



BUXTON NAVAL FACILITY FORMERLY USED DEFENSE SITE

**Technical Presentation
Cape Hatteras Anglers Club
April 30, 2026**



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Buxton Projects

- Project 01 Petroleum Comprehensive Soil and Groundwater Sampling
Current Status – 2025 Interim Response Action Fieldwork complete May 06, 2026
- Project 03 Groundwater Monitoring
Current Status – Paused until comprehensive sampling is complete
- Project 05 Small Arms Range
Current Status – Approved July 30, 2025. Not currently on the approved workplan for funding, but once funding is available a site inspection to evaluate lead will be performed



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Project 01

2024 Interim Response Action

Objective: Deploy a team to remove visible, petroleum-impacted soil and perform confirmatory soil sampling in areas along the beach and dunes that have exhibited odors and sheen.

Current Status: Fieldwork completed. Excavations started on October 2, 2024, and were completed on December 10, 2024.



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Project 01 Updates

2024 Interim Response Action

Ongoing Work: The U.S. Army Corps of Engineers (USACE) received comments on the Interim Response Action Completion Report (IRACR) from all stakeholders on January 13, 2026. Revised IRACR submitted to stakeholders for review April 7, 2026.



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Project 01

2025 Interim Response Action

Objective: Contain petroleum contamination to prevent migration and remove petroleum-impacted soil from the beach and dunes.

Current Status: Excavations are complete with demobilization to conclude by May 7, 2026.



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Project 01 Updates

2025 Interim Response Action

Fieldwork included soil excavation with and without water, encompassing both the unsaturated and saturated zones. Removal of impacted soil from the saturated zone required dewatering and proper management of the associated groundwater. Large quantities of impacted soil and water were removed from a likely secondary source area, the former Heating Oil Plant.



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Project 01 Updates (Continued)

Buxton Removal Volumes		Through April 18, 2026
Impacted Soil (Tons)		
Staged On Site	Transported For Disposal	Total Removed
13,110.70	11,796	24,907
Impacted Water (Gal)		
Staged On Site	Transported For Disposal	Total Removed
-	325,981	325,981
Concrete and Infrastructure debris (abandoned utilities, fencing, Asphalt, etc.) (lbs)		
Staged On Site	Transported For Disposal	Total Removed
-	7,904,486	7,904,486
Asbestos Pipe Removed (LF)		
Staged On Site	Transported For Disposal	Total Removed
29	274	303
Volume of Storm Water treated by GAC and Discharged On Site (Gal)*		
		122,500



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Project 01 Excavations Status

Pink Shading = Project Area

Black Circles/Squares/ Rectangles = Former Navy/ Coast Guard Structures

Gray Shading = Excavation Underway (not complete)

Green Shading = Excavated Areas without Petroleum Impacts

Orange Shading = Excavated Areas with Petroleum Impacts



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Project 01 Challenges

- Weather events
 - Excavation delays
 - Stormwater management
 - Erosion of the investigation area
- Extent of investigation and excavations
 - High volumes of material to dispose of



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Project 01 Lessons Learned

- Consider alternate contractual methods to allow for more variability in disposal and replenishment quantities
- Geophysical investigation results proved helpful in locating impacted areas



