quality Standards, Criteria & In-Stream Target Values table, July 2021), if no 2B Standards exist for certain compounds, concentrations were also compared to the lower of the EPA National Recommended Water Quality Criteria or NC In-Stream Target Values. Based on this comparison, the concentrations detected in TMW-1 did not exceed the NC surface water criteria.

Based on laboratory analytical results for TMW-1, groundwater is not impacted above 2L Standards or NC surface water criteria at the site. If impacted groundwater above 2L Standards or NC surface water criteria is encountered and dewatering activities are required during NC DOT construction activities, the groundwater should be characterized and properly managed via NPDES permitted discharge or containerization and disposal at a permitted facility. Groundwater analytical data are shown on Figure 3.

5.0 Summary and Regulatory Considerations

H&H has reviewed available NC DEQ files, geophysical survey results, and analytical results for soil and groundwater samples collected at the Parcel 85 property located at 741 E. Main St. in Sylva, Jackson County, North Carolina. The property is currently vacant but was most recently occupied by Bryson Patch Auto Sales. Parcel 85 was previously occupied by a former gasoline station (Gas & Groceries). Review of UST incident files indicate that low level petroleum impacted soil and groundwater were previously identified on Parcel 85 (Incident No. 28606).

No USTs were identified during the geophysical survey conducted on Parcel 85. Analytical results of soil samples collected by H&H indicate low concentrations of TPH DRO and TPH GRO below the NC DEQ Action Levels in select soil samples. Low level concentrations of VOCs were detected in a groundwater sample collected from temporary monitoring well TMW-1 below 2L Groundwater Standards and NC surface water criteria.

NC DOT plans indicate proposed drainage piping installations in proposed NC DOT work areas near Parcel 85. If impacted media are encountered during road construction activities, it should be properly managed and disposed at a permitted facility. The depth to water in TMW-1 was approximately 5 ft below grade at the time of H&H's assessment. If an UST is encountered during construction activities, the UST system(s) and their contents should be removed in accordance with NC DEQ regulations and be properly disposed.

6.0 Signature Page

This report was prepared by:

DocuSigned by:
David Graham 12/05/2022
9F6FAD6E6BA34BE...

David Graham, PG
Senior Project Geologist for
Hart & Hickman, PC



This report was reviewed by:

DocuSigned by:
Matt Bramblett
CBCA88C0F0E347B...

Matt Bramblett, PE
Principal and Project Manager for
Hart & Hickman, PC

Not considered final unless all signatures are completed.

Table 1 (Page 1 of 1)
Soil Boring and Monitoring Well GPS Coordinate Data
NC DOT Parcel 85
Sylva, Jackson County, North Carolina
H&H Job No. ROW-704

Sample ID	Latitude	Longitude
SB-85-1	35.368484	-83.202224
SB-85-2	35.368579	-83.202176
SB-85-3	35.368558	-83.202243
SB-85-4	35.368640	-83.202292
SB-85-5	35.368783	-83.202266
SB-85-6	35.368756	-83.202175
SB-85-7	35.368841	-83.202239
SB-85-8	35.368800	-83.202420
SB-85-9/TMW-1	35.368665	-83.202388
SB-85-10	35.368747	-83.202435
MW-1	35.368568	-83.202277

Notes:

GPS coordinate data points collected using a Trimble GeoExplorer 6000 series unit with external satellite for increased accuracy.

Table 2 (Page 1 of 1)
Soil Analytical Results
NC DOT Parcel 85
Sylva, Jackson County, North Carolina
H&H Job No. ROW-704

Sample ID	SB-85-1	SB-85-2	SB-85-3	SB-85-4	SB-85-5	SB-85-6	SB-85-7	SB-85-8	SB-85-9	SB-85-10	NC DEQ Action Levels
Sample Depth (ft)	0-2	2-4	2-4	0-2	2-4	2-4	3-4	4-5	4-6	4-6	
Sample Date	10/14/2022	10/17/2022	10/17/2022	10/17/2022	10/17/2022	10/17/2022	10/17/2022	10/17/2022	10/17/2022	10/17/2022	
<u>TPH DRO/GRO (UVF) (mg/kg)</u>											
Diesel-Range Organics (DRO)	<0.22	<0.6	1.7	21.7	<0.31	13.4	0.69	<0.53	19.2	<0.58	100
Gasoline-Range Organics (GRO)	<0.22	<0.6	1.8	1.8	<0.31	2.4	3.2	<0.53	12.6	<0.58	50

Notes:
UVF = QED Ultraviolet Fluorescence Technology; NC DEQ = North Carolina Department of Environmental Quality
Bold values exceed NCDEQ Action Levels.
TPH = Total Petroleum Hydrocarbons
DRO = Diesel-Range Organics
GRO = Gasoline-Range Organics

Table 3 (Page 1 of 1)
Summary of Well Construction and Water Level Data
NC DOT Parcel 85
Sylva, Jackson County, North Carolina
H&H Job No. ROW-704

Monitoring Well ID	Screened Interval (ft bgs)	Total Depth (ft bgs)	Depth to Water (ft bgs)
TMW-1	4-14	14.0	5.60

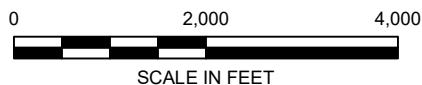
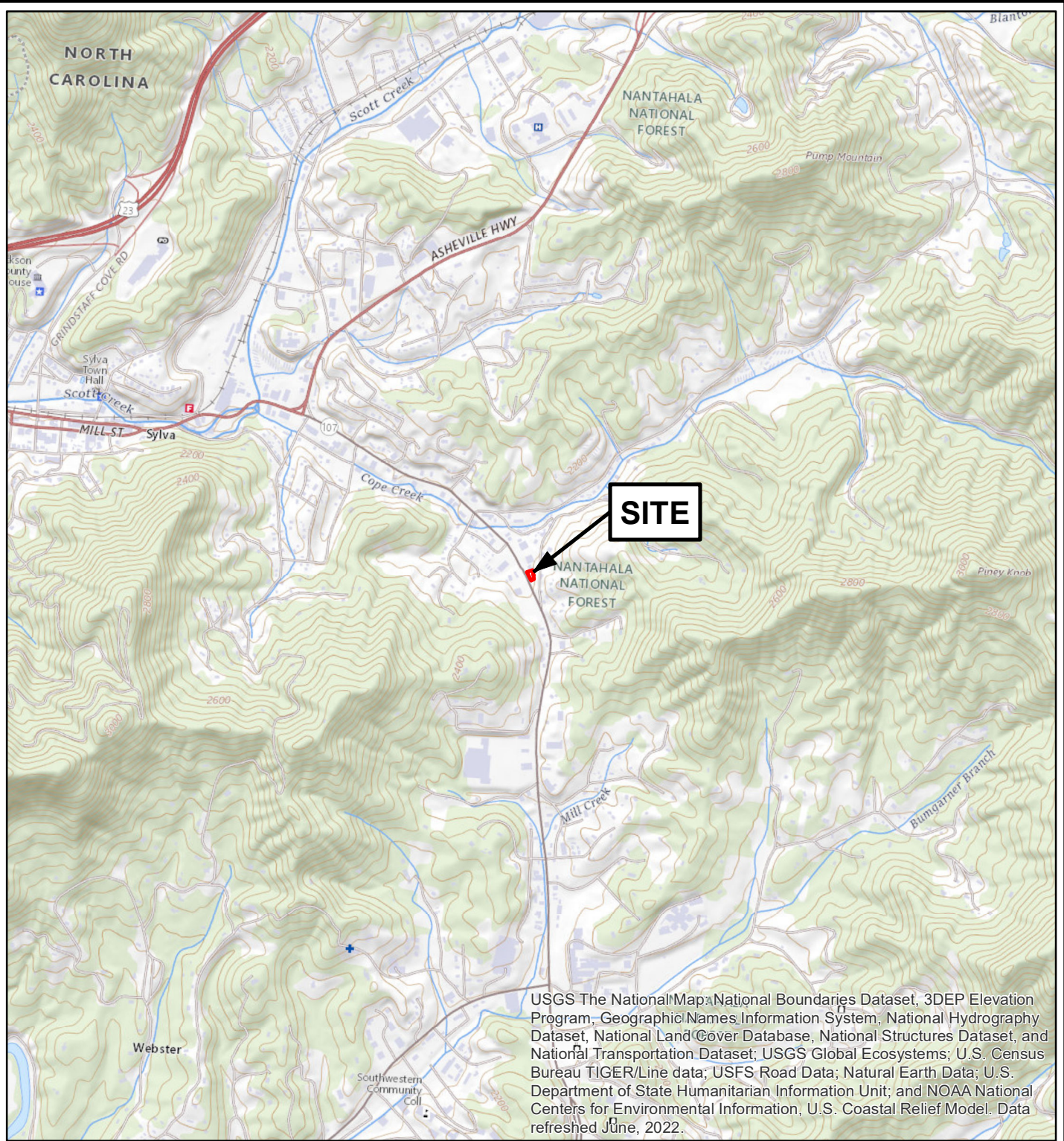
Notes:

bgs = below ground surface

Table 4 (Page 1 of 1)
Summary of Groundwater Analytical Results
NC DOT Parcel 85
Sylva, Jackson County, North Carolina
H&H Job No. ROW-704

Sample ID	TMW-1 (85)	NC 2L Standards ¹	NC UST GCL ²	NC 2B Standards ³	Water Quality Criteria ⁴
Date	10/18/2022				
Units	ug/L				
<u>VOCs (8260)</u>					
n-Butylbenzene	0.941 J	70	5,900	NE	3.9
sec-Butylbenzene	0.821	70	8,800	NE	NE
<u>PAHs (8270)</u>	BDL	--	--	--	--

Notes:
1) NC DEQ 15A NCAC 2L .0202 Groundwater Quality Standards (2L Standards) (April 2022).
2) NC DEQ Division of Waste Management (DWM) Underground Storage Tank (UST) Section, Gross Contamination Levels (GCLs) for Groundwater (September 2022).
3) NC DEQ Water Quality Standards for Surface Waters - Class C/Trout (Tr) (July 2021).
4) Lower of EPA Recommended Water Quality Criteria for Aquatic Life & Human Health - Class C/Tr or NC In-Stream Target Values for Surface Water - Class C/Tr (July 2021).
The nearest discharge is to a Class C/Tr surface water body (Cope Creek). Based on the classification of the receiving water body, surface water standards and criteria are based on Class C/Tr surface water standards.
Only constituents detected in at least one sample are shown.
EPA Method follows parameter in parentheses.
VOCs = volatile organic compounds; PAHs = polycyclic aromatic hydrocarbons
NE = not established; BDL = below detection limits
J = estimated value above the method detection limit but below the reporting limit

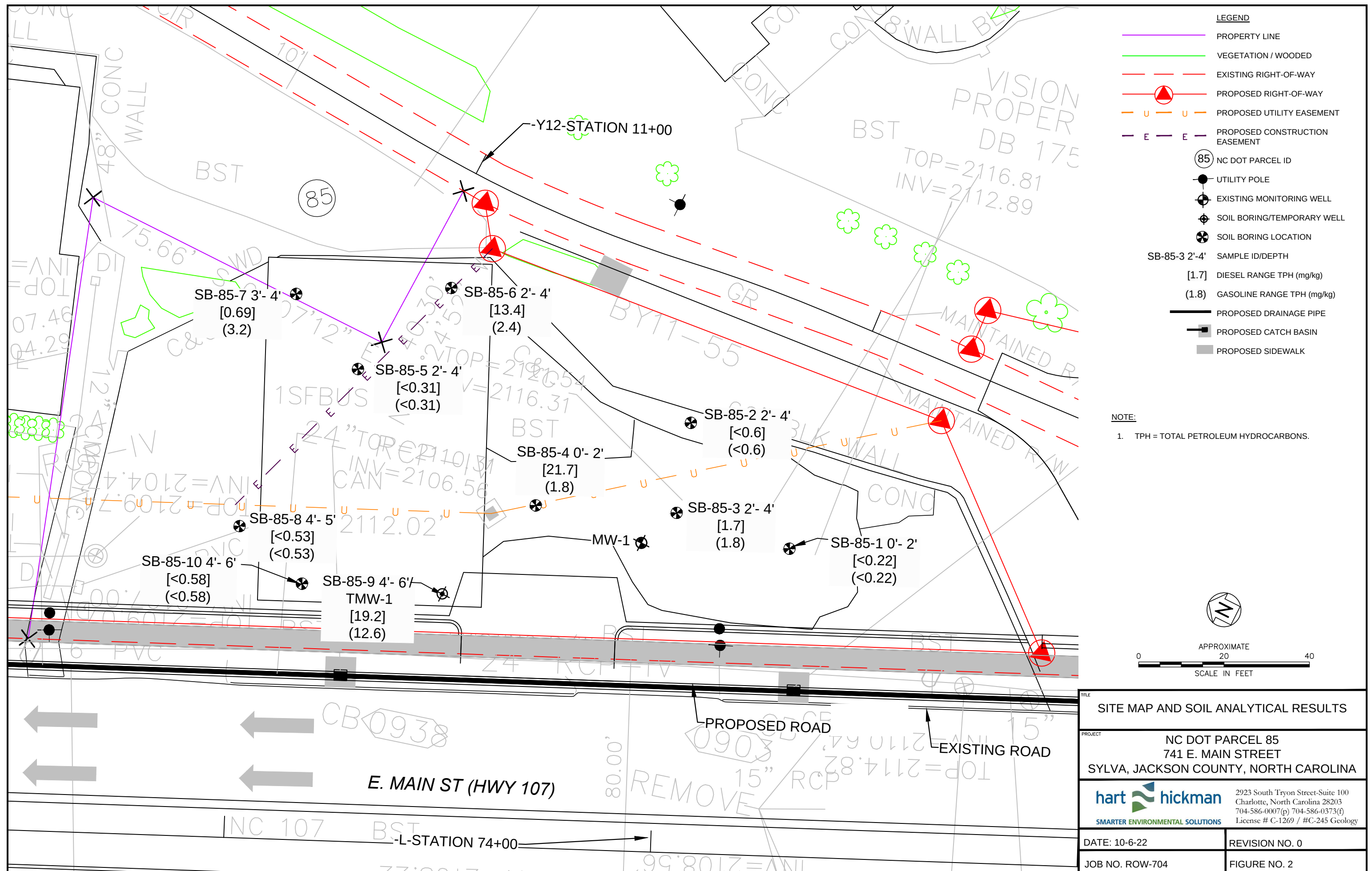


U.S.G.S. QUADRANGLE MAP

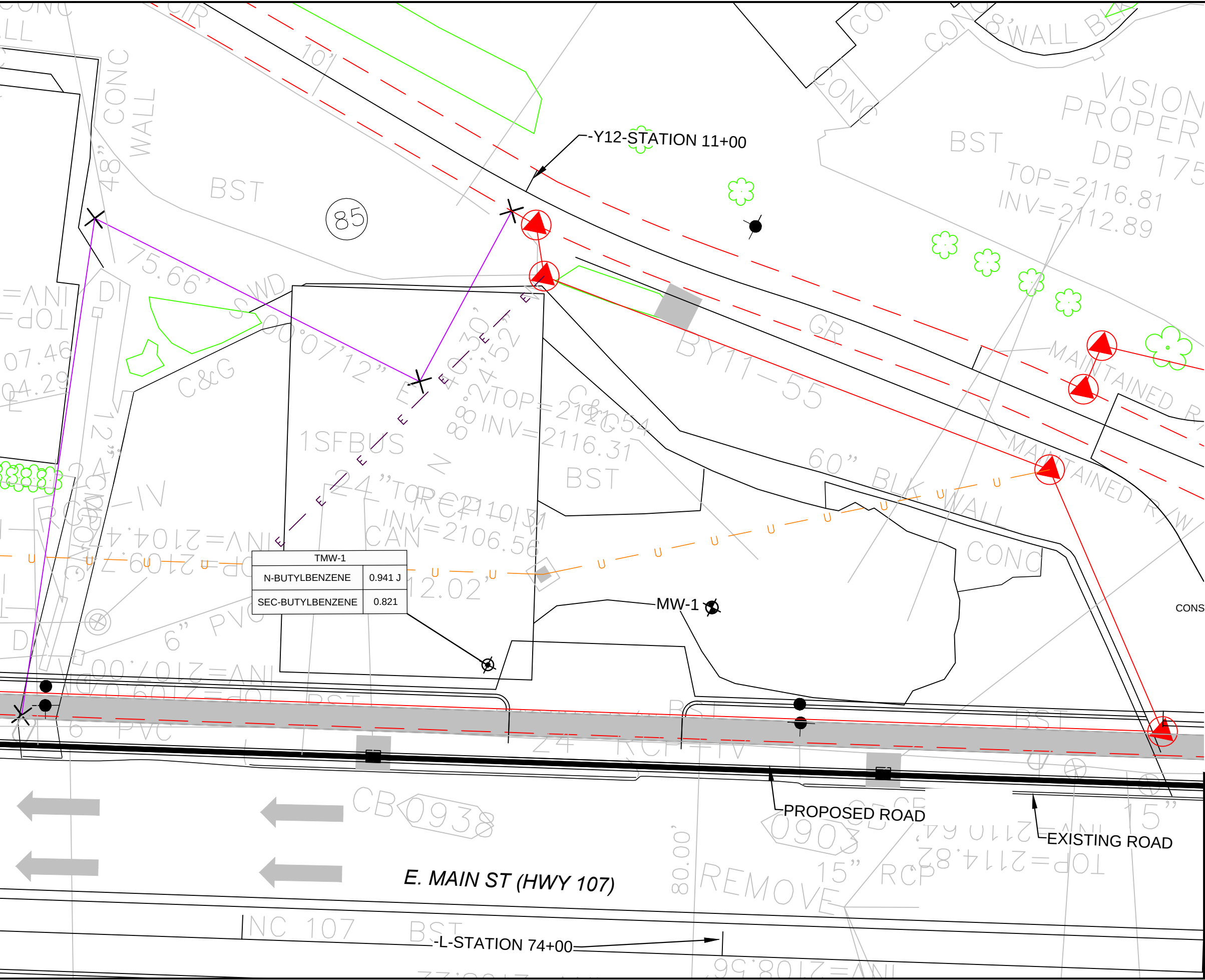
SYLVA SOUTH, NORTH CAROLINA 2022

QUADRANGLE
7.5 MINUTE SERIES (TOPOGRAPHIC)

TITLE		SITE LOCATION MAP	
PROJECT		NCDOT PARCEL 85 741 E. MAIN ST SYLVA, NORTH CAROLINA	
 SMARTER ENVIRONMENTAL SOLUTIONS		2923 South Tryon Street - Suite 100 Charlotte, North Carolina 28203 704-586-0007 (p) 704-586-0373 (f) License # C-1269 / # C-245 Geology	
DATE: 10-5-22		REVISION NO: 0	
JOB NO: ROW-704		FIGURE NO: 1	



S:\AAA-Master Projects\NC DOT Right-of-Way - ROW\ROW-704 Jackson County Phase 1\FIGURES\ROW-704 Site Maps 100422_recover.dwg, PARCEL 85 (2), 11/15/2022 10:16:50 AM, lmarbury



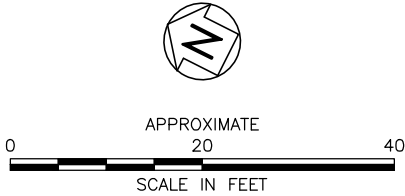
- LEGEND**
- PROPERTY LINE
 - VEGETATION / WOODED
 - EXISTING RIGHT-OF-WAY
 - PROPOSED RIGHT-OF-WAY
 - PROPOSED UTILITY EASEMENT
 - PROPOSED CONSTRUCTION EASEMENT
 - NC DOT PARCEL ID
 - UTILITY POLE
 - EXISTING MONITORING WELL
 - TEMPORARY WELL
 - PROPOSED DRAINAGE PIPE
 - PROPOSED CATCH BASIN
 - PROPOSED SIDEWALK

SAMPLE ID

TMW-1	
N-BUTYLBENZENE	0.941 J
SEC-BUTYLBENZENE	0.821

CONSTITUENT

CONCENTRATION (µg/L)



TITLE GROUNDWATER ANALYTICAL RESULTS	
PROJECT NC DOT PARCEL 85 741 E. MAIN STREET SYLVA, JACKSON COUNTY, NORTH CAROLINA	
hart hickman SMARTER ENVIRONMENTAL SOLUTIONS 2923 South Tryon Street-Suite 100 Charlotte, North Carolina 28203 704-586-0007(p) 704-586-0373(f) License # C-1269 / #C-245 Geology	
DATE: 10-6-22	REVISION NO. 0
JOB NO. ROW-704	FIGURE NO. 3

Appendix A
NC DOT Preliminary Plan

2020 ADT
2035 ADT
(ADT IN 100's)

SR 1449
COPE CREEK RD.

54
78

341 29 25 336
388 43 34 378

NC 107 NC 107

4 3
5 4

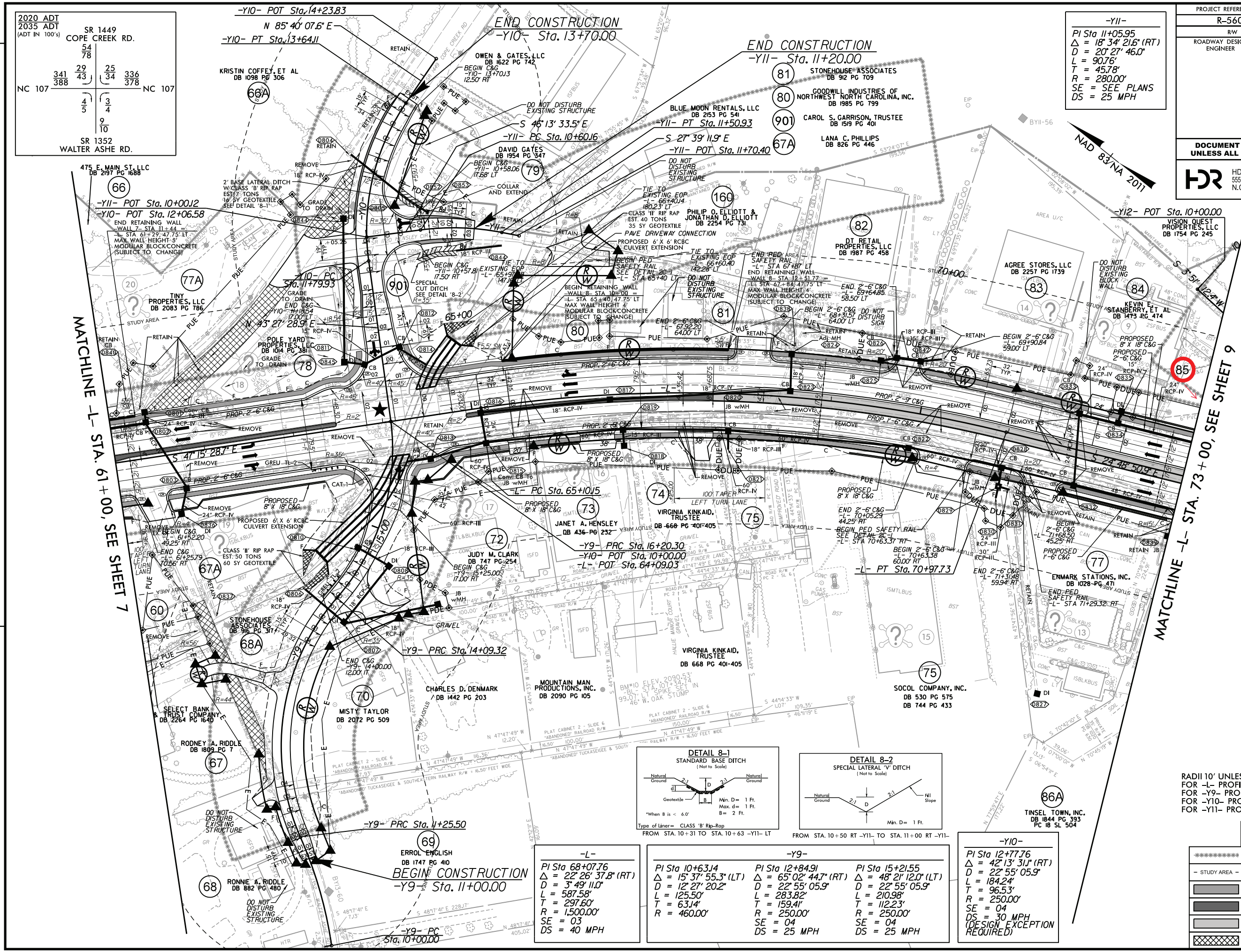
9
10

SR 1352
WALTER ASHE RD.

PROJECT REFERENCE NO.	SHEET NO.
R-5600	8
R/W SHEET NO.	
RW-8	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



HDR Engineering, Inc. of the Carolinas
 555 Fayetteville St, Suite 900 Raleigh, N.C. 27601
 N.C.B.E.L.S. License Number: F-0116



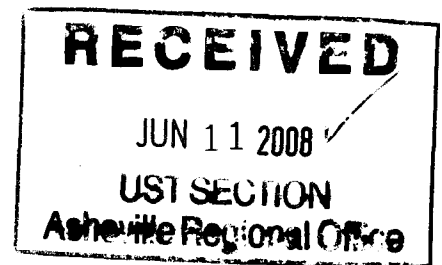
RADII 10' UNLESS OTHERWISE NOTED
FOR -L- PROFILE, SEE PROFILE SHEET 18
FOR -Y9- PROFILE, SEE PROFILE SHEET 26
FOR -Y10- PROFILE, SEE PROFILE SHEET 26
FOR -Y11- PROFILE, SEE PROFILE SHEET 26

	PROPOSED SIGNAL
	APE
~ STUDY AREA ~	STUDY AREA
	PROP CONC SIDEWALK
	PROP MON ISLAND
	RAISED GRASS MEDIAN
	PAVEMENT REMOVAL

PLOT DRIVER: NC00T_pdf_color_eng_50.plt	9/7/2021:	TCE REVISED; PARCEL 85	REVISED; PARCEL 70 & 72	TCE REVISED; PARCEL 72	PUE REVISED AND	PDE ADDED; PARCEL 71	IMPACTS REMOVED
USER: ASDNER	DATE: 7/29/2022	7/29/2022:	PARCELS 68A & 72	ROW			
			PENTABLE: R5600_pshpfl.tbl				
			TIME: 1:53:46 PM				

Appendix B

Historical Environmental Documents



**PHASE I
LIMITED SITE
ASSESSMENT REPORT**

Former Gas and Grocery #12
715 East Main Street, Sylva, NC
Jackson County

**UST Incident #
AES Project # 8210.01 P2**

Prepared For:

**Mr. Scott Stanberry
PO Box 577
Sylva, NC 28779**

*Loggins
6/12*

**NC DENR - Division of Waste Management - UST Section
Asheville Regional Office
2090 US Highway 70
Swannanoa, NC 28778**

Prepared By:

**Alpha Environmental Sciences, Inc.
162 Coxe Avenue, Suite 101
Asheville, NC 28801
(828) 398-2040**

June 11, 2008

A. SITE IDENTIFICATION

1. Site Identification

Date of Report: 6/6/08

Facility I.D.: N/A

UST Incident Number: Pending

Site Name: Former Gas and Grocery #12

Site Street Address: 719 East Main Street

City/Town: Sylva, NC

Zip Code: 28779

County: Jackson

Description of Geographical Data Point: Kerosene Tank Fill

Location Method: USGS 1:24,000 Topographical Map.

Latitude: 35° 22' 10" **Longitude:** 83° 12' 15"

2. Information about Contacts Associated with the Leaking UST System

UST Operator: Peak Energy

Address: 2707 Asheville Highway, Waynesville, NC 28786

Phone: 828-456-9035

Property Owner: J. Drew Moore

Address: 812 Park Avenue, Sanford, NC 27330

Phone: 919-774-1165

Consultant/Contractor: Alpha Environmental Sciences, Inc.

Address: 162 Coxe Avenue Su 101 Asheville, NC 28801

Phone: 828-398-2040, Fax: 828-452-7828

Analytical Laboratory: Pace Analytical Services, Inc.

State Certification No.: 40

Address: 9800 Kinsey Ave., Suite 100, Huntersville, NC 28078

Phone: 704-875-9092

3. Information about Release

Date Discovered: 2/14/2008

Estimated Quantity of Release: Unknown

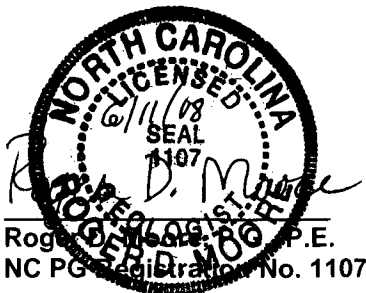
Cause of Release: Slow leaking of product through multiple locations at connections to the dispensers.

Source of Release: Product Line to dispenser connections

Size and Contents of the UST System from which the Release Occurred: Two 10,000 gallon gasoline tanks and one (1) 1000 gallon kerosene

4. Certification

I, Roger D. Moore, P.G., a Licensed Geologist for Alpha Environmental Sciences, Inc., do certify that the information contained in this report is correct and accurate to the best of my knowledge.



John Mazurek, P.G.
Environmental Project Manager

Alpha Environmental Sciences, Inc. is licensed to practice geology and engineering in North Carolina. The certification numbers of the company are C-262 and C-1231, respectively.

B. RISK CHARACTERIZATION

Part 1 - Groundwater/Surface Water/Vapor Impacts

High Risk

1. Has the release contaminated any water supply well including any well used for non-drinking purposes? **NO**
2. Is a water supply well used for drinking water located within 1,000 feet of the source area of release? **YES**
3. Is a water supply well not used for drinking water (e.g., irrigation, washing cars, industrial cooling water, filling swimming pools) located within 250 feet of the source area of the release? **NO**
4. Does groundwater within 500 feet of the source area of the release have the potential for future use (there is no other source of water supply other than the groundwater)? **Public water is available from Tuckasegee Water and Sewer Authority** **NO**
5. Do vapors from the release pose a threat of explosion because of accumulation of the vapors in a confined space or pose any other serious threat to public health, public safety or the environment?
If yes, describe. **NO**
6. Are there any other factors that would cause the release to pose an imminent danger to public health, public safety, or the environment? **NO**

Intermediate Risk

7. Is a surface water body located within 500 feet of the source area of the release? **The closest surface water body is 950 feet to the northwest.** **NO**
If yes, does the maximum groundwater contaminant concentration exceed the surface water quality standards and criteria found in 15A NCAC 2B .0200 by a factor of 10? **NO**
8. Is the source area of the release located within a approved or planned wellhead protection area as defined in 42 USC 300h-7 (e)? **NO**
9. Is the release located in the Coastal Plain physiographic region as designated on a map entitled "Geology of North Carolina" published by the Department in 1985? **NO**
10. Do the levels of groundwater contamination for any contaminant exceed the gross contamination levels (see Table 9) by the Department? **NO**

Part II - Land Use

Property Containing Source Area of Discharge or Release

1. Does the property contain one or more primary or secondary residences (permanent or temporary)? **NO**
Describe. **The property contains one small convenience store building which may be demolished to build commercial building(s)**

2. Does the property contain a school, daycare center, hospital, playground, park, recreation area, church, nursing home, or other place of public assembly? **NO**
Describe.
3. Does the property contain a commercial (e.g., retail, warehouse, office/business space, etc.) or industrial (e.g., manufacturing, utilities, industrial research and development, chemical/petroleum bulk storage, etc.) enterprise, an inactive commercial or industrial enterprise, or is the land undeveloped? **YES**
Describe. **The property only contains one small store building**
4. Do children visit the property? **YES**
Describe. **The business is closed, however children of all ages may visit the property.**
Is access to the property reliably restricted consistent with its use (e.g., by fences, security personnel or both?) **NO**
Describe. **The property does not have restricted access.**
5. Do pavements, buildings, or other structures cap the contaminated soil? **YES**
Describe. **The remaining contaminated soil is beneath the store building area.**
If yes, what mechanisms are in place or can be put into place to ensure that the contaminated soil will remain capped in the foreseeable future? **If demolition and new construction are planned, the buyer has stated that the remaining contamination above the water table will be removed and properly disposed of.**
6. What is the zoning status of the property? **Commercial**
7. Is the use of the property likely to change in the next 20 years? **NO**
Describe. **The value of the property is the traffic flow along Main street in this area. This will only increase over time.**

Property Surrounding Source Area of Discharge or Release

1. What is the distance from the source area of the release to the nearest primary or secondary residence (permanent or temporary)? **The distance to the nearest primary residence from the source area of the release is approximately 350 feet in the assumed down-gradient direction.** **350 feet**
2. What is the distance from the source area of the release to the nearest school, daycare center, hospital, playground, park, recreation area, church, nursing home or other place of public assembly? **The nearest place of public assembly is the Assembly of God Church located 400 ft. to the southeast of the site.** **450 feet**
3. What is the zoning status of properties in the surrounding area? **Residential**
4. Briefly characterize the use and activities of the land in the surrounding area. **The land use in the area surrounding the site is predominantly residential. One church and one gas station are the exceptions.**

C. RECEPTOR INFORMATION

1. Water Supply Wells

Alpha Environmental Sciences, Inc. performed a surrounding water supply well survey of the area within 1,500 feet of the Former Gas and Grocery #12 (Figs. 1 & 2). Fourteen (14) water supply wells were identified within 1,500 feet of the source area of the release with two (2) of the water supply wells located within 500 feet of the source of the release and fourteen water supply wells located within 1,000 feet of the source of the release (Fig. 3). One (1) of the wells within 500 feet of the source area, is down-gradient of the release. The closest water supply well to the source area of the release is the Assembly of God Church water supply well (WSW-1) located upgradient from the source. WSW-1 is located approximately 87 feet northeast of the source area of the release. This well is currently supplying the drinking water to the church on the adjacent property. Table 1 contains a summary of the water supply wells within the 1,500-foot survey radius.

The water supply well survey was performed by first contacting the Jackson County GIS Department for a map with property boundaries. Then Tuckasegee Water and Sewer Authority (TWASA) was contacted regarding the availability of public water and locations of public water lines within 1,500 feet of the source area of the release. Next, a physical survey was carried out by walking each road within the 1,500-foot survey radius. Each property within the 1,500-foot survey radius was visually scanned for water supply. Homeowners were questioned (if home) or surveys were passed out to all properties in which the homeowner/business owner was not present at the time of the survey.

2. Public Water Supplies

TWASA public water is the available public water supply to the Former Gas and Grocery #12. The nearest public water line is located in the roadway (Main Street-NC 107).

3. Surface Water

The Former Gas and Grocery #12 is located adjacent to NC 107(East Main Street), a five lane highway. The site is located in an area of mixed commercial and residential properties with most residences being sold to convert the land to commercial usage. The site is situated on the northwest side of Cope Creek, one of the larger tributaries of the Tuckasegee River. Surficial and groundwater from the site move to the northwest from the source area of the release. According to the USGS 1:24,000 topographic quadrangle map of the area, Cope Creek is located approximately 950 feet to the northwest of the property and flows west into the Tuckasegee River from the Site.

4. Wellhead Protection Areas

There are no designated wellhead protection areas within 1,500 feet of the source area of the release.

5. Deep Aquifers of the Coastal Plain

This area does not recharge the deep aquifers of the Coastal Plain province.

6. Subsurface Structures

Public sewer lines run along NC 107. Several additional underground utilities including electric, telephone, and cable were disconnected during tank removal and soil cleanup activities. A septic tank was discovered during tank closure activities, located between the store building and the rear retaining wall under the canopy. At the direction of the buyer, the tank was pumped of remaining effluent and filled with gravel. No sheen or product was noted in the tank.

7. Property Owners and Occupants

Table 2 lists the names and addresses for the properties contiguous to the source area (Fig. 4). The Former Gas and Grocery is located in a mixed use area containing both commercial and residential properties. The nearest place of public assembly to the Gas and Grocery is the Sylva Assembly of God Church located approximately 130 feet uphill to the southeast.

