

**SITE INVESTIGATION REPORT/REMEDIAL INVESTIGATION REPORT/
AND REMEDIAL ACTION WORKPLAN
FOR
FORMER UNIVERSITY MEDICAL CENTER AT PRINCETON
253 WITHERSPOON STREET; PORTION OF BLOCK 21.02, LOT 1
PRINCETON, MERCER COUNTY, NEW JERSEY
SRP PI # 011700, CASE # 15-09-09-1706-55**

Prepared for:

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For Submission to:

New Jersey Department of Environmental Protection
Bureau of Case Assignment and Initial Notice
Site Remediation Program
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September 21, 2015

1. INTRODUCTION

EcolSciences, Inc. was retained by Avalon Princeton, LLC to prepare this *Site Investigation Report/Remedial Investigation Report/Initial Remedial Action Workplan* (SIR/RIR/RAW) to address Reworked Site Material (as defined in Section 1.1 below) that was found to contain low concentrations of certain contaminants at the former University Medical Center at Princeton (SRP PI# 011700, Case # 15-09-09-1706-55), 253 Witherspoon Street, Princeton, Mercer County, New Jersey (“Site”), and referenced as Block 21.02, Lot 1. This SIR/RIR/RAW was prepared in accordance with the New Jersey Department of Environmental Protection (NJDEP) *Technical Requirements for Site Remediation (N.J.A.C. 7:26E)* dated July 1, 2013, and applicable NJDEP guidance for the Reworked Site Material Area of Concern (“AOC”).

1.1 Summary

The 5.63-acre Site is located at the intersection of Franklin Avenue and Witherspoon Street. Prior to closure of the facility, the Site was improved with a 308-bed acute care hospital operating as the University Medical Center at Princeton (“Hospital”). This facility included four hospital wings and a power plant, with a detached multi-level parking garage north of the Site. In 2014, EcolSciences oversaw the removal and closure of six regulated underground storage tanks (Incident # 14-05-22-1548-10), and an unrestricted use Response Action Outcome was issued for these tanks (six AOCs) on January 19, 2015.

With the exception of a portion of a parking garage that is present on the Site (the remainder of the parking garage is present on a separate lot), the structures at the Site were decommissioned and then demolished in 2014 and 2015. Masonry material (concrete and brick) generated from the former structures and site improvements was crushed and included with other site materials (sub-base beneath foundations, walkways, and roadways, site soils, a limited amount of pavement) for re-use on site (“Reworked Site Materials”). In addition, surplus Reworked Site Materials were stockpiled for offsite disposal.

1.2 General Reporting Requirements (N.J.A.C. 7:26E-1.6)

Avalon Princeton, LLC retained Peter Hansen of EcolSciences, Inc. as the Licensed Site Remediation Professional (LSRP #575775) on September 21, 2015 to evaluate the Reworked Site Material (AOC-1), to propose a remedy, to document the findings of that remediation, and to issue a regulatory approval (i.e. Response Action Outcome) for this AOC. The Case Inventory Document and original NJDEP forms certified by the Person Responsible for Conducting the Remediation and the LSRP that are applicable to this report are attached to the cover letter accompanying this report, with electronic copies included in Attachment A. Forms submitted in this report include the

Cover/Certification form, Preliminary Assessment/Site Investigation form, Remedial Investigation Report form, Remedial Action Workplan form, Receptor Evaluation form, and Alternate Remedy/Remedial Action Pre-Approval form. The job-specific Quality Assurance Project Plan (QAPP) is presented in Attachment B.

All sampling data (with the exception of waste characterization data) collected by EcolSciences has been submitted electronically in a summary table using the format outlined in the Site Remediation Program's "Electronic Data Interchange Manual." Copies of all sampling data and the Electronic Data Submission Application (EDSA) confirmation emails are provided electronically as Attachment C. The EDSA submissions are cataloged in the NJDEP SRP database as HZ171550.

Horizontal data points are reported in New Jersey state plane coordinates using North American Datum of 1983 (NAD 1983); vertical data points are reported as depth below ground surface, and in mean sea level using the North American Vertical Datum of 1988 (NAVD 1988). Locational data points for all samples collected for the remedial investigation are provided in Table 1. A Geographic Information System (GIS)-compatible site plan, including the site boundaries and the location of all areas of concern as polygons, is provided in Figure 2 and on the disc accompanying this report.

1.3 Regulatory Timeframes

Pursuant to N.J.A.C. 7:26C-1.7(b), the NJDEP hotline was called on September 9, 2015, and Case Tracking Number 15-09-09-1706-55 (SRP PI# 011700) was recorded for the site. September 9, 2015 is the applicable date for initiation of remediation pursuant to N.J.A.C. 7:26C-2.2. This date is used as the NJDEP "trigger date" for regulatory and mandatory timeframes.

Pursuant to N.J.A.C. 7:26C-1.7(d), a Confirmed Discharge Notification form is required within 14 days from the trigger date (i.e. September 22, 2015). The Confirmed Discharge Notification was submitted to NJDEP on September 11, 2015.

N.J.A.C. 7:26C-2.3(a)2, requires that a Licensed Site Remediation Professional (LSRP) shall be retained, and notification provided to NJDEP. Peter Hansen (LSRP # 585775) of EcolSciences, Inc. was retained as the LSRP for this AOC. The LSRP Retention Form was submitted to NJDEP on September 21, 2015.

Pursuant to N.J.A.C. 7:26C-4.3(a)3, the initial Annual Remediation Fee and form are required. The initial Annual Remediation Fee information was submitted to NJDEP on September 21, 2015.

Pursuant to N.J.A.C. 7:26E-1.12, an initial receptor evaluation is required with the submission of a Remedial Investigation Report, or no later than one year after the trigger date (i.e. September 8, 2016), with a mandatory reporting date of September 8, 2017 (N.J.A.C. 7:26C-3.3(a)2). The initial receptor evaluation is presented in Section 3.4.

Pursuant to N.J.A.C. 7:26E-4.10(a)3.ii, the submission of a site investigation and remedial investigation report is required within three years of the trigger date (i.e. September 8, 2018), with a mandatory reporting date of September 8, 2020 (N.J.A.C. 7:26C-3.3(a)5). The Site Investigation/Remedial Investigation Report is presented in Section 3.

The submission of this SIR/RIR/RAW in September 2015 complies with the applicable timeframes.

2. **SITE DESCRIPTION**

The following sections describe the environmental setting of the Site at the time of building demolition. The USGS regional site location and the proposed Site layout/AOC map are presented in Figures 1 and 2, respectively.

2.1 **Regional Location**

The location of the Site is as follows:

- **County** – Mercer County, New Jersey
- **Street Address, Block & Lot** – The Site, located at 253 Witherspoon Street, is approximately 5.63 acres in size and consists of a portion of Block 21.02, Lot 1. A portion of a parking garage is located on this parcel (with the remainder of the parking garage located on a separate lot); however, the parking garage is not part of the Site addressed in this report.

2.2 **Physical Features**

The physical features of the Site, including a brief description of the onsite improvements and exterior grounds, are summarized below:

- **Structures** – The Site is currently under construction with footings, foundations, and the majority of sub-grade utilities installed for the future residential buildings.
- **Grounds** – The Site consists of an active construction site.
- **Current Operations** – The Site is currently under construction for a proposed residential development.
- **Topography** – The Site is characterized by gently sloping topography with elevations ranging between approximately 180 feet above Mean Sea Level (MSL) within the southeast corner of the Site to approximately 155 feet MSL in the northwest corner of the Site.

2.3 **Environmental Setting**

The following environmental evaluation describes both the regional and site-specific environmental conditions of the site. Site topography is defined, regional and site-specific geology and hydrogeology are presented, and regional and site-specific hydrology is discussed.

2.3.1 Topography

The Site is characterized by gently sloping topography with elevations ranging between approximately 180 feet above Mean Sea Level (MSL) within the southeast corner of the Site to approximately 155 feet MSL in the northwest corner of the Site.

2.3.2 Soils

According to the Soil Survey of Mercer County, prepared by the United States Department of Agriculture (Natural Resource Conservation Service: 1972), soils on the Site and across the local region are classified as Ct-Cut and fill land, stratified substratum. Slopes range from 0 to 6 percent. The permeability ranges from moderate to slow, depending on the density of the rock, the slope of the bedding planes, and the degree to which the rock has been shattered. The Site soils consist of zero to seven feet of Reworked Site Material underlain by native material comprised of brown silty sand and some clay.

Review of the NJDEP Bureau of Land Use Management historic fill mapping (Princeton: HFM 78; 2004), shows that the Site is situated within an area that has not been mapped as a historic fill area.

2.3.3 Geology

The Site lies within the Piedmont Physiographic Province of New Jersey, and is underlain by the Passaic Formation of Late Triassic and early Jurassic age. The Passaic Formation consists of red shale with some inter-bedded sandstone. Surficial soils consist largely of silt and clay derived from decomposed bedrock. Groundwater typically occurs under unconfined water table conditions in unconsolidated deposits overlying the bedrock and in the joints and fractures of the late Triassic and early Jurassic Formation. As documented in EcolSciences' *UST Closure/Site Investigation/Remedial Investigation/Remedial Action Report* previously submitted to NJDEP in January 2015 along with an unrestricted use Response Action Outcome for the USTs, groundwater was not encountered in the Fall of 2014 during three monitor well gauging events. The well was an overburden well that extended to bedrock at a depth of twelve feet below ground surface. The monitor well was abandoned on November 26, 2014.

2.3.4 Hydrology

Surface runoff generated within the Site flows overland toward surface catch basins located within onsite parking areas that discharge to the regional storm water drainage system. The regional storm water drainage system discharges southeastward to the Millstone River. The portion of the

Millstone River that drains the Site has been classified by the NJDEP as FW2-NT (non-trout) waters. By definition, FW-2 waters are suitable for public potable water after required treatment. This category requires the water be acceptable for primary contact recreation, industrial and agricultural use, and the maintenance and migration of established biota. Non-trout waters generally do not have characteristics necessary to support trout such as high dissolved oxygen levels in relatively low summer temperatures; however, more tolerant fish species may flourish.

According to New Jersey Freshwater Wetland Maps (NJDEP, 1986), no wetlands are mapped on or immediately adjacent to the Site.

3. SITE INVESTIGATION/REMEDIAL INVESTIGATION REPORT

The details regarding the Site Investigation/Remedial Investigation at the former Site are provided in the following sections. The USGS general site location and a scaled area of concern map are provided in Figures 1 and 2, respectively. This Site Investigation/Remedial Investigation (SI/RI) report is prepared in accordance with N.J.A.C. 7:26E. The SI and RI forms are attached to the cover letter accompanying this report, with electronic copies included in Attachment A.

3.1 Site Investigation Sampling

All structures at the Site were decommissioned and then demolished in 2014 and 2015. Decommissioning activities included the evaluation and appropriate removal of lead, asbestos, light fixtures and ballasts, glass, wiring, lighting (including any fluorescent ballasts), batteries, electronic devices, oil-based finishes, thermostats, switches, thermometers, universal wastes, and other non-masonry materials. As noted in Section 1.1, masonry material (concrete and brick) from the structures and sidewalks was crushed and included in the Reworked Site Materials. A portion of the Reworked Site Material has been placed throughout the property and compacted. The remainder is stockpiled for offsite disposal.

In preparation for disposal the stockpiled Reworked Site Materials were sampled by others for disposal characterization by others, including TCL/TAL+30 analysis. This analysis (Attachment D) indicated minor Residential Direct Contact Soil Remediation Standard (RDCCSRS) exceedances of polycyclic aromatic hydrocarbons (PAHs), and one polychlorinated biphenyl (PCB) congener. Accordingly, the remaining Reworked Site Material that was placed on the Site was evaluated as discussed below in Section 3.2.

Subsequent to the Remedial Investigation sampling discussed below, additional sampling was conducted from the surplus stockpiled Reworked Site Material for waste characterization purposes. Fourteen (4) four-point composite samples were collected and analyzed for PAHs, PCBs, and metals. Analysis indicated the presence of RDCCSRS exceedances for PAHs; however, there were no detectable concentrations of any PCBs and metals were not present in excess of the RDCCSRS. A copy of the additional waste characterization sampling data is presented in Attachment D.

3.2 Remedial Investigation Sampling

EcolSciences conducted a remedial investigation on August 20, 2015 to evaluate the Reworked Site Material (AOC-1) present on the Site. Twenty two (22) test pits were installed across the Site to characterize, delineate, and evaluate the Reworked Site Materials. The sample frequency

utilized provides four test pits/samples per acre. All samples were analyzed for Polycyclic Aromatic Hydrocarbons (PAHs), PCBs, and Target Analyte List (TAL) metals. Based on the sampling of the stockpiled surplus Reworked Site Materials by others, these were the constituents that warranted further analysis. All samples were collected, controlled and analyzed in accordance with the project-specific Quality Assurance Project Plan (QAPP) in Attachment B.

As shown in Figure 3 and Table 1, PCBs were not detected in any sample. A combination of one to five different PAHs (i.e. benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, and/or indeno(1,2,3-cd)pyrene) were present above the 2012 NJDEP Residential Direct Contact Soil Remediation Standards (RDCSRS) in sixteen (16) of twenty two samples. Arsenic was present exceeding the RDCSRS in four samples, nickel exceeded RDCSRS in one sample, and vanadium exceeded RDCSRS in two samples. Several PAHs and metals exceeded the 2013 Default Impact to Groundwater Soil Screening Levels (DIGWSSL). The majority of these constituents are immobile compounds. As referenced in Section 2.3.3, an attempted groundwater investigation in 2014 did not identify any overburden groundwater. Hence, multiple lines of evidence (i.e. lack of overburden water and the nature of these constituents) support the conclusion, within the professional judgement of the LSRP, that no further evaluation of the impact to groundwater pathway is warranted.

On September 11, 2015, fourteen additional waste characterization samples (four-point composite) were collected from the surplus stockpile of Reworked Site Material for analysis (PAHs, PCBs, TAL Metals). PAH compounds were identified above RDCSRS in these waste characterization samples. There were no metals present above RDCSRS and there were no detectable concentrations of any PCB congeners in any sample. These waste characterization results are presented in Table 3.

All sampling data (with the exception of waste characterization data) has been submitted electronically in a summary table using the format outlined in the Site Remediation Program's "Electronic Data Interchange Manual." Copies of all sampling data and the Electronic Data Submission Application (EDSA) confirmation emails are provided electronically as Attachment C. The EDSA submission is stored in the NJDEP SRP database under catalogue number HZ171550. Horizontal and vertical locational data are provided in New Jersey state plane coordinates and North American Vertical Datum of 1988 (NAVD 1988), respectively in Table 1.

As shown in the soil test pit logs (Attachment E), the Reworked Site Materials were documented to be found throughout the Site, extending to depths of up to seven feet below ground

surface; native material was observed to underlie the reworked onsite materials at all 22 test pit locations. The Person Responsible to Conduct the Remediation confirmed the visual observation that the Reworked Site Materials have been confined to the fenced limits of the Site (an active construction site). Hence, no further delineation is warranted.

Reworked onsite materials were the only area of concern investigated during this Site/Remedial Investigation—no other media or areas of concern were identified as part of investigating this AOC. There were no seasonal variations noted that may have influenced sampling procedures, analytical results, or field measurements during the Site/Remedial Investigation sampling.

3.3 Reliability of Analytical Data

A Data Quality Assurance review and Data Usability Evaluation was conducted for all Remedial Investigation data packages pursuant to the project-specific QAPP (Attachment B) and in accordance with the NJDEP *Data of Known Quality Protocols Technical Guidance* (April 2014). The Data Quality Assurance review revealed that the laboratory quality control data, reports, and narrative contained no significant non-conformances that would cause qualification or rejection of analytical data. The Data Usability Evaluation determined that the quality of analytical data was sufficient to satisfy the Data Quality Objectives as defined in the QAPP. That is, the laboratory data was found to be representative and of adequate quality to support the decision that the site investigation met the objective of determining the presence/absence of contaminants in the Reworked Site Material. Table 2 provides a summary of the Data Quality Assurance review and the Data Usability Evaluation, and is presented in lieu of the worksheets suggested in the DKQP Guidance.

3.4 Receptor Evaluation and Ecological Evaluation

An Ecological Evaluation was submitted to NJDEP as part of EcolSciences' *UST Closure/Site Investigation/Remedial Investigation/Remedial Action Report* dated January 15, 2015. (A receptor evaluation was not required pursuant to N.J.A.C. 7:26E-1.12(b) since an unrestricted use Response Action Outcome was issued within one year of the earliest applicable trigger to remediate.) A Receptor Evaluation and updated Ecological Evaluation prepared in accordance with N.J.A.C. 7:26E-1.12 and 1.16, respectively, are provided in the following sections. The Receptor Evaluation form is attached to the cover letter accompanying this report, with electronic copies included in Attachment A.

3.4.1 Receptor Evaluation: Land Use

As shown on the figure and table attached to the Receptor Evaluation form (Attachment A), thirty five (35) potential land use receptors were identified within 200 feet of Site. Based on the chemical properties of the contaminants found in the reworked onsite material in the Site (i.e. PAHs, Metals), the fact that the Site is a controlled construction site with proper dust controls and is not open to the public, the presence of perimeter silt fencing and other erosional controls, and the lack of overland erosion observed at the Site, no open contaminant-migration pathways are present at the Site. Therefore, no additional investigation of land use receptors is warranted.

3.4.2 Receptor Evaluation: Groundwater

Contaminants within the reworked onsite materials were demonstrated via EcolSciences' test pit study to be limited to surficial soils, generally not extending more than seven feet below grade. As demonstrated in EcolSciences' *UST Closure/Site Investigation/Remedial Investigation/Remedial Action Report* dated January 15, 2015, overburden groundwater was not encountered in a monitoring well gauged on three separate occasions. The monitoring well was installed onsite to the top of bedrock, which was encountered at an approximate depth of twelve feet below ground. Considering the absence of overburden groundwater onsite, the immobile characteristics of the majority of Site constituents, there is no pathway for contaminant migration to groundwater. Therefore, no further receptor evaluation of groundwater is warranted.

3.4.3 Receptor Evaluation: Ecological

As discussed in EcolSciences' *UST Closure/Site Investigation/Remedial Investigation/Remedial Action Report*, the Site is located in an urban area of Princeton, Mercer County. The properties surrounding the Site are completely developed, and no environmentally sensitive natural resources were observed. Further, according to NJDEP mapping, no freshwater wetlands have been mapped in the immediate vicinity of the Site. As such, no further investigation regarding ecological receptors is warranted.

3.5 Variances from Technical Requirements – Site Investigation

No variances from the Technical Requirements were necessary for Site Remediation as part of this investigation.

3.6 Site Investigation/Remedial Investigation Findings and Conclusions

A Remedial Investigation of Reworked Site Materials throughout the Site identified the presence of PAHs and certain metals at concentrations in excess of the RDCSRS. Constituents above RDCSRS were also identified in the stockpile of surplus crushed masonry material.

Remediation (i.e. removal of the surplus stockpiled material and engineering and institutional controls for the material that was reused on the Site) is warranted. The proposed remedial activities are described in the Remedial Action Workplan presented in Section 4.