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Next Steps

Petroleum Comprehensive Sampling

82	Project Planning	214 days	Mon 11/18/24	Thu 9/11/25		
110	Modification Award	129 days	Mon 4/6/26	Thu 10/1/26		
111	Revised Draft UFP-QAPP	30 days	Mon 4/6/26	Fri 5/15/26		
112	PDT Review: Revised Draft UFP-QAPP	5 days	Mon 5/18/26	Fri 5/22/26	111	
113	Response to Comments on Revised Draft Review	5 days	Mon 5/25/26	Fri 5/29/26	112	
114	PDT Approval of RTCs	3 days	Mon 6/1/26	Wed 6/3/26	113	
115	EMCX Review: Revised Draft UFP-QAPP	10 days	Thu 6/4/26	Wed 6/17/26	114	
116	Response to Comments on EMCX Revised Draft Review	5 days	Thu 6/18/26	Wed 6/24/26	115	
117	PDT Review of RTCs on EMCX Comments: Revised Draft UFP-QAPP	5 days	Thu 6/25/26	Wed 7/1/26	116	
118	Revised RTCs	5 days	Thu 7/2/26	Wed 7/8/26	117	
119	EMCX Approval of RTCs	3 days	Thu 7/9/26	Mon 7/13/26	118	
120	Revised Draft Final UFP-QAPP	5 days	Tue 7/14/26	Mon 7/20/26	119	
121	Stakeholders Review: Revised Draft Final UFP-QAPP	20 days	Tue 7/21/26	Mon 8/17/26	120	
122	Response to Comments on Revised Draft Final Review	10 days	Tue 8/18/26	Mon 8/31/26	121	
123	PDT Approval of RTCs	5 days	Tue 9/1/26	Mon 9/7/26	122	
124	Stakeholder Backcheck: Revised Draft Final UFP-QAPP	5 days	Tue 9/8/26	Mon 9/14/26	123	
125	PDT/Stakeholder Approval of Revised Draft Final UFP-QAPP	3 days	Tue 9/15/26	Thu 9/17/26	124	
126	Final UFP/QAPP	5 days	Fri 9/18/26	Thu 9/24/26	125	
127	FUDSChem eQAPP Setup	5 days	Fri 9/25/26	Thu 10/1/26	126	
128						
129	Task 2: Site Investigation and Reporting	253 days	Tue 9/22/26	Thu 9/9/27		
130	Site Investigation	103 days	Tue 9/22/26	Thu 2/11/27		
131	Procurement, Mobilization, and Utility Clearance	15 days	Fri 9/25/26	Thu 10/15/26	126	
132	High-Resolution Site Characterization (HRSC) - Mobilization 1	20 days	Fri 10/16/26	Thu 11/12/26	131	
133	Soil and Groundwater Sampling - Mobilization 1	5 days	Fri 11/13/26	Thu 11/19/26	132	
134	Receipt of Analytical Results from Mobilization 1	15 days	Fri 11/20/26	Thu 12/10/26	133	
135	Groundwater Sampling - Mobilization 2	10 days	Fri 12/11/26	Thu 12/24/26	134	
136	Receipt of Analytical Results - Mobilization 2	15 days	Fri 12/25/26	Thu 1/14/27	135	
137	Receipt of Data Validation Report	20 days	Fri 1/15/27	Thu 2/11/27	136	
138						



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Next Steps

FY25 IRACR – Fiscal Year (FY) 26 Q4*

Petroleum Comprehensive Sampling Report – FY27 Q4*

Corrective Action Plan – FY28 Q3*

**subject to change*



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For More Information

Project Website:



www.sas.usace.army.mil/Missions/Formerly-Used-Defense-Sites/Buxton-Naval-Facility/

Project Photos:

<https://www.flickr.com/photos/savannahcorps/albums/72177720328649228/>

<https://www.flickr.com/photos/savannahcorps/albums/72177720321102827/>

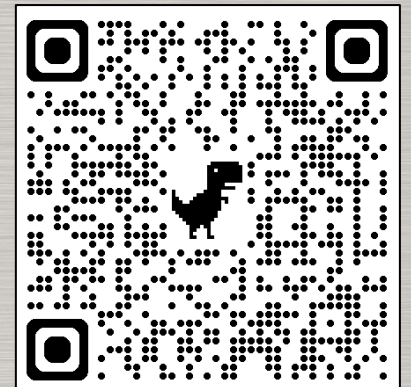
Email: cesas-FUDS@usace.army.mil



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2025 Interim Response Action

