Environmental, Planning, and Engineering Consultants
34 South Broadway
Suite 401
White Plains, NY 10601
tel: 914 949-7336
fax: 914 949-7559
www.akrf.com

February 1, 2022

Mr. Justin Starr, Project Manager
NYSDEC Region 3, Division of Environmental Remediation
21 S Putt Corners Road
New Paltz, NY 12561
(518) 660-1347
Justin.Starr@dec.ny.gov

Re: Supplementary Investigation Work Plan #2 (SIWP #2)
Former Excelsior Bag (BCP Site No. C360190)
City of Yonkers, Westchester County, NY

Dear Mr. Starr:

This Supplementary Investigation Work Plan #2 (SIWP #2) has been prepared by AKRF, Inc. (AKRF) on behalf of Extell Hudson Waterfront, LLC (the Volunteer) for the Former Excelsior Bag site located at 25, 35 and 45 Riverside Drive (f/k/a 159 Alexander Street), in Yonkers, New York (the Site). This SIWP #2 was prepared to refine the horizontal and vertical extents of dense non-aqueous phase liquids (DNAPL) (i.e., coal tar) documented above the Hudson River sediment confining layer during the 2020-2021 remedial investigation (RI). The data obtained from this SI #2 will be used to establish the proposed DNAPL remedial boundaries that will be detailed the forthcoming Remedial Action Work Plan (RAWP).

Site Background

The Site is part of a larger Extell Hudson Waterfront redevelopment plan approved by the City of Yonkers Planning Board on April 11, 2018, for which the final subdivision map was filed with the Westchester County Clerk's office on January 24, 2020. The Site is now identified by the City of Yonkers Tax Map as Section 2, Block 2620, Lot 2, portion of Lot 9, Lots 10, 11 and 12, Fisherman Way, Colman Way, and portion of Riverside Drive. The Site consists of an approximately 243,952-square foot vacant property with concrete/asphalt paved surfaces, a landscaped area (to the north), and a stone revetment (along the western boundary adjacent to the Hudson River). A site location map is provided as Figure 1.

The Volunteer was accepted into the NYSDEC Brownfield Cleanup Program (BCP) as a Volunteer (BCP Site No. C360190), and a NYSDEC Brownfield Cleanup Agreement (BCA) (BCA Index No. C360190-04-20) was executed on April 30, 2020. A Remedial Investigation Work Plan (RIWP) was prepared by AKRF in July 2020 and approved by NYSDEC on August 4, 2020, and subsequent investigation activities were conducted in September 2020 and April 2021. A draft Remedial Investigation Report (RIR) was submitted to NYSDEC on July 9, 2021, and preliminary comments on the draft July 2021 RIR were provided by NYSDEC to AKRF (on behalf of the Volunteer) via email on July 29, 2021. A formal RIR comment letter was issued by NYSDEC on September 7, 2021. Based upon NYSDEC comments, a Supplemental Remedial Investigation (SRI) was conducted in August 2021. The revised RIR, which incorporated the results of the September 2020/April 2021 RI and the August 2021 SRI field activities, was submitted to NYSDEC on

October 8, 2021, and approved by NYSDEC (with modifications) on October 29, 2021. The final November 2021 RIR was submitted to NYSDEC on November 3, 2021.

Proposed development of the Site includes two low-rise residential buildings (referred to as Building E and Building F), a portion of a third low-rise residential building (Building D), surrounding access roadways, and a waterfront esplanade. The first phase of construction (Phase I Construction), which includes components on both the Site and the north adjacent Former BICC Cables site [NYSDEC Brownfield Cleanup Program (BCP) Site No. C360051], began on September 13, 2021. Phase I Construction at the Site, which is being conducted in compliance with Supplemental Environmental Management Documentation submitted to NYSDEC on June 23, 2021, includes construction of a portion of Building D, surrounding access roadways, and the esplanade.

As further detailed in the November 2021 RIR, DNAPL (i.e., coal tar) impacts, coal tar odors, and elevated photoionization detector (PID) readings were encountered in the south-central portion of the Site directly above the Hudson River sediment confining layer at depths ranging from approximately 20 to 35 feet below ground surface. The coal tar impacts were observed at thicknesses of up to 10 feet (ranging from a light coating to fully saturated DNAPL intervals) in RI soil borings RI-SB-15, RI-SB-17, RI-SB-18, and RI-SB-27. Sheen and/or coal tar odors were also documented in RI soil borings RI-SB-16, RI-SB-29, RI-SB-30, and SRI soil borings SRI-SB-03, SRI-SB-05, and SRI-SB-06. The extent of DNAPL impacts documented above the Hudson River sediment confining layer during the 2020-2021 RI are shown on Figure 2.

Based upon recent correspondences with NYSDEC, it is anticipated the Site will be remediated under a forthcoming RAWP to achieve Site-specific Track 4 soil cleanup objectives (SCOs), which will include, among other components of the remedy, proposed remedial design of the approximate DNAPL area shown on Figure 2. Prior to preparation of the RAWP, the Volunteer has elected to conduct this SI #2 to delineate the extents of DNAPL (i.e., coal tar) documented above the Hudson River sediment confining layer during the 2020-2021 RI (detailed below), which will be utilized to define the horizontal and vertical boundaries for the proposed remedy.

