



# EcolSciences, Inc.

Environmental Management & Regulatory Compliance

November 9, 2016

Mr. John Gorman, Chief  
Pesticides and Toxic Substances Branch  
Division of Enforcement and Compliance Assistance  
USEPA Region 2  
Environmental Protection Agency  
290 Broadway  
New York, NY 10007-1866

Re: USEPA Comment Letter Response For:  
December 1, 2015 Application for Risk Based PCB Disposal Approval  
450-490 South Avenue and 50 Center Street  
Borough of Garwood  
Block 401, Lots 1 and 2  
Union County, New Jersey  
NJDEP PI# 032470 and 631620

Dear Mr. Gorman:

This letter has been prepared in response to the United States Environmental Protection Agency's (USEPA's) comment letter dated March 18, 2016 pertaining to the December 1, 2015 Application for a Risk Based Disposal Approval (Application) prepared by EcolSciences, Inc. (EcolSciences) on behalf of 490 South Avenue, LLC (490 South Avenue) for the above referenced Site. We believe the information presented herein will address the USEPA's concerns regarding the Application and respectfully request reconsideration of the Application, subject to the modifications and additional information included herein. This response letter also incorporates a summary of the discussions among Dr. James Haklar of USEPA Region 2, the New Jersey Department of Environmental Protection (NJDEP), 490 South Avenue, and EcolSciences during a meeting at the USEPA's office in Edison, New Jersey on April 28, 2016 (the NJDEP participated via telephone) and the USEPA's comments to a July 29, 2016 Draft comment response letter prepared by EcolSciences, Inc. and provided to Dr. Haklar. The USEPA's comments and 490 South Avenue/EcolSciences' responses are as follows:

***USEPA Comment 1:***

**“Applicability of the Federal PCB Regulations:** EcolSciences explains in the Application that PCBs were released into the environment prior to 1978 and so 490 South Avenue is voluntarily seeking EPA's approval of the risk-based cleanup. While information is presented that supports the conclusion of an initial release of PCBs prior to 1978, the PCB contaminated soil represents a source for on-going releases of PCBs to the groundwater (groundwater is contaminated with PCBs above EPA's regulatory level of 0.5 parts per billion). Therefore, we believe that 490 South Avenue must obtain EPA's approval of the proposed cleanup before remediation begins.”

Response:

490 South Avenue, LLC will obtain USEPA's approval prior to implementing the cleanup. It should be noted that, as detailed herein, the PCB containing soil with the most significant levels of PCBs that may represent a source for ongoing releases of PCBs to the groundwater will be removed for proper offsite disposal.

**USEPA Comment 2:**

**“PCB Cleanup Levels:** EcolSciences is proposing cleanup levels of 50 parts per million (ppm) within the first 6 feet of soil and 190 ppm for soils deeper than 6 feet. However, we cannot find the technical basis for setting the cleanup levels at these specific numbers. Based on the information presented, it appears that remediation of the first six feet of soil to the self-implementing high occupancy cleanup level of 10 ppm would be technically feasible. For the deeper soils, we cannot find in the Application any information to indicate that a site-specific impact to groundwater cleanup level was developed.

We are also concerned that vertical delineation of PCBs down to at least 10 ppm has not been completed at a number of sample locations as shown on Figures 4 and 5. Please be advised that EPA cannot concur with a cleanup that is not based upon a complete delineation of PCBs.”

Response:

*Remediation Cleanup Level Technical Justification Comment*

As noted by the USEPA, the Application proposes encapsulating the “at found” PCB concentrations in soil up to 50 ppm in the surficial six feet of soil with the exception of four areas that will be excavated for offsite disposal. The four areas where excavation will occur contain PCBs over 50 mg/kg (up to 3,700 mg/kg). Once these four areas are removed, the maximum remaining “at found” PCB concentrations in the surficial six feet of soil onsite will be 50 mg/kg. As shown on the attached PCB Overlay plans in Attachment B provided by 490 South Avenue, the vast majority of the “at found” PCB impacted material up to 50 mg/kg (in the surficial six feet of soil) is limited to low-occupancy areas of the Site (i.e. entrance to the Site, mechanical rooms, loading docks, and retail parking lot areas).

After the four shallow excavations referenced in the preceding paragraph are complete, the only proposed high occupancy areas where shallow PCB concentrations up to 50 mg/kg remain (in the surficial six feet of soil) are below three proposed retail spaced on Lot 2. Based on discussions with the USEPA during the April 28, 2016 meeting, the limited areas of remaining PCB impacted material at concentrations up to 50 mg/kg below the retail areas (to a depth of six feet below grade) will be excavated and relocated to low-occupancy portions of the Site adjacent to the existing PCB-impacted areas (i.e. below the parking garage entrance, loading docks, and/or commercial parking lot). The PCB impacted soil in the surficial six feet of the Site at location 8/19-14B will also be removed and relocated onsite given the location of this material below the residential mail room and public restrooms on the residential portion of the Site. Post excavation soil sampling will be conducted in accordance with the protocols outlined in the Application.

**These excavation activities will ensure that high occupancy areas of the Site meet the 10 mg/kg threshold in the first six feet of soil.** The low occupancy areas where PCB impacted soil between 10 and 50 mg/kg will remain in the surficial six feet of the existing site soil will be capped in accordance with the procedures set forth in the December 1, 2015 Application. This modification to the Application is consistent with the discussions with the USEPA and NJDEP during the April 28, 2016 meeting, and will be protective relative to the future use of the Site.

EcolSciences further evaluated the potential for the remaining PCB soil contamination (both above and below the water table) to impact the groundwater. The following Sections present a discussion of this evaluation.

#### **Application Proposes an Impervious Cap Across the PCB Impacted Area**

PCB's are identified by the NJDEP as immobile chemicals. The NJDEP's March 2014 'Capping of Inorganic and Semivolatile Contaminants for the Impact to Groundwater Pathway' guidance indicates that capping PCBs in soil is an acceptable remedy to address the impact to groundwater pathway, provided that the cap is impermeable. As shown on the PCB Overlay plans, a large portion of the PCB impacted area will be below the entrance driveway. With regard to the remaining areas that will be landscaped, soils are defined as impervious if the permeability is less than  $10^{-9}$  m/s (Soil Mechanics Fundamentals, 2011). The installation of a cap in accordance with 40 CFR§761.61(a)7 and (by reference) 40 CFR§761.75(b)(1)(ii), which specifies a soil permeability of  $1 \times 10^{-7}$  cm/s (equivalent to  $10^{-9}$  m/s), will meet the definition of an impervious cap and is appropriate to address the impact to groundwater pathway relative to future water infiltration.

#### **Semivolatile Soil and Groundwater Analytical Data Evaluation**

In certain instances the NJDEP provides for the development of a Site Specific Impact to Groundwater Soil Screening Level (SSIGWSRS) using the observed groundwater concentration 'Site Soil and Groundwater Analytical Evaluation' as discussed in detail in the response to USEPA Comment 9, below. This procedure is exclusive to metals and semi-volatile organic compounds, such as PCBs. The recent groundwater sampling activities described in response to USEPA Comment 9 documented only low level (4.3 µg/L) dissolved PCB exceedances in C-MW-6, where PCBs were identified at concentrations of up to 3,700 mg/kg in the saturated zone soils (said soil will ultimately be removed). A marginal groundwater exceedance was also identified in C-MW-8. A second sample was also collected from this well due to the saturated well screen length. The average dissolved PCB concentration of the two samples in this well complies with the NJDEP and USEPA standard. Complete laboratory data tables are included on Table 1 of Attachment A and are further discussed relative to USEPA Comment 9, below.

The lack of groundwater exceedances for dissolved PCBs in areas where PCBs are present at elevated concentrations in the soil at and below the water table (with the exception of C-MW-6 and C-MW-8 where soil removal will occur) provides additional technical basis and evidence in general accordance with the NJDEP 'Site Soil and Groundwater Analytical Evaluation' technical guidance that PCBs up to 190 mg/kg may remain onsite without any long-term adverse impacts

to the groundwater quality. **Following the NJDEP's guidance, the SSIGWSRS for PCBs is 190 mg/kg.**

### **SeSoil and AT123D Modeling Scenario**

A third NJDEP option for addressing the impact to groundwater pathway pursuant to NJDEP guidance is the use of the USEPA Seasonal Soil Compartment (SeSoil) and Analytical Transport 1, 2, and 3-Dimension (AT123D) model in accordance with NJDEP protocol (SeSoil/AT123D Guidance document dated May 2014). The SeSoil model is a vadose zone fate and transport simulation which incorporates site specific data pertaining to rainwater infiltration, soil type and characteristics, and contaminant concentrations and characteristics to determine if the vadose zone contaminants will leach to and impact groundwater. The AT123D model is a groundwater fate and transport simulation which incorporates the contaminant mass leached from the SeSoil model, site specific soil and hydrologic data, as well as existing groundwater concentrations, to determine if unacceptable groundwater concentrations in excess of the applicable standard will occur at defined Points of Compliance at the edge of and downgradient of the existing plume. The NJDEP allows the use of these modeling scenarios to develop Site Specific Impact to Groundwater Soil Remediation Standards (SSIGWSRS).

It should be noted that the NJDEP does not recommend using the AT123D model to demonstrate attenuation of contamination when an impervious or low permeability cap is utilized, since the model relies on infiltration of precipitation and volatilization for attenuation and degradation. The use of the modeling is intended to serve as additional multiple lines of evidence to technically support the remediation rationale presented in the December 2015 Application relative to contaminant migration. Since an impervious cap will be installed (although the cap will significantly decreasing infiltration and potential contaminant movement) this model actually overestimates the fate and transport of PCBs (i.e. the model is overly conservative). The climate database file for Westfield, New Jersey was utilized in the SeSoil and AT123D model run. Westfield is located adjacent to Garwood, and was the closest climate database to Garwood.

Using the existing soil data after the excavation proposed in the December 2015 Application (i.e. removal of the highest PCB impacts identified in the vicinity of LD3 as well as the PCB soil concentrations above 50 mg/kg in the upper six feet across the PCB impacted area), the highest remaining PCB concentrations were utilized to create a depth dependent 'worst case' scenario of PCB concentrations to remain in the vadose zone. The PCB concentrations used in the modeling scenario are shown in the table below and were applied to the entire PCB impacted area. The application of the data in this manner serves to significantly and conservatively overestimate the contamination throughout the impacted area. The concentrations in the following table range from 35-180 ppm; however, as detailed in the Application the average PCB concentrations in the surficial six foot zone range from 9.2 mg/kg to 14.92 mg/kg. On average, the depth to groundwater encountered in the PCB impacted area over multiple rounds of groundwater sampling is approximately ten feet.