Restoration Advisory Board Meeting

April 2026

Agenda

01

Project Summary

02

Remote Site Visit

03

By the Numbers

Project Summary

- 7 Months
- Over 31,500 labor hours
- 10 pieces of yellow iron
- 3 RAB meetings



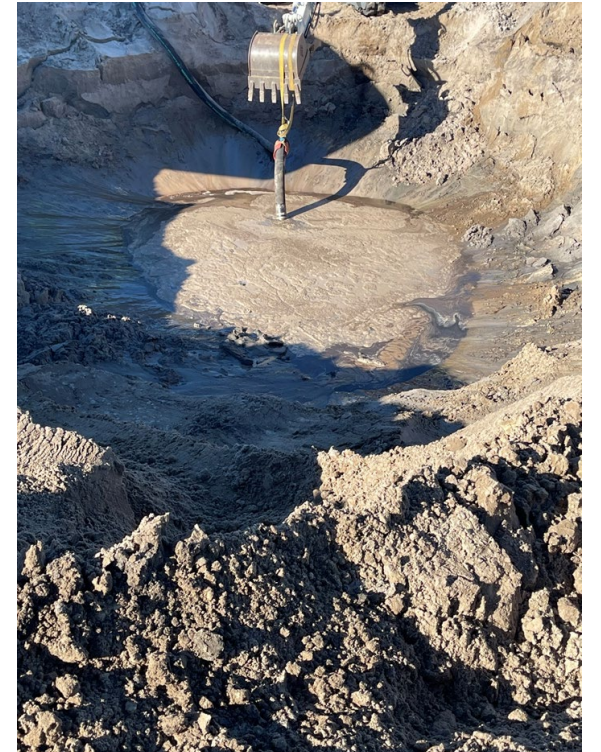
September – Mobilization and Site Prep



October – Site Prep Continues, Excavation Begins



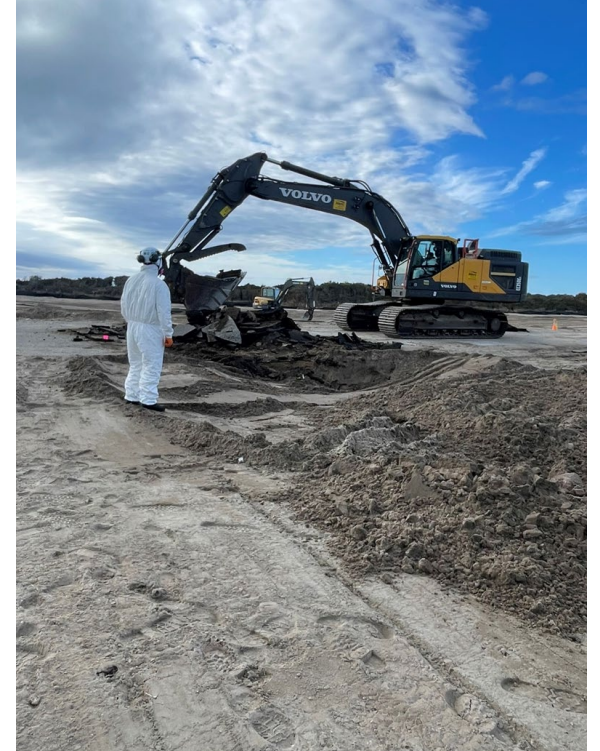
November – Storm Recovery, Excavation Continues



December – Excavation Continues, Begin GAC Water Filtration, First Soil Load-Out



January – Excavation Continues, Second Soil Load-Out



February – Excavation Continues, Rate of Impacted Soil Removal Increases



March – Excavation Continues, Magnetic Anomalies Investigated



April – Excavation Concludes, Final Soil Load- Out, Site Restoration, and Demobilization



Virtual Site Visit

By the Numbers

- Over 17,000 CY impacted soil excavated and removed
- Over 3.25 acres excavated to a minimum depth of 10'bgs
- Over 315,000 gallons of impacted water removed
- Over 275 ft asbestos pipe removed
- Over 5,000,000 lbs of concrete removed
- Over 2,800,000 lbs of infrastructure debris (abandoned utilities, fencing, asphalt etc) removed

Final Thoughts



Petroleum Comprehensive Sampling and Analysis at the Buxton Naval Facility Formerly Used Defense Site (FUDS) Buxton, NC



U.S. Army Corps of Engineers
Savannah District



Contract No: W912HN-24-D-1001-1007
Task Order No: W912HN24D1005/
W912HN25F1002



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ENVIRONMENTAL CONTRACTOR

Nicklaus EnSafe JV

- **David Clexton, PG (Project Manager, Senior Geologist)**
- **Travis Darden, PG (Lead Field Geologist)**
- **Brad Closson, PG (Field Geologist)**