All work will be completed in accordance with applicable protocols detailed in the NYSDEC-approved July 2020 RIWP, including the associated Quality Assurance Project Plan (QAPP), Health and Safety Plan (HASP), and Community Air Monitoring Plan (CAMP). The HASP and CAMP will be implemented during all subsurface investigation activities involving soil disturbance at the Site.

SI #2 Field Program Summary

A Geoprobe® direct-push probe (DPP) drill rig equipped with laser induced fluorescence (LIF) drilling probe technology will be used to refine the horizontal and vertical extent of DNAPL (i.e., coal tar) documented above the Hudson River sediment confining layer during the 2020-2021 RI. The LIF tooling for this Site will utilize Tar-specific Green Optical Screening Tool (TarGOST) equipment for coal tar delineation. TarGOST is specifically designed to respond to coal tars and creosotes. Additional TarGOST equipment information is provided in Attachment A.

SI #2 field activities include the following:

- Concrete pre-coring and the advancement of LIF probe equipment at 90 locations grided across the horizontal extent of DNAPL impacts identified in the 2020-2021 RI. The proposed LIF boring locations (SI-LIF-01 through SI-LIF-90) are shown on Figure 3. The LIF borings are based on grid spacing of 20 feet by 20 feet across the DNAPL area oriented with the southern Site boundary and covers the areas where DNAPL impacts have historically been identified on-Site. LIF probe equipment will be advanced 5 feet into the native Hudson River sediment confining layer (if identifiable using real-time LIF data evaluation) or down to a minimum of 40 feet bgs.
- The advancement of co-located confirmatory soil borings for LIF data calibration purposes. Confirmatory soil borings (e.g., SI-CB-01) will be advanced to the corresponding depth of the co-

located LIF boring location at a frequency of one (1) confirmatory soil boring for every ten (10) LIF boring locations conducted. The locations of the confirmatory soil borings will be selected based upon real-time LIF data evaluation and consultation with NYSDEC.

- The collection and laboratory analysis of one soil sample from each confirmatory soil boring [and associated quality assurance and quality control (QA/QC) samples] for Target Compound List (TCL) volatile organic compound (VOC) and TCL semivolatile organic compound (SVOC) analysis. One confirmatory boring soil sample will also be submitted for DNAPL fingerprint analysis.

Geophysical Survey

Prior to SIWP #2 intrusive activities, a geophysical survey, including GPR and magnetometry, will be performed to clear the proposed sampling locations. GPR uses electromagnetic wave propagation and scattering to image and identify changes in electrical and magnetic properties in the ground. Magnetometers measure irregularities in the magnetic field in a given area. Any underground utilities or other identified anomalies indicative of an underground storage tank (UST) will be marked in the field and measured off of fixed points.

Based on previous investigations and geophysical surveys performed at the Site, there are no suspected USTs within the investigation area shown on Figure 3. In addition, all electric, gas, sewer, and water utilities were disconnected/abandoned in-place at the Site in February 2021 prior to building demolition (a required prerequisite to obtain a City of Yonkers Demolition Permit). Regardless, sample locations will be positioned a minimum of 5 feet away from any marked underground utilities or anomalies indicative of a UST, if encountered.

SI #2 LIF Boring Advancement and LIF Data Collection

Prior to mobilization of Geoprobe® DPP drill rig and LIF drilling probe equipment, the LIF boring locations (SI-LIF-01 through SI-LIF-90 shown on Figure 3) will be marked in the field by a New York State-licensed surveyor and the concrete surface at each location will be pre-cored to provide drilling equipment access.

Following concrete pre-coring, a Geoprobe® DPP drill rig will be used to advance LIF drilling probe equipment through the concrete pre-cored locations. LIF data readings will be logged from surface grade to approximately 5 feet into the native Hudson River sediment confining layer. It is assumed that the top of the Hudson River sediment confining layer will be identifiable using real-time LIF data evaluation; however, in the event real-time LIF data does not provide a clear indication of the top of the Hudson River sediment confining layer, LIF data logging will be terminated at 40 feet bgs. In addition, in the event the drilling equipment encounters refusal, one additional attempt will be conducted within the concrete-cored location. If the second attempt also encounters refusal, the location will be marked and temporarily skipped. In consultation with NYSDEC, AKRF will assess toward the end of the SI #2 if additional concrete core-hole locations are necessary for LIF boring location off-sets and/or additional delineation.

Real-time LIF equipment data logging will performed by the LIF equipment subcontractor, documented in the field by AKRF field personnel, and summarized in a LIF results report prepared by the subcontractor. Additional LIF boring locations may be added if necessary to fully delineate the DNAPL extents.

SI #2 LIF Confirmatory Soil Borings

Based on real-time LIF data evaluation, AKRF will select confirmation soil boring locations (co-located with LIF boring locations) for LIF data calibration and soil sampling purposes. The confirmatory soil borings (e.g., SI-CB-01) will be advanced to the corresponding depth of the co-located LIF boring location at a frequency of one (1) confirmatory soil boring for every ten (10) LIF boring locations conducted.

To advance the confirmatory soil borings, AKRF proposes to use a Sonic drill rig. Confirmatory soil cores will be collected in 5-foot long, 4-inch diameter, stainless steel core barrels, and extruded into plastic

sampling sleeves (i.e., soil cores). The soil cores will be inspected by AKRF field personnel for evidence of contamination (e.g., odors, staining, etc.), screened for the presence of VOCs with a calibrated PID, and logged using the Modified Burmister Soil Classification System.

