Sitewide Cap Field Sampling Plan and
Quality Assurance Project Plan Addendum
Hatco Site – Fords, New Jersey
April 2020

1. Problem Definition and Purpose of this FSP

Weston Solutions, Inc. (Weston®) has prepared this Field Sampling Plan (FSP) and Quality Assurance Project Plan (QAPP) Addendum to describe supplemental remediation design activities to be implemented as part of the final sitewide cap design for the Hatco Remediation site. This document is intended as an addendum to the project QAPP originally prepared as part of Weston's 2009 *Addendum 3 to the Consolidated RAWP (Addendum 3),* and provides specific sample collection methodology and laboratory analytical requirements.

This sampling program supports the design of a sitewide cap system as an engineering control for the site. The cap will be located in both active and open areas of the chemical plant property and must accommodate the current site use. The objectives of this sampling program are:

1. To fill remaining data gaps to define the extent of contaminated soil to be capped;
2. To delineate contamination in two locations to be remediated that are outside the planned footprint of the cap (shallow soils south of Scrape Area X119 and possible light non-aqueous phase liquid (LNAPL) at Scrape Area X121);
3. To assess the existing asphalt pavement; and
4. To evaluate groundwater conditions in the vicinity of MW-50 and the former Di-Octyl Phthalate (DOP) tank farm.

Table 1 lists the data gaps that have been identified and will be addressed by this sampling plan. Applicable remediation criteria for the contaminants to be addressed by this plan are as follows:

Contaminant	Criteria
BEHP	210 milligrams per kilogram (mg/kg)
PCBs	2 mg/kg
Naphthalene	17 mg/kg
Benzo(a) anthracene	17 mg/kg
Benzo(a) pyrene	2 mg/kg

Results will be reported on a dry weight basis. An engineering control will be required for soils exceeding the criteria provided above. In addition, the Risk-Based Disposal Approval for this project (USEPA, March 30, 2005) establishes the following conditions for capping and removal of PCB contamination:

Range of PCB Concentrations	Depth of Cover Required
0 – 2 mg/kg	No Cap Required
>2 to < 500 mg/kg	May Remain Onsite if Capped
500 mg/kg and Above	Must be removed and disposed offsite

The engineered cap will be designed to cover all soils with PCB concentrations between 2 mg/kg and 500 mg/kg, as shown above. Soils containing 500 mg/kg or more of PCBs will be removed and disposed offsite.

In addition, an administrative control (Deed Notice) will be applied to address soils with PCB concentrations between 0.49 mg/kg and 2 mg/kg, but no cap would be required in those areas.

2. Monitoring Well Installation Included in this FSP

2a. DOP Tank Area
Soil borings completed around the location of the former DOP tanks in prior investigations found staining in the soils. The DOP tanks have been removed. As part of this FSP, one groundwater monitoring well will be replaced (MW-50) and two new wells will be installed (MW-62 and MW-63) hydraulically downgradient from MW-50 and the former DOP tanks to assess whether the observed staining is serving as an ongoing source of groundwater impacts. The original MW-50 was constructed of PVC and will be replaced with stainless steel well MW-50R, which is more compatible with phthalate contamination suspected in this area. The two downgradient monitoring wells will also be constructed of stainless steel.

2b. Former Scrape Area X121
A fourth monitoring well, MW-64, will be installed in the location where LNAPL was previously reported during the remediation at Scrape Area X121 in 2010 and 2011. This area is located just north of the EPT plant. The final location of MW-64 will be determined based on soil borings to be completed in this area. The well will be located in the vicinity of the soil boring that indicates the greatest evidence of contamination based on field observations (e.g., visible LNAPL, soil staining, or odors). If no evidence of contamination is observed in the soil borings then the well will be located near the center of former excavation X121. The primary purpose of this well is to assess the presence/absence of recoverable LNAPL in this area.

3. Project Data Quality Objectives (DQO)

The following data quality objectives have been established for this work:

- Sensitivity DQO. Reporting limits will be below the criteria presented earlier.
- Accuracy, precision, representativeness, completeness and comparability goals will be as stated in Addendum No. 3 to the Consolidated RAWP's QAPP (Weston, 2005).

Weston will communicate project-specific DQOs to the analytical laboratory via a Laboratory Communication Form (Appendix C).

4. Sample Design, Rationale and Locations

This FSP is broken into the following tasks:

Task 1: Cap Perimeter Sampling
Task 2: Asphalt Coring
Task 3: Monitoring Well Installation and Sampling

Task 1: Cap Perimeter Sampling
Table 2 lists soil boring locations and samples to address the data gaps identified in Table 1. Contingency step out locations are included in the event that the initial sampling does not fill the associated data gap. Soil samples collected from step out locations will be held pending results of the primary samples. Table 2 lists the primary and step out sample locations, depths and analyses.

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Figure 1 is an overall site map showing the location of the proposed soil samples. Figure 1, Details A through J show enlarged views of areas where Figure 1 becomes difficult to read at the full site view.

The proposed delineation samples will be classified as primary or step-out (contingency) samples. Contingency step-out distances were selected based on professional judgment and may be modified in the field depending on access and current conditions.

The sampling team will navigate to the target sample locations using the coordinates identified on Table 2 and handheld GPS navigational equipment. Each sampling location will be photographed and documented with a field sketch. If a location is inaccessible then the final location may be adjusted based on field conditions.

Task 2: Asphalt Coring
Weston engineers inspected the Hatco site on February 26, 2019 for the purpose of observing the condition of existing impervious cover (asphalt, concrete) and identifying areas to be cored to confirm the thickness and condition of the impervious cover. Table 2 lists the core locations, depth and location coordinates. An alternate location is provided for each primary location in the event that an obstruction requires a location to be moved or additional data is needed in that area.

Task 3: Monitoring Well Installation and Sampling
Monitoring well MW-50 will be replaced by MW-50R (original MW-50 well log is in Appendix B), using the screen interval and diameter specifications for the original well, except that the well will be constructed of stainless steel. Three new wells, MW-62, MW-63 and MW-64 will be installed to the specifications shown on Table 3.

5. Key Project Personnel and Contact Information

Name	Title	Cell Phone	Email
Jason Schindler	Principal Project Manager	(732) 740-5529	Jason.schindler@westonsolutions.com
John Sontag, Jr.	Project Manager	(484) 678-6135	John.Sontag@WestonSolutions.com
Andrea McGahan	Project Leader	(609) 903-4652	Andrea.mcgahan@westonsolutions.com
Aaron Roppoli	Associate Geoscientist II	(251) 751-2882	Aaron.Roppoli@WestonSolutions.com
Larry Werts	Health and Safety Coordinator	(215) 815-6237	Lawrence.Werts@WestonSolutions.com
Yunru Yang	Quality Assurance Coordinator	(732) 417-5822	Yunru.Yang@WestonSolutions.com

6. Utility Clearance

Utilities will be located using at least two methods, in accord with Weston's standard operating field procedure FLD 34. Utility location methods will include:

- New Jersey's One Call System, as required by Law (the drilling subcontractor will contact One Call and provide a copy of the Ticket to Weston prior to starting work);
- Geophysical investigation employing both electro-magnetic (EM) methods and ground penetrating radar (GPR) to identify metallic and non-metallic objects;
- Knowledgeable facility personnel; and
- Facility mapping.

Weston will provide the property owner/operator with a map showing proposed soil boring locations and will request identification of any known utilities in the vicinity of proposed drilling locations by the owner.

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7. Soil Sampling Methodology

Cap perimeter sampling is detailed Table 2 and shown on the Figure 1, Detail Maps A through J. Soil samples will be collected using direct-push drilling and sampling equipment and/or manual hand augers. Direct-push sampling tools will consist of stainless steel core barrels with disposable acetate sleeves. Stainless steel hand-augers will be used in wetland areas whenever the target depth is less than eight feet and may be achieved via manual methods. Outside of wetland areas, the field team will use the most expeditious method. Samples will be placed into laboratory-prepared sample containers and preserved (see Table 5). One of the following processes will be utilized at each sample location to collect the soil samples for laboratory analysis:

Manual Soil Sampling

- Navigate to a sampling location and set up equipment. Document the sampling location with a field sketch, photographs and tape measurements to fixed point(s).
- Ensure all necessary supplies are accessible (i.e., hand auger disposable aluminum pans, disposable scoops or spatulas, labeled sample containers, garbage bag, nitrile gloves, log book, weather-resistant pen, etc.).
- Advance sampling device to the target depth. If the sample is designated for vertical delineation, utilize a separate decontaminated hand auger for the sample interval.
- Don a clean pair of protective gloves for sampling.
- Log the soil core and compare the target sampling depth interval's lithology to the sample being delineated (Table 1; Appendix A; Soil Logs from Prior Investigations).
- Visually assess the sample. If there is LNAPL present, note the presence in the log book and do not collect a sample for laboratory analysis.
- Soil samples for laboratory analysis will be collected from a 6-inch depth interval.
- Homogenize the sample in a dedicated, disposable aluminum pan or decontaminated, reusable stainless steel bowl, by mixing with spatula or stainless steel scoop;
- Transfer soil from pan to laboratory-prepared sample container using a new disposable polyethylene scoop or decontaminated reusable stainless steel scoop.
- Verify labels on containers and place in cooler.
- Place extra soil back into the borehole, then backfill the hole to grade using bentonite chips if sufficient soil is not left over after sampling. Place disposable equipment and gloves into appropriate container for disposal.
- Decontaminate reusable sampling equipment following the procedure in this FSP Section 9.
- Set up at next sampling location.

Direct Push Soil Sampling

- Navigate to a sampling location and set up equipment. Document the sampling location as above.
- Note the starting and completion depth for each soil core advanced by the drilling crew. When the core is opened by the drilling crew, measure total volatile organic vapors with a PID for every 6" length of the core and record on a soil log.
- Log the core and process samples as described above for manual soil sampling via a hand auger.

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- Visually assess the sample. If there is LNAPL present, note the presence in the log book and do not collect a sample for laboratory analysis.

Intervals for which there is no recovery will be logged as "no recovery." For example, if three feet of core are retrieved for a 5-foot interval, the material retrieved will be measured from the top of the interval (i.e. 3 feet of recovery from 10 to 15 feet will be considered 10 to 13 feet with no recovery from 13 to 15 feet). If a sample interval falls within a no recovery zone, a second soil boring attempt will be made next to the initial soil boring. Up to three attempts will be made; if recovery cannot be achieved samples will be collected as close to the interval of interest as possible, in consultation with the team leader and/or project manager.

To maintain a record of sample collection, transfer between personnel, shipment, and receipt by the laboratory, standard chain-of-custody forms will be completed for all samples. Each form will be completed in the field and signed and dated by a member of the field team who will verify the exact sample shipment. This form will accompany the samples to the laboratory.

Samples will be placed into a cooler and preserved with ice for transport to the laboratory.

8. Geotechnical Coring

The drilling crew will navigate to each core location using handheld GPS equipment. At each location a 6-inch diameter core will be drilled to a depth of 0.5 feet or the top of the subgrade if the asphalt/gravel is thicker than 0.5 feet. At the top of the subgrade a reading will be taken using a dynamic cone penetrometer (DCP) in order to determine the strength of the underlying material.

DCP is a soil testing instrument comprised of a metal shaft with a 15 pound weighted hammer. The bottom of the shaft is a cone angled at 45 degrees which is driven into the ground by the free fall of the weight. The amount of blows in which the cone penetrates the ground a certain distance (1.75 inches) can be directly correlated to soil strength. The DCP cone forces the soil aside and develops a shear displacement similar to a bearing capacity failure. Research has been developed by geotechnical engineers to correlate this displacement to shear strength depending on soil type. The blows can be correlated to CBR (California bearing ratio) which is widely used to determine strength and quality of subgrade which affects pavement design and required asphalt thicknesses.

At each location photographs will be taken showing the condition of the surface of the asphalt at the core location. The field crew will note:

- Use of the area (roadway bearing truck traffic, open courtyard, etc.),
- Relative abundance of cracks, approximate length of cracks and approximate depth,
- Presence/absence and depth of pitting,
- Presence/absence and depth of ruts, scrapes, potholes or other damage to the surface,
- Photograph and describe each asphalt/concrete core,
- Record the thickness of a gravel subbase, if found,
- DCP readings will be recorded below the subbase, at the top of the underlying material, and
- The location of each core will be field measured to a known point such as a curb, building corner, fence, etc.

Coring equipment will be decontaminated between locations as described below, Section 11.1.

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Heavy equipment that does not contact soil in the borehole but does contact surface soil will be decontaminated and wipe tested when work has been completed in areas where prior sampling confirmed PCB concentrations above 50 mg/kg within the top 6-inches of soil. Areas where PCBs were confirmed to exceed 50 mg/kg at the surface are listed on Table 1 as "X119 Samples." Heavy equipment will be decontaminated before leaving the X119 area.

9. Monitoring Well Installation and Groundwater Sampling

Table 3 and Figure 1 provide well construction and location information.

A New Jersey licensed Well Driller will obtain permits for the wells shown on Figure 1 from the New Jersey Department of Environmental Protection (NJDEP) prior to beginning work at the site.

The well borings will be drilled using either a direct push drilling rig or a hollow-stem auger rig. A soil boring will be drilled first with continuous sampling via macro core or split spoon.

The following groundwater monitoring well installations are specified by this FSP:

- MW-50R – To be a stainless steel, 4-inch diameter monitoring well with 10 feet of screen at 5-15 feet below grade. Slot 0.020 screen with a No. 2 sand pack will be used.
- MW-62 and MW-63 – To be a stainless steel, 2-inch diameter monitoring wells with 10 feet of screen at 5-15 feet below grade. Slot 0.020 screen with a No. 2 sand pack is proposed pending lithologic review and these wells will provide downgradient monitoring for the LNAPL historically reported in this area, near the DOP tanks.
- MW-64 – To be a stainless steel, 4-inch diameter monitoring well (if LNAPL is observed; or 2-inch diameter if no LNAPL is found) with 10 feet of screen from 3 to 13 feet below grade. This well will also be constructed of 0.020 slot screen and a No. 2 sand pack.

Prior to installing each well, the field scientist will confirm the depth to water. If the depth to water is shallower than the planned well screen interval, the interval may be adjusted since these wells are designed to monitor water table conditions. To allow for seasonal variation, screens should be placed with about 2 feet of screen above the water level at the time of installation (or above the indications of shallowest water table depth based on logging) and 8 feet below the water level. Wells planned for this FSP will be located in unpaved areas of the site and will be completed with a protective stick up casing that extends between 2 and 3 feet above grade.

Wells will be installed by a New Jersey Licensed Professional Well Driller (present onsite) in accordance with N.J.A.C. 7:9D, for Category 3 Cased Environmental Resource Wells. The well driller will obtain a permit for each well prior to fieldwork, and provide a copy of the permit to Weston.

- Copies of the site-specific well construction requirements will be maintained at the drilling site by the well driller;
- All water used in well construction must be of potable quality;
- During well drilling, all cuttings and purge water will be drummed using 55-gallon steel closed top drums for liquids and open topped drums for soil;
- Monitoring well screens will be 10 feet in length (Table 3) unless a confining layer is encountered (in that case, screen lengths may be shortened);
- The sand filter pack should extend 2 feet above the top of the well screen;

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- When casing is to be installed into an oversized borehole, the borehole diameter will be at least four inches greater than the inside diameter of the well casing to be installed;
- The annular space will be sealed immediately following the setting of the well casing, but no later than 24 hours after the well casing has been set in place. Annular space between the casing and the borehole will be sealed in accordance with the requirements in N.J.A.C. 7:9D-2.9 and 2.10
- Once the well has been installed, the well casing will be securely capped until the well is placed in service. The cap will be threaded onto the casing, or be a friction type device which locks onto the outside of the casing,
- Protective steel casing will be installed to a minimum of two feet below grade, equipped with a steel locking cap and securely set in concrete.

For all wells specified in this FSP, the screened interval or filter pack will not extend across the interface of a confining layer and an aquifer.

Each monitoring well will be pumped until a clear discharge has been achieved or pumping has been conducted for at least one hour. The development pumping rate should be recorded for reference during sampling. Development water will be drummed and managed onsite in the area designated by the Project Manager, in consultation with the current property owner/operator.

After well installation, each new monitoring well will be surveyed by a New Jersey Licensed Professional Land Surveyor who will complete and certify a Well Form B for each well.

After a two-week equilibration period, wells will be gaged for depth to water and depth to LNAPL, if present, using an interface probe. If LNAPL is not present, then wells will be sampled in accordance with the following:

- Open the well and immediately take a headspace reading with a PID and a 4-gas meter. Record these readings. If elevated readings are detected, take the appropriate action specified for the instrument readings in the site-specific HASP.
- Take breathing zone readings using the PID and 4-gas meter.
- Measure and record depth to water to the nearest hundredth of a foot prior to purging (note: if LNAPL is present, do not sample).
- Set the pump intake at the approximate midpoint of the water column or the midpoint of the well screen if the top of the screen is submerged.
- Purge a minimum of 3 well volumes and a maximum of 5 well volumes of water using a peristaltic pump and dedicated HDPE tubing. The purge rate should not exceed the development pumping rate.
- Containerize purge water in a closed top 55-gallon steel drum
- Periodically measure depth to water to keep pump intake below the water level and prevent purging the well dry. Allow the well to recover if drawdown reaches 1-foot above the screen bottom.
- Use a dedicated, disposable bailer collect a groundwater sample for the analyses listed on Table 2.
- Transfer the groundwater sample to laboratory-prepared sample container.
- Verify labels on containers and place in cooler.
- Decontaminate reusable sampling equipment following the procedure in this FSP Section 11.

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10. Quality Assurance and Quality Control

Quality assurance/quality control (QA/QC) samples will be collected in accordance with Weston's QAPP, included as part of *Addendum 3.* Laboratory-blind field duplicate and matrix spike/matrix spike duplicate (MS/MSD) samples will be collected at a rate of 1 per 20 samples per analytical parameter (Table 4). Field blanks will be collected once per day per matrix and analyzed for the same parameters as the field samples.

A record of field procedures, tests and observations will be recorded in a field logbook and dedicated forms. Entries in the logbook will include the names of the individuals participating in the field effort, date and time, and the initials of the individual responsible for recording the observations.

11. Decontamination

11.1 Soil Sampling Equipment Decontamination
Reusable sampling equipment will be decontaminated before use at each sample location and prior to removal from the site. Decontamination procedures will follow technical requirements as set forth in the NJDEP *Field Sampling Procedures Manual* (August, 2005). Equipment will be decontaminated in the following sequence (as specified by the NJDEP's FSP for analysis that does not include metals):

- Laboratory grade glassware detergent plus tap water wash,
- Generous tap water rinse,
- Distilled and deionized (ASTM Type II) water rinse,
- Acetone (pesticide grade) rinse,
- Total air dry, and
- Distilled and deionized (ASTM Type II) water rinse.

11.2 Groundwater Sampling Equipment Decontamination
Prior to sampling, each well will be checked for product and depth to water will be recorded using an interface probe. The probe will be decontaminated in accordance with the steps in Section 11.1 for reusable sampling equipment.

A peristaltic pump with dedicated disposable tubing will be used to purge wells. The pump itself will not contact contaminated media and will, therefore, not require decontamination. Tubing will be dedicated to a single well and placed in closed top 55-gallon drums for offsite disposal when purging is complete at that location. Tubing will not be reused.

Groundwater samples will be collected using dedicated, disposable Teflon™ bailers. Samples will be collected by carefully lowering dedicated, disposable Teflon™ bailers and filling laboratory-cleaned glassware. Bailers will be disposed in open topped 55-gallon drums for offsite disposal; bailers will not be reused and will not require decontamination.

Decontamination Prior to Leaving Site
Before removing equipment from the site, equipment that comes into contact with PCB-containing materials will be decontaminated in accordance with the procedure stipulated by the 2009 Consolidated RAWP Addendum No. 3 for areas of PCB concentrations exceeding 50 mg/kg and subject to TSCA, described below.

Decontamination will be performed atop a decontamination pad constructed in such a manner as to capture all decontamination fluids; these fluids will be containerized for disposal as required in 40 CFR 761.79(g).