D. SITE GEOLOGY AND HYDROGEOLOGY

The subject site is located within the Blue Ridge Physiographic Province of Western North Carolina. According to the Geologic Map of North Carolina (NC Geologic Survey, 1985) the Site is underlain by Middle to Late Proterozoic migmatitic biotite gneiss (ZYbn) interlayered and gradational with biotite-garned gneiss and amphibolite.

The former Gas and Grocery sits near the base of a slope on flat terrain with drainage primarily to the northwest. Groundwater was encountered within MW-1 at an approximate depth of 4.17 ft below ground surface. Soils on-site consist of silty sand (SM) derived primarily from saprolitized biotite gneiss and schist.

E. SAMPLING RESULTS

For this Limited Site Assessment, the data from the original monitoring well installed for the Initial Abatement Actions (IAA) Report has been included for reference. The well was installed due to shallow groundwater in the underground storage tank pit. No soil samples were acquired during the monitoring well installation due to shallow groundwater in the tank pit area.

Monitoring well MW-1 was sampled by Alpha personnel on March 25, 2008. Sample MW-1 was submitted to a NC certified laboratory and analyzed via EPA methods 602, and 625, as well as the MADEP method for EPH/VPH. Groundwater sample MW-1 contained benzene at a level exceeding NCAC 2L groundwater quality standards (Table 4).

In order to assess the release for site closure, additional soil samples were collected for constituent analysis. The locations sampled consisted of tank closure samples that exceeded the action level of 10 ppm total petroleum hydrocarbon. Three locations were noted in the

IAA report which included SS-12, DS-6 and DS-1. Samples of the soils in these locations were collected with a Geoprobe®. The new samples were identified as P-1, P-2 and P-3 respectively. The soil samples were placed in prepared sample containers, labeled and placed in an ice filled cooler. A chain of custody record was completed and the samples were transported to a NC certified analytical laboratory. The samples were analyzed in accordance with EPA 8260/8270 and MADEP VPH/EPH. No petroleum constituents were detected in any of the samples. See table 5 for the analytical results. Figure 5 shows the locations of the probe samples.

F. CONCLUSIONS AND RECOMMENDATIONS

Assessment guidance and risk classification criteria suggest that the site should be ranked as a High Risk site due to the close proximity of drinking water wells to the source area of the release. Groundwater contamination exists at the site at very low level and one (1) drinking water well is located within a 500-foot radius down-gradient of the release. However, since the source of contamination has been removed from the Site, further contamination of the groundwater to levels above the NCAC 2L groundwater quality standards is unlikely. The source of contamination, the UST's, and nearly all of the petroleum contaminated soils above the water table have been removed, therefore, there is very little remaining risk to down-gradient wells. In addition, the nearest downgradient well is on a property that is for sale as commercial property and will need public water for development. We request on behalf of the owner, that the site rank be reduced to low and the site closed with no further action.

G. FREE PRODUCT INVESTIGATION

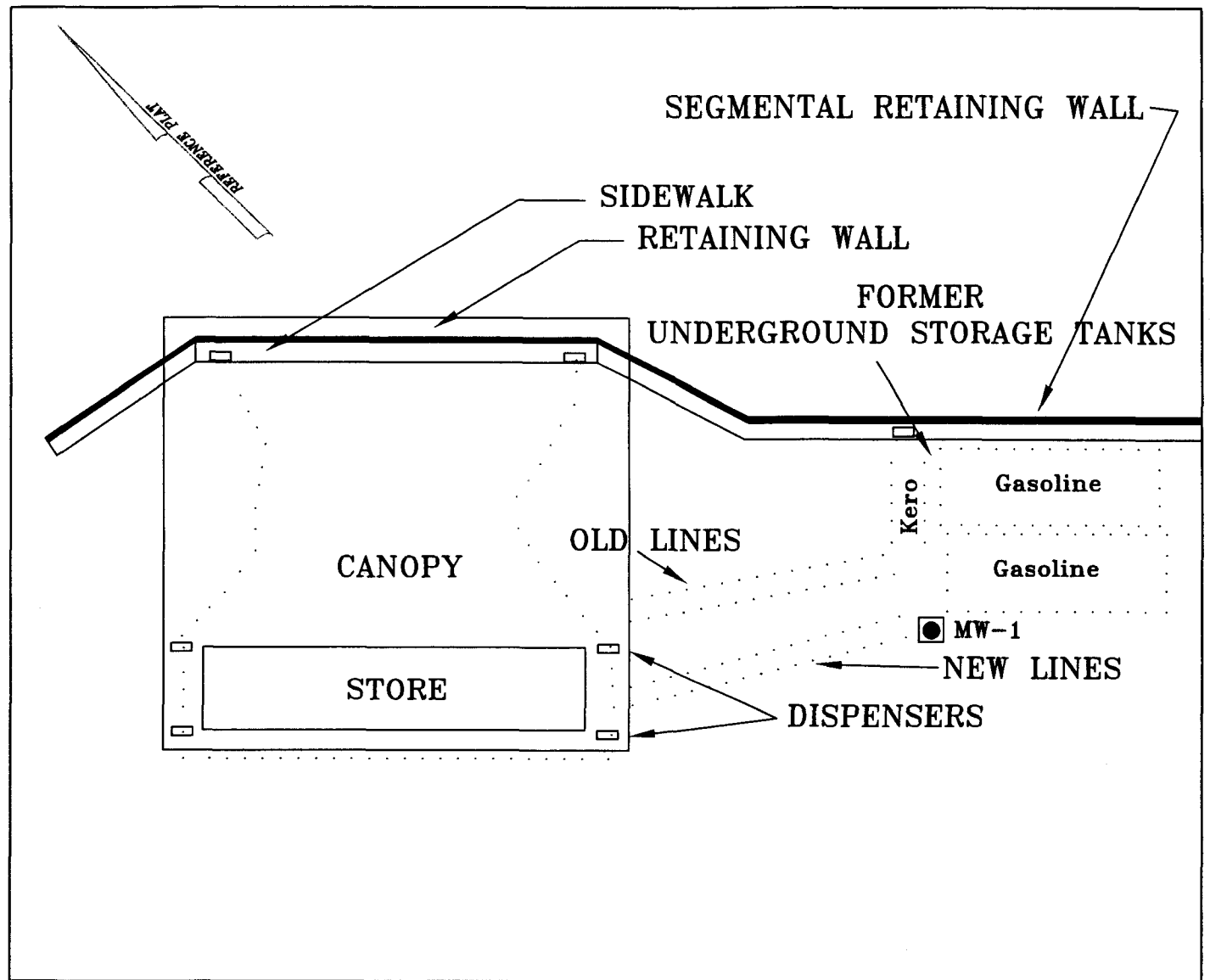
Free product was not encountered during any assessment or abatement activity at the Former Gas & Grocery # 12

H. SITE HISTORY

Please see Tables 6 and 7 for updated information concerning the site history.

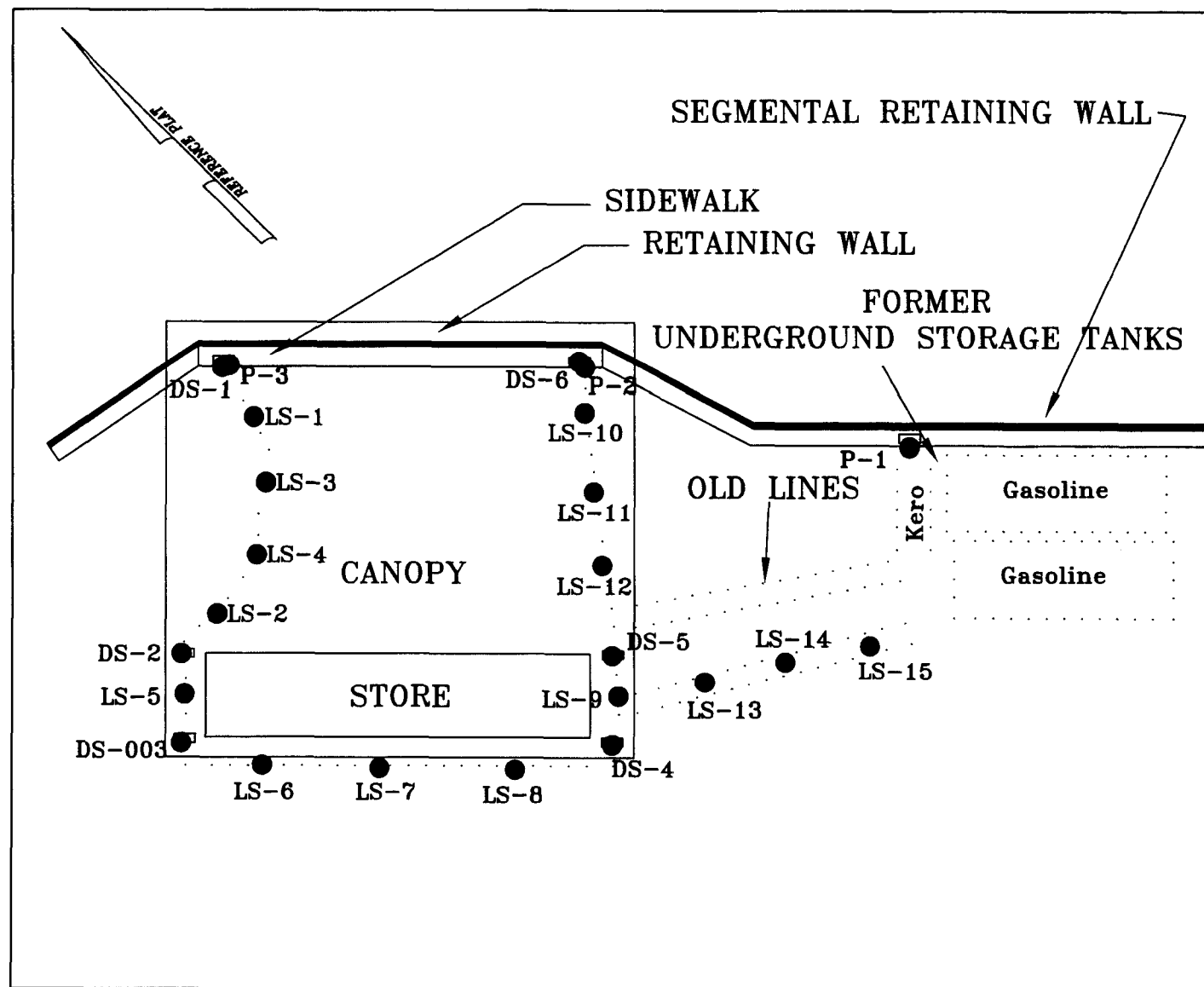
I. CLOSING REMARKS

This Limited Site Assessment Report and the results found herein are limited to the specific site and the boring locations as described. However, it is a well-known fact that variation in both geology and hydrogeology may occur between boring locations and well sampling locations. It is also a well-known fact that changes in groundwater and subsurface conditions can and do occur through time. These chiefly are regarding groundwater flow velocity, groundwater elevations and changes in groundwater quality at various locations on a given site. The conclusions drawn from the data presented in this report as well as the reporting methodology are in general accordance with the existing standards and accepted hydrogeologic and environmental engineering practices in use at the current time. Should at some point in the future, changes occur which require revision of this report or the conclusions drawn from it, we reserve the right to make the necessary changes given the data showing the changes and conditions and revise the conclusions drawn from the data as may be required.



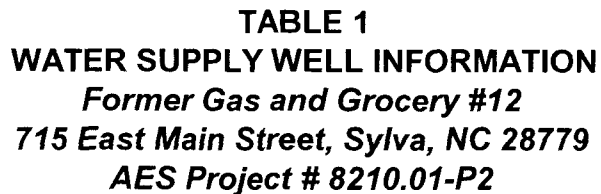
NC 107

Former Gas and Grocery Sylva, NC	
Schematic Site Base Map AES #8052.01	
Not to Scale	ALPHA Environmental Sciences, Inc.
DRAWN BY: RDM	
DATE: 06/11/08	
FIGURE 2	



NC 107

Former Gas and Grocery #12 Sylva, NC	
Probe Sample Locations AES #8210.01	
Not to Scale	ALPHA Environmental Sciences, Inc.
DRAWN BY: RDM	
DATE: 06/11/08	
FIGURE 5	



Well ID	Well Owner	Address	Phone Number	Well Use	Well Depth (ft. BGS)	Type of Well	Well Casing Depth (ft. BGS)	Well Screen Interval (x to y ft. BGS)	Distance from source area of release (ft)	Up or Downgradient	Comments
WSW-1	Church	255 Hensley Circle	UK	UK	UK	UK	UK	UK	87	U	VI
WSW-2	Kelly Robinson	149 Hensley Circle	828-631-WELD	DW, I, SP, & WL	UK	UK	UK	UK	401	U	C
WSW-3	Glen Hensley	67 Citrus Drive	UK	UK	UK	UK	UK	UK	520	D	VI
WSW-4	Larry Barnes	54 Liberty Drive	828-586-2321	DW	100	UK	UK	UK	534	U	C
WSW-5	Charles Fox	145 Hensley Circle	UK	UK	UK	UK	UK	UK	586	D	VI
WSW-6	Stonehouse Associates	623 East Main Street	828-586-5858	DW, I	UK	UK	UK	UK	607	D	C
WSW-7	Bernice Elliott	647 East Main Street	828-586-2996	DW	UK	UK	UK	UK	616	D	C
WSW-8a	Norman & Connie Flaxman	Flaxman Cove Road	UK	DW	100	UK	UK	UK	664	U	C
WSW-8b	Norman & Connie Flaxman	Flaxman Cove Road	UK	DW	160	UK	UK	UK	704	U	C
WSW-9	Ronald Clark	600 East Main Street	UK	UK	UK	UK	UK	UK	637	D	VI
WSW-10	Robert Price	PO Box 447-Hwy.107	UK	UK	UK	UK	UK	UK	659	U	VI
WSW-11	Tommy Ginn	PO Box 201-Hwy.107	UK	UK	UK	UK	UK	UK	664	D	VI
WSW-12	Roland English	103 Walter Ashe Road	UK	UK	UK	UK	UK	UK	670	D	VI
WSW-13	Douglas Cody	150 Cope Creek Road	828-586-5885	DW	90	UK	25	UK	900	D	C
WSW-14	Charles Denmark	42 Path Finder Lane	UK	UK	UK	UK	UK	UK	928	D	VI



TABLE 2
Former Gas and Grocery #12
715 East Main Street, Sylva, NC 28779
AES Project # 8210.01-P2

Revision Date: 5/20/2008

TAX PARCEL NUMBER / MAP ID	OWNER / OCCUPANT NAME (Last, First, MI)	ADDRESS
7641-75-5562	MOORE, J D ETUX	812 PARK AVE, SANFORD, NC 27330
7641-75-5631	MOORE, JAMES D MOORE, DIANE	812 PARK AVE, SANFORD, NC 27330
7641-75-5664	STANBERRY, KEVIN E STANBERRY, SCOTT J	PO BOX 577, SYLVA, NC 28779
7641-75-5702	STANBERRY, KEVIN E STANBERRY, SCOTT J	PO BOX 577, SYLVA, NC 28779
7641-75-2661	ENMARK STATIONS INC	PO BOX 728, SAVANNAH, GA 31402
7641-75-1409	POTTS, EDWARD V POTTS, ROBERT H ETAL	135 FLINT ST, ASHEVILLE, NC 28801
7641-75-4411	PORT OF CALL INC	8317 FARLEY AVE, LEEDS, AL 35094
7641-75-7527	N C DISTRICT COUNCIL OF THE ASSE	PO BOX 818, DUNN, NC 28334



TABLE 3
MONITORING WELL CONSTRUCTION INFORMATION
Former Gas and Grocery #12
715 East Main Street, Sylva, NC 28779
AES Project # 8210.01-P2

Revision Date: 4/02/2008

Well ID	Date Installed (m/dd/yy)	Date Water Level Measured (m/dd/yy)	Well Casing Depth (ft. BGS)	Screened Interval (x to y ft. BGS)	Bottom of Well (ft. BGS)	Top of Casing Elevation* (ft.)	Depth to Water from Top of Casing (ft.)	Free Product Thickness (ft.)	Groundwater Elevation* (ft.)	Comments
MW-1	3/20/2008	3/25/2008	18	3 to 18	18	100.00	4.17	N/A	95.83	



TABLE 4
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
Former Gas and Grocery #12
715 East Main Street, Sylva, NC 28779
AES Project # 8210.01-P2

RESULTS in Parts per Billion

Analytical Method		EPA 601/602						MADEP VPH/EPH				EPA 625
Contaminant of Concern*		Benzene	Chloroform	Ethylbenzene	Total Xylenes	Naphthalene	All other Analyzed Constituents	C5-C8 Aliphatics	C9-C18 Aliphatics	C19-C36 Aliphatics	C9-C22 Aromatics	All Analyzed Constituents
Well ID	Date Collected (m/dd/yy)											
MW-1	3/25/2008	17	1.7	3.6	10.3	13.9	BDL	BDL	357	ND	175	BDL
2L Standard (ug/l)		1	1,000	550	530	21	N/A	420	4200	42000	210	N/A
GCL (ug/l)		5,000	257,500	84,500	87,500	15500	N/A	N/A	N/A	N/A	N/A	N/A

 Exceeds NCAC 2L STANDARD

GCL = Gross Contamination Level

ppb = Parts per Billion

BDL = Below Detection Limits



TABLE 5
SUMMARY OF SOIL ANALYTICAL RESULTS
FORMER GAS AND GROCERY # 12
SYLVA, NORTH CAROLINA
AES PROJECT # 8210.01 P2

Analytical Method			EPA 8260	EPA 8270	MADEP VPH/EPH			
Contaminant of Concern*			ALL CONSTITUENTS	ALL CONSTITUENTS	C5-C8 Aliphatics	C9-C18 Aliphatics	C19-C36 Aliphatics	C9-C22 Aromatics
Sample Number	Previous Sample Location	Date Collected (m/dd/yy)						
P-1	SS-12	5/23/2008	BDL	BDL	BDL	BDL	BDL	BDL
P-2	DS-6	5/23/2008	BDL	NT	BDL	NT	NT	BDL
P-3	DS-1	5/23/2008	BDL	NT	BDL	NT	NT	BDL

GCL = Gross Contamination Level
 ppb = Parts per Billion
 BDL = Below Detection Limits



TABLE 6
SITE HISTORY - UST OWNER AND OPERATOR INFORMATION
Former Gas and Grocery #12
715 East Main Street, Sylva, NC 28779
AES Project # 8210.01-P2

Revision Date: 4/16/08

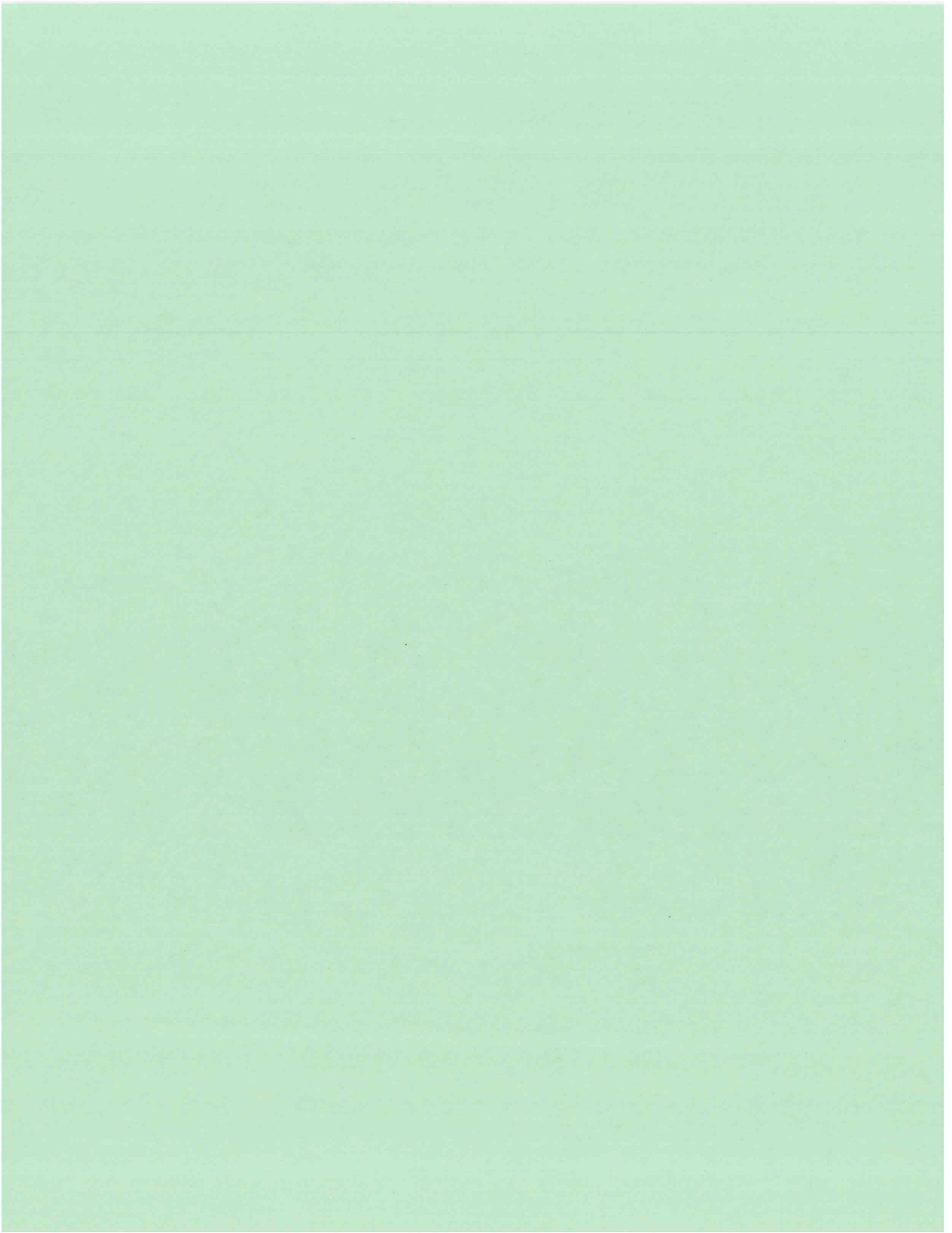
UST ID Number	#1 to #3	Facility ID Number	0-013009
Name of Property Owner		Dates of Operation (mm/dd/yy to mm/dd/yy)	
J. Drew Moore			
Street Address			
812 Park Avenue			
City	State	Zip	Telephone Number
Sanford	NC	27330	919-774-1165
Name of Operator		Dates of Operation (mm/dd/yy to mm/dd/yy)	
Peak Energy		N/A	
Street Address			
2707 Asheville Highway			
City	State	Zip	Telephone Number
Waynesville	NC	28786	828-456-9035



TABLE 7
Former Gas & Grocery #12
715 East Main Street-Sylva, NC 28779
AES Project # 8210.01-P2

Revision Date: 4/14/08

UST ID Number	Current/Last Contents	Previous Contents	Capacity (gallons)	Construction Details	Tank Dimensions	Description of Associated Piping and Pumps	Date Tank Installed	Status of UST	Was release associated with the UST System?
1	Gasoline	same	10,000	Steel	10' X 17'	Flex piping	5/10/1973	permanently closed by removal - 2/8/2008	Yes
2	Gasoline	same	10,000	Steel	10' X 17'	Flex piping	5/10/1973	permanently closed by removal - 2/8/2008	Yes
3	Kerosene	same	1000	Steel	10.5'X4'	Flex piping	Unknown	permanently closed by removal - 2/8/2008	Yes





North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor
William G. Ross Jr., Secretary

Division of Waste Management
Underground Storage Tank Section

Dexter R. Matthews, Director

June 12, 2008

Mr. Scott Stanberry
P.O. Box 577
Sylva, NC 28779

Re: Notice of No Further Action
15A NCAC 2L .0407(d)
Risk-based Assessment and Corrective Action for
Petroleum Underground Storage Tanks

Former Gas and Groceries #12
719 East Main Street
Sylva
Jackson County
Incident number: 28606
Risk Classification: Low

Dear Mr. Stanberry:

The Limited Site Assessment Report received by the Underground Storage Tank (UST) Section, Asheville Regional Office on June 11, 2008 has been reviewed. The report indicates that groundwater contamination meets the cleanup requirements for a low-risk site but exceeds the groundwater quality standards established in Title 15A NCAC 2L .0202. and the previously submitted Initial Abatement Action Report indicates that soil contamination exceeds the lower of the soil-to-groundwater or residential MSCCs established in Title 15A NCAC 2L .0411.

The UST Section determines that no further action is warranted for this incident. This determination shall apply unless the UST Section later finds that the discharge or release poses an unacceptable risk or a potentially unacceptable risk to human health or the environment. Pursuant to Title 15A NCAC 2L .0407(a) you have a continuing obligation to notify the Department of any changes that might affect the risk or land use classifications that have been assigned.

Be advised that as groundwater contamination exceeds the groundwater quality standards established in Title 15A NCAC 2L .0202, groundwater within the area of contamination or within the area where groundwater contamination is expected to migrate is not suitable for use as a water supply, as stipulated in the Notice of Residual Petroleum (instructions attached).

As groundwater contamination exceeds the groundwater quality standards established in Title 15A NCAC 2L .0202, pursuant to NCGS 143B-279.9 and 143B-279.11, you must file the approved Notice of Residual Petroleum (see attached instructions) with the Register of Deeds in the county in which the release is located and submit a certified copy to the UST Section within 30 days of receipt of this letter. This No

Further Action determination will not become valid until the UST Section receives a certified copy of the Notice of Residual Petroleum which is filed with the Register of Deeds.

As groundwater contamination exceeds the groundwater quality standards established in Title 15A NCAC 2L .0202 and soil contamination exceeds the lower of the soil-to-groundwater or residential MSCCs, public notice in accordance with 15A NCAC 2L .0409(b) also is required. Thus, within 30 days of receipt of this letter, a copy of the letter must be provided by certified mail, or by posting in a prominent place, if certified mail is impractical, to the local health director, the chief administrative officer of each political jurisdiction in which the contamination occurs, all property owners and occupants within or contiguous to the area containing contamination, and all property owners and occupants within or contiguous to the area where the contamination is expected to migrate. Within 60 days of receiving this no further action letter, this office must be provided with proof of receipt of the copy of the letter or of refusal by the addressee to accept delivery of the copy of the letter or with a description of the manner in which the letter was posted. This No Further Action determination will not become valid until public notice requirements are completed. Interested parties may examine the Limited Site Assessment Report and the Initial Abatement Action Report by contacting this regional office and may submit comments on the site to the regional office at the address or telephone number listed below.

This No Further Action determination applies only to the subject incident; for any other incidents at the subject site, the responsible party must continue to address contamination as required.

If you have any questions regarding this notice, please contact me at the address or telephone number listed below.

Sincerely,



Jan Andersen
Regional Supervisor
Asheville Regional Office

Attachments: Instructions for Notice of Residual Petroleum

cc: Roger Moore, L.G., Alpha Environmental Sciences, Inc.
Jackson County Health Department

UST Regional Offices

Asheville (ARO) – 2090 US Highway 70, Swannanoa, NC 28778 (828) 296-4500

Fayetteville (FAY) – 225 Green Street, Suite 714, Systel Building, Fayetteville, NC 28301 (910) 433-3300

Mooresville (MOR) – 610 East Center Avenue, Suite 301, Mooresville, NC 28115 (704) 663-1699

Raleigh (RRO) – 1628 Mail Service Center, Raleigh, NC 27699 (919) 791-4200

Washington (WAS) – 943 Washington Square Mall, Washington, NC 27889 (252) 946-6481

Wilmington (WIL) – 127 Cardinal Drive Extension, Wilmington, NC 28405 (910) 796-7215

Winston-Salem (WS) – 585 Waughtown Street, Winston-Salem, NC 27107 (336) 771-5000

Guilford County Environmental Health, 1203 Maple Street, Greensboro, NC 27405, (336) 641-3771

FTP: NFA low-NRP NOR0907.dot

Appendix C
Pyramid Geophysical Survey Report



PYRAMID GEOPHYSICAL SERVICES
(PROJECT 2022-260)

GEOPHYSICAL SURVEY

METALLIC UST INVESTIGATION: PARCEL 85 NCDOT PROJECT R-5600 (45818.1.FR1)

741 EAST MAIN STREET, SYLVA, NC

October 21, 2022

Report prepared for: David Graham, P.G.
Hart & Hickman, P.C.
2923 South Tryon Street, Suite 100
Charlotte, NC 28203

Prepared by: _____

A handwritten signature in black ink, appearing to read "E. Cross".

Eric C. Cross, P.G.
NC License #2181

Reviewed by: _____

A handwritten signature in black ink, appearing to read "Doug Canavella".

Douglas A. Canavella, P.G.
NC License #1066

503 INDUSTRIAL AVENUE, GREENSBORO, NC 27406

P: 336.335.3174 F: 336.691.0648

C257: GEOLOGY

C1251: ENGINEERING

GEOPHYSICAL INVESTIGATION REPORT
Parcel 85 - 741 East Main Street
Sylva, Jackson County, North Carolina

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<i>Discussion of GPR Results</i>	4
Summary & Conclusions	5
Limitations	5

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- Figure 2 – Parcel 85 - EM61 Metal Detection Contour Map
- Figure 3 – Parcel 85 - GPR Transect Locations and Select Images
- Figure 4 – Overlay of Metal Detection Results on NCDOT Engineering Plans

Appendices

- Appendix A – GPR Transect Images

LIST OF ACRONYMS

CADD	Computer Assisted Drafting and Design
DF	Dual Frequency
EM.....	Electromagnetic
GPR.....	Ground Penetrating Radar
GPS	Global Positioning System
NCDOT.....	North Carolina Department of Transportation
ROW	Right-of-Way
UST	Underground Storage Tank

EXECUTIVE SUMMARY

Project Description: Pyramid Geophysical Services (Pyramid), a department within Pyramid Environmental & Engineering, P.C., conducted a geophysical investigation for Hart & Hickman, P.C. (Hart & Hickman) at Parcel 85, located at 741 East Main Street, in Sylva, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) Right-of-Way (ROW) investigation (NCDOT Project R-5600). This parcel was designated a total take and the survey was designed to extend to all accessible areas of the property. Conducted from September 26-27, 2022, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

Geophysical Results: The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys. A total of seven EM anomalies were identified. The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface. GPR was performed across and around all sources of significant metallic interference to confirm the presence of reinforcement within the concrete and to confirm that the interference did not obscure any significant structures such as USTs. The geophysical survey identified evidence of utilities and/or buried debris. Collectively, the geophysical data recorded no evidence of metallic USTs at Parcel 85.

INTRODUCTION

Pyramid Geophysical Services (Pyramid), a department within Pyramid Environmental & Engineering, P.C., conducted a geophysical investigation for Hart & Hickman, P.C. (Hart & Hickman) at Parcel 85, located at 741 East Main Street, in Sylva, NC. The survey was part of a North Carolina Department of Transportation (NCDOT) Right-of-Way (ROW) investigation (NCDOT Project R-5600). This parcel was designated a total take and the survey was designed to extend to all accessible areas of the property. Conducted from September 26-27, 2022, the geophysical investigation was performed to determine if unknown, metallic underground storage tanks (USTs) were present beneath the survey area.

The site consisted of a car dealership surrounded by asphalt, concrete, and grass surfaces. An aerial photograph, showing the survey area boundaries, and ground-level photographs are shown in **Figure 1**.

FIELD METHODOLOGY

The geophysical investigation consisted of electromagnetic (EM) induction-metal detection and ground penetrating radar (GPR) surveys. Pyramid collected the EM data using a Geonics EM61-MK2 (EM61) metal detector integrated with a Geode External GPS/GLONASS receiver. The integrated GPS system allows the location of the instrument to be recorded in real-time during data collection, resulting in an EM data set that is geo-referenced and can be overlain on aerial photographs and CADD drawings. A boundary grid was established around the perimeter of the site with marks every 10 feet to maintain orientation of the instrument throughout the survey and assure complete coverage of the area.

According to the instrument specifications, the EM61 can detect a metal drum down to a maximum depth of approximately 8 feet. Smaller objects (1-foot or less in size) can be detected to a maximum depth of 4 to 5 feet. The EM61 data were digitally collected at

approximately 0.8-foot intervals along north-south trending or east-west trending, generally parallel survey lines, spaced five feet apart. The data were downloaded to a computer and reviewed in the field and office using the Geonics NAV61 and Surfer for Windows Version 15.0 software programs.

GPR data were acquired across select EM anomalies on September 27, 2022, using a Geophysical Survey Systems, Inc. (GSSI) SIR 4000 unit equipped with a 350 MHz HS antenna. Data were collected both in reconnaissance fashion as well as along formal transect lines across EM features. The GPR data were viewed in real-time using a vertical scan of 512 samples, at a rate of 48 scans per second. GPR data were viewed down to a maximum depth of approximately 6 feet, based on dielectric constants calculated by the SIR 4000 unit in the field during the reconnaissance scans. GPR transects across specific anomalies were saved to the hard drive of the SIR 4000 unit for post-processing and figure generation.

Pyramid's classifications of USTs for the purposes of this report are based directly on the geophysical UST ratings provided by the NCDOT. These ratings are as follows:

Geophysical Surveys for Underground Storage Tanks on NCDOT Projects			
High Confidence	Intermediate Confidence	Low Confidence	No Confidence
Known UST Active tank - spatial location, orientation, and approximate depth determined by geophysics.	Probable UST Sufficient geophysical data from both magnetic and radar surveys that is characteristic of a tank. Interpretation may be supported by physical evidence such as fill/vent pipe, metal cover plate, asphalt/concrete patch, etc.	Possible UST Sufficient geophysical data from either magnetic or radar surveys that is characteristic of a tank. Additional data is not sufficient enough to confirm or deny the presence of a UST.	Anomaly noted but not characteristic of a UST. Should be noted in the text and may be called out in the figures at the geophysicist's discretion.

DISCUSSION OF RESULTS

Discussion of EM Results

A contour plot of the EM61 results obtained across the survey area at the property is presented in **Figure 2**. Each EM anomaly is numbered for reference in the figure. The

following table presents the list of EM anomalies and the cause of the metallic response, if known:

LIST OF METALLIC ANOMALIES IDENTIFIED BY EM SURVEY

Metallic Anomaly #	Cause of Anomaly	Investigated with GPR
1	Reinforced Concrete/Drop Inlets/Utilities	✓
2	Suspected Buried Debris	✓
3	Metal Piles	
4	Suspected Buried Debris	✓
5	Pay Phone	
6	Utilities	
7	Drop Inlet	

The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface, including reinforced concrete, drop inlets, utilities, metal piles, and a pay phone. GPR was performed across and around all sources of significant metallic interference to confirm the presence of reinforcement within the concrete and to confirm that the interference did not obscure any significant structures such as USTs. GPR was also performed across EM Anomalies 2 and 4 to investigate whether the anomalies were the result of more significant structures such as USTs.

Discussion of GPR Results

Figure 3 presents the locations of the formal GPR transects performed at the property as well as select transect images. All of the transect images are included in **Appendix A**. A total of twenty-six formal GPR transects were performed at the site.

GPR Transects 1-14 and 21-22 were performed across and around areas of significant metallic interference and confirmed the presence of reinforcement within the concrete. GPR Transects 10-20 were also performed across areas where the canopy above the building interfered with GPS signal and EM data could not be collected. None of these transects showed evidence of significant structures such as USTs. Evidence of utilities and/or smaller fragments of buried debris was also observed.

GPR Transects 23-24 and 25-26 were performed across EM Anomalies 4 and 2, respectively. These transects showed low-amplitude reflectors more consistent with buried debris than USTs.

Collectively, the geophysical data recorded no evidence of metallic USTs at Parcel 85. **Figure 4** provides an overlay of the metal detection results on the NCDOT engineering plans for reference.