One soil sample from each confirmatory soil boring will be collected (at an interval selected based on LIF data evaluation) and analyzed using LIF probe equipment for data calibration purposes. One soil sample will also be collected from the same corresponding interval used for data calibration purposes and submitted for laboratory analysis for TCL VOCs by EPA Method 8260 and TCL SVOCs by EPA Method 8270. One confirmatory boring soil sample will also be submitted for DNAPL fingerprint analysis. Soil samples slated for laboratory analysis will be labeled and placed in laboratory-supplied containers and shipped to the laboratory via a courier with chain-of-custody documentation in accordance with appropriate EPA protocols to a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified laboratory.

A 5-business day standard analysis turnaround time will be requested from the laboratory. The analytical results will be reported with Category B deliverables. As required by the Category B sampling techniques, additional samples will be collected for QA/QC measures, including, trip blanks, field blanks, blind duplicates, and MS/MSD samples, following applicable protocols. A Data Usability Summary Report (DUSR) will be prepared by a third-party data validator.

After each confirmatory soil boring is completed, it is assumed that soil cuttings will display field evidence of contamination and will be containerized in properly labeled DOT-approved 55-gallon drums for waste characterization sampling and off-site disposal at a permitted facility. Boreholes will be filled with hydrated granular bentonite or bentonite chips. Disposable sampling equipment that comes in contact with environmental media will be disposed of as municipal trash as non-hazardous refuse.

Upon completion, any required offsets from original surveyed LIF boring locations or additional LIF boring locations conducted for further delineation will be field surveyed by a by a New York State-licensed surveyor.

Supplementary Investigation Report #2 (SIR #2)

At the conclusion of the SIWP #2 field activities, and upon receipt of the analytical results, AKRF will prepare the SIR #2 for submission to NYSDEC, which will include a summary of field activities, analysis of TarGOST and confirmatory soil boring findings, comparison of any analytical results to appropriate state standards and guidelines for the Site's future use, and documentation of the refined horizontal and vertical extents of DNAPL (i.e., coal tar) present on-Site above the Hudson River sediment confining layer. Appropriate figures/tables will be prepared to depict the refined vertical and horizontal extents of DNAPL and soil sample results. In addition, field documentation (e.g., TarGOST logs and modeling results, confirmatory soil boring logs, etc.) will be incorporated into the SIR #2 appendices.

Following submission of the SIR #2, the data will be used to establish proposed DNAPL remedial boundaries that will be detailed in the forthcoming RAWP.

The project team appreciates your expedited review of this SIWP #2. Please contact Marc at (914) 922-2356 or Scott at (914) 922-2354 if you have any questions or require additional information.

Sincerely,
AKRF, Inc.