Before equipment which contacted material with PCB concentrations potentially exceeding 50 mg/kg leaves the site, it will be decontaminated by manual scrubbing with a non-phosphate detergent and brushes, then rinsed with DI water. Alternatively, equipment may be steam cleaned, in order to meet the re-use requirements of 40 CFR 761.79(b)3 for non-porous surfaces. The direct push core barrel and drive shoe/cutting shoe will be sampled via the wipe sample protocol specified for small tools and irregular surfaces (40 CFR Subpart P – Sampling Non-Porous Surfaces for Measurement-Based Use, Reuse, and On-Site or Off-Site Disposal under Section 761.61(a)(6) and Decontamination under Section 761.79(b)(3)).

Because the drive shoe/cutting shoe and core barrel are small irregularly shaped tools, the entire surface will be wipe sampled (761.302 (b)).

Decontamination will be considered complete when the wipe sample result is less than 10 micrograms (µg)/100 square centimeters (cm^2) (761.79 (b)(3)(i)(a)). Decontamination will be performed until sampling demonstrates completeness.

12. Investigation-Derived Waste Management

Investigation-derived waste generated during sampling activities will be containerized and temporarily staged at the Hatco Site, in 55-gallon drums or other DOT-approved containers and handled in accordance with applicable Federal and State requirements.

Attachments:

Table 1	Hatco Sitewide Cap Boundary Data Gaps
Table 2	Hatco Sitewide Cap Analytical Sampling Protocol
Table 3	Monitoring Well Specifications and Sampling Protocol
Table 4	Quality Control Sample Summary Table
Table 5	Sample Preservation Table
Figure 1	Sitewide Cap Sampling Plan
Figure 1	Detail A
Figure 1	Detail B
Figure 1	Detail C
Figure 1	Detail D
Figure 1	Detail E
Figure 1	Detail F
Figure 1	Detail G
Figure 1	Detail H
Figure 1	Detail I
Figure 1	Detail J
Appendix A	Soil Logs for Samples Being Delineated
Appendix B	Soil Log and Well Construction Diagram for MW-50
Appendix C	Project Communication Form (to be completed following selection of the analytical laboratory)

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Table 1: Hatco Sidewide Cap Boundary Data Gaps

Data Gaps	Reference	Contaminant(s)	Location(s) to be Evaluated	Depth	Direction	Proposed Sample Locations	Map
Horizontal extent of PCBs East of location X001_B8 at 4.0-4.5 feet	See Detail A	PCBs	X001_B8	4.0-4.5	East	CAP_B-100	A
Vertical extent of PCBs below location X001_B8 at 4.0-4.5 feet	See Detail A	PCBs	X001_B8	5.0-5.5	Vertical	CAP_B-100	A
Horizontal extent of PCBs north of location X002_01 at 2.5-3.0 feet	See Detail A	PCBs	X002_01	2.5-3.0	north	CAP_B-101	A
Horizontal extent of PCBs east of location X002_02 at 2.5-3.0 feet	See Detail A	PCBs	X002_02	2.5-3.0	east	CAP_B-102	A
Horizontal extent of PCBs north of location X001-SW-AX8 at 1.5-2.0 feet	See Detail A	PCBs	X001-SW-AX8	1.5-2.0	north	CAP_B-103	A
Horizontal extent of PCBs east of location X002_03 at 2.5-3.0 feet	See Detail A	PCBs	X002_03	2.5-3.0	east	CAP_B-103	A
Horizontal extent of PCBs east of location X001-SW-AX8 at 1.5-2.0 feet	See Detail A	PCBs	X001-SW-AX8	1.5-2.0	east	CAP_B-104	A
Horizontal extent of PCBs north of location CAP_B-20_5N at 0.0-0.5 feet	See Detail A	PCBs	CAP_B-20_5N	0.0-0.5	north	CAP_B-105	A
Horizontal extent of PCBs north of location CAP_B-27_5N at 0.0-0.5 feet	See Figure 1	PCBs	CAP_B-27_5N	0.0-0.5	north	CAP_B-106	1
Horizontal extent of PCBs east of location CAP_B-27_5E at 0.0-0.5 feet	See Figure 1	PCBs	CAP_B-27_5E	0.0-0.5	east	CAP_B-107	1
Horizontal extent of PCBs north of location CAP_B-26 at 1.0-1.5 feet	See Figure 1	PCBs	CAP_B-26	1.0-1.5	north	CAP_B-108	1
Horizontal extent of Naphthalene north of location X137_32 at 2.0-2.5 feet	See Detail B	Naphthalene	X137_32	2.0-2.5	north	CAP_B-109	B
Horizontal extent of PCBs southeast of location S-16 at 4.5-5.0 feet	See Figure 1	PCBs	S-16	4.5-5.0	southeast	CAP_B-110	1
Horizontal extent of PCBs and Naphthalene south of location S16 and S17 at 4.5-5.0 feet	See Figure 1	PCBs and Naphthalene	S16 and S17	4.5-5.0	south	CAP_B-111	1
Horizontal extent of PCBs and Naphthalene south of location SB306, S17 and S18 at 4.5-5.0 feet	See Figure 1	PCBs and Naphthalene	SB306, S17 and S18	4.5-5.0	south	CAP_B-112	1
Horizontal extent of PCBs north of location CAP_B-36 at 1.0-1.5 feet	See Detail J	PCBs	CAP_B-36	1.0-1.5	north	CAP_B-114	J
Horizontal extent of PCBs south of location CAP_B-36 at 1.0-1.5 feet	See Detail J	PCBs	CAP_B-36	1.0-1.5	south	CAP_B-116	J
Horizontal extent of PCBs west of location CAP_B-36 at 1.0-1.5 feet	See Detail J	PCBs	CAP_B-36	1.0-1.5	west	CAP_B-117	J
Horizontal extent of PCBs and BEHP east of location SE1(HH/A 17.25) at 0.0-0.5 feet	See Detail C	PCBs and BEHP	SE1(HH/A 17.25)	0.0-0.5	east	CAP_B-119	C
Horizontal extent of BaA, BaP, and Naphthalene east of location A0.25-17.25 at 3.0-3.5 feet	See Detail C	BaA, BaP, and Naphthalene	A0.25-17.25	3.0-3.5	east	CAP_B-119	C
Horizontal extent of BEHP and staining north of location X029_08A and DOP tanks at 8.5-9 feet	See Figure 1	BEHP and staining	X029_08A and DOP tanks	8.5-9	north	CAP_B-119	C
Horizontal extent of BEHP east of location DOP Tanks at 0-0.5 feet	See Detail C	BEHP	DOP Tanks	0-0.5	east	CAP_B-120	C
Horizontal extent of BEHP and staining NE of location X029_08A and DOP tanks at 8.5-9.0 feet	See Detail C	BEHP and staining	X029_08A and DOP tanks	8.5-9.0	NE	CAP_B-120	C
Horizontal extent of BEHP, PCBs east of location RR7 at 0-0.5 feet	See Detail C	BEHP, PCBs	RR7	0-0.5	east	CAP_B-121	C
Horizontal extent of PCBs, BEHP and Naphthalene east of location RR7 at 1.0-1.5 feet	See Detail C	PCBs, BEHP and Naphthalene	RR7	1.0-1.5	east	CAP_B-121	C
Horizontal extent of BEHP and staining east of location X029_08A at 8.5-9.0 feet	See Detail C	BEHP and staining	X029_08A	8.5-9.0	east	CAP_B-121	C
Horizontal extent of BEHP and staining east of location X029_08A at 8.5-9.0 feet	See Detail C	BEHP and staining	X029_08A	8.5-9.0	east	CAP_B-122	C
Horizontal extent of BEHP and staining southeast of location X029_08A at 8.5-9.0 feet	See Detail C	BEHP and staining	X029_08A	8.5-9.0	southeast	CAP_B-123	C
Horizontal extent of PCBs east of location CAP_B-3 at 1.5-2.0 feet	See Detail C	PCBs	CAP_B-3	1.5-2.0	east	CAP_B-124	C
Horizontal ext. of PCBs & BEHP East of X029_08A (BEHP) & LN_B-19-25N (PCBs) 8.5-9 ft.	See Detail C	PCBs and BEHP	X029_08A (BEHP) and LN_B-19-25N (PCBs)	8.5-9.0	East	CAP_B-124	C
Horizontal extent of PCBs south of location CAP_B-3 at 1.5-2 feet	See Detail C	PCBs	CAP_B-3	1.5-2	south	CAP_B-125	C
Horizontal extent of PCBs south of location LN_B-19-25N at 8.5-9 feet	See Detail C	PCBs	LN_B-19-25N	8.5-9	south	CAP_B-125	C
Verify clean cap material above SEL-HS5-SW-14-West	See Detail F	PCBs	SEL-HS5-SW-14-West	0-0.5	in cap	CAP_B-129	F
Verify clean cap material above SEL-HS5-SW-14-West	See Detail F	PCBs	SEL-HS5-SW-14-West	1-1.5	in cap	CAP_B-129	F
Verify clean cap material above SEL-HS5-SW-14-West	See Detail F	PCBs	SEL-HS5-SW-14-West	0-0.5	Vertical	CAP_B-130	F
Verify clean cap material above SEL-HS5-SW-14-West	See Detail F	PCBs	SEL-HS5-SW-14-West	1-1.5	Vertical	CAP_B-130	F
Verify clean cap material above SEL-HS5-SW-14-West	See Detail F	PCBs	SEL-HS5-SW-14-West	0-0.5	Vertical	CAP_B-131	F
Verify clean cap material above SEL-HS5-SW-14-West	See Detail F	PCBs	SEL-HS5-SW-14-West	1-1.5	Vertical	CAP_B-131	F
Horizontal extent of PCBs west of location SEL-HS5-SW-14-West at 9.0-9.5 feet	See Detail F	PCBs	SEL-HS5-SW-14-West	9.0-9.5	west	CAP_B-132	F
Horizontal extent of PCBs and BEHP south of location BLN_B22 and B15(I/K 14.5) at 1.0-1.5 feet	See Figure 1	PCBs and BEHP	BLN_B22 and B15(I/K 14.5)	1.0-1.5	south	CAP_B-133	1
Horizontal extent of PCBs south of location MW-9SR at 2-2.5 feet	See Figure 1	PCBs	MW-9SR	2-2.5	south	CAP_B-133	1
Horizontal extent of BEHP south of location B15(I/K 14.5) at 3.0-3.5 feet	See Figure 1	BEHP	B15(I/K 14.5)	3.0-3.5	south	CAP_B-133	1
Horizontal extent of PCBs and BEHP south of location B15(I/K 14.5) at 7.5-8.0 feet	See Figure 1	PCBs and BEHP	B15(I/K 14.5)	7.5-8.0	south	CAP_B-133	1
Horizontal extent of PCBs and BEHP south of location MW-9SR at 10.0-10.5 feet	See Figure 1	PCBs and BEHP	MW-9SR	10.0-10.5	south	CAP_B-133	1
Horizontal extent of PCBs north of location X119_01 at 0.0-0.5 feet	See Detail G	PCBs	X119_01	0.0-0.5	north	CAP_B-139	G
Horizontal extent of PCBs west of location C8_5W and C8 at 0.0-0.5 feet	See Detail H	PCBs	C8_5W and C8	0.0-0.5	west	CAP_B-140	H
Horizontal extent of PCBs and BEHP west of location X121_10 and X121_11 at 2.0-2.5 feet	See Detail H	PCBs and BEHP	X121_10 and X121_11	2.0-2.5	west	CAP_B-140	H
Horizontal extent of Possible LNAPL west of location X121 at 5.5-6 feet	See Detail H	Possible LNAPL	X121	5.5-6	west	CAP_B-140	H
Horizontal extent of PCBs north of location X121_09 and X121_10 at 0.0-0.5 feet	See Detail H	PCBs	X121_09 and X121_10	0.0-0.5	north	CAP_B-141	H
Horizontal extent of PCBs and BEHP north of location X121_10 and X121_11 at 2.0-2.5 feet	See Detail H	PCBs and BEHP	X121_10 and X121_11	2.0-2.5	north	CAP_B-141	H
Horizontal extent of Possible LNAPL north of location X121 at 5.5 feet	See Detail H	Possible LNAPL	X121	5.5	north	CAP_B-141	H
Horizontal extent of PCBs east of location X121_10 at 0.0-0.5 feet	See Detail H	PCBs	X121_10	0.0-0.5	east	CAP_B-142	H
Horizontal extent of PCBs and BEHP east of location X121_10 and X121_11 at 2.0-2.5 feet	See Detail H	PCBs and BEHP	X121_10 and X121_11	2.0-2.5	east	CAP_B-142	H
Horizontal extent of Possible LNAPL east of location X121 at 5.5 feet	See Detail H	Possible LNAPL	X121	5.5	east	CAP_B-142	H
Horizontal extent of PCBs and BEHP west of location SB265 at 5.5-6.0 feet	See Detail H	PCBs and BEHP	SB265	5.5-6.0	west	CAP_B-144	H
Horizontal extent of PCBs northwest of location I4.5 and ASTs at 1.5-2 feet	See Detail I	PCBs	I4.5 and ASTs	1.5-2	northwest	CAP_B-145	I
Horizontal extent of PCBs north of location I4.5 and ASTs at 1.5-2 feet	See Detail I	PCBs	I4.5 and ASTs	1.5-2	north	CAP_B-146	I
Horizontal extent of PCBs north of location CAP_B-32 at 0-0.5 feet	See Figure 1	PCBs	CAP_B-32	0-0.5	north	CAP_B-147	1
Horizontal extent of PCBs north of location CAP_B-32 at 1-1.5 feet	See Figure 1	PCBs	CAP_B-32	1-1.5	north	CAP_B-147	1
Horizontal extent of PCBs west of location X082_04 at 0-0.5 feet	See Detail D	PCBs	X082_04	0-0.5	west	CAP_B-150	D
Horizontal extent of PCBs west of location X082_04 at 6-6.5 feet	See Detail D	PCBs	X082_04	6-6.5	west	CAP_B-150	D
Horizontal extent of PCBs west of location X094_02, X094_03 at 0-0.5 feet	See Detail D	PCBs	X094_02, X094_03	0-0.5	west	CAP_B-152	D
Horizontal extent of PCBs west of location X094_04 at 1-1.5 feet	See Detail D	PCBs	X094_04	1-1.5	west	CAP_B-152	D
Presence of LNAPL within at location X121 at 5.5-6 feet	See Detail H	LNAPL	X121	5.5-6	within	CAP_B-153	H
Horizontal extent of PCBs and BEHP north of stained soils at former lagoons at 0-0.5 feet	See Figure 1	PCBs and BEHP	Stained Soil	0-0.5	north	CAP_B-154	1
Horizontal extent of PCBs and BEHP north of staind soils at former lagoons at 1-1.5 feet	See Figure 1	PCBs and BEHP	Stained Soil	1-1.5	north	CAP_B-154	1
Horizontal extent of PCBs and BEHP north of stained soils at former lagoons at 0-0.5 feet	See Detail E	PCBs and BEHP	Stained Soil	0-0.5	north	CAP_B-155	E
Horizontal extent of PCBs and BEHP north of staind soils at former lagoons at 1-1.5 feet	See Detail E	PCBs and BEHP	Stained Soil	1-1.5	north	CAP_B-155	E
Horizontal extent of PCBs and BEHP northeast of staind soils at former lagoons at 0-0.5 feet	See Detail E	PCBs and BEHP	Stained Soil	0-0.5	northeast	CAP_B-156	E
Horizontal extent of PCBs and BEHP northeast of staind soils at former lagoons at 1-1.5 feet	See Detail E	PCBs and BEHP	Stained Soil	1-1.5	northeast	CAP_B-156	E
Evaluate horizontal extent of LNAPL southwest of IRW-5 at the water table	See Figure 1	LNAPL	IRW-5	10	west	CAP_B-157	1
Evaluate horizontal extent of LNAPL southwest of IRW-5 at the water table	See Figure 1	LNAPL	IRW-5	10	southwest	CAP_B-158	1
Evaluate horizontal extent of PCBs at western sidewall of X002 at 0-0.5 feet	See Detail A	PCBs	X002 western sidewall	0-0.5	west	CAP_B-159	A
Evaluate horizontal extent of PCBs at western sidewall of X002 at 1-1.5 feet	See Detail A	PCBs	X002 western sidewall	1-1.5	west	CAP_B-159	A
Areas Where Prior PCB Results Exceeded 50 mg/kg (See Decontamination Procedures)							
Horizontal extent of PCBs northwest of location X119-B6-SB04 at 0-0.5 feet	See Detail D	PCBs	X119-B6-SB04	0-0.5	northwest	X119-B6-SB05, SB10	D
Horizontal extent of PCBs west of location X119-B6-SB04 at 0-0.5 feet	See Detail D	PCBs	X119-B6-SB04	0-0.5	west	X119-B6-SB06, SB09	D
Horizontal extent of PCBs west of location X119-B6-SB03 at 0-0.5 feet	See Detail D	PCBs	X119-B6-SB03	0-0.5	west	X119-B6-SB07, SB11	D
Horizontal extent of PCBs south of location X119-B6-SB03 at 0-0.5 feet	See Detail D	PCBs	X119-B6-SB03	0-0.5	south	X119-B6-SB08, SB12	D
Horizontal extent of PCBs southeast of location X119-DS-SB20 at 2-2.5 feet	See Detail D	PCBs	X119-DS-SB20	2-2.5	southeast	X119-DS-SB24	D
Horizontal extent of PCBs west of location X119-DS-SB22, SB23 at 0-0.5 feet	See Detail D	PCBs	X119-DS-SB22, SB23	0-0.5	west	X119-DS-SB25, SB27	D
Horizontal extent of PCBs west of location X119-DS-SB22, SB23 at 1.5-2 feet	See Detail D	PCBs	X119-DS-SB22, SB23	1.5-2	west	X119-DS-SB25	D
Horizontal extent of PCBs south of location X119-DS-SB20 at 1.5-2 feet	See Detail D	PCBs	X119-DS-SB20	1.5-2	south	X119-DS-SB26, SB28, SB29	D
Vertical extent of PCBs below location X119-DS-SB20 at 2-2.5 feet	See Detail D	PCBs	X119-DS-SB20	2-2.5	vertical	X119-DS-SB26, SB28, SB29	D
Asphalt Core Samples							
Evaluate the existing asphalt thickness and integrity	See Figure 1	Not Applicable	Existing asphalt cap	Surface		AC-1	1
Alternate location	See Figure 1	Not Applicable	Existing asphalt cap	Surface		AC-2	1
Evaluate the existing asphalt thickness and integrity	See Figure 1	Not Applicable	Existing asphalt cap	Surface		AC-3	1
Alternate location	See Figure 1	Not Applicable	Existing asphalt cap	Surface		AC-4	1
Evaluate the existing asphalt thickness and integrity	See Figure 1	Not Applicable	Existing asphalt cap	Surface		AC-5	1
Alternate location	See Figure 1	Not Applicable	Existing asphalt cap	Surface		AC-6	1
Evaluate the existing asphalt thickness and integrity	See Figure 1	Not Applicable	Existing asphalt cap	Surface		AC-7	1
Alternate location	See Figure 1	Not Applicable	Existing asphalt cap	Surface		AC-8	1
Evaluate the existing asphalt thickness and integrity	See Figure 1	Not Applicable	Existing asphalt cap	Surface		AC-9	1
Alternate location	See Figure 1	Not Applicable	Existing asphalt cap	Surface		AC-10	1
Evaluate the existing asphalt thickness and integrity	See Figure 1	Not Applicable	Existing asphalt cap	Surface		AC-11	1
Alternate location	See Figure 1	Not Applicable	Existing asphalt cap	Surface		AC-12	1

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Table 2 - Hatco Sitewide Cap Analytical Sampling Protocol