4. REMEDIAL ACTION WORKPLAN

The following sections of this *Remedial Action Workplan* (RAW) were prepared following the guidelines set forth in New Jersey Department of Environmental Protection (NJDEP) *Technical Requirements for Site Remediation* (N.J.A.C. 7:26E-5.5) applicable NJDEP guidance and present the procedures for remediating the Reworked Site Material (AOC-1). The requisite NJDEP remedial action workplan form is attached to the cover letter accompanying this report, with an electronic copy included in Attachment A. The following presents a summary of the overall remedial strategy, the proposed engineering control details, the proposed institutional controls, and the remedial procedures that will be followed for the Site.

4.1 Overall Remedial Strategy

As discussed above, a Remedial Investigation (RI) of Reworked Site Materials throughout the Site identified the presence of PAHs and certain metals at concentrations in excess of the RDCSRS. The RI demonstrated that the Reworked Site Material is present on the Site at depths ranging to seven feet below ground. Surplus stockpiled Reworked Site Material will be removed for offsite disposal. The remedial action consists of the installation of engineering controls and the establishment of institutional controls in accordance with the NJDEP Presumptive and Alternative Remedy Technical Guidance (August 2013) for the existing Reworked Site Material. The Site is an active construction site with the majority of the subgrade Site utilities within the Reworked Site Materials already installed. Accordingly, this RAW includes an Alternative Remedy Approval request for the Clean Utility Corridor presumptive remedy specifications. As discussed in Section 4.4.2 below, the proposed Alternative Remedy for the utility corridor included herein is equally protective over time as the Presumptive Remedy. All other components of the proposed engineering controls conform to the respective Presumptive Remedy specifications.

4.2 Disposal of Surplus Reworked Site Material

Surplus onsite reworked material will be characterized and removed for offsite disposal at a permitted disposal facility. Fully executed manifests or bills of lading documenting off-site transport of surplus material will be maintained and included in the Remedial Action Report.

4.3 Proposed Engineering Controls (conforming to Presumptive Remedy Specifications)

Engineering controls will be implemented as the remedial action at the Site in the form of various site improvements: Building Slab, Concrete Walkway, Asphalt Paving, Vegetative Cover, Landscaping, Playground, and Dog Walk. These capping elements will be constructed as per N.J.A.C. 7:26E-5.3 and the NJDEP Site Remediation Program Presumptive and Alternate Remedy

Guidance (August 2013). A description of the elements of these engineering controls is provided below.

- **Building Slab (New Construction)** – The buildings being constructed will form a portion of the engineering controls. The Building Slab cap will consist of four inches (minimum) of concrete atop a four inch (minimum) layer of sub base (washed crushed stone or DGA from a certified quarry), atop the Reworked Site Material. The transition from the stone layer to the Reworked Site Material will constitute the visual contamination boundary. The monitoring requirement (to be prescribed in the Deed Notice and Remedial Action Permit for the Site) will include annual inspections to support the long term effectiveness of the Building Slab capping element. The proposed Building Slab specification is consistent with the NJDEP's Presumptive Remedy requirements and guidance. The proposed location and cross-sectional detail of the Building Slab capping element is provided in Figures 4 and 5, respectively.
- **Concrete Walkway Areas** – Site amenities will include concrete sidewalks, walkways, patios, terraces, and other surfaces. The Concrete Walkway Areas capping element will consist of a minimum of four inches of concrete material atop a four-inch (minimum) layer of sub base (washed crushed stone or DGA from a certified quarry), atop the Reworked Site Material. The transition from the stone layer to the Reworked Site Material will constitute the visual contamination boundary. The Concrete Walkway Areas will included a variety of surficial materials including but not limited to stamped concrete, concrete pavers and/or bricks. The manufactured thickness of certain pavers may not be four inches thick; however, the pavers will be underlain by poured concrete, and crushed stone or DGA. In all areas, there will be a total barrier and buffer thickness of at least eight inches. The monitoring requirement (to be prescribed in the Deed Notice and Remedial Action Permit for the Site) will include annual inspections to support the long term effectiveness of the Concrete Walkway Areas capping element. The proposed Building Slab specification is consistent with the NJDEP's Presumptive Remedy requirements and guidance. The proposed location and cross-sectional detail of the Concrete Walkways capping element is provided in Figures 4 and 5, respectively.
- **Asphalt-Paved Areas** – Onsite roadways will comprise the Asphalt-Paved Areas capping element, which will consist of four inches (minimum) of asphalt atop a four-inch (minimum) layer of sub base (washed crushed stone or DGA from a certified quarry), atop the Reworked Site Material. The transition from the crushed stone layer to the Reworked Site Material will constitute the visual contamination boundary. The monitoring requirement (to be prescribed in the Deed Notice and Remedial Action Permit for the

Site) will include annual inspections to support the long term effectiveness of the Asphalt-Paved Areas capping element. The proposed Asphalt-Paved Areas specification is consistent with the NJDEP's Presumptive Remedy requirements and guidance. The proposed location and cross-sectional detail of the Asphalt-Paved Areas capping element is provided in Figures 4 and 5, respectively.

- **Vegetative Cover Areas** – The onsite lawn areas will comprise the Vegetative Cover Areas capping element, which will consist of the following elements beneath the a vegetative cover (e.g. grass): twelve inches (minimum) of clean fill (e.g. topsoil and certified clean fill) atop a geotextile fabric (Mirafi 140N or equivalent), atop the Reworked Site Material. The clean fill will be evaluated in accordance with the NJDEP Fill Material Guidance for SRP Sites. The geotextile fabric will constitute the visual contamination boundary. The monitoring requirement (to be prescribed in the Deed Notice and Remedial Action Permit for the Site) will include semi-annual inspections to support the long term effectiveness of the Vegetative Cover Areas capping element. The proposed Vegetative Cover Areas specification is consistent with the NJDEP's Presumptive Remedy requirements and guidance. The proposed location and cross-sectional detail of the Vegetative Cover Areas capping element is provided in Figures 4 and 5, respectively.
- **Landscaped Areas** – Onsite areas that are landscaped with plantings or mulch will comprise the Landscaped Areas capping element, which will consist of twenty four inches (minimum) of clean fill (e.g. topsoil, clean fill), atop a geotextile fabric (Mirafi 140N or equivalent), atop the Reworked Site Material. The clean fill will be evaluated in accordance with the NJDEP Fill Material Guidance for SRP Sites. The geotextile fabric will constitute the visual contamination boundary. If trees or shrubs are to be planted within this capping element, a minimum 12-inch buffer of clean fill must be maintained on all lateral sides and below the extent of the planted root ball. The monitoring requirement (to be prescribed in the Deed Notice and Remedial Action Permit for the Site) will include semi-annual inspections to support the long term effectiveness of the Landscaped Areas capping element. The proposed Landscaped Areas specification is consistent with the NJDEP's Presumptive Remedy requirements and guidance. The proposed location and cross-sectional detail of the Landscaped Areas capping element is provided in Figures 4 and 5, respectively.
- **Playground Area** – A playground area will be constructed in the southwest portion of the site. The Playground Area capping element will consist of a surface of unitary surface material (e.g. a 0.5-inch thick poured-in-place EPDM granular wearing material or similar material) atop a 3.5-inch shredded rubber base course, atop a filter fabric, underlain by a twelve-inch

(minimum) layer of sub base (washed crushed stone or DGA from a certified quarry). The sub base will be underlain by a geotextile fabric (Mirafi 140N or equivalent). The geotextile fabric will constitute the visual contamination boundary between the engineering control and the underlying Reworked Site Material. The monitoring requirement (to be prescribed in the Deed Notice and Remedial Action Permit for the Site) will include annual inspections to support the long term effectiveness of the Playground Area capping element. The proposed Playground Area specification is consistent with the NJDEP's Presumptive Remedy requirements and guidance. The proposed location and cross-sectional detail of the Playground Area capping element is provided in Figures 4 and 5, respectively.

- **Dog Walk Area** – A dog walk area will be constructed in the southeastern portion of the site. The Dog Walk Area capping element will consist of a synthetic turf designed for dog parks (e.g. K9 Grass Classic, or equivalent) underlain by a twelve-inch (minimum) layer of sub base (washed crushed stone from a certified quarry), and a geotextile fabric (Mirafi 140N or equivalent). The geotextile fabric will constitute the visual contamination boundary between the engineering control and the underlying Reworked Site Material. The monitoring requirement (to be prescribed in the Deed Notice and Remedial Action Permit for the Site) will include annual inspections to support the long term effectiveness of the Dog Walk Area capping element. The proposed Dog Walk Area specification is consistent with the NJDEP's Presumptive Remedy requirements and guidance. The proposed location and cross-sectional detail of the Dog Walk Area capping element is provided in Figures 4 and 5, respectively.

4.4 Proposed Alternate Remedy (Engineering Controls)

The engineering control in only the underground utility corridors is proposed to be different from the NJDEP Site Remediation Program Presumptive and Alternate Remedy Guidance (August 2013). Pursuant to NJAC 7:26e-5.3(c)2, NJDEP written approval is required prior to the implementation of an alternate remedy. Accordingly, an Alternate Remedy/Remedial Action Pre-Approval form has been included in this submission and timely NJDEP approval of the following specification is requested. Upon issuance of the Alternate Remedy Approval by the NJDEP, the RAW will be updated to reflect this Approval, and a revised RAW will be submitted to NJDEP. A description of the alternate remedy is as follows:

- **Underground Utility Corridors** – All onsite underground utility corridors are assumed to have been constructed using Reworked Site Materials which may contain PAHs and metals above RDCSRS. The surficial engineering controls described in Section 4.3 above will be present above all utility corridors. Because the Site will be a rental community (i.e. Type II

Residential) under the oversight and control of the property owner (i.e. Avalon Princeton, LLC), no disruption of any underground utilities can occur without the property owner's knowledge and approval. In addition, prior to any future disruption of an underground utility for repairs, the repair contractor will also need to obtain pre-approval of the disruption from the LSRP or his designee. The disruption will occur under the oversight of the LSRP (or designee) in accordance with all applicable regulations. Any material removed from the utility corridor during a repair will be replaced within the corridor after a disruption or properly disposed of offsite, with the surficial engineering control(s) repaired to pre-existing conditions. In addition, the areas of the Site where underground utilities are located will be inspected on a semi-annual basis.

It is the professional judgment of the LSRP that the alternative presumptive remedy for the utility corridors is equally protective over time as the presumptive remedy.

4.4.1 Impractical Due to Conditions at the Site

The Presumptive Remedy for Utility Corridors is impractical because the majority of underground utilities have already been installed within the Reworked Site Material prior to the discovery of contaminants above the RDCSRS. Use of the default Presumptive Remedy for Utility Corridors would require excavation of all areas where utilities have been installed. Undermining and/or disrupting the existing utilities may cause negative effects on the integrity of these subsurface utilities resulting in future maintenance issues. In addition, it may not be possible to remove all Reworked Site Materials from around the installed utilities particularly given the depth of some of the installed utilities. Further, since the utility corridors will all be beneath the engineering controls described in Section 4.3, the presence of Reworked Site Materials in the sub-surface utility corridors remains protective of human health and the environment.

The NJDEP Presumptive and Alternative Remedy Guidance includes a list of potential site-specific factors that may be considered in determining if a Presumptive Remedy is impractical. Among these potential site-specific conditions is the following circumstance that applies to the Site.

- The remedy will require excavation near or beneath structures (either onsite or on adjacent sites) that would jeopardize the stability or integrity of such structures.

As discussed herein, the majority of Site utilities are already installed onsite. In addition, a series of footings and portions of the proposed building foundations are already in place. Providing clean utility corridors may jeopardize these site improvements.

4.4.2 Equally Protective Over Time

It is the LSRP's professional judgement that implementation of the Alternate Remedy will be equally protective of human health and the environment over time when compared to a Presumptive Remedy. The proposed development is Type II residential housing (i.e. rental) under full control of the property owner/Person Responsible for Conducting the Remediation. The property owner/Person Responsible for Conducting the Remediation will ensure that, prior to any disruption of any underground utility corridor, the LSRP or his designee is notified of the proposed disruption so that the disruption is conducted in a manner that is protective of human health and safety and the environment. Furthermore, these procedures will be memorialized in the Deed Notice for the Site.

As a means to document and ensure that the alternate remedy (i.e. engineering control) will remain equally protective over time, areas of the site where subsurface utilities are located will be inspected on a semi-annual basis. This inspection frequency is more rigorous than the frequency prescribed for presumptive remedies for underground utility corridors (i.e. annual).

4.5 Installation of Engineering Controls

Installation of the engineering controls described above will be conducted to ensure: 1) the control of the sub-grade preparation prior to installation of the elements of the engineering control; 2) installation of the geotextile fabric to allow for overlapping/sealing of the fabric seams; and 3) placement and compaction of capping buffers and barriers (e.g. clean fill, crushed stone, asphalt, concrete, etc.) in a manner consistent with N.J.A.C. 7:26E Table 5.1. A brief description of each step is as follows:

- **Sub-grade Preparation** – Prior to capping, the surface layer of the contaminated fill material will be re-graded if necessary and areas requiring removal of soil per site engineering constraints will be excavated and the soils transferred to areas where excess soil can be used onsite below the engineering control. In the event excess reworked onsite material is generated, this material will be disposed of along with the already stockpiled Reworked Site Material (Section 4.2). The area to be capped will be cleared of any standing vegetation, frozen materials (if applicable), and debris which might negatively impact the integrity of the engineering control.
- **Filter Fabric Installation** – A permeable geotextile fabric (Mirafi 140N or an equivalent) will be used as a visual contamination boundary marker in the Landscaped Areas, Vegetative Cover Areas, Playground Area and Dog Walk Area. The fabric will be placed in accordance with manufacturer's specifications. After a roll or panel of the filter fabric is initially positioned,

the fabric will be shifted for optimal positioning as per design specifications. Quality control of the filter fabric seams will be monitored to ensure that the fabric is sufficiently overlapped. Once in place, the filter fabric liner will be secured to prevent movement during the installation of the soil.

- **Soil Cap Installation** – Once the geotextile fabric is positioned, the buffer and barrier layers will be installed in accordance with the specifications set forth in N.J.A.C. 7:26E-Table 5.1 and as described in Section 4.3. A sufficient volume of certified clean soil will be incorporated into the capping such that upon settling, the final depth of the barrier and buffer layers will be in accordance with N.J.A.C. 7:26E-Table 5.1.
- **Certification of the Installed Cap** – The final cap will be surveyed by a licensed surveyor and the as-built site plan will become a component of the Deed Notice for the Site.
- **Source Materials for Capping** – The Vegetative Cover and Landscaped Area capping elements will consist of certified clean soil materials evaluated in accordance with the NJDEP Fill Material Guidance for SRP Sites. Capping elements requiring clean stone or quarry product will receive written certification that the material originated from a licensed quarry/mine, and that the material has not been subject to discharged hazardous substances. Material not originating from a licensed quarry/mine will be evaluated in accordance with Section 6 of the Fill Material Guidance.

4.6 Fill Use Plan

Clean fill to be imported as final cover to the Site will comply with the NJDEP Fill Material Guidance for SRP Sites to document that the material is clean in accordance with NJDEP regulations and guidance. At the time of this submission, a clean fill source has not been identified, and the volume of clean fill required to complete the remediation has not been determined. Bills of lading for the clean fill will be maintained and included in the remedial action report.

Surplus onsite reworked material will be removed from the Site in accordance with the procedures described in Section 4.2

4.7 Soil/Sediment Erosion Control and Monitoring

All grading, site disturbances, and capping activities will comply with the Soil Erosion and Sediment Control Plan approved by the local Soil Conservation District.

4.8 Dust Control and Monitoring

During the implementation of this Remedial Action Workplan, the exposed Reworked Site Material will be kept wet (as needed) to minimize the potential for fugitive dust. If street sweeping is needed, wet street-sweeping techniques will be used. Stockpiled surplus Reworked Site Material will be kept wet (as needed) to minimize fugitive dust within acceptable limits, and covered and secured with 6-mil plastic.

Fugitive dust emissions will be monitored pursuant to NJAC 7:26E-5.5(b)7 during earthwork activities using Real-Time Aerosol Monitors. The applicable Permissible Exposure Limits (PELs) or Threshold Limit Values (TLVs) for the contaminants is 150 $\mu\text{g}/\text{m}^3$ time-weighted average (TWA) in ambient air. If monitoring indicates exceedances of this TWA level, construction activities will be temporarily suspended until dust emissions are reduced to within acceptable limits. Dust control measures will consist of either covering or wetting the Reworked Site Material with water to reduce fugitive dust.

4.9 Deed Notice

The Deed Notice will include a summary of the constituents present above the NJDEP RDCSRS at the Site. The Deed Notice will also memorialize the engineering controls “as-built” on the Site, and identify procedures to be followed in the event future maintenance or construction would penetrate the cap. Upon completion of remedial activities at the Site, the Deed Notice will be filed in the Mercer County Clerk’s office and a Remedial Action Permit for Soil (RAP) obtained from the NJDEP.

4.9.1 Long Term Monitoring and Maintenance

Long-term monitoring and maintenance requirements will be set forth in the Deed Notice and RAP and will be conducted under LSRP oversight. As part of the routine monitoring procedures, Semi-Annual Monitoring Reports will be prepared by the LSRP or his designee.

4.9.2 Inspection Schedule

Periodic monitoring and maintenance will be implemented to ensure the integrity of the capped areas. As discussed in Section 4.3 for the presumptive remedy and Section 4.4 for the Alternative Remedy, annual inspections and semi-annual inspections are proposed to ensure the continued protectiveness of the engineering controls as detailed above. Any breaches in the integrity of the cap identified during routine inspections will be repaired accordingly.

4.9.3 Biennial Certification

Biennial certifications will be completed under LSRP oversight and submitted to the NJDEP in accordance with the terms of the RAP. The purpose of the biennial certification is to document to the NJDEP that the engineering and institutional controls are being properly maintained and continue to be protective of public health and safety and of the environment. The Biennial certifications will include the Monitoring Reports (Section 4.9.1) and the Remedial Action Protectiveness/Biennial Certification Form-Soil. The Biennial Certification will be submitted to the NJDEP with copies to all entities required pursuant to NJAC 7:26C-7. The NJDEP shall also be provided with the name and address of each person that was sent a copy of the certification.

4.10 Permits

Pursuant to NJAC 7:26E-5.5(b)8, the following permits are required to complete the remediation:

- **Remedial Action Permit-Soil:** A Remedial Action Permit Application-Soil (RAP) will be included in the Remedial Action Report. Issuance of the Response Action Outcome (RAO) will not occur until the RAP has been issued, any required financial assurance posted and all appropriate Annual Remediation Fees have been paid.