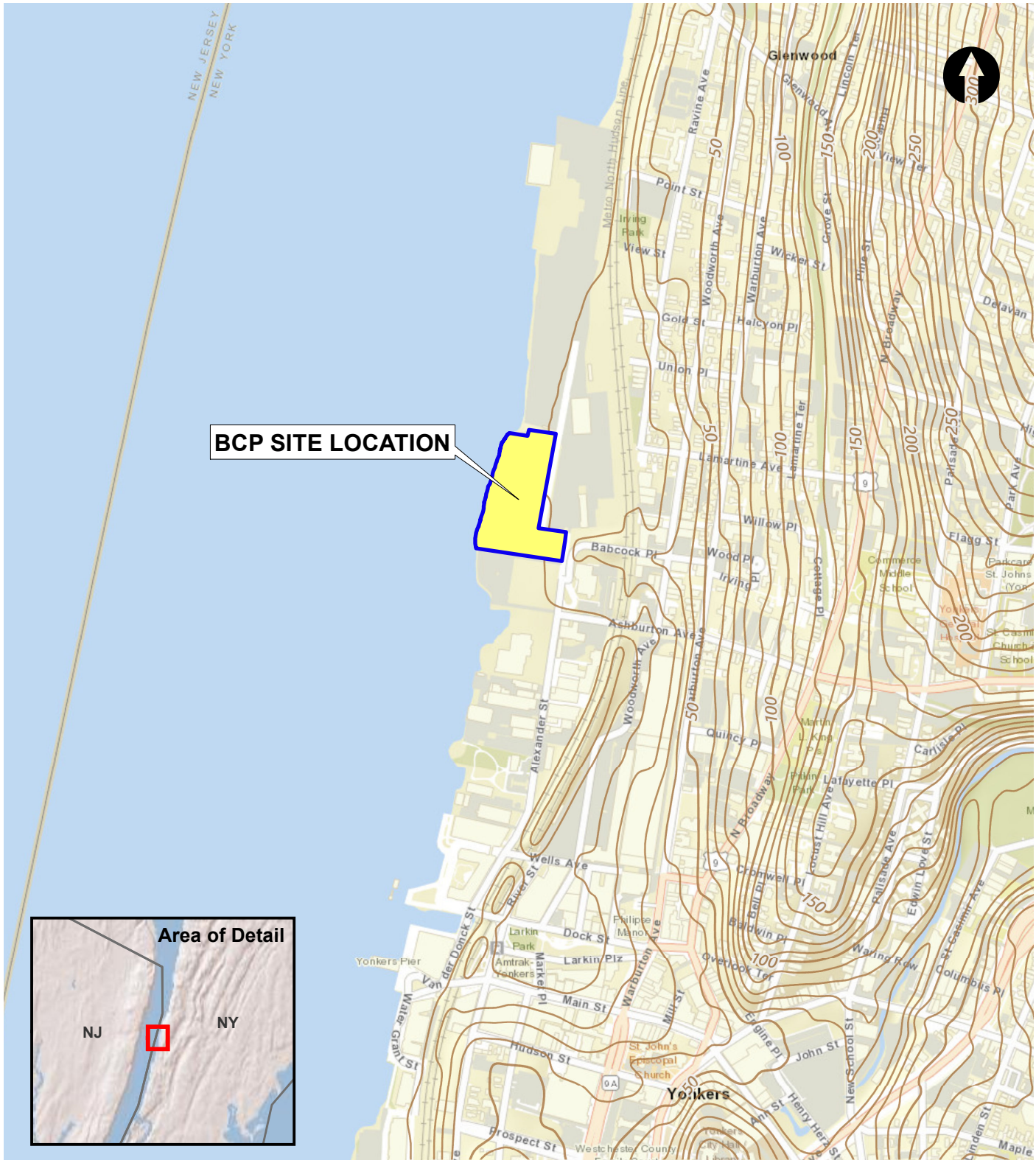
Marc S. Godick, LEP
Sr. Vice President

Scott P. Caporizzo
Technical Director

cc: Amen Omorogbe – NYSDEC
Jack Mandelbaum, Jay Mellick, Ryan Masters, Moshe Botnick – Extell
Christine Leas – SPR

Enclosed:
Figure 1 – Site Location Map
Figure 2 - 2020-2021 RI Delineated Extent of DNAPL Impacts (Coal Tar) Above the Hudson River Sediment Confining Layer
Figure 3 - Proposed LIF Boring Location Plan
Attachment A – TarGOST Informational Brochure

FIGURES



Service Layer Credits: ESRI Worlwide Street Map data; 2019.

Map Source - BCP Site Boundary from Ward Carpenter Engineers, Inc. "Survey of Property prepared for Extell Hudson Waterfront LLC in the City of Yonkers" - dated May 16, 2019, revised June 26, 2019.