SUMMARY & CONCLUSIONS

Pyramid's evaluation of the EM61 and GPR data collected at Parcel 85 in Sylva, North Carolina, provides the following summary and conclusions:

- The EM61 and GPR surveys provided reliable results for the detection of metallic USTs within the accessible portions of the geophysical survey area.
- The majority of the EM anomalies were directly attributed to visible cultural features at the ground surface.
- GPR was performed across and around all sources of significant metallic interference to confirm the presence of reinforcement within the concrete and to confirm that the interference did not obscure any significant structures such as USTs.
- The geophysical survey identified evidence of utilities and/or buried debris.
- Collectively, the geophysical data recorded no evidence of metallic USTs at Parcel 85.

LIMITATIONS

Geophysical surveys have been performed and this report was prepared for Hart & Hickman, P.C. in accordance with generally accepted guidelines for EM61 and GPR surveys. It is generally recognized that the results of the EM61 and GPR surveys are non-unique and may not represent actual subsurface conditions. The EM61 and GPR results obtained for this project have not conclusively determined the definitive presence or absence of metallic USTs, but the evidence collected is sufficient to result in the

conclusions made in this report. Additionally, it should be understood that areas containing extensive vegetation, reinforced concrete, or other restrictions to the accessibility of the geophysical instruments could not be fully investigated.

APPROXIMATE BOUNDARIES OF GEOPHYSICAL SURVEY AREA



View of Survey Area (Facing Approximately North)



View of Survey Area (Facing Approximately North)



503 INDUSTRIAL AVENUE
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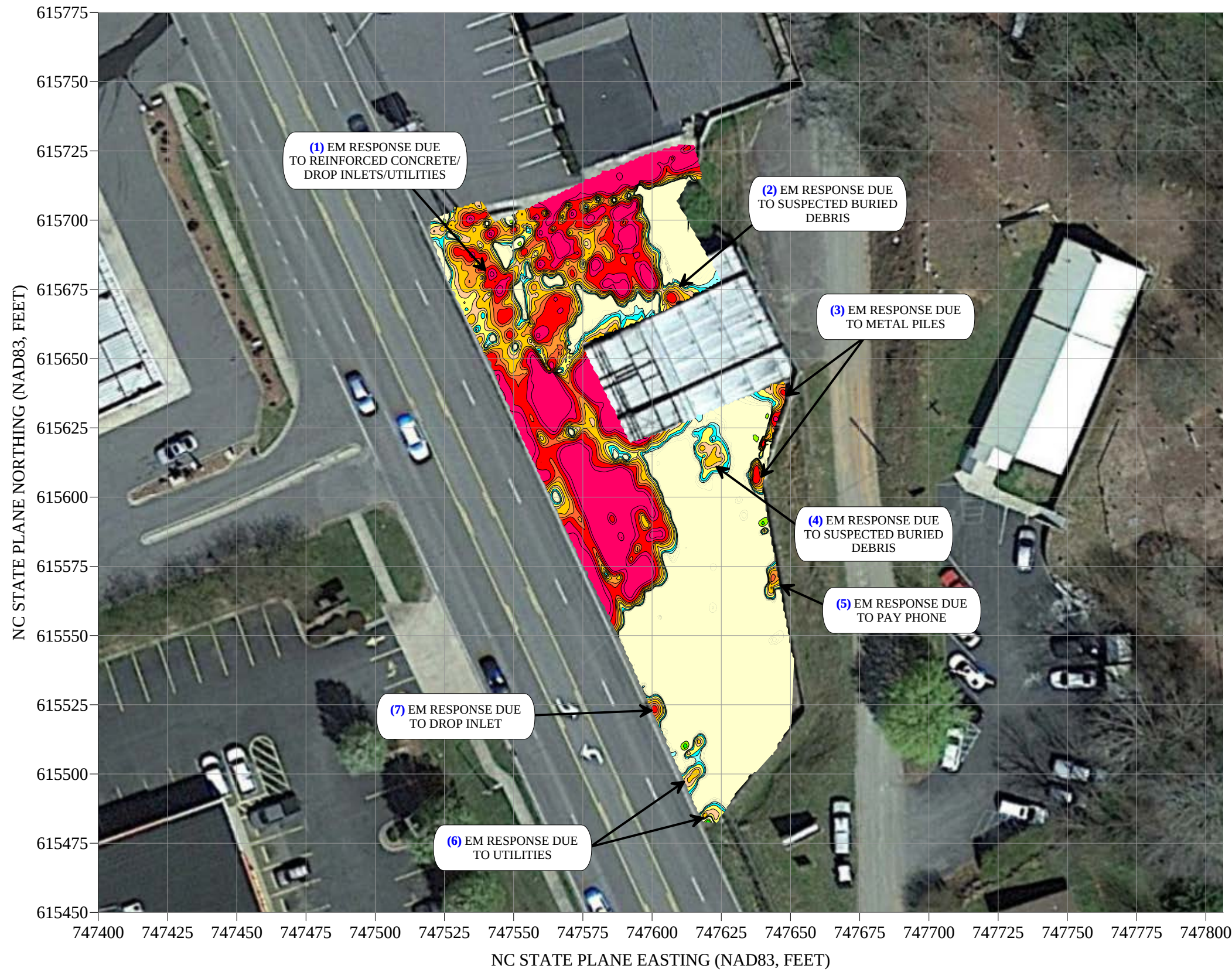
PROJECT
PARCEL 85
SYLVA, NORTH CAROLINA
NCDOT PROJECT R-5600

TITLE
PARCEL 85 -
GEOPHYSICAL SURVEY BOUNDARIES
AND SITE PHOTOGRAPHS

DATE
9/30/2022
PYRAMID
PROJECT #:
2022-260

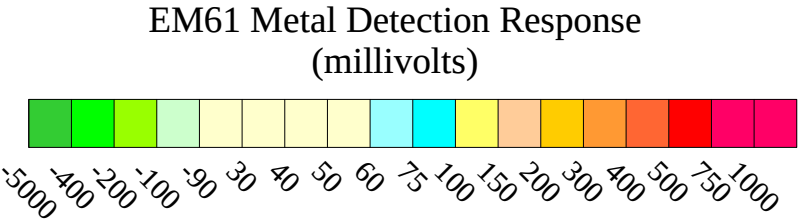
CLIENT
HART & HICKMAN
FIGURE 1

EM61 METAL DETECTION RESULTS



NO EVIDENCE OF METALLIC
USTs WAS OBSERVED.

The contour plot shows the differential results of the EM61 instrument in millivolts (mV). The differential results focus on larger metallic objects such as USTs and drums. The EM data were collected on September 26, 2022, using a Geonics EM61-MK2 instrument. Verification GPR data were collected using a GSSI SIR 4000 instrument with a 350 MHz HS antenna on September 27, 2022.



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PROJECT
PARCEL 85
SYLVA, NORTH CAROLINA
NCDOT PROJECT R-5600

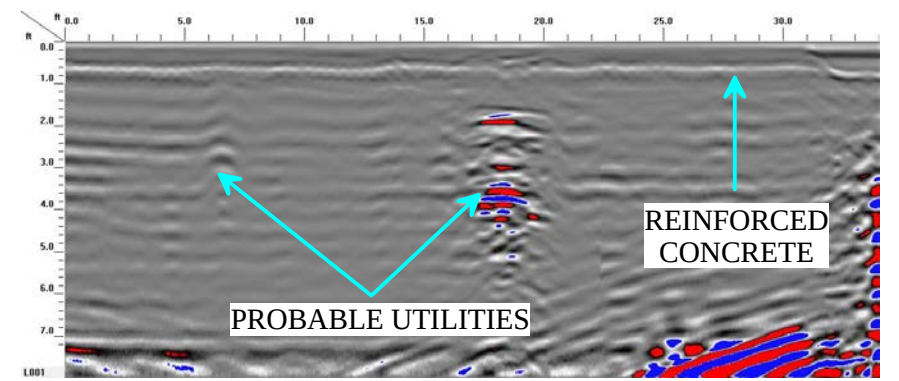
TITLE
PARCEL 85 -
EM61 METAL DETECTION CONTOUR MAP

DATE
9/30/2022
PYRAMID
PROJECT #: 2022-260

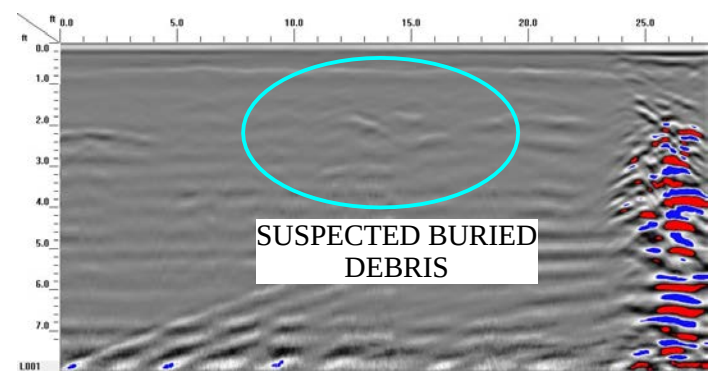
CLIENT
HART & HICKMAN
FIGURE 2



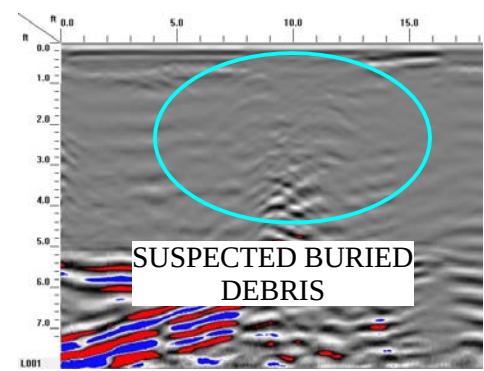
GPR TRANSECT LOCATIONS



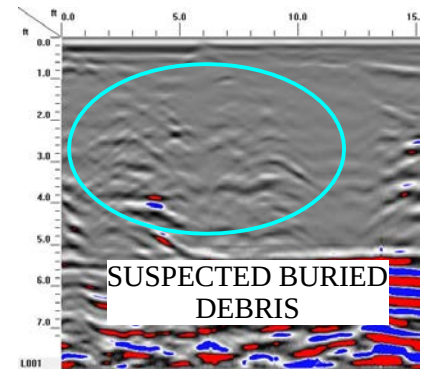
GPR TRANSECT 6 (T6)



GPR TRANSECT 24 (T24)



GPR TRANSECT 25 (T25)



GPR TRANSECT 26 (T26)



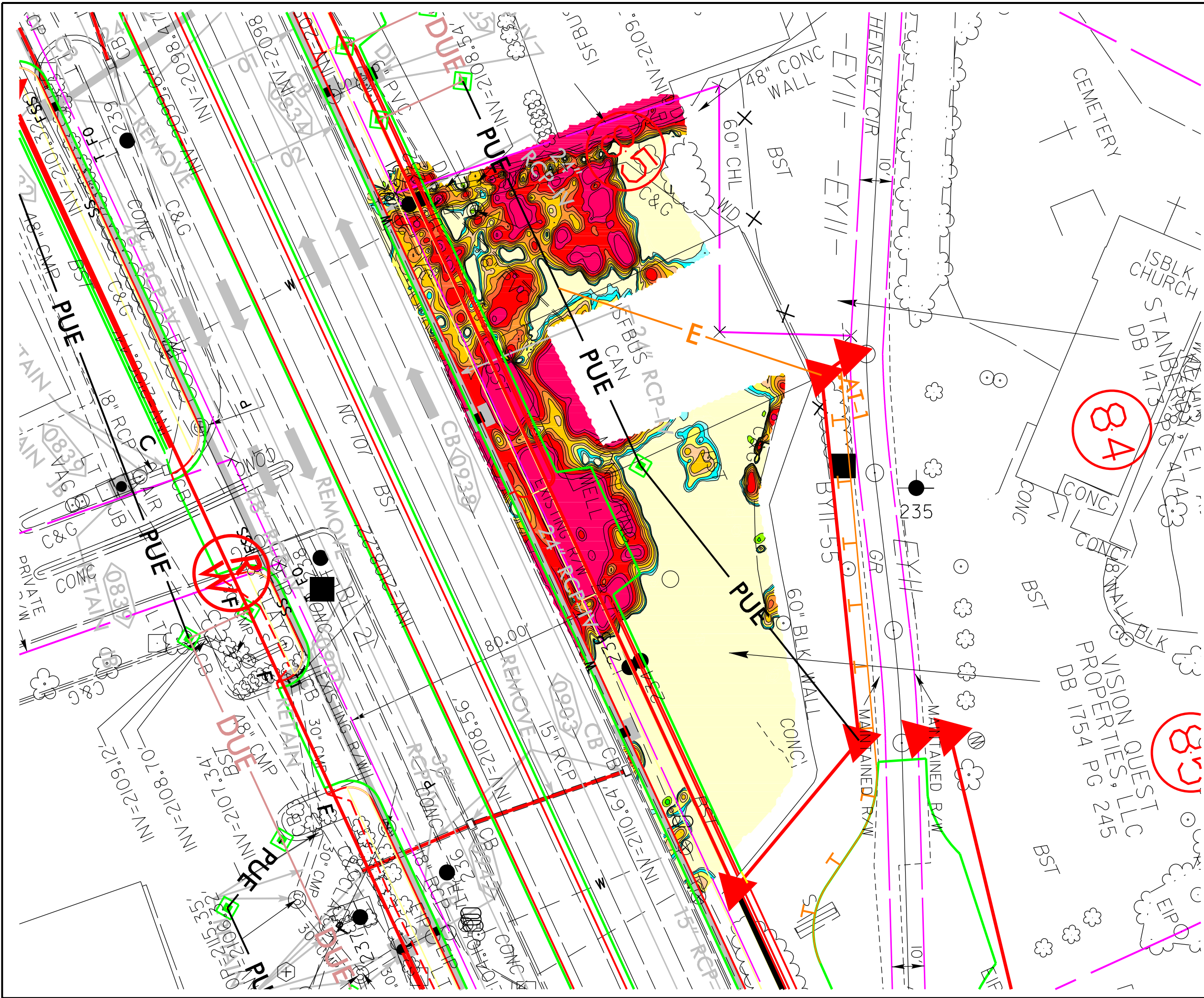
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PROJECT
PARCEL 85
SYLVA, NORTH CAROLINA
NCDOT PROJECT R-5600

TITLE
PARCEL 85 -
GPR TRANSECT LOCATIONS AND SELECT IMAGES

DATE
9/30/2022
PYRAMID
PROJECT #:
2022-260

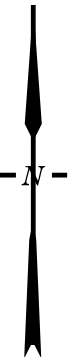
CLIENT
HART & HICKMAN
FIGURE 3



LEGEND

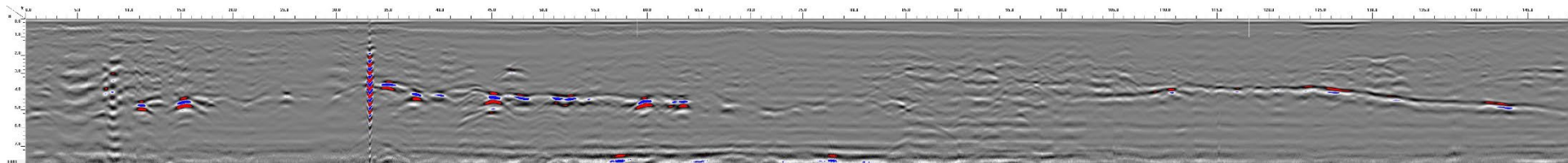
- EXISTING ROW
- EXISTING PROPERTY BOUNDARY
- PROPOSED ROW LINE
- TEMPORARY CONSTRUCTION EASEMENT
- PUE PERMANENT UTILITY EASEMENT
- PROPOSED SS CUT LINE
- PROPOSED SS FILL LINE

MILLIVOLTS (mV)

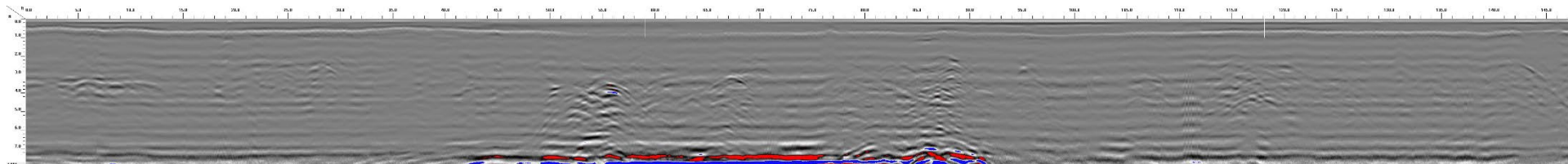


TITLE OVERLAY OF METAL DETECTION RESULTS ON NCDOT ENGINEERING PLANS	
PROJECT PARCEL 85 SYLVA, NORTH CAROLINA NCDOT PROJECT R-5600	
 503 INDUSTRIAL AVENUE GREENSBORO, NC 27406 336.335.3174 (p) 336.691.0648 (f) License # C1251 Eng. / #C257 Geology	
DATE: 10-3-2022	REVISION NO. 0
PYRAMID PROJECT NO. 2022-260	FIGURE NO. 4

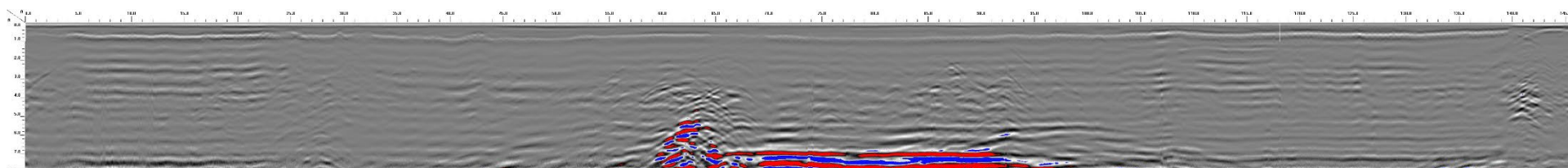
Appendix A – GPR Transect Images



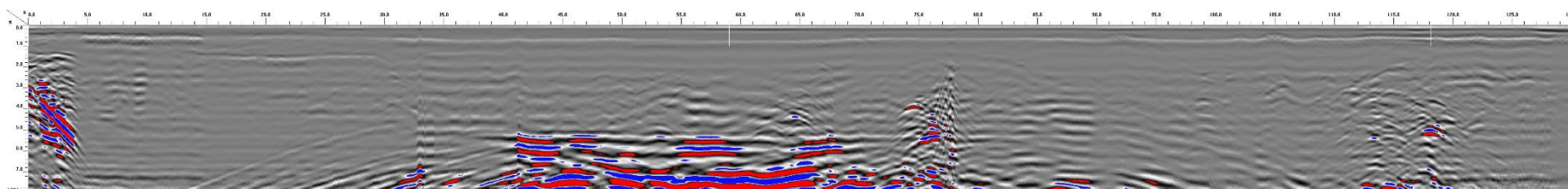
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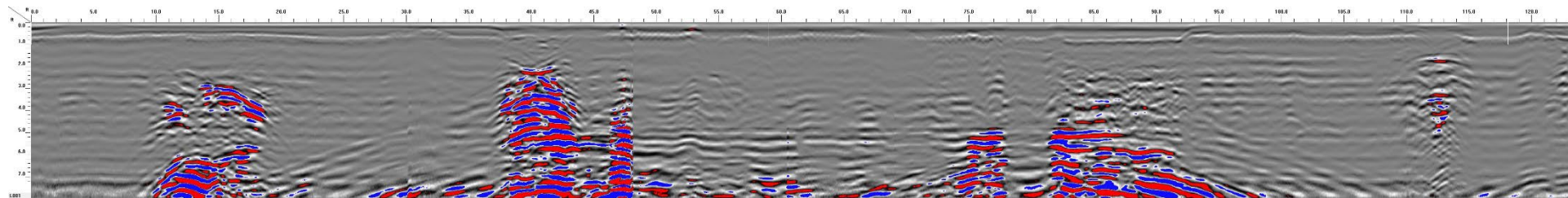
GPR TRANSECT 2



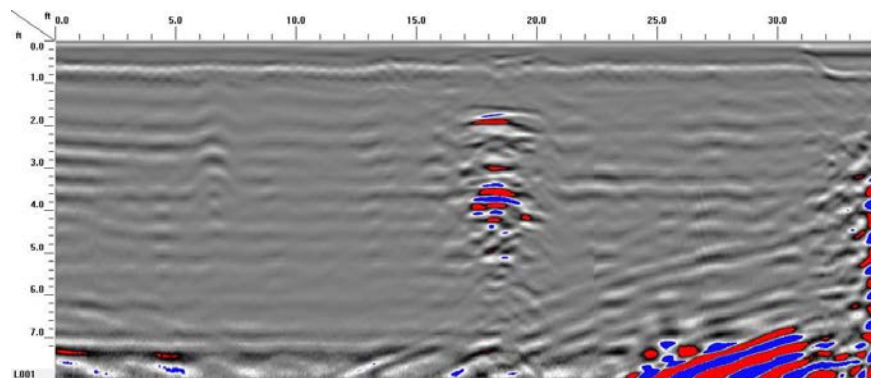
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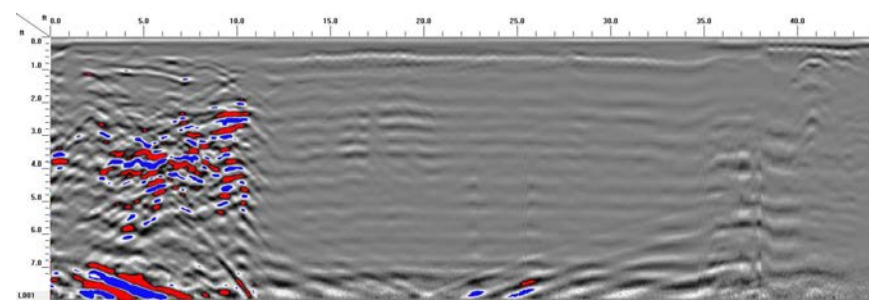
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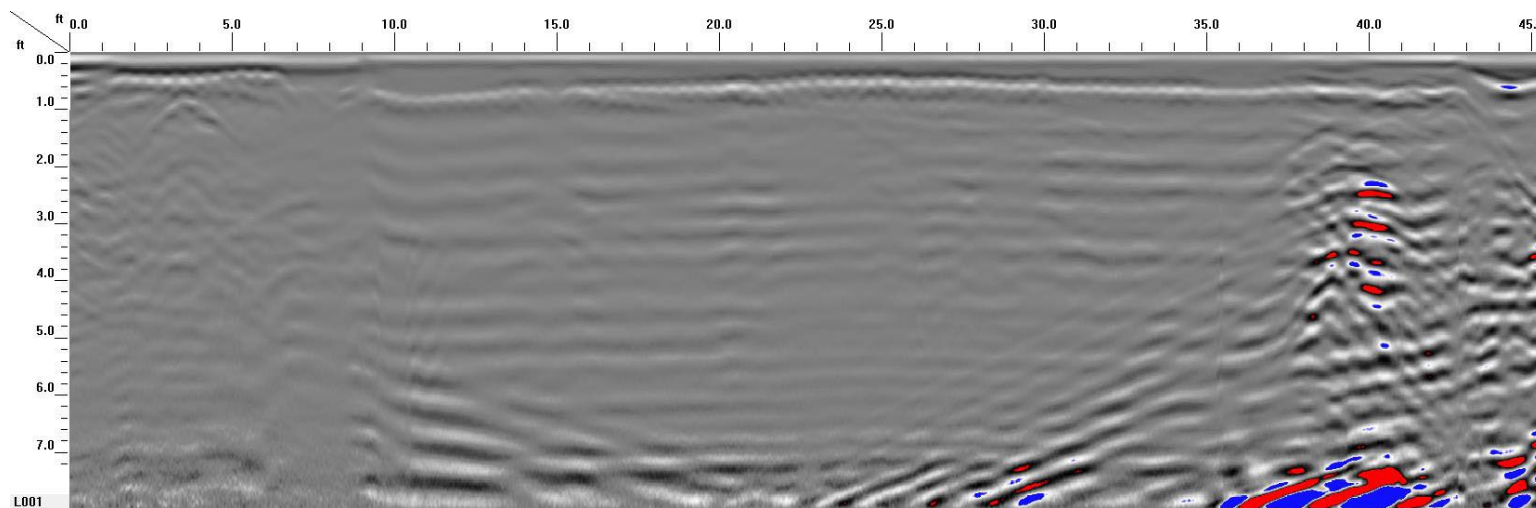
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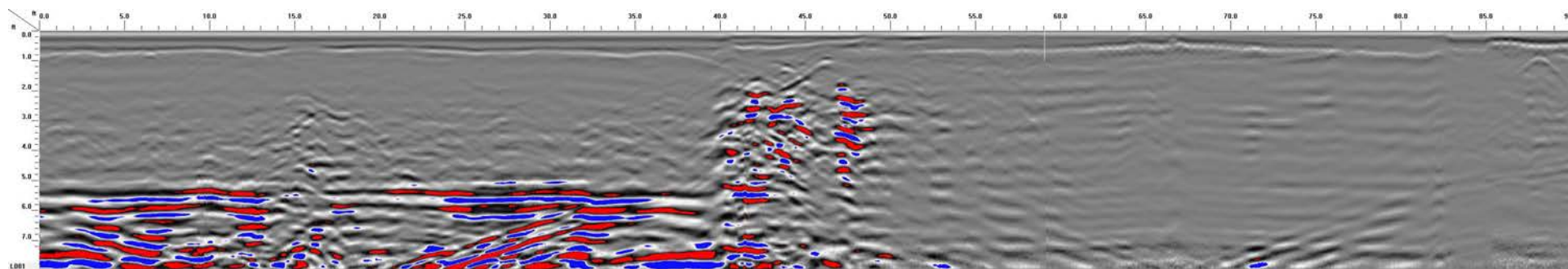
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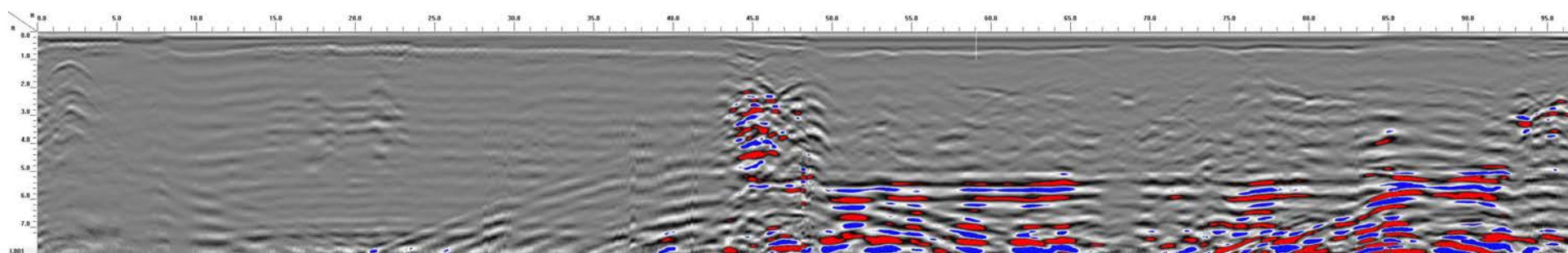
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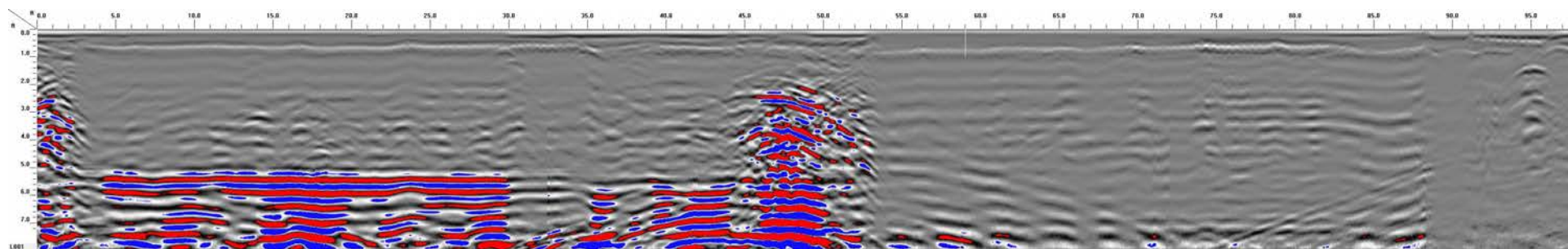
GPR TRANSECT 8



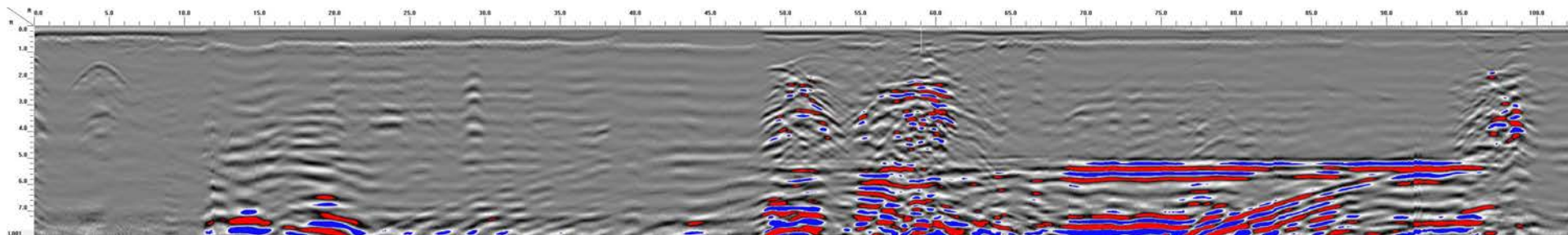
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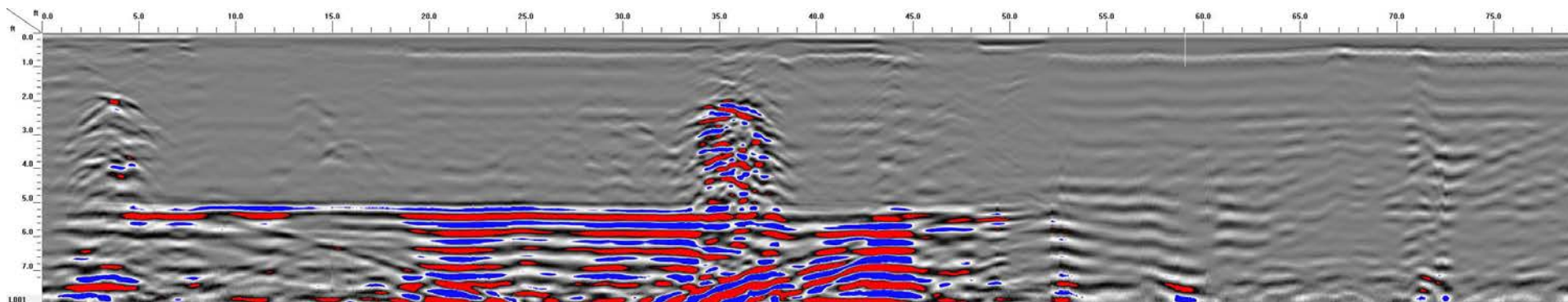
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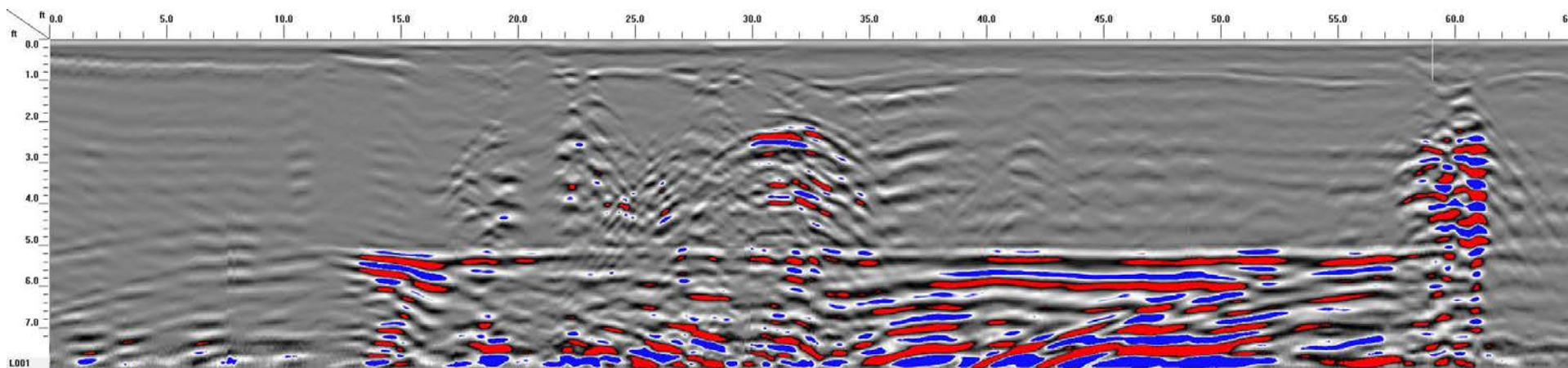
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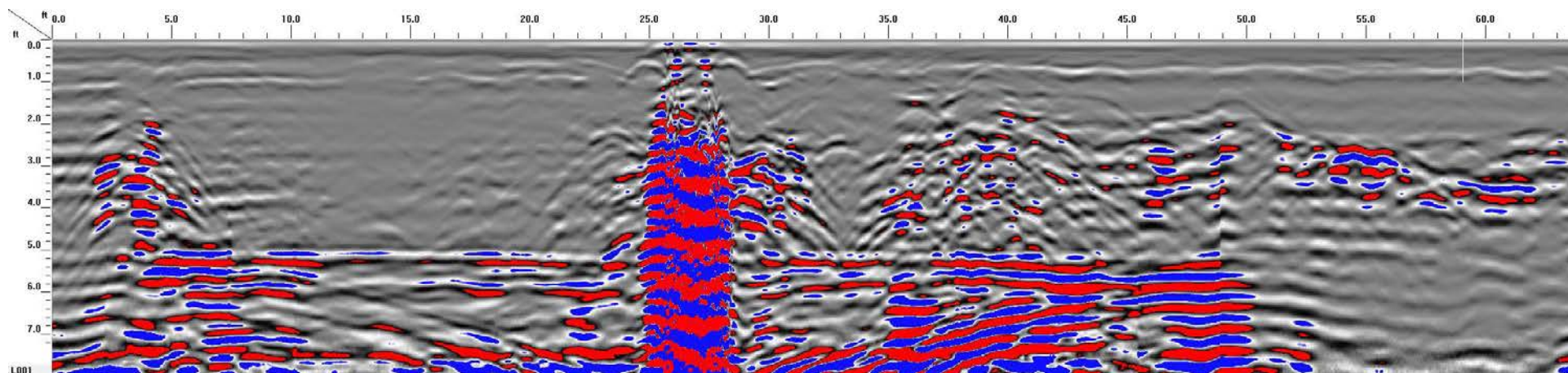
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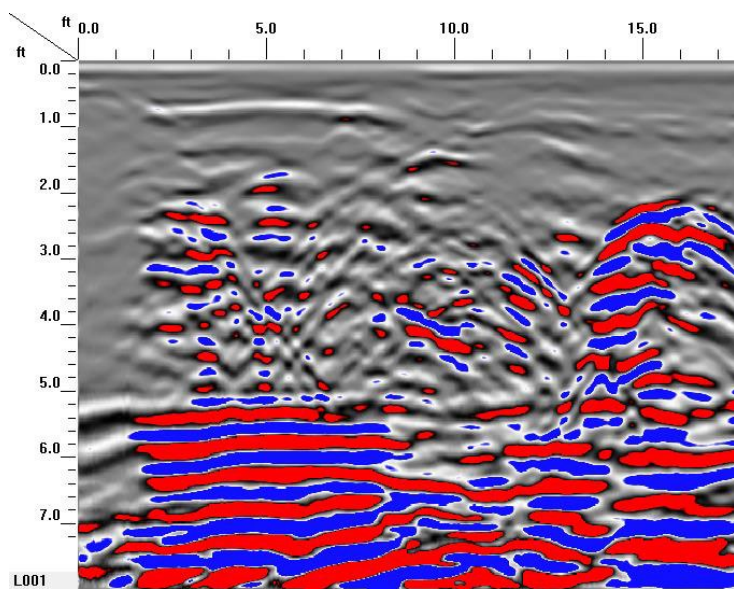
GPR TRANSECT 13