Supporting Staff:

- **David Warren (Senior Geologist)**
- **Amy Escalante (Lead Engineer)**
- **Christina Ashdown (Chemist)**
- **Heather Govenor (Risk Assessor)**

Key Subcontractors

- **Hana Engineers and Consultants, LLC (Drilling)**
- **Eagle Synergistic Optimizing Technologies, LLC (HRSC)**



Comprehensive Sampling Objective

Investigate the site for residual petroleum contamination that might have been left behind during previous removal efforts.

This effort includes:

- Quality Assurance Project Plan (currently under revision)
- High Resolution Site Characterization (HRSC) methods along with confirmation soil and groundwater sampling.
- Preparation of an Investigation Completion Report documenting the investigation findings.

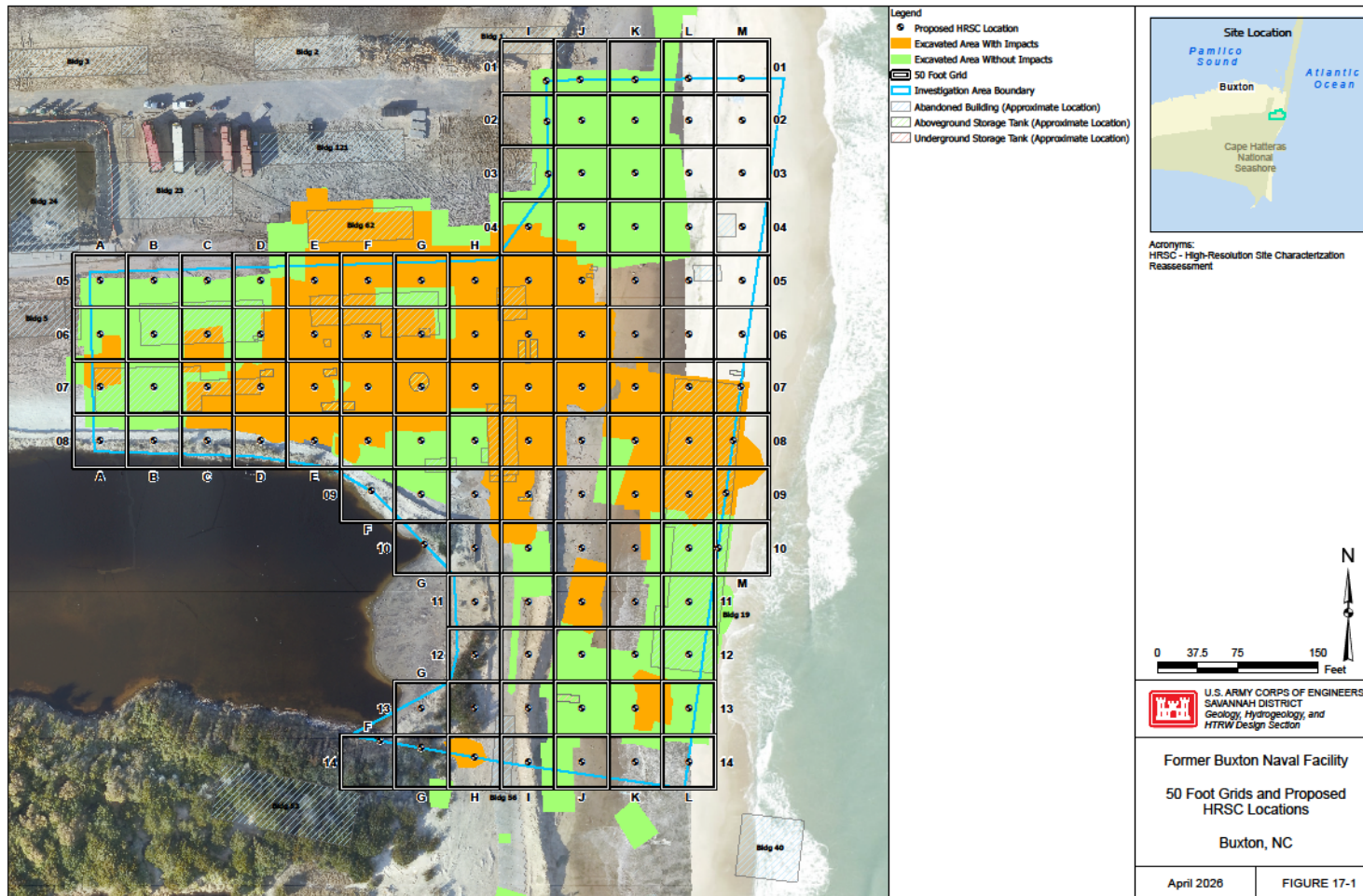
Why the Modification was Issued:

- Adapted to account for significant changes in site conditions following excavation activities and significant weather events.
- Implement a grid sampling approach to evaluate the entire site.
- Adds samples to eliminate remaining uncertainty.



Investigation Approach

- Establish 50' x 50' Grid of Investigation Area.



Investigation Approach

- **Mobilization 1 (~40 days):**
 - ▶ **Complete HRSC (OIHPT and MIHPT) at the center of each grid cell.**
 - 110 locations
 - ▶ **Collect confirmation soil and groundwater samples**
 - 28 locations
 - Up to 3 soil samples per location (84 samples)
 - Up to 2 samples per location (56 samples)
 - ▶ **Demobilize and analyze data from mobilization 1.**
- **Mobilization 2 (~10 days):**
 - ▶ **Collect deep groundwater samples at locations where exceedances are observed during Mobilization 1.**
 - Vertical groundwater delineation
 - Up to 33 deeper groundwater samples as needed.
- **Final Demobilization**
 - ▶ **Surveying, waste disposal, and site restoration**
- **Data Analysis and Reporting**
 - ▶ **Process sample analytical data and prepare draft Investigation Report.**



Comprehensive Sampling Methods

Direct Push Technology (DPT):

- Drilling equipment used to advance HRSC tooling.
- Used to drive hollow steel rods into the subsurface to collect soil and groundwater samples.
- Track mounted – ideal for sandy conditions



Comprehensive Sampling Methods

High Resolution Site Characterization (HRSC):

- **Optical Image Profiler & Hydraulic Profiling Tool (OIHPT)**
 - ▶ Specialized tooling advanced into the subsurface that detects petroleum product (LNAPL) in soil, soil permeability, and soil type/lithology.