Depth Interval (ft. bgs)	PCB Concentration (mg/kg)
0-6	50
6-7	160
7-8	59
8-9	35
9-10	180

The highest dissolved PCB groundwater concentration identified in the most recent groundwater sampling event, as described above and in further detail below in response to USEPA Comment 9, of 4.3 µg/L was utilized for the initial groundwater concentration in the AT123D model run. The model applies this concentration throughout the PCB-impacted area (the PCB impacted area is shown on Figures 8 and 9 of the Application), which again overestimates the actual groundwater conditions and conservatively biases the model.

Pursuant to the NJDEP SeSoil/AT123D guidance, site specific soil textures were developed through sampling utilizing ASTM Method D422-63 (ASTM 2007a), a sieve and hydrometer-based method. Samples were collected from a representative location within the PCB impacted area from each two foot interval. However, a sample could not be collected from the 14-16 foot interval due to poor sample recovery. The average sand, silt, and clay percentages identified in the vadose zone soils (0-10 feet below grade) and the saturated zone soils (10-20 feet below grade) are shown in the table below along with the appropriate soil texture based on the USDA soil triangle (Bonazountas and Wagner, 1984). The soil texture type was used to determine the SeSoil and AT123D inputs for effective porosity, soil pore disconnectedness, and intrinsic permeability.

Soil Texture Type		
Soil Parameter	Vadose Zone	Saturated Zone
Average Sand %	51.7	58.9
Average Silt %	36.9	31.0
Average Clay %	11.4	10.1
<b>Soil Texture</b>	<b>loam</b>	<b>sandy loam</b>
Note: percentages corrected after removal of gravel		

Pursuant to NJDEP guidance, a site specific percent soil organic carbon content was also determined utilizing the Lloyd Kahn method (USEPA, 1988). Three soil samples were collected from the vadose zone and three soil samples were collected from the saturated zone. Since the total organic carbon content did not vary by more than an order of magnitude in each zone, the concentrations were averaged in accordance with NJDEP guidance.

Total and Percent Organic Carbon				
Vadose zone				
Sample ID	SE-90C1	10OC1	FM-13OC1	Average
Total organic carbon (mg/kg)	3,540	22,800	8,620	11,653
Percent (%) Organic Carbon				1.17
Saturated Zone				
Sample ID	SE-90C2	10OC2	FM-13OC2	Average
Total organic carbon (mg/kg)	1,620	3,890	521	2,010
Percent (%) Organic Carbon				0.20

The percent organic carbon contents identified in the table above were utilized in the SeSoil and AT123D model.

The soil source size was defined as the entire PCB impacted area as shown on Figures 8 and 9 of the Application, roughly 0.45-acres (or 1,821 square meters). As indicated above, the groundwater concentration utilized in the model was conservatively set at 4.3 µg/L for the entire source size, even though no groundwater exceedances have been identified throughout the majority of the source area. The groundwater impacted area was defined as the same size as the PCB impacted soil area, again to represent the most conservative modeling scenario.

Site specific hydrological data was determined for the Site as indicated below:

- Hydraulic conductivity was determined by slug tests conducted within the wells located in the PCB-impacted area. Site-specific hydraulic conductivity ranged from 1.0 to 1.1 feet/day. The highest hydraulic conductivity of 1.1 foot/day was utilized to represent the most conservative scenario (i.e. the highest potential for contaminant mobility).
- Hydraulic gradient was determined based on the most recent groundwater level measurements. The groundwater flow is generally to the east/southeast (although localized mounding was observed in several areas of the site). The hydraulic gradient across the Site was determined to be approximately 0.005 ft/ft.
- The following Dispersivities were utilized in the model run in accordance with the guidance.  
 Length of Contaminant Plume = 60.96 meters (approximately 200 feet)  
 Longitudinal Dispersivity =  $0.83(\text{Log}_{10}(60.96))^{2.414} = 3.3617$   
 Transverse Dispersivity =  $1/10^{\text{th}}$  Longitudinal Dispersivity = 0.33617  
 Vertical Dispersivity =  $1/100^{\text{th}}$  Longitudinal Dispersivity = 0.033617
- The aquifer dimensions were set to infinite as directed by the guidance.
- The organic carbon content of the aquifer material was calculated as described above to be 0.2%.

Points of Compliance (POC) were selected in accordance with the SeSoil/AT123D Guidance. The purposes of the POCs is to evaluate whether the groundwater quality standard (0.5 µg/L) will be exceeded based on any additional leaching from the SeSoil model as well as the mobility

of the existing groundwater plume. In particular, the following POC's were selected pursuant to the guidance:

- POC-1: A location at the centerline of the plume at the surface of the water table at the downgradient edge of the AOC. C-MW-6, located at the downgradient edge of the PCB impacted area, was chosen as POC-1.
- POC-2: A location at the centerline of the plume at the maximum extent of the plume at the surface of the water table. C-MW-7, located downgradient of the PCB impacted area and on the edge of the Site (i.e. a sentinel well), was selected as POC-2 to determine if this sentinel well would possibly be impacted by the PCB plume in the future.

The SeSoil model was run for a period of 99 years pursuant to NJDEP guidance. The model indicates that the post remedial vadose zone soil concentrations, included in the model (these concentrations significantly overestimate the PCB concentrations in the soil as discussed above), will not leach to the groundwater in 99 years. This supports the NJDEP's assertion in the 'Site Soil and Groundwater Analytical Evaluation' and 'Capping of Inorganic and Semivolatile Contaminants for the Impact to Groundwater Pathway' guidance documents that PCBs are immobile chemicals that remain strongly adhered to soil particles. The AT123D model was also run for a period of 99 years to be as conservative as possible, although the groundwater concentrations are expected to attenuate in 30 years as described in the response to USEPA Comment 9, below. Evaluation of POC-1, the location of C-MW-6, indicates that the current groundwater contaminant concentrations of 4.3 µg/L will not increase, and notably the model does not account for improvements in the groundwater that are expected to occur as a result of source removal in the vicinity of well C-MW-6. Most importantly, the model indicates that the PCB contaminant plume will have no impact on C-MW-7, the downgradient sentinel well on the eastern end of the property, which was defined as POC-2 (i.e. no detectable concentrations of PCBs in groundwater will migrate to C-MW-7 over 99 years). Additional discussion of the PCB impacted groundwater fate and transport is present in USEPA Comment Response 9. The SeSoil and AT123D printout sheets are included in Attachment C.

In summary, the concentrations of PCBs that will remain onsite after the targeted excavations proposed in the Application are complete and the technical basis and multiple lines of evidence for establishing the cleanup levels proposed in the Application (and modified herein) are as follows:

- Proposed Residential areas of the Site will comply with the 10 mg/kg PCB threshold, regardless of depth.
- The non-residential PCB impacted area referenced in the Application that will be used in the future for high occupancy purposes will comply with the 10 mg/kg PCB threshold in the first six feet of soil. Below six feet, PCB concentrations may be up to 190 mg/kg.
- PCBs excavated from the surficial six feet of soil between 10 mg/kg and 100 mg/kg will be consolidated in low-occupancy commercial/retail areas of the Site (i.e.

entrance to the Site, loading docks, mechanical rooms, commercial retail/parking lot) and will be capped pursuant to the procedures set forth in the Application. Material disturbed from the surficial six feet of soil that contains PCBs above 100 mg/kg will be disposed offsite.

- PCBs are immobile and the NJDEP allows the use of capping with an impermeable cap to address the impact to groundwater pathway.
- Applying the NJDEP guidance entitled 'Site Soil and Groundwater Analytical Evaluation' provides a SSIGWSRS of 190 mg/kg, assuming the June 2016 groundwater results are confirmed.
- Application of a conservative SeSoil/AT123D computer model simulation indicates that the remaining PCB soil concentrations and the existing marginal groundwater concentrations present in C-MW-6 will not migrate over a 99 year period. Moreover, the model does not take into account that source material in the vicinity of C-MW-6 will be removed. As indicated in response to USEPA Comment 9 below, the groundwater conditions are expected to comply with the NJDEP and USEPA standards within approximately 30 years.

In the professional judgement of EcolSciences and the undersigned LSRP, these multiple lines of evidence provide sufficient technical basis for setting the cleanup levels as proposed in the Application.

At the request of Dr. James Haklar, EcolSciences further discussed the impact to groundwater pathway evaluation with representatives of the New Jersey Department of Environmental Protection (NJDEP) and provided a memo to the NJDEP representatives specifically addressing the Impact to Groundwater Pathway using NJDEP guidance and LSRP judgement for the proposed cleanup levels referenced above. EcolSciences' rationale for establishing the proposed cleanup levels referenced above was approved by Mr. Kevin Schick (Chief – NJDEP Bureau of Environmental Evaluation & Risk Assessment) on October 14, 2016. The NJDEP memorandum and Mr. Schick's approval are included in Attachment D.

#### *Additional Vertical Soil Delineation Activities*

With regard to vertical delineation of the previously identified PCB concentrations above 10 mg/kg, EcolSciences, Inc. conducted additional soil sampling activities in June 2016 to complete the vertical delineation of the PCBs. The locations where PCBs were identified above 10 mg/kg and were not previously vertically delineated are shown on the table below.



Lot 1 (former Petro parcel)		
Sample ID	Sample Depth	PCB Conc.
SE-9E	15.5-16	33

Lot 2 (former Casale parcel)		
Sample ID	Sample Depth	PCB Conc.
8/19-21D	9-9.5	19
PR5Dc	19.5-20	21
14f	19.5-20	180
10f	19.5-20	48

Lot 2 (former Casale parcel – continued)		
Sample ID	Sample Depth	PCB Conc.
13e	15.5-16	69
PR2b	11.5-12	11
20f	19.5-20	41
B6e	15.5-16	29
FM13b	9.5-10	28
AW-1c	9.5-10	180
ABE-3c	8.5-9	35

Sample Depth in feet below ground surface (ft. bgs)  
 All PCB concentrations in milligrams/kilogram  
 (mg/kg)

EcolSciences conducted additional vertical delineation sampling on June 14-16, 2016 at the locations specified above with the exception of locations AW-1c and ABE-3C. The drilling activities utilized dual tube drilling methodologies to minimize the potential for vertical cross-contamination and ensure accurate sample collection from the depths needed for vertical delineation. Please note that soil borings AW-1c and ABE-3C were previously completed with hand tools due to limited interior accessibility. The collection of deeper samples at these locations will require access with a drill rig (samples were previously collected to the maximum depths achievable using hand equipment) which is not feasible until the buildings are demolished. Vertical delineation at these two locations will be completed after building demolition; however, there is sufficient vertical delineation data at numerous other sample points to demonstrate that PCBs above 10 mg/kg will not be present at a depth generally greater than 27.5 feet, as explained below.