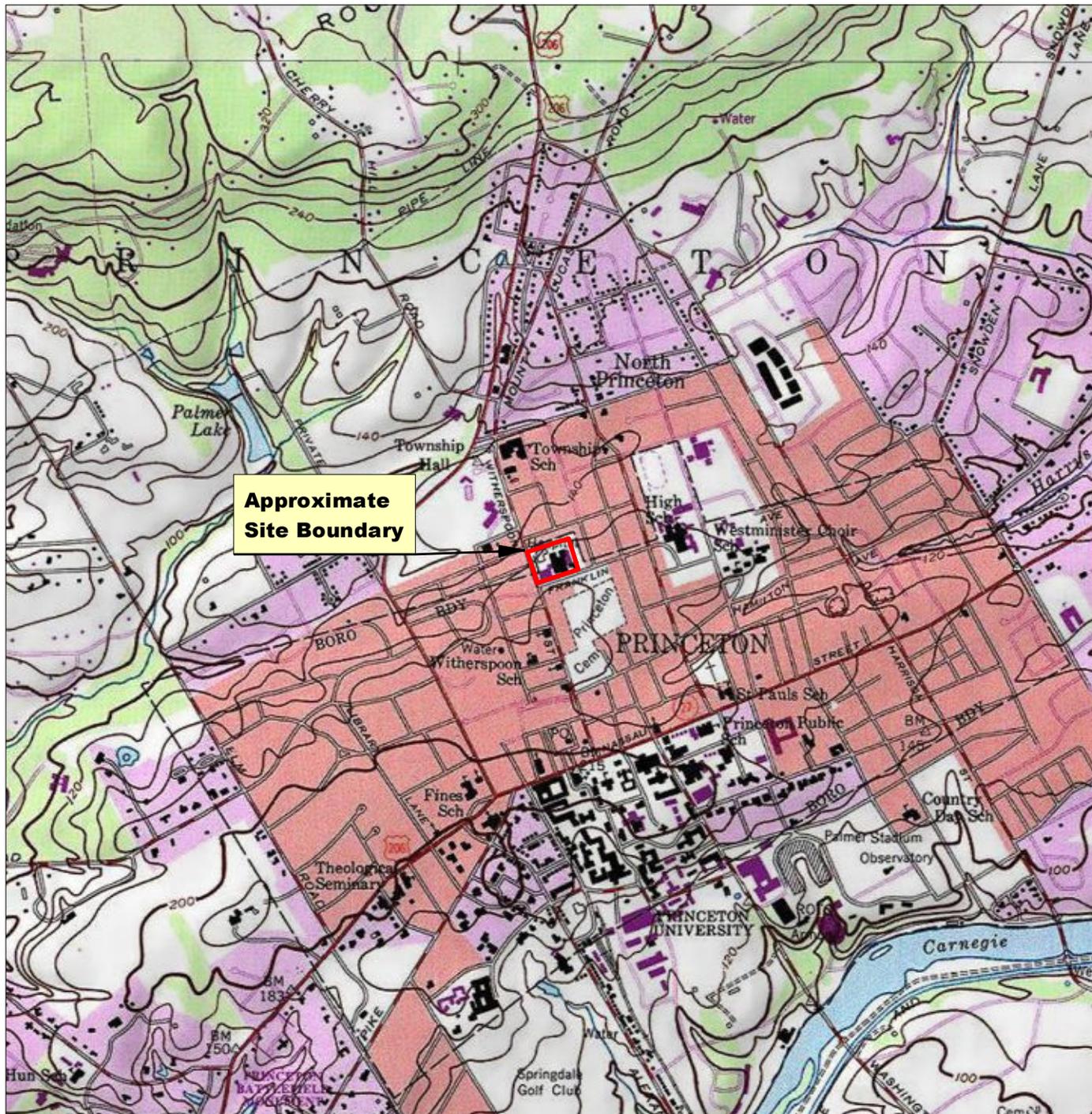
4.11 Submission of Remedial Action Report

Upon completion of remediation at the Site, a *Remedial Action Report* (RAR) will be prepared including the filed Deed Notice and a Remedial Action Permit-Soil application. The RAR and RAP application will be certified by the LSRP and submitted to the NJDEP.

Upon receipt of the RAP from the NJDEP, an area of concern restricted use Response Action Outcome will be issue by EcolSciences' LSRP.

4.12 Schedule

The installation of the engineering controls will occur simultaneous to construction. Construction is scheduled to be complete by the end of 2016. Final reporting will occur within six months of completing the capping activities.



Approximate Site Boundary



SITE LOCATION



State Plane Coordinates (New Jersey NAD 83)
447,073' E; 554,940' N

FIGURE 1: USGS SITE LOCATION

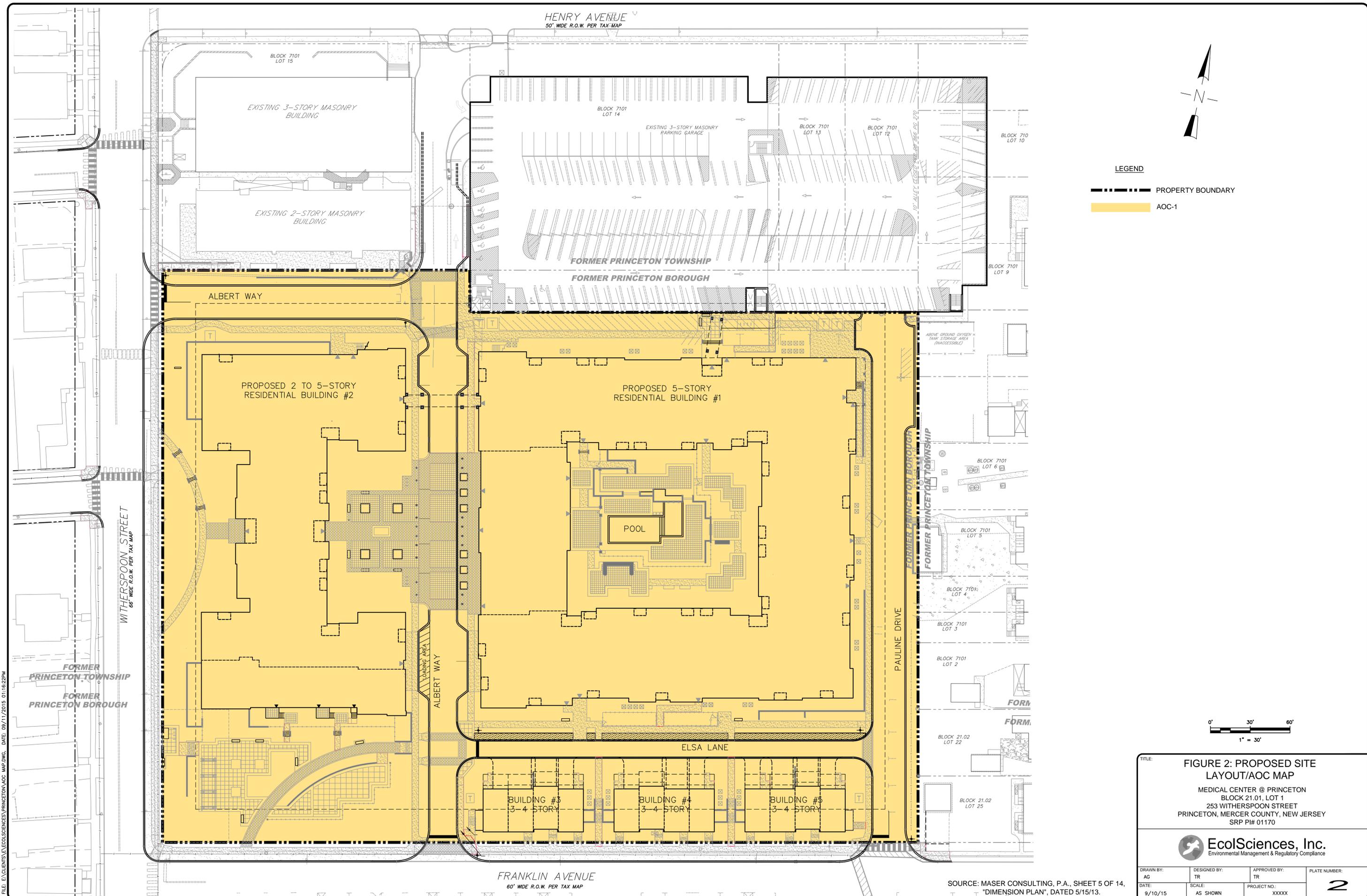
Former University Medical Center @ Princeton
Block 21.02, Lot 1
Princeton, Mercer County, New Jersey
SRP PI# 011700

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EcolSciences, Inc.
Environmental Management & Regulatory Compliance

Date: September 2015

Scale 1:24,000



FILE: E:\CLIENTS\ENVIRONMENTAL\PRINCETON\AOC MAP.DWG, DATE: 09/11/2015 01:16:22PM

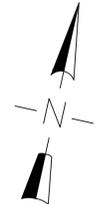
TITLE:
FIGURE 2: PROPOSED SITE LAYOUT/AOC MAP
 MEDICAL CENTER @ PRINCETON
 BLOCK 21.01, LOT 1
 253 WITHERSPOON STREET
 PRINCETON, MERCER COUNTY, NEW JERSEY
 SRP PI# 01170



DRAWN BY: AG	DESIGNED BY: TR	APPROVED BY: TR	PLATE NUMBER: 2
DATE: 9/10/15	SCALE: AS SHOWN	PROJECT NO.: XXXXX	

SOURCE: MASER CONSULTING, P.A., SHEET 5 OF 14, "DIMENSION PLAN", DATED 5/15/13.

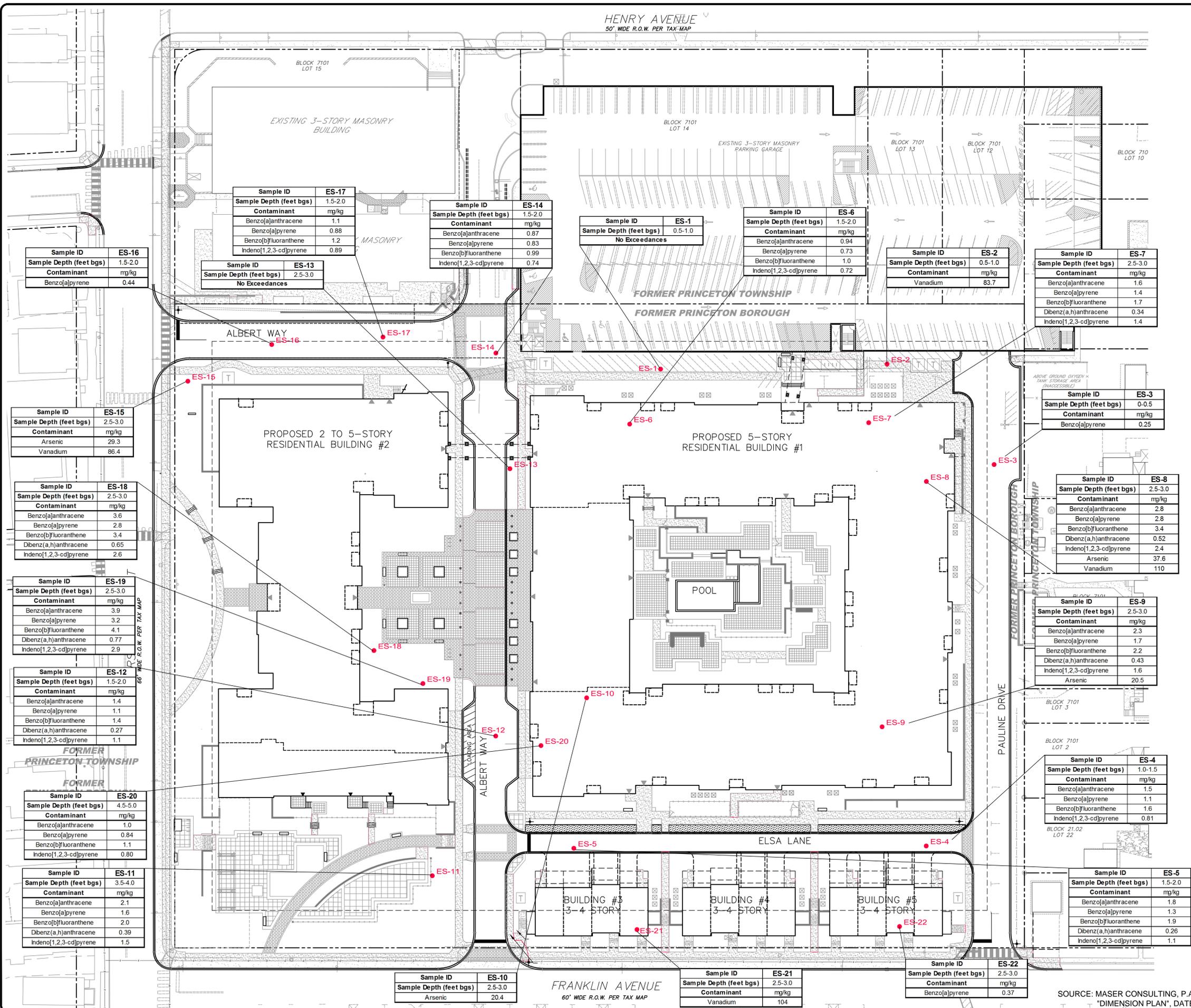
HENRY AVENUE
50' WIDE R.O.W. PER TAX MAP



LEGEND

- PROPERTY BOUNDARY= PROJECT AREA
- ES-7 APPROXIMATE SOIL SAMPLE LOCATION (8/20/15)

Contaminant	Regulatory Criteria	
	NUDEP Residential SRS mg/kg	NUDEP Non-Residential SRS mg/kg
Benzo[a]anthracene	0.6	2
Benzo[a]pyrene	0.2	0.2
Benzo[b]fluoranthene	0.6	2
Dibenz[a,h]anthracene	0.2	0.2
Indeno[1,2,3-cd]pyrene	0.6	2
Arsenic	19	19
Vanadium	78	1100



Sample ID	ES-16
Sample Depth (feet bgs)	1.5-2.0
Contaminant	mg/kg
Benzo[a]pyrene	0.44

Sample ID	ES-17
Sample Depth (feet bgs)	1.5-2.0
Contaminant	mg/kg
Benzo[a]anthracene	1.1
Benzo[a]pyrene	0.88
Benzo[b]fluoranthene	1.2
Indeno[1,2,3-cd]pyrene	0.89

Sample ID	ES-14
Sample Depth (feet bgs)	1.5-2.0
Contaminant	mg/kg
Benzo[a]anthracene	0.87
Benzo[a]pyrene	0.83
Benzo[b]fluoranthene	0.99
Indeno[1,2,3-cd]pyrene	0.74

Sample ID	ES-1
Sample Depth (feet bgs)	0.5-1.0
Contaminant	mg/kg
No Exceedances	

Sample ID	ES-6
Sample Depth (feet bgs)	1.5-2.0
Contaminant	mg/kg
Benzo[a]anthracene	0.94
Benzo[a]pyrene	0.73
Benzo[b]fluoranthene	1.0
Indeno[1,2,3-cd]pyrene	0.72

Sample ID	ES-2
Sample Depth (feet bgs)	0.5-1.0
Contaminant	mg/kg
Vanadium	83.7

Sample ID	ES-7
Sample Depth (feet bgs)	2.5-3.0
Contaminant	mg/kg
Benzo[a]anthracene	1.6
Benzo[a]pyrene	1.4
Benzo[b]fluoranthene	1.7
Dibenz[a,h]anthracene	0.34
Indeno[1,2,3-cd]pyrene	1.4

Sample ID	ES-15
Sample Depth (feet bgs)	2.5-3.0
Contaminant	mg/kg
Arsenic	29.3
Vanadium	86.4

Sample ID	ES-13
Sample Depth (feet bgs)	2.5-3.0
Contaminant	mg/kg
No Exceedances	

Sample ID	ES-1
Sample Depth (feet bgs)	0.5-1.0
Contaminant	mg/kg
No Exceedances	

Sample ID	ES-6
Sample Depth (feet bgs)	1.5-2.0
Contaminant	mg/kg
Benzo[a]anthracene	0.94
Benzo[a]pyrene	0.73
Benzo[b]fluoranthene	1.0
Indeno[1,2,3-cd]pyrene	0.72

Sample ID	ES-2
Sample Depth (feet bgs)	0.5-1.0
Contaminant	mg/kg
Vanadium	83.7

Sample ID	ES-3
Sample Depth (feet bgs)	0-0.5
Contaminant	mg/kg
Benzo[a]pyrene	0.25

Sample ID	ES-18
Sample Depth (feet bgs)	2.5-3.0
Contaminant	mg/kg
Benzo[a]anthracene	3.6
Benzo[a]pyrene	2.8
Benzo[b]fluoranthene	3.4
Dibenz[a,h]anthracene	0.65
Indeno[1,2,3-cd]pyrene	2.6

Sample ID	ES-13
Sample Depth (feet bgs)	2.5-3.0
Contaminant	mg/kg
No Exceedances	

Sample ID	ES-1
Sample Depth (feet bgs)	0.5-1.0
Contaminant	mg/kg
No Exceedances	

Sample ID	ES-6
Sample Depth (feet bgs)	1.5-2.0
Contaminant	mg/kg
Benzo[a]anthracene	0.94
Benzo[a]pyrene	0.73
Benzo[b]fluoranthene	1.0
Indeno[1,2,3-cd]pyrene	0.72

Sample ID	ES-2
Sample Depth (feet bgs)	0.5-1.0
Contaminant	mg/kg
Vanadium	83.7

Sample ID	ES-8
Sample Depth (feet bgs)	2.5-3.0
Contaminant	mg/kg
Benzo[a]anthracene	2.8
Benzo[a]pyrene	2.8
Benzo[b]fluoranthene	3.4
Dibenz[a,h]anthracene	0.52
Indeno[1,2,3-cd]pyrene	2.4
Arsenic	37.6
Vanadium	110

Sample ID	ES-19
Sample Depth (feet bgs)	2.5-3.0
Contaminant	mg/kg
Benzo[a]anthracene	3.9
Benzo[a]pyrene	3.2
Benzo[b]fluoranthene	4.1
Dibenz[a,h]anthracene	0.77
Indeno[1,2,3-cd]pyrene	2.9

Sample ID	ES-13
Sample Depth (feet bgs)	2.5-3.0
Contaminant	mg/kg
No Exceedances	

Sample ID	ES-1
Sample Depth (feet bgs)	0.5-1.0
Contaminant	mg/kg
No Exceedances	

Sample ID	ES-6
Sample Depth (feet bgs)	1.5-2.0
Contaminant	mg/kg
Benzo[a]anthracene	0.94
Benzo[a]pyrene	0.73
Benzo[b]fluoranthene	1.0
Indeno[1,2,3-cd]pyrene	0.72

Sample ID	ES-2
Sample Depth (feet bgs)	0.5-1.0
Contaminant	mg/kg
Vanadium	83.7

Sample ID	ES-9
Sample Depth (feet bgs)	2.5-3.0
Contaminant	mg/kg
Benzo[a]anthracene	2.3
Benzo[a]pyrene	1.7
Benzo[b]fluoranthene	2.2
Dibenz[a,h]anthracene	0.43
Indeno[1,2,3-cd]pyrene	1.6
Arsenic	20.5

Sample ID	ES-12
Sample Depth (feet bgs)	1.5-2.0
Contaminant	mg/kg
Benzo[a]anthracene	1.4
Benzo[a]pyrene	1.1
Benzo[b]fluoranthene	1.4
Dibenz[a,h]anthracene	0.27
Indeno[1,2,3-cd]pyrene	1.1