Sample Station Name (Soil Boring)	Target Northing	Target Easting	Sampling Methodology	Total Depth (ft bgs)	Target Sample Depth (ft bgs)			Field Sample Name	Sample Matrix	Analytical Protocol[(a)]
CAP_B-100	615564	542740	Direct Push Macrocore	5.5	4	-	4.5	CAP_B-100-I-J-0-MoDaYr	Soil	PCBs
					5	-	5.5	CAP_B-100-K-L-0-MoDaYr	Soil	PCBs
CAP_B-100_20NE	615580	542751	Direct Push Macrocore	5.5	4	-	4.5	CAP_B-100_20NE-I-J-0-MoDaYr	Soil	HOLD - PCBs
					5	-	5.5	CAP_B-100_20NE-K-L-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-101	615577	542772	Hand Auger	3	2.5	-	3	CAP_B-101-F-G-0-MoDaYr	Soil	PCBs
CAP_B-101_10N	615587	542773	Hand Auger	3	2.5	-	3	CAP_B-101_10N-F-G-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-101_30N	615607	542773	Hand Auger	3	2.5	-	3	CAP_B-101_30N-F-G-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-102	615553	542789	Hand Auger	3	2.5	-	3	CAP_B-102-F-G-0-MoDaYr	Soil	PCBs
CAP_B-102_10NE	615563	542800	Hand Auger	3	2.5	-	3	CAP_B-102_10NE-F-G-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-103	615534	542797	Hand Auger	3	1.5	-	2	CAP_B-103-D-E-0-MoDaYr	Soil	PCBs
					2.5	-	3	CAP_B-103-F-G-0-MoDaYr	Soil	PCBs
CAP_B-103_20NE	615534	542817	Hand Auger	3	1.5	-	2	CAP_B-103_20NE-D-E-0-MoDaYr	Soil	HOLD - PCBs
					2.5	-	3	CAP_B-103_20NE-F-G-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-104	615512	542806	Hand Auger	2	1.5	-	2	CAP_B-104-D-E-0-MoDaYr	Soil	PCBs
CAP_B-105	615490	542863	Direct Push Macrocore	0.5	0	-	0.5	CAP_B-105-A-B-0-MoDaYr	Soil	PCBs
CAP_B-105_10N	615499	542862	Hand Auger	0.5	0	-	0.5	CAP_B-105_10N-A-B-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-105_20N	615510	542862	Hand Auger	0.5	0	-	0.5	CAP_B-105_20N-A-B-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-106	615536	542973	Hand Auger	0.5	0	-	0.5	CAP_B-106-A-B-0-MoDaYr	Soil	PCBs
CAP_B-106_10N	615545	542973	Hand Auger	0.5	0	-	0.5	CAP_B-106_10N-A-B-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-106_20N	615555	542972	Hand Auger	0.5	0	-	0.5	CAP_B-106_20N-A-B-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-107	615530	543008	Hand Auger	0.5	0	-	0.5	CAP_B-107-A-B-0-MoDaYr	Soil	PCBs
CAP_B-107_10N	615539	543008	Hand Auger	0.5	0	-	0.5	CAP_B-107_10N-A-B-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-108	615471	543098	Hand Auger	1.5	1	-	1.5	CAP_B-108-C-D-0-MoDaYr	Soil	PCBs
CAP_B-108_10N	615481	543098	Hand Auger	1.5	1	-	1.5	CAP_B-108_10N-C-D-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-109	615466	543229	Hand Auger	2.5	2	-	2.5	CAP_B-109-E-F-0-MoDaYr	Soil	Naphthalene
CAP_B-109_10N	615476	543229	Hand Auger	2.5	2	-	2.5	CAP_B-109_10N-E-F-0-MoDaYr	Soil	HOLD - Naphthalene
CAP_B-109_20N	615486	543229	Hand Auger	2.5	2	-	2.5	CAP_B-109_20N-E-F-0-MoDaYr	Soil	HOLD - Naphthalene
CAP_B-110	614924	543276	Direct Push Macrocore	5	4.5	-	5	CAP_B-110-J-K-0-MoDaYr	Soil	PCBs
CAP_B-110_10E	614917	543286	Direct Push Macrocore	5	4.5	-	5	CAP_B-110_10E-J-K-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-110_20E	614912	543298	Direct Push Macrocore	5	4.5	-	5	CAP_B-110_20E-J-K-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-111	614907	543229	Direct Push Macrocore	5	4.5	-	5	CAP_B-111-J-K-0-MoDaYr	Soil	PCBs, Naphthalene
CAP_B-111_10S	614892	543229	Direct Push Macrocore	5	4.5	-	5	CAP_B-111_10S-J-K-0-MoDaYr	Soil	HOLD - PCBs, Naphthalene
CAP_B-112	614873	543176	Direct Push Macrocore	5	4.5	-	5	CAP_B-112-J-K-0-MoDaYr	Soil	PCBs, Naphthalene
CAP_B-112_20S	614849	543176	Direct Push Macrocore	5	4.5	-	5	CAP_B-112_20S-J-K-0-MoDaYr	Soil	HOLD - PCBs, Naphthalene
CAP_B-114	614770	543174	Direct Push Macrocore	1.5	1	-	1.5	CAP_B-114-C-D-0-MoDaYr	Soil	PCBs
CAP_B-114_5N	614774	543173	Direct Push Macrocore	1.5	1	-	1.5	CAP_B-114_5N-C-D-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-114_25N	614795	543173	Direct Push Macrocore	1.5	1	-	1.5	CAP_B-114_25N-C-D-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-116	614763	543175	Direct Push Macrocore	1.5	1	-	1.5	CAP_B-116-C-D-0-MoDaYr	Soil	PCBs
CAP_B-116_5S	614758	543175	Direct Push Macrocore	1.5	1	-	1.5	CAP_B-116_5S-C-D-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-116_25S	614738	543175	Direct Push Macrocore	1.5	1	-	1.5	CAP_B-116_25S-C-D-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-117	614766	543171	Direct Push Macrocore	1.5	1	-	1.5	CAP_B-117-C-D-0-MoDaYr	Soil	PCBs
CAP_B-117_5W	614765	543166	Direct Push Macrocore	1.5	1	-	1.5	CAP_B-117_5W-C-D-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-117_25W	614765	543145	Direct Push Macrocore	1.5	1	-	1.5	CAP_B-117_25W-C-D-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-119	614469	542981	Direct Push Macrocore	9	0	-	0.5	CAP_B-119-A-B-0-MoDaYr	Soil	BEHP, PCBs
					3	-	3.5	CAP_B-119-G-H-0-MoDaYr	Soil	BaA, BaP, Naphthalene
					8.5	-	9	CAP_B-119-R-S-0-MoDaYr	Soil	BEHP, Sample if no LNAPL
CAP_B-119_10NE	614474	542989	Direct Push Macrocore	9	0	-	0.5	CAP_B-119_10NE-A-B-0-MoDaYr	Soil	HOLD - BEHP, PCBs
					3	-	3.5	CAP_B-119_10NE-G-H-0-MoDaYr	Soil	HOLD - BaA, BaP, Naphthalene
					8.5	-	9	CAP_B-119_10NE-R-S-0-MoDaYr	Soil	HOLD - BEHP, Sample if no LNAPL
CAP_B-119_30NE	614485	543007	Direct Push Macrocore	9	0	-	0.5	CAP_B-119_30NE-A-B-0-MoDaYr	Soil	HOLD - BEHP, PCBs
					3	-	3.5	CAP_B-119_30NE-G-H-0-MoDaYr	Soil	HOLD - BaA, BaP, Naphthalene
					8.5	-	9	CAP_B-119_30NE-R-S-0-MoDaYr	Soil	HOLD - BEHP, Sample if no LNAPL

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Table 2 - Hatco Sitewide Cap Analytical Sampling Protocol

Sample Station Name (Soil Boring)	Target Northing	Target Easting	Sampling Methodology	Total Depth (ft bgs)	Target Sample Depth (ft bgs)			Field Sample Name	Sample Matrix	Analytical Protocol[(a)]
CAP_B-120	614433	543026	Direct Push Macrocore or Hand Auger	9	0	-	0.5	CAP_B-120-A-B-0-MoDaYr	Soil	BEHP
					8.5	-	9	CAP_B-120-R-S-0-MoDaYr	Soil	BEHP, Sample if no LNAPL
CAP_B-120_20E	614432	543046	Direct Push Macrocore or Hand Auger	9	0	-	0.5	CAP_B-120_20E-A-B-0-MoDaYr	Soil	HOLD - BEHP
					8.5	-	9	CAP_B-120_20E-R-S-0-MoDaYr	Soil	HOLD - BEHP, Sample if no LNAPL
CAP_B-120_50E	614432	543075	Direct Push Macrocore or Hand Auger	9	0	-	0.5	CAP_B-120_50E-A-B-0-MoDaYr	Soil	HOLD - BEHP
					8.5	-	9	CAP_B-120_50E-R-S-0-MoDaYr	Soil	HOLD - BEHP, Sample if no LNAPL
CAP_B-121	614384	543026	Direct Push Macrocore or Hand Auger	9	0	-	0.5	CAP_B-121-A-B-0-MoDaYr	Soil	BEHP, PCBs
					1	-	1.5	CAP_B-121-C-D-0-MoDaYr	Soil	BEHP, PCBs, Naphthalene
					8.5	-	9	CAP_B-121-R-S-0-MoDaYr	Soil	BEHP, Sample if no LNAPL
CAP_B-121_25E	614383	543049	Direct Push Macrocore	9	0	-	0.5	CAP_B-121_25E-A-B-0-MoDaYr	Soil	HOLD - BEHP, PCBs
					1	-	1.5	CAP_B-121_25E-C-D-0-MoDaYr	Soil	HOLD - BEHP, PCBs, Naphthalene
					8.5	-	9	CAP_B-121_25E-R-S-0-MoDaYr	Soil	HOLD - BEHP, Sample if no LNAPL
CAP_B-121_50E	614383	543076	Direct Push Macrocore	9	0	-	0.5	CAP_B-121_50E-A-B-0-MoDaYr	Soil	HOLD - BEHP, PCBs
					1	-	1.5	CAP_B-121_50E-C-D-0-MoDaYr	Soil	HOLD - BEHP, PCBs, Naphthalene
					8.5	-	9	CAP_B-121_50E-R-S-0-MoDaYr	Soil	HOLD - BEHP, Sample if no LNAPL
CAP_B-122	614284	543028	Direct Push Macrocore	9	8.5	-	9	CAP_B-122-R-S-0-MoDaYr	Soil	BEHP, Sample if no LNAPL
CAP_B-122_25E	614284	543053	Direct Push Macrocore	9	8.5	-	9	CAP_B-122_25E-R-S-0-MoDaYr	Soil	HOLD - BEHP, Sample if no LNAPL
CAP_B-122_50E	614284	543079	Direct Push Macrocore	9	8.5	-	9	CAP_B-122_50E-R-S-0-MoDaYr	Soil	HOLD - BEHP, Sample if no LNAPL
CAP_B-123	614259	543001	Direct Push Macrocore	9	8.5	-	9	CAP_B-123-R-S-0-MoDaYr	Soil	BEHP, Sample if no LNAPL
CAP_B-123_25S	614233	543001	Direct Push Macrocore	9	8.5	-	9	CAP_B-123_25S-R-S-0-MoDaYr	Soil	HOLD - BEHP, Sample if no LNAPL
CAP_B-124	614219	542971	Direct Push Macrocore	9	1.5	-	2	CAP_B-124-D-E-0-MoDaYr	Soil	PCBs, Sample if no LNAPL
					8.5	-	9	CAP_B-124-R-S-0-MoDaYr	Soil	PCBs, Sample if no LNAPL
CAP_B-124_20E	614218	542999	Direct Push Macrocore	9	1.5	-	2	CAP_B-124_20E -D-E-0-MoDaYr	Soil	HOLD - PCBs, Sample if no LNAPL
					8.5	-	9	CAP_B-124_20E -R-S-0-MoDaYr	Soil	HOLD - BEHP, PCBs, Sample if no LNAPL
CAP_B-125	614144	542972	Direct Push Macrocore	9	1.5	-	2	CAP_B-125-D-E-0-MoDaYr	Soil	PCBs, Sample if no LNAPL
					8.5	-	9	CAP_B-125-R-S-0-MoDaYr	Soil	PCBs, Sample if no LNAPL
CAP_B-125_25E	614145	542997	Direct Push Macrocore	9	1.5	-	2	CAP_B-125_25E-D-E-0-MoDaYr	Soil	HOLD - PCBs, Sample if no LNAPL
					8.5	-	9	CAP_B-125_25E-R-S-0-MoDaYr	Soil	HOLD - PCBs, Sample if no LNAPL
CAP_B-125_50E	614145	543020	Direct Push Macrocore	9	1.5	-	2	CAP_B-125_50E-D-E-0-MoDaYr	Soil	HOLD - PCBs, Sample if no LNAPL
					8.5	-	9	CAP_B-125_50E-R-S-0-MoDaYr	Soil	HOLD - PCBs, Sample if no LNAPL
CAP_B-129	614341	542510	Hand Auger	1.5	0	-	0.5	CAP_B-129-A-B-0-MoDaYr	Soil	PCBs
					1	-	1.5	CAP_B-129-C-D-0-MoDaYr	Soil	PCBs
CAP_B-130	614312	542513	Hand Auger	1.5	0	-	0.5	CAP_B-130-A-B-0-MoDaYr	Soil	PCBs
					1	-	1.5	CAP_B-130-C-D-0-MoDaYr	Soil	PCBs
CAP_B-131	614297	542523	Hand Auger	1.5	0	-	0.5	CAP_B-131-A-B-0-MoDaYr	Soil	PCBs
					1	-	1.5	CAP_B-131-C-D-0-MoDaYr	Soil	PCBs
CAP_B-132	614323	542499	Direct Push Macrocore	9.5	9	-	9.5	CAP_B-132-S-T-0-MoDaYr	Soil	PCBs
CAP_B-133	614506	542557	Direct Push	10.5	1	-	1.5	CAP_B-133-C-D-0-MoDaYr	Soil	PCBs, BEHP
					2	-	2.5	CAP_B-133-E-F-0-MoDaYr	Soil	PCBs
					3	-	3.5	CAP_B-133-G-H-0-MoDaYr	Soil	BEHP
					7.5	-	8	CAP_B-133-P-Q-0-MoDaYr	Soil	PCBs, BEHP
					10	-	10.5	CAP_B-133-U-V-0-MoDaYr	Soil	PCBs, BEHP
CAP_B-139	614836	542249	Hand Auger	0.5	0	-	0.5	CAP_B-139-A-B-0-MoDaYr	Soil	PCBs
CAP_B-139_10N	614846	542249	Hand Auger	0.5	0	-	0.5	CAP_B-139_10N-A-B-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-139_10W	614836	542239	Hand Auger	0.5	0	-	0.5	CAP_B-139_10W-A-B-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-140	614849	542312	Hand Auger	6	0	-	0.5	CAP_B-140-A-B-0-MoDaYr	Soil	PCBs
					2	-	2.5	CAP_B-140---0-MoDaYr	Soil	PCBs and BEHP
					5.5	-	6	CAP_B-140-L-M-0-MoDaYr	Soil	Possible LNAPL, BEHP and PCBs
CAP_B-140_10NW	614856	542308	Direct Push Macrocore	6	0	-	0.5	CAP_B-140_10NW-A-B-0-MoDaYr	Soil	HOLD - PCBs
					2	-	2.5	CAP_B-140_10NW-E-F-0-MoDaYr	Soil	HOLD - PCBs and BEHP
					5.5	-	6	CAP_B-140_10NW-A-M-0-MoDaYr	Soil	HOLD-Possible LNAPL, BEHP and PCBs

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Table 2 - Hatco Sitewide Cap Analytical Sampling Protocol

Sample Station Name (Soil Boring)	Target Northing	Target Easting	Sampling Methodology	Total Depth (ft bgs)	Target Sample Depth (ft bgs)			Field Sample Name	Sample Matrix	Analytical Protocol[(a)]
CAP_B-141	614862	542332	Direct Push Macrocore	6	0	-	0.5	CAP_B-141-A-B-0-MoDaYr	Soil	PCBs
					2	-	2.5	CAP_B-141-E-F-0-MoDaYr	Soil	PCBs, BEHP
					5.5	-	6	CAP_B-141-L-M-0-MoDaYr	Soil	Possible LNAPL, BEHP and PCBs
CAP_B-141_10NW	614868	542326	Direct Push Macrocore	6	0	-	0.5	CAP_B-141_10NW-A-B-0-MoDaYr	Soil	HOLD - PCBs
					2	-	2.5	CAP_B-141_10NW-E-F-0-MoDaYr	Soil	HOLD-PCBs, BEHP
					5.5	-	6	CAP_B-141_10NW-L-M-0-MoDaYr	Soil	HOLD-Possible LNAPL, BEHP and PCBs
CAP_B-142	614857	542357	Direct Push Macrocore	6	0	-	0.5	CAP_B-142-A-B-0-MoDaYr	Soil	PCBs
					2	-	2.5	CAP_B-142-E-F-0-MoDaYr	Soil	PCBs, BEHP
					5.5	-	6	CAP_B-142-L-M-0-MoDaYr	Soil	Possible LNAPL, BEHP and PCBs
CAP_B-142_10NE	614866	542363	Direct Push Macrocore	6	0	-	0.5	CAP_B-142_10NE-A-B-0-MoDaYr	Soil	HOLD - PCBs
					2	-	2.5	CAP_B-142_10NE-E-F-0-MoDaYr	Soil	HOLD - PCBs, BEHP
					5.5	-	6	CAP_B-142_10NE-L-M-0-MoDaYr	Soil	HOLD-Possible LNAPL, BEHP and PCBs
CAP_B-144	614917	542360	Hand Auger	6	5.5	-	6	CAP_B-144-L-M-0-MoDaYr	Soil	PCBs, BEHP
CAP_B-144_10W	614917	542351	Hand Auger	6	5.5	-	6	CAP_B-144_10W-L-M-0-MoDaYr	Soil	HOLD - PCBs, BEHP
CAP_B-144_10S	614906	542361	Hand Auger	6	5.5	-	6	CAP_B-144_10S-L-M-0-MoDaYr	Soil	HOLD - PCBs, BEHP
CAP_B-145	615163	542302	Hand Auger	2	1.5	-	2	CAP_B-145-D-E-0-MoDaYr	Soil	PCBs
CAP_B-145_10W	615163	542290	Hand Auger	2	1.5	-	2	CAP_B-145_10W-D-E-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-145_40W	615162	542262	Hand Auger	2	1.5	-	2	CAP_B-145_40W-D-E-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-146	615202	542291	Hand Auger	2	1.5	-	2	CAP_B-146-D-E-0-MoDaYr	Soil	PCBs
CAP_B-146_10W	615202	542280	Hand Auger	2	1.5	-	2	CAP_B-146_10W-D-E-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-146_50W	615201	542240	Hand Auger	2	1.5	-	2	CAP_B-146_50W-D-E-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-147	615361	542556	Direct Push Macrocore	1.5	0	-	0.5	CAP_B-147-A-B-0-MoDaYr	Soil	PCBs
					1	-	1.5	CAP_B-147-C-D-0-MoDaYr	Soil	PCBs
CAP_B-147_20N	615370	542556	Hand Auger	1.5	0	-	0.5	CAP_B-147_20N-A-B-0-MoDaYr	Soil	HOLD - PCBs
					1	-	1.5	CAP_B-147_20N-C-D-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-147_30N	615381	542557	Hand Auger	1.5	0	-	0.5	CAP_B-147_30N-A-B-0-MoDaYr	Soil	HOLD - PCBs
					1	-	1.5	CAP_B-147_30N-C-D-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-150	614490	542255	Hand Auger	6.5	0	-	0.5	CAP_B-150-A-B-0-MoDaYr	Soil	PCBs
					6	-	6.5	CAP_B-150-M-N-0-MoDaYr	Soil	PCBs
CAP_B-150_10W	614490	542245	Hand Auger	6.5	0	-	0.5	CAP_B-150_10W-A-B-0-MoDaYr	Soil	HOLD - PCBs
					6	-	6.5	CAP_B-150_10W-M-N-0-MoDaYr	Soil	HOLD - PCBs
CAP_B-152	614658	542284	Hand Auger	1.5	0	-	0.5	CAP_B-152-A-B-0-MoDaYr	Soil	PCBs
					1	-	1.5	CAP_B-152-C-D-0-MoDaYr		
CAP_B-152_20SE	614641	542299	Hand Auger	1.5	0	-	0.5	CAP_B-152_20SE-A-B-0-MoDaYr	Soil	HOLD - PCBs
					1	-	1.5	CAP_B-152_20SE-C-D-0-MoDaYr		
CAP_B-153	614843	542346	Direct Push Macrocore	6	5.5	-	6	CAP_B-153-L-M-0-MoDaYr	Soil	Possible LNAPL, BEHP and PCBs
CAP_B-153_10NW	614846	542337	Direct Push Macrocore	6	5.5	-	6	CAP_B-153_10NW-L-M-0-MoDaYr	Soil	Possible LNAPL, BEHP and PCBs
CAP_B-154	614043	542515	Hand Auger	1.5	0	-	0.5	CAP_B-154-A-B-0-MoDaYr	Soil	PCBs and BEHP
					1		1.5	CAP_B-154-C-D-0-MoDaYr		
CAP_B-154_10N	614053	542515	Hand Auger	1.5	0	-	0.5	CAP_B-154_10N-A-B-0-MoDaYr	Soil	HOLD- PCBs and BEHP
					1		1.5	CAP_B-154_10N-C-D-0-MoDaYr		
CAP_B-154_20N	614063	542515	Hand Auger	1.5	0	-	0.5	CAP_B-154_20N-A-B-0-MoDaYr	Soil	HOLD - PCBs and BEHP
					1		1.5	CAP_B-154_20N-C-D-0-MoDaYr		
CAP_B-155	614225	542608	Hand Auger	1.5	0	-	0.5	CAP_B-155-A-B-0-MoDaYr	Soil	PCBs and BEHP
					1		1.5	CAP_B-155-C-D-0-MoDaYr		
CAP_B-155_10N	614235	542608	Hand Auger	1.5	0	-	0.5	CAP_B-155_10N-A-B-0-MoDaYr	Soil	HOLD - PCBs and BEHP
					1		1.5	CAP_B-155_10N-C-D-0-MoDaYr		
CAP_B-156	614231	542717	Hand Auger	1.5	0	-	0.5	CAP_B-156-A-B-0-MoDaYr	Soil	PCBs and BEHP
					1		1.5	CAP_B-156-C-D-0-MoDaYr		