In addition to vertical delineation of PCBs in the soil to 10 mg/kg, surficial concrete contamination was identified at location CC-LD at 77 mg/kg. The concrete was cored at this location and a deeper concrete sample was collected from 0.5-1 ft bgs.

The drill tubes and coring devices were decontaminated in accordance with 40 CFR§761.79 and 40 CFR§761 Subpart S utilizing the double wash/double rinse procedures and diesel fuel as the performance-based organic decontamination fluid (PODF) followed by washing with soap and water. The PODF was containerized in 55-gallon drums for offsite disposal.

Soil samples were collected from deeper intervals at each of the locations (except AW-1c and ABE-3c as described above) to complete the vertical delineation. All soil samples were collected in pre-cleaned sample jars provided by the laboratory and packed on ice in a cooler to ensure a preservation temperature of 4°C. Samples were analyzed by TestAmerica, Inc. (TestAmerica) for PCBs utilizing USEPA SW-846 method 8082A. The PCBs were extracted using method 3546. TestAmerica is a National Environmental Laboratory Accreditation Program (NELAP)

certified laboratory and their New Jersey NELAP accreditation number is 12028. See USEPA Comment Response 3 below for additional information pertaining to the PCB extraction methods.

PCB sample results were compared to the current NJDEP RDCSRS of 0.2 mg/kg, the NJDEP NRDCSRS and TSCA self-implementing cleanup criteria of 1.0 mg/kg, and the TSCA self-implementing cleanup criteria in (future) Defined High Occupancy Areas of 10 mg/kg. See USEPA Comment Response 5 for a discussion on the PCB sample dates of collection and dates of analysis. All of the PCB samples were analyzed within two weeks of collection in order to comply with NJDEP holding times. Copies of the NJDEP-compliant reduced format laboratory data packages are not included in this Application, but are available upon request. The results of the PCB sampling are included in the tables below and the complete results are included on Table 2 of Attachment A. Figures 1 and 2 in Attachment B present the revised sample location and PCB concentration maps (these are revised Figures 4 and 5 from the December 1, 2015 Application).

Lot 1 (former Petro parcel)		
Sample ID	Sample Depth	PCB Concentration
SE-9E	15.5-16	33
SE-9F	19.5-20	33
SE-9G	23.5-24	ND (0.080)

Sample Depth in feet below ground surface (ft. bgs)

All PCB concentrations in milligrams/kilogram (mg/kg)

ND - Not Detected. If PCBs were not detected the laboratory reporting limit is shown in parentheses

**Blue Text exceeds NJDEP RDCSRS (0.20 mg/kg)**

**Shaded exceeds the NJDEP NRDCSRS/USEPA self-implementing threshold**

**Red Shaded Exceeds USEPA self-implementing high occupancy threshold (10 mg/kg)**

Lot 2 (former Casale parcel)		
Sample ID	Sample Depth	PCB Concentration
8/19-21D	9-9.5	19
8/19-21E	19.5-20	ND (0.076)
PR5Dc	19.5-20	21
PR5D	23.5-24	64
PR5E	27.5-28	3.2
PR5F	31.5-32	ND (0.078)
14f	19.5-20	180
14G	23.5-24	0.1
10f	19.5-20	48
10G	23.5-24	20
10H	27.5-28	ND (0.075)
13e	15.5-16	69
13F	19.5-20	ND (0.081)
PR2b	11.5-12	11
PR-2C	19.5-20	0.064J
20f	19.5-20	41
20G	23.5-24	ND (0.075)
B6e	15.5-16	29
B6-F	19.5-20	0.032J
FM13b	9.5-10	28
FM-13C	19.5-20	0.069J

As indicated in the table above, PCBs were successfully delineated to the most stringent applicable regulatory standard (the NJDEP RDCSRS) of 0.2 mg/kg at each location. In addition, PCBs were not detected in the subsurface concrete in sample CC-LD2. **Based on these results, the PCB contamination has been successfully vertically delineated at 32 locations throughout the site, with a maximum depth of 27.5 feet for PCBs above 10 mg/kg. It is EcolSciences professional opinion that, based on these results, PCBs above 10 mg/kg are no deeper than 27.5 feet at locations AW-1c and ABE-3C. It is requested that completion of vertical delineation for these two locations be conducted as a condition of a USEPA Approval of the Application, after demolition of the buildings and as part of remediation.**

***USEPA Comment 3***

**“PCB Extraction Methods:** The discussions presented on Pages 11 and 16 explain that PCBs were extracted using Methods 3546 and 3510C, respectively. Since these methods are not identified in 40 C.F.R. §761.272 (under the requirements for chemical extraction and analysis of samples), please provide for our review the actual levels of detection that were achieved using these extraction methods.

***Response:***

TestAmerica, Inc., a NJDEP and NELAP certified laboratory, analyzed all samples referenced in the Application and discussed herein. The method detection limits (MDLs) for all samples referenced in the Application were presented on the PCB results tables included in the December 1, 2015 Application. For the USEPA’s convenience, the reporting limits (RLs) associated with the specific analytical methods utilized by TestAmerica, Inc. and referenced in the Application and in this Addendum are presented in the tables below. The MDLs and RLs are also presented on the laboratory data tables (Attachment A) of this Addendum.

Parameter	Analyte Description	CAS Number	(RL) mg/kg	(MDL) mg/kg
Polychlorinated Biphenyls (PCBs) GC USEPA 8082A_DKQP Microwave Extraction 3546	PCB-1016	12674-11-2	0.0670	0.00890
	PCB-1221	11104-28-2	0.0670	0.00890
	PCB-1232	11141-16-5	0.0670	0.00890
	PCB-1242	53469-21-9	0.0670	0.00890
	PCB-1248	12672-29-6	0.0670	0.00890
	PCB-1254	11097-69-1	0.0670	0.00920
	PCB-1260	11096-82-5	0.0670	0.00920
	PCB-1262	37324-23-5	0.0670	0.00920
	PCB-1268	11100-14-4	0.0670	0.00920
	Polychlorinated Biphenyls, Total	1336-36-3	0.0670	0.00920

Parameter	Analyte Description	CAS Number	(RL) $\mu\text{g/L}$	(MDL) $\mu\text{g/L}$
Polychlorinated Biphenyls (PCBs) by USEPA GC 8082A_DKQP Liquid-Liquid Extraction (Separatory Funnel) 3510C	Polychlorinated Biphenyls, Total	1336-36-3	0.400	0.0980
	PCB-1016	12674-11-2	0.400	0.0980
	PCB-1221	11104-28-2	0.400	0.0980
	PCB-1232	11141-16-5	0.400	0.0980
	PCB-1242	53469-21-9	0.400	0.0980
	PCB-1248	12672-29-6	0.400	0.0980
	PCB-1254	11097-69-1	0.400	0.0840
	PCB-1260	11096-82-5	0.400	0.0840
	PCB-1262	37324-23-5	0.400	0.0840
	PCB-1268	11100-14-4	0.400	0.0840

***USEPA Comment 4***

**“The Use of the Terms Aroclor and Congener:** While the Application uses the terms “congener” and “Aroclor” interchangeably, please note that they are not synonymous. A PCB congener is any single, unique well-defined chemical compound while Aroclors are mixtures of PCB congeners.”

***Response:***

The USEPA’s comment is noted. References to the types of PCBs in this Response Letter are consistent with the USEPA’s comment.

***USEPA Comment 5***

**“Sample Analysis Dates:** As required by the PCB regulations please provide the analysis dates for all of the samples referenced in the Application.”

***Response:***

The sample collection, extraction, and analysis dates for all samples collected and referenced in the Application, as well as the dates associated with the samples referenced in this Reponse Letter are included on Tables 3, 4, and 5 presented in Attachment B.

***USEPA Comment 6***

**“Section 1 (Introduction):** Page 1 describes properties that are included in the redevelopment area but where PCB cleanups are not planned. Two of these properties are Lots 4-6 and Lots 19-22 on Block 403 that have always been used for parking. Please explain whether these lots have always been paved (from the time that they were first used for parking) and whether there has been any sampling for PCBs on these properties. Please note that PCBs can be present in non-manufacturing areas from the use of waste oil for weed control.”

Response:

Based on EcolSciences' review of historic aerial photographs from 1930, 1939, and 1959 the Block 403 Lots were wooded until sometime between 1930 (NJDEP Geoweb photograph) and December 15, 1939 when this portion of the property was used for parking. It is unclear if these lots were paved in 1939 as striping is not apparent until the April 3, 1959 aerial photograph, which clearly shows all of the Block 403 Lots were paved.

No PCBs were detected in a soil sample collected from the western portion of Lot 403 (sample ID 17-12, collected on March 6, 2014 from 1-1.5 feet below grade). A second soil boring and a temporary well point were also installed in the western portion of Block 403 and no evidence of a discharge was observed. Furthermore, based on a PA conducted by EcolSciences, there is no indication that waste oil was used for weed control. The soil sample location and result is shown on Figure 1. The PCB concentration and detection limits, collection date, extraction date, and analysis date for sample 17-12 are shown on Table 6.

*USEPA Comment 7*

**“Section 2.2 (Physical Features):** Please confirm whether any samples of the building materials (e.g., paint, caulk, mastics) were collected and analyzed for PCBs. If the buildings were either built or renovated between 1950 and 1980 then we recommend that this sampling be performed.”