Sample ID	ES-13
Sample Depth (feet bgs)	2.5-3.0
Contaminant	mg/kg
No Exceedances	

Sample ID	ES-1
Sample Depth (feet bgs)	0.5-1.0
Contaminant	mg/kg
No Exceedances	

Sample ID	ES-6
Sample Depth (feet bgs)	1.5-2.0
Contaminant	mg/kg
Benzo[a]anthracene	0.94
Benzo[a]pyrene	0.73
Benzo[b]fluoranthene	1.0
Indeno[1,2,3-cd]pyrene	0.72

Sample ID	ES-2
Sample Depth (feet bgs)	0.5-1.0
Contaminant	mg/kg
Vanadium	83.7

Sample ID	ES-4
Sample Depth (feet bgs)	1.0-1.5
Contaminant	mg/kg
Benzo[a]anthracene	1.5
Benzo[a]pyrene	1.1
Benzo[b]fluoranthene	1.6
Indeno[1,2,3-cd]pyrene	0.81

Sample ID	ES-20
Sample Depth (feet bgs)	4.5-5.0
Contaminant	mg/kg
Benzo[a]anthracene	1.0
Benzo[a]pyrene	0.84
Benzo[b]fluoranthene	1.1
Indeno[1,2,3-cd]pyrene	0.80

Sample ID	ES-13
Sample Depth (feet bgs)	2.5-3.0
Contaminant	mg/kg
No Exceedances	

Sample ID	ES-1
Sample Depth (feet bgs)	0.5-1.0
Contaminant	mg/kg
No Exceedances	

Sample ID	ES-6
Sample Depth (feet bgs)	1.5-2.0
Contaminant	mg/kg
Benzo[a]anthracene	0.94
Benzo[a]pyrene	0.73
Benzo[b]fluoranthene	1.0
Indeno[1,2,3-cd]pyrene	0.72

Sample ID	ES-2
Sample Depth (feet bgs)	0.5-1.0
Contaminant	mg/kg
Vanadium	83.7

Sample ID	ES-4
Sample Depth (feet bgs)	1.0-1.5
Contaminant	mg/kg
Benzo[a]anthracene	1.5
Benzo[a]pyrene	1.1
Benzo[b]fluoranthene	1.6
Indeno[1,2,3-cd]pyrene	0.81

Sample ID	ES-11
Sample Depth (feet bgs)	3.5-4.0
Contaminant	mg/kg
Benzo[a]anthracene	2.1
Benzo[a]pyrene	1.6
Benzo[b]fluoranthene	2.0
Dibenz[a,h]anthracene	0.39
Indeno[1,2,3-cd]pyrene	1.5

Sample ID	ES-13
Sample Depth (feet bgs)	2.5-3.0
Contaminant	mg/kg
No Exceedances	

Sample ID	ES-1
Sample Depth (feet bgs)	0.5-1.0
Contaminant	mg/kg
No Exceedances	

Sample ID	ES-6
Sample Depth (feet bgs)	1.5-2.0
Contaminant	mg/kg
Benzo[a]anthracene	0.94
Benzo[a]pyrene	0.73
Benzo[b]fluoranthene	1.0
Indeno[1,2,3-cd]pyrene	0.72

Sample ID	ES-2
Sample Depth (feet bgs)	0.5-1.0
Contaminant	mg/kg
Vanadium	83.7

Sample ID	ES-5
Sample Depth (feet bgs)	1.5-2.0
Contaminant	mg/kg
Benzo[a]anthracene	1.8
Benzo[a]pyrene	1.3
Benzo[b]fluoranthene	1.9
Dibenz[a,h]anthracene	0.26
Indeno[1,2,3-cd]pyrene	1.1

Sample ID	ES-10
Sample Depth (feet bgs)	2.5-3.0
Contaminant	mg/kg
Arsenic	20.4

FRANKLIN AVENUE
60' WIDE R.O.W. PER TAX MAP

Sample ID	ES-21
Sample Depth (feet bgs)	2.5-3.0
Contaminant	mg/kg
Vanadium	104

Sample ID	ES-22
Sample Depth (feet bgs)	2.5-3.0
Contaminant	mg/kg
Benzo[a]pyrene	0.37

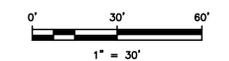


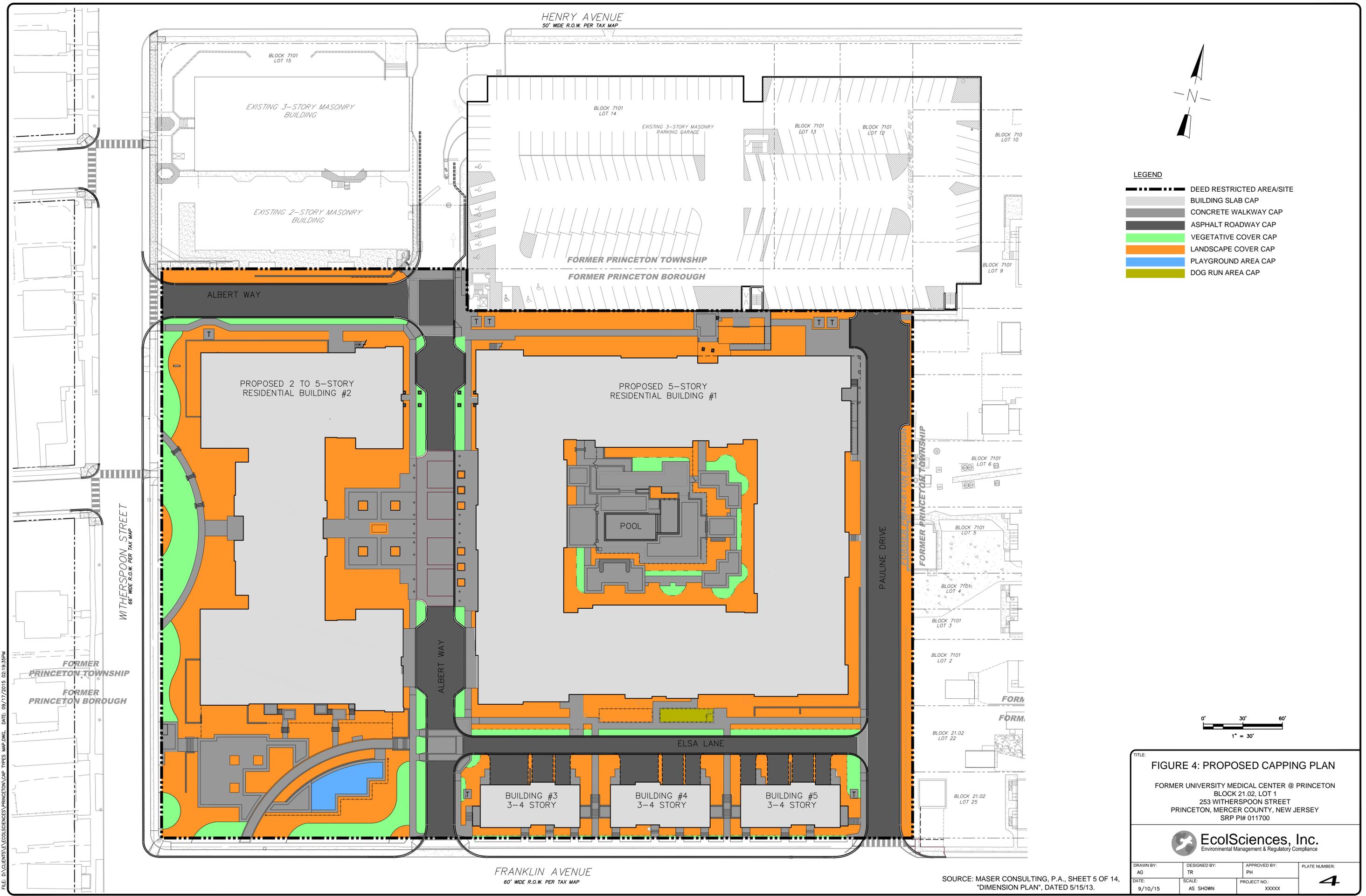
FIGURE 3: REMEDIAL INVESTIGATION
SAMPLE LOCATIONS
FORMER UNIVERSITY MEDICAL CENTER @ PRINCETON
BLOCK 21.02, LOT 1
253 WITHERSPOON STREET
PRINCETON, MERCER COUNTY, NEW JERSEY
SRP PI# 011700



DRAWN BY: AG	DESIGNED BY: TR	APPROVED BY: TR	PLATE NUMBER: 3
DATE: 9/10/15	SCALE: AS SHOWN	PROJECT NO.: XXXXX	

SOURCE: MASER CONSULTING, P.A., SHEET 5 OF 14,
"DIMENSION PLAN", DATED 5/15/13.

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LEGEND

- DEED RESTRICTED AREA/SITE
- BUILDING SLAB CAP
- CONCRETE WALKWAY CAP
- ASPHALT ROADWAY CAP
- VEGETATIVE COVER CAP
- LANDSCAPE COVER CAP
- PLAYGROUND AREA CAP
- DOG RUN AREA CAP

TITLE:
FIGURE 4: PROPOSED CAPPING PLAN
 FORMER UNIVERSITY MEDICAL CENTER @ PRINCETON
 BLOCK 21.02, LOT 1
 253 WITHERSPOON STREET
 PRINCETON, MERCER COUNTY, NEW JERSEY
 SRP P1# 011700

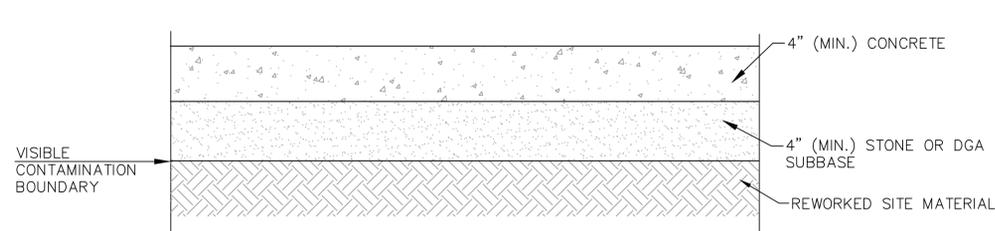


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DATE: 9/10/15	SCALE: AS SHOWN	PROJECT NO.: XXXXX	

SOURCE: MASER CONSULTING, P.A., SHEET 5 OF 14,
 "DIMENSION PLAN", DATED 5/15/13.

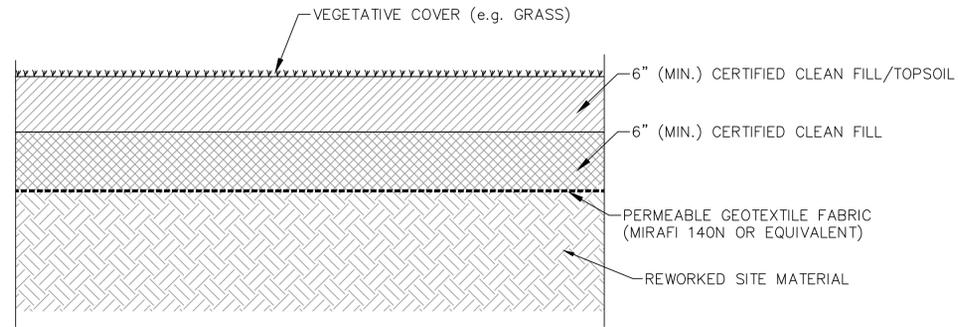
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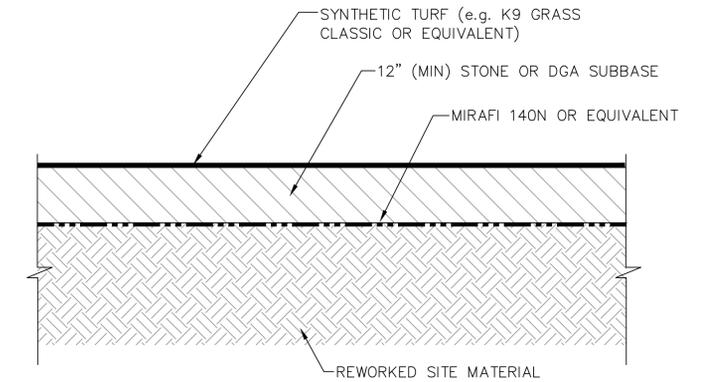
PROPOSED BUILDING SLAB CAP

N.T.S.



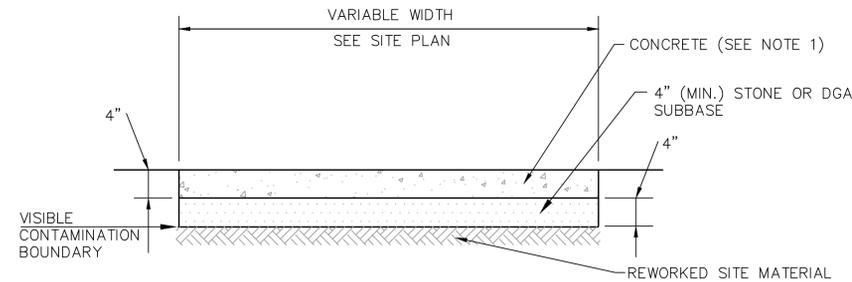
PROPOSED VEGETATIVE COVER AREAS CAP

N.T.S.



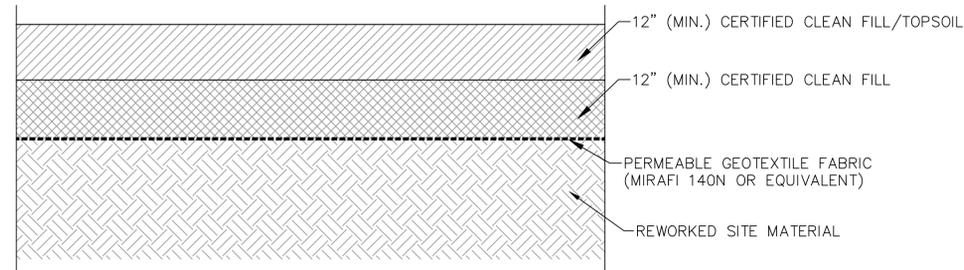
PROPOSED DOG RUN AREA CAP

N.T.S.



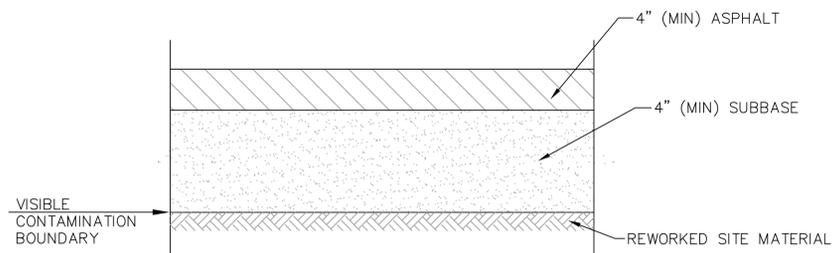
PROPOSED CONCRETE WALKWAY AREAS CAP

N.T.S.



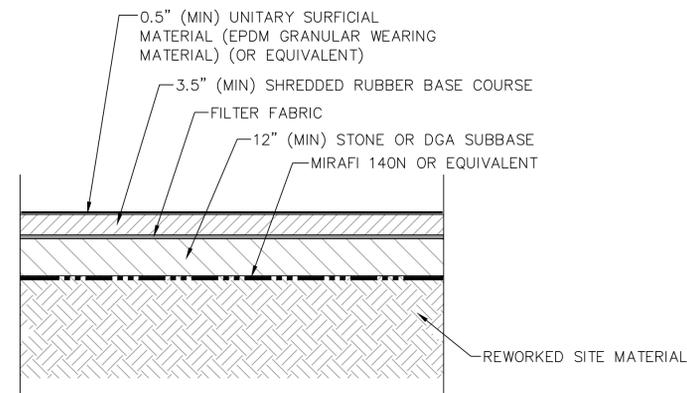
PROPOSED LANDSCAPED AREAS CAP

N.T.S.



PROPOSED ASPHALT-PAVED AREAS CAP

N.T.S.



PROPOSED PLAYGROUND AREA CAP

N.T.S.

NOTE 1: THE CONCRETE WALKWAY AREAS WILL INCLUDE A VARIETY OF SURFICIAL MATERIALS INCLUDING BUT NOT LIMITED TO STAMPED CONCRETE, CONCRETE PAVERS AND/OR BRICKS. THE MANUFACTURED THICKNESS OF CERTAIN PAVERS MAY NOT BE FOUR INCHES THICK; HOWEVER, THE PAVERS WILL BE UNDERLAIN BY POURED CONCRETE, AND THE CRUSHED STONE OR DGA SUB BASE.