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Table 2 - Hatco Sitewide Cap Analytical Sampling Protocol

Sample Station Name (Soil Boring)	Target Northing	Target Easting	Sampling Methodology	Total Depth (ft bgs)	Target Sample Depth (ft bgs)			Field Sample Name	Sample Matrix	Analytical Protocol[(a)]
CAP_B-156_10NE	614240	542721	Hand Auger	1.5	0	-	0.5	CAP_B-156_10NE-A-B-0-MoDaYr	Soil	HOLD - PCBs and BEHP
					1	-	1.5	CAP_B-156_10NE-C-D-0-MoDaYr		
CAP_B-157	614756	542450	Hand Auger	1.5	0	-	0.5	CAP_B-157-A-B-0-MoDaYr	Soil	PCBs and BEHP, Sample if no LNAPL
					1	-	1.5	CAP_B-157-C-D-0-MoDaYr	Soil	PCBs and BEHP, Sample if no LNAPL
CAP_B-158	614819	542433	Hand Auger	1.5	0	-	0.5	CAP_B-158-A-B-0-MoDaYr	Soil	PCBs and BEHP, Sample if no LNAPL
					1	-	1.5	CAP_B-158-C-D-0-MoDaYr	Soil	PCBs and BEHP, Sample if no LNAPL
CAP_B-159	615532	542767	Hand Auger	1.5	0	-	0.5	CAP_B-159-A-B-0-MoDaYr	Soil	PCBs and BEHP, Sample if no LNAPL
					1	-	1.5	CAP_B-159-C-D-0-MoDaYr	Soil	PCBs and BEHP, Sample if no LNAPL
X119 Area Samples										
X119-B6-SB05	614696	542199	Hand Auger	0.5	0	-	0.5	X119-B6-SB05-A-B-0-MoDaYr	Soil	PCBs
X119-B6-SB10	614693	542188	Hand Auger	0.5	0	-	0.5	X119-B6-SB10-A-B-0-MoDaYr	Soil	HOLD-PCBs
X119-B6-SB06	614688	542195	Hand Auger	0.5	0	-	0.5	X119-B6-SB06-A-B-0-MoDaYr	Soil	PCBs
X119-B6-SB09	614686	542190	Hand Auger	0.5	0	-	0.5	X119-B6-SB09-A-B-0-MoDaYr	Soil	HOLD-PCBs
X119-B6-SB07	614685	542201	Hand Auger	0.5	0	-	0.5	X119-B6-SB07-A-B-0-MoDaYr	Soil	PCBs
X119-B6-SB11	614679	542198	Hand Auger	0.5	0	-	0.5	X119-B6-SB11-A-B-0-MoDaYr	Soil	HOLD-PCBs
X119-B6-SB08	614682	542208	Hand Auger	0.5	0	-	0.5	X119-B6-SB08-A-B-0-MoDaYr	Soil	PCBs
X119-B6-SB12	614676	542210	Hand Auger	0.5	0	-	0.5	X119-B6-SB12-A-B-0-MoDaYr	Soil	HOLD-PCBs
X119-DS-SB24	614656	542267	Hand Auger	2.5 feet	2	-	2.5	X119-DS-SB24-E-F-0-MoDaYr	Soil	PCBs
X119-DS-SB25	614650	542234	Hand Auger	2 feet	0	-	0.5	X119-DS-SB25-A-B-0-MoDaYr	Soil	PCBs
					1.5	-	2	X119-DS-SB25-D-E-0-MoDaYr	Soil	PCBs
X119-DS-SB26	614630	542252	Hand Auger	2.5 feet	1.5	-	2	X119-DS-SB26-D-E-0-MoDaYr	Soil	PCBs
					2	-	2.5	X119-DS-SB26-E-F-0-MoDaYr	Soil	PCBs
X119-DS-SB27	614635	542222	Hand Auger	2.5 feet	0	-	0.5	X119-DS-SB27-A-B-0-MoDaYr	Soil	HOLD-PCBs
					1.5	-	2	X119-DS-SB27-D-E-0-MoDaYr	Soil	HOLD-PCBs
					2	-	2.5	X119-DS-SB27-E-F-0-MoDaYr	Soil	HOLD-PCBs
X119-DS-SB28	614624	542236	Hand Auger	2.5 feet	0	-	0.5	X119-DS-SB28-A-B-0-MoDaYr	Soil	HOLD-PCBs
					1.5	-	2	X119-DS-SB28-D-E-0-MoDaYr	Soil	HOLD-PCBs
					2	-	2.5	X119-DS-SB28-E-F-0-MoDaYr	Soil	HOLD-PCBs
X119-DS-SB29	614612	542222	Hand Auger	2.5 feet	0	-	0.5	X119-DS-SB29-A-B-0-MoDaYr	Soil	HOLD-PCBs
					1.5	-	2	X119-DS-SB29-D-E-0-MoDaYr	Soil	HOLD-PCBs
					2	-	2.5	X119-DS-SB29-E-F-0-MoDaYr	Soil	HOLD-PCBs
Asphalt Core Samples										
AC-1	615501	542957	Coring Tool	0.5 feet	0	-	0.5	AC-1-A-B-0-MoDaYr	Asphalt	Physical Evaluation
AC-2	615280	543031	Coring Tool	0.5 feet	0	-	0.5	AC-2-A-B-0-MoDaYr	Asphalt	Physical Evaluation
AC-3	615271	542849	Coring Tool	0.5 feet	0	-	0.5	AC-3-A-B-0-MoDaYr	Asphalt	Physical Evaluation
AC-4	615158	542399	Coring Tool	0.5 feet	0	-	0.5	AC-4-A-B-0-MoDaYr	Asphalt	Physical Evaluation
AC-5	614991	543124	Coring Tool	0.5 feet	0	-	0.5	AC-5-A-B-0-MoDaYr	Asphalt	Physical Evaluation
AC-6	614855	542469	Coring Tool	0.5 feet	0	-	0.5	AC-6-A-B-0-MoDaYr	Asphalt	Physical Evaluation
AC-7	615284	542668	Coring Tool	0.5 feet	0	-	0.5	AC-7-A-B-0-MoDaYr	Asphalt	Physical Evaluation
AC-8	615013	542963	Coring Tool	0.5 feet	0	-	0.5	AC-8-A-B-0-MoDaYr	Asphalt	Physical Evaluation
AC-9	614799	542318	Coring Tool	0.5 feet	0	-	0.5	AC-9-A-B-0-MoDaYr	Asphalt	Physical Evaluation
AC-10	614757	542484	Coring Tool	0.5 feet	0	-	0.5	AC-10-A-B-0-MoDaYr	Asphalt	Physical Evaluation
AC-11	614894	542617	Coring Tool	0.5 feet	0	-	0.5	AC-11-A-B-0-MoDaYr	Asphalt	Physical Evaluation
AC-12	614758	542705	Coring Tool	0.5 feet	0	-	0.5	AC-12-A-B-0-MoDaYr	Asphalt	Physical Evaluation

Notes:
PCBs: USEPA Method 8082A
BEHP: bis(2-ethylhexyl) phthalate USEPA Method 8270C
Naphthalene: USEPA Method 8270C
B(a)A: Benzo(a) anthracene USEPA Method 8270C
B(a)P: Benzo(a) pyrene USEPA Method 8270C
White locations are primary and shaded locations are contingency
(a) If the primary samples exceed the remediation goals, the contingency sample(s) will be analyzed.

At all locations, investigators should check the log for the sample(s) being delineated to ensure that the same strata are being sampled. Sample depths should be adjusted in the field if necessary, based on lithology

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Table 3
Monitoring Well Specifications and Sampling Protocol
Hatco G000003943

Well Name	Northing	Easting	Diameter	Total Depth	Screen Depth	Drilling Method	Material Type	Purpose of Monitoring Well	Monitoring Well Sampling Protocol
MW-50R	614218	542944	4 Inch	15 feet	5-15 feet	Hollow Stem Auger or other method proposed by Licensed Well Driller	Stainless Steel	Replace MW-50S, a PVC well, with a stainless steel well which will be more compatible with the product stored in the ASTs in this area	An initial groundwater sample will be collected and analyzed for SVOCs+15 and PCBs
MW-62	614045	542934	2 Inch	15 feet	5-15 feet	Hollow Stem Auger or other method proposed by Licensed Well Driller	Stainless Steel	MW-62 will provide downgradient monitoring for the LNAPL occurrence observed at MW-50S.	An initial groundwater sample will be collected and analyzed for SVOCs+15 and PCBs
MW-63	614124	543135	2 Inch	15 feet	5-15 feet	Hollow Stem Auger or other method proposed by Licensed Well Driller	Stainless Steel	MW-63 will provide downgradient monitoring for the LNAPL occurrence observed at MW-50S.	An initial groundwater sample will be collected and analyzed for SVOCs+15 and PCBs
MW-64	614842	542320	2 or 4 Inch	13 feet	3-13 feet	Hollow Stem Auger or other method proposed by Licensed Well Driller	Stainless Steel	MW-64 will be a 4-inch diameter well installed to confirm conditions at the former X121, where LNAPL had been previously reported	This well will be gaged for product and depth to water only

Note: Coordinates are approximate and will be finalized after soil borings are completed

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Table 4. Quality Control Sample Summary Table
Sitewide Cap Pre-Design Sampling Plan
Hatco G000003943
Fords, New Jersey

Parameters	Matrix	No. of Samples	Collection Frequency	No. of Field Blanks[a]	Frequency of Field Blanks	No. of Laboratory-Blind Duplicate Samples[b]	Frequency of Laboratory-Blind Duplicate Samples	No. of MS/MSD Samples	Frequency of MS/MSD Samples	Comments
PCBs	Soil - Initial Samples	76	See Table 2	16	one per day	4	1 per 20 analyzed	4	1 per batch of 20 samples	Analyze immediately
PCBs	Soil - Contingency Samples	81	See Table 2			5	None	5	1 per batch of 20 samples	Hold
SVOCs	Soil - Initial Samples	30	See Table 1	5	one per day	2	1 per 20 analyzed	2	1 per batch of 20 samples	Analyze immediately
SVOCs	Soil - Contingency Samples	43	See Table 1			3	None	3	1 per batch of 20 samples	Hold
PCBs	Aqueous - Monitor Well Samples	3	See Table 2	1	one per day	1	1 per 20 analyzed	1	1 per batch of 20 samples	Analyze immediately
SVOCs	Aqueous - Monitor Well Samples	3	See Table 2			1	1 per 20 analyzed	1	1 per batch of 20 samples	Analyze immediately

Notes:
No trip blank samples required for matrix and analytical parameters
[a] Total number of field blanks is dependent upon the duration of the sampling event
[b] One laboratory-blind duplicate contingency sample will be collected in the field for every 20 delineation samples and held cool for possible analysis with contingency samples.
PCBs Total polychlorinated biphenyls
MS/MSD Matrix spike/matrix spike duplicate sample

L:\13067 Hatco\12.0 Preliminary Documents\5003 Sitewide Cap\2020-03-27 Revised Sitewide Cap FSP\Native Files\[Table 3 and 4 QAQC_ar.xlsx]Table 3 QC Sample Summary

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Table 5. Sample Preservation Table
Sitewide Cap Pre-Design Sampling Plan
Hatco G000003943
Fords, New Jersey

Parameters	Matrix	Sample Container	Analytical Method	Sample Preservation	Holding Time	Comments
PCBs	Soil - Initial Samples	4 oz glass	SW-846 Method 8082A	Cool to 4°C ± 2°C	14 days to extraction; 40 days from extraction to analysis	Analyzed immediately
PCBs	Soil - Contingency Samples	4 oz glass	SW-846 Method 8082A	Cool to 4°C ± 2°C	14 days to extraction; 40 days from extraction to analysis	Hold cool. Contingency samples
PCBs	Aqueous - Monitoring Well Samples	1 liter amber glass, teflon cap	SW-846 Method 8082A	Cool to 4°C ± 2°C	7 days to extraction; 40 days from extraction to analysis	Analyze immediately
SVOCs	Soil - Initial Samples	4 oz glass	SW-846 Method 8270D	Cool to 4°C ± 2°C	14 days to extraction; 40 days from extraction to analysis	Analyze immediately
SVOCs	Soil - Contingency Samples	4 oz glass	SW-846 Method 8270D	Cool to 4°C ± 2°C	14 days to extraction; 40 days from extraction to analysis	Hold cool. Contingency samples
SVOCs	Aqueous - Monitoring Well Samples	1 liter amber glass, teflon cap	SW-846 Method 8270D	Cool to < 6°C	7 days to extraction; 40 days from extraction to analysis	Analyze immediately

Notes:

PCBs Total polychlorinated biphenyls
°C Degrees centigrade
oz Ounces

L:\13067 Hatco\12.0 Preliminary Documents\5003 Sitewide Cap\2019-05-09 FSP-Rev2\[Table 3 and 4 QAQC.xlsx]Table 4 Sample Preservation

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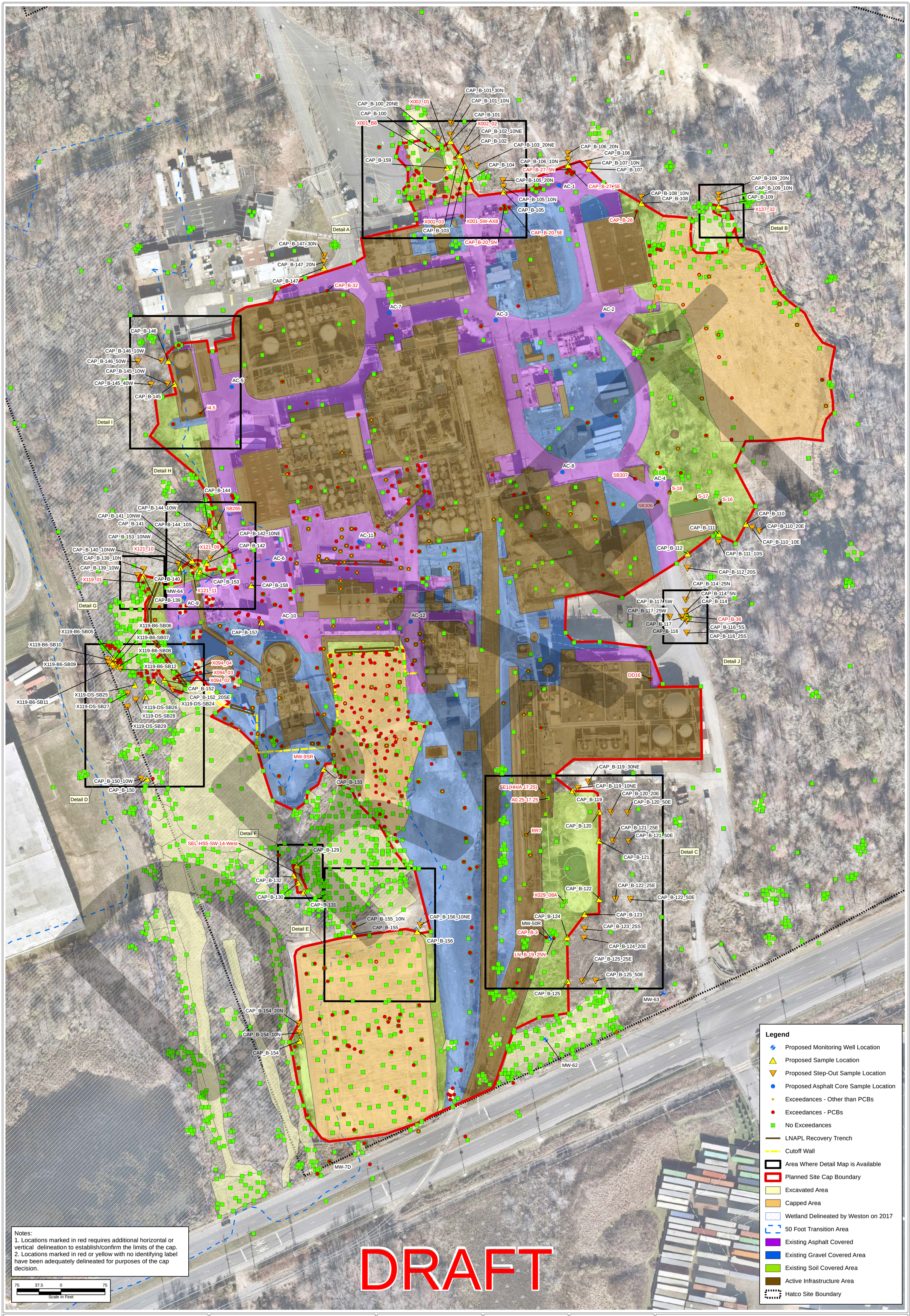