Response:

To date, samples of building materials (other than concrete) for PCBs have not been collected. Review of Site history, Sanborn Maps, and available building plans indicate that the buildings were constructed primarily between the late 1800s and prior to 1949 (a 1949 Sanborn map shows the property in its current configuration). Based on EcolSciences' NJDEP Preliminary Assessments, known improvements to the Site buildings after 1950 were limited to the addition of the concrete block partition wall which now separates Lot 1 from Lot 2 and small interior office areas utilized by Petro Plastics and Casale Industries. The interior of Petro Plastics offices features primarily wood paneled walls with limited painted surfaces. The interior of the Casale Industries office area features wood and steel framing, drywall, and acoustic ceiling tiles. Although the presence of PCBs in building materials is not anticipated, an interior evaluation of potential PCB containing building materials will be conducted prior to building demolition and any PCB containing materials identified will be addressed in accordance with 40 CFR§761. Environmental Health Investigations, Inc. (EHI) has been retained by 490 South Avenue, LLC to complete this task. The EHI scope of work for characterization of potential PCB containing building materials is included in Attachment E. 490 South Avenue respectfully requests that the interior evaluation of areas within the buildings that may have been renovated between 1950 and 1980 be addressed as an Application approval condition. The building demolition will be conducted in accordance with all applicable Federal and State regulations.

***USEPA Comment 8***

**“Section 4.4 (PCBs in Concrete and Wood Block Floor):** The text on Page 15 explains that 26 concrete chip samples were collected from Lot 1. However, Figure 7 shows that there were actually 38 samples collected. Please resolve this discrepancy.

Please provide the aerial extent (in square feet) of the concrete present in Lots 1 and 2 as well the extent of the wood block floor. Please also provide the number of subsamples comprising each composite sample that was collected. This information will assist EPA in determining whether the collection of additional characterization samples is necessary.”

*Response:*

*Concrete Chip Samples*

Thirty-nine samples were collected and analyzed from Lot 1 for PCBs as shown on Figure 7 of the December 1, 2015 Application. The reference to the lesser 26 samples was an error.

*Concrete Floor and Wood Block for Areas*

The square footage of concrete present on Lots 1 and 2 is estimated to be 155,000 square feet (65,000 square feet associated with Lot 1 and 90,000 square feet associated with Lot 2). The concrete sampling conducted to date exceeds the recommendations of the NJDEP’s January 12, 2010 Guidance for Characterization of Concrete and Clean Material Certification for Recycling, which served as the basis for determining the initial number of concrete samples. Based on an aerial extent of 155,000 square feet and an average concrete thickness of one foot (although generally six to eight inches of concrete were observed throughout the majority of the buildings), the NJDEP’s guidance recommends a total of 19 concrete samples from the building slabs. A total of 53 concrete samples (39 from Lot 1 and 14 from Lot 2, which includes the deeper concrete sample CC-LD2 collected from Lot 2 as described above) have been analyzed for PCBs.

Figure 4 presents the concrete sampling locations and results from Lot 1 and Figure 5 presents the concrete sampling locations and results from Lot 2.

During follow up discussions with Dr. Haklar, the USEPA requested the collection of additional discrete concrete chip samples (number was not specified) and five more composite wood block floor samples (wood block sampling discussed separately, below). Additional concrete chip sampling will be conducted from the concrete floors onsite in an effort to provide analysis to meet an approximate sample frequency of one sample per 1,500 square feet of concrete floor. In the main building on Lot 1, this frequency has already been achieved since thirty-six samples have been collected from the approximately 50,000-square foot area. From the western-most building on Lot 1 (9,000-square feet), four additional concrete chip samples will be collected and from the central building on Lot 1 (6,000-square feet), three additional concrete chip samples will be collected. Regarding the building on Lot 2 which is approximately 90,000 square feet, 60 concrete samples are required to meet the frequency of one PCB sample per 1,500-square feet and 13 surficial concrete samples have already been collected and analyzed for PCBs.

Therefore, 47 additional surficial concrete chip samples will be collected to meet the frequency of one sample for every 1,500 square feet. The additional samples from Lot 2 will be biased with approximately 30 of the 47 samples will be collected from the PCB- impacted area. With regard to the concrete walls, ten concrete wall samples will be collected from the buildings on each of the Lots (for a total of twenty wall samples), biased toward the areas where former die casting operations were conducted.

In total, 74 additional concrete samples will be collected and analyzed for PCBs with samples biased towards areas of staining and known PCB impacts in the soil. After completion of the additional sampling, a total of 127 PCB samples will have been collected from the concrete. All of the concrete chip samples will be analyzed for PCBs in accordance with the methodologies specified in the Application. A map depicting the proposed additional concrete sampling locations is included on Figure 6.

The wood block floor is only present in portions of the building on Lot 2, and is estimated to cover approximately 25,000 square feet. Three composite wood block floor samples have been collected to date. Each composite sample was compiled from five discrete sample locations evenly distributed throughout the wood block floor area. Five additional five-point composite samples will be collected and analyzed for PCBs.

490 South Avenue, LLC respectfully requests that the additional concrete chip and wood block floor sampling be conducted subsequent to the Application approval as a condition for approval. All material will be handled as appropriate based on the concentrations of PCBs identified in the samples in accordance with the Application.

***USEPA Comment 9***

**“Section 4.5 - PCB Area Groundwater Investigations:** EcolSciences explains that the monitoring wells are constructed using PVC screens and risers. EPA is concerned that the use of PVC is inappropriate for monitoring low-level organic (PCB) contamination. We therefore recommend that post-remediation groundwater monitoring wells be installed that are constructed with stainless steel components.

Please provide the PCB sampling results for all of the Site-related wells (not just the wells located within areas impacted by PCBs) as well as a map showing the data that supports the conclusion (as shown on Figure 8) that groundwater flow is generally to the southeast.

Please explain whether any light or dense non-aqueous phase liquids have been found in the groundwater and please also provide a description of the size and contents of all underground storage tanks present on the Site.”

Response:

*Monitoring Well Construction*

While EcolSciences does not share the USEPA's concern regarding the use of PVC and low-level PCB concentrations in groundwater, post-remediation groundwater monitoring wells will be constructed with stainless steel components.

*Monitoring Well Network PCB Sampling Results*

At the time of the December 1, 2015 Application, PCB groundwater sampling had been limited to the areas of the Site where elevated concentrations of PCBs are present in the soil. To address the USEPA's comment, the existing monitoring wells throughout the Site, with the exception of C-MW-5 and P-MW-8 as described below, were sampled for PCBs in June 2016. The results are presented on Table 1 and are shown on Figure 3. The sample collection, extraction, and analysis dates and the MDL and RL are presented on Tables 1 and 5 of Attachment B. The sampling activities were conducted using low-flow purging techniques in accordance with the NJDEP's Field Sampling Procedures Manual (FSPM). PCBs were not detected in 19 of the 24 monitoring wells, and the only wells where PCBs were identified were within the PCB impacted soil area (wells P-MW-5, P-MW-10, C-MW-8, C-MW-6, and C-MW-6D). In the five wells where total PCBs were detected in the unfiltered fraction, a filtered sample was also collected and analyzed to determine if the PCB groundwater exceedances may be a due to turbidity. The collection and analysis of filtered groundwater samples was discussed with and approved by Dr. Haklar during the April 28, 2016 meeting. The results of the filtered sample analysis revealed no detectable concentrations of PCBs in wells P-MW-5, P-MW-10, and C-MW-6D. Dissolved PCBs were detected only in wells C-MW-8 and C-MW-6 at concentrations of 1.0 µg/L and 4.3 µg/L, respectively. These concentrations are approximately three times lower than the PCB concentrations of the unfiltered samples. Additionally, in accordance with NJDEP sampling procedures (pursuant to the NJDEP's FSPM), two groundwater samples were collected from well C-MW-8 due to the length of the saturated screen (10 feet). When low-flow purging is conducted, the NJDEP's FSPM recommends the collection of multiple samples from the same well in an effort to ensure collection of a sample for each five foot interval of saturated screen. The average PCB concentration of the two dissolved samples from this well is 0.5 µg/L which complies with USEPA and NJDEP standards (one sample contained PCBs at 1.0 µg/L and PCBs were not detected in the second sample). With this average result in mind, PCB exceedances of the GWQS are limited to well C-MW-6 which is located in the area of most significant PCB concentrations in soil (up to 3,000-3,700 mg/kg at the water table). The Application indicates that this material (approximately 850 tons) will be excavated for offsite disposal at a TSCA facility. The PCB concentrations that will remain in soil in this area after excavation is complete will be a maximum of 44 mg/kg, below the concentration in the soil at well C-MW-8 where PCBs are present in the soil at 110 mg/kg and the average groundwater concentration complies with the GWQS. The excavation in the vicinity of C-MW-6 and elsewhere on the Site is anticipated to improve the groundwater quality in this area over time with the ultimate goal of compliance with the GWQS. It should also be noted that the Application states that approximately 75 tons of PCB impacted soil with concentrations up to 110 mg/kg will be



removed from the vicinity of C-MW-8 which will likely serve to improve groundwater conditions in this portion of the Site.

While the groundwater is anticipated to improve after excavation is complete, the groundwater remedial action for PCBs will consist of an institutional control (groundwater classification exception area [CEA]) with monitored natural attenuation in accordance with NJDEP regulations and guidance. Groundwater CEAs with long-term periodic sampling requirements and the completion of Biennial Certifications to the NJDEP pursuant to a Remedial Action Permit (RAP) are an effective mechanism to protect future occupants from the underlying groundwater contamination. The use of a CEA will eliminate potential risks to the Site occupants and ensures protection of the environment while remediation is completed using monitored natural attenuation.

The NJDEP has approved an institutional control with monitored natural attenuation for PCB groundwater remediation in the past without the need for engineering controls. Specifically, a groundwater CEA with monitored natural attenuation for PCBs at a concentration of 26.5 µg/L was established in March 2013. The CEA was approved by the NJDEP and a groundwater remedial action permit was issued for the Former Atlantic Industries Site in Nutley New Jersey listed under NJDEP PI 019223. The monitored natural attenuation (MNA) calculations resulted in a CEA duration for PCBs of 45.8 years. Using the same degradation rate for PCBs (0.0002/day) approved by the NJDEP for the Former Atlantic Industries Site, natural attenuation of the dissolved PCBs at the subject Site (starting concentration of 4.3 µg/L) would occur in just under 30 years. However, EcoSciences anticipates that the dissolved PCB concentrations present in the groundwater after soil remediation is complete will be lower. Given the relative immobility of PCBs, and a contaminant transport rate of 0.0000115 ft/day which was calculated using the site specific hydrological data and a retardation rate of 19,021 (calculated using site specific data), the PCB plume will only be expected to migrate 0.01 feet over 30 years. The site specific calculations and hydrological backup data are presented in Attachment E. This supports the findings of the Site-specific SeSoil/AT123D model discussed in response to USEPA Comment 2 which indicated that the PCB plume, even when the PCB impacted area was left without an impervious cap and subject to rainwater infiltration and transport, will not migrate to the downgradient point of compliance (i.e. C-MW-7 at the downgradient edge of the Site).