TITLE: **FIGURE 5: PROPOSED CAPPING ELEMENT DETAIL**
 FORMER UNIVERSITY MEDICAL CENTER @ PRINCETON
 BLOCK 21.02, LOT 1
 253 WITHERSPOON STREET
 PRINCETON, MERCER COUNTY, NEW JERSEY
 SRP P1# 011700



DRAWN BY: AG	DESIGNED BY: TR	APPROVED BY: TR	PLATE NUMBER: 5
DATE: 9/10/15	SCALE: AS SHOWN	PROJECT NO.: XXXXX	

Table 1
Remedial Investigation Sampling Results
Former University Medical Center @ Princeton, 253 Witherspoon Street, Princeton, Mercer County, New Jersey
SRP PI# 011700, Case 15-09-09-1706-55

PAHs-PCBs

Lab ID:	NJDEP	NJDEP	NJDEP	460-99997-1	460-99997-2	460-99997-3	460-99997-4	460-99997-5	460-99997-6	460-99997-7	460-99997-8
Client ID:	Residential	Non-Residential	IGW	ES-1	ES-2	ES-3	ES-4	ES-5	ES-6	ES-7	ES-8
Date Sampled:	SRS	SRS	Screening	08/20/2015	08/20/2015	08/20/2015	08/20/2015	08/20/2015	08/20/2015	08/20/2015	08/20/2015
Matrix:	2012	2012	2013	Soil							
Unit:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Sample Depth (feet below ground surface):				0.5-1.0	0.5-1.0	0-0.5	1.0-1.5	1.5-2.0	1.5-2.0	2.5-3.0	2.5-3.0
Sample Depth MSL (feet NAVD 1988):				167.7-167.2	168.7-167.2	168.5-168.0	178.9-178.4	177.6-177.1	168.5-168.0	165.4-164.9	164.6-164.1
Easting - NJ State Plane (NAD1983)				447060.9	447205.5	447293.9	447327.9	447104.4	447053.1	447204.4	447253.6
Northing - NJ State Plane (NAD1983)				555115.6	555165.5	555124.3	554867.6	554793.0	555074.9	555124.7	555098.2
SVOA-8270D-SOIL				Conc. Qual MDL							
2-Methylnaphthalene	230	2400	8	0.41 U 0.0091	0.36 U 0.0080	0.74 U 0.016	0.059 J 0.0089	0.058 J 0.0092	0.020 J 0.0086	0.078 J 0.0086	0.090 J 0.0090
Acenaphthene	3400	37000	110	0.027 J 0.0099	0.010 J 0.0088	0.029 J 0.018	0.33 J 0.0097	0.40 J 0.010	0.15 J 0.0095	0.39 J 0.0094	0.53 J 0.0098
Acenaphthylene	NA	300000	NA	0.41 U 0.011	0.36 U 0.0094	0.74 U 0.019	0.40 U 0.010	0.42 U 0.011	0.39 U 0.010	0.011 J 0.010	0.41 U 0.010
Anthracene	17000	30000	2400	0.41 U 0.039	0.36 U 0.035	0.072 J 0.071	0.80 J 0.038	0.92 J 0.040	0.38 J 0.037	0.88 J 0.037	1.4 J 0.039
Benzo[a]anthracene	0.6	2	0.8	0.10 J 0.034	0.079 J 0.030	0.27 J 0.062	1.5 J 0.034	1.8 J 0.035	0.94 J 0.033	1.6 J 0.032	2.8 J 0.034
Benzo[a]pyrene	0.2	0.2	0.2	0.096 J 0.012	0.073 J 0.011	0.25 J 0.023	1.1 J 0.012	1.3 J 0.013	0.73 J 0.012	1.4 J 0.012	2.8 J 0.012
Benzo[b]fluoranthene	0.6	2	2	0.13 J 0.016	0.10 J 0.014	0.31 J 0.029	1.6 J 0.016	1.9 J 0.016	1.0 J 0.015	1.7 J 0.015	3.4 J 0.016
Benzo[g,h,i]perylene	380000	30000	NA	0.066 J 0.024	0.068 J 0.021	0.21 J 0.043	0.71 J 0.023	0.94 J 0.024	0.64 J 0.022	1.10 J 0.022	2.20 J 0.023
Benzo[k]fluoranthene	6	23	25	0.052 J 0.018	0.040 J 0.016	0.12 J 0.032	0.64 J 0.017	0.73 J 0.018	0.40 J 0.017	0.77 J 0.017	1.30 J 0.018
Chrysene	62	230	80	0.12 J 0.011	0.099 J 0.0099	0.33 J 0.020	1.5 J 0.011	1.8 J 0.011	1.0 J 0.011	1.6 J 0.011	2.8 J 0.011
Dibenz(a,h)anthracene	0.2	0.2	0.8	0.041 U 0.021	0.021 J 0.019	0.065 J 0.039	0.18 J 0.021	0.26 J 0.022	0.18 J 0.020	0.34 J 0.020	0.52 J 0.021
Fluoranthene	2300	24000	1300	0.24 J 0.012	0.15 J 0.011	0.63 J 0.022	4.5 J 0.012	5.2 J 0.012	2.3 J 0.012	4.2 J 0.012	6.6 J 0.012
Fluorene	2300	24000	170	0.021 J 0.0089	0.36 U 0.0079	0.023 J 0.016	0.13 J 0.0087	0.19 J 0.0091	0.08 J 0.0085	0.32 J 0.0085	0.55 J 0.0089
Indeno[1,2,3-cd]pyrene	0.6	2	7	0.083 J 0.027	0.059 J 0.024	0.24 J 0.050	0.81 J 0.027	1.1 J 0.028	0.72 J 0.026	1.4 J 0.026	2.4 J 0.027
Naphthalene	6	17	25	0.013 J 0.010	0.36 U 0.0092	0.74 U 0.019	0.095 J 0.010	0.10 J 0.011	0.037 J 0.0099	0.12 J 0.0099	0.17 J 0.010
Phenanthrene	NA	300000	NA	0.18 J 0.011	0.096 J 0.0097	0.31 J 0.020	4.4 J 0.011	4.4 J 0.011	1.4 J 0.010	3.7 J 0.010	5.8 J 0.011
Pyrene	1700	18000	840	0.20 J 0.019	0.13 J 0.017	0.46 J 0.034	3.3 J 0.018	4.1 J 0.019	2.0 J 0.018	3.1 J 0.018	5.4 J 0.018
Total Conc	NA	NA	NA	1.328	0.925	3.319	21.654	25.198	11.981	22.709	38.76
GCSVOA-8082A-SOIL				Conc. Qual MDL							
Aroclor 1016	NA	NA	NA	0.083 U 0.011	0.074 U 0.0098	0.076 U 0.010	0.081 U 0.011	0.085 U 0.011	0.079 U 0.011	0.079 U 0.010	0.082 U 0.011
Aroclor 1221	NA	NA	NA	0.083 U 0.011	0.074 U 0.0098	0.076 U 0.010	0.081 U 0.011	0.085 U 0.011	0.079 U 0.011	0.079 U 0.010	0.082 U 0.011
Aroclor 1232	NA	NA	NA	0.083 U 0.011	0.074 U 0.0098	0.076 U 0.010	0.081 U 0.011	0.085 U 0.011	0.079 U 0.011	0.079 U 0.010	0.082 U 0.011
Aroclor 1242	NA	NA	NA	0.083 U 0.011	0.074 U 0.0098	0.076 U 0.010	0.081 U 0.011	0.085 U 0.011	0.079 U 0.011	0.079 U 0.010	0.082 U 0.011
Aroclor 1248	NA	NA	NA	0.083 U 0.011	0.074 U 0.0098	0.076 U 0.010	0.081 U 0.011	0.085 U 0.011	0.079 U 0.011	0.079 U 0.010	0.082 U 0.011
Aroclor 1254	NA	NA	NA	0.083 U 0.011	0.074 U 0.010	0.076 U 0.010	0.081 U 0.011	0.085 U 0.012	0.079 U 0.011	0.079 U 0.010	0.082 U 0.011
Aroclor 1260	NA	NA	NA	0.083 U 0.011	0.074 U F1	0.076 U 0.010	0.081 U 0.011	0.085 U 0.012	0.079 U 0.011	0.079 U 0.011	0.082 U 0.011
Aroclor 1262	NA	NA	NA	0.083 U 0.011	0.074 U 0.010	0.076 U 0.010	0.081 U 0.011	0.085 U 0.012	0.079 U 0.011	0.079 U 0.011	0.082 U 0.011
Aroclor 1268	NA	NA	NA	0.083 U 0.011	0.074 U 0.010	0.076 U 0.010	0.081 U 0.011	0.085 U 0.012	0.079 U 0.011	0.079 U 0.011	0.082 U 0.011
Total PCBs	0.2	1	0.2	0.083 U 0.011	0.074 U 0.010	0.076 U 0.010	0.081 U 0.011	0.085 U 0.012	0.079 U 0.011	0.079 U 0.011	0.082 U 0.011

NA: Not Applicable
SRS: Soil Remediation Standard
IGW: Impact to Groundwater
MDL: Method Detection Limit
U: Indicates the analyte was analyzed for but not detected.
J: Result is less than the MDL but greater than or equal to the MDL and the concentration is an approximate value.
F1: MS and/or MSD Recovery is outside acceptance limits.

-Boxed bold font: Indicates exceedance of SRS
-Yellow-highlighted boxed bold font: Indicates exceedance of SRS and IGW

Table 1
Remedial Investigation Sampling Results
Former University Medical Center @ Princeton, 253 Witherspoon Street, Princeton, Mercer County, New Jersey
SRP PI# 011700, Case 15-09-09-1706-55

PAHs-PCBs

Lab ID:	NJDEP	NJDEP	NJDEP	460-99997-9	460-99997-10	460-99997-11	460-99997-12	460-99997-13	460-99997-14	460-99997-15	460-99997-16																
Client ID:	Residential	Non-Residential	IGW	ES-9	ES-10	ES-11	ES-12	ES-13	ES-14	ES-15	ES-16																
Date Sampled:	SRS	SRS	Screening	08/20/2015	08/20/2015	08/20/2015	08/20/2015	08/20/2015	08/20/2015	08/20/2015	08/20/2015																
Matrix:	2012	2012	2013	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil																
Unit:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg																
Sample Depth (feet below ground surface):				2.5-3.0	2.5-3.0	3.5-4.0	1.5-2.0	2.5-3.0	1.5-2.0	2.5-3.0	1.5-2.0																
Sample Depth MSL (feet NAVD 1988):				173.1-172.6	172.0-171.5	175.0-174.5	173.0-172.5	167.2-166.7	166.2-165.7	158.8-158.3	160.1-159.6																
Easting - NJ State Plane (NAD1983)				447276.4	447080.8	447019.3	447031.6	446985.7	446953.2	446761.9	446807.6																
Northing - NJ State Plane (NAD1983)				554934.1	554891.2	554747.3	554848.6	555021.5	555092.3	555010.8	555051.8																
SVOA-8270D-SOIL				Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL			
2-Methylnaphthalene	230	2400	8	0.096	J	0.018	0.42	U	0.0092	0.039	J	0.0088	0.097	J	0.0087	0.012	J	0.0087	0.074	J	0.0085	0.41	U	0.0090	1.9	U	0.041
Acenaphthene	3400	37000	110	0.46	J	0.019	0.024	J	0.010	0.31	J	0.0097	0.65	U	0.0095	0.031	J	0.0096	0.21	J	0.0093	0.41	U	0.0099	0.13	J	0.045
Acenaphthylene	NA	300000	NA	0.80	U	0.021	0.42	U	0.011	0.40	U	0.010	0.39	U	0.010	0.40	U	0.010	0.030	J	0.0099	0.41	U	0.010	1.9	U	0.048
Anthracene	17000	30000	2400	1.6	U	0.076	0.11	J	0.040	0.79	U	0.038	0.79	U	0.037	0.081	J	0.038	0.35	J	0.036	0.41	U	0.039	0.26	J	0.18
Benzo[a]anthracene	0.6	2	0.8	2.3	U	0.067	0.20	U	0.035	2.1	U	0.033	1.4	U	0.033	0.22	U	0.033	0.87	U	0.032	0.041	U	0.034	0.57	U	0.16
Benzo[a]pyrene	0.2	0.2	0.2	1.7	U	0.024	0.13	U	0.013	1.6	U	0.012	1.1	U	0.012	0.19	U	0.012	0.83	U	0.012	0.027	J	0.012	0.44	U	0.056
Benzo[b]fluoranthene	0.6	2	2	2.2	U	0.031	0.21	U	0.016	2.0	U	0.016	1.4	U	0.015	0.28	U	0.015	0.99	U	0.015	0.033	J	0.016	0.55	U	0.073
Benzo[g,h,i]perylene	380000	30000	NA	1.50	U	0.046	0.062	J	0.024	1.20	U	0.023	0.91	U	0.023	0.098	J	0.023	0.64	U	0.022	0.41	U	0.023	0.33	J	0.11
Benzo[k]fluoranthene	6	23	25	0.87	U	0.035	0.078	U	0.018	0.87	U	0.017	0.60	U	0.017	0.12	U	0.017	0.41	U	0.017	0.041	U	0.018	0.26	U	0.081
Chrysene	62	230	80	2.5	U	0.022	0.23	J	0.011	2.3	U	0.011	1.5	U	0.011	0.29	J	0.011	1.0	U	0.010	0.026	J	0.011	0.67	J	0.051
Dibenz(a,h)anthracene	0.2	0.2	0.8	0.43	U	0.042	0.042	J	0.022	0.39	U	0.021	0.27	U	0.020	0.027	J	0.021	0.18	U	0.020	0.041	U	0.021	0.11	J	0.097
Fluoranthene	2300	24000	1300	7.2	U	0.024	0.73	U	0.012	5.7	U	0.012	3.7	U	0.012	0.63	U	0.012	2.0	U	0.011	0.037	J	0.012	1.6	J	0.055
Fluorene	2300	24000	170	0.25	J	0.017	0.030	J	0.0091	0.20	J	0.0087	0.33	J	0.0086	0.032	J	0.0086	0.16	J	0.0084	0.41	U	0.0089	0.083	J	0.041
Indeno[1,2,3-cd]pyrene	0.6	2	7	1.6	U	0.053	0.079	U	0.028	1.5	U	0.027	1.1	U	0.026	0.11	U	0.026	0.74	U	0.026	0.041	U	0.027	0.41	U	0.12
Naphthalene	6	17	25	0.12	J	0.020	0.012	J	0.011	0.075	J	0.010	0.13	J	0.010	0.020	J	0.010	0.099	J	0.0097	0.41	U	0.010	1.9	U	0.047
Phenanthrene	NA	300000	NA	7.0	U	0.021	0.64	U	0.011	3.4	U	0.011	3.5	U	0.010	0.44	U	0.011	1.5	U	0.010	0.018	J	0.011	1.2	J	0.050
Pyrene	1700	18000	840	4.6	U	0.036	0.47	U	0.019	4.1	U	0.018	2.9	U	0.018	0.42	U	0.018	1.5	U	0.017	0.031	J	0.019	0.96	J	0.085
Total Conc	NA	NA	NA	34.426	U		3.005	U		26.574	U		20.377	U		3.001	U		11.583	U		0.172	U		7.573	U	
GCSVOA-8082A-SOIL				Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL
Aroclor 1016	NA	NA	NA	0.081	U	0.011	0.084	U	0.011	0.081	U	0.011	0.080	U	0.011	0.080	U	0.011	0.078	U	0.010	0.083	U	0.011	0.076	U	0.010
Aroclor 1221	NA	NA	NA	0.081	U	0.011	0.084	U	0.011	0.081	U	0.011	0.080	U	0.011	0.080	U	0.011	0.078	U	0.010	0.083	U	0.011	0.076	U	0.010
Aroclor 1232	NA	NA	NA	0.081	U	0.011	0.084	U	0.011	0.081	U	0.011	0.080	U	0.011	0.080	U	0.011	0.078	U	0.010	0.083	U	0.011	0.076	U	0.010
Aroclor 1242	NA	NA	NA	0.081	U	0.011	0.084	U	0.011	0.081	U	0.011	0.080	U	0.011	0.080	U	0.011	0.078	U	0.010	0.083	U	0.011	0.076	U	0.010
Aroclor 1248	NA	NA	NA	0.081	U	0.011	0.084	U	0.011	0.081	U	0.011	0.080	U	0.011	0.080	U	0.011	0.078	U	0.010	0.083	U	0.011	0.076	U	0.010
Aroclor 1254	NA	NA	NA	0.081	U	0.011	0.084	U	0.012	0.081	U	0.011	0.080	U	0.011	0.080	U	0.011	0.078	U	0.011	0.083	U	0.011	0.076	U	0.010
Aroclor 1260	NA	NA	NA	0.081	U	0.011	0.084	U	0.012	0.081	U	0.011	0.080	U	0.011	0.080	U	0.011	0.078	U	0.011	0.083	U	0.011	0.076	U	0.010
Aroclor 1262	NA	NA	NA	0.081	U	0.011	0.084	U	0.012	0.081	U	0.011	0.080	U	0.011	0.080	U	0.011	0.078	U	0.011	0.083	U	0.011	0.076	U	0.010
Aroclor 1268	NA	NA	NA	0.081	U	0.011	0.084	U	0.012	0.081	U	0.011	0.080	U	0.011	0.080	U	0.011	0.078	U	0.011	0.083	U	0.011	0.076	U	0.010
Total PCBs	0.2	1	0.2	0.081	U	0.011	0.084	U	0.012	0.081	U	0.011	0.080	U	0.011	0.080	U	0.011	0.078	U	0.011	0.083	U	0.011	0.076	U	0.010

NA: Not Applicable
SRS: Soil Remediation Standard
IGW: Impact to Groundwater
MDL: Method Detection Limit
U: Indicates the analyte was analyzed for but not detected.
J: Result is less than the MDL but greater than or equal to the MDL and the concentration is an approximate value.
F1: MS and/or MSD Recovery is outside acceptance limits.

-Boxed bold font: Indicates exceedance of SRS
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Table 1
Remedial Investigation Sampling Results
Former University Medical Center @ Princeton, 253 Witherspoon Street, Princeton, Mercer County, New Jersey
SRP PI# 011700, Case 15-09-09-1706-55

PAHs-PCBs

Lab ID:	NJDEP	NJDEP	NJDEP	460-99997-17	460-99997-18	460-99997-19	460-99997-20	460-99997-21	460-99997-22												
Client ID:	Residential	Non-Residential	IGW	ES-17	ES-18	ES-19	ES-20	ES-21	ES-22												
Date Sampled:	SRS	SRS	Screening	08/20/2015	08/20/2015	08/20/2015	08/20/2015	08/20/2015	08/20/2015												
Matrix:	2012	2012	2013	Soil	Soil	Soil	Soil	Soil	Soil												
Unit:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg												
Sample Depth (feet below ground surface):				1.5-2.0	2.5-3.0	2.5-3.0	4.5-5.0	2.5-3.0	2.5-3.0												
Sample Depth MSL (feet NAVD 1988):				162.6-162.1	169.5-169.0	170.9-170.4	170.9-170.4	177.0-176.5	179.0-178.5												
Easting - NJ State Plane (NAD1983)				446877.2	446935.7	446974.4	447062.3	447160.7	447327.6												
Northing - NJ State Plane (NAD1983)				555079.0	554877.3	554867.9	554852.0	554754.1	554810.7												
SVOA-8270D-SOIL				Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL
2-Methylnaphthalene	230	2400	8	0.051	J	0.018	0.17	J	0.018	0.18	J	0.044	0.17	J	0.0086	0.38	U	0.0084	0.39	U	0.0087
Acenaphthene	3400	37000	110	0.27	J	0.019	1.1		0.020	1.2	J	0.048	0.24	J	0.0094	0.38	U	0.0092	0.097	J	0.0095
Acenaphthylene	NA	300000	NA	0.80	U	0.021	0.81	U	0.021	2.0	U	0.051	0.025	J	0.010	0.38	U F1	0.0098	0.39	U	0.010
Anthracene	17000	30000	2400	0.54	J	0.076	2.8		0.077	2.6		0.19	0.54		0.037	0.38	U	0.036	0.25	J	0.037
Benzo[a]anthracene	0.6	2	0.8	1.10		0.067	3.6		0.068	3.9		0.17	1.00		0.032	0.038	U F1	0.032	0.44		0.033
Benzo[a]pyrene	0.2	0.2	0.2	0.88		0.024	2.8		0.025	3.2		0.061	0.84		0.012	0.038	U	0.012	0.37		0.012
Benzo[b]fluoranthene	0.6	2	2	1.2		0.031	3.4		0.032	4.1		0.078	1.1		0.015	0.015	J	0.015	0.53		0.015
Benzo[g,h,i]perylene	380000	30000	NA	0.81		0.046	2.20		0.047	2.40		0.12	0.69		0.022	0.38	U F1	0.022	0.24	J	0.023
Benzo[k]fluoranthene	6	23	25	0.45		0.035	1.50		0.035	1.50		0.087	0.41		0.017	0.038	U	0.017	0.23		0.017
Chrysene	62	230	80	1.2		0.022	3.9		0.022	4.2		0.054	1.0		0.011	0.012	J	0.010	0.45		0.011
Dibenz(a,h)anthracene	0.2	0.2	0.8	0.20		0.042	0.65		0.042	0.77		0.10	0.20		0.020	0.038	U	0.020	0.062		0.020
Fluoranthene	2300	24000	1300	2.8		0.024	12.0		0.024	11.0		0.059	2.6		0.011	0.027	J	0.011	1.0		0.012
Fluorene	2300	24000	170	0.15	J	0.017	0.73	J	0.018	0.98	J	0.044	0.25	J	0.0084	0.38	U	0.0083	0.082	J	0.0086
Indeno[1,2,3-cd]pyrene	0.6	2	7	0.89		0.053	2.6		0.054	2.9		0.13	0.80		0.026	0.038	U	0.025	0.24		0.026
Naphthalene	6	17	25	0.075	J	0.020	0.35	J	0.021	0.32	J	0.051	0.18	J	0.0098	0.38	U F1	0.0097	0.39	U	0.010
Phenanthrene	NA	300000	NA	2.7		0.021	12		0.022	9.7		0.053	2.7		0.010	0.016	J	0.010	0.87		0.010
Pyrene	1700	18000	840	2.5		0.036	7.0		0.037	7.8		0.091	2.0		0.018	0.020	J F1	0.017	0.97		0.018
Total Conc	NA	NA	NA	15.816			56.8			56.75			14.745			0.09			5.831		
GCSVOA-8082A-SOIL				Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL
Aroclor 1016	NA	NA	NA	0.081	U	0.011	0.082	U	0.011	0.081	U	0.011	0.079	U	0.010	0.077	U	0.010	0.080	U	0.011
Aroclor 1221	NA	NA	NA	0.081	U	0.011	0.082	U	0.011	0.081	U	0.011	0.079	U	0.010	0.077	U	0.010	0.080	U	0.011
Aroclor 1232	NA	NA	NA	0.081	U	0.011	0.082	U	0.011	0.081	U	0.011	0.079	U	0.010	0.077	U	0.010	0.080	U	0.011
Aroclor 1242	NA	NA	NA	0.081	U	0.011	0.082	U	0.011	0.081	U	0.011	0.079	U	0.010	0.077	U	0.010	0.080	U	0.011
Aroclor 1248	NA	NA	NA	0.081	U	0.011	0.082	U	0.011	0.081	U	0.011	0.079	U	0.010	0.077	U	0.010	0.080	U	0.011
Aroclor 1254	NA	NA	NA	0.081	U	0.011	0.082	U	0.011	0.081	U	0.011	0.079	U	0.011	0.077	U	0.011	0.080	U	0.011
Aroclor 1260	NA	NA	NA	0.081	U	0.011	0.082	U	0.011	0.081	U	0.011	0.079	U	0.011	0.077	U F1	0.011	0.080	U	0.011
Aroclor 1262	NA	NA	NA	0.081	U	0.011	0.082	U	0.011	0.081	U	0.011	0.079	U	0.011	0.077	U	0.011	0.080	U	0.011
Aroclor 1268	NA	NA	NA	0.081	U	0.011	0.082	U	0.011	0.081	U	0.011	0.079	U	0.011	0.077	U	0.011	0.080	U	0.011
Total PCBs	0.2	1	0.2	0.081	U	0.011	0.082	U	0.011	0.081	U	0.011	0.079	U	0.011	0.077	U	0.011	0.080	U	0.011