0 800 1,600

SCALE IN FEET

AKRF
440 Park Avenue South, New York, NY 10016

FORMER EXCELSIOR BAG

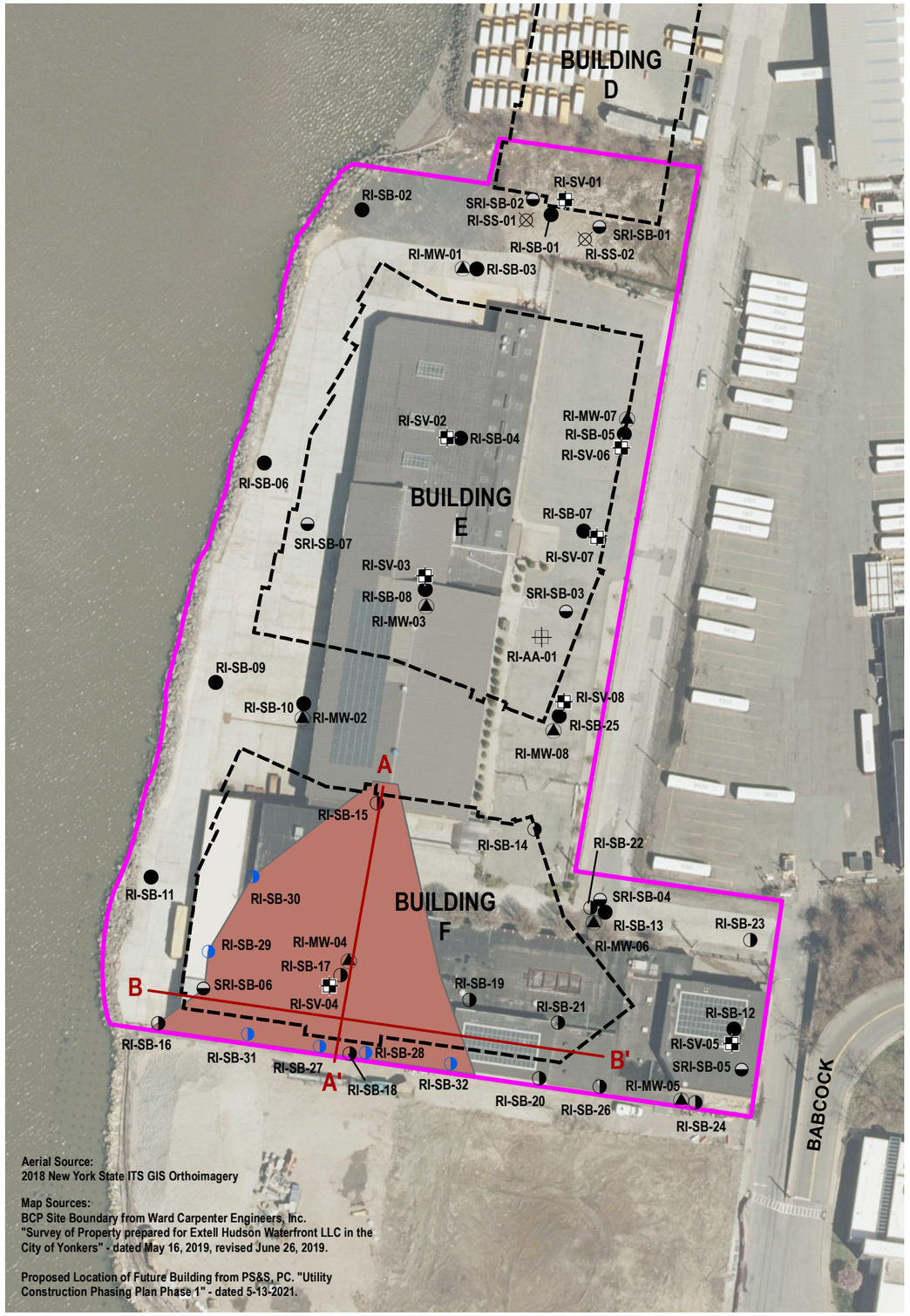
Yonkers, New York

BCP SITE LOCATION

DATE
11/22/2021

PROJECT NO.
200131

FIGURE
1



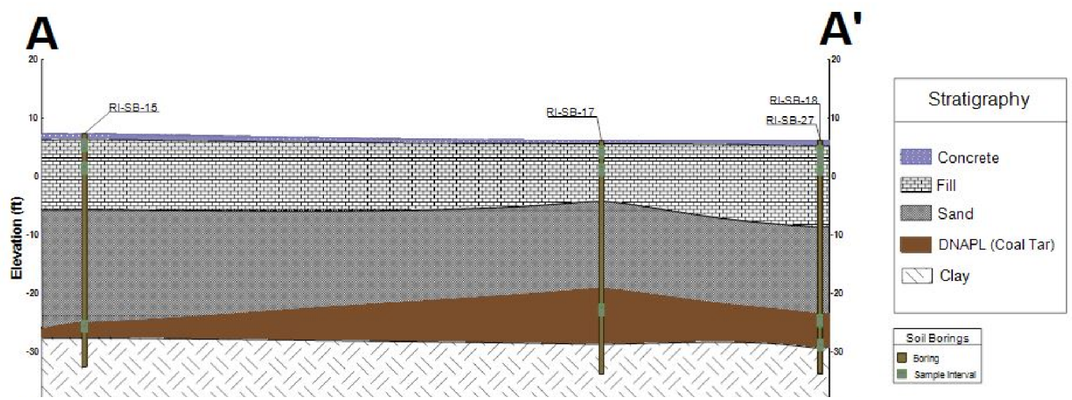
Aerial Source:
2018 New York State ITS GIS Orthoimagery

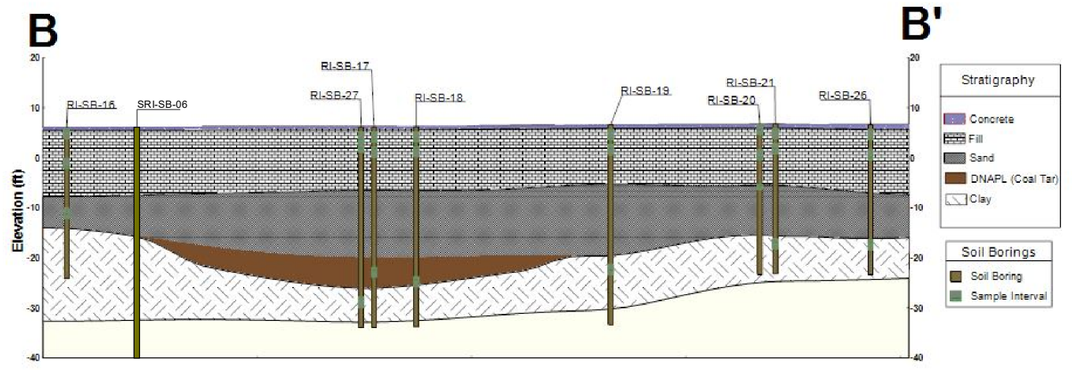
Map Sources:
BCP Site Boundary from Ward Carpenter Engineers, Inc.
"Survey of Property prepared for Extell Hudson Waterfront LLC in the City of Yonkers" - dated May 16, 2019, revised June 26, 2019.

Proposed Location of Future Building from PS&S, PC. "Utility Construction Phasing Plan Phase 1" - dated 5-13-2021.

LEGEND

- BCP SITE BOUNDARY
- PROPOSED LOCATION OF FUTURE BUILDING
- SHALLOW SOIL BORING LOCATION
- INTERMEDIATE SOIL BORING LOCATION
- DEEP SOIL BORING LOCATION
- SOIL VAPOR POOINT LOCATION
- GROUNDWATER SAMPLE LOCATION
- SURFACE SOIL SAMPLE LOCATION
- AMBIENT AIR SAMPLE LOCATION
- DNAPL DELINEATION SOIL BORING LOCATION
- DELINEATED EXTENT OF DNAPL IMPACTS (COAL TAR) ABOVE THE HUDSON RIVER SEDIMENT INTERMEDIATE CONFINING LAYER (2020-2021 REMEDIAL INVESTIGATION)





NOTE: THE DELINEATED EXTENT OF DNAPL IMPACTS SHOWN ARE BASED UPON 2020-2021 REMEDIAL INVESTIGATION FIELD OBSERVATIONS OF SEPARATE PHASE DNAPL OR SHEEN/ODORS/STAINING ON SOIL SAMPLES AND DRILL CUTTINGS.