As indicated in the Application and using the groundwater sampling data generated in June 2016, the extent of dissolved PCBs in groundwater is delineated to the area immediately surrounding C-MW-6 with the vertical extent limited to a depth of 30 feet below grade (confirmed with the dissolved PCB results from well C-MW-6D which is screened from 30-35 feet below grade). This dissolved PCB plume is focused in the area of elevated PCB concentrations in soil up to 3,700 mg/kg which will be excavated to a concentration of 44 mg/kg, based on the sampling conducted to date (approximately 850 tons). The dissolved PCB concentrations in C-MW-6 are anticipated to improve after excavation is complete. Given the presence of PCBs bound to suspended solids in wells P-MW-5, P-MW-10, C-MW-8, and C-MW-6D, the CEA will cover

this area as well and will extend to clean wells P-MW-3, C-MW-9, P-MW-7, C-MW-2, and C-MW-7.

In further discussion of the SSIGWSRS discussed in USEPA Comment Response 2 above, in certain instances the NJDEP provides for the development of a SSIGWSRS using the observed groundwater concentration (“Site Soil and Groundwater Analytical Evaluation”). This procedure is exclusive to metals and semi-volatile organic compounds, such as PCBs. Specifically, soil exceeding the default impact to groundwater screening level does not require remediation and compliance with the impact to groundwater screening levels when the following conditions are present:

- Soil contamination has been delineated
- The highest soil contaminants concentrations are present at the water table
- Two source area groundwater sampling events demonstrate no groundwater impacts

Although other methods have been used to develop a SSIGWSRS for the Site, the lack of groundwater exceedances for dissolved PCBs in areas where PCBs are present at elevated concentrations in the soil at and below the water table (with the exception of C-MW-6 and C-MW-8 where soil removal will occur) provides a technical basis in general accordance with NJDEP technical guidance that PCBs up to 190 mg/kg may remain onsite without any long-term adverse impacts to the groundwater quality. Additional source area groundwater sampling events will be conducted in the future to confirm the June 2016 findings and fully comply with the NJDEP “Site Soil and Groundwater Analytical Evaluation” guidance.

#### *Groundwater Flow Direction Comment*

The groundwater PCB results and groundwater flow direction, developed using contour mapping programs based on the groundwater levels identified during the June 2016 sampling event, are included on Figure 3. The June 2016 well gauging activities confirmed again that groundwater flow is generally to the southeast, although, as indicated on Figure 3, there is a minor flow component to the south in the northern portion of the Site. This is due to the non-native elevated topography along the rail line to the north of the Site and a limited area of perched water in this portion of the Site. The easterly flow is consistent with regional conditions also well documented on the former Hess gas station property located to the north of the Site, beyond the rail line, based on EcolSciences’ review of NJDEP files.

#### *LNAPL/DNAPL Comment*

During the June 2016 sampling event, light non-aqueous phase liquids (LNAPL) was identified in two of the monitoring wells, P-MW-8 on Lot 1 and C-MW-5 on Lot 2. **These monitoring wells are outside of the PCB impacted area, as shown on Figure 3 and the petroleum product identified is unrelated to PCBs.** LNAPL was not previously identified in these wells or any other wells onsite. DNAPL has not been identified onsite, although low level chlorinated solvents associated with a confirmed offsite source have been identified on Lot 1 and were reported to the NJDEP.

With regard to the LNAPL identified during the June 2016 sampling event, approximately 1.5 inches of LNAPL was identified in P-MW-8 and approximately 6 inches of LNAPL was identified in C-MW-5. Samples of the product were collected and were analyzed by TestAmerica, Inc. via petroleum fingerprint analysis. While the LNAPL was weathered, it appeared to be consistent with gasoline, # 2 fuel oil/diesel, and/or lube oil in P-MW-8. Well P-MW-8 is located immediately downgradient of four abandoned in place heating oil tanks and petroleum contaminated soil in this area will be remediated after building demolition. The LNAPL in C-MW-5 appeared to be consistent with degraded diesel/ #2 fuel oil plus lube oil. C-MW-5 is adjacent to a brake pit that contained lubricating oil previously utilized by Casale Industries. Petroleum impacted soil in these areas will be remediated after building demolition. The product in the wells was removed to the extent practicable during the sampling event, and oil absorbent socks were installed in the wells. The LNAPL will be handled under the auspices of the NJDEP Site Remediation Program.

*UST History Comment*

With regard to underground storage tanks, as mentioned above four 10,000-gallon abandoned in place former heating oil storage tanks are located in the northern portion of Lot 1. The specific type of heating oil previously stored in these tanks is not known. The tanks are filled with concrete and are adjacent to the NJ Transit rail line precluding removal of these tanks. Remedial actions will be conducted to address the petroleum contamination identified in the vicinity of these tanks. PCBs have not been identified in this portion of the Site. A geophysical survey of Lot 1 did not identify and additional underground storage tanks.

A geophysical survey of Lot 2 did not identify underground storage tanks. The geophysical survey did identify two approximately 550 to 1,000-gallon underground storage tanks in the alleyway between Lots 2 and 4, between the former industrial building and the separate non-industrial building at 400 Center Street (Lot 4). The property owner indicated that these tanks historically contained heating oil (per EcolSciences' Preliminary Assessments). Soil sampling on Lot 4 (400 South Avenue, located adjacent to the south of Lot 2) did not identify any PCB contamination. These tanks are located south of the PCB impacted area and will be removed as part of Site redevelopment. In addition to the underground storage tanks currently present onsite, Sanborn Maps depicted 'crude oil' tanks in the northwestern portion of the Lot 2 building, although it is not clear if these were above or underground tanks. This location is approximately 130 feet north of the PCB impacted area. A geophysical survey of this area did not identify any USTs. Soil borings and sampling conducted in this portion of the site identified low levels of petroleum hydrocarbons. PCBs were not detected in any of the samples collected from Lot 4.

The locations of the four 10,000-gallon underground storage tanks are shown on Figures 4, 7, 8, and 9 of the December Application (northern portion of Lot 1, labelled 'Abandoned Oil USTs') and the location of the 550-1,000-gallon underground storage tanks on Lot 4 are in the area labelled 'Potential UST Fill Port and Potential UST Vent Pipe' as shown on Figures 5, 8, and 9 of the December Application. A copy of the Sanborn Map showing the 'Crude Oil' Tank

location in the northwestern portion of Lot 2 was included in the Attachment C of the December 1, 2015 Application.

***USEPA Comment 10***

**“Section 5.1 (Overall Remediation Approach):** The text on Page 22 states that the entire site will be capped in accordance with 40 CFR §761.61(a)(7). Please confirm whether the "clean landscape cover" (as specified in this section) will comply with the geotechnical requirements of the PCB regulations.”

***Response:***

Clean landscape cover will comply with the geotechnical requirements specified in the PCB regulations.

***USEPA Comment 11***

**“Section 5.4 (Proposed Redevelopment and Engineering Controls):** Please note that the cap thickness requirements specified in 40 CFR §761.61(a)(7) does not include underlying aggregate. Also, if utility trenches are required they should be capped (once backfilled) in accordance with the PCB regulations.”

***Response:***

The USEPA’s comment is accepted. As stated in the Application, the engineering controls will comply with the PCB regulations.

***USEPA Comment 12***

**“Section 5.6 (Redevelopment and Remediation Plan Precautions):** Please describe the measures that will be taken to prevent sections of the building, as they are falling onto the PCB contaminated concrete slab during demolition, from becoming contaminated with PCBs either present in the slab or in the underlying soil (if the slab is broken and exposes the soil).

This section of the Application provides a list of proposed facilities for disposal of PCBs less than 50 ppm. Please verify whether these facilities meet the requirements specified in 40 CFR 761.61 (a)(5)(i)(B)(ii).”

***Response:***

***Demolition***

The primary mechanism for PCB cross-contamination into building debris during demolition would be exposure to PCB-containing soil. Comprehensive sampling throughout the Site indicates that elevated concentrations of PCBs in soil are located primarily below the competent building slabs. Two limited areas were identified where PCBs are present in the concrete above the USEPA standard of 1.0 mg/kg. One area is in the northeastern portion of the Lot 1 building and encroaches slightly into the western portion of the Lot 2 (one sample location on Lot 2 in this area contains PCBs above 1 mg/kg). The second area is the loading dock area in the Lot 2 building. The only area where PCBs were identified above 10 mg/kg in the concrete was in the

loading dock area of the Lot 2 building. Of the 38 concrete samples collected from Lot 1, only seven samples exceeded the USEPA threshold of 1.0 mg/kg and the average PCB concentration identified in the concrete was 0.58 mg/kg, below the USEPA self-implementing threshold of 1.0 mg/kg. The seven samples that contained PCBs above 1.0 mg/kg were collected from the northeastern portion of the building, as described above, and are summarized in the table below and shown on Figure 7 of the December 1, 2015 Application.

Lot 1 PCB Results over 1.0 mg/kg	
Sample ID	PCB Conc. (mg/kg)
C-4	1.3
C-16	1.3
C-17	1.3
C-19	1.2
C-20	3.2
C-22	4.8
C-23	1.4

On Lot 2, PCBs were detected in three of the thirteen samples above 1.0 mg/kg with an average concentration of 0.86 mg/kg. Sample C8, collected from the western portion of the Lot 2 building and adjacent to the PCB impacts identified in the Lot 1 building, contained PCBs at 1.4 mg/kg. The other two samples, CC-LD which contained PCBs at 77 mg/kg and C5 which contained PCBs at 7.4 mg/kg, are located within and adjacent to the loading dock area.

The marginal PCB concentrations in the competent slab area in the northeastern corner of Lot 1/western portion of Lot 2 are not expected to impact any of the demolition debris since the PCB concentrations are only marginally above 1.0 mg/kg and well bound to the concrete. However, the areas where PCBs were identified above 1.0 mg/kg will be clearly marked out prior to demolition and the demolition in these areas will proceed with care (including wetting to control dust) to limit debris that falls in this area and avoid any potential cross contamination. After above grade demolition is complete, the slab will be removed and placed below the cap as proposed in the Application.