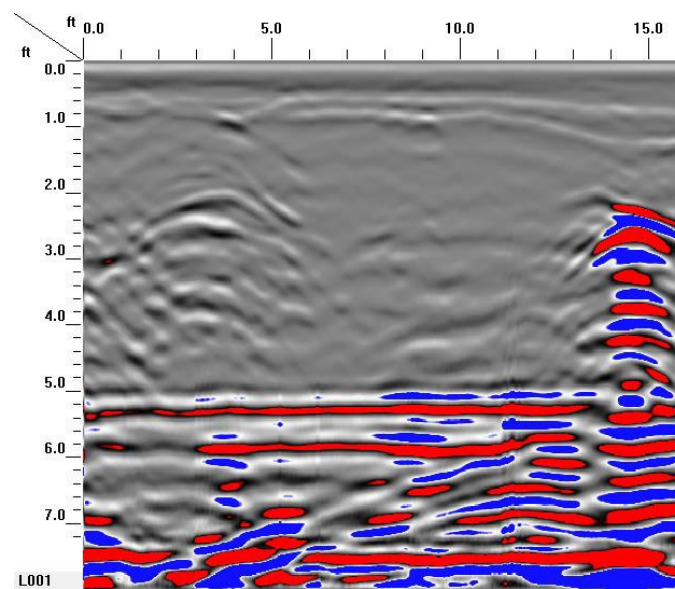
GPR TRANSECT 14



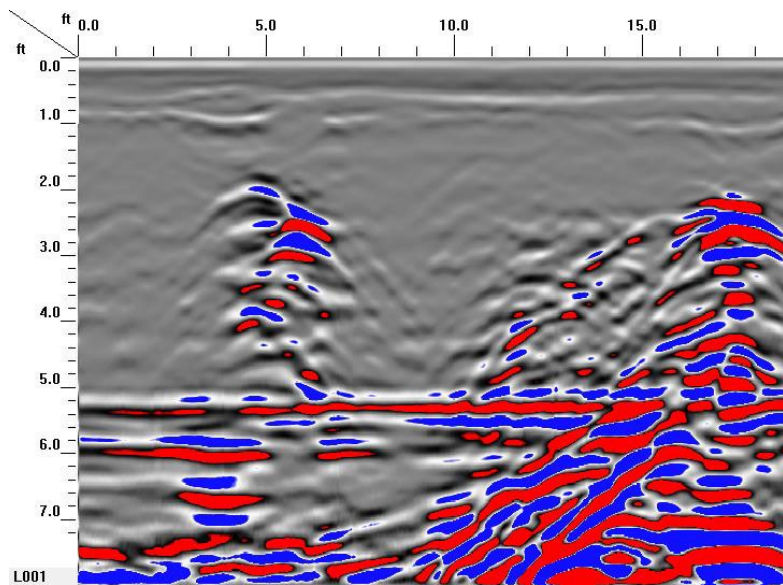
GPR TRANSECT 15



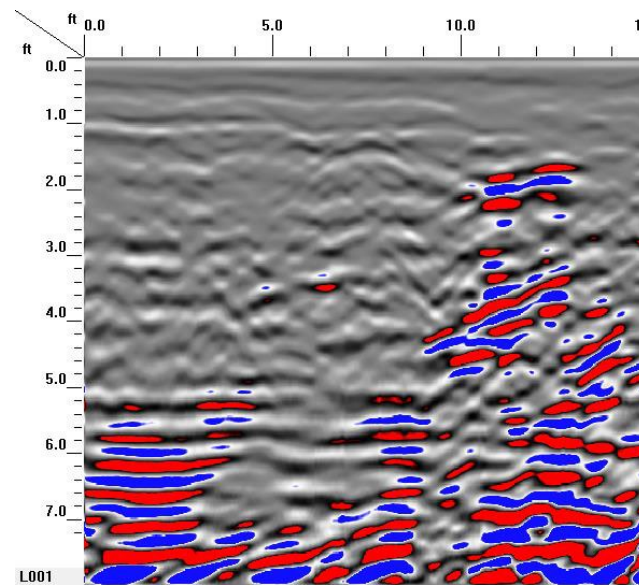
GPR TRANSECT 16



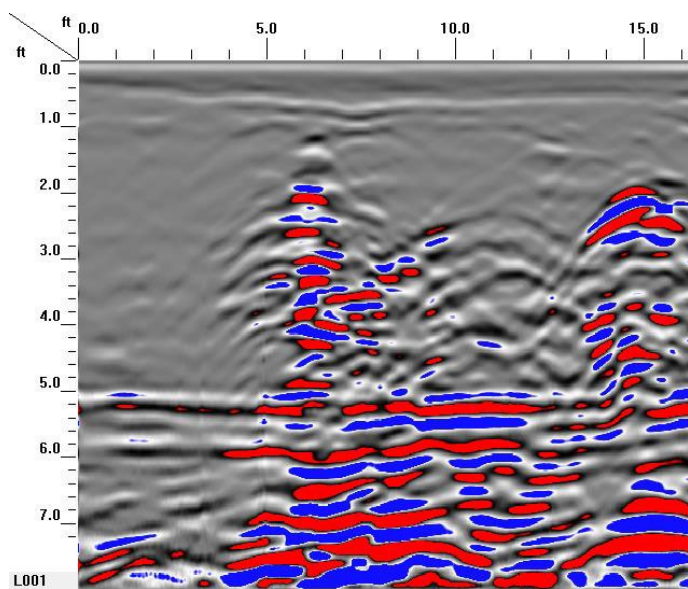
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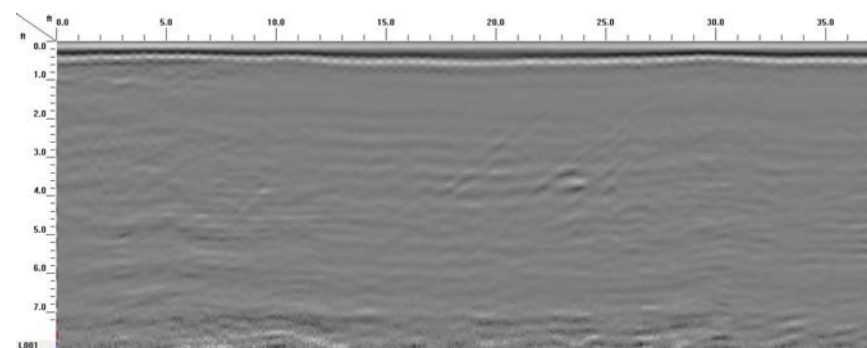
GPR TRANSECT 18



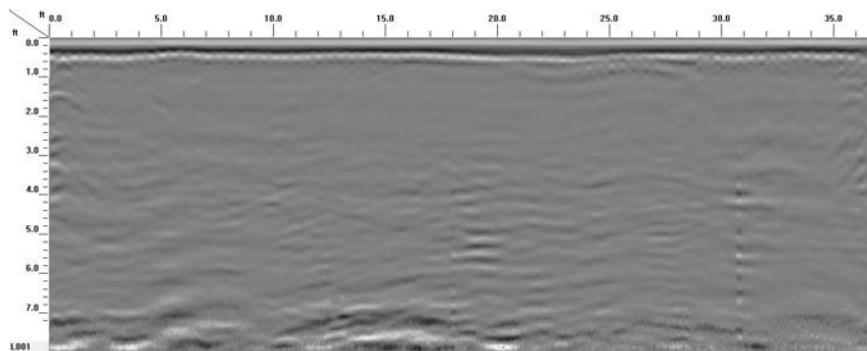
GPR TRANSECT 20



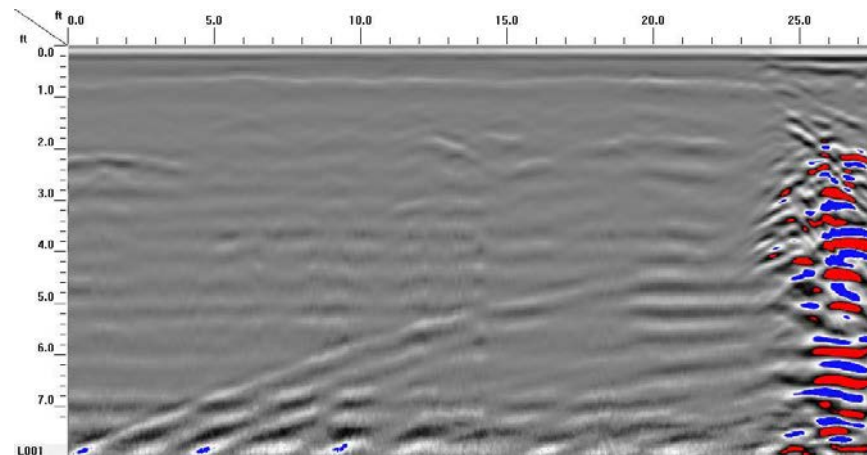
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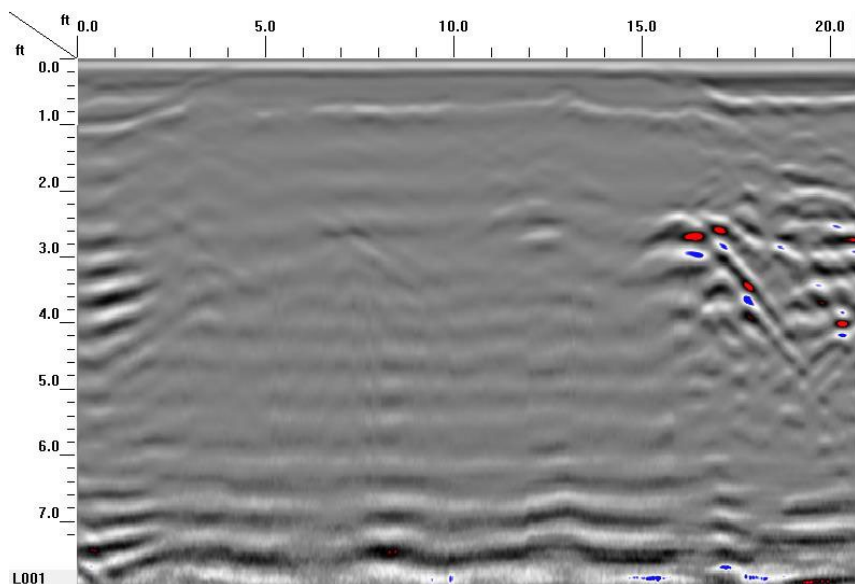
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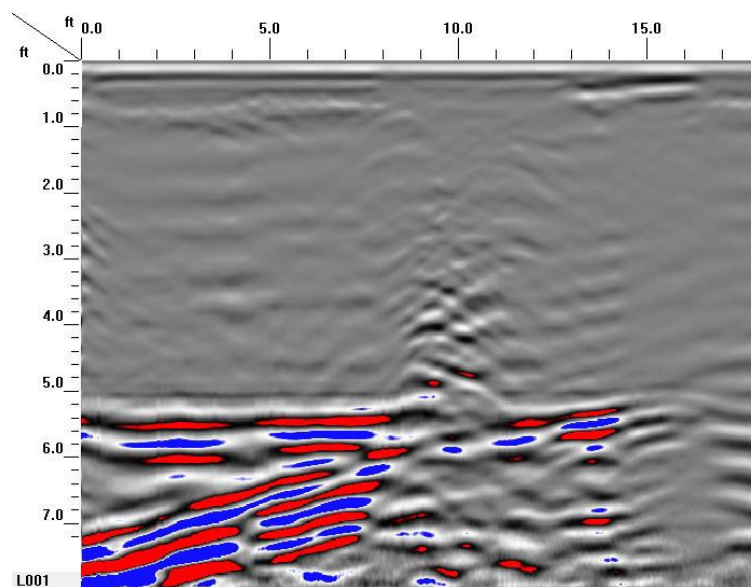
GPR TRANSECT 22



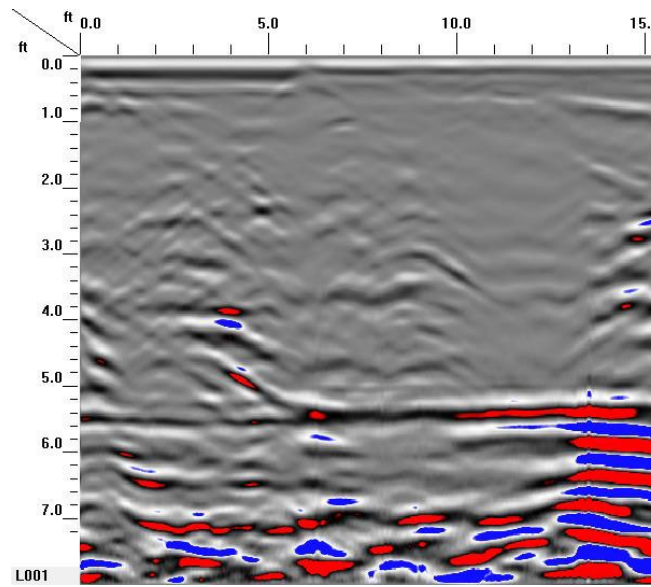
GPR TRANSECT 24



GPR TRANSECT 23



GPR TRANSECT 25



GPR TRANSECT 26

Appendix D

Soil Boring Logs, Well Construction Record, and Well Abandonment Record

Client: NC DOT
 Project: ROW-704
 Address: Parcel 85 - 741 E.Main Street Sylva,
 North Carolina

BORING LOG
 Boring No. SB-85-1
 Page: 1 of 1

Drilling Start Date: 10/14/22
 Drilling End Date: 10/14/22
 Drilling Company: GEX
 Drilling Method: Direct Push
 Drilling Equipment: GeoProbe 7822 DT
 Driller: David Hall
 Logged By: ABM

Boring Depth (ft): 15.0
 Boring Diameter (in): 2.25
 Sampling Method(s): Direct Push, Grab
 DTW During Drilling (ft): 7.1
 DTW After Drilling (ft):
 Ground Surface Elev. (ft):
 Location (X,Y):

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		DEPTH (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	
0				GR			5.00	(0') Asphalt (0.17') SILT (ML); few fine to coarse sand, soft, dry, reddish-brown with slight gray, micaceous	2.1	SB-85-1	0
									0.7		
5				DP			5.00		1.5		5
								(7') SILT (ML); few fine to coarse sand, medium stiff, wet, reddish-brown with slight gray, micaceous; saturated from 10'-12.5'	0.4		
									1.2		
10				DP			5.00		0.8		10
									0.2		
									0.3		
15								(15') Boring terminated			15
20											20

NOTES: Hole precleared to 5' by GEX using hand auger.

Client: NC DOT
 Project: ROW-704
 Address: Parcel 85 - 741 E.Main Street Sylva,
 North Carolina

BORING LOG
 Boring No. SB-85-2
 Page: 1 of 1

Drilling Start Date: 10/17/22
 Drilling End Date: 10/17/22
 Drilling Company: GEX
 Drilling Method: Direct Push
 Drilling Equipment: GeoProbe 7822 DT
 Driller: David Hall
 Logged By: ABM

Boring Depth (ft): 10.0
 Boring Diameter (in): 2.25
 Sampling Method(s): Direct Push, Grab
 DTW During Drilling (ft): 6.0
 DTW After Drilling (ft):
 Ground Surface Elev. (ft):
 Location (X,Y):

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		DEPTH (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	
0				GR			5.00	(0') Fill: Gravel (0.25') SILT (ML); few fine to coarse sand, soft, moist, reddish-brown with slight gray, micaceous	1.6		0
										SB-85-2	
				DP			5.00	(6') SILT (ML); few fine to coarse sand, medium stiff, wet, reddish-brown with slight gray, micaceous	1.7		5
10								(10') Boring terminated			10
15											15

NOTES: Hole precleared to 5' using hand auger.

Client: NC DOT
 Project: ROW-704
 Address: Parcel 85 - 741 E.Main Street Sylva,
 North Carolina

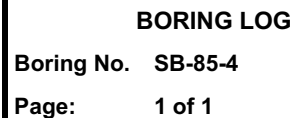
BORING LOG
 Boring No. SB-85-3
 Page: 1 of 1

Drilling Start Date: 10/17/22
 Drilling End Date: 10/17/22
 Drilling Company: GEX
 Drilling Method: Direct Push
 Drilling Equipment: GeoProbe 7822 DT
 Driller: David Hall
 Logged By: ABM

Boring Depth (ft): 10.0
 Boring Diameter (in): 2.25
 Sampling Method(s): Direct Push, Grab
 DTW During Drilling (ft): 6.0
 DTW After Drilling (ft):
 Ground Surface Elev. (ft):
 Location (X,Y):

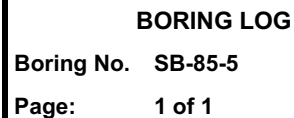
DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		DEPTH (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	
0				GR			5.00	(0') Asphalt (0.25') Concrete (0.5') Fine to medium Well-graded SAND (SW); some silt, loose, moist, light-medium brown with gray	1.0		0
									1.1	SB-85-3	
									1.4		
5				DP			5.00	(6') Fine to medium Well-graded SAND (SW); some silt, loose, wet, light-medium brown with gray			5
								(9') SILT (ML); few fine to coarse sand, medium stiff, wet, reddish-brown with slight gray, micaceous			10
10								(10') Boring terminated			10
15											15

NOTES: Hole precleared to 5' by GEX using hand auger.



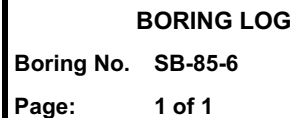
Boring Depth (ft):	8.0
Boring Diameter (in):	2.25
Sampling Method(s):	Direct Push, Grab
DTW During Drilling (ft):	4.0
DTW After Drilling (ft):	
Ground Surface Elev. (ft):	
Location (X,Y):	

NOTES: Hole precleared to 5' by GEX using hand auger.



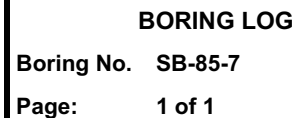
Boring Depth (ft):	8.0
Boring Diameter (in):	2.25
Sampling Method(s):	Direct Push, Grab
DTW During Drilling (ft):	6.0
DTW After Drilling (ft):	
Ground Surface Elev. (ft):	
Location (X,Y):	

NOTES: Hole precleared to 5' by GEX using hand auger.



Boring Depth (ft):	8.0
Boring Diameter (in):	2.25
Sampling Method(s):	Direct Push, Grab
DTW During Drilling (ft):	5.0
DTW After Drilling (ft):	
Ground Surface Elev. (ft):	
Location (X,Y):	

NOTES: Hole precleared to 5' by GEX using hand auger.



Boring Depth (ft):	8.0
Boring Diameter (in):	2.25
Sampling Method(s):	Direct Push, Grab
DTW During Drilling (ft):	4.0
DTW After Drilling (ft):	
Ground Surface Elev. (ft):	
Location (X,Y):	

NOTES: Hole precleared to 5' by GEX using hand auger.

Client: NC DOT
 Project: ROW-704
 Address: Parcel 85 - 741 E.Main Street Sylva,
 North Carolina

BORING LOG
 Boring No. SB-85-8
 Page: 1 of 1

Drilling Start Date: 10/17/22
 Drilling End Date: 10/17/22
 Drilling Company: GEX
 Drilling Method: Direct Push
 Drilling Equipment: GeoProbe 7822 DT
 Driller: David Hall
 Logged By: ABM

Boring Depth (ft): 8.0
 Boring Diameter (in): 2.25
 Sampling Method(s): Direct Push, Grab
 DTW During Drilling (ft): 5.0
 DTW After Drilling (ft):
 Ground Surface Elev. (ft):
 Location (X,Y):

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		DEPTH (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	
0				GR			5.00	(0') Fill: Gravel (0.5') SILT (ML); little fine to coarse sand, soft, moist, reddish-pink with slight yellow, micaceous	1.3		0
									1.4		
									2.2	SB-85-8	
5				DP			3.00	(5') SILT (ML); few coarse sand, medium stiff, wet, dark brown with slight light brown , petroleum odor	190.8		5
								(7') Well-graded SAND (SW); mostly fine grained sand, some silt, loose, wet, medium brown-gray, petroleum odor	88.1		
								(8') Boring terminated			
10											10

NOTES: Hole precleared to 5' by GEX using hand auger.

Client: NC DOT
 Project: ROW-704
 Address: Parcel 85 - 741 E.Main Street Sylva,
 North Carolina

WELL LOG
 Well No. SB-85-9/TMW-1
 Page: 1 of 1

Drilling Start Date: 10/17/22	Boring Depth (ft): 14.0	Well Depth (ft): 14.0
Drilling End Date: 10/17/22	Boring Diameter (in): 2.25	Well Diameter (in): 1.0
Drilling Company: GEX	Sampling Method(s): DP, GR	Screen Slot (in): 0.010
Drilling Method: Direct Push	DTW During Drilling (ft): 4.0	Riser Material: Sch 40 PVC
Drilling Equipment: GeoProbe 7822 DT	DTW After Drilling (ft):	Screen Material: Sch 40 PVC Slotted
Driller: David Hall	Top of Casing Elev. (ft):	Seal Material(s): Bent. Pellets
Logged By: ABM	Location (X,Y):	Filter Pack: Sand Pack

DEPTH (ft)	LITHOLOGY	WATER LEVEL	WELL COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		DEPTH (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	
0								(0') Asphalt			0
								(0.25') Concrete			
								(0.5') Fine Sandy SILT (ML); soft, moist, medium brown with slight yellow, micaceous			
								(4') As Above: wet	1,325	SB-85-9	
5								(5') Fine Well-graded SAND (SW); some silt, loose, wet, dark gray with slight brown, petroleum odor			5
								(7.5') Fine Sandy SILT (ML); soft, wet, medium brown with dark brown, micaceous	25.3		
								(8') Boring terminated			
								(14') Depth of TMW-1 (installed in separate hole adjacent to SB-85-9)			
15											15

NOTES: Hole precleared to 5' by GEX using hand auger.

Client: NC DOT
 Project: ROW-704
 Address: Parcel 85 - 741 E.Main Street Sylva,
 North Carolina

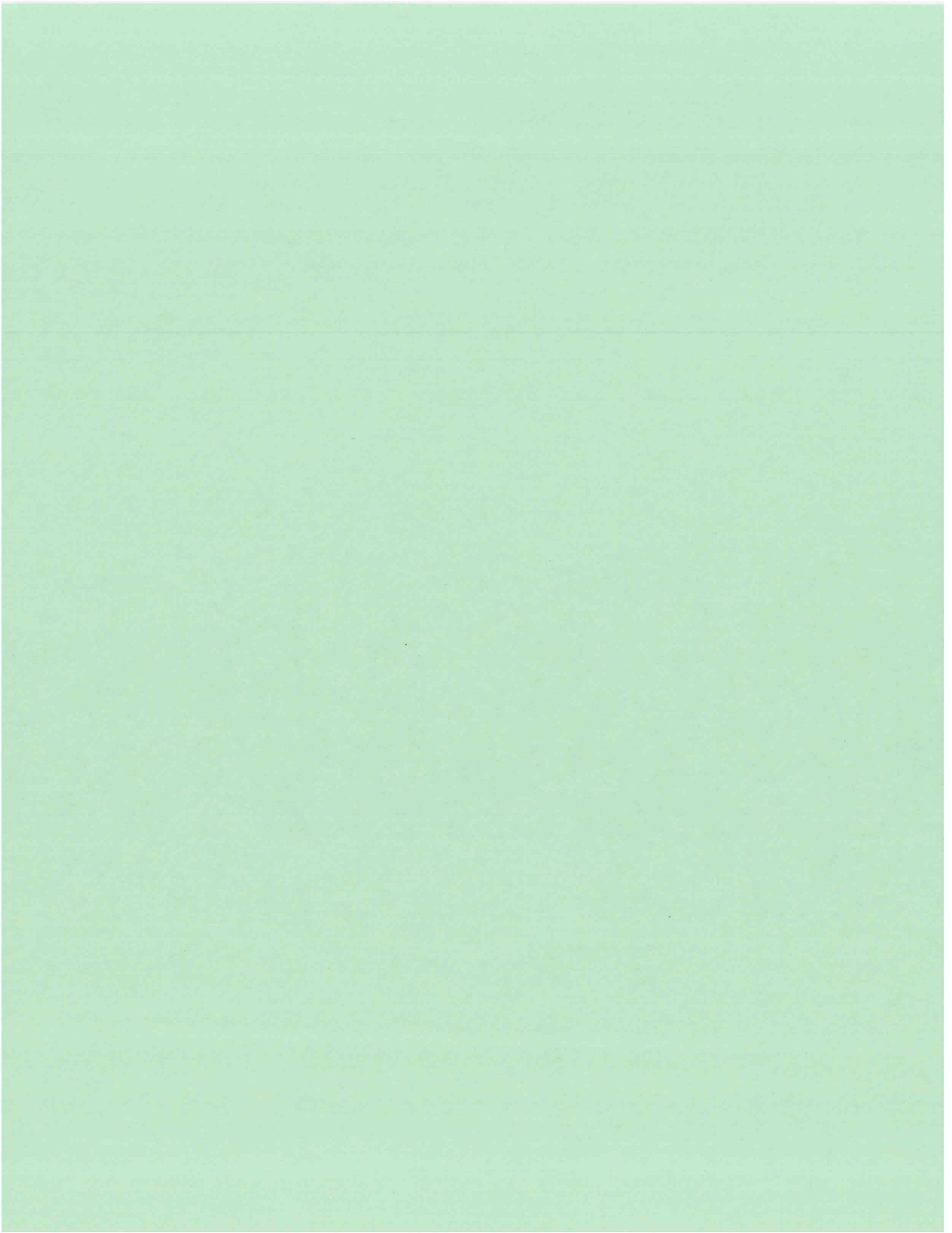
BORING LOG
 Boring No. SB-85-10
 Page: 1 of 1

Drilling Start Date: 10/17/22
 Drilling End Date: 10/17/22
 Drilling Company: GEX
 Drilling Method: Direct Push
 Drilling Equipment: GeoProbe 7822 DT
 Driller: David Hall
 Logged By: ABM

Boring Depth (ft): 8.0
 Boring Diameter (in): 2.25
 Sampling Method(s): Direct Push, Grab
 DTW During Drilling (ft): 4.0
 DTW After Drilling (ft):
 Ground Surface Elev. (ft):
 Location (X,Y):

DEPTH (ft)	LITHOLOGY	WATER LEVEL	BORING COMPLETION	COLLECT				SOIL/ROCK VISUAL DESCRIPTION	MEASURE		DEPTH (ft)
				Sample Type	Time	Blow Counts	Recovery (ft)		PID (ppm)	Lab Sample	
0				GR			5.00	(0') Asphalt (0.25') Concrete (0.5') SILT (ML); few fine sand, soft, moist, medium brown with slight yellow, micaceous	2.1		0
									1.5		
								(4') SILT (ML); few fine sand, soft, wet, medium brown with slight yellow, micaceous	754.3	SB-85-10	
5				DP			3.00	(5') Fine Well-graded SAND (SW); some silt, loose, wet, dark gray with medium brown, petroleum odor	10.9		5
								(7.5') Fine Sandy SILT (ML); medium stiff, wet, medium brown with dark brown and yellow, micaceous			
								(8') Boring terminated			
10											10

NOTES: Hole precleared to 5' by GEX using hand auger.



WELL CONSTRUCTION RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

DAVID HALL

Well Contractor Name

A - 4459

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION

Company Name

2. Well Construction Permit #:

List all applicable well construction permits (i.e. County, State, Variance, etc.)

3. Well Use (check well use):

Water Supply Well:

- ☐ Agricultural ☐ Municipal/Public
☐ Geothermal (Heating/Cooling Supply) ☐ Residential Water Supply (single)
☐ Industrial/Commercial ☐ Residential Water Supply (shared)
☐ Irrigation

Non-Water Supply Well:

- ☒ Monitoring ☐ Recovery

Injection Well:

- ☐ Aquifer Recharge ☐ Groundwater Remediation
☐ Aquifer Storage and Recovery ☐ Salinity Barrier
☐ Aquifer Test ☐ Stormwater Drainage
☐ Experimental Technology ☐ Subsidence Control
☐ Geothermal (Closed Loop) ☐ Tracer
☐ Geothermal (Heating/Cooling Return) ☐ Other (explain under #21 Remarks)

4. Date Well(s) Completed: 10/17/22 Well ID# TMW-1

5a. Well Location:

NCDOT - PARCEL 85

Facility/Owner Name

Facility ID# (if applicable)

741 EAST MAIN STREET SYLVA 28779

Physical Address, City, and Zip

JACKSON

County

Parcel Identification No. (PIN)

5b. Latitude and Longitude in degrees/minutes/seconds or decimal degrees: (if well field, one lat/long is sufficient)

35° 22' 24.60" N 83° 13' 13.22" W

6. Is (are) the well(s): ☐ Permanent or ☒ Temporary

7. Is this a repair to an existing well: ☐ Yes or ☒ No

If this is a repair, fill out known well construction information and explain the nature of the repair under #21 remarks section or on the back of this form.

8. Number of wells constructed: 1

For multiple injection or non-water supply wells ONLY with the same construction, you can submit one form.

9. Total well depth below land surface: 14.0 (ft.)
For multiple wells list all depths if different (example: 3@200' and 2@100')

10. Static water level below top of casing: (ft.)
If water level is above casing, use "-"

11. Borehole diameter: 2.25 (in.)

12. Well construction method: DPT
(i.e. auger, rotary, cable, direct push, etc.)

FOR WATER SUPPLY WELLS ONLY:

13a. Yield (gpm) Method of test:

13b. Disinfection type: Amount:

For Internal Use ONLY:

14. WATER ZONES

FROM	TO	DESCRIPTION
ft.	ft.	
ft.	ft.	

15. OUTER CASING (for multi-cased wells) OR LINER (if applicable)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		

16. INNER CASING OR TUBING (geothermal closed-loop)

FROM	TO	DIAMETER	THICKNESS	MATERIAL
ft.	ft.	in.		
ft.	ft.	in.		

17. SCREEN

FROM	TO	DIAMETER	SLOT SIZE	THICKNESS	MATERIAL
ft.	ft.	in.			
ft.	ft.	in.			

18. GROUT

FROM	TO	MATERIAL	EMPLACEMENT METHOD & AMOUNT
ft.	ft.		
ft.	ft.		
ft.	ft.		

19. SAND/GRAVEL PACK (if applicable)

FROM	TO	MATERIAL	EMPLACEMENT METHOD
ft.	ft.		
ft.	ft.		

20. DRILLING LOG (attach additional sheets if necessary)

FROM	TO	DESCRIPTION (color, hardness, soil/rock type, grain size, etc.)
0.0 ft.	14.0 ft.	DIRECT PUSH
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	
ft.	ft.	

21. REMARKS

22. Certification:

Signature of Certified Well Contractor

11/02/22
Date

By signing this form, I hereby certify that the well(s) was (were) constructed in accordance with 15A NCAC 02C .0100 or 15A NCAC 02C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

23. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well construction details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

24a. **For All Wells:** Submit this form within 30 days of completion of well construction to the following:

Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

24b. **For Injection Wells:** In addition to sending the form to the address in 24a above, also submit a copy of this form within 30 days of completion of well construction to the following:

Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

24c. **For Water Supply & Injection Wells:** In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well construction to the county health department of the county where constructed.

WELL ABANDONMENT RECORD

This form can be used for single or multiple wells

1. Well Contractor Information:

DAVID HALL

Well Contractor Name (or well owner personally abandoning well on his/her property)

A - 4459

NC Well Contractor Certification Number

GEOLOGIC EXPLORATION

Company Name

2. Well Construction Permit #:

List all applicable well construction permits (i.e. County, State, Variance, etc.) if known

3. Well use (check well use):

Water Supply Well:

- | | |
|--|--|
| ☐ Agricultural | ☐ Municipal/Public |
| ☐ Geothermal (Heating/Cooling Supply) | ☐ Residential Water Supply (single) |
| ☐ Industrial/Commercial | ☐ Residential Water Supply (shared) |
| ☐ Irrigation | |

Non-Water Supply Well:

- | | |
|--|-----------------------------------|
| ☒ Monitoring | ☐ Recovery |
|--|-----------------------------------|

Injection Well:

- | | |
|--|---|
| ☐ Aquifer Recharge | ☐ Groundwater Remediation |
| ☐ Aquifer Storage and Recovery | ☐ Salinity Barrier |
| ☐ Aquifer Test | ☐ Stormwater Drainage |
| ☐ Experimental Technology | ☐ Subsidence Control |
| ☐ Geothermal (Closed Loop) | ☐ Tracer |
| ☐ Geothermal (Heating/Cooling Return) | ☐ Other (explain under 7g) |

4. Date well(s) abandoned: 10/17/22

5a. Well location:

NCDOT - PARCEL 85

Facility/Owner Name

Facility ID# (if applicable)

741 EAST MAIN STREET SYLVA 28779

Physical Address, City, and Zip

JACKSON

County

Parcel Identification No. (PIN)

5b. Latitude and longitude in degrees/minutes/seconds or decimal degrees: (if well field, one lat/long is sufficient)

35° 22' 24.60" N 83° 13' 13.22" W

CONSTRUCTION DETAILS OF WELL(S) BEING ABANDONED

Attach well construction record(s) if available. For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

6a. Well ID#: TMW-1

6b. Total well depth: 14.0 (ft.)

6c. Borehole diameter: 2.25 (in.)

6d. Water level below ground surface: (ft.)

6e. Outer casing length (if known): (ft.)

6f. Inner casing/tubing length (if known): (ft.)

6g. Screen length (if known): (ft.)

For Internal Use ONLY:

WELL ABANDONMENT DETAILS

7a. Number of wells being abandoned: 1

For multiple injection or non-water supply wells ONLY with the same construction abandonment, you can submit one form.

7b. Approximate volume of water remaining in well(s): (gal.)

FOR WATER SUPPLY WELLS ONLY:

7c. Type of disinfectant used:

7d. Amount of disinfectant used:

7e. Sealing materials used (check all that apply):

- | | |
|--|---|
| ☐ Neat Cement Grout | ☐ Bentonite Chips or Pellets |
| ☐ Sand Cement Grout | ☐ Dry Clay |
| ☐ Concrete Grout | ☐ Drill Cuttings |
| ☐ Specialty Grout | ☐ Gravel |
| ☒ Bentonite Slurry | ☐ Other (explain under 7g) |

7f. For each material selected above, provide amount of materials used:

1.0 GALLONS

7g. Provide a brief description of the abandonment procedure:

ABANDONED VIA TREMIE PIPE WITH BENTONITE SLURRY

8. Certification:



11/02/22

Signature of Certified Well Contractor or Well Owner

Date

By signing this form, I hereby certify that the well(s) was (were) abandoned in accordance with 15A NCAC 02C .0100 or 2C .0200 Well Construction Standards and that a copy of this record has been provided to the well owner.

9. Site diagram or additional well details:

You may use the back of this page to provide additional well site details or well abandonment details. You may also attach additional pages if necessary.

SUBMITTAL INSTRUCTIONS

10a. **For All Wells:** Submit this form within 30 days of completion of well abandonment to the following:

Division of Water Quality, Information Processing Unit,
1617 Mail Service Center, Raleigh, NC 27699-1617

10b. **For Injection Wells:** In addition to sending the form to the address in 10a above, also submit one copy of this form within 30 days of completion of well abandonment to the following:

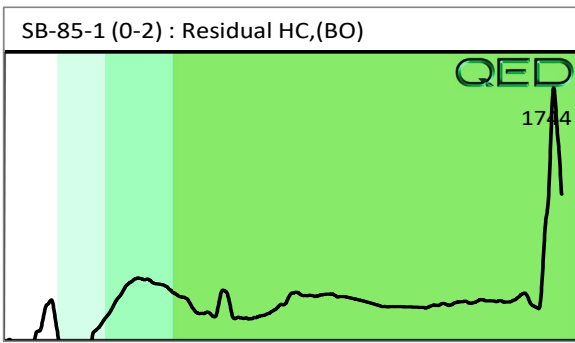
Division of Water Quality, Underground Injection Control Program,
1636 Mail Service Center, Raleigh, NC 27699-1636

10c. **For Water Supply & Injection Wells:** In addition to sending the form to the address(es) above, also submit one copy of this form within 30 days of completion of well abandonment to the county health department of the county where abandoned.