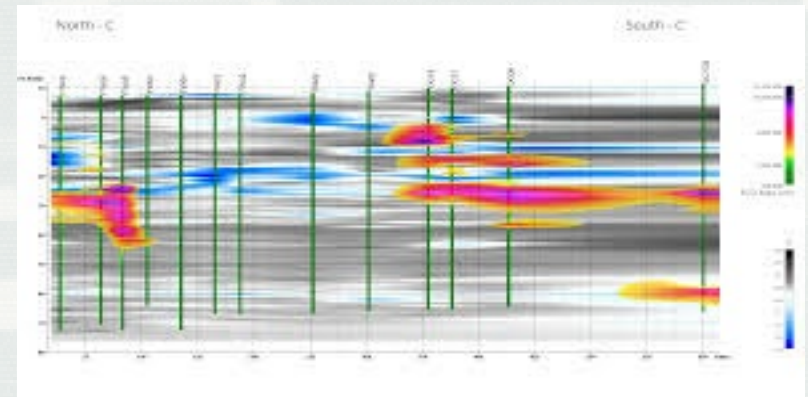
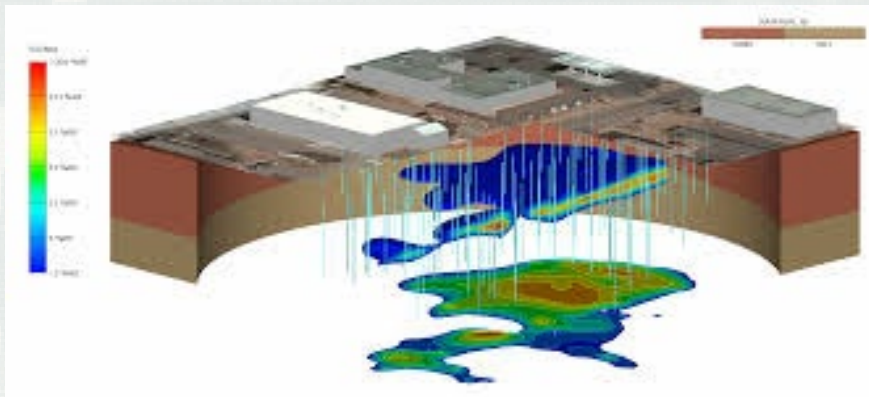
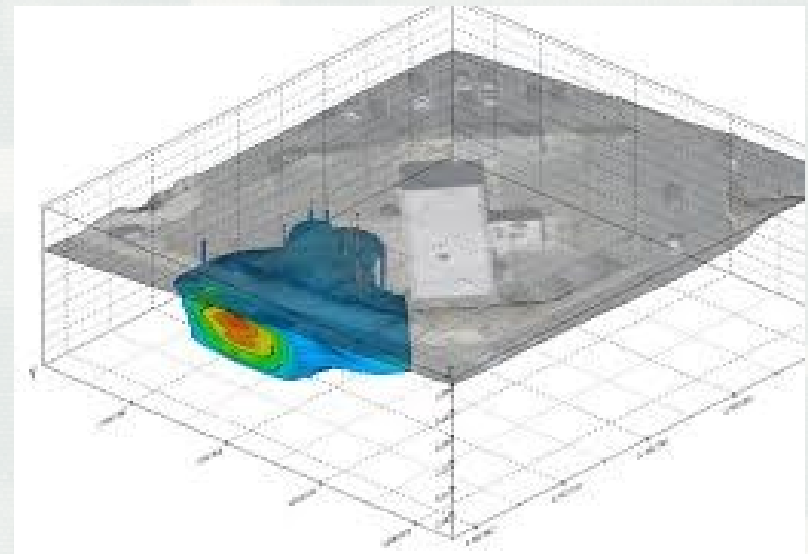
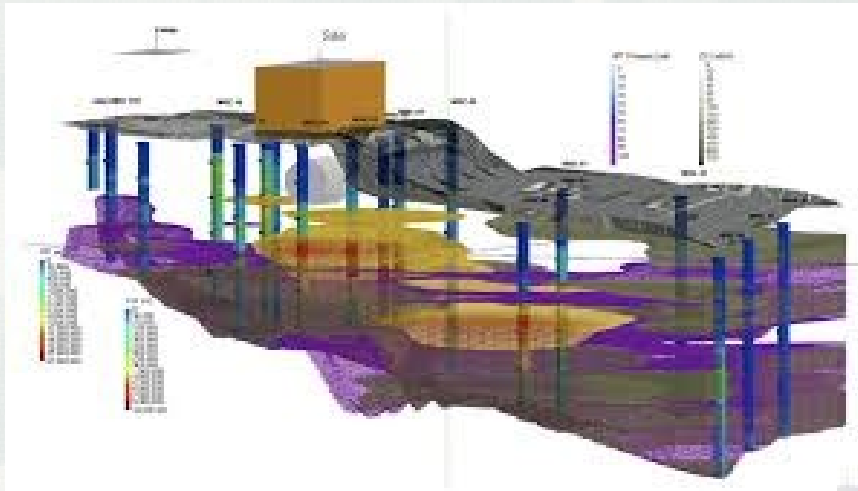
Comprehensive Sampling Methods

HRSC (cont'd)

- **Membrane Interface & Hydraulic Profiling Tool (MIHPT)**
 - ▶ Specialized tooling advanced into the subsurface that detects volatile petroleum hydrocarbons (VOCs) and some semi-volatile petroleum hydrocarbons (SVOCs), soil permeability, and soil type/lithology.



Examples of HRSC Output



General Schedule (Estimated)

Milestone	Target Date
QAPP (Work Plan) Revision	Summer 2026
Field Investigation	Late Summer/Fall 2026
Investigation Report	Following Data Evaluation



Questions