With regard to the Lot 2 loading dock where PCBs were identified at 77 mg/kg, this area is also competent concrete with the PCBs bound in the concrete. Although cross contamination from this material to demolition debris is unlikely, since PCBs are above 10 mg/kg in the concrete, the loading dock concrete slab will be covered with six inches of stone prior to initiating demolition to serve as a temporary barrier between any demolition debris and the underlying concrete. After demolition is complete, the stone will be placed below the cap with the PCB containing soil that will remain onsite. The impacted area outside of the loading dock (PCBs at 7.4 mg/kg) will be addressed in the same manner as the concrete impacted with PCBs on Lot 1. The concrete associated with sample CC-LD will be addressed in accordance with the procedures set forth in the Application.

Mr. John Gorman  
November 9, 2016  
Page 22 of 29

*Disposal Facility Requirements*

PCB impacted materials containing PCBs between 10 and 50 ppm will be disposed at Conestoga Landfill in Morgantown, Pennsylvania or another RCRA subtitle D facility that is in compliance with 40 CFR761.61 (a)(5)(i)(B)(ii). The materials will not be disposed at a beneficial use facility. Conestoga's Landfill permit is included in Attachment F.

***USEPA Comment 13***

**“Section 6 (Quality assurance/Quality Control Plan):** Please note that post-excavation sampling should follow 40 CFR Part 761, Subpart O (not Subpart N as referenced in the text).”

*Response:*

Post-excavation soil sampling will be conducted in accordance with 40 CFR Part 761, Subpart O.

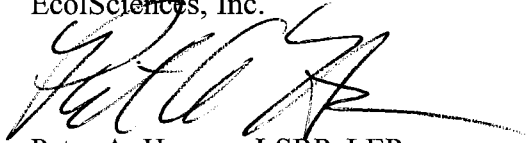
***USEPA Comment Letter Response Conclusion:***

490 South Avenue, LLC, EcolSciences, Inc., and the undersigned LSRP believe the responses and additional information included herein fully addresses the USEPA's comments. As detailed in the Application and this Response Letter, the proposed remediation and future redevelopment of the Site will not pose an unreasonable risk of injury to health or the environment and is protective of human health, safety, and the environment. Accordingly, we respectfully request your reconsideration of the Application taking into consideration this Response Letter and approve the Application subject to the conditions recommended herein.

Should you have any questions or require additional information, please contact me at 973-366-9500. Thank you in advance for your immediate attention to this matter.

Very truly yours,

EcolSciences, Inc.



Peter A. Hansen, LSRP, LEP  
Vice President

Attachments

cc: NJDEP – Kevin Schick, BEERA  
Ed Russo, 490 South Avenue LLC

# **ATTACHMENT A**

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**Tables**

**EcolSciences, Inc.**

Environmental Management & Regulatory Compliance

Table 1 - Groundwater Sampling Results  
 USEPA Risk Based Plan Application USEPA Comment Response Letter  
 50 Center Street and 450 South Avenue  
 Block 401, Lots 1 and 2  
 Garwood, New Jersey

Lab ID: Client ID: Date Sampled: Matrix: Unit: Dilution:	NJ Higher of PQLs and GW Quality 2015 ug/l	460-115481-2 C-MW-9-9 06/15/2016 Water ug/l 1	460-115481-3 C-MW-9-13.2 06/15/2016 Water ug/l 1	460-115481-4 C-MW-2D-27.6 06/15/2016 Water ug/l 1	460-115481-5 C-MW-2D-32.6 06/15/2016 Water ug/l 1	460-115481-6 C-MW-2 06/15/2016 Water ug/l 1	460-115481-7 C-MW-7D-27.4 06/15/2016 Water ug/l 1	460-115481-8 C-MW-7D-32.4 06/15/2016 Water ug/l 1	460-115481-9 C-MW-7 06/15/2016 Water ug/l 1	460-115481-10 C-MW-3 06/15/2016 Water ug/l 1	460-115334-2 P-MW-4 06/13/2016 Water ug/l 1	460-115334-3 P-MW-9 06/13/2016 Water ug/l 1	460-115334-4 P-MW-2 06/13/2016 Water ug/l 1	460-115334-5 P-MW-1 06/13/2016 Water ug/l 1	460-115334-6 P-MW-6 06/13/2016 Water ug/l 1	460-115334-7 P-MW-3 06/13/2016 Water ug/l 1	
GCSVOA-8082A-WATER																	
WATER BY 8082A																	
PCB-1016	NA	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098
PCB-1221	NA	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098
PCB-1232	NA	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098
PCB-1242	NA	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098
PCB-1248	NA	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098
PCB-1254	NA	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084
PCB-1260	NA	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084
PCB-1262	NA	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084
PCB-1268	NA	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084
Total PCBs	0.5	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098

Lab ID: Client ID: Date Sampled: Matrix: Unit: Dilution:	NJ Higher of PQLs and GW Quality 2015 ug/l	460-115571-2 C-MW-8-7.5 06/16/2016 Water ug/l 1	460-115571-3 C-MW-8-12.5 06/16/2016 Water ug/l 1	460-115571-4 C-MW-6 06/16/2016 Water ug/l 1	460-115571-4-DL C-MW-6 06/16/2016 Water ug/l 5	460-115571-5 C-MW-6D 06/16/2016 Water ug/l 1	460-115571-6 C-MW-4D-27.8 06/16/2016 Water ug/l 1	460-115571-7 C-MW-4D-32.8 06/16/2016 Water ug/l 1	460-115571-8 C-MW-4 06/16/2016 Water ug/l 1	460-115571-9 C-MW-3 06/16/2016 Water ug/l 1	460-115387-2 P-MW-3D-27.7 06/14/2016 Water ug/l 1	460-115387-3 P-MW-3D-32.7 06/14/2016 Water ug/l 1	460-115387-4 P-MW-5 06/14/2016 Water ug/l 1	460-115387-5 P-MW-10 06/14/2016 Water ug/l 1	460-115387-6 P-MW-8D-27 06/14/2016 Water ug/l 1	460-115387-7 P-MW-8D-32 06/14/2016 Water ug/l 1	460-115387-8 P-MW-7D-26.9 06/14/2016 Water ug/l 1	460-115387-9 P-MW-7D-31.9 06/14/2016 Water ug/l 1	460-115387-10 P-MW-7 06/14/2016 Water ug/l 1
GCSVOA-8082A-WATER																			
WATER BY 8082A																			
Aroclor-1248, Dissolved	NA	0.40 U 0.098	1.0 0.098	4.3 0.098	~	0.40 U 0.098	~	~	~	~	~	~	0.40 U 0.098	0.42 U 0.10	~	~	~	~	~
PCB-1016	NA	0.40 U 0.098	0.40 U 0.098	~	2.0 U 0.49	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098
PCB-1016, Dissolved	NA	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	~	0.40 U 0.098	~	~	~	~	~	~	0.40 U 0.098	0.42 U 0.10	~	~	~	~	~
PCB-1221	NA	0.40 U 0.098	0.40 U 0.098	~	2.0 U 0.49	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098
PCB-1221, Dissolved	NA	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	~	0.40 U 0.098	~	~	~	~	~	~	0.40 U 0.098	0.42 U 0.10	~	~	~	~	~
PCB-1232	NA	0.40 U 0.098	0.40 U 0.098	~	2.0 U 0.49	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098
PCB-1232, Dissolved	NA	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	~	0.40 U 0.098	~	~	~	~	~	~	0.40 U 0.098	0.42 U 0.10	~	~	~	~	~
PCB-1242	NA	0.40 U 0.098	0.40 U 0.098	~	2.0 U 0.49	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098
PCB-1242, Dissolved	NA	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	~	0.40 U 0.098	~	~	~	~	~	~	0.40 U 0.098	0.42 U 0.10	~	~	~	~	~
PCB-1248	NA	2.3 0.098	3.6 0.098	~	12 D 0.49	0.75 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	1.8 0.098	2.0 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098
PCB-1254	NA	0.40 U 0.084	0.40 U 0.084	~	2.0 U 0.42	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084
PCB-1254, Dissolved	NA	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	~	0.40 U 0.084	~	~	~	~	~	~	0.40 U 0.084	0.42 U 0.088	~	~	~	~	~
PCB-1260	NA	0.40 U 0.084	0.40 U 0.084	~	2.0 U 0.42	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084
PCB-1260, Dissolved	NA	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	~	0.40 U 0.084	~	~	~	~	~	~	0.40 U 0.084	0.42 U 0.088	~	~	~	~	~
PCB-1262	NA	0.40 U 0.084	0.40 U 0.084	~	2.0 U 0.42	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084
PCB-1262, Dissolved	NA	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	~	0.40 U 0.084	~	~	~	~	~	~	0.40 U 0.084	0.42 U 0.088	~	~	~	~	~
PCB-1268	NA	0.40 U 0.084	0.40 U 0.084	~	2.0 U 0.42	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084
PCB-1268, Dissolved	NA	0.40 U 0.084	0.40 U 0.084	0.40 U 0.084	~	0.40 U 0.084	~	~	~	~	~	~	0.40 U 0.084	0.42 U 0.088	~	~	~	~	~
Total PCBs	0.5	2.3 0.098	3.6 0.098	~	12 D 0.49	0.75 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	1.8 0.098	2.0 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098	0.40 U 0.098
Total PCBs, Dissolved	0.5	0.40 U 0.098	1.0 0.098	4.3 0.098	~	0.40 U 0.098	~	~	~	~	~	~	0.40 U 0.098	0.42 U 0.10	~	~	~	~	~

NA: Not Applicable  
 SRS: Soil Remediation Standard  
 U : Indicates the analyte was analyzed for but not detected.