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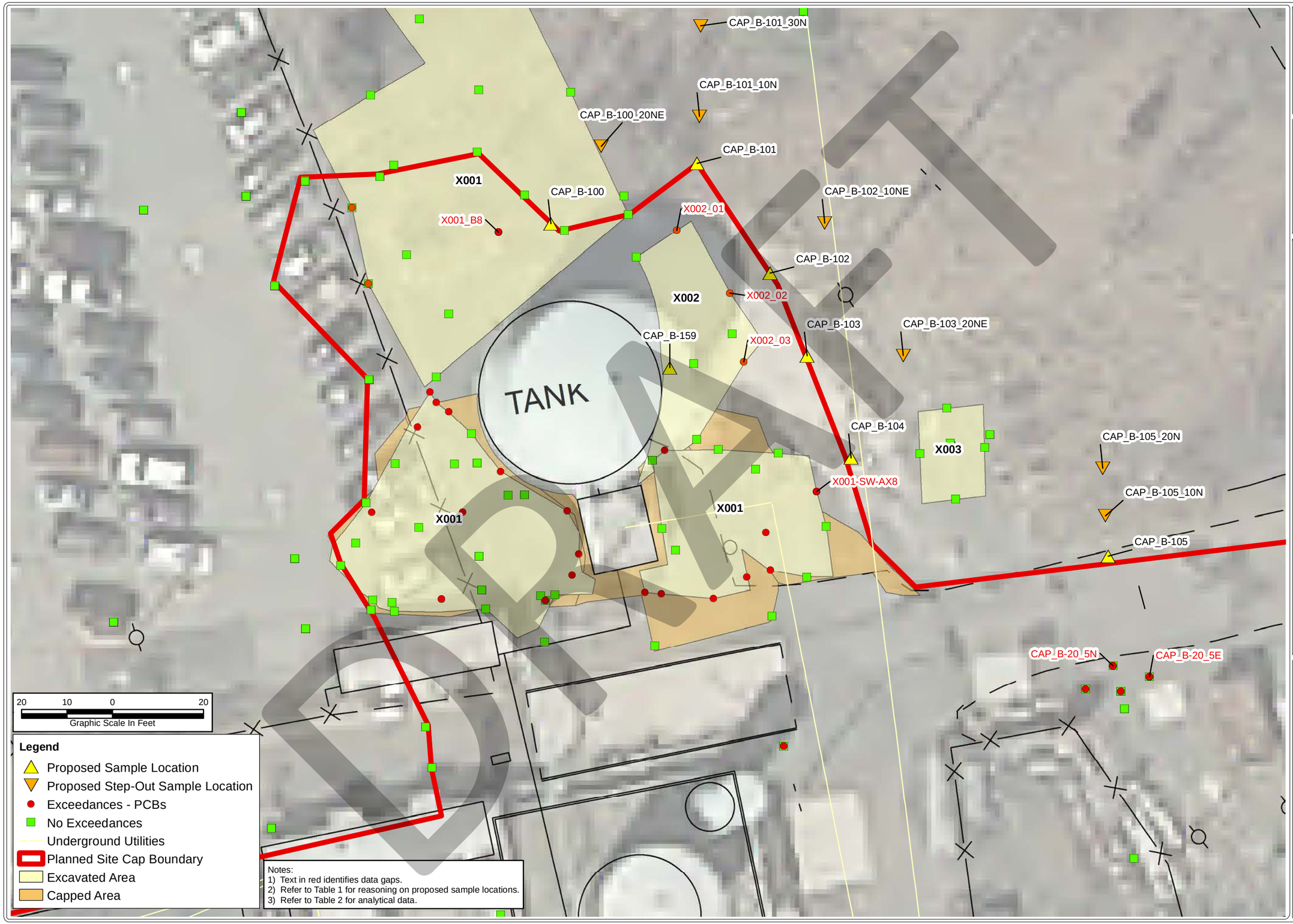
	PROJECT NAME: Hatco Remediation Project	W E	DRAWING: 25387_Hatco_Sitewide_Cap_Boundary_Outside_Samples_R3.mxd PATH: P:\Hatco\GIS\MXD\2018_11_Sitewide_Cap_Delineation\	CHECKED BY: A. McGahan
		S	REVISION No. 3	CONTRACT No. DELIVERY ORDER NO.
FIGURE: 1 / SCALE: 1" = 75' / DATE: April 2020			WORK ORDER No. 13067.001.004.5002	DRAWN/MODIFIED BY: H. Bravo-Ruiz DATE CREATED: 4/2/2020

Weston Solutions, Inc.
205 Campus Drive Edison, New Jersey 08837-3939
TEL: (732) 417-5800 Fax: (732) 417-5801
http://www.westonsolutions.com



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DRAWN BY: H. Bravo-Ruiz
REVIEWED BY: A. McGahan
PROJECT MANAGER: J. Schindler
SCALE: 1"=25'
DATE: 4/1/2020

TITLE: DETAIL A

FIGURE #: Figure 1, Detail A

DRAWING NUMBER: see path

WORK ORDER No. 13067.001.004.5002

WESTON SOLUTIONS

PROJECT: Hatco Remediation

CLIENT NAME: Hatco Corporation

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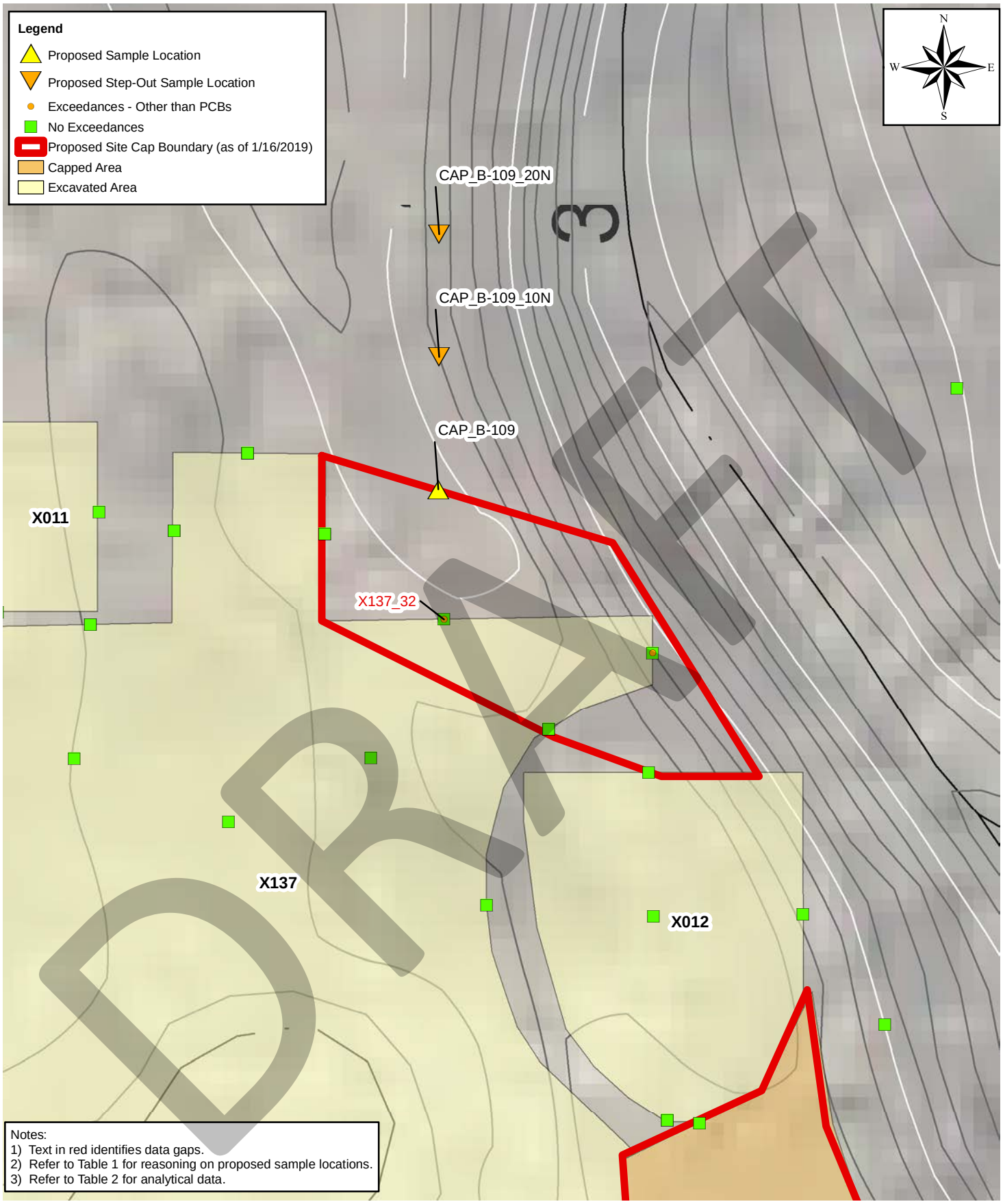


Notes:
1) Text in red identifies data gaps.
2) Refer to Table 1 for reasoning on proposed sample locations.
3) Refer to Table 2 for analytical data.

SCALE: 0 5 10 20 Feet

TITLE: DETAIL B

PROJECT: Hatco

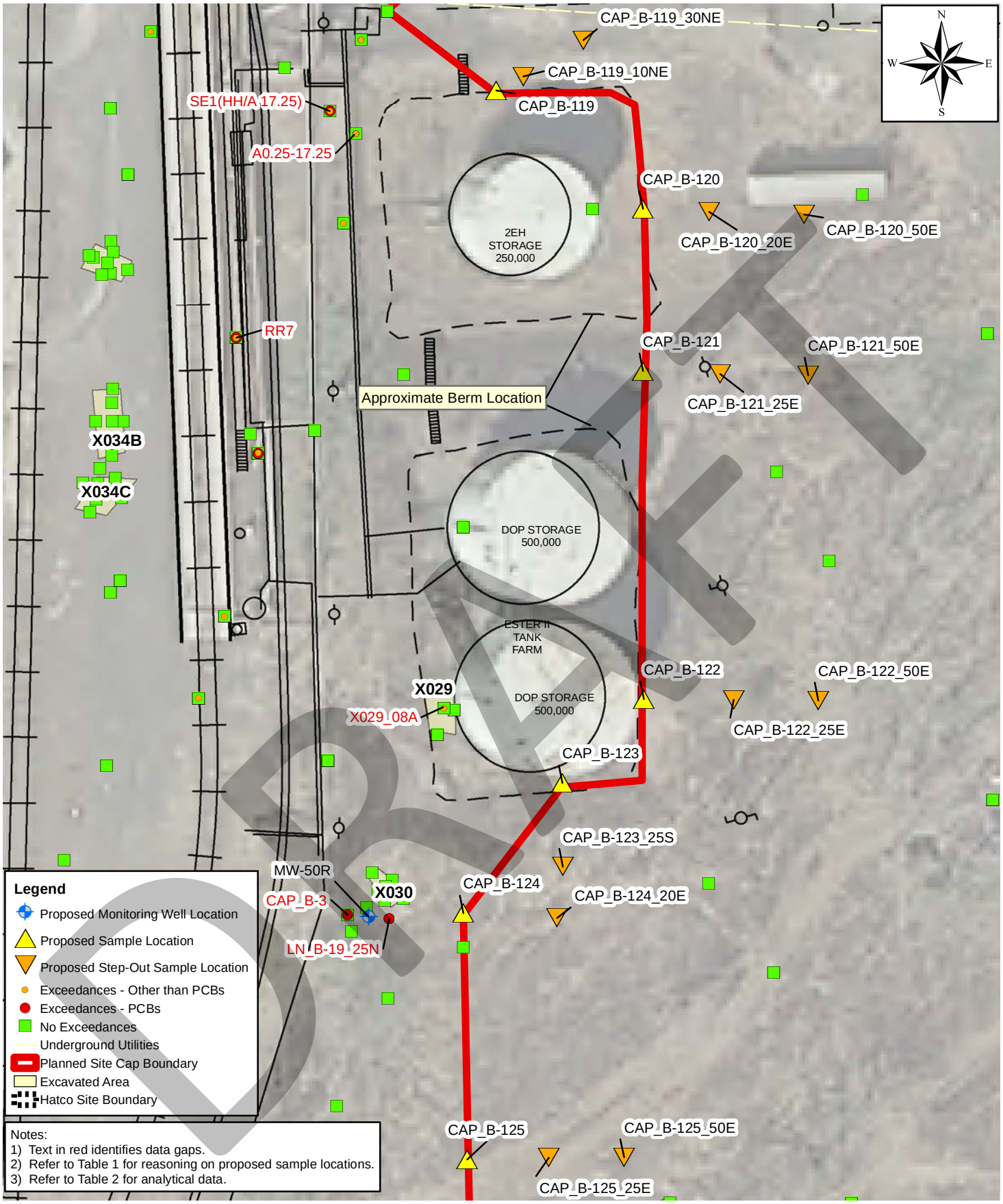
CLIENT NAME: Hatco Corporation

WESTON SOLUTIONS

DATE: 5/6/2019

FIGURE #: Figure 1, Detail B

P:\Hatco\GIS\MXD\2018_12_Cap_Outliers_Invest\23833_Site_Cap_Delineation_X137_R.mxd



SCALE:

0 20 40 80 Feet

TITLE:

DETAIL C

PROJECT:

Hatco

CLIENT NAME:

Hatco Corporation

WESTON SOLUTIONS

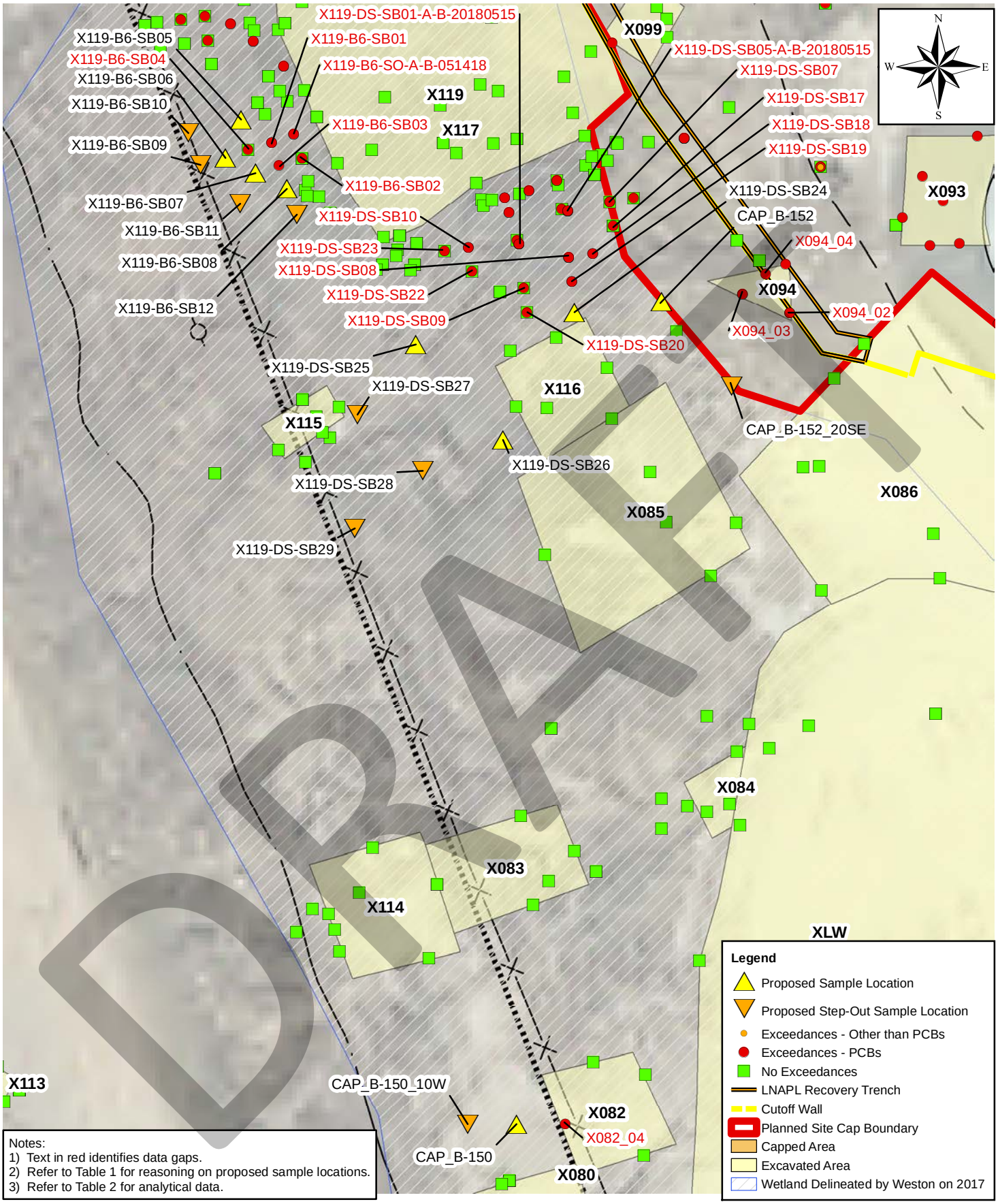
DATE:

5/6/2019

FIGURE #:

Figure 1; Detail C

P:\Hatco\GIS\MXD\2018_12_Cap_Outliers_Invest\23834_Site_Cap_X029_R.mxd



SCALE:

0 12.5 25 50 Feet

TITLE:

DETAIL D

PROJECT:

Hatco

CLIENT NAME:

Hatco Corporation

WESTON SOLUTIONS

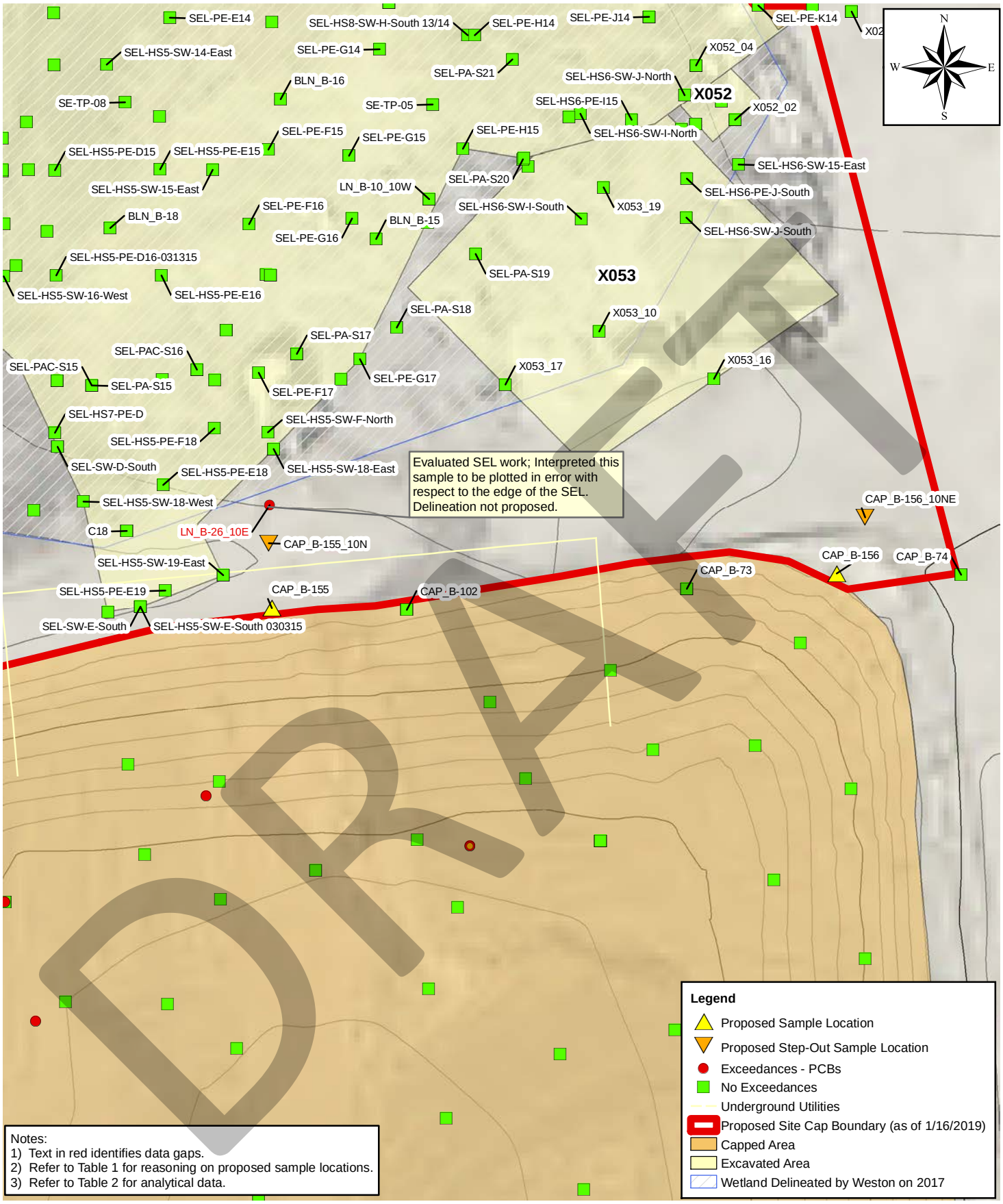
DATE:

4/1/2020

FIGURE #:

Figure 1, Detail D

P:\Hatco\GIS\MXD\2018_12_Cap_Outliers_Invest\23851_Site_Cap_West_Side.mxd



SCALE:

0 12.5 25 50 Feet

TITLE:

DETAIL E

PROJECT:

Hatco

CLIENT NAME:

Hatco Corporation

WESTON SOLUTIONS

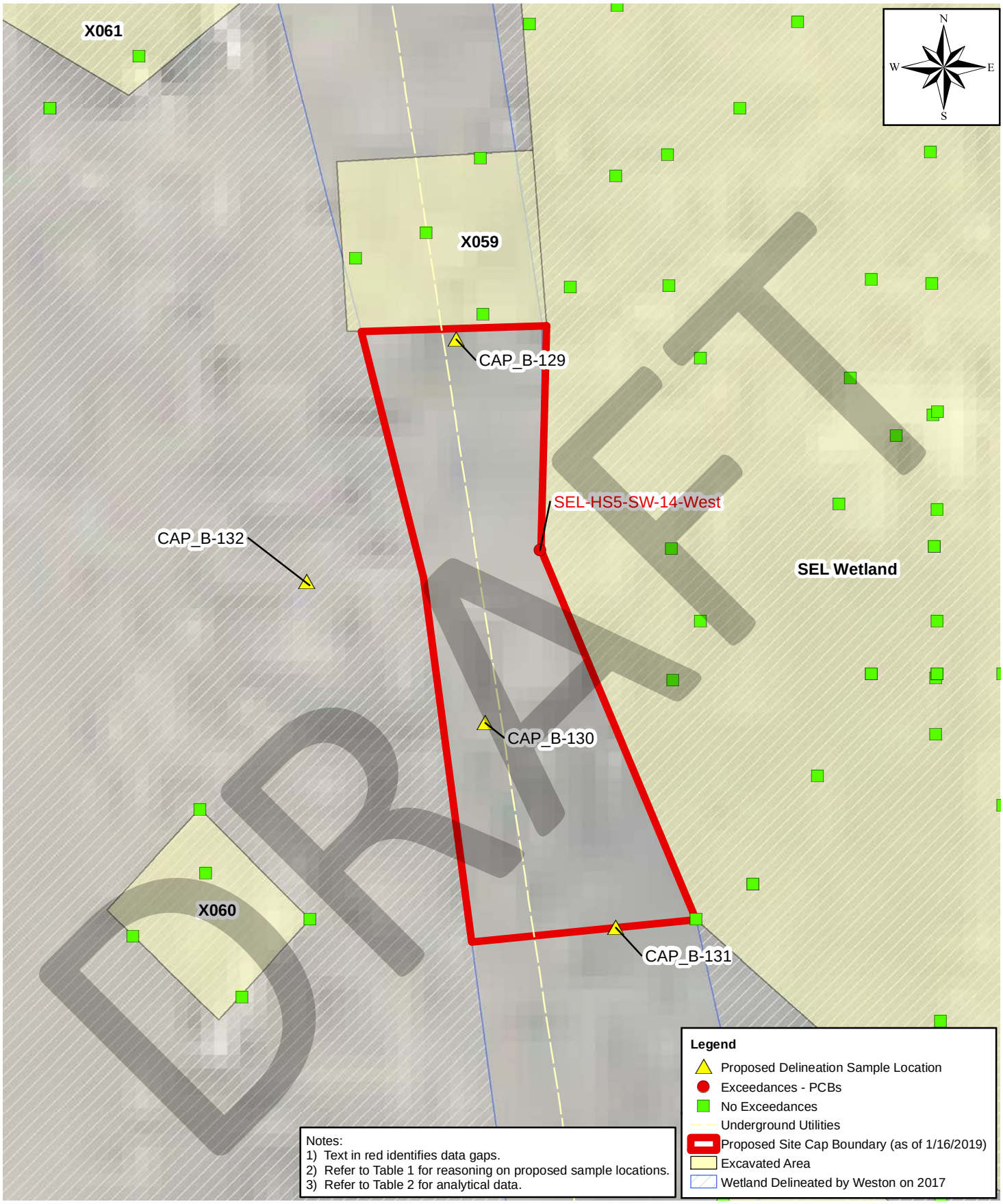
DATE:

4/1/2020

FIGURE #:

Figure 1, Detail E

P:\Hatco\GIS\MXD\2018_12_Cap_Outliers_Invest\25385_Site_Cap_Fmr_Lgn_North_R2.mxd



Notes:
1) Text in red identifies data gaps.
2) Refer to Table 1 for reasoning on proposed sample locations.
3) Refer to Table 2 for analytical data.

SCALE:
0 5 10 20 Feet

TITLE:
DETAIL F

PROJECT:
Hatco

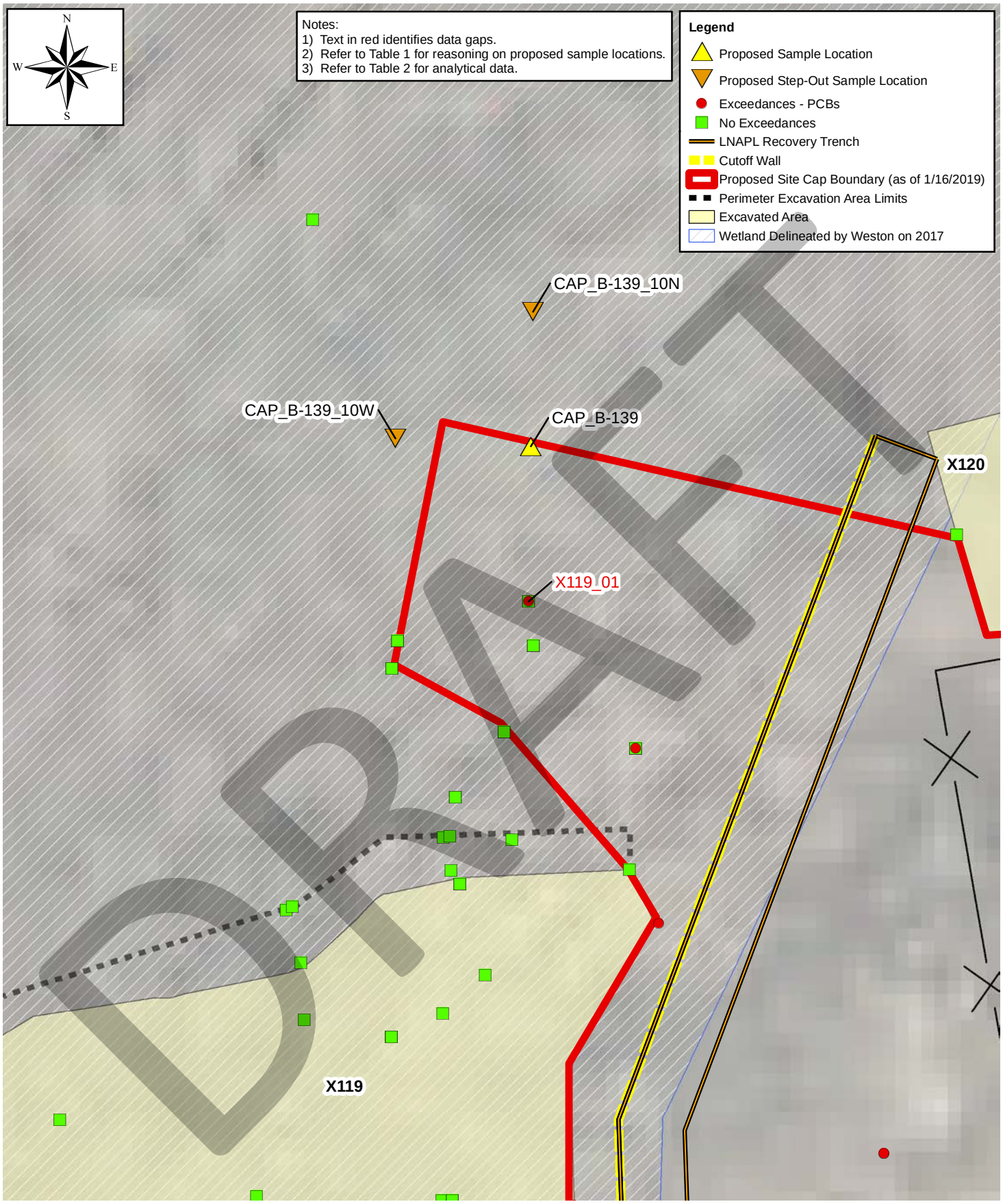
CLIENT NAME:
Hatco Corporation

WESTON SOLUTIONS

DATE:
4/1/2020

FIGURE #:
Figure 1, Detail F

P:\Hatco\GIS\MXD\2018_12_Cap_Outliers_Invest\25386_Site_Cap_SEL_HS5_SW14_R2.mxd



SCALE:

0 5 10 20 Feet

TITLE:

DETAIL G

PROJECT:

Hatco

CLIENT NAME:

Hatco Corporation

WESTON SOLUTIONS

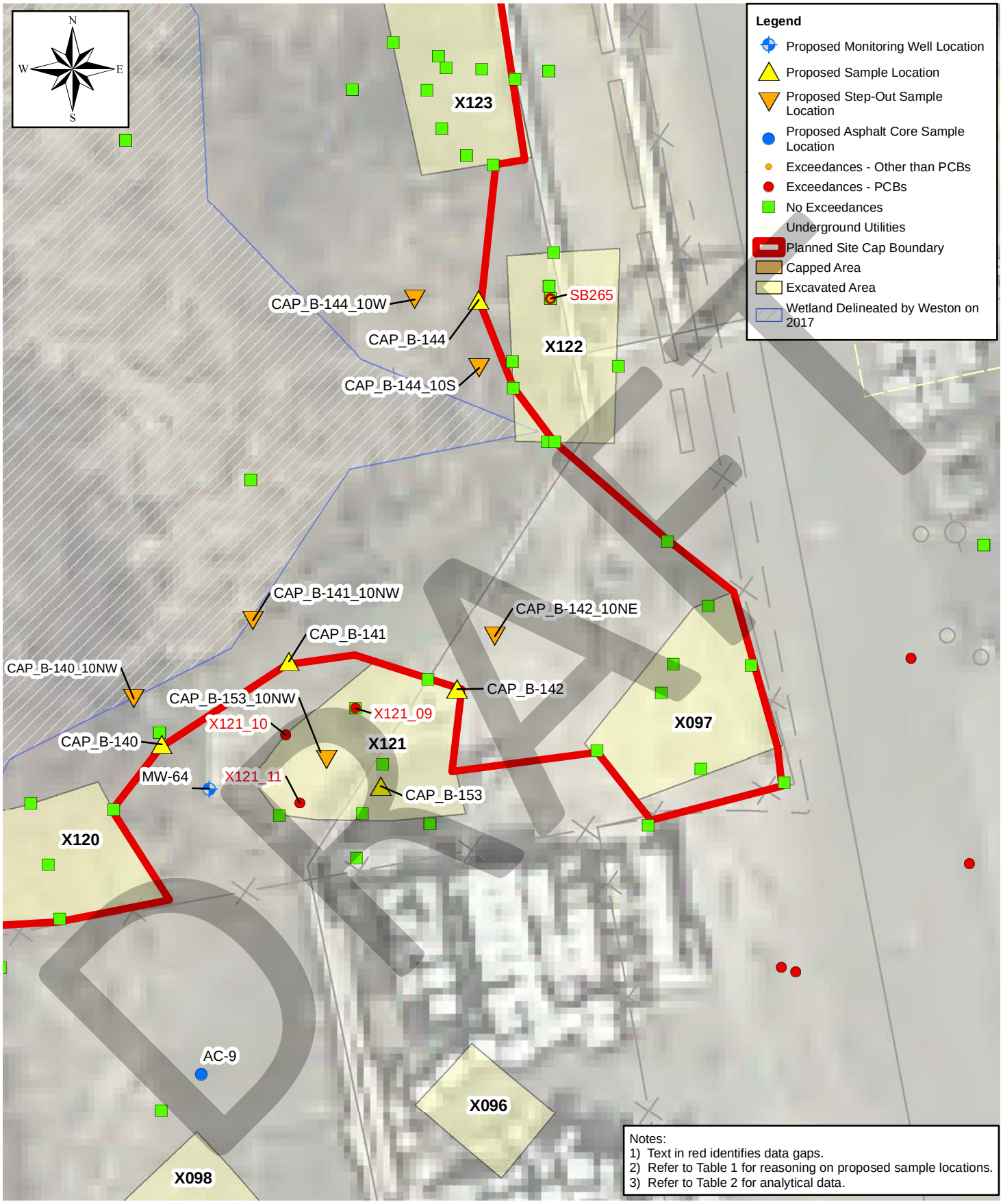
DATE:

4/1/2020

FIGURE #:

Figure 1, Detail G

P:\Hatco\GIS\MXD\2018_12_Cap_Outliers_Invest\23843_Site_Cap_X119_01_R.mxd



Notes:
1) Text in red identifies data gaps.
2) Refer to Table 1 for reasoning on proposed sample locations.
3) Refer to Table 2 for analytical data.

SCALE:
0 10 20 40 Feet

TITLE:
DETAIL H

PROJECT:
Hatco

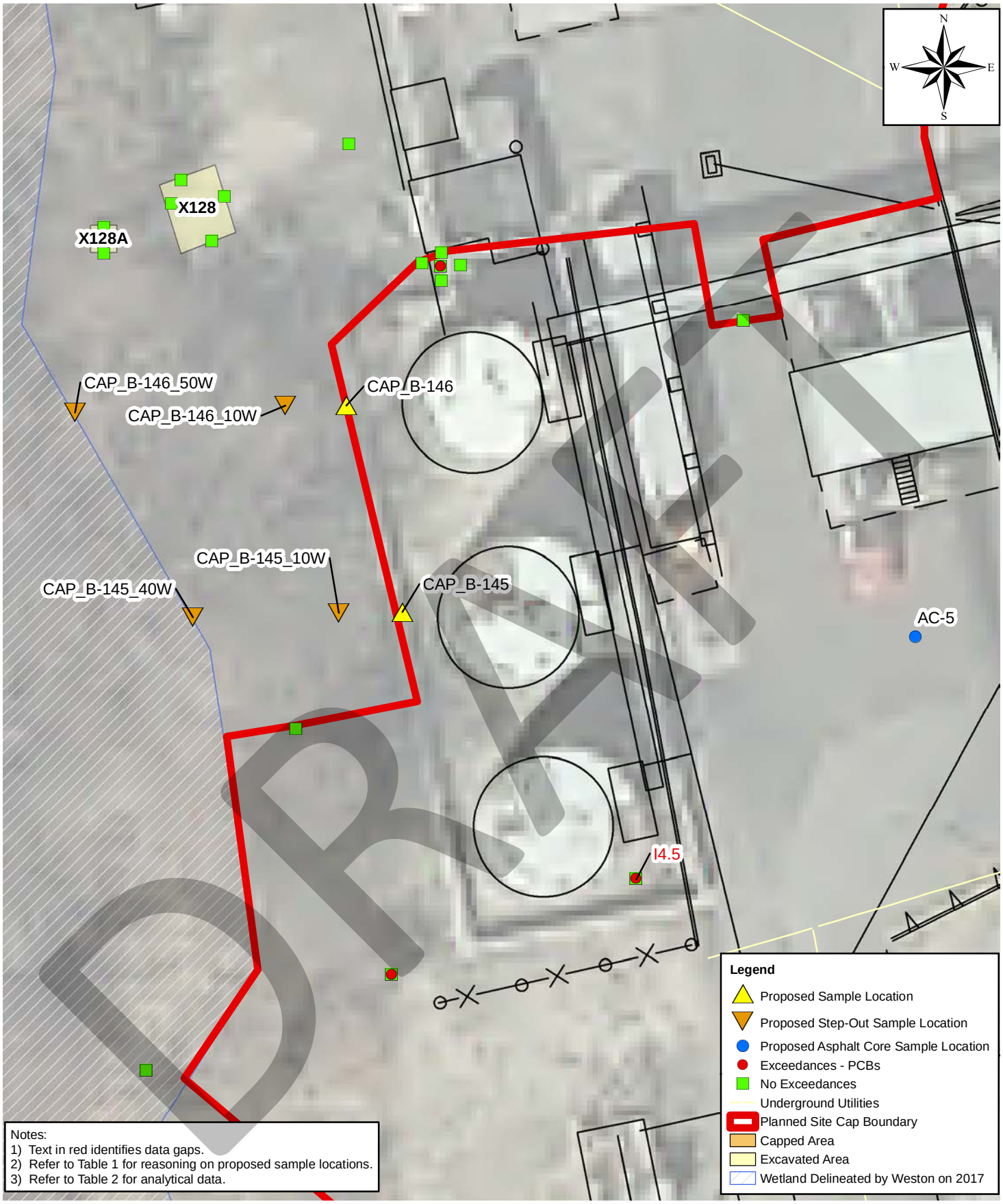
CLIENT NAME:
Hatco Corporation

WESTON SOLUTIONS

DATE:
5/6/2019

FIGURE #:
Figure 1, Detail H

P:\Hatco\GIS\MXD\2018_12_Cap_Outliers_Invest\23846_Site_Cap_LN_B22_R.mxd



SCALE:

0 12.5 25 50 Feet

TITLE:

DETAIL I

PROJECT:

Hatco

CLIENT NAME:

Hatco Corporation

WESTON SOLUTIONS

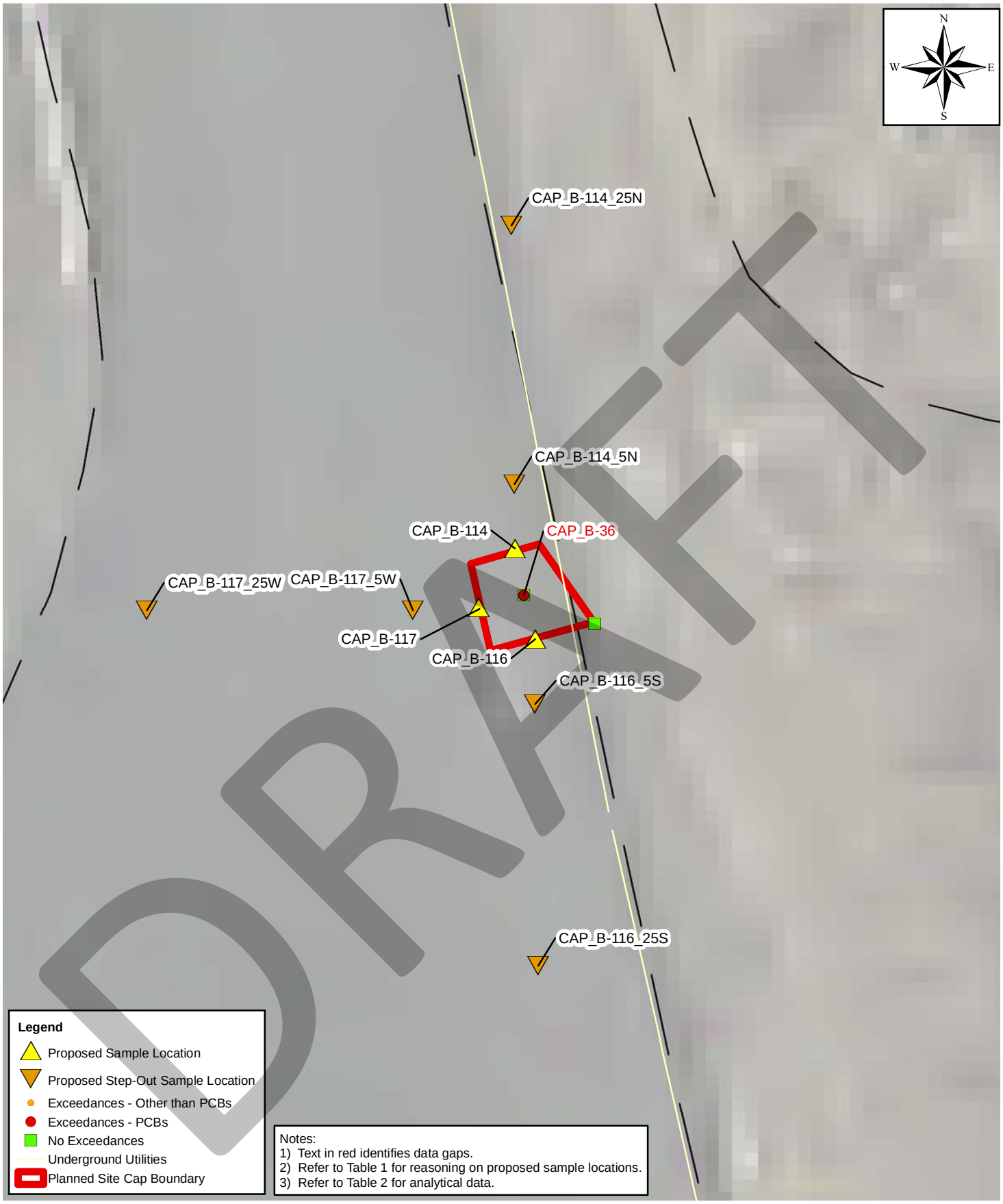
DATE:

5/6/2019

FIGURE #:

Figure 1; Detail I

P:\Hatco\GIS\MXD\2018_12_Cap_Outliers_Invest\23849_Site_Cap_NW_Corner_R.mxd



SCALE:

0 5 10 20 Feet

TITLE:

DETAIL J

PROJECT:

Hatco

CLIENT NAME:

Hatco Corporation

WESTON SOLUTIONS

DATE:

5/6/2019

FIGURE #:

Figure 1, Detail J

P:\Hatco\GIS\MXD\2018_12_Cap_Outliers_Invest\23850_Site_Cap_Samp_B-36_R.mxd

Appendix A

DRAFT

Dan Raviv Associates, Inc.
57 E. Willow Street Millburn, NJ 07041

SOIL BORING REPORT

BORING NO. B15

SHEET NO. 1 OF 1

PROJECT NAME: Hatco
PROJECT NO.: 86C289F(RT)

LOCATION: Fords, New Jersey
CONTRACTOR: James C Anderson

START DATE: 8/28/92
FINISH DATE: 8/28/92
DRILLER: Jan Urban
DRAI GEOL. Rebecca Hollender

SAMPLER TYPE: Split spoon
INSIDE DIAMETER (IN.): 2
HAMMER WEIGHT (LB): 140
HAMMER FALL (IN.): 30

RIG TYPE: B-57
BIT TYPE: 6" hollow stem auger
DEPTH TO WATER: ~5.5'
TOTAL DEPTH DRILLED: 12'

DEPTH FROM GRADE (FEET)	SAMPLER BLOWS PER 6 IN.	SAMPLE DESIGNATION	RECOVERY (INCHES)	HNu (ppm)	LITHOLOGIC CLASSIFICATION AND COMMENTS
	12				Black and gray sandy clay.
1	15		15"	3-5	
	16	B15/1.5-2'			
2	13				
3					
4		B15/4'			
	7				Black-stained, sandy clay.
5	7		18"	50-70	
	15				
6	14	B15/6'			Black-stained, with whitish streaks, medium- to coarse-grain sand with some clay. Wet.
	4				
7	4		18"	30-50	
	7				
8	8	B15/8'			
	4				
9	4		24"	20-30 peaked at 50	
	4				
10	19	B15/10'			
	3				
11	2		20"	5-10	
	4				
12	4				Black-brown clay.
					BOE @ 12'

DR832262

DRAFT

WCR-5

DRAI 4/92

205 Campus Drive
Edison, NJ 08837
Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: BLN_B-22

Project: Hatco

Client: Hatco Corporation
Borehole Completed As: BLN_B-22
Project Location: Hatco, NJ
Date Completed: 5/16/2007
Total Depth (ft bgs): 12
Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			
Depth (ft bgs)	Symbol (USCS)	Description USCS Burmister	Recovery (ft)	PID/OVM (ppm)	Analytical Sample	Comments
		Ground Surface				
0		***Interval 1*** Fill: Soil-Rubble Mixed fill.			0 - 0.5 0.5 - 1 1 - 1.5 1.5 - 2 2 - 2.5	
1						
2			4/4			
3		***Interval 2*** Light Gray fine SAND, little Silt (Saturated)				Top of LNAPL
4						
5						
6			4/4			
7						
		Interval 3 Light Pale Gray CLAY and SILT, trace medium Sand (Moist)			7.5 - 8 8 - 8.5	Bottom of LNAPL
8		***Interval 4*** Light Yellowish Brown fine SAND, some Silt and Clay (Moist)				
9		***Interval 5*** Light Gray coarse to fine SAND (Moist)				
10			2/4			
11						
12		End of Borehole				
13						
14						

Drilling Subcontractor: ECDI
Northing (NAD 83): 614549.767
Drilling Method: Geoprobe
Easting (NAD 83): 542547.365
Sampling Method: Macro-Core
Depth to Watertable (ft bgs): 4.6

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205 Campus Drive
Edison, NJ 08837
Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: CAP_B-3

Project: Hatco

Client: Hatco Corporation
Borehole Completed As: CAP_B-3
Project Location: Hatco, NJ
Date Completed: 5/24/2007
Total Depth (ft bgs): 3
Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			
Depth (ft bgs)	Symbol (USCS)	Description USCS Burmister	Recovery (ft)	PID/OVM (ppm)	Analytical Sample	Comments
		Ground Surface				
0		***Interval 1*** Fill: Soil Mixed fill with debris, 2in. of top soil.			0 - 0.5	
1			2.5/3		1.5 - 2	
2		***Interval 2*** Gray Silty CLAY (Moist)				
3		End of Borehole				
4						

Drilling Subcontractor: ECDI
Northing (NAD 83): 614218.6
Drilling Method: Geoprobe
Easting (NAD 83): 542935.707
Sampling Method: Macro-Core
Depth to Watertable (ft bgs): NA

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205 Campus Drive
Edison, NJ 08837
Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: CAP_B-20

Project: Hatco

Client: Hatco Corporation

Borehole Completed As: CAP_B-20

Project Location: Hatco, NJ

Date Completed: 5/23/2007

Total Depth (ft bgs): 2.5

Geologist/Logger: Brendan Grimm

SUBSURFACE PROFILE			SAMPLE			
Depth (ft bgs)	Symbol (USCS)	Description USCS Burmister	Recovery (ft)	PID/OVM (ppm)	Analytical Sample	Comments
		Ground Surface				
0		***Interval 1*** Gray GRAVEL,NA Sand			0 - 0.5	
		Interval 2 Reddish Brown medium SAND, little Silt, little Gravel (Moist) (FirmFirm)				
1		***Interval 3*** Gray Silty CLAY, little Gravel (Moist)	2.5/2.5		1.5 - 2	
2						
		End of Borehole				
3						

Drilling Subcontractor: ECDI

Northing (NAD 83): 615465.903

Drilling Method: Geoprobe

Easting (NAD 83): 542869.831

Sampling Method: Macro-Core

Depth to Watertable (ft bgs): NA

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205 Campus Drive
Edison, NJ 08837
Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: CAP_B-26

Project: Hatco

Client: Hatco Corporation
Borehole Completed As: CAP_B-26
Project Location: Hatco, NJ
Date Completed: 5/23/2007
Total Depth (ft bgs): 3
Geologist/Logger: Brendan Grimm

SUBSURFACE PROFILE			SAMPLE			
Depth (ft bgs)	Symbol (USCS)	Description USCS Burmister	Recovery (ft)	PID/OVM (ppm)	Analytical Sample	Comments
0		Ground Surface				
		Interval 1			0 - 0.5	
		FINE/ COURSE GRAVEL				
		Interval 2 Fill: Soil (Moist)				
1						
			2.5/3		1.5 - 2	
2						
3		End of Borehole				
4						

Drilling Subcontractor: ECDI
Northing (NAD 83): 615456.495
Drilling Method: Geoprobe
Easting (NAD 83): 543089.454
Sampling Method: Macro-Core
Depth to Watertable (ft bgs): NA

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205 Campus Drive
Edison, NJ 08837
Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: CAP_B-27

Project: Hatco

Client: Hatco Corporation

Borehole Completed As: CAP_B-27

Project Location: Hatco, NJ

Date Completed:

Total Depth (ft bgs):

Geologist/Logger:

SUBSURFACE PROFILE			SAMPLE			
Depth (ft bgs)	Symbol (USCS)	Description USCS Burmister	Recovery (ft)	PID/OVM (ppm)	Analytical Sample	Comments
0		Ground Surface				
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						

Drilling Subcontractor:

Northing (NAD 83): 615525.253

Drilling Method:

Easting (NAD 83): 542976.766

Sampling Method:

Depth to Watertable (ft bgs):

DRAFT

205 Campus Drive
Edison, NJ 08837
Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: CAP_B-31

Project: Hatco

Client: Hatco Corporation
Borehole Completed As: CAP_B-31
Project Location: Hatco, NJ
Date Completed: 5/22/2007
Total Depth (ft bgs): 2
Geologist/Logger: Brendan Grimm

SUBSURFACE PROFILE			SAMPLE			
Depth (ft bgs)	Symbol (USCS)	Description USCS Burmister	Recovery (ft)	PID/OVM (ppm)	Analytical Sample	Comments
		Ground Surface				
0		***Interval 1*** Greyish Brown SILT and CLAY, little fine Sand course gravel			0 - 0.5	
		Interval 2 Brown medium to fine SAND, some Silt (Moist) trace debris. at 1 ft unusual odor				
1			2/2			
					1.5 - 2	
2		End of Borehole				
3						

Drilling Subcontractor: ECDI
Northing (NAD 83): 615523.909
Drilling Method: Geoprobe
Easting (NAD 83): 542762.842
Sampling Method: Macro-Core
Depth to Watertable (ft bgs): NA

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205 Campus Drive
Edison, NJ 08837
Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: CAP_B-32

Project: Hatco

Client: Hatco Corporation
Borehole Completed As: CAP_B-32
Project Location: Hatco, NJ
Date Completed: 5/23/2007
Total Depth (ft bgs): 6
Geologist/Logger: Brendan Grimm

SUBSURFACE PROFILE			SAMPLE			
Depth (ft bgs)	Symbol (USCS)	Description USCS Burmister	Recovery (ft)	PID/OVM (ppm)	Analytical Sample	Comments
0		Ground Surface				
		Interval 1 Fill: Soil FINE/COURSE GRAVEL			0 - 0.5	
		Interval 2 Brownish Gray SILT and CLAY, and medium Sand, trace Gravel (Moist)				
1			1.5/3		1.5 - 2	
2						
3						
4			1/3			
5						
6		End of Borehole				
7						

Drilling Subcontractor: ECDI
Northing (NAD 83): 615321.172
Drilling Method: Geoprobe
Easting (NAD 83): 542561.995
Sampling Method: Macro-Core
Depth to Watertable (ft bgs): NA

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205 Campus Drive
Edison, NJ 08837
Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: CAP_B-36

Project: Hatco

Client: Hatco Corporation

Borehole Completed As: CAP_B-36

Project Location: Hatco, NJ

Date Completed: 8/8/2007

Total Depth (ft bgs):

Geologist/Logger:

SUBSURFACE PROFILE			SAMPLE			
Depth (ft bgs)	Symbol (USCS)	Description USCS Burmister	Recovery (ft)	PID/OVM (ppm)	Analytical Sample	Comments
0		Ground Surface				
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						

Drilling Subcontractor:

Northing (NAD 83): 614766.398

Drilling Method:

Easting (NAD 83): 543174.163

Sampling Method:

Depth to Watertable (ft bgs):

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205 Campus Drive
Edison, NJ 08837
Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: LN_B-19_25N

Project: Hatco

Client: Hatco Corporation
Borehole Completed As: LN_B-19_25N
Project Location: Hatco, NJ
Date Completed: 5/3/2007
Total Depth (ft bgs): 16
Geologist/Logger: Ray Jicha

SUBSURFACE PROFILE			SAMPLE			
Depth (ft bgs)	Symbol (USCS)	Description USCS Burmister	Recovery (ft)	PID/OVM (ppm)	Analytical Sample	Comments
0		Ground Surface				NO LNAPL
		Interval 1 Fill: Soil-Rubble				
1						
2			4/4			
3						
4						
5						
6		***Interval 2*** Brown coarse to fine SAND, little Silt (Moist)	3.5/4			
		Interval 3 Dark Gray CLAY and SILT, little fine Sand (Saturated)				
7						
8					8.5 - 9	
9						
10			4/4			
11		***Interval 4*** Light Gray coarse to fine SAND, trace Silt, little Gravel (Saturated)				
12		***Interval 5*** Light Gray coarse to fine SAND (Saturated) COLOR CHANGES TO PALE BROWN AT BOTTOM FOOT OF SLEEVE.				
13						
14			3.5/4			
15						
16		End of Borehole				
17						

Drilling Subcontractor: ECDI
Northing (NAD 83): 614217.427
Drilling Method: Geoprobe
Easting (NAD 83): 542948.34
Sampling Method: Macro-core
Depth to Watertable (ft bgs): 8.3

DRAFT

Project: Hatco Corporation Site Project Location: Fords, New Jersey Project Number: 4706E04695.00	Log of Boring SB265 Sheet 1 of 1

Date(s) Drilled	3/26/98	Coordinates	N 614,917 E 542,371	Logged By	S. Krone / K. Condon
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	4.25-inch-ID auger	Checked By	R. Wintermute
Drill Rig Type	Mobile B-53 ATV (rubber-tired)	Drilling Contractor	CT&E (B. Petley)	Total Depth of Borehole	14.0 ft
Sampling Method	2-inch-OD split spoon	Water Level(s)	6.5 ft BGS ATD	Surface Elevation	33.8 ft MSL 1983/88 NAVD
Hammer Weight/Drop	140 lbs / 30 inches	Borehole Completion	Tremie-grouted to surface		

Elevation (feet)	Downhole Depth (feet)	Type	Laboratory Sample Number	Recovery (inches)	Blows per 6 inches	Headspace PID (ppm)	Ambient PID (ppm)	Contaminant Zones	Graphic Log	MATERIAL DESCRIPTION	REMARKS
	0			10	17 20 10 8	1.1	1.0			(SP-SM) medium dense, brown, f. SAND, some silt, trace f. gravel; concrete, coal [Fill]	
				1	3 3 2 2	1.2	0.9			(SM) loose, brown, silty, f. SAND, trace f. gravel [Fill]	
30										with red brick, coal, black sludge	
	5			10	3 3 6 4	1.1	0.9				
			SB265-4								Sample collected at 1405 (Phth, PCB, TCLP)
				18	2 1 1 1	0.7	0.7			(SC) very loose to loose, wet, brown, clayey, f. SAND, trace silt, trace f.-c. gravel	
25				15	2 2 3 2	0.7	0.7				
			SB265-8							(CL) medium stiff, gray, f. sandy CLAY, trace root mat; mixed with black sludge	Sample collected at 1420 (PCB)
	10			10	2 4 6 14	0.6	0.6				
										(SM) medium dense, black, silty, f. SAND	
					22 22 12 14	0.6	0.6			(SP) dense, gray, c. SAND, trace f.-m. sand, trace clay	
20			SB265-12								Sample collected at 1440 (PCB)
										End of Boring at 14 feet	
	15										
15											
	20										
10											
	25										

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ENV 3N GRACEHAT.GPJ WAYNE.GDT 3/28/01

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205 Campus Drive
Edison, NJ 08837
Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: X029-08A

Project: Hatco Remediation

Client: Hatco Corporation
Borehole Completed As: X029-08A
Project Location: Hatco Remediation, NJ
Date Completed: 9/8/2014
Total Depth (ft bgs): 50
Geologist/Logger: L. Tagger

SUBSURFACE PROFILE			SAMPLE			
Depth (ft bgs)	Symbol (USCS)	Description USCS Burmister	Recovery (ft)	PID/OVM (ppm)	Analytical Sample	Comments
		Ground Surface				
0		(0-2') Light olive brown, SILT and fine SAND, little Clay, medium dense, wet.		0.0		
1				0.0		
2		(2-3') Light olive brown, fine to medium SAND, medium dense, wet.	3	92 91		Slight staining and odors from 2 to 3' bgs.
3		(3-5') No Recovery.		0.0 0.0		
4				0.0		
5		(5-5.5') Light olive brown, fine to medium SAND, medium dense, wet.				
6		(5.5-6') Dark trayish brown, SILT and fine SAND, little Clay, soft.		0.0		
7		(6-9') Grayish brown to dark gray, fine to medium SAND, medium dense, wet.	4	0.0 0.0		
8				28 17	X	Staining and odors from 8 to 9' bgs. Sample X029-08A-AQ-AS-0 collected from 8 to 9' bgs.
9		(9-10') No Recovery.		0.0 0.0		
10		(10-12') Gray, medium SAND, medium dense, wet.			X	Sample X029-08A-AU-AW-0 collected from 10 to 11' bgs.
11				0.0		
12		(12-13') Very dark grayish brown, fine to medium SAND, trace Silt, medium dense, wet.	5	0.0 0.0		
13		(13-14') Light brownish gray, fine SAND, dense, wet.		0.0		
14		(14-15') Light olive brown, fine to medium SAND and CLAY, dense, wet.				
15		(15-16') Gray, fine to medium SAND, medium dense, wet.		0.0 0.0		
16		(16-16.5') Dark gray, fine SAND and CLAY, dense, wet.	5	0.0		
17		(16.5-18') Light grayish brown, fine SAND, dense, wet.		0.0		
18		(18-20') Dark gray, fine SAND, trace Clay, medium dense, wet.		0.0		
19		(20-23') Dark gray, Fine SAND, trace Clay, medium dense, wet.		0.0 0.0		
20			5	0.0		
21		(23-25') Dark gray, fine SAND, some medium Sand, little Clay, medium dense. wet.		0.0		
22				0.0		
23						
24						

Drilling Subcontractor: Advanced Drilling
Northing (NAD 83): 0
Drilling Method: Geoprobe
Easting (NAD 83): 0
Sampling Method: Grab
Depth to Watertable (ft bgs): 0.0'

DRAFT

205 Campus Drive
Edison, NJ 08837
Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: X029-08A

Project: Hatco Remediation

Client: Hatco Corporation
Borehole Completed As: X029-08A
Project Location: Hatco Remediation, NJ
Date Completed: 9/8/2014
Total Depth (ft bgs): 50
Geologist/Logger: L. Tagger

SUBSURFACE PROFILE			SAMPLE			
Depth (ft bgs)	Symbol (USCS)	Description USCS Burmister	Recovery (ft)	PID/OVM (ppm)	Analytical Sample	Comments
25						
		(25-26') Dark gray, fine coarse SAND, loose, wet.				
26		(26-27') Light brownish gray, fine SAND and CLAY, dense, wet.		0.0		
27		(27-30') Light brownish gray, fine SAND, medium dense, wet.	5	0.0		
28				0.0		
29				0.0		
30		(30-35') Light brownish gray, fine to medium SAND, medium dense, wet.				
31				0.0		
32				0.0		
33			5	0.0		
34				0.0		
35		(35-38.5') Light brownish gray, fine to medium SAND, medium dense, wet.		0.0		
36				0.0		
37			5	0.0		
38				0.0		
39		(38.5-39') Light brown, fine SAND, medium dense, wet.		0.0		
40		(39.5-40') Very dark gray, coarse SAND, medium dense, wet.				
41		(40-41') Dark gray, fine to coarse SAND, wet.		0.0	X	Sample X029-08A-DG-DI-0 collected from 41 to 42' bgs.
42		(41-42') Very dark grayish brown, fine SAND and SILT, trace Clay, dense, wet.		0.0		
43		(42-43') Grayish brown, SILT and CLAY, little coarse Sand, dense, wet.	5	0.0		
44		(43-45') Gray, medium to coarse SAND.		0.0		
45		(45-49') Gray, fine to medium SAND, trace coarse SAND, dense, wet.				
46				0.0		
47				0.0		
48			5	0.0		

Drilling Subcontractor: Advanced Drilling
Northing (NAD 83): 0
Drilling Method: Geoprobe
Easting (NAD 83): 0
Sampling Method: Grab
Depth to Watertable (ft bgs): 0.0'

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205 Campus Drive
Edison, NJ 08837
Phone: (732) 417-5800
Fax: (732) 417-5801

Log of Borehole: X029-08A

Project: Hatco Remediation

Client: Hatco Corporation
Borehole Completed As: X029-08A
Project Location: Hatco Remediation, NJ
Date Completed: 9/8/2014
Total Depth (ft bgs): 50
Geologist/Logger: L. Tagger

SUBSURFACE PROFILE			SAMPLE			
Depth (ft bgs)	Symbol (USCS)	Description USCS Burmister	Recovery (ft)	PID/OVM (ppm)	Analytical Sample	Comments
				0.0		
49				0.0		
		(49-50') Gray, medium to coarse SAND, some fine Sand, medium dense, wet.				
50		End of Borehole				
51						
52						
53						
54						
55						
56						
57						
58						
59						
60						
61						
62						
63						
64						
65						
66						
67						
68						
69						
70						
71						
72						

Drilling Subcontractor: Advanced Drilling
Northing (NAD 83): 0
Drilling Method: Geoprobe
Easting (NAD 83): 0
Sampling Method: Grab
Depth to Watertable (ft bgs): 0.0'

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Dan Raviv Associates, Inc.
57 E. Willow Street Millburn, NJ 07041

SOIL BORING REPORT

BORING NO. I 4.5

SHEET NO. 1 OF 1

PROJECT NAME: Hatco
PROJECT NO.: 86C289F(RT)

LOCATION: Fords, New Jersey
CONTRACTOR: James C. Anderson

START DATE: 8-26-92
FINISH DATE: 8-26-92
DRILLER: Jon Urban
DRAI GEOL: Rebecca Hollender