0 50 100 200
SCALE IN FEET

AKRF
440 Park Avenue South, New York, NY 10016

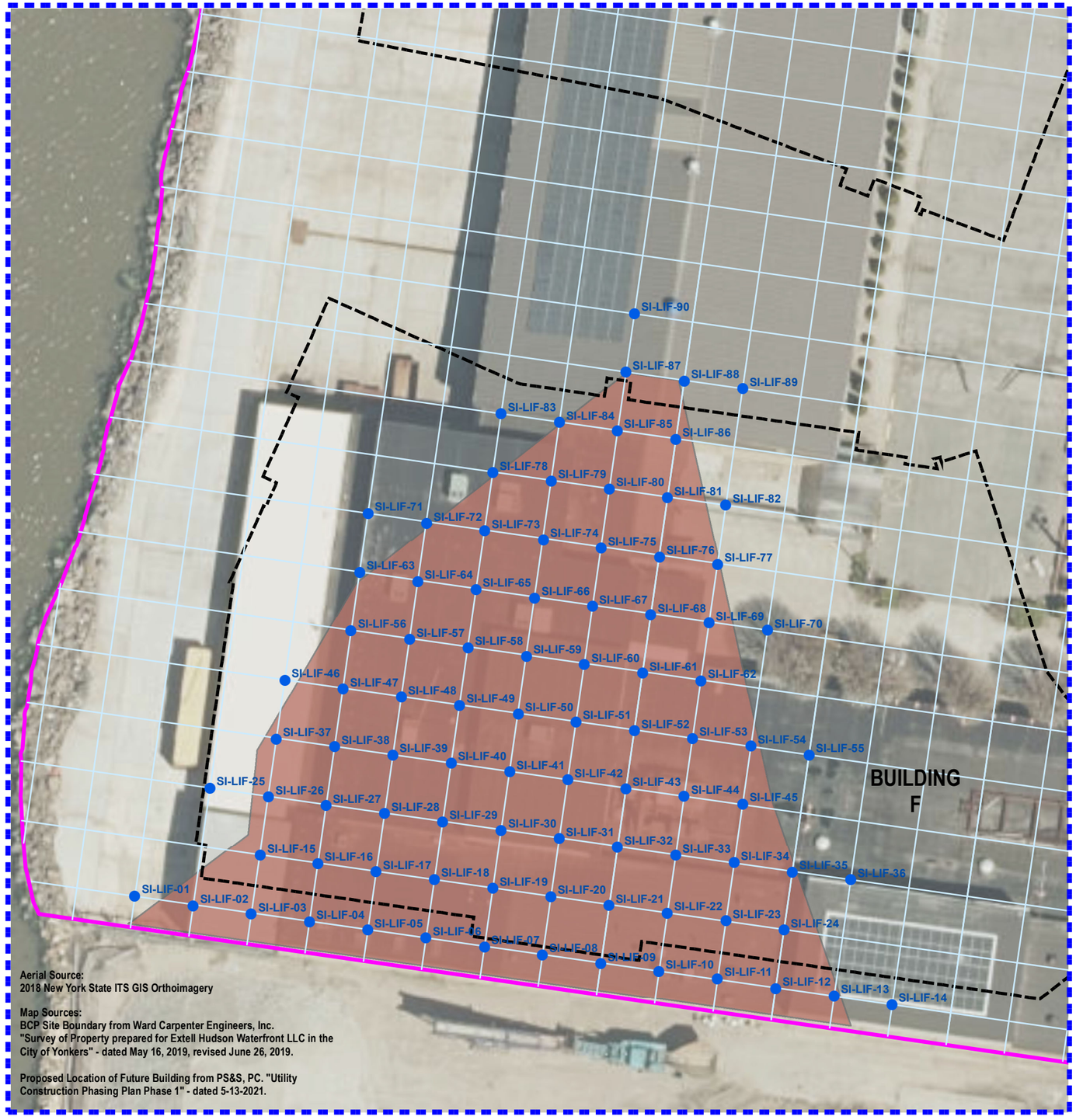
FORMER EXCELSIOR BAG
Yonkers, New York

2020-2021 REMEDIAL INVESTIGATION DELINEATED EXTENT OF DNAPL IMPACTS (COAL TAR) ABOVE THE HUDSON RIVER SEDIMENT CONFINING LAYER

DATE
11/22/2021

PROJECT NO.
200131

FIGURE
2



Aerial Source:
2018 New York State ITS GIS Orthoimagery

Map Sources:
BCP Site Boundary from Ward Carpenter Engineers, Inc.
"Survey of Property prepared for Extell Hudson Waterfront LLC in the City of Yonkers" - dated May 16, 2019, revised June 26, 2019.

Proposed Location of Future Building from PS&S, PC. "Utility Construction Phasing Plan Phase 1" - dated 5-13-2021.

DETAIL 1 - PROPOSED LIF BORING LOCATIONS
SCALE: 1" = 40'-0"

KEY MAP
SCALE: 1" = 200'-0"

LEGEND

- BCP SITE BOUNDARY
- PROPOSED LOCATION OF FUTURE BUILDING
- PROPOSED LIF BORING LOCATION
- DELINEATED EXTENT OF DNAPL IMPACTS (COAL TAR) ABOVE THE HUDSON RIVER SEDIMENT INTERMEDIATE CONFINING LAYER (2020-2021 REMEDIAL INVESTIGATION)

NOTES:

1. PROPOSED LIF BORING LOCATIONS WERE POSITIONED BASED UPON THE DELINEATED EXTENT OF DNAPL (COAL TAR) OBSERVED ABOVE THE HUDSON RIVER SEDIMENT CONFINING LAYER DURING THE 2020-2021 REMEDIAL INVESTIGATION. LOCATIONS MAY BE FIELD ADJUSTED, IN CONSULTATION WITH NYSDEC, BASED UPON REAL-TIME LIF DATA EVALUATION.
2. CONFIRMATORY SOIL BORINGS WILL BE ADVANCED (CO-LOCATED WITH LIF BORING LOCATIONS) FOR LIF DATA CALIBRATION PURPOSES AT A FREQUENCY OF ONE (1) CONFIRMATORY SOIL BORING FOR EVERY TEN (10) LIF BORING LOCATIONS COMPLETED. THE LOCATIONS OF THE CONFIRMATORY SOIL BORINGS WILL BE SELECTED BASED UPON REAL-TIME LIF DATA EVALUATION.
3. THE LIF BORINGS ARE BASED ON GRID SPACING OF 20 FEET BY 20 FEET ACROSS THE DNAPL AREA ORIENTED WITH THE SOUTHERN SITE BOUNDARY.

AKRF
440 Park Avenue South, New York, NY 10016

FORMER EXCELSIOR BAG
Yonkers, New York

PROPOSED LASER-INDUCED FLUORESCENCE (LIF) BORING LOCATION PLAN

DATE
1/31/2022

PROJECT NO.
200131

FIGURE
3

ATTACHMENT A

TARGOST INFORMATIONAL BROCHURE

TarGOST®

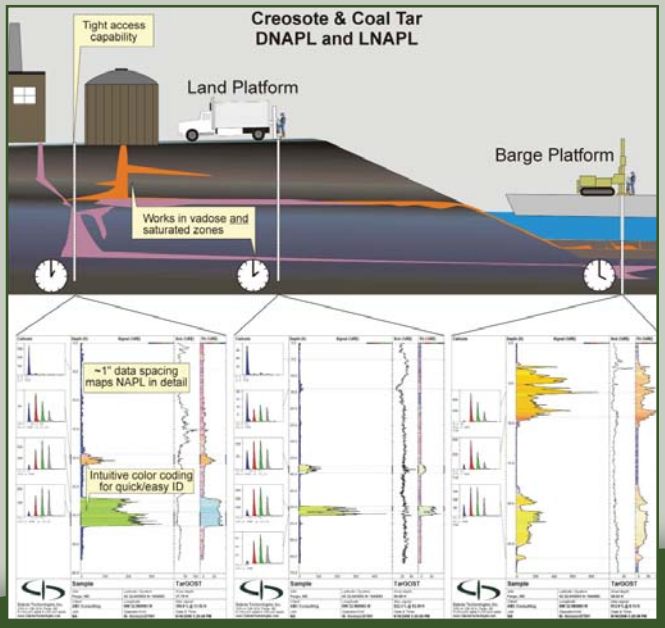
Tar-specific Green Optical Screening Tool

Dakota Technologies specializes in delineating coal tar and creosotes at former manufactured gas plants (MGP) and wood treatment facilities.

Our Tar-specific Green Optical Screening Tool (TarGOST®) is designed specifically for delineating coal tars and creosotes - the non-aqueous phase liquid contamination typically found at former MGP and wood treater sites. TarGOST can be deployed by all forms of direct push platforms across a wide range of site conditions... even hand delivery is an option.

TarGOST benefits include:

- **Real-time data** — allows for "on-the-fly" guidance of the next bore-hole location, leading to better bounding of source term NAPL
- **No IDW** — true in-situ information without producing waste, carryover, or handling and storage of samples
- **Fast** — production rates of 300 to 500 feet per day (typical direct push conditions)
- **Flexible delivery** — percussion (i.e. Geoprobe®) or cone penetration test (CPT)
- **Color-coded logs** — the ultimate in qualitative and semi-quantitative information "at-a-glance"
- **High data density** — one inch/data point
- **Sensitive** — low detection limits and quiet baselines that only laser-based systems provide
- **Selective** — TarGOST is "blind" to dissolved phase and the waveforms offer positive identification of NAPL vs natural fluorescence commonly encountered at MGP and wood treater sites
- **TarGOST-HP** — TarGOST is now available with built-in hydraulic profiling capability for comprehensive subsurface characterization using a single tool



MGP waste and creosote NAPLs contain large amounts of naturally fluorescent PAHs, but UV-based fluorescence systems fail to consistently detect them due to quenching. The TarGOST system was specifically designed to overcome this quenching and precisely log NAPL presence versus depth while ignoring dissolved phase PAHs.

TarGOST is delivered with direct-push platforms such as Geoprobe (hammerable) and CPT. The probe features a sapphire window in the side allowing direct fluorescence measurements as the probe is steadily advanced into the soil.

Coal tar and creosote fluorescence is directed back up-hole to be analyzed. Responses are indicated in real-time on a graph of Signal versus depth. The logged results are color-coded and contain hundreds of waveforms to aid in proper interpretation of the fluorescence response.