Table 2 - Soil and Concrete Sample Results  
 USEPA Risk Based Plan Application USEPA Comment Response Letter  
 50 Center Street and 450 South Avenue  
 Block 401, Lots 1 and 2  
 Garwood, New Jersey

Lab ID: Client ID: Date Sampled: Matrix: Unit: Dilution:	NJDEP Residential SRS mg/kg	NJDEP Non-Residential SRS mg/kg	NJDEP IGW Screening Nov 2013 mg/kg	460-115513-1 8/19-21E 06/14/2016 Soil mg/kg 1	460-115513-5-DL SE-9F 06/14/2016 Soil mg/kg 50	460-115513-6 SE-9G 06/14/2016 Soil mg/kg 1	460-115513-8-DL PR5D 06/14/2016 Soil mg/kg 50	460-115513-9-DL PR5E 06/14/2016 Soil mg/kg 5	460-115513-10 PR5F 06/14/2016 Soil mg/kg 1	460-115513-13 14G 06/15/2016 Soil mg/kg 1	460-115513-17-DL 10G 06/15/2016 Soil mg/kg 20	460-115513-18 10H 06/15/2016 Soil mg/kg 1
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	Conc. Qual MDL
SOIL BY 8082A												
Aroclor 1016	NA	NA	NA	0.076 U 0.010	3.9 U 0.51	0.080 U 0.011	3.7 U 0.49	0.38 U 0.050	0.078 U 0.010	0.083 U 0.011	1.5 U 0.19	0.075 U 0.010
Aroclor 1221	NA	NA	NA	0.076 U 0.010	3.9 U 0.51	0.080 U 0.011	3.7 U 0.49	0.38 U 0.050	0.078 U 0.010	0.083 U 0.011	1.5 U 0.19	0.075 U 0.010
Aroclor 1232	NA	NA	NA	0.076 U 0.010	3.9 U 0.51	0.080 U 0.011	3.7 U 0.49	0.38 U 0.050	0.078 U 0.010	0.083 U 0.011	1.5 U 0.19	0.075 U 0.010
Aroclor 1242	NA	NA	NA	0.076 U 0.010	3.9 U 0.51	0.080 U 0.011	3.7 U 0.49	0.38 U 0.050	0.078 U 0.010	0.083 U 0.011	1.5 U 0.19	0.075 U 0.010
Aroclor 1248	NA	NA	NA	0.076 U 0.010	33 D 0.51	0.080 U 0.011	64 D 0.49	3.2 D 0.050	0.078 U 0.010	0.10	20 D 0.19	0.075 U 0.010
Aroclor 1254	NA	NA	NA	0.076 U 0.010	3.9 U 0.53	0.080 U 0.011	3.7 U 0.50	0.38 U 0.052	0.078 U 0.011	0.083 U 0.011	1.5 U 0.20	0.075 U 0.010
Aroclor 1260	NA	NA	NA	0.076 U 0.010	3.9 U 0.53	0.080 U 0.011	3.7 U 0.50	0.38 U 0.052	0.078 U 0.011	0.083 U 0.011	1.5 U 0.20	0.075 U 0.010
Aroclor 1262	NA	NA	NA	0.076 U 0.010	3.9 U 0.53	0.080 U 0.011	3.7 U 0.50	0.38 U 0.052	0.078 U 0.011	0.083 U 0.011	1.5 U 0.20	0.075 U 0.010
Aroclor 1268	NA	NA	NA	0.076 U 0.010	3.9 U 0.53	0.080 U 0.011	3.7 U 0.50	0.38 U 0.052	0.078 U 0.011	0.083 U 0.011	1.5 U 0.20	0.075 U 0.010
Total PCBs	0.2	1	0.2	0.076 U 0.010	33 D 0.53	0.080 U 0.011	64 D 0.50	3.2 D 0.052	0.078 U 0.011	0.10	20 D 0.20	0.075 U 0.010

Lab ID: Client ID: Date Sampled: Matrix: Unit: Dilution:	NJDEP Residential SRS mg/kg	NJDEP Non-Residential SRS mg/kg	NJDEP IGW Screening Nov 2013 mg/kg	460-115513-20 13F 06/15/2016 Soil mg/kg 1	460-115513-24 PR-2C 06/15/2016 Soil mg/kg 1	460-115513-28 20G 06/15/2016 Soil mg/kg 1	460-115563-1 B6-F 06/16/2016 Soil mg/kg 1	460-115563-5 FM-13C 06/16/2016 Soil mg/kg 1	460-115553-1 CC-LD2 06/16/2016 Soil mg/kg 1
GCSVOA-8082A-SOIL				Conc. Qual MDL	Conc. Qual MDL	Conc. Qual MDL	Conc. Qual MDL	Conc. Qual MDL	Conc. Qual MDL
SOIL BY 8082A									
Aroclor 1016	NA	NA	NA	0.081 U 0.011	0.078 U 0.010	0.075 U 0.0099	0.075 U 0.0099	0.080 U 0.011	0.074 U 0.0098
Aroclor 1221	NA	NA	NA	0.081 U 0.011	0.078 U 0.010	0.075 U 0.0099	0.075 U 0.0099	0.080 U 0.011	0.074 U 0.0098
Aroclor 1232	NA	NA	NA	0.081 U 0.011	0.078 U 0.010	0.075 U 0.0099	0.075 U 0.0099	0.080 U 0.011	0.074 U 0.0098
Aroclor 1242	NA	NA	NA	0.081 U 0.011	0.078 U 0.010	0.075 U 0.0099	0.075 U 0.0099	0.080 U 0.011	0.074 U 0.0098
Aroclor 1248	NA	NA	NA	0.081 U 0.011	0.064 J 0.010	0.075 U 0.0099	0.032 J 0.0099	0.069 J 0.011	0.074 U 0.0098
Aroclor 1254	NA	NA	NA	0.081 U 0.011	0.078 U 0.011	0.075 U 0.010	0.075 U 0.010	0.080 U 0.011	0.074 U 0.010
Aroclor 1260	NA	NA	NA	0.081 U 0.011	0.078 U 0.011	0.075 U 0.010	0.075 U 0.010	0.080 U 0.011	0.074 U 0.010
Aroclor 1262	NA	NA	NA	0.081 U 0.011	0.078 U 0.011	0.075 U 0.010	0.075 U 0.010	0.080 U 0.011	0.074 U 0.010
Aroclor 1268	NA	NA	NA	0.081 U 0.011	0.078 U 0.011	0.075 U 0.010	0.075 U 0.010	0.080 U 0.011	0.074 U 0.010
Total PCBs	0.2	1	0.2	0.081 U 0.011	0.064 J 0.011	0.075 U 0.010	0.032 J 0.010	0.069 J 0.011	0.074 U 0.010

NA: Not Applicable

SRS: Soil Remediation Standard

D : Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.

J : Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

U : Indicates the analyte was analyzed for but not detected.

Table 3 - Lot 1 Soil and Concrete Sample Collection, Extraction, and Analysis Dates  
 USEPA Risk Based Plan Application USEPA Comment Response Letter  
 50 Center Street and 450 South Avenue  
 Block 401, Lots 1 and 2  
 Garwood, New Jersey

Lot 1 PCB Soil and Concrete Sample Dates				
Lab ID	Sample ID	Date Collected	Date Extracted	Date Analyzed
460-71832-1	13-1	02/27/2014	3/3/2014	3/4/2014
460-71832-2	13-2	02/27/2014	3/3/2014	3/3/2014
460-71832-3	13-3	02/27/2014	3/3/2014	3/3/2014
460-71834-1	3A-1	02/28/2014	3/3/2014	3/4/2014
460-71834-2	2A-1	02/28/2014	3/3/2014	3/4/2014
460-71835-1	17-6	02/28/2014	3/12/2014	3/12/2014
460-71836-3	8/19-12	02/28/2014	3/10/2014	3/10/2014
460-71837-5	1B-1	02/27/2014	3/10/2014	3/10/2014
460-71999-5	8/19-5	03/04/2014	3/12/2014	3/12/2014
460-72000-1	17-2	03/04/2014	3/12/2014	3/13/2014
460-72000-3	17-4	03/04/2014	3/12/2014	3/13/2014
460-72003-1	C-2	03/04/2014	3/8/2014	3/8/2014
460-72003-2	C-1	03/04/2014	3/8/2014	3/8/2014
460-72003-3	C-3	03/04/2014	3/8/2014	3/8/2014
460-72005-1	7-1	03/05/2014	3/6/2014	3/6/2014
460-72005-10	7-10	03/05/2014	3/6/2014	3/6/2014
460-72005-11	7-11	03/05/2014	3/6/2014	3/6/2014
460-72005-12	7-12	03/05/2014	3/6/2014	3/6/2014
460-72005-2	7-2	03/05/2014	3/6/2014	3/6/2014
460-72005-3	7-3	03/05/2014	3/6/2014	3/6/2014
460-72005-4	7-4	03/05/2014	3/6/2014	3/6/2014
460-72005-5	7-5	03/05/2014	3/6/2014	3/6/2014
460-72005-6	7-6	03/05/2014	3/6/2014	3/6/2014
460-72005-7	7-7	03/05/2014	3/6/2014	3/6/2014
460-72005-8	7-8	03/05/2014	3/6/2014	3/6/2014
460-72005-9	7-9	03/05/2014	3/6/2014	3/6/2014
460-72006-1	9B-1	03/04/2014	3/6/2014	3/6/2014
460-72006-2	13-4	03/05/2014	3/6/2014	3/6/2014
460-72104-1	C-6	03/06/2014	3/8/2014	3/9/2014
460-72104-2	C-9	03/06/2014	3/8/2014	3/9/2014
460-72104-3	C-8	03/06/2014	3/8/2014	3/9/2014
460-72122-2	8/19-14	03/06/2014	3/13/2014	3/13/2014
460-72122-3	8/19-15	03/06/2014	3/13/2014	3/13/2014
460-72124-1	5-1	03/06/2014	3/10/2014	3/10/2014
460-72124-2	11-1	03/06/2014	3/10/2014	3/10/2014
460-73587-1	13-23	04/01/2014	4/2/2014	4/2/2014
460-73587-10	13-17	04/01/2014	4/2/2014	4/2/2014
460-73587-11	13-18	04/01/2014	4/2/2014	4/2/2014
460-73587-12	13-5	04/01/2014	4/2/2014	4/2/2014
460-73587-13	13-6	04/01/2014	4/2/2014	4/2/2014
460-73587-14	13-7	04/01/2014	4/2/2014	4/2/2014
460-73587-15	13-8	04/01/2014	4/2/2014	4/2/2014
460-73587-16	13-9	04/01/2014	4/2/2014	4/3/2014
460-73587-17	13-10	04/01/2014	4/2/2014	4/2/2014
460-73587-18	13-12	04/01/2014	4/2/2014	4/2/2014
460-73587-19	13-11	04/01/2014	4/2/2014	4/2/2014
460-73587-2	13-21	04/01/2014	4/2/2014	4/2/2014
460-73587-20	13-13	04/01/2014	4/2/2014	4/2/2014
460-73587-21	13-1	04/01/2014	4/2/2014	4/2/2014
460-73587-3	13-20	04/01/2014	4/2/2014	4/2/2014
460-73587-4	13-19	04/01/2014	4/2/2014	4/2/2014
460-73587-5	13-15	04/01/2014	4/2/2014	4/2/2014
460-73587-6	13-14	04/01/2014	4/2/2014	4/2/2014
460-73587-7	13-22	04/01/2014	4/2/2014	4/2/2014
460-73587-9	13-16	04/01/2014	4/2/2014	4/2/2014
460-73593-1	8/19-14M	03/31/2014	4/2/2014	4/3/2014
460-73593-10	8/19-14BD	03/31/2014	4/17/2014	4/17/2014
460-73593-11	8/19-14AS	03/31/2014	4/2/2014	4/3/2014
460-73593-12	8/19-14AD	03/31/2014	4/9/2014	4/9/2014
460-73593-13	8/19-20S	03/31/2014	4/2/2014	4/3/2014
460-73593-14	8/19-20D	03/31/2014	4/9/2014	4/9/2014
460-73593-15	5-3S	03/31/2014	4/2/2014	4/3/2014
460-73593-16	5-3D	03/31/2014	4/9/2014	4/9/2014