SAMPLER TYPE: Split Spoon
INSIDE DIAMETER (IN.): 2
HAMMER WEIGHT (LB): 140
HAMMER FALL (IN.): 30

RIG TYPE: B-57
BIT TYPE: 6" hollow stem auger
DEPTH TO WATER: —
TOTAL DEPTH DRILLED: 6'

DEPTH FROM GRADE (FEET)	SAMPLER BLOWS PER 6 IN.	SAMPLE DESIGNATION	RECOVERY (INCHES)	HNu (ppm)	LITHOLOGIC CLASSIFICATION AND COMMENTS
1					Traprock and fill.
2	6	I4.5/1.5-2'	17"	1-2ppm	Gray-green to reddish-gray clay with fine-grain sand and silt.
	11				
3	12				
	35				
4					
	3	I4.5/4'	12"	<1ppm	Tan-brown, medium-to fine-grain sand with clay.
5	6				
	13				
6	15				
					BOE @ 6'

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WCR-5

Dan Raviv Associates, Inc. West Orange, N.J. DETAILED DRILL LOG	PROJECT NAME Hatco	TEST HOLE NUMBER MW 9S
	PROJECT/JOB NUMBER 86C289	SHEET 1 of 2
DRILLING COMPANY Moretrench American	SITE	LOCATION Fords, NJ
NAME of DRILLER Martin Pepper	LOGGED BY: AL / CHECKED BY:	ELEVATION
DRILL MANUFACTURER AND MODEL NUMBER Mobile Drill B57	DEPTH TO GROUNDWATER/DATE 3' 11/17/87	ORIENTATION Vertical
SIZE AND TYPE OF BIT (S) 12" Dia. Hollow Stem Augers	TOTAL DEPTH OF HOLE 18' / TOTAL CORE RECOVERY	DATE STARTED 11/17/87 / DATE COMPLETED 11/18/87

Depth Elev.	Drilling & Sampling	Recovery (Ft)	Lenght % / R.Q.D.	Lenght (Ft) Stratum (Ft)	Water Tests		REMARKS (Drill Time, Water Loss, Weathering etc.)	Depth Elev.	Graphic Log	CLASSIFICATION OF MATERIALS (DESCRIPTION)
	4 SS 28 20 22						Type #2 Cement Grout from 0-1' Bentonite Pellets from 1-2'			Clay - 0-1' gray-green fill material. Red Clay - 1-2', hard, some gravel, fill. Silty Sand: 2-2½', brown some silt and cobbles. Fine Sand: gray 2½-3½'
2	11 SS 13 13 13							2		
4	2 SS 4 6 5						H_2O @ ~4'	4		Medium grained Sand: 3½'-24'8", lt. gray, wet, well sorted, w/ petroleum odor?, some fine sand, tr clay and gravel, some Coarse sand, decreasing strength of odor w/ increasing depths
6	3 SS 4 4 7						Type #1 Sand from 2-17.3'	6		
8							Screen from 2.3-17.3' - PVC casing from 2.3-2.7' above ground surface (Sch 40, slot 20)	8		
10	6 SS 17 35 61						4" PVC w/screw in bottom plug	10		
12								12		
14	5 SS 8 16 35						Protective steel casing w/ locking cap from ~2-3' above ground surface.	14		
16	6 SS 7 30 39							16		
18	11 SS 35 58 57							18		
20	5 SS 18 38 43							20		
22	2 SS 13 46 47							22		

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Dan Raviv Associates, Inc. West Orange, N.J. DETAILED DRILL LOG	PROJECT NAME Hatco	TEST HOLE NUMBER MW 75
	PROJECT/JOB NUMBER 86C289	SHEET 2 of 2
DRILLING COMPANY Moretrench American	SITE	LOCATION Fords, NJ
NAME of DRILLER Martin Pepper	LOGGED BY: AL / CHECKED BY:	ELEVATION
DRILL MANUFACTURER AND MODEL NUMBER Mobile Drill B57	DEPTH TO GROUNDWATER/DATE 3' 11/17/87	ORIENTATION Vertical
SIZE AND TYPE OF BIT (S) 12" Dia. Hollow Stem Auger	TOTAL DEPTH OF HOLE 18' / TOTAL CORE RECOVERY	DATE STARTED 11/17/87 / DATE COMPLETED 11/18/87

Depth Elev.	Drilling & Sampling	Recovery (ft)	Rmks % RQD	Longest (ft) Standard Int.	Water Tests		REMARKS (Drill Time, Water Loss, Weatherling etc.)	Depth Elev.	Graphic Log	CLASSIFICATION OF MATERIALS (DESCRIPTION)
	3 55 10 25 42									Silty Clay: blue-gray 75% Clay, 25% Sand
25								25		
27								27		
29								29		
30								30		

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Appendix B

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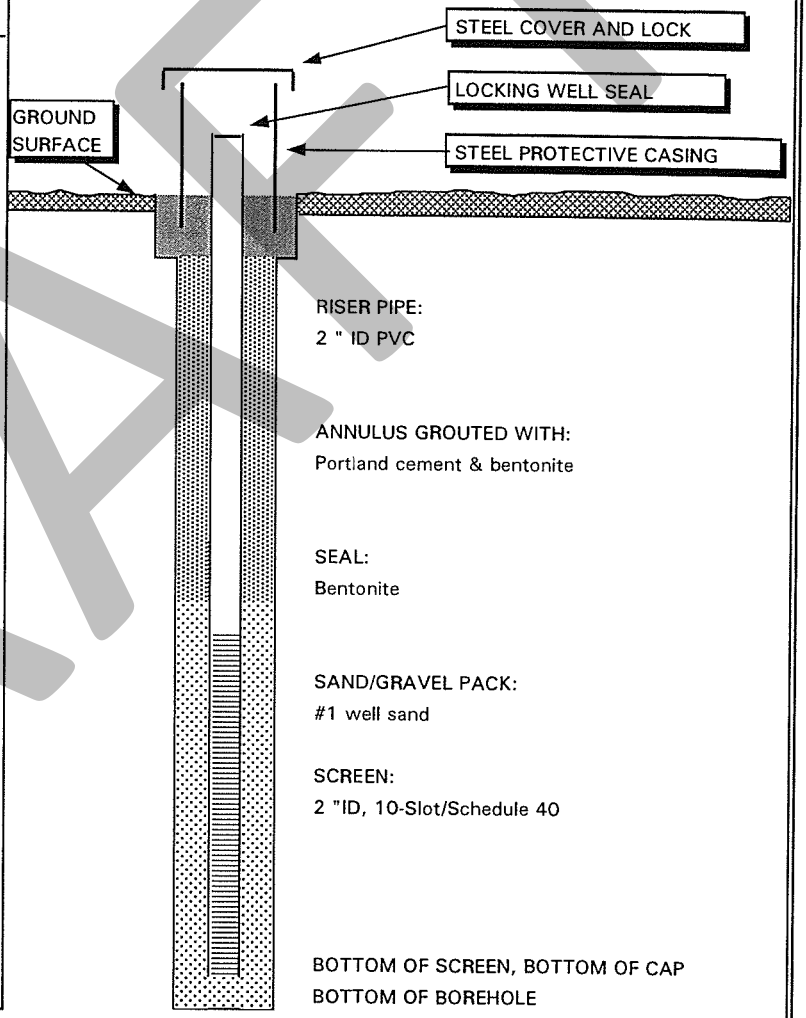
URS GREINER WOODWARD-CLYDE

CONSTRUCTION OF MONITORING WELL NO. MW-50S

Project name and number GRACE/HATCO 6E04695		***NJDEPE well permit No.*** 2649014	***Elevation datum*** NAVD 88 (MSL)
Drilling company CT&E		***Surveyor*** Paul J. Emilius, Jr.	***Ground elevation*** 23.78 ft
Date and time of completion 03/25/1998		***Northing*** 614218.3	***Top of protective steel casing elevation*** 26.34 ft
Inspector S.Krone/K.Condon		***Easting*** 542944.2	***Top of riser pipe elevation*** 26.29 ft

	KEY	ELEVATIONS (ft above Mean Sea Level)	DEPTHS (ft below ground, not to scale)
A = Top of Protective Casing	A	26.34	-2.56
B = Top of Riser	B	26.29	-2.51
C = Ground Surface	C	23.78	0
D = Top of Sand Pack	D	22.28	1.5
E = Top of Screen	E	20.78	3
F = Bottom of Screen	F	10.78	13
G = Bottom of Borehole	G	10.78	13



RISER PIPE:
2 " ID PVC

ANNULUS GROUTED WITH:
Portland cement & bentonite

SEAL:
Bentonite

SAND/GRAVEL PACK:
#1 well sand

SCREEN:
2 "ID, 10-Slot/Schedule 40

BOTTOM OF SCREEN, BOTTOM OF CAP
BOTTOM OF BOREHOLE

DIAMETER OF BOREHOLE: 6"

REMARKS (Installation, development) :

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MONITORING WELL CERTIFICATION - FORM A - AS-BUILT CERTIFICATION

Name of Owner: Hatco Chemical Corp.

Name of Facility: same

Location: King Georges Post Rd., Fords, NJ 08863

UST Registration No.: _____ BUST case No.: ____ - ____ - ____ - _____

CERTIFICATION

Well Permit Number: _2_6_ - _4_ 9_0_ - _14_

Owner's Well Number: MW-50S

Well Completion Date: 3/25/98

Lithologic Log: Attach

Distance from Top of Casing (cap off) to ground surface (one-hundredth of a foot):	- 2.51 ft.
Total Depth of Well to the nearest 1/2 foot:	13.0 ft.
Depth to Top of Screen (or Top of Open Hole) From Top of Casing (one-hundredth of a foot):	5.51 ft.
Screen Length (or length of open hole) in feet:	10 ft.
Screen or Slot Size:	0.01 in.
Screen or Slot Material:	PVC
Casing Material: (PVC, Steel or Other-Specify):	PVC
Casing Diameter (inches):	2 in.
Static Water Level From Top of Casing at the Time of Installation (one-hundredth of a foot):	10.46 ft.
Yield (gallons per minute):	0.6 gpm
Development Technique (specify):	Centrifugal Pump
Length of Time Well is Developed/Pumped or Bailed:	1 Hours 0 Minutes

Authentication

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Technical Certification:

K.D. Seborowski — Name (Type or Print)

Signature

AR 1030 — Certification or License No.

Seal

Certification by Executive Officer or Duly Authorized Representative:

GEORGE LEAHY — Name (Type or Print)

Signature

3/29/01 — Date

Title: VICE PRESIDENT

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THIS FORM MUST BE COMPLETED BY THE PERMITTEE OR HIS/HER AGENT

GROUND WATER MONITORING WELL CERTIFICATION - FORM B - LOCATION CERTIFICATION

Name of Permittee: Hatco Chemical Corp.
Name of Facility: same
Location: King Georges Post Road, Fords, NJ 08863
NJPDES Number: 0051551

LAND SURVEYOR'S CERTIFICATION

Well Permit Number (As assigned by NJDEP's Bureau of Water Allocation): 26 - 49014 -
This number must be permanently affixed to the well casing.
Datum NAD 1983 NAVD 88
Longitude (one-tenth of a second) West 74°19' 1.91"
Latitude (one-tenth of a second): North 40°31' 10.34"
North 614218.3
East 542944.2
Elevation of Top of Casing (cap off) (one-hundredth of a foot): WC = 26.34 I/C = 26.29 GR 23.78
Owners Well Number (As shown on application or plans): MW-50S

BENCHMARK - KV0961 **ELEVATION** - 101.01
GEOGRAPHIC POSITION - 74°18'15"
40°27'37"
DATE OF SURVEY - 11/9/98

AUTHENTICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

PROFESSIONAL LAND SURVEYOR'S SIGNATURE

Paul J. Emilius, Jr.
PROFESSIONAL LAND SURVEYOR'S NAME
(Please print or type)

SEAL

New Jersey P.L.S. License No. 37186
PROFESSIONAL LAND SURVEYOR'S LICENSE #

The Department reserves the right in cases of violation of permit specified ground water limits or Ground Water Quality Standards (N.J.A.C. 7:9-6.1 et seq.) to require that wells be resurveyed to an accuracy of one-hundredth of a second latitude and longitude. This shall not be considered to be a major modification of the N.J.P.D.E.S. permit.

form-b.doc3181

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Project: Hatco Corporation Site Project Location: Fords, New Jersey Project Number: 4706E04695.00	Log of Boring SB214/MW50S Sheet 1 of 1

Date(s) Drilled	3/25/98	Coordinates	N 614,244 E 542,977	Logged By	S. Krone / K. Condon
Drilling Method	Hollow-Stem Auger	Drill Bit Size/Type	4.25-inch-ID auger	Checked By	R. Wintermute
Drill Rig Type	Mobile B-53 ATV (rubber-tired)	Drilling Contractor	CT&E (B. Petley)	Total Depth of Borehole	13.0 ft
Sampling Method	2-inch-OD split spoon	Water Level(s)	7.5 ft BGS ATD; 7.95 ft BGS at completion	Surface Elevation	29.0 ft MSL 1983/88 NAVD
Hammer Weight/Drop	140 lbs / 30 inches	Borehole Completion	2-inch-dia. Schedule 40 PVC monitoring well, 10-slot screen set at 3-13 ft, bentonite seal 0-1.5 ft		

Elevation (feet)	Downhole Depth (feet)	Type	Laboratory Sample Number	Recovery (inches)	Blows per 6 inches	Headspace PID (ppm)	Ambient PID (ppm)	Contaminant Zones	Graphic Log	MATERIAL DESCRIPTION	REMARKS
	0			19	9, 11, 14, 9	1.1	1.0			(SM) medium dense, brown, silty, f. SAND, some gravel; coal, roots, brick [Fill]	
				19	9, 11, 13, 14	4.0	1.0				
25										(SM) medium dense, brown, silty SAND; mixed with dry, black sludge	
	5		SB214-4	10	6, 6, 10, 8	3.9	1.0				Sample collected at 1230 (Phth)
				12	5, 6, 5, 5	1.9	1.0			becomes loose, wet	
20				NR	4, 2, 2, 2	–	1.0				
	10		SB214-10	19	4, 9, 15, 21	1.1	1.0			becomes predominantly brown and black, spongy sludge	Sample collected at 1300 (Phth, PCB)
15										**End of Boring at 13 feet**	
	15									Boring was sampled to 12 feet, then drilled out to 13 feet to set well. Monitoring well was installed; 10-slot Schedule 40 PVC screen set at 3-13 feet. Depth to water measured at 7.95 feet BGS at completion of well (1330).	
10											
	20										
5											
25											

Woodward-Clyde

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ENV 3N GRAPHHAT GPJ WAYNE GDT 3/28/01

Appendix C

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EXAMPLE: PROJECT COMMUNICATION FORM

Client Name:

Project Name: ***Project Number:***

Project Manager: ***Contact info:***

Field Manager:

***Sample Matrix*:** ☐ Ground Water ☐ Surface water ☐ Soil ☐ Sediment ☐ Drinking water

☐ Air (☐ Indoor ☐ Sub-slab ☐ Ambient)

☐ Other.

DKQP Analyses/Methods:

☐ VOC 8260B ☐ VOC 8260C ☐ Aromatics 8260B ☐ Aromatics 8260C

☐ Halocarbons 8260 ☐ Pesticides 8081A ☐ Pesticides 8081B

☐ PCBs 8082 ☐ PCBs 8082A ☐ PAH 8270C ☐ PAH 8270D

☐ SVOC 8270C ☐ SVOC 8270D ☐ 524.2 ☐ TO-15 ☐ LLTO-15

☐ TO-17 ☐ NJDEP EPH

☐ 6010B Metals ☐ 6010C Metals ☐ 6020 Metals ☐ 6020A Metals

☐Total CN 9010C ☐ Total CN 9013 ☐ Total CN 9014 ☐ Total CN 9012B

☐ Hex Chrome 7196A ☐ Hex Chrome 7199

☐ Mercury 7471B ☐ Mercury 7470A

☐Other tests: _____

_____.

TAT Required: Standard: Other:

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Constituents of Concern: Please *note any known or suspected contaminants in high concentrations or any non-standard analytes not contained in routine target lists (see notes).*

Regulatory Criteria:

☐ Soil Remediation Standards (Residential Direct Contact);

☐ Soil Remediation Standards (Nonresidential Direct Contact);

☐ Default Impact to Ground Water Soil Screening Levels;

☐ Default Leachate Criteria for Class II Ground Water (SPLP);

☐ Specific Ground Water Quality Criteria;

☐ Surface Water Quality Criteria;

☐ Maximum Contaminant Level (MCL) for State Regulated VOCs;

☐ Vapor Intrusion Ground Water Screening Level;

☐ Vapor Intrusion Residential Indoor Air Screening Level;

☐ Vapor Intrusion Nonresidential Indoor Air Screening Level;

☐ NJDEP Action Levels for Indoor Air;

☐ Vapor Intrusion NJ Department of Health Notification Levels;

☐ Extractable petroleum Hydrocarbons;

☐ Hexavalent Chromium Cleanup Criterion;

☐ Ecological Screening Criteria;

☐ Other: _____

Quality Control Requirements: *Indicate if your project will have Project specific field quality control samples. Check all that apply. Also specify if special QA/QC site requirements exist: i.e., QAPP.*

☐ Matrix Spike ☐ Matrix Spike Dup ☐ Trip Blank(s) ☐ Sample Duplicate

☐ Other Field QC

☐ Project QAPP (send appropriate section(s) to lab)

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Data Deliverables Requirements: *Indicate the data deliverable type submitted:*

☐ Full deliverables ☐ Reduced deliverables ☐ Paper copy included

☐ Excel Spreadsheet ☐ HAZSITE Electronic Deliverables ☐ TO-15 Unit Conversion Table

☐ Other:_____

Expected Sampling Date(s): *Indicate expected number of sampling events or duration*

Total Number of Samples and Expected Sample Load Per Day: *(indicate number of each matrix if applicable)*

Sample Pick Up: ☐ Office(s) ☐ Site (address) ☐ Other

Special Instructions:

☐ Report TICs

☐ Project-specific analyte list

☐ Project-specific criteria

☐ Historically elevated concentrations of target analytes

☐ Multi-day sampling event

Notes:

There are standard target analytes for organic analysis. Refer to the methods for a list of specific compounds. If a contaminant of concern is not contained on the target list of a method, it is important that the laboratory know this prior to sampling. Prior notification will allow the laboratory to obtain standards and perform necessary instrument calibration to insure proper identification and quantification. ***If requesting non-routine compounds that have no regulatory criteria, indicate required reporting limit for each compound.***

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DATA OF KNOWN QUALITY CONFORMANCE/NON-CONFORMANCE SUMMARY QUESTIONNAIRE

Laboratory Name: ***Client:***

Project Location: ***Project Number:***

Laboratory Sample ID(s): ***Sampling Date(s):***

List DKQP Methods Used (e.g., 8260, 8270, et cetera)

1	For each analytical method referenced in this laboratory report package, were all specified QA/QC performance criteria followed, including the requirement to explain any criteria falling outside of acceptable guidelines, as specified in the NJDEP Data of Known Quality performance standards?	□Yes □ No
1A	Were the method specified handling, preservation, and holding time requirements met?	□Yes □ No
1B	*EPH Method*: Was the EPH method conducted without significant modifications (see Section 11.3 of respective DKQ methods)	□Yes □ No □N/A
2	Were all samples received by the laboratory in a condition consistent with that described on the associated chain-of-custody document(s)?	□Yes □ No
3	Were samples received at an appropriate temperature (4±2° C)?	□Yes □ No □N/A
4	Were all QA/QC performance criteria specified in the NJDEP DKQP standards achieved?	□Yes □ No
5	a) Were reporting limits specified or referenced on the chain-of-custody or communicated to the laboratory prior to sample receipt? b) Were these reporting limits met?	□Yes □ No □Yes □ No □ NA
6	For each analytical method referenced in this laboratory report package, were results reported for all constituents identified in the method-specific analyte lists presented in the DKQP documents and/or site-specific QAPP?	□Yes □ No
7	Are project-specific matrix spikes and/or laboratory duplicates included in this data set?	□Yes □ No

Notes: For all questions to which the response was "No" (with the exception of question #7), additional information should be provided in an attached narrative. If the answer to question #1, #1A, or #1B is "No", the data package does not meet the requirements for "Data of Known Quality."

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