Appendix E
Laboratory Analytical Reports



(SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present





Hydrocarbon Analysis Results

Client: HART & HICKMAN, PC
Address: 2923 SOUTH TRYON STREET, SUITE 100
 CHARLOTTE, NC 28203

Samples taken
Samples extracted
Samples analysed

Monday, October 17, 2022
 Monday, October 17, 2022
 Friday, October 21, 2022

Contact: DAVE GRAHAM

Operator

MAX MOYER

Project: ROW.704

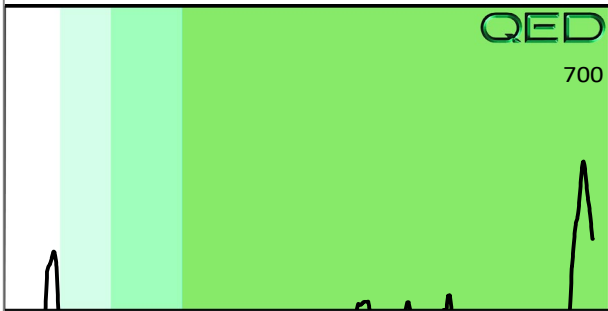
													U04049
Matrix	Sample ID	Dilution used	BTEX (C6 - C9)	GRO (C5 - C10)	DRO (C10 - C35)	TPH (C5 - C35)	Total Aromatics (C10-C35)	16 EPA PAHs	BaP	Ratios			HC Fingerprint Match
										% light	% mid	% heavy	
s	SB-85-2 (2-4)	24.1	<0.6	<0.6	<0.6	<0.6	<0.12	<0.19	<0.024	0	0	0	PHC not detected
s	SB-85-3 (2-4)	24.8	<0.62	1.8	1.7	3.5	0.79	<0.2	<0.025	72.4	22.5	5.2	Road Tar 91.3%,(FCM)
s	SB-85-4 (0-2)	22.0	<0.55	1.8	21.7	23.5	15.2	0.82	<0.022	15.2	73.4	11.4	Deg Fuel 95.4%,(FCM)
s	SB-85-5 (2-4)	12.5	<0.31	<0.31	<0.31	<0.31	<0.06	<0.1	<0.013	0	100	0	Residual HC
s	SB-85-6 (2-4)	22.0	<0.55	2.4	13.4	15.8	8.9	0.47	<0.022	29.4	62.7	7.9	Deg Fuel 82.2%,(FCM)
s	SB-85-7 (3-4)	21.8	<0.55	3.2	0.69	3.89	0.42	<0.17	<0.022	88.4	8.3	3.3	Deg.PHC 77.2%,(FCM)
s	SB-85-8 (4-5)	21.1	<0.53	<0.53	<0.53	<0.53	<0.11	<0.17	<0.021	0	100	0	Residual HC
s	SB-85-9 (4-6)	22.8	<0.57	12.6	19.2	31.8	3	<0.18	<0.023	96.5	2.7	0.8	Deg.Diesel 53.1%,(FCM)
s	SB-85-10 (4-6)	23.2	<0.58	<0.58	<0.58	<0.58	<0.12	<0.19	<0.023	0	100	0	PHC not detected
	Initial Calibrator QC check			OK		Final FCM QC Check				OK		97.7 %	

Results generated by a QED HC-1 analyser. Concentration values in mg/kg for soil samples and mg/L for water samples. Soil values are not corrected for moisture or stone content

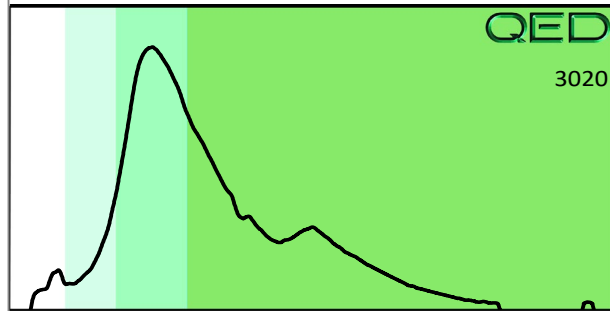
Fingerprints provide a tentative hydrocarbon identification. The abbreviations are:- FCM = Results calculated using Fundamental Calibration Mode : % = confidence for sample fingerprint match to library

(SBS) or (LBS) = Site Specific or Library Background Subtraction applied to result : (PFM) = Poor Fingerprint Match : (T) = Turbid : (P) = Particulate present

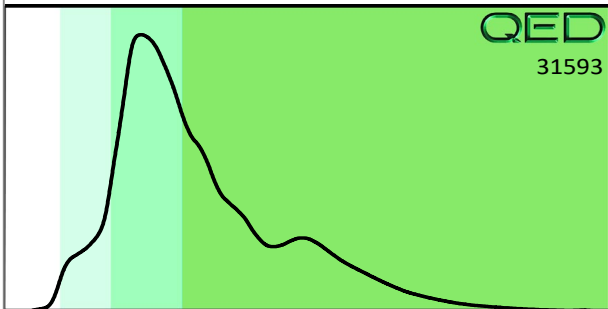
SB-85-2 (2-4) : PHC not detected



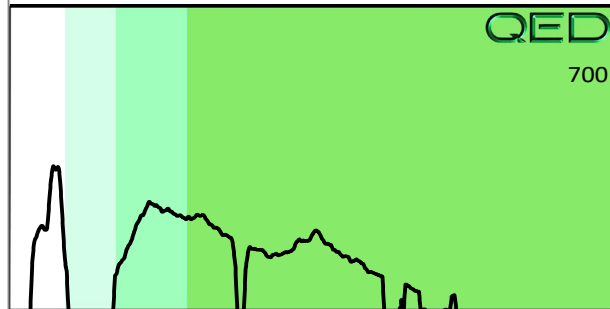
SB-85-3 (2-4) : Road Tar 91.3%,(FCM)



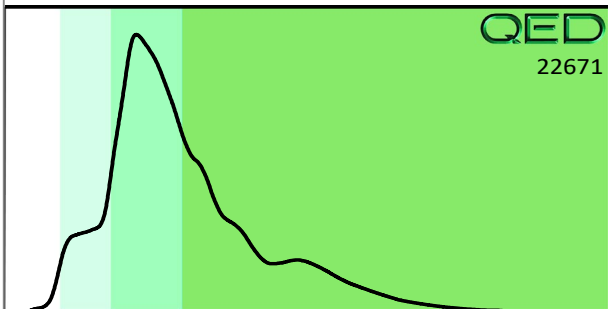
SB-85-4 (0-2) : Deg Fuel 95.4%,(FCM)



SB-85-5 (2-4) : Residual HC



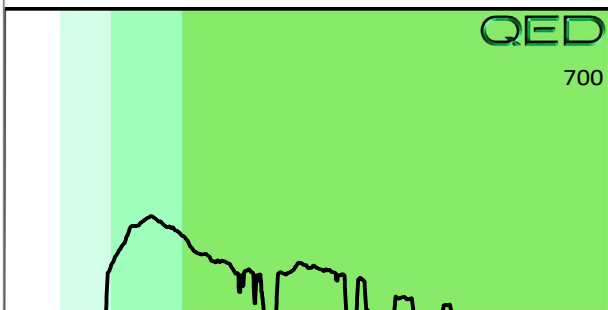
SB-85-6 (2-4) : Deg Fuel 82.2%,(FCM)



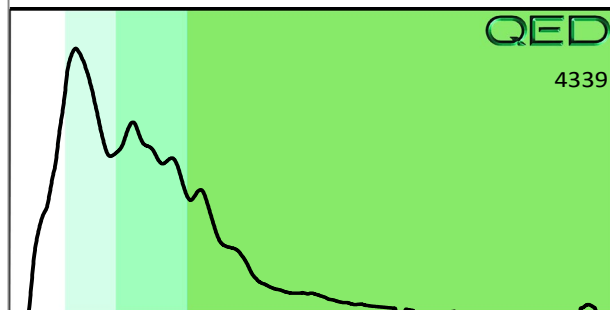
SB-85-7 (3-4) : Deg.PHC 77.2%,(FCM)



SB-85-8 (4-5) : Residual HC



SB-85-9 (4-6) : Deg.Diesel 53.1%,(FCM)



SB-85-10 (4-6) : PHC not detected



Client Name:		DOT						RED Lab, LLC 105 Portwatch Way Suite F Wilmington, NC 28412		
Address:		2923 S Tryon St. Ste 100 Charlotte, NC, 28203						Each UVF sample will be analyzed for total BTEX, GRO, DRO, TPH, PAH total aromatics and BaP. Standard GC Analyses are for BTEX and Chlorinated Solvents: VC, 1,1 DCE, 1,2 cis DCE, 1,2 trans DCE, TCE, and PCE. Specify target analytes in the space provided below.		
Contact:		Dave Graham								
Project Ref.:		ROW 704								
Email:		dgraham@hartshorn.com								
Phone #:		704-887-4630								
Collected by:		Adam Michalek								
CHAIN OF CUSTODY AND ANALYTICAL REQUEST FORM										
Sample Collection		TAT Requested		Analysis Type		Initials	Sample ID	Total Wt.	Tare Wt.	Sample Wt.
Date/Time	24 Hour	48 Hour	UVF	GC						
10/14/22 1830		X	X		AM	SB-85-1(0-2)	55.2	43.7	11.5	
COMMENTS/REQUESTS: Report to MDLS \$15K flags						TARGET GC/UVF ANALYTES:				
Relinquished by				Accepted by		Date/Time		RED Lab USE ONLY		
Adam Michalek				Fed Ex		10/17/22 1000				
Relinquished by				Accepted by		Date/Time				
				VJK		10/18 4pm		Ref. No		

Client Name:	DOT
Address:	2923 S Tryon St, Ste 100 Charlotte, NC 28203
Contact:	Dave Graham
Project Ref.:	ROW, 704
Email:	dgraham@hart-hickman.com
Phone #:	704-887-4630
Collected by:	Adam Michalak



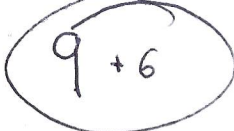
RED Lab, LLC
105 Portwatch Way
Suite F
Wilmington, NC 28412

Each UVF sample will be analyzed for total BTEX, GRO, DRO, TPH, PAH total aromatics and BaP. Standard GC Analyses are for BTEX and Chlorinated Solvents: VC, 1,1 DCE, 1,2 cis DCE, 1,2 trans DCE, TCE, and PCE. Specify target analytes in the space provided below.

CHAIN OF CUSTODY AND ANALYTICAL REQUEST FORM

Sample Collection	TAT Requested		Analysis Type		Initials	Sample ID	Total Wt.	Tare Wt.	Sample Wt.
	24 Hour	48 Hour	UVF	GC					
10/17/22 1145		X	X		AM	SB-85-2 (2-4)	50.8	40.0	10.8
10/17/22 1215						SB-85-3 (2-4)	54.2	43.7	10.5
10/17/22 1245						SB-85-4 (0-2)	54.2	42.4	11.8
10/17/22 1315						SB-85-5 (2-4)	51.1	39.9	11.2
10/17/22 1345						SB-85-6 (2-4)	55.6	43.8	11.8
10/17/22 1415						SB-85-7 (3-4)	52.7	40.8	11.9
10/17/22 1445						SB-85-8 (4-5)	55.7	43.4	12.3
10/17/22 1515						SB-85-9 (4-6)	54.9	43.5	11.4
10/17/22 1545						SB-85-10 (4-6)	54.7	43.5	11.2

COMMENTS/REQUESTS: Report to MDLs & "f" flags	TARGET GC/UVF ANALYTES:
---	-------------------------

Relinquished by	Accepted by	Date/Time	RED Lab USE ONLY  Ref. No
Adam Michalak	FedEx	10/19/22 1700	
Relinquished by	Accepted by	Date/Time	
	MM 10/20/22	1030	

10/27/2022

Hart & Hickman (Charlotte)
David Graham
2923 South Tryon St. Ste 100
Charlotte, NC, 28203

Ref: Analytical Testing
Lab Report Number: 22-293-0100
Client Project Description: ROW.704

Dear David Graham:

Waypoint Analytical, LLC (Charlotte) received sample(s) on 10/20/2022 for the analyses presented in the following report.

The above referenced project has been analyzed per your instructions. The analyses were performed in accordance with the applicable analytical method.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters were performed in accordance with guidelines established by the USEPA (including 40 CFR 136 Method Update Rule May 2021) unless otherwise indicated.

Certain parameters (chlorine, pH, dissolved oxygen, sulfite...) are required to be analyzed within 15 minutes of sampling. Usually, but not always, any field parameter analyzed at the laboratory is outside of this holding time. Refer to sample analysis time for confirmation of holding time compliance.

The results are shown on the attached Report of Analysis(s). Results for solid matrices are reported on an as-received basis unless otherwise indicated. This report shall not be reproduced except in full and relates only to the samples included in this report.

Please do not hesitate to contact me or client services if you have any questions or need additional information.

Sincerely,



Angela D Overcash
Senior Project Manager



Certification Summary

Laboratory ID: WP CNC: Waypoint Analytical Carolina, Inc. (C), Charlotte, NC

State	Program	Lab ID	Expiration Date
North Carolina	State Program	37735	07/31/2023
North Carolina	State Program	402	12/31/2022
South Carolina	State Program	99012	07/31/2023
South Carolina	State Program	99012	12/31/2022



Sample Summary Table

Report Number: 22-293-0100

Client Project Description: ROW.704

Lab No	Client Sample ID	Matrix	Date Collected	Date Received
91185	TMW-1 (85)	Aqueous	10/18/2022 16:10	10/20/2022 12:49



Summary of Detected Analytes

Project: ROW.704

Report Number: 22-293-0100

Client Sample ID Method	Lab Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
TMW-1 (85)	V 91185					
8260D	n-Butylbenzene	0.941	µg/L	0.185	10/25/2022 03:47	J
8260D	sec-Butyl benzene	0.821	µg/L	0.200	10/25/2022 03:47	



Client: Hart & Hickman (Charlotte)
Project: ROW.704
Lab Report Number: 22-293-0100
Date: 10/26/2022

CASE NARRATIVE

Volatile Organic Compounds - GC/MS Method 8260D

Analyte: 2-Butanone

QC Batch No: V25553/V25503

Relative Percent Difference (RPD) for the duplicate analysis was outside of the allowable QC limits.

Analyte: Acetone

QC Batch No: V25553/V25503

Relative Percent Difference (RPD) for the duplicate analysis was outside of the allowable QC limits.

Analyte: Acrolein

QC Batch No: V25553/V25503

Relative Percent Difference (RPD) for the duplicate analysis was outside of the allowable QC limits.

Analyte: Chloromethane

QC Batch No: V25553/V25503

Relative Percent Difference (RPD) for the duplicate analysis was outside of the allowable QC limits.

Analyte: Dichlorodifluoromethane

QC Batch No: V25553/V25503

Relative Percent Difference (RPD) for the duplicate analysis was outside of the allowable QC limits.

Analyte: Ethanol

QC Batch No: V25504/V25503

Relative Percent Difference (RPD) for the duplicate analysis was outside of the allowable QC limits.

Analyte: Ethanol

QC Batch No: V25553/V25503

Relative Percent Difference (RPD) for the duplicate analysis was outside of the allowable QC limits.

Analyte: Vinyl acetate

QC Batch No: V25553/V25503

Relative Percent Difference (RPD) for the duplicate analysis was outside of the allowable QC limits.

01102

Hart & Hickman (Charlotte)
David Graham
2923 South Tryon St. Ste 100
Charlotte, NC 28203

Project ROW.704

Information :

Report Date : 10/27/2022
Received : 10/20/2022

Report Number : 22-293-0100

REPORT OF ANALYSIS

Lab No : 91185

Matrix: Aqueous

Sample ID : TMW-1 (85)

Sampled: 10/18/2022 16:10

Analytical Method: 8260D

Prep Batch(es): V25503 10/24/22 14:00

Prep Method: 5030B

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Acetone	<1.80	µg/L	1.80	5.00	1	10/25/22 03:47	MSA	V25504
Acrolein	<2.00	µg/L	2.00	5.00	1	10/25/22 03:47	MSA	V25504
Acrylonitrile	<0.230	µg/L	0.230	5.00	1	10/25/22 03:47	MSA	V25504
Benzene	<0.180	µg/L	0.180	0.500	1	10/25/22 03:47	MSA	V25504
Bromobenzene	<0.210	µg/L	0.210	0.500	1	10/25/22 03:47	MSA	V25504
Bromochloromethane	<0.420	µg/L	0.420	1.00	1	10/25/22 03:47	MSA	V25504
Bromodichloromethane	<0.160	µg/L	0.160	0.500	1	10/25/22 03:47	MSA	V25504
Bromoform	<1.50	µg/L	1.50	5.00	1	10/25/22 03:47	MSA	V25504
Bromomethane	<0.280	µg/L	0.280	1.00	1	10/25/22 03:47	MSA	V25504
n-Butylbenzene	0.941 J	µg/L	0.185	1.00	1	10/25/22 03:47	MSA	V25504
sec-Butyl benzene	0.821	µg/L	0.200	0.500	1	10/25/22 03:47	MSA	V25504
tert-Butyl benzene	<0.920	µg/L	0.920	2.00	1	10/25/22 03:47	MSA	V25504
Carbon Disulfide	<0.150	µg/L	0.150	5.00	1	10/25/22 03:47	MSA	V25504
Carbon Tetrachloride	<0.180	µg/L	0.180	0.500	1	10/25/22 03:47	MSA	V25504
Chlorobenzene	<0.190	µg/L	0.190	0.500	1	10/25/22 03:47	MSA	V25504
Chlorodibromomethane	<0.190	µg/L	0.190	0.500	1	10/25/22 03:47	MSA	V25504
Chloroethane	<0.430	µg/L	0.430	1.00	1	10/25/22 03:47	MSA	V25504
Chloroform	<0.220	µg/L	0.220	0.500	1	10/25/22 03:47	MSA	V25504
Chloromethane	<0.220	µg/L	0.220	0.500	1	10/25/22 03:47	MSA	V25504
2-Chlorotoluene	<0.200	µg/L	0.200	0.500	1	10/25/22 03:47	MSA	V25504
4-Chlorotoluene	<0.200	µg/L	0.200	0.500	1	10/25/22 03:47	MSA	V25504
Di-Isopropyl Ether (DIPE)	<0.960	µg/L	0.960	5.00	1	10/25/22 03:47	MSA	V25504

**Qualifiers/
Definitions**

DF Dilution Factor
MQL Method Quantitation Limit

J Estimated value

01102

Hart & Hickman (Charlotte)
David Graham
2923 South Tryon St. Ste 100
Charlotte, NC 28203

Project ROW.704

Information :

Report Date : 10/27/2022
Received : 10/20/2022

Report Number : 22-293-0100

REPORT OF ANALYSIS

Lab No : 91185

Matrix: Aqueous

Sample ID : TMW-1 (85)

Sampled: 10/18/2022 16:10

Analytical Method: 8260D

Prep Batch(es): V25503 10/24/22 14:00

Prep Method: 5030B

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Batch
1,2-Dibromo-3-Chloropropane	<1.10	µg/L	1.10	2.00	1	10/25/22 03:47	MSA	V25504
1,2-Dibromoethane	<0.200	µg/L	0.200	0.500	1	10/25/22 03:47	MSA	V25504
Dibromomethane	<0.230	µg/L	0.230	0.500	1	10/25/22 03:47	MSA	V25504
1,2-Dichlorobenzene	<0.220	µg/L	0.220	0.500	1	10/25/22 03:47	MSA	V25504
1,3-Dichlorobenzene	<0.190	µg/L	0.190	0.500	1	10/25/22 03:47	MSA	V25504
1,4-Dichlorobenzene	<0.210	µg/L	0.210	0.500	1	10/25/22 03:47	MSA	V25504
Dichlorodifluoromethane	<1.20	µg/L	1.20	5.00	1	10/25/22 03:47	MSA	V25504
1,1-Dichloroethane	<0.240	µg/L	0.240	0.500	1	10/25/22 03:47	MSA	V25504
1,2-Dichloroethane	<0.150	µg/L	0.150	0.500	1	10/25/22 03:47	MSA	V25504
1,1-Dichloroethene	<0.150	µg/L	0.150	0.500	1	10/25/22 03:47	MSA	V25504
cis-1,2-Dichloroethene	<0.200	µg/L	0.200	0.500	1	10/25/22 03:47	MSA	V25504
trans-1,2-Dichloroethene	<0.180	µg/L	0.180	0.500	1	10/25/22 03:47	MSA	V25504
1,2-Dichloropropane	<0.190	µg/L	0.190	0.500	1	10/25/22 03:47	MSA	V25504
1,3-Dichloropropane	<0.130	µg/L	0.130	0.500	1	10/25/22 03:47	MSA	V25504
2,2-Dichloropropane	<0.210	µg/L	0.210	2.00	1	10/25/22 03:47	MSA	V25504
1,1-Dichloropropene	<0.200	µg/L	0.200	0.500	1	10/25/22 03:47	MSA	V25504
cis-1,3-Dichloropropene	<0.210	µg/L	0.210	0.500	1	10/25/22 03:47	MSA	V25504
trans-1,3-Dichloropropene	<0.150	µg/L	0.150	0.500	1	10/25/22 03:47	MSA	V25504
Ethanol	<42.0	µg/L	42.0	200	1	10/25/22 03:47	MSA	V25504
Ethylbenzene	<0.170	µg/L	0.170	0.500	1	10/25/22 03:47	MSA	V25504
Ethyl Tertiary Butyl Ether (ETBE)	<1.80	µg/L	1.80	10.0	1	10/25/22 03:47	MSA	V25504
Hexachlorobutadiene	<0.350	µg/L	0.350	2.00	1	10/25/22 03:47	MSA	V25504

**Qualifiers/
Definitions**

DF Dilution Factor
MQL Method Quantitation Limit

J Estimated value

01102

Hart & Hickman (Charlotte)
David Graham
2923 South Tryon St. Ste 100
Charlotte, NC 28203

Project ROW.704

Information :

Report Date : 10/27/2022
Received : 10/20/2022

Report Number : 22-293-0100

REPORT OF ANALYSIS

Lab No : 91185

Matrix: Aqueous

Sample ID : TMW-1 (85)

Sampled: 10/18/2022 16:10

Analytical Method: 8260D

Prep Batch(es): V25503 10/24/22 14:00

Prep Method: 5030B

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Batch
n-Hexane	<1.30	µg/L	1.30	10.0	1	10/25/22 03:47	MSA	V25504
2-Hexanone	<0.380	µg/L	0.380	5.00	1	10/25/22 03:47	MSA	V25504
Isopropylbenzene	<0.180	µg/L	0.180	5.00	1	10/25/22 03:47	MSA	V25504
4-Isopropyl toluene	<0.089	µg/L	0.089	0.500	1	10/25/22 03:47	MSA	V25504
Methyl Ethyl Ketone (MEK)	<0.710	µg/L	0.710	5.00	1	10/25/22 03:47	MSA	V25504
Methyl tert-butyl ether (MTBE)	<0.140	µg/L	0.140	0.500	1	10/25/22 03:47	MSA	V25504
4-Methyl-2-Pentanone	<1.00	µg/L	1.00	5.00	1	10/25/22 03:47	MSA	V25504
Methylene Chloride	<0.330	µg/L	0.330	1.00	1	10/25/22 03:47	MSA	V25504
Naphthalene	<0.470	µg/L	0.470	1.00	1	10/25/22 03:47	MSA	V25504
n-Propylbenzene	<0.190	µg/L	0.190	0.500	1	10/25/22 03:47	MSA	V25504
Styrene	<0.220	µg/L	0.220	0.500	1	10/25/22 03:47	MSA	V25504
1,1,1,2-Tetrachloroethane	<0.160	µg/L	0.160	0.500	1	10/25/22 03:47	MSA	V25504
1,1,2,2-Tetrachloroethane	<0.160	µg/L	0.160	0.500	1	10/25/22 03:47	MSA	V25504
Tetrachloroethene	<0.220	µg/L	0.220	0.500	1	10/25/22 03:47	MSA	V25504
Toluene	<0.220	µg/L	0.220	0.500	1	10/25/22 03:47	MSA	V25504
1,2,3-Trichlorobenzene	<0.380	µg/L	0.380	2.00	1	10/25/22 03:47	MSA	V25504
1,2,4-Trichlorobenzene	<0.310	µg/L	0.310	1.00	1	10/25/22 03:47	MSA	V25504
1,1,1-Trichloroethane	<0.160	µg/L	0.160	0.500	1	10/25/22 03:47	MSA	V25504
1,1,2-Trichloroethane	<0.096	µg/L	0.096	0.500	1	10/25/22 03:47	MSA	V25504
Trichloroethene	<0.180	µg/L	0.180	0.500	1	10/25/22 03:47	MSA	V25504
Trichlorofluoromethane	<0.180	µg/L	0.180	0.500	1	10/25/22 03:47	MSA	V25504
1,2,3-Trichloropropane	<0.270	µg/L	0.270	1.00	1	10/25/22 03:47	MSA	V25504

Qualifiers/ Definitions

DF Dilution Factor
MQL Method Quantitation Limit

J Estimated value

01102

Hart & Hickman (Charlotte)
David Graham
2923 South Tryon St. Ste 100
Charlotte, NC 28203

Project ROW.704

Information :

Report Date : 10/27/2022
Received : 10/20/2022

Report Number : 22-293-0100

REPORT OF ANALYSIS

Lab No : 91185

Matrix: Aqueous

Sample ID : TMW-1 (85)

Sampled: 10/18/2022 16:10

Analytical Method: 8260D

Prep Batch(es): V25503 10/24/22 14:00

Prep Method: 5030B

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Batch
1,3,5-Trimethylbenzene	<0.180	µg/L	0.180	0.500	1	10/25/22 03:47	MSA	V25504
Vinyl Acetate	<1.00	µg/L	1.00	2.00	1	10/25/22 03:47	MSA	V25504
Vinyl Chloride	<0.170	µg/L	0.170	0.500	1	10/25/22 03:47	MSA	V25504
o-Xylene	<0.210	µg/L	0.210	0.500	1	10/25/22 03:47	MSA	V25504
m,p-Xylene	<0.420	µg/L	0.420	1.00	1	10/25/22 03:47	MSA	V25504
Xylene (Total)	<0.21	µg/L	0.210	0.500	1	10/25/22 03:47		V25504
Surrogate: 4-Bromofluorobenzene	102		Limits: 80-124%		1	10/25/22 03:47	MSA	V25504
Surrogate: Dibromofluoromethane	97.8		Limits: 75-129%		1	10/25/22 03:47	MSA	V25504
Surrogate: 1,2-Dichloroethane - d4	101		Limits: 63-136%		1	10/25/22 03:47	MSA	V25504
Surrogate: Toluene-d8	100		Limits: 77-123%		1	10/25/22 03:47	MSA	V25504

Analytical Method: 8270E

Prep Batch(es): V25610 10/21/22 08:59

Prep Method: 3510C

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Acenaphthene	<7.40	µg/L	7.40	20.8	1	10/24/22 22:19	JMV	V25611
Acenaphthylene	<7.22	µg/L	7.22	20.8	1	10/24/22 22:19	JMV	V25611
Anthracene	<6.83	µg/L	6.83	10.4	1	10/24/22 22:19	JMV	V25611
Benzo(a)anthracene	<5.88	µg/L	5.88	10.4	1	10/24/22 22:19	JMV	V25611
Benzo(a)pyrene	<4.86	µg/L	4.86	10.4	1	10/24/22 22:19	JMV	V25611
Benzo(b)fluoranthene	<4.70	µg/L	4.70	10.4	1	10/24/22 22:19	JMV	V25611
Benzo(g,h,i)perylene	<4.41	µg/L	4.41	10.4	1	10/24/22 22:19	JMV	V25611
Benzo(k)fluoranthene	<4.87	µg/L	4.87	10.4	1	10/24/22 22:19	JMV	V25611

**Qualifiers/
Definitions**

DF Dilution Factor
MQL Method Quantitation Limit

J Estimated value

01102

Hart & Hickman (Charlotte)
David Graham
2923 South Tryon St. Ste 100
Charlotte, NC 28203

Project ROW.704

Information :

Report Date : 10/27/2022
Received : 10/20/2022

Report Number : 22-293-0100

REPORT OF ANALYSIS

Lab No : 91185

Matrix: Aqueous

Sample ID : TMW-1 (85)

Sampled: 10/18/2022 16:10

Analytical Method: 8270E

Prep Batch(es): V25610 10/21/22 08:59

Prep Method: 3510C

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Chrysene	<5.60	µg/L	5.60	10.4	1	10/24/22 22:19	JMV	V25611
Dibenz(a,h)anthracene	<6.25	µg/L	6.25	20.8	1	10/24/22 22:19	JMV	V25611
Fluoranthene	<6.27	µg/L	6.27	10.4	1	10/24/22 22:19	JMV	V25611
Fluorene	<7.56	µg/L	7.56	10.4	1	10/24/22 22:19	JMV	V25611
Indeno(1,2,3-cd)pyrene	<6.45	µg/L	6.45	10.4	1	10/24/22 22:19	JMV	V25611
1-Methylnaphthalene	<7.62	µg/L	7.62	10.4	1	10/24/22 22:19	JMV	V25611
2-Methylnaphthalene	<7.20	µg/L	7.20	10.4	1	10/24/22 22:19	JMV	V25611
Naphthalene	<8.20	µg/L	8.20	10.4	1	10/24/22 22:19	JMV	V25611
Phenanthrene	<6.59	µg/L	6.59	10.4	1	10/24/22 22:19	JMV	V25611
Pyrene	<5.64	µg/L	5.64	10.4	1	10/24/22 22:19	JMV	V25611
Surrogate: 2-Fluorobiphenyl	77.2		Limits: 44-119%		1	10/24/22 22:19	JMV	V25611
Surrogate: Nitrobenzene-d5	66.6		Limits: 44-120%		1	10/24/22 22:19	JMV	V25611
Surrogate: 4-Terphenyl-d14	94.2		Limits: 50-134%		1	10/24/22 22:19	JMV	V25611

**Qualifiers/
Definitions**

DF Dilution Factor
MQL Method Quantitation Limit

J Estimated value

Quality Control Data

Client ID: Hart & Hickman (Charlotte)
Project Description: ROW.704
Report No: 22-293-0100

QC Prep: V25503
QC Prep Batch Method: 5030B
QC Analytical Batch(es): V25504
Analysis Method: 8260D
Analysis Description: Volatile Organic Compounds - GC/MS

Lab Reagent Blank LRB-V25503 Matrix: AQU
Associated Lab Samples: 91185

Parameter	Units	Blank Result	MDL	MQL	Analyzed	% Recovery	% Rec Limits
Acetone	µg/L	<1.80	1.80	5.00	10/25/22 01:32		
Acrolein	µg/L	<2.00	2.00	5.00	10/25/22 01:32		
Acrylonitrile	µg/L	<0.230	0.230	5.00	10/25/22 01:32		
Benzene	µg/L	<0.180	0.180	0.500	10/25/22 01:32		
Bromobenzene	µg/L	<0.210	0.210	0.500	10/25/22 01:32		
Bromochloromethane	µg/L	<0.420	0.420	1.00	10/25/22 01:32		
Bromodichloromethane	µg/L	<0.160	0.160	0.500	10/25/22 01:32		
Bromoform	µg/L	<1.50	1.50	5.00	10/25/22 01:32		
Bromomethane	µg/L	<0.280	0.280	1.00	10/25/22 01:32		
n-Butylbenzene	µg/L	<0.185	0.185	1.00	10/25/22 01:32		
sec-Butyl benzene	µg/L	<0.200	0.200	0.500	10/25/22 01:32		
tert-Butyl benzene	µg/L	<0.920	0.920	2.00	10/25/22 01:32		
Carbon Disulfide	µg/L	<0.150	0.150	5.00	10/25/22 01:32		
Carbon Tetrachloride	µg/L	<0.180	0.180	0.500	10/25/22 01:32		
Chlorobenzene	µg/L	<0.190	0.190	0.500	10/25/22 01:32		
Chlorodibromomethane	µg/L	<0.190	0.190	0.500	10/25/22 01:32		
Chloroethane	µg/L	<0.430	0.430	1.00	10/25/22 01:32		
Chloroform	µg/L	<0.220	0.220	0.500	10/25/22 01:32		
Chloromethane	µg/L	<0.220	0.220	0.500	10/25/22 01:32		
2-Chlorotoluene	µg/L	<0.200	0.200	0.500	10/25/22 01:32		
4-Chlorotoluene	µg/L	<0.200	0.200	0.500	10/25/22 01:32		
Di-Isopropyl Ether (DIPE)	µg/L	<0.960	0.960	5.00	10/25/22 01:32		
1,2-Dibromo-3-Chloropropane	µg/L	<1.10	1.10	2.00	10/25/22 01:32		
1,2-Dibromoethane	µg/L	<0.200	0.200	0.500	10/25/22 01:32		
Dibromomethane	µg/L	<0.230	0.230	0.500	10/25/22 01:32		
1,2-Dichlorobenzene	µg/L	<0.220	0.220	0.500	10/25/22 01:32		
1,3-Dichlorobenzene	µg/L	<0.190	0.190	0.500	10/25/22 01:32		

Quality Control Data

Client ID: Hart & Hickman (Charlotte)
Project Description: ROW.704
Report No: 22-293-0100

QC Prep: V25503
QC Prep Batch Method: 5030B
QC Analytical Batch(es): V25504
Analysis Method: 8260D
Analysis Description: Volatile Organic Compounds - GC/MS

Lab Reagent Blank LRB-V25503 Matrix: AQU
Associated Lab Samples: 91185

Parameter	Units	Blank Result	MDL	MQL	Analyzed	% Recovery	% Rec Limits
1,4-Dichlorobenzene	µg/L	<0.210	0.210	0.500	10/25/22 01:32		
Dichlorodifluoromethane	µg/L	<1.20	1.20	5.00	10/25/22 01:32		
1,1-Dichloroethane	µg/L	<0.240	0.240	0.500	10/25/22 01:32		
1,2-Dichloroethane	µg/L	<0.150	0.150	0.500	10/25/22 01:32		
1,1-Dichloroethene	µg/L	<0.150	0.150	0.500	10/25/22 01:32		
cis-1,2-Dichloroethene	µg/L	<0.200	0.200	0.500	10/25/22 01:32		
trans-1,2-Dichloroethene	µg/L	<0.180	0.180	0.500	10/25/22 01:32		
1,2-Dichloropropane	µg/L	<0.190	0.190	0.500	10/25/22 01:32		
1,3-Dichloropropane	µg/L	<0.130	0.130	0.500	10/25/22 01:32		
2,2-Dichloropropane	µg/L	<0.210	0.210	2.00	10/25/22 01:32		
1,1-Dichloropropene	µg/L	<0.200	0.200	0.500	10/25/22 01:32		
cis-1,3-Dichloropropene	µg/L	<0.210	0.210	0.500	10/25/22 01:32		
trans-1,3-Dichloropropene	µg/L	<0.150	0.150	0.500	10/25/22 01:32		
Ethanol	µg/L	<42.0	42.0	200	10/25/22 01:32		
Ethylbenzene	µg/L	<0.170	0.170	0.500	10/25/22 01:32		
Ethyl Tertiary Butyl Ether (ETBE)	µg/L	<1.80	1.80	10.0	10/25/22 01:32		
Hexachlorobutadiene	µg/L	<0.350	0.350	2.00	10/25/22 01:32		
n-Hexane	µg/L	<1.30	1.30	10.0	10/25/22 01:32		
2-Hexanone	µg/L	<0.380	0.380	5.00	10/25/22 01:32		
Isopropylbenzene	µg/L	<0.180	0.180	5.00	10/25/22 01:32		
4-Isopropyl toluene	µg/L	<0.089	0.089	0.500	10/25/22 01:32		
Methyl Ethyl Ketone (MEK)	µg/L	<0.710	0.710	5.00	10/25/22 01:32		
Methyl tert-butyl ether (MTBE)	µg/L	<0.140	0.140	0.500	10/25/22 01:32		
4-Methyl-2-Pentanone	µg/L	<1.00	1.00	5.00	10/25/22 01:32		
Methylene Chloride	µg/L	<0.330	0.330	1.00	10/25/22 01:32		
Naphthalene	µg/L	<0.470	0.470	1.00	10/25/22 01:32		
n-Propylbenzene	µg/L	<0.190	0.190	0.500	10/25/22 01:32		