NA: Not Applicable
SRS: Soil Remediation Standard
IGW: Impact to Groundwater
MDL: Method Detection Limit
U: Indicates the analyte was analyzed for but not detected.
J: Result is less than the MDL but greater than or equal to the MDL and the concentration is an approximate value.
F1: MS and/or MSD Recovery is outside acceptance limits.

-Boxed bold font: Indicates exceedance of SRS
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Table 1
Remedial Investigation Sampling Results
Former University Medical Center @ Princeton, 253 Witherspoon Street, Princeton, Mercer County, New Jersey
SRP PI# 011700, Case 15-09-09-1706-55

Metals

Lab ID:	NJDEP	NJDEP	NJDEP	460-99997-1	460-99997-2	460-99997-3	460-99997-4	460-99997-5	460-99997-6	460-99997-7	460-99997-8																
Client ID:	Residential	Non-Residential	IGW	ES-1	ES-2	ES-3	ES-4	ES-5	ES-6	ES-7	ES-8																
Date Sampled:	SRS	SRS	Screening	08/20/2015	08/20/2015	08/20/2015	08/20/2015	08/20/2015	08/20/2015	08/20/2015	08/20/2015																
Matrix:	2012	2012	2013	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil																
Unit:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg																
Sample Depth (feet below ground surface):				0.5-1.0	0.5-1.0	0-0.5	1.0-1.5	1.5-2.0	1.5-2.0	2.5-3.0	2.5-3.0																
Sample Depth MSL (feet NAVD 1988):				167.7-167.2	168.7-167.2	168.5-168.0	178.9-178.4	177.6-177.1	168.5-168.0	165.4-164.9	164.6-164.1																
Easting - NJ State Plane (NAD1983)				447060.9	447205.5	447293.9	447327.9	447104.4	447053.1	447204.4	447253.6																
Northing - NJ State Plane (NAD1983)				555115.6	555165.5	555124.3	554867.6	554793.0	555074.9	555124.7	555098.2																
METALS-SOIL BY 6020A				Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL
Aluminum	78000	NA	6000	20000		8.0	20200		8.0	13000		7.9	10700		8.7	11600		9.2	18700		7.9	20800		7.7	26800		8.7
Antimony	31	450	6	1.1	U	0.45	1.1	U	0.44	0.44	J	0.44	1.0	J	0.49	1.7		0.52	0.69	J	0.44	1.0		0.43	1.2	U	0.49
Arsenic	19	19	19	7.7		0.49	13.0		0.48	7.3		0.48	11.1		0.53	10.4		0.56	12.7		0.48	17.2		0.47	37.6		0.53
Barium	16000	59000	2100	146		0.72	111		0.71	52.7		0.71	78.8		0.78	101		0.83	131		0.70	120		0.69	127		0.78
Beryllium	16	140	0.7	1.2		0.14	1.7		0.14	0.72		0.14	0.62		0.15	0.65		0.16	1.2		0.13	1.4		0.13	2.0		0.15
Cadmium	78	78	2	1.1	U	0.34	1.1	U	0.34	1.1	U	0.34	0.44	J	0.37	1.3	U	0.39	1.1	U	0.33	1.0	U	0.33	1.2	U	0.37
Calcium	NA	NA	NA	4620		39.1	5260		38.7	30100		38.5	82500		42.3	92400		44.9	35600		38.2	21000		37.6	4860		42.4
Chromium	NA	NA	NA	28.6		0.85	47.4		0.84	36.9		0.83	47.5		0.92	30.5		0.97	45.2		0.83	50.3		0.81	54.6		0.92
Cobalt	1600	590	90	12.3		0.84	23.8		0.83	10.5		0.83	4.6		0.91	5.5		0.96	11.9		0.82	13.3		0.81	17.3		0.91
Copper	3100	45000	11000	25.2		0.74	40.9		0.73	54.0		0.72	30.8		0.80	26.8		0.84	39.4		0.72	39.8		0.71	47.3		0.80
Iron	NA	NA	NA	25000		28.3	39900		28.0	25500		27.9	16300		30.6	13100		32.5	27900		27.7	36500		27.2	45300		30.7
Lead	400	800	90	29.5		0.24	26.0		0.24	15.5		0.24	32.7		0.26	39.0		0.28	38.6		0.24	41.6		0.23	24.7		0.26
Magnesium	NA	NA	NA	5240		39.2	9650		38.8	8350		38.6	7510		42.4	9640		45.0	8840		38.3	9930		37.7	13400		42.6
Manganese	11000	5900	65	702		1.7	908		1.7	390		1.7	292		1.9	406		2.0	512		1.7	495		1.7	394		1.9
Nickel	1600	23000	48	20.9		0.85	30.9		0.85	27.9		0.84	14.7		0.92	17.6		0.98	23.7		0.84	29.7		0.82	40.6		0.93
Potassium	NA	NA	NA	2470		37.1	4020		36.8	2200		36.6	2160		40.2	2100		42.6	3810		36.3	4670		35.7	6820		40.3
Selenium	390	5700	11	0.66	J	0.42	0.46	J	0.42	5.4	U	0.41	5.9	U	0.45	6.3	U	0.48	0.43	J	0.41	0.49	J	0.40	5.9	U	0.46
Silver	390	5700	1	1.1	U	0.82	1.1	U	0.81	1.1	U	0.81	1.2	U	0.89	1.3	U	0.94	1.1	U	0.80	1.0	U	0.79	1.2	U	0.89
Sodium	NA	NA	NA	440		41.9	337		41.5	824		41.3	766		45.4	1030		48.1	738		41.0	698		40.3	432		45.5
Thallium	5	79	3	0.27	J	0.17	0.45		0.17	0.43	U	0.17	0.47	U	0.18	0.50	U	0.19	0.30	J	0.17	0.43		0.16	0.74		0.18
Vanadium	78	1100	NA	53.4		0.84	83.7		0.84	47.8		0.83	34.2		0.91	26.0		0.97	58.8		0.83	65.9		0.81	110		0.92
Zinc	23000	110000	930	71.8		2.7	82.9		2.6	57.0		2.6	146		2.9	208		3.1	155		2.6	110		2.6	98.3		2.9
SOIL BY 7471B				Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL
Mercury	23	65	0.1	0.063		0.014	0.31		0.012	0.083		0.013	0.26		0.014	0.22		0.014	0.22		0.014	0.10		0.014	0.038		0.014

NA: Not Applicable
SRS: Soil Remediation Standard
IGW: Impact to Groundwater
MDL: Method Detection Limit
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Table 1
Remedial Investigation Sampling Results
Former University Medical Center @ Princeton, 253 Witherspoon Street, Princeton, Mercer County, New Jersey
SRP PI# 011700, Case 15-09-09-1706-55

Metals

Lab ID:	NJDEP	NJDEP	NJDEP	460-99997-9	460-99997-10	460-99997-11	460-99997-12	460-99997-13	460-99997-14	460-99997-15	460-99997-16																
Client ID:	Residential	Non-Residential	IGW	ES-9	ES-10	ES-11	ES-12	ES-13	ES-14	ES-15	ES-16																
Date Sampled:	SRS	SRS	Screening	08/20/2015	08/20/2015	08/20/2015	08/20/2015	08/20/2015	08/20/2015	08/20/2015	08/20/2015																
Matrix:	2012	2012	2013	Soil																							
Unit:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg																
Sample Depth (feet below ground surface):				2.5-3.0	2.5-3.0	3.5-4.0	1.5-2.0	2.5-3.0	1.5-2.0	2.5-3.0	1.5-2.0																
Sample Depth MSL (feet NAVD 1988):				173.1-172.6	172.0-171.5	175.0-174.5	173.0-172.5	167.2-166.7	166.2-165.7	158.8-158.3	160.1-159.6																
Easting - NJ State Plane (NAD1983)				447276.4	447080.8	447019.3	447031.6	446985.7	446953.2	446761.9	446807.6																
Northing - NJ State Plane (NAD1983)				554934.1	554891.2	554747.3	554848.6	555021.5	555092.3	555010.8	555051.8																
METALS-SOIL BY 6020A				Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL
Aluminum	78000	NA	6000	10500		8.4	26700		9.1	13300		8.7	13800		8.5	16600		7.4	19700		7.2	34200		8.7	13300		7.4
Antimony	31	450	6	0.77	J	0.47	1.2	U	0.51	1.1	J	0.48	1.1	J F1	0.48	0.41	J	0.41	0.98	U	0.40	1.2	U	0.48	1.0	U	0.42
Arsenic	19	19	19	20.5		0.51	20.4		0.55	8.8	0.52	5.6	0.52	7.0	0.45	9.4	0.44	29.3		0.53	7.3	0.45	62.6	0.67	62.6	0.67	
Barium	16000	59000	2100	69.8		0.76	111		0.82	98.8	0.78	117	0.76	97.7	0.66	123	0.65	267		0.78	62.6	0.67	62.6	0.67			
Beryllium	16	140	0.7	0.58		0.14	2.1		0.16	0.92		0.15	0.89		0.15	0.76		0.13	1.3		0.12	2.4		0.15	0.82		0.13
Cadmium	78	78	2	1.1	U	0.36	1.2	U	0.39	1.2	U	0.37	1.2	U	0.36	1.0	U	0.31	0.98	U	0.31	1.2	U	0.37	1.0	U	0.32
Calcium	NA	NA	NA	73200		41.0	4700		44.2	66900		42.1	88900		41.5	12000		36.1	8720		35.3	2830		42.1	28600		36.2
Chromium	NA	NA	NA	40.5		0.89	61.5		0.96	35.4	0.91	28.7	0.90	30.3	0.78	34.5	0.76	55.0	0.91	29.2	0.78	62.6	0.67	62.6	0.67		
Cobalt	1600	590	90	5.4		0.88	12.9		0.95	8.7	0.90	6.0	0.89	7.6	0.77	16.3	0.76	11.3	0.90	8.8	0.78	62.6	0.67	62.6	0.67		
Copper	3100	45000	11000	29.7		0.77	44.6		0.83	31.1	0.79	30.0	F1	0.78	28.9	0.68	45.9	0.66	33.2	0.79	73.7	0.68	62.6	0.67			
Iron	NA	NA	NA	13900		29.7	42600		32.0	20800		30.5	14700		30.0	25500		26.1	31600		25.5	42800		30.5	23900		26.2
Lead	400	800	90	45.8		0.25	15.6		0.27	40.9	0.26	35.2	0.26	37.9	0.22	44.5	0.22	20.9	0.26	20.5	0.22	62.6	0.67	62.6	0.67		
Magnesium	NA	NA	NA	6670		41.2	12400		44.3	8010	NA	42.2	10700		41.6	5150		36.2	6810		35.4	10200		42.3	6990		36.3
Manganese	11000	5900	65	259		1.8	325		2.0	429		1.9	483		1.8	316		1.6	691		1.6	204		1.9	293		1.6
Nickel	1600	23000	48	18.2		0.90	28.9		0.97	21.3	0.92	17.5	0.91	18.8	0.79	23.5	0.77	35.9	0.92	19.7	0.79	62.6	0.67	62.6	0.67		
Potassium	NA	NA	NA	1660		39.0	3500		42.0	2790		40.0	2300		39.4	2040		34.2	3470		33.5	6190		40.0	3010		34.4
Selenium	390	5700	11	5.7	U	0.44	0.50	J	0.48	5.9	U	0.45	5.8	U	0.45	0.43	J	0.39	0.51	J	0.38	0.49	J	0.45	0.40	J	0.39
Silver	390	5700	1	1.1	U	0.86	1.2	U	0.93	1.2	U	0.88	1.2	U	0.87	1.0	U	0.76	0.98	U	0.74	1.2	U	0.89	1.0	U	0.76
Sodium	NA	NA	NA	615		44.0	238		47.4	668		45.2	807		44.5	195		38.7	459		37.8	1050		45.2	712		38.8
Thallium	5	79	3	0.46	U	0.18	0.38	J	0.19	0.47	U	0.18	0.46	U	0.18	0.17	J	0.16	0.31	J	0.15	0.60	0.18	0.17	J	0.16	
Vanadium	78	1100	NA	32.3		0.89	67.7		0.96	40.4	0.91	27.9	0.90	43.0	0.78	59.7	0.76	86.4		0.91	52.6	0.78	62.6	0.67	62.6	0.67	
Zinc	23000	110000	930	152		2.8	71.9		3.0	296		2.9	169	F1	2.8	110		2.5	119		2.4	70.7		2.9	193		2.5
SOIL BY 7471B				Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL
Mercury	23	65	0.1	0.20		0.013	0.043		0.013	0.20		0.014	0.14		0.014	0.063		0.013	0.13		0.014	0.023		0.014	0.16		0.013

NA: Not Applicable
 SRS: Soil Remediation Standard
 IGW: Impact to Groundwater
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Table 1
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Former University Medical Center @ Princeton, 253 Witherspoon Street, Princeton, Mercer County, New Jersey
SRP PI# 011700, Case 15-09-09-1706-55

Metals

Lab ID:	NJDEP	NJDEP	NJDEP	460-99997-17	460-99997-18	460-99997-19	460-99997-20	460-99997-21	460-99997-22													
Client ID:	Residential	Non-Residential	IGW	ES-17	ES-18	ES-19	ES-20	ES-21	ES-22													
Date Sampled:	SRS	SRS	Screening	08/20/2015	08/20/2015	08/20/2015	08/20/2015	08/20/2015	08/20/2015													
Matrix:	2012	2012	2013	Soil	Soil	Soil	Soil	Soil	Soil													
Unit:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg													
Sample Depth (feet below ground surface):				1.5-2.0	2.5-3.0	2.5-3.0	4.5-5.0	2.5-3.0	2.5-3.0													
Sample Depth MSL (feet NAVD 1988):				162.6-162.1	169.5-169.0	170.9-170.4	170.9-170.4	177.0-176.5	179.0-178.5													
Easting - NJ State Plane (NAD1983)				446877.2	446935.7	446974.4	447062.3	447160.7	447327.6													
Northing - NJ State Plane (NAD1983)				555079.0	554877.3	554867.9	554852.0	554754.1	554810.7													
METALS-SOIL BY 6020A				Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	
Aluminum	78000	NA	6000	10200		8.3	9440		8.5	10900		8.7	18600		7.3	25100		7.8	28900		8.2	
Antimony	31	450	6	1.1	0.46		1.7	0.48		1.3	0.49	0.41	J	0.41		1.1	UF1	0.44		1.1	U	0.46
Arsenic	19	19	19	10.3	0.50	7.2	0.52	5.8	0.53	6.2	0.44	2.8	0.47	9.3	0.50							
Barium	16000	59000	2100	77.4	0.74	87.2	0.77	80.3	0.78	147	0.65	75.1	0.70	240	0.73							
Beryllium	16	140	0.7	0.65	0.14	0.65	0.15	0.70	0.15	1.5		0.12	0.47	0.13	0.14					1.7		
Cadmium	78	78	2	1.1	U	0.35	1.2	U	0.36	1.2	U	0.37	0.99	U	0.31	1.1	U	0.33		1.1	U	0.35
Calcium	NA	NA	NA	51900	40.3	97000	41.5	92000	42.5	27000	35.3	7240	38.0	2160	39.8							
Chromium	NA	NA	NA	31.2	0.87	29.6	0.90	30.2	0.92	55.1	0.77	155	0.82	37.6	0.86							
Cobalt	1600	590	90	7.1	0.86	4.7	0.89	5.8	0.91	15.1	0.76	36.3	0.82	13.2	0.85							
Copper	3100	45000	11000	31.2	0.76	33.5	0.78	34.2	0.80	39.9	0.67	95.4	0.72	31.3	0.75							
Iron	NA	NA	NA	14000	29.2	11800	30.1	14100	30.8	34700	25.6	41600	27.5	31800	28.8							
Lead	400	800	90	40.9	0.25	41.3	0.26	38.4	0.26	27.6	0.22	10.3	0.23	86.4	0.25							
Magnesium	NA	NA	NA	5820	40.4	9170	41.7	8380	42.7	12900	35.4	12700	38.1	6190	39.9							
Manganese	11000	5900	65	306		1.8	305		1.8	368		1.9	569		1.6	929		1.7	942		1.8	
Nickel	1600	23000	48	18.9	0.88	15.8	0.91	18.5	0.93	36.3	0.77	101		0.83	26.5	0.87						
Potassium	NA	NA	NA	2310	38.3	1700	39.5	1900	40.4	5690	33.6	854	36.1	3660	37.8							
Selenium	390	5700	11	5.6	U	0.43	5.8	U	0.45	5.9	U	0.46	4.9	U	0.38	5.3	U	0.41	0.81	J	0.43	
Silver	390	5700	1	1.1	U	0.85	1.2	U	0.87	1.2	U	0.89	0.99	U	0.74	1.1	U	0.80	1.1	U	0.84	
Sodium	NA	NA	NA	715	43.2	843	44.6	745	45.6	748	37.9	602	40.8	156	42.7							
Thallium	5	79	3	0.45	U	0.17	0.46	U	0.18	0.48	U	0.18	0.29	J	0.15	0.42	U	0.16	0.29	J	0.17	
Vanadium	78	1100	NA	31.5	0.87	26.3	0.90	30.1	0.92	47.6	0.76	104		0.82	45.4	0.86						
Zinc	23000	110000	930	171	2.7	224	2.8	213	2.9	103	2.4	56.4	2.6	113	2.7							
SOIL BY 7471B				Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	
Mercury	23	65	0.1	0.44		0.013	0.17		0.014	0.21		0.014	0.85		0.012	0.015	J	0.012	0.23		0.014	

NA: Not Applicable
SRS: Soil Remediation Standard
IGW: Impact to Groundwater
MDL: Method Detection Limit
U: Indicates the analyte was analyzed for but not detected.
J: Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1: MS and/or MSD Recovery is outside acceptance limits.