DAKOTA TECHNOLOGIES

www.dakotatechnologies.com
info@dakotatechnologies.com
701.237.4908

Atlanta, GA
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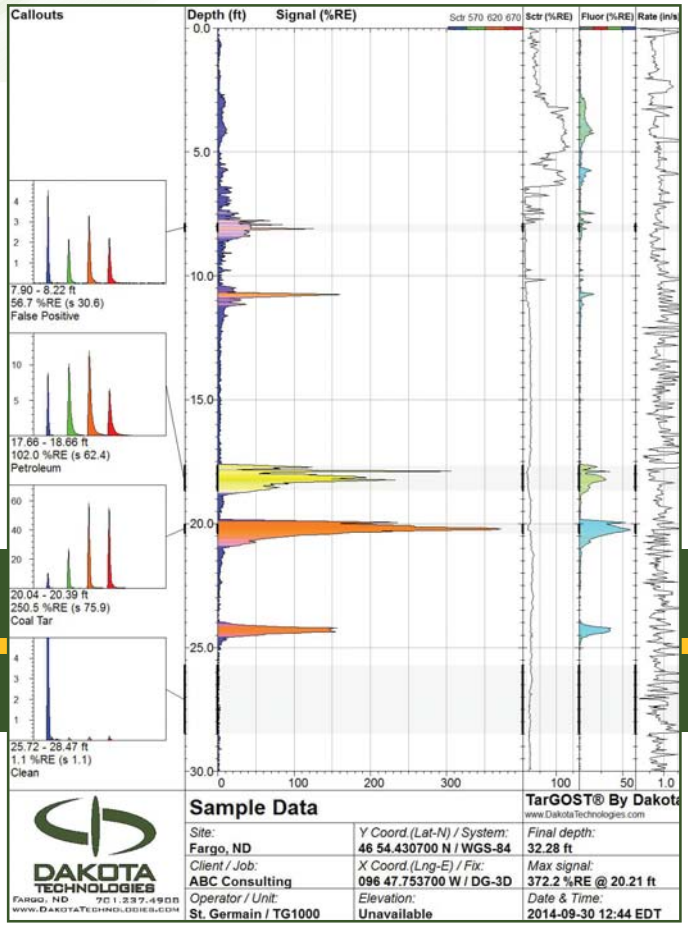
Kansas City, MO
Fargo, ND
Columbus, OH
Charleston, SC
Virginia Beach, VA

TarGOST®

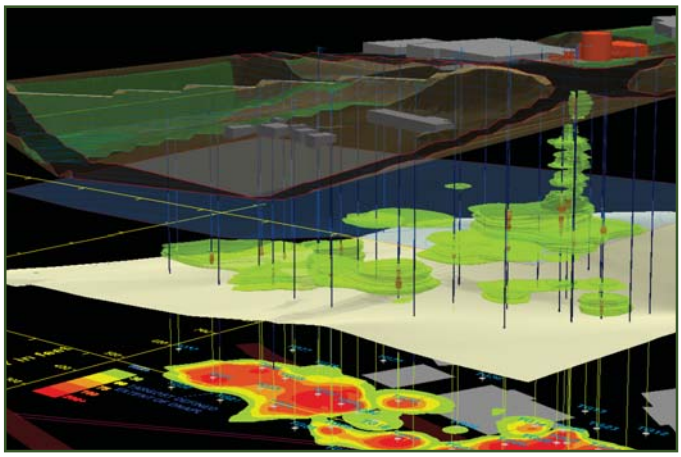
Tar-specific Green Optical Screening Tool

Successful risk assessments and remediation system designs require detailed knowledge of NAPL distribution. TarGOST provides this knowledge at unprecedented speed, detail, and efficiency. Sampling simply can't compete with TarGOST's production rates.

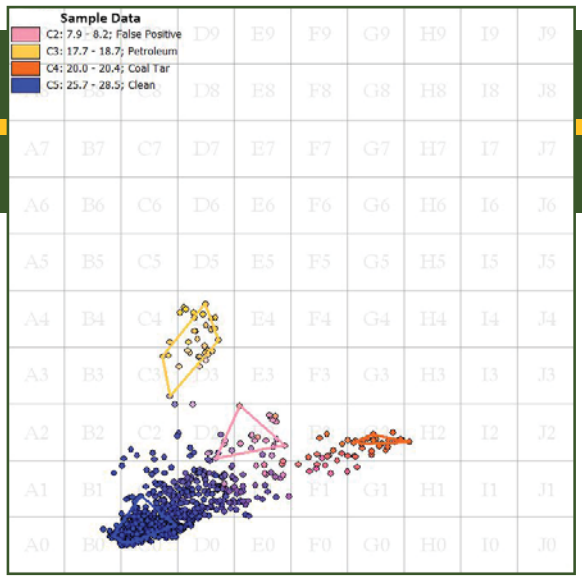
Since the first full-scale site characterization project in June 2003, the TarGOST system has been successfully applied at over 300 investigations. Barge is a common deployment platform for TarGOST studies of NAPL impacted sediments adjacent to former MGP and wood treater sites.



High Resolution TarGOST Logs



TarGOST Data—Conceptual Site Model (CSM)



Advanced data analysis extracts maximum benefit from temporal and spectral information

The end result of a TarGOST boring is a high-density, non-subjective electronic data log (above) readily incorporated into 2D and 3D conceptual site models. [The yellow contaminant at 18 ft. is diesel, while the lower orange lenses are coal tar.]

Bottom line: You have more important things to do for your client than struggle to define a heterogeneously distributed source term NAPL body. A TarGOST survey allows you to properly define the NAPL distribution once and for all so you can move on to the next steps.

DAKOTA TECHNOLOGIES

www.dakotatechnologies.com
info@dakotatechnologies.com
701.237.4908

Atlanta, GA
Boston, MA
Minneapolis, MN
Morris, MN
Kansas City, MO
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