Quality Control Data

Client ID: Hart & Hickman (Charlotte)
Project Description: ROW.704
Report No: 22-293-0100

QC Prep: V25503
QC Prep Batch Method: 5030B
QC Analytical Batch(es): V25504
Analysis Method: 8260D
Analysis Description: Volatile Organic Compounds - GC/MS

Lab Reagent Blank LRB-V25503 Matrix: AQU
Associated Lab Samples: 91185

Parameter	Units	Blank Result	MDL	MQL	Analyzed	% Recovery	% Rec Limits
Styrene	µg/L	<0.220	0.220	0.500	10/25/22 01:32		
1,1,1,2-Tetrachloroethane	µg/L	<0.160	0.160	0.500	10/25/22 01:32		
1,1,2,2-Tetrachloroethane	µg/L	<0.160	0.160	0.500	10/25/22 01:32		
Tetrachloroethene	µg/L	<0.220	0.220	0.500	10/25/22 01:32		
Toluene	µg/L	<0.220	0.220	0.500	10/25/22 01:32		
1,2,3-Trichlorobenzene	µg/L	<0.380	0.380	2.00	10/25/22 01:32		
1,2,4-Trichlorobenzene	µg/L	<0.310	0.310	1.00	10/25/22 01:32		
1,1,1-Trichloroethane	µg/L	<0.160	0.160	0.500	10/25/22 01:32		
1,1,2-Trichloroethane	µg/L	<0.096	0.096	0.500	10/25/22 01:32		
Trichloroethene	µg/L	<0.180	0.180	0.500	10/25/22 01:32		
Trichlorofluoromethane	µg/L	<0.180	0.180	0.500	10/25/22 01:32		
1,2,3-Trichloropropane	µg/L	<0.270	0.270	1.00	10/25/22 01:32		
1,3,5-Trimethylbenzene	µg/L	<0.180	0.180	0.500	10/25/22 01:32		
Vinyl Acetate	µg/L	<1.00	1.00	2.00	10/25/22 01:32		
Vinyl Chloride	µg/L	<0.170	0.170	0.500	10/25/22 01:32		
o-Xylene	µg/L	<0.210	0.210	0.500	10/25/22 01:32		
m,p-Xylene	µg/L	<0.420	0.420	1.00	10/25/22 01:32		
4-Bromofluorobenzene (S)					10/25/22 01:32	100	80-124
Dibromofluoromethane (S)					10/25/22 01:32	98.8	75-129
1,2-Dichloroethane - d4 (S)					10/25/22 01:32	102	63-136
Toluene-d8 (S)					10/25/22 01:32	98.8	77-123

Laboratory Control Sample & LCSD LCS-V25503 LCSD-V25503

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
Acetone	µg/L	40.0	40.3	38.1	101	95.2	40-166	5.6	20

Quality Control Data

Client ID: Hart & Hickman (Charlotte)
Project Description: ROW.704
Report No: 22-293-0100

QC Prep: V25503 **QC Analytical Batch(es):** V25504
QC Prep Batch Method: 5030B **Analysis Method:** 8260D
Analysis Description: Volatile Organic Compounds - GC/MS

Laboratory Control Sample & LCSD LCS-V25503 LCSD-V25503

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
Acrolein	µg/L	40.0	36.1	36.5	90.2	91.2	70-130	1.1	20
Acrylonitrile	µg/L	40.0	37.5	39.9	93.7	99.7	81-127	6.2	20
Benzene	µg/L	20.0	19.2	18.4	96.0	92.0	77-128	4.2	20
Bromobenzene	µg/L	20.0	18.4	18.1	92.0	90.5	78-129	1.6	20
Bromochloromethane	µg/L	20.0	19.5	18.6	97.5	93.0	78-135	4.7	20
Bromodichloromethane	µg/L	20.0	19.9	20.0	99.5	100	76-138	0.5	20
Bromoform	µg/L	20.0	18.7	18.3	93.5	91.5	71-135	2.1	20
Bromomethane	µg/L	20.0	20.5	20.6	103	103	41-168	0.4	20
n-Butylbenzene	µg/L	20.0	19.3	18.7	96.5	93.5	68-134	3.1	20
sec-Butyl benzene	µg/L	20.0	19.2	19.1	96.0	95.5	71-131	0.5	20
tert-Butyl benzene	µg/L	20.0	19.6	19.4	98.0	97.0	70-132	1.0	20
Carbon Disulfide	µg/L	20.0	19.2	18.7	96.0	93.5	59-135	2.6	20
Carbon Tetrachloride	µg/L	20.0	18.4	18.6	92.0	93.0	72-142	1.0	20
Chlorobenzene	µg/L	20.0	19.3	18.7	96.5	93.5	78-119	3.1	20
Chlorodibromomethane	µg/L	20.0	19.9	20.1	99.5	101	75-134	1.0	20
Chloroethane	µg/L	20.0	20.5	20.3	103	102	57-142	0.9	20
Chloroform	µg/L	20.0	18.9	18.9	94.5	94.5	77-130	0.0	20
Chloromethane	µg/L	20.0	17.6	17.0	88.0	85.0	47-145	3.4	20
2-Chlorotoluene	µg/L	20.0	19.3	18.7	96.5	93.5	74-126	3.1	20
4-Chlorotoluene	µg/L	20.0	19.1	18.8	95.5	94.0	78-129	1.5	20
Di-Isopropyl Ether (DIPE)	µg/L	20.0	19.1	19.1	95.5	95.5	60-154	0.0	20
1,2-Dibromo-3-Chloropropane	µg/L	20.0	17.6	19.8	88.0	99.0	63-134	11.7	20
1,2-Dibromoethane	µg/L	20.0	20.1	20.4	101	102	77-135	1.4	20
Dibromomethane	µg/L	20.0	18.2	18.3	91.0	91.5	76-138	0.5	20
1,2-Dichlorobenzene	µg/L	20.0	19.4	18.5	97.0	92.5	78-128	4.7	20
1,3-Dichlorobenzene	µg/L	20.0	19.2	18.9	96.0	94.5	77-125	1.5	20

Quality Control Data

Client ID: Hart & Hickman (Charlotte)
Project Description: ROW.704
Report No: 22-293-0100

QC Prep: V25503 **QC Analytical Batch(es):** V25504
QC Prep Batch Method: 5030B **Analysis Method:** 8260D
Analysis Description: Volatile Organic Compounds - GC/MS

Laboratory Control Sample & LCSD LCS-V25503 LCSD-V25503

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
1,4-Dichlorobenzene	µg/L	20.0	19.0	19.0	95.0	95.0	75-126	0.0	20
Dichlorodifluoromethane	µg/L	20.0	19.6	18.8	98.0	94.0	28-163	4.1	20
1,1-Dichloroethane	µg/L	20.0	19.0	18.6	95.0	93.0	70-130	2.1	20
1,2-Dichloroethane	µg/L	20.0	17.5	17.8	87.5	89.0	68-131	1.6	20
1,1-Dichloroethene	µg/L	20.0	19.5	18.9	97.5	94.5	70-154	3.1	20
cis-1,2-Dichloroethene	µg/L	20.0	19.0	18.4	95.0	92.0	76-141	3.2	20
trans-1,2-Dichloroethene	µg/L	20.0	19.2	18.9	96.0	94.5	76-135	1.5	20
1,2-Dichloropropane	µg/L	20.0	19.0	18.6	95.0	93.0	77-130	2.1	20
1,3-Dichloropropane	µg/L	20.0	19.9	19.3	99.5	96.5	76-132	3.0	20
2,2-Dichloropropane	µg/L	20.0	17.9	17.3	89.5	86.5	29-149	3.4	20
1,1-Dichloropropene	µg/L	20.0	19.3	18.3	96.5	91.5	71-136	5.3	20
cis-1,3-Dichloropropene	µg/L	20.0	18.9	19.3	94.5	96.5	65-140	2.0	20
trans-1,3-Dichloropropene	µg/L	20.0	19.4	19.3	97.0	96.5	67-140	0.5	20
Ethanol	µg/L	500	355	437	71.0	87.4	70-130	20.7*	20
Ethylbenzene	µg/L	20.0	19.1	18.5	95.5	92.5	80-127	3.1	20
Ethyl Tertiary Butyl Ether (ETBE)	µg/L	40.0	39.0	38.6	97.5	96.5	70-130	1.0	20
Hexachlorobutadiene	µg/L	20.0	18.8	18.9	94.0	94.5	61-134	0.5	20
n-Hexane	µg/L	20.0	18.7	18.8	93.5	94.0	70-130	0.5	20
2-Hexanone	µg/L	20.0	18.0	18.0	90.0	90.0	64-137	0.0	20
Isopropylbenzene	µg/L	20.0	19.5	18.8	97.5	94.0	70-130	3.6	20
4-Isopropyl toluene	µg/L	20.0	19.6	18.8	98.0	94.0	69-132	4.1	20
Methyl Ethyl Ketone (MEK)	µg/L	20.0	20.6	20.3	103	102	71-134	1.4	20
Methyl tert-butyl ether (MTBE)	µg/L	20.0	19.3	19.2	96.5	96.0	68-135	0.5	20
4-Methyl-2-Pentanone	µg/L	20.0	18.0	18.9	90.0	94.5	69-134	4.8	20
Methylene Chloride	µg/L	20.0	19.7	19.4	98.5	97.0	73-131	1.5	20
Naphthalene	µg/L	20.0	17.6	17.9	88.0	89.5	64-136	1.6	20

Quality Control Data

Client ID: Hart & Hickman (Charlotte)
Project Description: ROW.704
Report No: 22-293-0100

QC Prep: V25503 **QC Analytical Batch(es):** V25504
QC Prep Batch Method: 5030B **Analysis Method:** 8260D
Analysis Description: Volatile Organic Compounds - GC/MS

Laboratory Control Sample & LCSD LCS-V25503 LCSD-V25503

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
n-Propylbenzene	µg/L	20.0	19.5	19.0	97.5	95.0	72-132	2.5	20
Styrene	µg/L	20.0	19.8	18.8	99.0	94.0	78-129	5.1	20
1,1,1,2-Tetrachloroethane	µg/L	20.0	20.0	19.6	100	98.0	79-134	2.0	20
1,1,2,2-Tetrachloroethane	µg/L	20.0	18.5	19.8	92.5	99.0	62-127	6.7	20
Tetrachloroethene	µg/L	20.0	19.2	18.3	96.0	91.5	80-129	4.8	20
Toluene	µg/L	20.0	18.7	18.0	93.5	90.0	76-131	3.8	20
1,2,3-Trichlorobenzene	µg/L	20.0	19.0	19.2	95.0	96.0	58-144	1.0	20
1,2,4-Trichlorobenzene	µg/L	20.0	19.1	19.5	95.5	97.5	66-139	2.0	20
1,1,1-Trichloroethane	µg/L	20.0	19.3	18.9	96.5	94.5	75-135	2.0	20
1,1,2-Trichloroethane	µg/L	20.0	19.2	19.8	96.0	99.0	70-140	3.0	20
Trichloroethene	µg/L	20.0	20.0	19.8	100	99.0	77-133	1.0	20
Trichlorofluoromethane	µg/L	20.0	20.4	19.8	102	99.0	62-148	2.9	20
1,2,3-Trichloropropane	µg/L	20.0	19.1	19.3	95.5	96.5	71-127	1.0	20
1,3,5-Trimethylbenzene	µg/L	20.0	19.4	19.0	97.0	95.0	75-131	2.0	20
Vinyl Acetate	µg/L	20.0	17.3	18.2	86.5	91.0	34-167	5.0	20
Vinyl Chloride	µg/L	20.0	19.8	18.7	99.0	93.5	57-141	5.7	20
o-Xylene	µg/L	20.0	19.4	18.7	97.0	93.5	78-128	3.6	20
m,p-Xylene	µg/L	40.0	39.1	37.6	97.7	94.0	77-133	3.9	20
4-Bromofluorobenzene (S)					102	100	80-124		
Dibromofluoromethane (S)					101	101	75-129		
1,2-Dichloroethane - d4 (S)					99.8	99.0	63-136		
Toluene-d8 (S)					99.8	98.8	77-123		

Quality Control Data

Client ID: Hart & Hickman (Charlotte)
Project Description: ROW.704
Report No: 22-293-0100

QC Prep: V25610
QC Prep Batch Method: 3510C
QC Analytical Batch(es): V25611
Analysis Method: 8270E
Analysis Description: Semivolatile Organic Compounds - GC/MS

Lab Reagent Blank LRB-V25610 Matrix: AQU
Associated Lab Samples: 91185

Parameter	Units	Blank Result	MDL	MQL	Analyzed	% Recovery	% Rec Limits
Acenaphthene	µg/L	<7.12	7.12	20.0	10/24/22 12:46		
Acenaphthylene	µg/L	<6.94	6.94	20.0	10/24/22 12:46		
Anthracene	µg/L	<6.57	6.57	10.0	10/24/22 12:46		
Benzo(a)anthracene	µg/L	<5.65	5.65	10.0	10/24/22 12:46		
Benzo(a)pyrene	µg/L	<4.67	4.67	10.0	10/24/22 12:46		
Benzo(b)fluoranthene	µg/L	<4.52	4.52	10.0	10/24/22 12:46		
Benzo(g,h,i)perylene	µg/L	<4.24	4.24	10.0	10/24/22 12:46		
Benzo(k)fluoranthene	µg/L	<4.68	4.68	10.0	10/24/22 12:46		
Chrysene	µg/L	<5.38	5.38	10.0	10/24/22 12:46		
Dibenz(a,h)anthracene	µg/L	<6.01	6.01	20.0	10/24/22 12:46		
Fluoranthene	µg/L	<6.03	6.03	10.0	10/24/22 12:46		
Fluorene	µg/L	<7.27	7.27	10.0	10/24/22 12:46		
Indeno(1,2,3-cd)pyrene	µg/L	<6.20	6.20	10.0	10/24/22 12:46		
1-Methylnaphthalene	µg/L	<7.33	7.33	10.0	10/24/22 12:46		
2-Methylnaphthalene	µg/L	<6.92	6.92	10.0	10/24/22 12:46		
Naphthalene	µg/L	<7.88	7.88	10.0	10/24/22 12:46		
Phenanthrene	µg/L	<6.34	6.34	10.0	10/24/22 12:46		
Pyrene	µg/L	<5.42	5.42	10.0	10/24/22 12:46		
2-Fluorobiphenyl (S)					10/24/22 12:46	70.8	44-119
Nitrobenzene-d5 (S)					10/24/22 12:46	61.2	44-120
4-Terphenyl-d14 (S)					10/24/22 12:46	94.2	50-134

Laboratory Control Sample & LCSD LCS-V25610 LCSD-V25610

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
Acenaphthene	µg/L	50.0	35.2	41.0	70.4	82.0	38-117	15.2	20.0

Quality Control Data

Client ID: Hart & Hickman (Charlotte)
Project Description: ROW.704
Report No: 22-293-0100

QC Prep: V25610 **QC Analytical Batch(es):** V25611
QC Prep Batch Method: 3510C **Analysis Method:** 8270E
Analysis Description: Semivolatile Organic Compounds - GC/MS

Laboratory Control Sample & LCSD LCS-V25610 LCSD-V25610

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
Acenaphthylene	µg/L	50.0	34.5	40.2	69.0	80.4	41-130	15.2	20.0
Anthracene	µg/L	50.0	39.4	43.5	78.8	87.0	57-123	9.8	20.0
Benzo(a)anthracene	µg/L	50.0	39.4	42.5	78.8	85.0	58-125	7.5	20.0
Benzo(a)pyrene	µg/L	50.0	46.1	50.1	92.2	100	54-128	8.3	20.0
Benzo(b)fluoranthene	µg/L	50.0	42.5	46.3	85.0	92.6	53-131	8.5	20.0
Benzo(g,h,i)perylene	µg/L	50.0	39.4	43.1	78.8	86.2	50-134	8.9	20.0
Benzo(k)fluoranthene	µg/L	50.0	42.1	45.6	84.2	91.2	53-131	7.9	20.0
Chrysene	µg/L	50.0	39.9	44.0	79.8	88.0	59-123	9.7	20.0
Dibenz(a,h)anthracene	µg/L	50.0	31.6	35.2	63.2	70.4	51-134	10.7	20.0
Fluoranthene	µg/L	50.0	39.7	43.3	79.4	86.6	57-128	8.6	20.0
Fluorene	µg/L	50.0	36.9	43.2	73.8	86.4	52-124	15.7	20.0
Indeno(1,2,3-cd)pyrene	µg/L	50.0	39.6	43.1	79.2	86.2	52-134	8.4	20.0
1-Methylnaphthalene	µg/L	50.0	28.7	33.0	57.4	66.0	41-119	13.9	20.0
2-Methylnaphthalene	µg/L	50.0	27.6	31.6	55.2	63.2	40-121	13.5	20.0
Naphthalene	µg/L	50.0	26.5	30.4	53.0	60.8	40-121	13.7	20.0
Phenanthrene	µg/L	50.0	39.8	44.0	79.6	88.0	59-120	10.0	20.0
Pyrene	µg/L	50.0	41.3	45.6	82.6	91.2	57-126	9.8	20.0
2-Fluorobiphenyl (S)					67.0	77.6	44-119		
Nitrobenzene-d5 (S)					51.8	58.8	44-120		
4-Terphenyl-d14 (S)					85.8	92.0	50-134		

Shipment Receipt Form

Customer Number: **01102**

Customer Name: **Hart & Hickman (Charlotte)**

Report Number: **22-293-0100**

Shipping Method

☐ Fed Ex	☐ US Postal	☐ Lab	☐ Other :	
☐ UPS	☒ Client	☐ Courier	Thermometer ID:	IRT-15 3.8 C

Shipping container/cooler uncompromised?	☒ Yes	☐ No
Number of coolers/boxes received	1	
Custody seals intact on shipping container/cooler?	☐ Yes	☐ No ☒ Not Present
Custody seals intact on sample bottles?	☐ Yes	☐ No ☒ Not Present
Chain of Custody (COC) present?	☒ Yes	☐ No
COC agrees with sample label(s)?	☒ Yes	☐ No
COC properly completed	☒ Yes	☐ No
Samples in proper containers?	☒ Yes	☐ No
Sample containers intact?	☒ Yes	☐ No
Sufficient sample volume for indicated test(s)?	☒ Yes	☐ No
All samples received within holding time?	☒ Yes	☐ No
Cooler temperature in compliance?	☒ Yes	☐ No
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	☒ Yes	☐ No
Water - Sample containers properly preserved	☒ Yes	☐ No ☐ N/A
Water - VOA vials free of headspace	☒ Yes	☐ No ☐ N/A
Trip Blanks received with VOAs	☒ Yes	☐ No ☐ N/A
Soil VOA method 5035 – compliance criteria met	☐ Yes	☐ No ☒ N/A
☐ High concentration container (48 hr)	☐ Low concentration EnCore samplers (48 hr)	
☐ High concentration pre-weighed (methanol -14 d)	☐ Low conc pre-weighed vials (Sod Bis -14 d)	
Special precautions or instructions included?	☐ Yes	☒ No

Comments:

Signature:

Angela D Overcash

Date & Time:

10/20/2022 15:16:13

Client Name/Address Hart & Hickman, PC (H&H) 2923 S. Tryon St, Suite100 Charlotte, NC			Client Project Manager/Contact David Graham			Billing Information accountspayable@ harthickman.com			For Laboratory Use Only										
Project Description Parcel 85			Project/Site Location (City/State) Sylva, NC			☐ RUSH – Additional charges apply ☐ Special Detection Limit(s) Date Results Needed 5 day TAT			Method of Shipment ☐ Fed Ex ☐ UPS ☐ USPS ☐ Courier ☐ Client Drop Off Other _____				Matrix Key WW – Wastewater GW – Groundwater DW – Drinking Water S – Soil /Solid O – Oil P - Product M - Misc						
Project Number ROW-704			Project Manager Phone # 704-586-0007			Project Manager Email dgraham@harthickman.com			Purchase Order Number				Site/Facility ID #						
 449 Springbrook Road Charlotte, NC 28217 Phone: 704-529-6364 Fax: 704-525-0409			Unless noted, all containers per Table II of 40 CFR Part 136			Number of Containers Matrix (Refer to Key)			(G)rab or (C)omposite 8260VOCs PAHs 8270							A Cool < 10C Na2S2O3 (Micro Only) B Cool <= 6C C H2SO4 pH<2 D None Required E NaOH pH>10 F HNO3 pH<2 G HCL pH<2 H H3PO4 pH<2 I Cool <= 6C NA2S2O3			
Date	Time	Sample Identification				Required Analysis / Preservative										Comments/Notes			
10/18/22	1610	TMW-1 (85)			5				✓	✓									
For Laboratory Use Only					Sampled by (Name – Print) Adam Michalak (H&H)					Client Remarks/Comments									
Ice Y/N		Custody Seals Y / N		Lab Comments		Relinquished by: (SIGNATURE)					Date Time		Received by: (SIGNATURE)			Date Time			
Blank/Cooler Temp 3.8 C		Relinquished by: (SIGNATURE)					Date Time		Received by: (SIGNATURE)			Date Time							
		Relinquished by: (SIGNATURE)					Date Time		Received by: (SIGNATURE)			Date Time							

Appendix F
Groundwater Sampling Record

LOW-FLOW GROUNDWATER SAMPLING RECORD

Stabilization Criteria

Primary:
 pH +/- 0.1 unit
 S. Cond. +/- 5%
 Turb. +/- 10% (<10 NTUs for metals)
 Water Level: slight or stable
 drawdown during purging

Secondary:
 DO +/- 0.2 mg/L
 ORP +/- 20 mV

Job No: ROW-704

Well ID: TMW-1

Well Location: Parcel 85

Date: 10/18/22

Facility Name: DOT Right of Way

Top of Casing Elevation (ft msl): _____ Casing Material: PVC Volume of Water Per Well Volume: _____ gallons

Total Well Depth (ftTOC): 14 Depth to Water (ftTOC): 5.60 Well Diameter: 1 inch

Sampling Personnel: ABM, _____ Screen Interval (ftTOC): 4 - 14

Type of Pump: Peristaltic Tubing Material: Polyethylene Pump/Tubing set at: 13 ft

Weather Conditions: Sunny, 35 F NOTES: Riser at 0.31' above ground surface

GROUNDWATER SAMPLING PARAMETERS

Time	Water Level	Volume Pumped	Pumping Rate	DO (mg/l)	Temp. (°C)	S. Cond. (µS/cm)	pH (SU)	ORP (mV)	Turbidity (NTU)
15:50	5.68	0.75 L	150 mL/min	3.29	19.5	97.8	7.53	-118.2	125.00
15:55	5.68	1.50 L	150 mL/min	2.08	19.9	111.9	8.60	-182.5	16.30
16:00	5.68	2.25 L	150 mL/min	2.00	19.9	111.2	8.54	-183.9	15.60
16:05	5.68	3.00 L	150 mL/min	1.92	19.8	111.6	8.51	-184.3	7.70

Other Sample Parameters: _____

Sampled at: 16:10 Parameters taken with: YSI Pro Plus and Hach 2100Q

Sample Delivered to: Lab by ABM at _____

Field Filtration: ☐ Yes ☒ No If yes, which sample parameters were field filtered: _____

Sample Parameter Containers (Types, Number of Containers, Preservatives): 3 40- mL VOA 8260, 2 1 L Amber 8270

Via Email

March 11, 2025

NC DOT Geotechnical Unit
GeoEnvironmental Section
1589 Mail Service Center
Raleigh, North Carolina 27699-1589

Attention: Mr. Ashley Cox, Jr., LG

Re: UST Closure Report – Parcel 010
NC DOT State Project No. R-5600
WBS Element No. 45818.1.FR1
Sylva, Jackson County, North Carolina
H&H Job No. ROW-809

Dear Ashley:

Please find the attached PDF copy of the UST Closure Report for the Shirley and Carroll Sutton property (Parcel 010) located in Sylva, Jackson County, North Carolina. Please return via DocuSign for final signatures. If you have any questions or need additional information, please contact us at (704) 586-0007.

Sincerely,

Hart & Hickman, PC



David Graham, PG
Project Manager



Matt Bramblett, PE
Principal

Attachment

UST CLOSURE REPORT

H&H JOB NO. ROW-809

MARCH 11, 2025



NC DOT PARCEL #010

Sylva, Jackson County, North Carolina

State Project R-5600

WBS Element #45818.1.FR1



SMARTER ENVIRONMENTAL SOLUTIONS

#C-1269 Engineering / #C-245 Geology

Underground Storage Tank Closure Report

1.0 Site Information

1.1 Site Identification

Date of Report: March 11, 2025 Site Risk: NA
Facility ID: NA UST Incident Number: NA
Site Name: Vacant Parcel (NC DOT Parcel 010)
Site Street Address: 360 W. Main Street
City, Town: Sylva Zip Code: 28779 County: Jackson
Description of Geographical Data Point: Center of Former UST locations
Location Method: Google Earth
Latitude: 35.374159 N Longitude: -83.219394 W

1.2. Information about Contacts Associated with the Leaking UST System

UST/AST Owner: Shirley & Carroll Sutton Email: NA
Address: 204 Claude Brooks Road, Whittier, NC 28789 Tel.: N/A
UST/AST Operator: Shirley & Carroll Sutton Email: NA
Address: 204 Claude Brooks Road, Whittier, NC 28789 Tel.: N/A
Property Owner: Shirley & Carroll Sutton Email: NA
Address: 204 Claude Brooks Road, Whittier, NC 28789 Tel.: N/A
Property Occupant: Vacant Email: NA
Address: 360 W. Main Street Tel.: NA
Consultant/Contractor: Hart & Hickman, PC Email: dgraham@harthickman.com
Address: 2923 South Tryon Street, Suite 100, Charlotte, NC 28203
Tel.: (704) 586-0007
Analytical Laboratory: Waypoint Analytical State Cert. No. 402
Address: 449 Springbrook Road, Charlotte, NC 28217 Tel.: (704) 529-6364

1.3 Information About Release

Date Discovered: Laboratory report dated February 11, 2025 indicates petroleum detections in UST closure soil samples below NC DEQ Action Levels
Estimated Quantity of Release: NA
Cause of Release: NA
Source of Release: NA
Sizes and contents of Tanks or other Containment from which the release occurred: One 550-gallon gasoline UST, one 750-gallon gasoline UST, and one 1,000-gallon gasoline UST

1.4 Certification

I, David Graham, PG a Licensed Geologist at Hart & Hickman, PC, do certify that the information contained in this report is correct and accurate to the best of my knowledge.

Signed by:
David Graham
9F6FAD6E6BA34BE...



Hart & Hickman, PC is licensed to practice geology/engineering in North Carolina. The certification numbers of the company are C-245/C-1269.

2.0 Executive Summary

The North Carolina Department of Transportation (NC DOT) is planning to conduct road improvement activities along East and West Main Street in Sylva, NC. H&H previously conducted geophysical survey activities in proposed NC DOT work areas on Parcel 010 in September 2022. H&H contracted with Pyramid Geophysical Services (Pyramid) to identify potential USTs within proposed NC DOT work areas using electromagnetic (EM) induction technology and ground penetrating radar (GPR). The EM/GPR survey detected the presence of three potential USTs on Parcel 10. H&H identified potential fill ports near each of the USTs.

On behalf of NC DOT, Hart & Hickman PC (H&H) and our UST closure contractor, EVO Corporation (EVO), mobilized to the Site on January 27 through 30, 2025 to investigate and remove the USTs. An exploratory excavation was conducted to remove the concrete slab and overburden soil to uncover the USTs. During excavation activities, three USTs (UST-1, UST-2, and UST-3) were identified beneath the concrete slab. UST-1, UST-2, and UST-3 were estimated to be 550-gallons, 1,000-gallons, and 750-gallons in capacity, respectively. The USTs were removed and UST closure soil samples were collected from the former tank basins in accordance with North Carolina Department of Environmental Quality (NC DEQ) guidelines. No concentrations of petroleum constituents were detected in UST closure soil samples collected beneath the USTs and associated piping and dispenser areas above NC DEQ Action Levels.

3.0 Site History and Characterization

3.1 UST Owner and Operator Information Table:

UST ID Number	UST-1, UST-2, & UST-3		Facility ID Number	NA
Owner Name (and Contact)		Dates of Operation (mm/dd/yy to mm/dd/yy)		
Shirley and Carroll Sutton		Unknown		
Street Address				
204 Claude Brooks Road				
City	State	Zip	Telephone Number	
Whittier	NC	28789	NA	
Operator Name (and Contact)		Dates of Operation (mm/dd/yy to mm/dd/yy)		
Shirley and Carroll Sutton		Unknown		
Street Address				
204 Claude Brooks Road				
City	State	Zip	Telephone Number	
Whittier	NC	28789	NA	
Other Incidents Onsite or Commingled/In Close Proximity				
Incident Number	NA		Date Incident Occurred	NA
Name of Responsible Party for Other Incident		Date Incident Reported		NA
NA		Date Incident Closed		NA
Street Address				
NA				
City	State	Zip	Telephone Number	
NA	NA	NA	NA	

3.2 UST Information Table:

UST ID Number	Current/Last Contents	Previous Contents	Capacity (gallons)	Construction Details	Approximate Tank Dimensions	Description of Associated Piping and Pumps	Date Tank Installed	Status of UST	Was release associated with the UST System?
UST-1	Gasoline	N/A	~550	Single-walled steel	10 ft x 3 ft	Less than 10 ft of steel piping identified/removed. No pumps identified.	Unknown	Removed 01/28/2025	No
UST-2	Gasoline	N/A	~1,000	Single-walled steel	12 ft x 4 ft	Less than 10 ft of steel piping identified/removed. No pumps identified.	Unknown	Removed 01/28/2025	No
UST-3	Gasoline	N/A	~750	Single-walled steel	8 ft x 4 ft	No associated piping or pumps identified	Unknown	Removed 01/28/2025	No

3.3 Non-UST/AST Spills at the Site

No non-UST/ AST spills or releases are associated with the Site.

3.4 Description of Release

No known releases are associated with the Site.

3.5 Site Characteristics

As mentioned above, NC DOT is planning to conduct road improvement activities along East and West Main Street in Sylva, NC. The Site was previously occupied by one-story building with a garage. Previous use of the building is unknown. The building was demolished and the property was vacant at the time of the UST removal activities. The Site is located in a mixed commercial and residential area of Sylva, Jackson County. A topographic site location map is presented as Figure 1, and a site map is presented as Figure 2.

The subject Site is located in the Blue Ridge Physiographic Province of North Carolina. The land surface of the area is generally characterized as inter-mountain basins surrounded by moderate-to-steep sloped mountains, which may become steeper where intersected by streams. Within the Site area, underlying bedrock is composed of predominantly biotite gneiss that is inter-layered and gradational with biotite-garnet gneiss and amphibolite. Locally, quartz and aluminosilicates are abundant.

Visual observations during the UST excavation activities indicate that the soil in the area of the UST excavation consists of tan and brown sandy silt to a depth of approximately 6 ft below ground surface (bgs). No groundwater or bedrock was encountered during the UST removal activities. Groundwater flow direction likely follows topography and flows from northeast to southwest toward Scott Creek.

A water supply well survey was not conducted during UST closure activities. No surface waters were identified on the site property. However, Scott Creek borders the southwestern boundary of the Site property.

3.6 Initial Abatement Actions, Assessment Activities, and Corrective Actions Performed to Date

Prior to the 2022 geophysical survey activities and January 2025 UST closure activities, no other known initial abatement actions, assessments, or corrective action activities have been conducted at the Site.

4.0 Closure Procedures

4.1 Preparations for Closure (including steps taken to notify authorities, permits obtained, and steps taken to clean and purge the tanks)

Prior to UST closure activities, H&H submitted a Notice of Intent: UST Permanent Closure or Change-in-Service (UST-3) form to NC DEQ on January 10, 2025. A copy of the UST-3 form is provided in Appendix A. EVO obtained a fire permit from the Jackson County Fire Department prior to conducting UST removal activities. A copy of the email approval of the fire inspection results is included in Appendix B. H&H prepared a Site-Specific Health and Safety Plan for UST closure activities. A copy of the Health and Safety Plan is included in Appendix C.

On January 27 through January 30, 2025, EVO mobilized to the site to remove the three USTs. During excavation activities, one 550-gallon UST, one 1,000-gallon UST, and one 750-gallon UST (UST-1, UST-2, and UST-3, respectively) were identified and removed from the site. Residual liquids/sludge were pumped from each tank into a vacuum truck provided by EVO prior to removal of the USTs. In addition, prior to removal, the interior of the tanks were triple-rinsed with a pressure washer and the water was removed with the vacuum truck. A total of approximately 1,162 gallons of residual liquids and rinse water were pumped from the USTs and properly disposed by EVO. The certificate of disposal and non-hazardous materials manifest for removed residual liquids are included in Appendix D.

Prior to removal of USTs, dry ice (carbon dioxide) was added to purge potential explosive vapors from the USTs. A lower explosion level (LEL) meter was utilized to monitor for explosive atmospheres to confirm readings within the tank were less than 10% of the LEL prior to UST removal.

4.2 Closure Procedures

Initially, soil was removed from the top and sides of the USTs with an excavator so that the tanks could be removed from the ground. Soils encountered during the excavation were evaluated in the field for the presence of odors, staining, and organic vapor readings using a photo ionization detector (PID). The PID was calibrated prior to its use against an isobutylene standard. No potential impacts were identified with the PID in the excavated overburden soils.

Following removal, the USTs were observed for evidence of holes, pitting, and corrosion. The USTs were constructed of steel and appeared to be in good condition. Less than 10 ft of product piping was observed running from UST-1 and UST-2 to a potential former dispenser island location located to the east of the USTs (see Figure 2). Prior to removal of the USTs, a concrete pad was removed from the ground surface above the USTs. There was visual surface evidence of a potential former dispenser island near the eastern ends of the former product piping. However, there was no indication of former dispenser locations in the area. No piping or dispenser areas were identified near UST-3. The USTs and product piping were transported

off-site by EVO to Metalwood Recycling in Sylva, North Carolina for proper disposal and recycling. The Tank Disposal Certificate is included in Appendix E.

After UST removals, closure soil samples were collected in accordance with the NC DEQ UST Section *Guidelines for Site Checks, Tank Closure, and Initial Response and Abatement*, May 17, 2021 Version, Change 11 - 2021 (*Guidelines*). There were no field indications of a release based on PID readings of the closure soil samples and overburden soil.

Because there were no field indications of a release, after UST removal activities, the excavation area was backfilled with non-impacted overburden soil and clean imported fill material by EVO.

After UST closure activities, H&H completed a Site Investigation Report for Permanent Closure or Change-in-Service of Un-Registered UST (UST-2B Form) and submitted it to the NC DEQ – Raleigh Central Office on March 11, 2025 on behalf of the NC DOT. A copy of this form is included in Appendix F.

No groundwater was encountered during UST Closure activities.

4.3 Soil Excavation Activities

As described above, overburden soils were removed from the top and sides of the USTs with an excavator so that the tanks could be removed from the ground. Soils encountered during the excavation were evaluated in the field for the presence of odors, staining, and organic vapor readings using a PID. There were no field indications of a release based on PID readings of overburden soils or closure soil samples collected beneath the USTs. As such, no over excavation of soil was conducted beneath the USTs, and no impacted soil was removed from the site.