###	-Boxed BLUE bold font: Indicates exceedance of IGW
###	-Boxed bold font: Indicates exceedance of SRS
###	-Yellow-highlighted boxed bold font: Indicates exceedance of SRS and IGW

TABLE 2
 Data Quality Assessment/Data Usability Evaluation
 Former University Medical Center @ Princeton, 253 Witherspoon Street, Princeton, Mercer County, New Jersey
 SRP PI # 011700, Case 15-09-09-1706-55
 SVOC-8270D

LABORATORY SDG ID:	TestAmerica (Edison) 460-99997-1	
Preparation Batch ID(s):	460-318152, 460-318158	
Analysis Batch ID(s):	460-318190, 460-318191, 460-318357, 460-318575	
DATA OF KNOWN QUALITY PROTOCOL REQUIREMENT	COMMENT	Qualification Required
GC/MS dftpp Tune (every 12 hours, criteria per SW-846)	All aspects acceptable	N/A
Initial Calibration (ICAL): Minimum five standards %RSD ≤ 20% or "r" ≥ 0.99 for all compounds	All acceptable	N/A
Method Blank Contamination: (Target Analytes < RL; except phthalates < 5x RL)	Acceptable, no contamination	N/A
Field/Equipment Blank Contamination: (Not required if using dedicated sampling equipment)	No Field Blank Collected	N/A
MS/MSD (Site Specific QC): Target Analytes 70<%R<130; "difficult" analytes 20<%R<160 MS/MSD RPD: <20% Aqueous matrix, <30% Solid matrix	Batches 460-318152 and 460-318158: MS and/or MSD %R outside QC limits (low) for several compounds. DUE: LCS OK. No qualification needed.	No
Laboratory Control Sample (LCS): Target Analytes 70<%R<130; "difficult" analytes 20<%R<160	All acceptable, no outliers	N/A
Sample Duplicate: For compounds > 2x RL RPD: ≤ 20% Aqueous matrix, ≤ 30% Solid matrix	All acceptable	N/A
Surrogate Recovery: Minimum 3 BN and 3 Acid Surrogates: Solid Matrix %R: 30<%R<130; Aqueous Matrix: BN %R: 30<%R<130, Acid %R: 15<%R<110	All acceptable, no outliers	N/A
Internal Standards Data: Minimum 6 IS; Area 50%-200% of CCV, RTs ± 30 sec	All acceptable	N/A
Continuing Calibration Verification (CCV): 1 CCV per 12 hours; %D ≤ 20% for all CCCs; ≤ 30% for all others	All acceptable	N/A
Quantitation: All compounds: RL ≤ results ≤ Upper Calibration Range Detections between MDL and RL qualified with "J"	All acceptable	N/A
Field Duplicate - Site Specific QC: For compounds > 2x RL RPD: <30% Aqueous matrix, <50% Solid matrix	Site Specific sample duplicate not required	N/A
Sample Preservation Requirements Met (≤ 6 □C)?	Met	N/A
Holding Time Requirements Met? Aqueous: extract w/in 7 days of sample; Solid: extract w/in 14 days; Analyze within 40 days of extraction	Met	N/A
Target Analyte Reporting: Samples	All acceptable	N/A
OVERALL DISPOSITION	All SVOC data are reported as provided in the data deliverable and are not qualified, rejected, or negated.	

TABLE 2
 Data Quality Assessment/Data Usability Evaluation
 Former University Medical Center @ Princeton, 253 Witherspoon Street, Princeton, Mercer County, New Jersey
 SRP PI # 011700, Case 15-09-09-1706-55
 PCBs

LABORATORY SDG ID:	TestAmerica (Edison) 460-99997-1	
Preparation Batch ID(s):	460-318165, 460-318167	
Analysis Batch ID(s):	460-318197, 460-318286	
DATA OF KNOWN QUALITY PROTOCOL REQUIREMENT	COMMENT	Qualification Required
Method Blank Contamination: (Target Analytes < RL)	Acceptable, no contamination	N/A
Field/Equipment Blank Contamination: (Not required if using dedicated sampling equipment)	No Field Blank Collected	N/A
MS/MSD (Site Specific QC): Must include Aroclor 1016 & 1260 Target Analytes 40<%R<140 MS/MSD RPD: <20% Aqueous matrix; <30% Solid matrix	Batches 460-318165 and 460-318167: MS and/or MSD %R outside QC limits (high) for aroclor 1260. DUE: LCS OK. Samples ND. No qualification needed.	No
Laboratory Control Sample (LCS): Must include Aroclor 1016 & 1260 Target Analytes 40<%R<140	All acceptable, no outliers	N/A
Sample Duplicate: For compounds > 2x RL RPD: ≤ 20% Aqueous matrix, ≤ 30% Solid matrix	All acceptable	N/A
Surrogate Recovery: Minimum 2 Surrogates: %R: 30<%R<150 on both primary and secondary columns	All acceptable, no outliers	N/A
Initial Calibration (ICAL): Minimum five standards for Aroclor 1016 & 1260; 3-5 levels for others %RSD ≤ 20% or "r" ≥ 0.99 for 1016 & 1260	All acceptable	N/A
Continuing Calibration Verification (CCV): for Aroclor 1016 & 1260 1 CCV per 12 hours or 20 samples; %D ≤ 20%	All acceptable	N/A
Quantitation: All compounds: RL ≤ results ≤ Upper Calibration Range Report highest concentration from two GC columns. Detections between MDL and RL qualified with "J"	All acceptable	N/A
Quantitation: All compounds: RPD or %D ≤ 40% between two columns	All acceptable	N/A
Field Duplicate - Site Specific QC: For compounds > 2x RL RPD: <30% Aqueous matrix, <50% Solid matrix	Site Specific sample duplicate not required	N/A
Sample Preservation Requirements Met (≤ 6 °C)?	Met	N/A
Holding Time Requirements Met? Aqueous: extract w/in 7 days of sample; Solid: extract w/in 14 days; Analyze within 40 days of extraction	Met	N/A
Target Analyte Reporting: Samples	All acceptable	N/A
OVERALL DISPOSITION	All PCB data are reported as provided in the data deliverable and are not qualified, rejected, or negated.	

TABLE 2
Data Quality Assessment/Data Usability Evaluation
Former University Medical Center @ Princeton, 253 Witherspoon Street, Princeton, Mercer County, New Jersey
SRP PI # 011700, Case 15-09-09-1706-55
Metals (ICPMS-6020A)

LABORATORY SDG ID:	TestAmerica (Edison) 460-99997-1	
Preparation Batch ID(s):	460-319427, 460-319429	
Analysis Batch ID(s):	460-319928	
DATA OF KNOWN QUALITY PROTOCOL REQUIREMENT	COMMENT	Qualification Required
Tuning: SW-846 tuning criteria	All acceptable	N/A
Linear Dynamic Range: checked every 6 months	All acceptable	N/A
Initial Calibration (ICAL): daily prior to analysis of samples; blank plus 3 standards plus blank; linear curve fit $r \leq 0.998$	All acceptable	N/A
Initial Calibration Verification (ICV): ICV daily after ICAL; separate source from calibration standards; %R: $90 \leq \%R \leq 110\%$	All acceptable	N/A
Continuing Calibration Verification (CCV): CCV after 10 samples; separate source from calibration standards; %R: $80 \leq \%R \leq 120\%$	All acceptable	N/A
Initial & Continuing Calibration Blanks (ICB & CCB): after ICV or CCV, result < RL	All acceptable	N/A
Low Level Continuing Calibration Verification (LLCCV): daily only if RL STD not in ICAL, same source as ICAL standards; All elements: $70 \leq \%R \leq 130\%$	All acceptable	N/A
Method Blank Contamination: (Target Analytes < RL)	Acceptable, no contamination	N/A
Field/Equipment Blank Contamination: (Not required if using dedicated sampling equipment)	No Field Blank Collected	N/A
Laboratory Control Sample (LCS): Aqueous Target Analytes: $80 < \%R < 120$ Soil/Sediment/Solid LCS: LCS Vendor Limits (95% confidence limit)	All acceptable, no outliers	N/A
Sample Duplicate: For analytes $\geq 5x$ RL: RPD: $\leq 20\%$ AQ matrix, $\leq 35\%$ Solid matrix	Duplicate RPD outside QC limit: Batch 460-319427: Sodium Batch 460-319429: Manganese All others acceptable	N/A
MS/MSD (Site Specific QC): Target Analytes $75 < \%R < 125$; professional judgement if concentration >4X spiked amount; For analytes $\geq 5x$ RL: RPD: $\leq 20\%$ AQ matrix, $\leq 35\%$ Solid matrix	Batches 460-319427 and 460-319429: MS %R outside QC limit for several elements. LCS acceptable. All others acceptable, no outliers	No
Post-Digestion Spike: $80 < \%R < 120$	Batch 460-319427: Copper post-dige spike outside QC limit (low). All others acceptable, no outliers	No
Serial Dilution: 5x dilution on MS sample: For results > 50x RL: %D $\leq 10\%$	All acceptable, no outliers	N/A
Internal Standards: Intensity of IS 70%-130% of ICAL standard	All acceptable, no outliers	N/A
Quantitation: All compounds: RL \leq results \leq Linear Calibration Range Detections between MDL and RL qualified with "J"	All acceptable	N/A
Site Specific Field Duplicate - For analytes $\geq 5x$ RL: RPD: $\leq 30\%$ AQ matrix, $\leq 50\%$ Solid matrix For analytes < 5x RL: professional judgement	Site Specific sample duplicate not required	N/A
Sample Preservation Requirements Met (≤ 6 °C, AQ pH < 2 HNO ₃)?	Met	N/A
Holding Time Requirements Met? 180 days	Met	N/A
Target Analyte Reporting: Samples	All acceptable	N/A
OVERALL DISPOSITION	All metals data are reported as provided in the data deliverable and are not qualified, rejected, or negated.	

TABLE 2
 Data Quality Assessment/Data Usability Evaluation
 Former University Medical Center @ Princeton, 253 Witherspoon Street, Princeton, Mercer County, New Jersey
 SRP PI # 011700, Case 15-09-09-1706-55
 Mercury

LABORATORY SDG ID:	TestAmerica (Edison) 460-99997-1	
Preparation Batch ID(s):	460-318643, 460-318651	
Analysis Batch ID(s):	460-318713	
DATA OF KNOWN QUALITY PROTOCOL REQUIREMENT	COMMENT	Qualification Required
Initial Calibration (ICAL): daily prior to analysis of samples; Minimum five standards plus blank; linear regression $r \geq 0.995$	All acceptable	N/A
Initial Calibration Verification (ICV): daily after ICAL; separate source from calibration standards; All elements: $90\% \leq \%R \leq 110\%$	All acceptable	N/A
Low Level Initial Calibration Verification (LLICV): daily after ICV and at end of run, same source as ICAL standards; All elements: $70\% \leq \%R \leq 130\%$	All acceptable	N/A
Initial & Continuing Calibration Blanks (ICB & CCB): after ICV or CCV, result < RL	All acceptable	N/A
Continuing Calibration Verification (CCV): 1 CCV for every 10 samples; All elements: $90\% \leq \%R \leq 110\%$	All acceptable	N/A
Low Level Continuing Calibration Verification (LLCCV): daily only if RL STD not in ICAL, same source as ICAL standards; All elements: $70\% \leq \%R \leq 130\%$	All acceptable	N/A
Method Blank Contamination: (Target Analytes < RL)	Acceptable, no contamination	N/A
Field/Equipment Blank Contamination: (Not required if using dedicated sampling equipment)	No Field Blank Collected	N/A
Interference Check Standards (ICSA & ICSB): daily after ICAL ISCA & ICSB: $80\% \leq \%R \leq 120\%$; ISCA: non-spiked analytes $\leq 2x$ RL	All acceptable, no outliers	N/A
Laboratory Control Sample (LCS): Aqueous Target Analytes: $80\% \leq \%R < 120\%$ Soil/Sediment/Solid LCS: LCS Vendor Limits (95% confidence limit)	All acceptable, no outliers	N/A
Sample Duplicate: For analytes $\geq 5x$ RL: RPD: $\leq 20\%$ AQ matrix, $\leq 35\%$ Solid matrix For analytes < 5x RL: absolute difference between result \leq RL	All acceptable	N/A
MS/MSD (Site Specific QC): Target Analytes $75\% \leq \%R < 125\%$; professional judgement if concentration >4X spiked amount; For analytes $\geq 5x$ RL: RPD: $\leq 20\%$ AQ matrix, $\leq 35\%$ Solid matrix For analytes < 5x RL: absolute difference between result \leq RL	All acceptable, no outliers	N/A
Quantitation: All compounds: RL \leq results \leq Linear Calibration Range Detections between MDL and RL qualified with "J"	All acceptable	N/A
Site Specific Field Duplicate - For analytes $\geq 5x$ RL: RPD: $\leq 30\%$ AQ matrix, $\leq 50\%$ Solid matrix For analytes < 5x RL: professional judgement	Site Specific sample duplicate not required	N/A
Sample Preservation Requirements Met (≤ 6 °C, AQ pH < 2 HNO ₃)?	Met	N/A
Holding Time Requirements Met? 28 days	Met	N/A
Target Analyte Reporting: Samples	All acceptable	N/A
OVERALL DISPOSITION	All metals data are reported as provided in the data deliverable and are not qualified, rejected, or negated.	

Table 3
 Remedial Investigation (Waste Characterization) Sampling Results
 Former University Medical Center @ Princeton, 253 Witherspoon Street, Princeton, Mercer County, New Jersey
 SRP PI# 011700, Case 15-09-09-1706-55

PAHs-PCBs

Lab ID:	NJDEP	NJDEP	NJDEP	460-100972-1	460-100972-2	460-100972-3	460-100972-4	460-100972-5	460-100972-6	460-100972-7	460-100972-8	460
Client ID:	Residential	Non-Residential	IGW	WC-1	WC-2	WC-3	WC-4	WC-5	WC-6	WC-7	WC-8	
Date Sampled:	SRS	SRS	Screening	09/11/2015	09/11/2015	09/11/2015	09/11/2015	09/11/2015	09/11/2015	09/11/2015	09/11/2015	09
Matrix:	2012	2012	2013	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	
Unit:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
Dilution				1	1	5	1	1	1	5	1	
SVOA-8270D-SOIL				Conc. Qual MDL	Conc. Qual MDL	Conc. Qual MDL	Conc. Qual MDL	Conc. Qual MDL	Conc. Qual MDL	Conc. Qual MDL	Conc. Qual MDL	Conc.
2-Methylnaphthalene	230	2400	8	0.035 J 0.0087	0.026 J 0.0087	0.11 J 0.043	0.016 J 0.0088	0.019 J 0.0087	0.035 J 0.0091	0.17 J 0.0450	0.050 J 0.0089	0.17
Acenaphthene	3400	37000	110	0.13 J 0.0096	0.07 J 0.0096	1.6 J 0.047	0.08 J 0.0096	0.05 J 0.0095	0.26 J 0.0099	1.1 J 0.0490	0.41 J 0.0098	1.1
Acenaphthylene	NA	300000	NA	0.04 J 0.010	0.06 J 0.010	0.09 J 0.05	0.02 J 0.010	0.04 J 0.010	0.02 J 0.011	2.0 U 0.052	0.03 J 0.010	2.0
Anthracene	17000	30000	2400	0.40 J 0.038	0.25 J 0.038	12.0 J 0.19	0.24 J 0.038	0.14 J 0.037	0.72 J 0.039	2.8 J 0.190	1.10 J 0.038	2.7
Benzo[a]anthracene	0.6	2	0.8	0.90 0.033	0.84 0.033	10.0 0.16	0.94 0.033	0.54 0.033	2.4 0.034	6.0 0.170	2.5 0.034	4.0
Benzo[a]pyrene	0.2	0.2	0.2	0.84 0.012	0.83 0.012	6.0 0.059	0.81 0.012	0.54 0.012	2.0 0.012	3.8 0.061	2.1 0.012	3.0
Benzo[b]fluoranthene	0.6	2	2	1.1 0.015	1.1 0.015	8.3 0.077	1.2 0.015	0.77 0.015	3.1 0.016	5.0 0.079	3.2 0.016	4.1
Benzo[g,h,i]perylene	380000	30000	NA	0.32 J 0.023	0.33 J 0.023	5.4 J 0.11	0.30 J 0.023	0.21 J 0.023	0.68 J 0.024	3.60 J 0.120	0.71 J 0.023	1.60
Benzo[k]fluoranthene	6	23	25	0.40 0.017	0.40 0.017	3.1 0.085	0.50 0.017	0.25 0.017	1.10 0.018	1.90 0.088	1.20 0.018	1.60
Chrysene	62	230	80	1.1 0.011	0.9 0.011	15.0 0.053	1.1 0.011	0.7 0.011	2.6 0.011	6.6 0.055	2.7 0.011	4.4
Dibenz[a,h]anthracene	0.2	0.2	0.8	0.14 0.021	0.13 0.021	1.5 0.10	0.14 0.021	0.10 0.020	0.3 0.02	1.0 0.11	0.3 0.02	0.6
Fluoranthene	2300	24000	1300	2.2 0.012	1.7 0.012	33.0 0.058	2.1 0.012	1.3 0.012	5.8 0.012	19.0 0.060	7.4 0.012	13.0
Fluorene	2300	24000	170	0.16 J 0.0086	0.06 J 0.0086	1.4 J 0.043	0.05 J 0.0086	0.04 J 0.0085	0.19 J 0.0089	0.67 J 0.0440	0.30 J 0.0088	0.77
Indeno[1,2,3-cd]pyrene	0.6	2	7	0.43 0.026	0.43 0.026	6.5 0.13	0.42 0.026	0.27 0.026	0.95 0.027	4.2 0.130	0.98 0.027	1.9
Naphthalene	6	17	25	0.039 J 0.0100	0.034 J 0.0100	0.17 J 0.05	0.034 J 0.010	0.023 J 0.0100	0.082 J 0.0100	0.340 J 0.0510	0.100 J 0.0100	0.310
Phenanthrene	NA	300000	NA	1.4 0.011	0.8 0.011	30.0 0.052	0.9 0.011	0.5 0.010	2.7 0.011	17.0 0.054	3.8 0.011	12.0
Pyrene	1700	18000	840	1.3 0.018	1.1 0.018	22.0 0.089	1.1 0.018	0.8 0.018	3.6 0.019	12.0 0.092	3.6 0.018	6.9
Total Conc	NA	NA	NA	10.936	9.064	156.2	9.949	6.256	26.487	85.170	30.458	58.130

GCSVOA-8082A-SOIL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.		
Aroclor 1016	NA	NA	NA	0.080	U	0.0110	0.080	U	0.0110															
Aroclor 1221	NA	NA	NA	0.080	U	0.0110	0.080	U	0.0110															
Aroclor 1232	NA	NA	NA	0.080	U	0.0110	0.080	U	0.0110															
Aroclor 1242	NA	NA	NA	0.080	U	0.0110	0.080	U	0.0110															
Aroclor 1248	NA	NA	NA	0.080	U	0.0110	0.080	U	0.0110															
Aroclor 1254	NA	NA	NA	0.080	U	0.011	0.080	U	0.011															
Aroclor 1260	NA	NA	NA	0.080	U	0.011	0.080	U	0.011															
Aroclor 1262	NA	NA	NA	0.080	U	0.011	0.080	U	0.011															
Aroclor 1268	NA	NA	NA	0.080	U	0.011	0.080	U	0.011															
Total PCBs	0.2	1	0.2	0.080	U	0.011	0.080	U	0.011															

NA: Not Applicable
 SRS: Soil Remediation Standard
 IGW: Impact to Groundwater
 MDL: Method Detection Limit
 U: Indicates the analyte was analyzed for but not detected.
 J: Result is less than the RCL but greater than or equal to the MDL
 and the
 concentration is an approximate value.
 F1: MS and/or MSD Recovery is outside acceptance limits.

-Boxed bold font: Indicates
 exceedance of SRS
 ### -Yellow-highlighted boxed bold font:
 Indicates exceedance of SRS and IGW

Table 3
Remedial Investigation (Waste Characterization) Sampling Results
Former University Medical Center @ Princeton, 253 Witherspoon Street, Princeton, Mercer County, New Jersey
SRP PI# 011700, Case 15-09-09-1706-55

PAHs-PCBs

Lab ID:	NJDEP	NJDEP	NJDEP	-100972-9	460-100972-10	460-100972-11	460-100972-12	460-100972-13	460-100972-14											
Client ID:	Residential	Non-Residential	IGW	WC-9	WC-10	WC-11	WC-12	WC-13	WC-14											
Date Sampled:	SRS	SRS	Screening	/11/2015	09/11/2015	09/11/2015	09/11/2015	09/11/2015	09/11/2015											
Matrix:	2012	2012	2013	Soil	Soil	Soil	Soil	Soil	Soil											
Unit:	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg											
Dilution				5	2	1	1	1	1											
SVOA-8270D-SOIL				Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL
2-Methylnaphthalene	230	2400	8	J	0.0450	0.032	J	0.0170	0.016	J	0.0088	0.020	J F1	0.0086	0.38	U	0.0083	0.009	J	0.0088
Acenaphthene	3400	37000	110	J	0.0490	0.27	J	0.0190	0.08	J	0.0096	0.16	J F1	0.0094	0.02	J *	0.0091	0.06	J *	0.0096
Acenaphthylene	NA	300000	NA	U	0.052	0.02	J	0.020	0.02	J	0.010	0.39	U F1	0.010	0.01	J	0.010	0.01	J	0.010
Anthracene	17000	30000	2400		0.190	0.84		0.074	0.26	J	0.038	0.53	F1	0.037	0.06	J	0.036	0.17	J	0.038
Benzo[a]anthracene	0.6	2	0.8		0.170	2.7		0.065	1.1		0.033	1.3	F1	0.032	0.27		0.031	0.75		0.033
Benzo[a]pyrene	0.2	0.2	0.2		0.061	2.2		0.024	0.90		0.012	1.0	F1	0.012	0.25		0.011	0.66		0.012
Benzo[b]fluoranthene	0.6	2	2		0.079	2.8		0.030	1.4		0.015	1.4	F1	0.015	0.37		0.015	0.96		0.016
Benzo[g,h,i]perylene	380000	30000	NA	J	0.120	1.30		0.045	0.32	J	0.023	0.64		0.022	0.09	J	0.022	0.21	J	0.023
Benzo[k]fluoranthene	6	23	25		0.088	1.10		0.034	0.58		0.017	0.52	F1	0.017	0.15		0.016	0.33		0.017
Chrysene	62	230	80		0.055	3.1		0.021	1.1		0.011	1.4	F1	0.011	0.3	J	0.010	0.9		0.011
Dibenz[a,h]anthracene	0.2	0.2	0.8		0.11	0.4		0.04	0.15		0.021	0.2		0.020	0.047		0.020	0.089		0.021
Fluoranthene	2300	24000	1300		0.060	5.9		0.023	2.3		0.012	3.0	F1	0.012	0.7		0.011	1.6		0.012
Fluorene	2300	24000	170	J	0.0440	0.25	J	0.0170	0.06	J	0.0086	0.13	J F1	0.0085	0.02	J	0.0082	0.05	J	0.0087
Indeno[1,2,3-cd]pyrene	0.6	2	7		0.130	1.6		0.052	0.45		0.026	0.76		0.026	0.11		0.025	0.26		0.026
Naphthalene	6	17	25	J	0.0510	0.100	J	0.0200	0.030	J	0.0100	0.031	J F1	0.0099	0.380	U	0.0096	0.017	J	0.0100
Phenanthrene	NA	300000	NA		0.054	3.2		0.021	1.0		0.011	1.7	F1	0.010	0.3	J	0.010	0.8		0.011
Pyrene	1700	18000	840		0.092	4.9		0.035	1.3		0.018	2.6	F1	0.018	0.4	J	0.017	1.1		0.018
Total Conc	NA	NA	NA			30.745			11.042			15.401			2.992			7.906		

GCSVOA-8082A-SOIL				Qual	MDL	Conc.	Qual	MDL												
Aroclor 1016	NA	NA	NA	U	0.0110	0.079	U	0.0100	0.081	U	0.0110	0.079	U	0.0100	0.077	U	0.0100	0.080	U	0.0110
Aroclor 1221	NA	NA	NA	U	0.0110	0.079	U	0.0100	0.081	U	0.0110	0.079	U	0.0100	0.077	U	0.0100	0.080	U	0.0110
Aroclor 1232	NA	NA	NA	U	0.0110	0.079	U	0.0100	0.081	U	0.0110	0.079	U	0.0100	0.077	U	0.0100	0.080	U	0.0110
Aroclor 1242	NA	NA	NA	U	0.0110	0.079	U	0.0100	0.081	U	0.0110	0.079	U	0.0100	0.077	U	0.0100	0.080	U	0.0110
Aroclor 1248	NA	NA	NA	U	0.0110	0.079	U	0.0100	0.081	U	0.0110	0.079	U	0.0100	0.077	U	0.0100	0.080	U	0.0110
Aroclor 1254	NA	NA	NA	U	0.011	0.079	U	0.011	0.081	U	0.011	0.079	U	0.011	0.077	U	0.011	0.080	U	0.011
Aroclor 1260	NA	NA	NA	U	0.011	0.079	U	0.011	0.081	U	0.011	0.079	U	0.011	0.077	U	0.011	0.080	U	0.011
Aroclor 1262	NA	NA	NA	U	0.011	0.079	U	0.011	0.081	U	0.011	0.079	U	0.011	0.077	U	0.011	0.080	U	0.011
Aroclor 1268	NA	NA	NA	U	0.011	0.079	U	0.011	0.081	U	0.011	0.079	U	0.011	0.077	U	0.011	0.080	U	0.011
Total PCBs	0.2	1	0.2	U	0.011	0.079	U	0.011	0.081	U	0.011	0.079	U	0.011	0.077	U	0.011	0.080	U	0.011

NA: Not Applicable
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MDL: Method Detection Limit
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and the
concentration is an approximate value
F1 : MS and/or MSD Recovery is outside acceptance limits.

-Boxed bold font: Indicates exceedance of SRS
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Table 3
Remedial Investigation (Waste Characterization) Sampling Results
Former University Medical Center @ Princeton, 253 Witherspoon Street, Princeton, Mercer County, New Jersey
SRP PI# 011700, Case 15-09-09-1706-55

Metals

Lab ID:	NJDEP	NJDEP	NJDEP	460-100972-1			460-100972-2			460-100972-3			460-100972-4			460-100972-5			460-100972-6			460-100972-7			460-100972-8					
Client ID:	Residential	Non-Residential	IGW	WC-1			WC-2			WC-3			WC-4			WC-5			WC-6			WC-7			WC-8					
Date Sampled:	SRS	SRS	Screening	09/11/2015			09/11/2015			09/11/2015			09/11/2015			09/11/2015			09/11/2015			09/11/2015			09/11/2015					
Matrix:	2012	2012	2013	Soil			Soil			Soil			Soil			Soil			Soil			Soil			Soil					
Unit:	mg/kg	mg/kg	mg/kg	mg/kg			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg					
Dilution																														
METALS-SOIL BY 6020A				Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL
Aluminum	78000	NA	6000	26500		24.5	23100		24.0	18800		21.9	17200		24.8	16400		24.3	19200		25.1	12100		24.7	17800		24.7	17800		24.7
Antimony	31	450	6	2.2	J	1.90	4.7	U	1.80	4.2	U F1	1.70	4.8	U	1.90	4.7	U	1.90	4.9	U	1.90	1.9	J	1.90	4.8	U	1.90	4.8	U	1.90
Arsenic	19	19	19	9.9		1.20	10.2		1.10	18.8		1.00	9.9		1.20	10.1		1.20	10.9		1.20	7.9		1.20	7.4		1.20	7.4		1.20
Barium	16000	59000	2100	265		1.70	208		1.70	166		1.50	139		1.70	107		1.70	159		1.70	125		1.70	125		1.70	125		1.70
Beryllium	16	140	0.7	1.5		0.40	1.2		0.39	0.5		0.36	1.0		0.41	1.1		0.40	1.2		0.41	1.0		0.41	0.79		0.41	0.79		0.41
Cadmium	78	78	2	1.0	U	0.50	0.9	U	0.49	0.9	U	0.44	1.0	U	0.50	0.9	U	0.49	1.0	U	0.51	1.0	U	0.50	1.0	U	0.50	1.0	U	0.50
Calcium	NA	NA	NA	11200		70.4	20100		68.9	78100		174.0	21200		71.2	18300		69.7	45300		72.2	111000		178.0	41200		71.1	41200		71.1
Chromium	NA	NA	NA	38.8		1.20	41.2		1.10	56.6	F1	1.00	40.7		1.20	34.6		1.10	43.7		1.20	33.4		1.20	61.2		1.20	61.2		1.20
Cobalt	1600	590	90	14.8		1.40	16.6		1.30	8.6	J	1.20	12.5		1.40	12.4		1.40	12.0	J	1.40	7.7	J	1.40	14.8		1.40	14.8		1.40
Copper	3100	45000	11000	32.8		1.50	46.8		1.50	34.8		1.50	37.1		1.60	45.5		1.50	667.0		1.60	55.9		1.60	55.4		1.60	55.4		1.60
Iron	NA	NA	NA	34000		26.9	34300		26.3	19400		24.0	30800		27.2	27900		26.6	28900		27.5	14600		27.1	29000		27.1	29000		27.1
Lead	400	800	90	49.7		0.93	27.5		0.91	34.5		0.83	29.3		0.94	28.7		0.92	33.4		0.96	60.2		0.94	45.6		0.94	45.6		0.94
Magnesium	NA	NA	NA	7460		59.4	9210		58.1	11000		53.0	6200		60.0	7290		58.8	9410		60.8	11100		59.9	9520		59.9	9520		59.9
Manganese	11000	5900	65	850		1.2	831		1.2	587		1.1	438		1.3	519		1.2	533		1.3	406		1.3	466		1.3	466		1.3
Nickel	1600	23000	48	30.5		1.70	30.4		1.70	24.8		1.50	22.3		1.80	22.9		1.70	27.5		1.80	23.2		1.80	53.0		1.80	53.0		1.80
Potassium	NA	NA	NA	4490		36.0	4110		35.3	4100	F1	32.2	3220		36.4	3570		35.7	4310		36.9	2150		36.4	2700		36.4	2700		36.4
Selenium	390	5700	11	4.80	U	1.60	4.70	U	1.60	4.20	U	1.50	4.80	U	1.70	4.70	U	1.60	4.90	U	1.70	4.80	U	1.70	4.80	U	1.70	4.80	U	1.70
Silver	390	5700	1	2.4	U	0.42	2.3	U	0.41	2.1	U	0.37	2.4	U	0.42	2.4	U	0.42	2.4	U	0.43	2.4	U	0.42	2.4	U	0.42	2.4	U	0.42
Sodium	NA	NA	NA	817	J	80.5	802	J	78.8	3570	F1	71.9	557	J	81.4	644	J	79.7	1660		82.5	874	J	81.3	1270		81.3	1270		81.3
Thallium	5	79	3	4.80	U	2.10	4.70	U	2.10	4.20	U	1.90	4.80	U	2.10	4.70	U	2.10	4.90	U	2.20	4.80	U	2.10	4.80	U	2.10	4.80	U	2.10
Vanadium	78	1100	NA	47.4		1.20	58.7		1.20	35.3		1.10	52.8		1.20	51.7		1.20	50.3		1.20	30.4		1.20	46.2		1.20	46.2		1.20
Zinc	23000	110000	930	109.0		1.7	99.1		1.7	173.0	F1	1.5	87.1		1.8	87.9		1.7	155.0		1.8	428.0		1.8	163.0		1.8	163.0		1.8

SOIL BY 7471B				Conc.	Qual	MDL																								
Mercury	23	65	0.1	0.086		0.014	0.076		0.013	0.18		0.014	0.15		0.013	0.15		0.013	0.14		0.015	0.21		0.013	0.11		0.014	0.11		0.014

NA: Not Applicable
SRS: Soil Remediation Standard
IGW: Impact to Groundwater
MDL: Method Detection Limit
U: Indicates the analyte was analyzed for but not detected.
J: Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1: MS and/or MSD Recovery is outside acceptance limits.

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Table 3
Remedial Investigation (Waste Characterization) Sampling Results
Former University Medical Center @ Princeton, 253 Witherspoon Street, Princeton, Mercer County, New Jersey
SRP PI# 011700, Case 15-09-09-1706-55

Metals

Lab ID:	NJDEP	NJDEP	NJDEP	460-100972-9			460-100972-10			460-100972-11			460-100972-12			460-100972-13			460-100972-14		
Client ID:	Residential	Non-Residential	IGW	WC-9			WC-10			WC-11			WC-12			WC-13			WC-14		
Date Sampled:	SRS	SRS	Screening	09/11/2015			09/11/2015			09/11/2015			09/11/2015			09/11/2015			09/11/2015		
Matrix:	2012	2012	2013	Soil			Soil			Soil			Soil			Soil			Soil		
Unit:	mg/kg	mg/kg	mg/kg	mg/kg			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg		
Dilution																					
METALS-SOIL BY 6020A				Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL
Aluminum	78000	NA	6000	12800		25.3	19500		23.6	18200		24.1	19400		23.4	16100		22.9	17200		24.1
Antimony	31	450	6	7.7	F1	1.90	4.6	U	1.80	4.7	U	1.80	4.5	U	1.80	4.4	U	1.80	4.7	U	1.80
Arsenic	19	19	19	10.1		1.20	12.4		1.10	11.5		1.10	18.6		1.10	14.0		1.10	11.5		1.10
Barium	16000	59000	2100	116		1.80	147		1.60	148		1.70	124		1.60	77		1.60	124		1.70
Beryllium	16	140	0.7	0.6		0.42	1.3		0.39	1.1		0.40	1.5		0.38	1.1		0.38	1.1		0.40
Cadmium	78	78	2	1.0	U	0.51	0.7	J	0.48	0.93	U	0.49	0.9	U	0.47	0.9	U	0.46	0.9	U	0.49
Calcium	NA	NA	NA	89000		363.0	36000		67.7	28700		69.2	17400		67.2	14400		65.7	26000		69.2
Chromium	NA	NA	NA	43.0		1.20	38.4		1.10	34.3		1.10	56.0		1.10	38.9		1.10	36.8		1.10
Cobalt	1600	590	90	6.5	J	1.40	12.7		1.30	12.5		1.30	12.9		1.30	16.2		1.30	12.5		1.30
Copper	3100	45000	11000	37.3		1.60	43.1		1.50	37.9		1.50	38.2		1.50	56.2		1.40	52.6		1.50
Iron	NA	NA	NA	16400		27.7	30000		25.9	27700		26.4	39400		25.6	33400		25.1	29200		26.4
Lead	400	800	90	42.4		0.96	37.0		0.90	33.9		0.92	29.1		0.89	21.3		0.87	30.8		0.92
Magnesium	NA	NA	NA	7650		61.2	9360		57.1	7630		58.3	7420		56.6	9490		55.4	8450		58.3
Manganese	11000	5900	65	344		1.3	663		1.2	693		1.2	402		1.2	503		1.2	561		1.2
Nickel	1600	23000	48	20.8		1.80	24.6		1.70	23.1		1.70	27.6		1.70	27.0		1.60	23.5		1.70
Potassium	NA	NA	NA	2120		37.2	3530		34.7	3290		35.4	4040		34.4	3370		33.6	3460		35.4
Selenium	390	5700	11	4.90	U	1.70	4.60	U	1.60	4.70	U	1.60	4.50	U	1.60	4.40	U	1.50	4.70	U	1.60
Silver	390	5700	1	2.5	U F1	0.43	2.3	U	0.40	2.3	U	0.41	2.3	U	0.40	2.2	U	0.39	2.3	U	0.41
Sodium	NA	NA	NA	1200	J	83.0	924	J	77.5	667	J	79.1	476	J	76.8	916	J	75.1	786	J	79.1
Thallium	5	79	3	4.90	U	2.20	4.60	U	2.00	4.70	U	2.10	4.50	U	2.00	4.40	U	2.00	4.70	U	2.10
Vanadium	78	1100	NA	35.1	F1	1.20	61.2		1.10	59.0		1.20	74.4		1.10	67.9		1.10	55.0		1.20
Zinc	23000	110000	930	198.0	F1	1.8	114.0		1.7	115.0		1.7	101.0		1.7	80.0		1.6	128.0		1.7

SOIL BY 7471B	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL	Conc.	Qual	MDL			
Mercury	23	65	0.1	0.24		0.013	0.27		0.014	0.10		0.014	0.14		0.013	0.06		0.012	0.14		0.014

NA: Not Applicable
SRS: Soil Remediation Standard
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