The approximate extent of the UST excavation areas are shown on Figure 2. The top of the USTs were approximately one ft bgs. As noted above, the soil consisted of tan and brown sandy silt to a depth of approximately 6 ft bgs. Because there were no indications of a release, overburden soil that was removed from the excavation and clean imported fill were used to backfill the excavation. The imported fill soil was obtained from Arrowhead Contractors in Sylva, NC and gravel/ABC stone was obtained from Harrison Construction in Dillsboro, NC. The fill material was compacted in approximate one-foot lifts using the excavator bucket to existing grade and capped with approximately 3-inches of ABC stone. At the direction of NC DOT, no compaction testing was performed on this site.

5.0 Site Investigation

5.1 Field Screening

Field screening of soil samples collected beneath the USTs and overburden soil was conducted using a PID. Soil samples were placed in plastic Ziploc® bags and subsequently screened with the PID. There were no field indications of a release based on PID readings of the closure soil samples and overburden soil. PID screening results are presented in Table 1.

5.2 Soil Sampling Information

After removal of the one 550-gallon UST, one 1,000-gallon UST, and one 750-gallon UST, closure soil samples were collected in accordance with the NC DEQ UST Section *Guidelines* using the excavator bucket. Soil samples were collected from the center of the excavator bucket from soil not in direct contact with the bucket. Soil samples T1-1 and T1-2, T2-1 and T2-2, and T3-1 and T3-2 were collected approximately 5 ft bgs beneath the centerline of UST-1, UST-2, and UST-3, respectively. Soil samples T1-PP and T2-PP were collected approximately 1 ft below the product piping associated with UST-1 and UST-2, respectively. Because there was no clear indication of former dispenser locations, one soil sample (D-1) was collected approximately 2 ft below the center of the potential dispenser island location. The closure samples were submitted to Waypoint Analytical (Waypoint), a NC certified laboratory, for analysis of total petroleum hydrocarbons (TPH) as diesel range organics (DRO) and gasoline range organics (GRO) by EPA Method 8015. The locations of the UST closure soil samples are depicted on Figure 2.

5.3 Groundwater and Surface Water

No groundwater or surface water samples were collected from the site.

5.4 Quality-Control Information

During UST closure activities, soil samples were collected using a nitrile glove-covered hand, placed into laboratory-supplied sample containers, and then labeled as to content, analyses requested, sample date and time, and sampler's name. The samples were placed in an iced cooler upon collection and were subsequently submitted to Waypoint under standard chain-of-custody protocol.

5.5 Soil Investigation Results

Based on the laboratory analytical results, concentrations of TPH DRO (ranging from 4.02 mg/kg to 41.4 mg/kg) were detected in soil samples T1-1, T1-2, T2-1, T2-2, T3-1, T3-2, T1-PP, T2-PP, and D-1. The TPH DRO detections are below the NC DEQ Action Level of 100 mg/kg. No concentrations of TPH GRO were detected in the UST closure soil samples. Soil sample analytical results, analytical methods, PID readings, and sample depths are summarized in Table 1. The laboratory analytical data report and chain-of-custody record are provided in Appendix G.

6.0 Conclusions and Recommendations

Between January 27 and 30, 2025, one 550-gallon UST, one 1,000-gallon UST, and one 750-gallon UST and associated product piping were removed from the subject property. No groundwater or bedrock was encountered during UST closure activities. In addition, non-aqueous phase liquid (NAPL) was not identified during UST closure activities. No concentrations of TPH DRO or GRO were detected in UST closure soil samples above the NC DEQ Action Levels. Therefore, H&H recommends that an unconditional No Further Action letter be issued for closure of this UST system.

ATTACHMENTS

Tables

Table 1	Summary of UST Closure Soil Sample Analytical Results
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Figures

Figure 1	Site Location Map
Figure 2	Site Map and Soil Analytical Results

Appendices

Appendix A	Notice of Intent: UST Permanent Closure or Change in Service Form (UST-3 Form)
Appendix B	Fire Permit Inspection Approval Email
Appendix C	Health and Safety Plan
Appendix D	Certificate of Disposal and Non-Hazardous Materials Manifest (Liquid)
Appendix E	Tank Disposal Certificate
Appendix F	Site Investigation Report for Permanent Closure or Change-in-Service of Un-Registered UST (UST-2B Form)
Appendix G	Laboratory Analytical Data Report

Table 1
Summary of UST Closure Soil Sample Analytical Results
NC DOT Parcel 10
Sylva, North Carolina
H&H Job. No. ROW-809

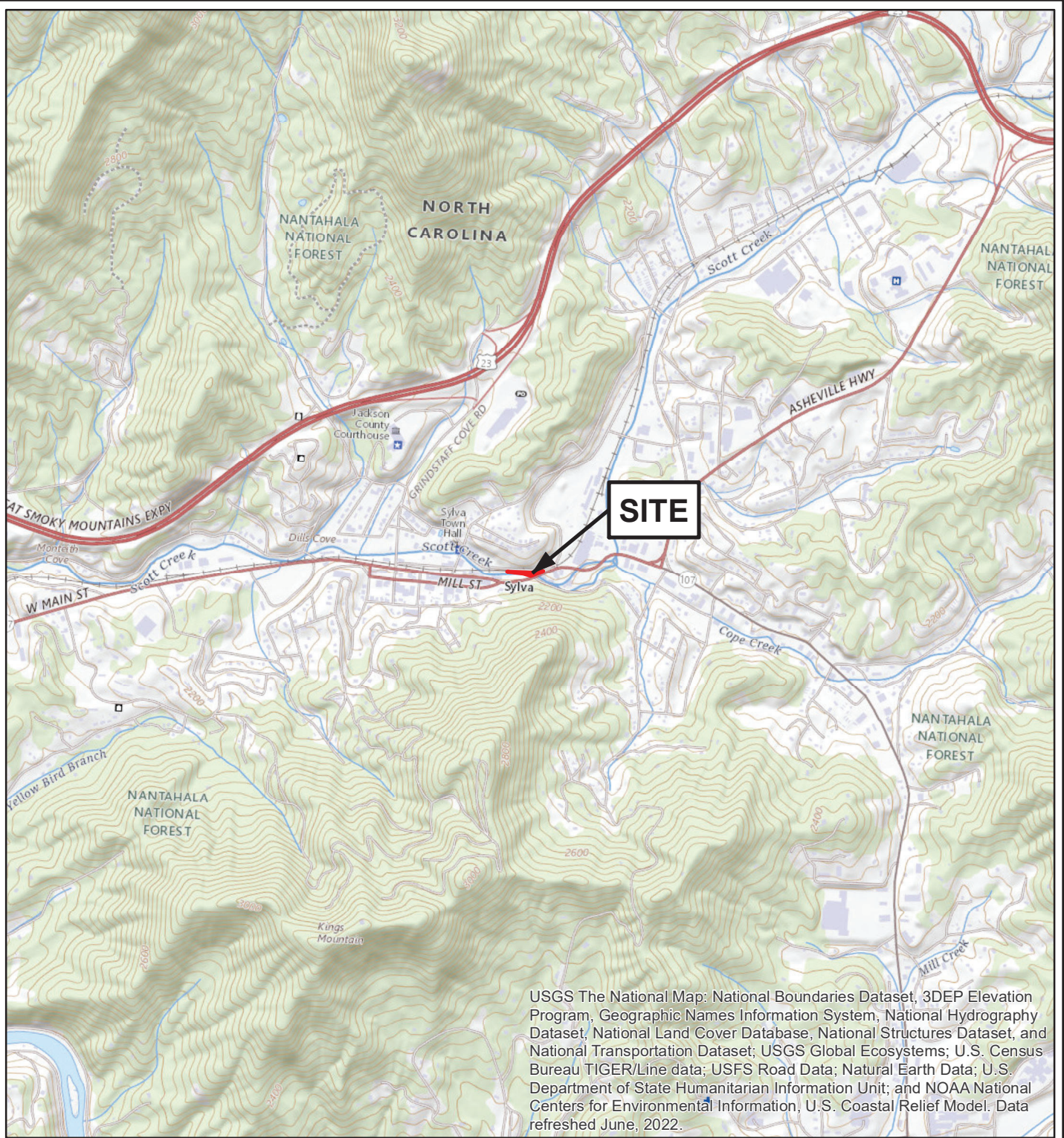
Analytical Method					PID	EPA 8015C	
Contaminant of Concern					PID Readings (PPM)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)
Sample ID	Date Collected	Sample Location	Sample Depth (ft)	Incident Phase			
T1-1	01/28/25	UST-1	5	CL	0.0	<2.59	4.02
T1-2	01/28/25	UST-1	5	CL	5.2	<2.66	41.4
T2-1	01/28/25	UST-2	5	CL	0.2	<3.23	30.7
T2-2	01/28/25	UST-2	5	CL	4.6	<2.53	21.4
T3-1	01/28/25	UST-3	5	CL	0.0	<2.92	28.4
T3-2	01/28/25	UST-3	5	CL	0.1	<2.57	20.3
T1-PP	01/29/25	UST-1 Piping	2	CL	2.7	<3.29	11.9
T2-PP	01/29/25	UST-2 Piping	2	CL	0.0	<2.85	12.9
D-1	01/29/25	Dispenser	1	CL	0.0	<2.76	15.3
TPH Action Level (mg/kg)					NE	50	100
Soil-to-Water Maximum Soil Contaminant Concentration (mg/kg)					NE	NE	NE
Residential Maximum Soil Contaminant Concentration (mg/kg)					NE	NE	NE
Industrial/Commercial Maximum Soil Contaminant Concentration (mg/kg)					NE	NE	NE

Notes:

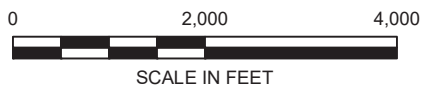
Concentrations are reported in milligrams per kilogram (mg/kg).

PPM = parts per million

UST = Underground Storage Tank; CL = Closure; NE = Not Established; TPH = Total Petroleum Hydrocarbons; GRO = Gasoline Range Organics; DRO = Diesel Range Organics



USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed June, 2022.



U.S.G.S. QUADRANGLE MAP
SYLVA SOUTH, NORTH CAROLINA 2022

QUADRANGLE
7.5 MINUTE SERIES (TOPOGRAPHIC)

TITLE SITE LOCATION MAP	
PROJECT NCDOT PARCEL 10 360 W. MAIN ST SYLVA, NORTH CAROLINA	
 SMARTER ENVIRONMENTAL SOLUTIONS 2923 South Tryon Street - Suite 100 Charlotte, North Carolina 28203 704-586-0007 (p) 704-586-0373 (f) License # C-1269 / # C-245 Geology	
DATE: 3-7-25	REVISION NO: 0
JOB NO: ROW-809	FIGURE NO: 1

Appendix A

Notice of Intent: UST Permanent Closure or Change in Service Form (UST-3 Form)

UST-3 Notice of Intent: UST Permanent Closure or Change-in-Service

Return completed form to:

The DWM Regional Office located in the area where the facility is located. Also send a copy to the Central Office in Raleigh.
Go to the following link for the regional and central office mailing addresses:
<https://www.deq.nc.gov/about/divisions/waste-management/ust/ro-staff>

STATE USE ONLY

I.D. # _____

Date Received _____

INSTRUCTIONS (READ THIS FIRST)

Complete and return a UST-3 form at least **thirty (30) days** prior to closure or change-in-service activities.

Completed UST closure or change-in-service site assessment reports, along with a copy of the UST-2A and/or 2B forms, should be submitted to the appropriate Division of Waste Management (DWM) Regional Office within thirty (30) days following closure activities. The UST-2 form should also be submitted to the Central Office in Raleigh so that the status of the tanks may be changed to permanently closed and your tank fee account can be closed out. Note: Tank fees may be due for unregistered tanks.

UST closure and change-in-service site assessments must be completed in accordance with the latest version of the *Guidelines for Site Checks, Tank Closure and Initial Response*. The guidelines can be obtained at <https://deq.nc.gov/about/divisions/waste-management/ust>. Note: To close tanks in place you must obtain prior approval from the DWM Regional office located in the region where the facility is located.

You must make sure that USTs removed from your property are disposed of properly. When choosing a closure contractor, ask where the tank(s) will be taken for disposal. Usually, USTs are cleaned and cut up for scrap metal. This is dangerous work and must be performed by a qualified company. Tanks disposed of illegally in fields or other dumpsites can leak petroleum products and sludge into the environment. If your tanks are disposed of improperly, you could be held responsible for the cleanup of any environmental damage that occurs.

I. OWNERSHIP OF TANKS

Owner Name (Corporation, Individual, Public Agency, or Other Entity)
Shirley Sutton

Street Address
204 Claude Brooks Road

City
Whittier

County
Swain

State
NC

Zip Code
28789

Phone Number
N/A

Email
N/A

II. LOCATION

Facility Name or Company
Vacant Parcel

Facility ID # (If known)
N/A

Street Address
360 W. Main Street

City
Sylva

County
Jackson

Zip Code
28779

Phone Number
N/A

III. CONTACT PERSONNEL

Name:
David Graham

Company Name:
Hart & Hickman, PC

Job Title:
Project Manager

Phone Number:
704-586-0007

IV. TANK REMOVAL, CLOSURE IN PLACE, CHANGE-IN SERVICE

- Contact local fire marshal.
- Plan entire closure event.
- Conduct Site Soil Assessment.
- If removing tanks or closing in place, refer to API Publication 2015 *Cleaning Petroleum Storage Tanks* and 1604 *Removal and Disposal of Used Underground Petroleum Storage Tanks*.
- Provide a sketch locating piping, tanks and soil sampling locations.
- Submit a closure report in the format of UST-12 (including the form UST-2) within thirty (30) days following the site investigation.
- If a release from the tanks has occurred, the site assessment portion of the tank closure must be conducted under the supervision of a P.E. or L.G., with all closure site assessment reports bearing the signature and seal of the P.E. or L.G. If a release has not occurred, the supervision, signature or seal of a P.E. or L.G. is not required.
- Keep closure records for three (3) years.

V. WORK TO BE PERFORMED BY

Contractor Name:
Tony Disher

Contractor Company Name:
EVO Corporation

Address:
1703 Vargrave Street

City:
Winston-Salem

State:
NC

Zip Code:
27107

Phone No:
336-725-5844

Primary Consultant Name:
David Graham, PG

Primary Consultant Company Name:
Hart & Hickman, PC

Consultant Phone No:
704-586-0007

VI. TANKS SCHEDULED FOR CLOSURE OR CHANGE-IN-SERVICE

Tank ID No.	Size in Gallons	Last Contents	Proposed Activity		
			Removal	Closure Abandonment in Place *	Change-In-Service New Contents Stored
1	2500	Unknown	☒	☐	
2	2500	Unknown	☒	☐	
3	2000	Unknown	☒	☐	
			☐	☐	
			☐	☐	

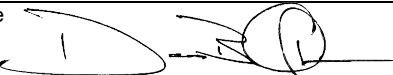
* Prior written approval to abandon a tank in place must be received from a DWM Regional Office.

VII. OWNER OR OWNER'S AUTHORIZED REPRESENTATIVE

Has a release from a UST system occurred at this location? ☐ Yes ☐ No ☒ Unknown

I understand that I can be held responsible for environmental damage resulting from the improper disposal of my USTs.

Print name and official title: David Graham - Project Manager for Hart & Hickman, PC as Agent for NC DOT

Signature 

Date Signed
January 10,
2025

SCHEDULED REMOVAL DATE
January 29, 2025

Notify your DWM Regional Office 48 hours before this date if scheduled removal date changes

Appendix B

Fire Permit Inspection Approval Email

From: [Tony Disher](#)
To: [David Graham](#)
Subject: FW: Jackson County Inspection Results
Date: Monday, March 10, 2025 10:39:05 AM

-----Original Message-----

From: Jackson County Permitting Center <mmurphy@roktech.net>
Sent: Tuesday, January 28, 2025 2:02 PM
To: Tony Disher <Tony.Disher@evocorp.net>
Cc: jcpermitcenter@jacksonnc.org
Subject: Jackson County Inspection Results

Greetings from Jackson County Code Enforcement. Please see your inspection results below.

Inspection Results
Job Name: SUTTON, SHIRLEY C DEAN
Inspection Date:1/28/2025
Permit Number:2017-9425-2-27063
Inspector: Danny Lewis
Inspection Type:Other
Inspection Results:Approved
Notes:

Common Rejections:

Appendix C
Health and Safety Plan

EMERGENCY CONTACT INFORMATION
NC DOT Road Improvement - UST Removals
East and West Main St. Sylva, NC
H&H Job No. ROW-809
January 20, 2025

Emergency Response

- (1) Hospital: (i.e., address and telephone number). **Attach Hospital Route Map or Directions**

Harris Regional Hospital: Emergency Room, 68 Hospital Road, Sylva, NC 28779 Phone: (828) 586-7000 (see attached map)

In the event of an emergency situation on the site, personnel are to immediately notify the appropriate emergency responder (i.e., fire, rescue, police, etc.), and to take any corrective actions or emergency procedures that can be safely performed (i.e., first-aid, CPR, etc.) When conditions permit, onsite personnel must notify the H&H Project Manager and Health & Safety Officer that an incident has occurred. Onsite personnel should review and be familiar with the phone number and location of the nearest hospital (listed above).

- (2) On-site emergency contact person and telephone number:

N/A

- (3) Other emergency contacts as appropriate: (i.e., fire, ambulance, 911, etc.)

- | |
|--|
| <ul style="list-style-type: none">• Ambulance, Fire, & Police - 911• Poison Control – (800) 222-1222• H&H Field Staff – Tyler Shulz – (704) 607-3877• H&H Project Manager – David Graham – (704) 649-5999 (cell)• Shannon Cottrill, Health & Safety Officer (704) 577-8810 (cell)• Client Contact – Ashley Cox – NC DOT (919) 707-6872 (office) |
|--|

- (4) Other non-emergency contacts as appropriate: (i.e., H&H Clinic addresses)

- | |
|--|
| <ul style="list-style-type: none">• Mountain Park Urgent Care: 90 E. Main Street, Sylva, NC (828) 631-3181• Concentra, Steele Creek: 8943 South Tryon St, Suite K, Charlotte, NC 28273 (704) 588-0885• Concentra, Freedom Drive: 4221 Tuckaseegee Road, Charlotte, NC 28208 (704) 395-0060 |
|--|

Site History (Describe what is known about the site. i.e., type of facility, operations, chemicals, etc.).

H&H is under contract to perform UST removal activities at four sites located along Main St. in Sylva, Jackson County, North Carolina. Potential USTs were identified via EM/GPR during Phase II assessment activities in 2022. Monitoring well abandonment activities will also be conducted at three sites on Main Street.	
<u>Parcel ID</u>	<u>Property Owner - Address</u>
Parcel 6	Wholesale Investments LLC – 345 W. Main Street (2 USTs)
Parcel 10	Shirley Sutton – 360 W. Main Street (3 USTs)
Parcel 24	Alpine Sylva LLC – 28 W. Main Street (2 USTs) (MW Aban.)
Parcel 78	Pole Yard Properties, LLC – (MW Abandonments)
Parcel 85	Vision Quest Properties – 741 E. Main Street (MW abandonments)
Parcel 132	Kathy Watkins, Et Al – 1668 E. Main Street (1 UST)

Scope of Work (Describe task(s) to be performed).

The scope of work (SOW) for activities that may be performed at the site by H&H personnel includes the following:
• Oversee utility locate. • Provide oversight during removal of residual fluids and sludge from the UST(s) with a vacuum truck. • After fluid removal, a lower explosion level (LEL) meter will be utilized to monitor for explosive atmospheres in the UST(s). Explosive vapors will be purged from the UST(s) using dry ice (or another equivalent). • Provide oversight for overburden and UST removal. • Collection of soil closure samples from the base of the UST excavation. • Provide oversight while the excavation is being backfilled with on-Site and imported soil. • Contractor will provide lane closure contractor to close eastbound lane on Main St. during closure activities on Parcel 6. • Oversight of drilling subcontractor for well abandonment activities.

Potential Hazards (List known or suspected hazards present on-site and preventative measures. Refer to *Job Safety Analysis* files for reference/assistance).

(1) **Physical Hazards** (i.e., fire, explosion, traffic, slips, trips, and falls, etc.).

Task	Physical Hazards	Action for hazard prevention	Potential for Exposure
Soil Sample Collection	Pinch points, muscle strain, slips/trips, moving vehicles	Wear cut resistant gloves, set up barriers around the work area, use caution and be aware of surface conditions	Low
UST Removal Oversight	Noise, falling items, being struck by large moving equipment	Wear hearing protection, discuss hand signals with equipment operators and trucks, wear proper PPE	High
Oversight of Drilling/Excavation Equipment	Pinch points, noise, falling items, being struck by large, moving equipment, falling into open excavation	Discuss pinch points during kickoff meeting, ear plugs, hard hat, safety vest, establish perimeter around open test pits and backfill immediately.	Medium

(2) Chemical Hazards (i.e., chemicals or products stored on-site).

- Petroleum related volatile organic compounds (VOCs) and/or aromatic compounds may be present in soil, groundwater, and/or soil gas at the site.

<u>Task</u>	<u>Chemical Hazards</u>	<u>Action for hazard prevention</u>	<u>Potential for Exposure to Hazard</u>
Soil sampling	Petroleum VOCs or SVOCs	Don nitrile gloves when contacting soil at the Site.	Medium

(3) Biological Hazards (i.e., toxic insects, poisonous plants, and poisonous snakes).

(4) Other Hazards (i.e., high winds, thunderstorms, hail, lightning, snow, and ice.)

Pedestrian traffic is possible across the Site Vehicle traffic onsite and along Main Street
--

Training

- (1) Minimum Training Required (Review site specific information prior to entering the site).

- 40-hour OSHA HAZWOPER training
- 8-hour OSHA HAZWOPER supervisor training (if required)
- Medical Monitoring Program Participant
- “Fit for Duty” Clearance from Medical Director and current respirator fit test

- (2) Specialized Training or Required Permits (i.e., site specific, or special permits may be necessary).

- The NC One Call 811 and a private utility locator will provide utility location services to identify subsurface utilities during excavation activities.

Personal Protective Equipment (PPE)

- (1) PPE Required: (examples: hard hat, safety glasses with side shields, steel toe boots, Tyvek coveralls, respirator, rubber boots, gloves, etc.).

The following PPE will be required during the performance of site activities:

Safety glasses	At all times during the performance of site work, regardless of the task
Safety shoes/boots	At all times during the performance of site work, regardless of the task
Traffic safety vest	At any time where work is performed in areas of vehicular traffic and heavy equipment, or within 25 ft of such an area
Hearing Protection	At any time where noise levels are above natural ambient levels, at any time when working within 25 ft of operational heavy equipment (i.e., excavators), and at any time when utilizing portable equipment which creates noise levels above natural ambient levels (i.e., drills, saws, etc)
Leather work gloves	At any time the use of hand protection is warranted, including but not limited to, operations involving the use of hand tools
Nitrile gloves	At any time environmental samples are to be collected or contaminated media is being handled
Hard hat	At any time when working within 25ft of operational heavy equipment and when working within a space with limited overhead clearance and/or overhead obstructions (including the basement)
Tyvek® coveralls	At any time where dermal exposure to contaminants is imminent or assured, or where exposure to liquid or solid wastes is likely. The use of Tyvek® coveralls may require the modification of the PPE level established for the site
Respirator	At any time when volatile organic vapor measurements indicate levels at or in excess of the action level established for the site (see Exposure Monitoring below). When used, the appropriate respirator cartridge must be used (i.e., organic vapor). Consultation with the Project Manager and Health & Safety Officer is <u>required</u> prior to the use of a respirator.

NOTE: EACH OR ANY COMBINATION OF EACH OF THESE FORMS OF PPE MUST BE UTILIZED IN ACCORDANCE WITH CLIENT SPECIFIC HEALTH AND SAFETY REQUIREMENTS, IF APPLICABLE.

Exposure Monitoring (Describe exposure monitoring to be conducted).

During drilling and intrusive sampling activities, a photoionization detector (PID) shall be utilized to monitor potential exposure to volatile organic vapors. Monitoring of potential volatile organic vapors will be conducted within the breathing zone (i.e., 4 to 6 ft above ground surface), and will be conducted periodically during each day. A minimum of a single measurement within the breathing zone in the work area(s) should be performed, and data obtained through the performance of this monitoring shall be recorded in the field book, noting the date, time, location and measurement obtained. More frequent vapor monitoring should be conducted as conditions warrant (i.e., recognition of offensive odors).

As a PID detects numerous volatile organic vapors and is not specific to a particular compound, the action level for organic vapors as monitored with the PID at the site is established at a level of 0.5 parts per million (ppm), above background levels. This level is the acceptable OSHA time weighted average (TWA) limit for benzene (NIOSH, Pocket Guide to Chemical Hazards, September 2005).

- If little to no work has been performed previously at the site use VC (TWA=1ppm).
- If more comprehensive site characterization info is available, and no VC is present, action level may be increased to match appropriate hazardous compound.
- If this level is observed or exceeded within the breathing zone for more than 1 minute, operations are to be suspended and personnel will move up wind of the work area until levels dissipate.
- If volatile organic vapor levels do not dissipate in the work area, contact the Project Manager and Health & Safety Officer, ventilation measures may be necessary in the work area and/or the required PPE may be modified to include donning of an appropriate respirator.

Note: Calibration, frequency of calibration, and use of the PID must be performed in accordance with the manufacturer's specifications.

Decontamination (Evaluate the need for decontamination, describe procedures, etc.)

Driller's sampling devices (i.e., screen-point samplers, sampling rods, stainless steel hand augers, and probe rods) shall be decontaminated in accordance with Section 9.1, *Field Equipment Decontamination Procedure*, of the. Decontamination is to be performed within a dedicated decontamination area. Decontamination fluids and waste materials will be properly contained for offsite disposal. All other sampling equipment shall be disposed of (i.e., nitrile gloves, DPT sleeves).

Dedicated or disposable sampling apparatus will be properly contained for disposal if it has come into contact with hazardous materials or suspect hazardous materials. If dedicated or disposable equipment can be properly decontaminated after use, it may be disposed of as non-hazardous in an appropriate container after decontamination.

Site Control (Evaluate the need for site control to protect persons from exposure to hazardous conditions; i.e., work permits, cones, barricade tape, etc.).

H&H personnel shall take necessary measures to maintain site control and limit exposure of persons to hazardous conditions or hazardous materials. As needed, H&H shall establish work areas to be demarked with traffic cones, barricades, caution tape, or other appropriate measures.

In general, a minimum perimeter of 25 ft should be established around the work area by one or more of the control measures listed above. Where possible, operations will not be conducted in a manner which increases personnel or subcontract exposure to traffic or other hazards.

No unauthorized personnel are to be allowed in the work areas during operations.

Safety Briefings

Safety briefings will be held on each day during which site work is performed. A minimum of one daily safety briefing will be held on the site by all personnel involved in site operations. Additional safety briefings will be conducted as site conditions or hazards change, when returning to the site following breaks in operation such as lunch or weekends, or at other appropriate times to be determined by on-site personnel or the Project Manager.

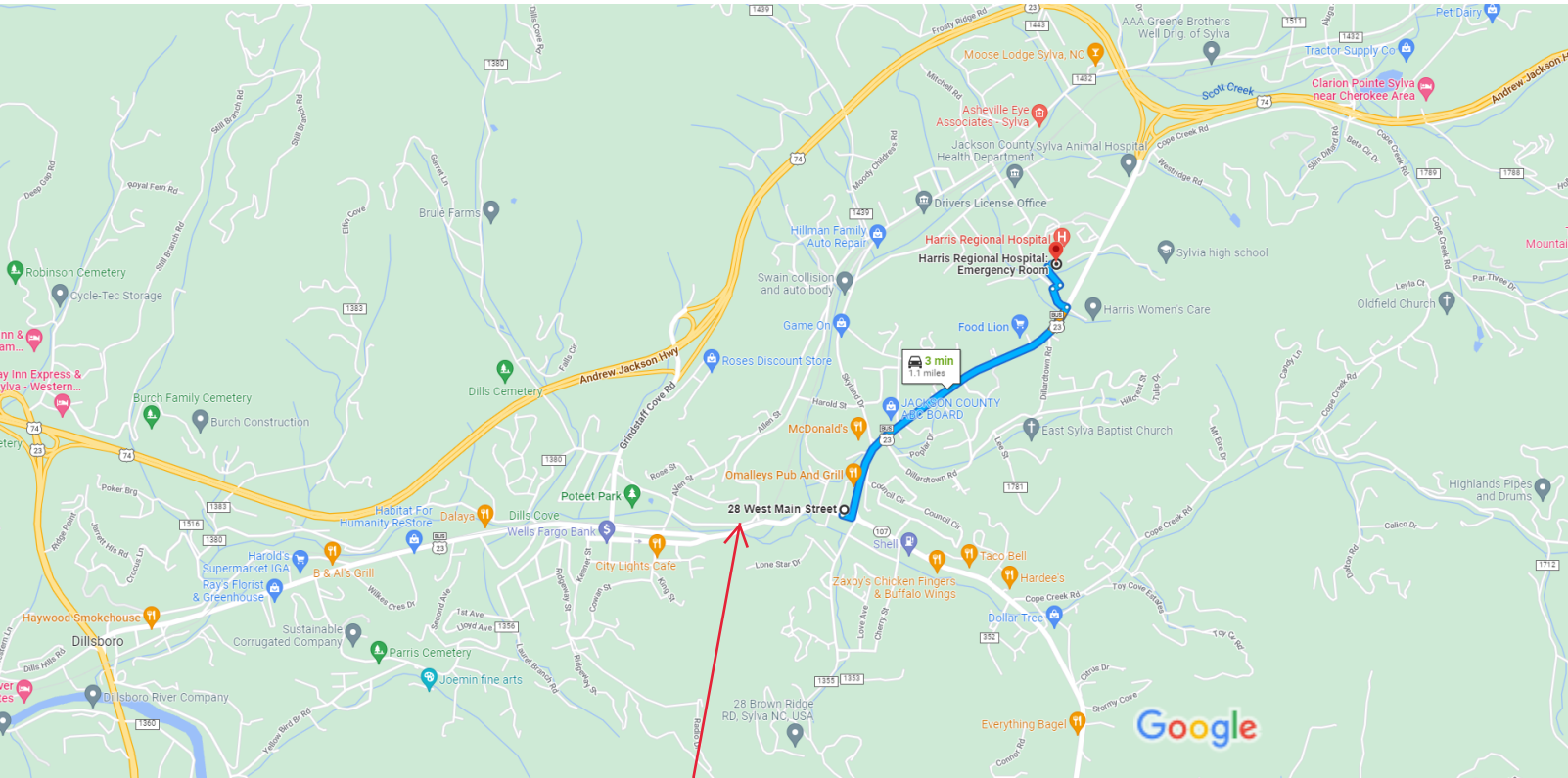
Records of these safety meetings will be noted on the safety briefing log sheets (provided at the end of this document) and in the field book, and will include the date and time of the briefing, names and affiliations of attendees, and any pertinent subjects of discussion.

Additional Information/Notes (Please enter any pertinent information that may be relevant for the site, this is to be executed before and after site visits. Information may include items like gate instructions, etc.)

Date executed: January 20, 2025

Prepared by David Graham

[Insert Hospital Directions and Map]



From Parcel 24
28 W Main St
Sylva, NC 28779

Parcel 10 360 W.
Main Street

- ↑ 1. Head east on W Main St
13 ft
- ↩ 2. Turn left onto US-23 BUS N
Pass by JACKSON COUNTY ABC BOARD (on the left in 0.3 mi)
0.9 mi
- ↩ 3. Turn left onto Hospital Rd
387 ft
- ↪ 4. Turn right
125 ft
- ↩ 5. Turn left
338 ft
- ↪ 6. Turn right
Destination will be on the right
82 ft

Harris Regional Hospital: Emergency Room
68 Hospital Rd, Sylva, NC 28779

[Insert Safety Briefing Forms]

Tail-Gate Safety Briefing Attendance Log

Name

Date

[Insert Near Miss Forms]

NEAR MISS REPORT

A near miss is a potential hazard or incident that has not resulted in personal injury. Unsafe working conditions, unsafe employee work habits, improper use of equipment or use of malfunctioning equipment have the potential to cause work related injuries. It is everyone's responsibility to report and /or correct these potential accidents/incidents immediately. Please complete this form as a means to report these near-miss situations.

Location _____ Date _____

Time _____ ☐ am ☐ pm

Please check all appropriate conditions:

☐

Unsafe Act

☐

Unsafe equipment

☐

Unsafe Condition

☐

Unsafe use of equipment

Description of incident or potential hazard: _____

Employee Signature _____ Date _____
(optional)

NEAR MISS INVESTIGATION

Description of the near-miss condition: _____

Root Causes (primary & contributing): _____

Corrective action taken (Remove the hazard, replace, repair, or retrain in the proper procedures for the task)

Signed _____ Date Completed _____

Not completed for the following reason: _____

Management _____ Date _____

ACCIDENT / EXPOSURE REPORT FORM

EMPLOYEE NAME _____ DATE OF BIRTH _____
HOME ADDRESS _____ PHONE NO. _____
SEX: MALE __ FEMALE __ JOB TITLE _____ SOC. SEC. NO. _____
OFFICE NO. _ OFFICE LOCATION _____ DATE OF HIRE _____
HOURS USUALLY WORKED: HOURS PER DAY _____ HOURS PER WEEK _____
TOTAL HOURS WEEKLY _____

WHERE DID ACCIDENT, OR EXPOSURE OCCUR? (INCLUDE ADDRESS) _____

COUNTY _____ ON EMPLOYER'S PREMISES? YES _____ NO _____

WHAT WAS EMPLOYEE DOING WHEN THE ACCIDENT OCCURRED? (BE SPECIFIC) _

HOW DID THE ACCIDENT OR EXPOSURE OCCUR? (DESCRIBE FULLY) _____

WHAT STEPS COULD BE TAKEN TO PREVENT SUCH AN OCCURRENCE? _____

OBJECT OR SUBSTANCE THAT DIRECTLY INJURED EMPLOYEE _____

DESCRIBE THE INJURY OR ILLNESS _____

PART OF BODY AFFECTED _____

NAME AND ADDRESS OF PHYSICIAN _____

IF HOSPITALIZED, NAME AND ADDRESS OF HOSPITAL _____

DATE OF INJURY/ILLNESS _____ TIME OF DAY _____

LOSS OF ONE OR MORE DAY OR WORK? YES/NO _____

IF YES, DATE LAST WORKED _____

HAS EMPLOYEE RETURNED TO WORK? _____ IF YES, DATE RETURNED _____

DID EMPLOYEE DIE? _____ IF YES, DATE _____

COMPLETED BY (PRINT) _____

SIGNATURE _____

TITLE _____ DATE _____

AN ACCIDENT, EXPOSURE REPORT MUST BE COMPLETED BY THE SUPERVISOR OR SITE SAFETY OFFICER IMMEDIATELY UPON LEARNING OF THE INCIDENT. THE COMPLETED REPORT MUST BE IMMEDIATELY TRANSMITTED TO THE MANAGER, HEALTH & SAFETY.

Appendix D

Certificate of Disposal and Non-Hazardous Materials Manifest (Liquid)



1703 Vargrave Street
Winston-Salem, NC 27107
ph 336-725-5844
fax 336-725-6244

CERTIFICATE OF DISPOSAL

Evo Corporation does hereby certify that 1,162 gallons of non-hazardous contaminated water received on 1/28/2025 from:

Generator: NC Department of Transportation (NC DOT)

Originating at: 360 W. Main Street (Parcel 010)
Sylva, Jackson County, NC

EC Waste ID #: 012529

has been disposed of by Evo Corporation in a manner approved by the North Carolina Department of Environmental Quality.

A handwritten signature in black ink, appearing to read "Thomas W. Hammett", is written over a horizontal line.

Signature

Thomas W. Hammett
CEO
Evo Corporation

EVO CORPORATION

1703 Vargrave Street, Winston-Salem, NC 27107

www.evocorp.net

NON-HAZARDOUS MATERIALS MANIFEST

Load #

Manifest No. 20274

GENERATOR INFORMATION

Generator: NCDOT
Site Address: 360 W. Main St
City/State: Sylva, NC

Phone: 919-707-6872
Contact: Ashley Cox, Jr.

MATERIAL DESCRIPTION / QUANTITY / WEIGHT

Gross Weight (lbs): _____

Material: ~~Product~~ Wastewater

Empty Weight (lbs): _____

Contaminant: Gasoline/Diesel

Net Weight (lbs): _____

Quantity

1162

Tons Drums Pails Sacs Yards Other: gallons

TRANSPORTER INFORMATION

Transporter: Evo Corporation
Truck #: 419

Phone: 336-725-5844
Contact: Tony Disher

As the transporter, I certify that the materials described above being shipped under this non-hazardous materials manifest are properly classified, packaged, labeled, secured and are in proper condition for transport in commerce under the applicable regulations governing transportation, and I hereby receive this material for delivery to the facility designate.

Driver Signature: [Signature]

Date: 1-28-25

FACILITY INFORMATION

Evo Corporation

1703 Vargrave Street

Winston-Salem NC 27107

Evo Project #: 012529

Phone: 336-725-5844

Contact: Tony Disher

I certify that the carrier has delivered the materials described above to this facility, and I hereby accept this material for treatment and/or disposal in a manner that has been authorized by the State of North Carolina.

Facility Signature: [Signature]

Date: 1/28/25

White/Facility

Canary/Invoice

Pink/Carrier

Appendix E

Tank Disposal Certificate



1703 Vargrave Street
Winston-Salem, NC 27107
ph 336-725-5844
fax 336-725-6244

TANK DISPOSAL CERTIFICATE

Tank Owner: NC Department of Transportation (NC DOT)

Site Address: 360 W. Main Street (Parcel 010)
Sylva, Jackson County, NC

Description of Tanks:

<u>Tank Number</u>	<u>Size of Tank</u>	<u>Contents</u>
2	1,000 Gallons	Gasoline
1	550 Gallons	Gasoline
3	750 Gallons	Gasoline

Transporter: Evo Corporation

EC Project #: 012529

Disposal Certification:

Evo Corporation does hereby certify that the above named storage tanks were transported to Metalwood Recycling, 656 Skyland Road, Sylva, NC for proper disposal and recycling.

Signature

Thomas W. Hammett
CEO
Evo Corporation

Appendix F

Site Investigation Report for Permanent Closure or Change-in-Service of Un-Registered UST (UST-2B Form)

UST-2B

Site Investigation Report for Permanent Closure or Change-in-Service of UN-REGISTERED UST



Return completed form to:

NC DEQ / DWM / UST SECTION
1646 MAIL SERVICE CENTER
RALEIGH, NC 27699-1646
ATTN: REGISTRATION & PERMITTING

phone (919) 707-8171 fax (919) 715-1117 <http://www.wastenotnc.org/>

Facility ID #

STATE USE ONLY:

Date Received

INSTRUCTIONS (READ THIS FIRST)

1. UST permanent closure or change in service must be completed in accordance with the latest version of the Guidelines for Site Checks, Tank Closure and Initial Response and Abatement. The guidelines can be obtained at <http://deq.nc.gov/about/divisions/waste-management/waste-management-permit-guidance/underground-storage-tanks-section>.
2. Permanent closure: Complete all sections of this form.
3. Change-in-service: Where UST systems will be converted from storing a regulated substance to a non-regulated substance, complete sections I, II, III, IV, and VI.
4. For more than 5 un-registered UST systems, attach additional forms as needed.
5. **Un-Registered USTs may be subject to unpaid fees and late penalties.**
6. REGISTERED USTs use Form UST-2A.

I. OWNERSHIP OF TANKS

Owner Name (Corporation, Individual, Public Agency, or Other Entity)
Shirley and Carroll Sutton

Street Address
204 Claude Brooks Road

City
Whittier

County
Swain

State
NC

Zip Code
28789

Phone Number
N/A

II. LOCATION OF TANKS

Facility Name or Company
Unknown (vacant)

Facility ID # (if known)
NA

Street Address
360 W. Main Street

City
Sylva

County
Jackson

Zip Code
28779

Phone Number
NA

III. CONTACT PERSONNEL

Contact for Facility:
Shirley and Carroll Sutton

Job Title:
Owner

Phone #:
N/A

Closure Contractor Name:
Tony Disher

Closure Contractor Company:
EVO Corporation

Address:
Winston-Salem, NC

Phone #:
336-725-5844

Primary Consultant Name:
David Graham, PG

Primary Consultant Company:
Hart & Hickman, PC

Address:
Charlotte, NC

Phone #:
704-586-0007

IV. UST INFORMATION FOR UN-REGISTERED UST SYSTEMS

REGISTERED USTs use Form UST-2A.

V. EXCAVATION CONDITION

Tank ID No.	Size in Gallons	Last Contents	Last Use Date	Permanent Close Date	Method of Permanent Closure: Indicate REMOVED or enter fill material, such as foam/ concrete/ sand	Change-in-Service Date	Water in excavation		Free product		Notable odor or visible soil contamination	
							Yes	No	Yes	No	Yes	No
UST-1	550	Gasoline	N/A	1/28/25	Removed		☐	☒	☐	☒	☐	☒
UST-2	1,000	Gasoline	N/A	1/28/25	Removed		☐	☒	☐	☒	☐	☒
UST-3	750	Gasoline	N/A	1/28/25	Removed		☐	☒	☐	☒	☐	☒
							☐	☐	☐	☐	☐	☐
							☐	☐	☐	☐	☐	☐
							☐	☐	☐	☐	☐	☐

VI. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true accurate and complete.

Print name and official title of owner or owner's authorized representative
David Graham, PG - Project Manager - Hart & Hickman, PC for NC DOT

Signature

Date Signed

March 11, 2025

Appendix G

Laboratory Analytical Data Report

2/11/2025

Hart & Hickman (Charlotte)
David Graham
2923 South Tryon St. Ste 100
Charlotte, NC, 28203

Ref: Analytical Testing
Lab Report Number: 25-034-0005
Client Project Description: ROW-809 Parcel 10
Sylva, NC

Dear David Graham:

Waypoint Analytical, LLC (Charlotte) received sample(s) on 1/31/2025 for the analyses presented in the following report.

The above referenced project has been analyzed per your instructions. The analyses were performed in accordance with the applicable analytical method.

The analytical data has been validated using standard quality control measures performed as required by the analytical method. Quality Assurance, method validations, instrumentation maintenance and calibration for all parameters were performed in accordance with guidelines established by the USEPA (including 40 CFR 136 Method Update Rule May 2021) unless otherwise indicated.

Certain parameters (chlorine, pH, dissolved oxygen, sulfite...) are required to be analyzed within 15 minutes of sampling. Usually, but not always, any field parameter analyzed at the laboratory is outside of this holding time. Refer to sample analysis time for confirmation of holding time compliance.

The results are shown on the attached Report of Analysis(s). Results for solid matrices are reported on an as-received basis unless otherwise indicated. This report shall not be reproduced except in full and relates only to the samples included in this report.

Please do not hesitate to contact me or client services if you have any questions or need additional information.

Sincerely,



Angela D Overcash
Senior Project Manager

Certification Summary

Laboratory ID: WP CNC: Waypoint Analytical Carolina, Inc. (C), Charlotte, NC

State	Program	Lab ID	Expiration Date
North Carolina	State Program	37735	07/31/2025
North Carolina	State Program	402	12/31/2025
South Carolina	State Program	99012	07/31/2025
South Carolina	State Program	99012	12/31/2024

Laboratory ID: WP MTN: Waypoint Analytical, LLC., Memphis, TN

State	Program	Lab ID	Expiration Date
Alabama	State Program	40750	02/28/2025
Arkansas	State Program	88-0650	02/07/2025
California	State Program	2904	06/30/2025
Florida	State Program - NELAP	E871157	06/30/2025
Georgia	State Program	C044	11/14/2025
Georgia	State Program	04015	06/30/2025
Illinois	State Program - NELAP	200078	10/31/2025
Kentucky	State Program	KY90047	12/31/2025
Kentucky	State Program	80215	06/30/2025
Kentucky	State Program	KY90047	12/31/2025
Louisiana	State Program - NELAP	LA037	12/31/2025
Louisiana	State Program - NELAP	04015	06/30/2025
Mississippi	State Program	MS	11/14/2025
North Carolina	State Program	47701	07/31/2025
North Carolina	State Program	415	12/31/2025
Pennsylvania	State Program - NELAP	68-03195	05/31/2025
South Carolina	State Program	84002	06/30/2025
Tennessee	State Program	02027	11/14/2025
Texas	State Program - NELAP	T104704180	09/30/2025
Virginia	State Program	00106	06/30/2025
Virginia	State Program - NELAP	460181	09/14/2025

Sample Summary Table

Report Number: 25-034-0005
Client Project Description: ROW-809 Parcel 10
Sylva, NC

Lab No	Client Sample ID	Matrix	Date Collected	Date Received	Method	Lab ID
91607	T1-1	Solids	01/28/2025 15:00	01/31/2025 15:11		
91607	T1-1	Solids	01/28/2025 15:00	01/31/2025 15:11	8015C DRO	WP MTN
91608	T1-2	Solids	01/28/2025 15:05	01/31/2025 15:11		
91608	T1-2	Solids	01/28/2025 15:05	01/31/2025 15:11	8015C DRO	WP MTN
91609	T2-1	Solids	01/28/2025 14:50	01/31/2025 15:11		
91609	T2-1	Solids	01/28/2025 14:50	01/31/2025 15:11	8015C DRO	WP MTN
91610	T2-2	Solids	01/28/2025 14:55	01/31/2025 15:11		
91610	T2-2	Solids	01/28/2025 14:55	01/31/2025 15:11	8015C DRO	WP MTN
91611	T3-1	Solids	01/28/2025 14:40	01/31/2025 15:11		
91611	T3-1	Solids	01/28/2025 14:40	01/31/2025 15:11	8015C DRO	WP MTN
91612	T3-2	Solids	01/28/2025 14:45	01/31/2025 15:11		
91612	T3-2	Solids	01/28/2025 14:45	01/31/2025 15:11	8015C DRO	WP MTN
91613	T1-PP	Solids	01/29/2025 15:50	01/31/2025 15:11		
91613	T1-PP	Solids	01/29/2025 15:50	01/31/2025 15:11	8015C DRO	WP MTN
91614	T2-PP	Solids	01/29/2025 15:40	01/31/2025 15:11		
91614	T2-PP	Solids	01/29/2025 15:40	01/31/2025 15:11	8015C DRO	WP MTN
91615	D-1	Solids	01/29/2025 15:45	01/31/2025 15:11		
91615	D-1	Solids	01/29/2025 15:45	01/31/2025 15:11	8015C DRO	WP MTN

Summary of Detected Analytes

Project: ROW-809 Parcel 10

Report Number: 25-034-0005

Client Sample ID Method	Lab Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
T1-1	V 91607					
8015C DRO	Diesel Range Organics (C10-C28)	4.02	mg/Kg - dry	2.25	02/06/2025 04:28	
SW-DRYWT	Moisture	15.7	%		02/04/2025 10:56	
T1-2	V 91608					
8015C DRO	Diesel Range Organics (C10-C28)	41.4	mg/Kg - dry	23.1	02/06/2025 04:51	
SW-DRYWT	Moisture	17.8	%		02/04/2025 10:56	
T2-1	V 91609					
8015C DRO	Diesel Range Organics (C10-C28)	30.7	mg/Kg - dry	2.31	02/07/2025 14:32	
SW-DRYWT	Moisture	17.9	%		02/04/2025 10:56	
T2-2	V 91610					
8015C DRO	Diesel Range Organics (C10-C28)	21.4	mg/Kg - dry	2.32	02/07/2025 14:56	
SW-DRYWT	Moisture	18.2	%		02/04/2025 10:56	
T3-1	V 91611					
8015C DRO	Diesel Range Organics (C10-C28)	28.4	mg/Kg - dry	12.1	02/07/2025 15:19	
SW-DRYWT	Moisture	21.2	%		02/04/2025 10:56	
T3-2	V 91612					
8015C DRO	Diesel Range Organics (C10-C28)	20.3	mg/Kg - dry	2.35	02/07/2025 15:42	
SW-DRYWT	Moisture	19.3	%		02/04/2025 10:56	
T1-PP	V 91613					
8015C DRO	Diesel Range Organics (C10-C28)	11.9	mg/Kg - dry	2.46	02/07/2025 16:44	
SW-DRYWT	Moisture	22.8	%		02/04/2025 10:56	
T2-PP	V 91614					
8015C DRO	Diesel Range Organics (C10-C28)	12.9	mg/Kg - dry	2.36	02/07/2025 17:07	
SW-DRYWT	Moisture	19.6	%		02/04/2025 10:56	
D-1	V 91615					
8015C DRO	Diesel Range Organics (C10-C28)	15.3	mg/Kg - dry	2.49	02/07/2025 17:31	
SW-DRYWT	Moisture	23.6	%		02/04/2025 10:56	



Client: Hart & Hickman (Charlotte)
Project: ROW-809 Parcel 10
Lab Report Number: 25-034-0005
Date: 2/10/2025

CASE NARRATIVE

Total Petroleum Hydrocarbons - Extractable Method 8015C DRO

Sample 91613 (T1-PP)

QC Batch No: L798585/L798211

Surrogate(s) was flagged for recovery outside QC limits in this project sample. This sample was re-analyzed for verification, and/or dilution of target analytes. Batch QC samples (method blank and laboratory control samples) all showed surrogates within QC limits.

01102

Hart & Hickman (Charlotte)
David Graham
2923 South Tryon St. Ste 100
Charlotte, NC 28203

Project ROW-809 Parcel 10

Information :

Report Date : 02/11/2025
Received : 01/31/2025

Report Number : **25-034-0005**

REPORT OF ANALYSIS

Lab No : **91607**

Matrix: **Solids**

Sample ID : **T1-1**

Sampled: **1/28/2025 15:00**

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Method
Moisture	15.7	%			1	02/04/25 10:56	CJR	SW-DRYWT

**Qualifiers/
Definitions**

* Outside QC Limit
I Recovery out of range

DF Dilution Factor
MQL Method Quantitation Limit

01102

Hart & Hickman (Charlotte)
David Graham
2923 South Tryon St. Ste 100
Charlotte, NC 28203

Project ROW-809 Parcel 10

Information :

Report Date : 02/11/2025
Received : 01/31/2025

Report Number : **25-034-0005**

REPORT OF ANALYSIS

Lab No : **91607**

Matrix: **Solids**

Sample ID : **T1-1**

Sampled: **1/28/2025 15:00**

Analytical Method: 8015C DRO

Prep Batch(es): **L798211** 02/05/25 07:30

Prep Method: 3546

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Diesel Range Organics (C10-C28)	4.02	mg/Kg - dry	2.25	3.95	1	02/06/25 04:28	MMK	L798585
Surrogate: OTP Surrogate	73.6		Limits: 50-150%		1	02/06/25 04:28		8015C DRO

Analytical Method: 8015C GRO

Prep Batch(es): **V56100** 02/06/25 13:59

Prep Method: 5035 MED

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Gasoline Range Organics (C6-C10)	<2.59	mg/Kg - dry	2.59	6.25	50	02/06/25 17:22	BLJ	V56101
Surrogate: a,a,a-Trifluorotoluene	87.9		Limits: 50-137%		50	02/06/25 17:22	BLJ	8015C GRO

**Qualifiers/
Definitions**

*
I

Outside QC Limit
Recovery out of range

DF
MQL

Dilution Factor
Method Quantitation Limit

01102

Hart & Hickman (Charlotte)
David Graham
2923 South Tryon St. Ste 100
Charlotte, NC 28203

Project ROW-809 Parcel 10

Information :

Report Date : 02/11/2025
Received : 01/31/2025

Report Number : **25-034-0005**

REPORT OF ANALYSIS

Lab No : **91608**

Matrix: **Solids**

Sample ID : **T1-2**

Sampled: **1/28/2025 15:05**

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Method
Moisture	17.8	%			1	02/04/25 10:56	CJR	SW-DRYWT

**Qualifiers/
Definitions**

* Outside QC Limit
I Recovery out of range

DF Dilution Factor
MQL Method Quantitation Limit

01102

Hart & Hickman (Charlotte)
David Graham
2923 South Tryon St. Ste 100
Charlotte, NC 28203

Project ROW-809 Parcel 10

Information :

Report Date : 02/11/2025
Received : 01/31/2025

Report Number : **25-034-0005**

REPORT OF ANALYSIS

Lab No : **91608**

Matrix: **Solids**

Sample ID : **T1-2**

Sampled: **1/28/2025 15:05**

Analytical Method: 8015C DRO

Prep Batch(es): **L798211** 02/05/25 07:30

Prep Method: 3546

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Diesel Range Organics (C10-C28)	41.4	mg/Kg - dry	23.1	40.5	10	02/06/25 04:51	MMK	L798585
Surrogate: OTP Surrogate	95.5		Limits: 50-150%		10	02/06/25 04:51		8015C DRO

Analytical Method: 8015C GRO

Prep Batch(es): **V56100** 02/06/25 13:59

Prep Method: 5035 MED

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Gasoline Range Organics (C6-C10)	<2.66	mg/Kg - dry	2.66	6.44	50	02/06/25 17:51	BLJ	V56101
Surrogate: a,a,a-Trifluorotoluene	96.2		Limits: 50-137%		50	02/06/25 17:51	BLJ	8015C GRO

**Qualifiers/
Definitions**

*
I

Outside QC Limit
Recovery out of range

DF
MQL

Dilution Factor
Method Quantitation Limit

01102

Hart & Hickman (Charlotte)
David Graham
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Project ROW-809 Parcel 10

Information :

Report Date : 02/11/2025
Received : 01/31/2025

Report Number : **25-034-0005**

REPORT OF ANALYSIS

Lab No : **91609**

Matrix: **Solids**

Sample ID : **T2-1**

Sampled: **1/28/2025 14:50**

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Method
Moisture	17.9	%			1	02/04/25 10:56	CJR	SW-DRYWT

**Qualifiers/
Definitions**

* Outside QC Limit
I Recovery out of range

DF Dilution Factor
MQL Method Quantitation Limit

01102

Hart & Hickman (Charlotte)
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Project ROW-809 Parcel 10

Information :

Report Date : 02/11/2025
Received : 01/31/2025

Report Number : **25-034-0005**

REPORT OF ANALYSIS

Lab No : **91609**

Matrix: **Solids**

Sample ID : **T2-1**

Sampled: **1/28/2025 14:50**

Analytical Method: 8015C DRO

Prep Batch(es): **L798211** 02/05/25 07:30

Prep Method: 3546

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Diesel Range Organics (C10-C28)	30.7	mg/Kg - dry	2.31	4.06	1	02/07/25 14:32	MMK	L798585
Surrogate: OTP Surrogate	148		Limits: 50-150%		1	02/07/25 14:32		8015C DRO

Analytical Method: 8015C GRO

Prep Batch(es): **V56100** 02/06/25 13:59

Prep Method: 5035 MED

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Gasoline Range Organics (C6-C10)	<3.23	mg/Kg - dry	3.23	7.78	50	02/06/25 18:20	BLJ	V56101
Surrogate: a,a,a-Trifluorotoluene	114		Limits: 50-137%		50	02/06/25 18:20	BLJ	8015C GRO

**Qualifiers/
Definitions**

*	Outside QC Limit	DF	Dilution Factor
I	Recovery out of range	MQL	Method Quantitation Limit

01102

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David Graham
2923 South Tryon St. Ste 100
Charlotte, NC 28203

Project ROW-809 Parcel 10

Information :

Report Date : 02/11/2025
Received : 01/31/2025

Report Number : **25-034-0005**

REPORT OF ANALYSIS

Lab No : **91610**

Matrix: **Solids**

Sample ID : **T2-2**

Sampled: **1/28/2025 14:55**

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Method
Moisture	18.2	%			1	02/04/25 10:56	CJR	SW-DRYWT

**Qualifiers/
Definitions**

*
I

Outside QC Limit
Recovery out of range

DF
MQL

Dilution Factor
Method Quantitation Limit

01102

Hart & Hickman (Charlotte)
David Graham
2923 South Tryon St. Ste 100
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Project ROW-809 Parcel 10

Information :

Report Date : 02/11/2025
Received : 01/31/2025

Report Number : **25-034-0005**

REPORT OF ANALYSIS

Lab No : **91610**

Matrix: **Solids**

Sample ID : **T2-2**

Sampled: **1/28/2025 14:55**

Analytical Method: 8015C DRO

Prep Batch(es): **L798211** 02/05/25 07:30

Prep Method: 3546

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Diesel Range Organics (C10-C28)	21.4	mg/Kg - dry	2.32	4.07	1	02/07/25 14:56	MMK	L798585
Surrogate: OTP Surrogate	138		Limits: 50-150%		1	02/07/25 14:56		8015C DRO

Analytical Method: 8015C GRO

Prep Batch(es): **V56100** 02/06/25 13:59

Prep Method: 5035 MED

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Gasoline Range Organics (C6-C10)	<2.53	mg/Kg - dry	2.53	6.11	50	02/06/25 18:48	BLJ	V56101
Surrogate: a,a,a-Trifluorotoluene	88.9		Limits: 50-137%		50	02/06/25 18:48	BLJ	8015C GRO

**Qualifiers/
Definitions**

* Outside QC Limit
I Recovery out of range

DF Dilution Factor
MQL Method Quantitation Limit

01102

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Project ROW-809 Parcel 10

Information :

Report Date : 02/11/2025
Received : 01/31/2025

Report Number : **25-034-0005**

REPORT OF ANALYSIS

Lab No : **91611**

Matrix: **Solids**

Sample ID : **T3-1**

Sampled: **1/28/2025 14:40**

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Method
Moisture	21.2	%			1	02/04/25 10:56	CJR	SW-DRYWT

**Qualifiers/
Definitions**

* Outside QC Limit
I Recovery out of range

DF Dilution Factor
MQL Method Quantitation Limit

01102

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Project ROW-809 Parcel 10

Information :

Report Date : 02/11/2025
Received : 01/31/2025

Report Number : **25-034-0005**

REPORT OF ANALYSIS

Lab No : **91611**

Matrix: **Solids**

Sample ID : **T3-1**

Sampled: **1/28/2025 14:40**

Analytical Method: 8015C DRO

Prep Batch(es): **L798211** 02/05/25 07:30

Prep Method: 3546

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Diesel Range Organics (C10-C28)	28.4	mg/Kg - dry	12.1	21.2	5	02/07/25 15:19	MMK	L798585
Surrogate: OTP Surrogate	139		Limits: 50-150%		5	02/07/25 15:19		8015C DRO

Analytical Method: 8015C GRO

Prep Batch(es): **V56100** 02/06/25 13:59

Prep Method: 5035 MED

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Gasoline Range Organics (C6-C10)	<2.92	mg/Kg - dry	2.92	7.06	50	02/06/25 19:17	BLJ	V56101
Surrogate: a,a,a-Trifluorotoluene	116		Limits: 50-137%		50	02/06/25 19:17	BLJ	8015C GRO

**Qualifiers/
Definitions**

*	Outside QC Limit	DF	Dilution Factor
I	Recovery out of range	MQL	Method Quantitation Limit

01102

Hart & Hickman (Charlotte)
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Project ROW-809 Parcel 10
Information :

Report Date : 02/11/2025
Received : 01/31/2025

Report Number : **25-034-0005**

REPORT OF ANALYSIS

Lab No : **91612**

Matrix: **Solids**

Sample ID : **T3-2**

Sampled: **1/28/2025 14:45**

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Method
Moisture	19.3	%			1	02/04/25 10:56	CJR	SW-DRYWT

**Qualifiers/
Definitions**

* Outside QC Limit
I Recovery out of range

DF Dilution Factor
MQL Method Quantitation Limit

01102

Hart & Hickman (Charlotte)
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Project ROW-809 Parcel 10

Information :

Report Date : 02/11/2025
Received : 01/31/2025

Report Number : **25-034-0005**

REPORT OF ANALYSIS

Lab No : **91612**

Matrix: **Solids**

Sample ID : **T3-2**

Sampled: **1/28/2025 14:45**

Analytical Method: 8015C DRO

Prep Batch(es): **L798211** 02/05/25 07:30

Prep Method: 3546

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Diesel Range Organics (C10-C28)	20.3	mg/Kg - dry	2.35	4.13	1	02/07/25 15:42	MMK	L798585
Surrogate: OTP Surrogate	141		Limits: 50-150%		1	02/07/25 15:42		8015C DRO

Analytical Method: 8015C GRO

Prep Batch(es): **V56100** 02/06/25 13:59

Prep Method: 5035 MED

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Gasoline Range Organics (C6-C10)	<2.57	mg/Kg - dry	2.57	6.20	50	02/06/25 19:46	BLJ	V56101
Surrogate: a,a,a-Trifluorotoluene	82.5		Limits: 50-137%		50	02/06/25 19:46	BLJ	8015C GRO

**Qualifiers/
Definitions**

* Outside QC Limit
I Recovery out of range

DF Dilution Factor
MQL Method Quantitation Limit

01102

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Project ROW-809 Parcel 10

Information :

Report Date : 02/11/2025
Received : 01/31/2025

Report Number : **25-034-0005**

REPORT OF ANALYSIS

Lab No : **91613**

Matrix: **Solids**

Sample ID : **T1-PP**

Sampled: **1/29/2025 15:50**

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Method
Moisture	22.8	%			1	02/04/25 10:56	CJR	SW-DRYWT

**Qualifiers/
Definitions**

* Outside QC Limit
I Recovery out of range

DF Dilution Factor
MQL Method Quantitation Limit

01102

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Project ROW-809 Parcel 10

Information :

Report Date : 02/11/2025
Received : 01/31/2025

Report Number : **25-034-0005**

REPORT OF ANALYSIS

Lab No : **91613**

Matrix: **Solids**

Sample ID : **T1-PP**

Sampled: **1/29/2025 15:50**

Analytical Method: 8015C DRO

Prep Batch(es): **L798211** 02/05/25 07:30

Prep Method: 3546

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Diesel Range Organics (C10-C28)	11.9	mg/Kg - dry	2.46	4.31	1	02/07/25 16:44	MMK	L798585
Surrogate: OTP Surrogate	171 *		Limits: 50-150%		10	02/06/25 07:12		8015C DRO

Analytical Method: 8015C GRO

Prep Batch(es): **V56100** 02/06/25 13:59

Prep Method: 5035 MED

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Gasoline Range Organics (C6-C10)	<3.29	mg/Kg - dry	3.29	7.94	50	02/06/25 20:15	BLJ	V56101
Surrogate: a,a,a-Trifluorotoluene	78.1		Limits: 50-137%		50	02/06/25 20:15	BLJ	8015C GRO

**Qualifiers/
Definitions**

*	Outside QC Limit	DF	Dilution Factor
I	Recovery out of range	MQL	Method Quantitation Limit

01102

Hart & Hickman (Charlotte)
David Graham
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Charlotte, NC 28203

Project ROW-809 Parcel 10

Information :

Report Date : 02/11/2025
Received : 01/31/2025

Report Number : **25-034-0005**

REPORT OF ANALYSIS

Lab No : **91614**

Matrix: **Solids**

Sample ID : **T2-PP**

Sampled: **1/29/2025 15:40**

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Method
Moisture	19.6	%			1	02/04/25 10:56	CJR	SW-DRYWT

**Qualifiers/
Definitions**

*
I

Outside QC Limit
Recovery out of range

DF
MQL

Dilution Factor
Method Quantitation Limit

01102

Hart & Hickman (Charlotte)
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Project ROW-809 Parcel 10

Information :

Report Date : 02/11/2025
Received : 01/31/2025

Report Number : **25-034-0005**

REPORT OF ANALYSIS

Lab No : **91614**

Matrix: **Solids**

Sample ID : **T2-PP**

Sampled: **1/29/2025 15:40**

Analytical Method: 8015C DRO

Prep Batch(es): **L798211** 02/05/25 07:30

Prep Method: 3546

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Diesel Range Organics (C10-C28)	12.9	mg/Kg - dry	2.36	4.14	1	02/07/25 17:07	MMK	L798585
Surrogate: OTP Surrogate	108		Limits: 50-150%		1	02/07/25 17:07		8015C DRO

Analytical Method: 8015C GRO

Prep Batch(es): **V56100** 02/06/25 13:59

Prep Method: 5035 MED

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Gasoline Range Organics (C6-C10)	<2.85	mg/Kg - dry	2.85	6.88	50	02/06/25 20:44	BLJ	V56101
Surrogate: a,a,a-Trifluorotoluene	76.1		Limits: 50-137%		50	02/06/25 20:44	BLJ	8015C GRO

**Qualifiers/
Definitions**

*
I

Outside QC Limit
Recovery out of range

DF
MQL

Dilution Factor
Method Quantitation Limit

01102

Hart & Hickman (Charlotte)
David Graham
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Charlotte, NC 28203

Project ROW-809 Parcel 10
Information :

Report Date : 02/11/2025
Received : 01/31/2025

Report Number : **25-034-0005**

REPORT OF ANALYSIS

Lab No : **91615**

Matrix: **Solids**

Sample ID : **D-1**

Sampled: **1/29/2025 15:45**

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Method
Moisture	23.6	%			1	02/04/25 10:56	CJR	SW-DRYWT

**Qualifiers/
Definitions**

*
I

Outside QC Limit
Recovery out of range

DF
MQL

Dilution Factor
Method Quantitation Limit

01102

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Project ROW-809 Parcel 10

Information :

Report Date : 02/11/2025
Received : 01/31/2025

Report Number : **25-034-0005**

REPORT OF ANALYSIS

Lab No : **91615**

Matrix: **Solids**

Sample ID : **D-1**

Sampled: **1/29/2025 15:45**

Analytical Method: 8015C DRO

Prep Batch(es): **L798211** 02/05/25 07:30

Prep Method: 3546

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Diesel Range Organics (C10-C28)	15.3	mg/Kg - dry	2.49	4.36	1	02/07/25 17:31	MMK	L798585
Surrogate: OTP Surrogate	139		Limits: 50-150%		1	02/07/25 17:31		8015C DRO

Analytical Method: 8015C GRO

Prep Batch(es): **V56100** 02/06/25 13:59

Prep Method: 5035 MED

Test	Results	Units	MDL	MQL	DF	Date / Time Analyzed	By	Analytical Batch
Gasoline Range Organics (C6-C10)	<2.76	mg/Kg - dry	2.76	6.66	50	02/06/25 21:12	BLJ	V56101
Surrogate: a,a,a-Trifluorotoluene	79.6		Limits: 50-137%		50	02/06/25 21:12	BLJ	8015C GRO

**Qualifiers/
Definitions**

*
I

Outside QC Limit
Recovery out of range

DF
MQL

Dilution Factor
Method Quantitation Limit

Quality Control Data

Client ID: Hart & Hickman (Charlotte)
Project Description: ROW-809 Parcel 10
Report No: 25-034-0005

QC Prep: L798211 **QC Analytical Batch(es):** L798585
QC Prep Batch Method: 3546 **Analysis Method:** 8015C DRO
Analysis Description: Total Petroleum Hydrocarbons - Extractable

Lab Reagent Blank LRB-L798211 Matrix: SOL
Associated Lab Samples: 91607, 91608, 91609, 91610, 91611, 91612, 91613, 91614, 91615

Parameter	Units	Blank Result	MDL	MQL	Analyzed	% Recovery	% Rec Limits
Diesel Range Organics (C10-C28)	mg/Kg	<1.90	1.90	3.33	02/06/25 02:07		
OTP Surrogate (S)					02/06/25 02:07	117	50-150

Laboratory Control Sample LCS-L798211

Parameter	Units	Spike Conc.	LCS Result	LCS %Rec	% Rec Limits
Diesel Range Organics (C10-C28)	mg/Kg	33.3	33.1	99.3	50-150
OTP Surrogate (S)				110	50-150

Matrix Spike & Matrix Spike Duplicate V 91509-MS-L798211 V 91509-MSD-L798211

Parameter	Units	Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS %Rec	MSD %Rec	%Rec Limits	RPD	Max RPD
Diesel Range Organics (C10-C28)	mg/Kg	<19.0	33.3	32.8	38.7	37.8	81.6	115	50-150	2.3	30
OTP Surrogate (S)							101	95.5	50-150		

Quality Control Data

Client ID: Hart & Hickman (Charlotte)
Project Description: ROW-809 Parcel 10
Report No: 25-034-0005

QC Prep: V56100
QC Prep Batch Method: 5035 MED
QC Analytical Batch(es): V56101
Analysis Method: 8015C GRO
Analysis Description: Total Petroleum Hydrocarbons - Volatile

Lab Reagent Blank LRB-V56100 Matrix: SOL
Associated Lab Samples: 91607, 91608, 91609, 91610, 91611, 91612, 91613, 91614, 91615

Parameter	Units	Blank Result	MDL	MQL	Analyzed	% Recovery	% Rec Limits
Gasoline Range Organics (C6-C10)	mg/Kg	<2.07	2.07	5.00	02/06/25 16:25		
a,a,a-Trifluorotoluene (S)					02/06/25 16:25	99.8	50-137

Laboratory Control Sample & LCSD LCS-V56100 LCSD-V56100

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS %Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD
Gasoline Range Organics (C6-C10)	mg/Kg	50.0	53.8	48.5	108	97.0	41-138	10.3	20
a,a,a-Trifluorotoluene (S)					109	97.4	50-137		



Quality Control Data

Client ID: Hart & Hickman (Charlotte)
Project Description: ROW-809 Parcel 10
Report No: 25-034-0005

QC Analytical Batch: V55976
Analysis Method: SW-DRYWT
Analysis Description: Dry Weight Determination

Duplicate V 91620-DUP

Parameter	Units	Result	DUP Result	RPD	Max RPD	Analyzed
Moisture	%	29.5	30.4	3.0	20.0	02/04/25 10:56

Shipment Receipt Form

Customer Number: **01102**

Customer Name: **Hart & Hickman (Charlotte)**

Report Number: **25-034-0005**

Shipping Method

☐ Fed Ex	☐ US Postal	☐ Lab	☐ Other :	
☐ UPS	☒ Client	☐ Courier	Thermometer ID:	IRT15 0.5C

Shipping container/cooler uncompromised?	☒ Yes	☐ No	
Number of coolers/boxes received	1		
Custody seals intact on shipping container/cooler?	☐ Yes	☐ No	☒ Not Present
Custody seals intact on sample bottles?	☐ Yes	☐ No	☒ Not Present
Chain of Custody (COC) present?	☒ Yes	☐ No	
COC agrees with sample label(s)?	☒ Yes	☐ No	
COC properly completed	☒ Yes	☐ No	
Samples in proper containers?	☒ Yes	☐ No	
Sample containers intact?	☒ Yes	☐ No	
Sufficient sample volume for indicated test(s)?	☒ Yes	☐ No	
All samples received within holding time?	☒ Yes	☐ No	
Cooler temperature in compliance?	☒ Yes	☐ No	☐ Not Present
Cooler/Samples arrived at the laboratory on ice. Samples were considered acceptable as cooling process had begun.	☒ Yes	☐ No	
Water - Sample containers properly preserved	☐ Yes	☐ No	☒ N/A
Water - VOA vials free of headspace	☐ Yes	☐ No	☒ N/A
Trip Blanks received with VOAs	☐ Yes	☐ No	☒ N/A
Soil VOA method 5035 – compliance criteria met	☒ Yes	☐ No	☐ N/A
☐ High concentration container (48 hr)	☐ Low concentration EnCore samplers (48 hr)		
☒ High concentration pre-weighed (methanol -14 d)	☒ Low conc pre-weighed vials (Sod Bis -14 d)		
Special precautions or instructions included?	☐ Yes	☒ No	

Comments:

Signature:

Angelo Norvell

Date & Time:

02/03/2025 10:58:03