Table 3 - Lot 1 Soil and Concrete Sample Collection, Extraction, and Analysis Dates  
 USEPA Risk Based Plan Application USEPA Comment Response Letter  
 50 Center Street and 450 South Avenue  
 Block 401, Lots 1 and 2  
 Garwood, New Jersey

Lot 1 PCB Soil and Concrete Sample Dates				
Lab ID	Sample ID	Date Collected	Date Extracted	Date Analyzed
460-73593-17	5-2S	03/31/2014	4/2/2014	4/3/2014
460-73593-18	5-2D	03/31/2014	4/9/2014	4/9/2014
460-73593-19	5-4S	03/31/2014	4/2/2014	4/3/2014
460-73593-2	8/19-14DP	03/31/2014	4/9/2014	4/9/2014
460-73593-20	5-4D	03/31/2014	4/9/2014	4/9/2014
460-73593-21-DL	10-12M	04/01/2014	4/3/2014	4/4/2014
460-73593-22-DL	10-12D	04/01/2014	4/3/2014	4/4/2014
460-73593-23	10-11S	04/01/2014	4/3/2014	4/3/2014
460-73593-24-DL	10-11M	04/01/2014	4/3/2014	4/4/2014
460-73593-25-DL	10-11D	04/01/2014	4/3/2014	4/4/2014
460-73593-26	8/19-14CS	04/01/2014	4/3/2014	4/3/2014
460-73593-27	8/19-14CD	04/01/2014	4/9/2014	4/9/2014
460-73593-28	8/19-18S	04/01/2014	4/3/2014	4/3/2014
460-73593-29	8/19-18D	04/01/2014	4/9/2014	4/9/2014
460-73593-3	8/19-14ES	03/31/2014	4/2/2014	4/3/2014
460-73593-30	8/19-16S	04/01/2014	4/3/2014	4/3/2014
460-73593-31	8/19-16D	04/01/2014	4/9/2014	4/9/2014
460-73593-32	8/19-17S	04/01/2014	4/3/2014	4/3/2014
460-73593-33	8/19-17D	04/01/2014	4/9/2014	4/9/2014
460-73593-4	8/19-14ED	03/31/2014	4/9/2014	4/9/2014
460-73593-5	8/19-19S	03/31/2014	4/2/2014	4/3/2014
460-73593-6	8/19-19D	03/31/2014	4/9/2014	4/9/2014
460-73593-7	8/19-14FS	03/31/2014	4/2/2014	4/3/2014
460-73593-8	8/19-14FD	03/31/2014	4/9/2014	4/9/2014
460-73593-9	8/19-14BS	03/31/2014	4/2/2014	4/3/2014
460-73658-13	7-13	04/02/2014	4/3/2014	4/3/2014
460-73658-14	7-14	04/02/2014	4/3/2014	4/3/2014
460-73658-15	7-15	04/02/2014	4/3/2014	4/3/2014
460-73658-16	7-16	04/02/2014	4/3/2014	4/3/2014
460-73660-1	10-8M	04/02/2014	4/3/2014	4/3/2014
460-73660-10	10-3D	04/02/2014	4/3/2014	4/3/2014
460-73660-11	10-2M	04/02/2014	4/3/2014	4/3/2014
460-73660-12	10-2D	04/02/2014	4/3/2014	4/3/2014
460-73660-17	10-9S	04/02/2014	4/4/2014	4/4/2014
460-73660-19	10-10D	04/02/2014	4/3/2014	4/3/2014
460-73660-2	10-8D	04/02/2014	4/3/2014	4/3/2014
460-73660-20	10-10M	04/02/2014	4/3/2014	4/3/2014
460-73660-3	10-7S	04/02/2014	4/3/2014	4/3/2014
460-73660-4	10-7M	04/02/2014	4/3/2014	4/3/2014
460-73660-5	10-7D	04/02/2014	4/3/2014	4/3/2014
460-73660-6	10-6M	04/02/2014	4/3/2014	4/3/2014
460-73660-7	10-6D	04/02/2014	4/3/2014	4/3/2014
460-73660-8	10-3S	04/02/2014	4/3/2014	4/3/2014
460-73660-9	10-3M	04/02/2014	4/3/2014	4/3/2014
460-73776-1	10-9S	04/02/2014	4/4/2014	4/5/2014
460-73776-10	10-1M	04/03/2014	4/7/2014	4/7/2014
460-73776-11	10-1D	04/03/2014	4/7/2014	4/7/2014
460-73776-14	8/19-21S	04/03/2014	4/7/2014	4/7/2014
460-73776-15	8/19-21D	04/03/2014	4/9/2014	4/10/2014
460-73776-16	8/19-22S	04/03/2014	4/7/2014	4/7/2014
460-73776-17	8/19-22D	04/03/2014	4/9/2014	4/10/2014
460-73776-18	8/19-14DS	04/03/2014	4/7/2014	4/7/2014
460-73776-19	8/19-14DD	04/03/2014	4/9/2014	4/9/2014
460-73776-2	10-9M	04/02/2014	4/7/2014	4/7/2014
460-73776-3	10-9D	04/02/2014	4/7/2014	4/7/2014
460-73776-4	10-5M	04/03/2014	4/7/2014	4/7/2014
460-73776-5	10-5D	04/03/2014	4/7/2014	4/7/2014
460-73776-6	10-4S	04/03/2014	4/4/2014	4/5/2014
460-73776-7	10-4M	04/03/2014	4/7/2014	4/7/2014
460-73776-8	10-4D	04/03/2014	4/7/2014	4/7/2014
460-73776-9	10-1S	04/03/2014	4/4/2014	4/5/2014
460-73832-11	C-11	04/03/2014	4/7/2014	4/7/2014
460-73832-12	C-12	04/04/2014	4/7/2014	4/7/2014

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Lab ID	Sample ID	Date Collected	Date Extracted	Date Analyzed
460-73832-13	C-13	04/03/2014	4/7/2014	4/7/2014
460-73832-14	C-14	04/03/2014	4/7/2014	4/7/2014
460-73832-15	C-15	04/03/2014	4/7/2014	4/7/2014
460-73832-16	C-16	04/04/2014	4/7/2014	4/7/2014
460-73832-17	C-17	04/04/2014	4/7/2014	4/7/2014
460-73832-18	C-18	04/04/2014	4/7/2014	4/7/2014
460-73832-19	C-19	04/04/2014	4/7/2014	4/7/2014
460-73832-20	C-20	04/04/2014	4/7/2014	4/7/2014
460-73832-21	C-21	04/04/2014	4/7/2014	4/7/2014
460-73832-22	C-22	04/04/2014	4/7/2014	4/7/2014
460-74419-1	10-12-1	04/14/2014	4/16/2014	4/18/2014
460-74419-12	10-12H1	04/14/2014	4/16/2014	4/17/2014
460-74419-13	10-12H2	04/14/2014	4/16/2014	4/17/2014
460-74419-16	10-12G1	04/14/2014	4/16/2014	4/17/2014
460-74419-17	10-12G2	04/14/2014	4/16/2014	4/17/2014
460-74419-2	10-12-2	04/14/2014	4/16/2014	4/17/2014
460-74419-20	10-12D1	04/14/2014	4/16/2014	4/18/2014
460-74419-21	10-12D2	04/14/2014	4/16/2014	4/18/2014
460-74419-22	10-12D3	04/14/2014	4/22/2014	4/22/2014
460-74419-23	10-12D4	04/14/2014	4/22/2014	4/22/2014
460-74419-24	10-12E1	04/14/2014	4/16/2014	4/18/2014
460-74419-25	10-12E2	04/14/2014	4/16/2014	4/18/2014
460-74419-26	10-12E3	04/14/2014	4/22/2014	4/22/2014
460-74419-27	10-12E4	04/14/2014	4/22/2014	4/22/2014
460-74419-28	10-12F1	04/14/2014	4/16/2014	4/17/2014
460-74419-29	10-12F2	04/14/2014	4/16/2014	4/18/2014
460-74419-3	10-12A-1	04/14/2014	4/16/2014	4/17/2014
460-74419-30	10-12F3	04/14/2014	4/22/2014	4/22/2014
460-74419-31	10-12F4	04/14/2014	4/22/2014	4/22/2014
460-74419-32	8/19-14B2A	04/14/2014	4/16/2014	4/17/2014
460-74419-33	8/19-14B2B	04/14/2014	4/16/2014	4/17/2014
460-74419-36	8/19-14B1A	04/14/2014	4/16/2014	4/17/2014
460-74419-37	8/19-14B1B	04/14/2014	4/16/2014	4/17/2014
460-74419-4	10-12A-2	04/14/2014	4/16/2014	4/17/2014
460-74419-8	10-12B1	04/14/2014	4/16/2014	4/17/2014
460-74419-9	10-12B2	04/14/2014	4/16/2014	4/17/2014
460-89049-1	NE-1	01/12/2015	1/23/2015	1/25/2015
460-89049-10	C-26	01/12/2015	1/16/2015	1/17/2015
460-89049-2	NE-2	01/12/2015	1/23/2015	1/25/2015
460-89049-3	NE-3	01/12/2015	1/23/2015	1/25/2015
460-89049-32	C-27	01/13/2015	1/23/2015	1/25/2015
460-89049-33	C-28	01/13/2015	1/23/2015	1/25/2015
460-89049-35	C-30	01/13/2015	1/23/2015	1/25/2015
460-89049-36	C-31	01/13/2015	1/23/2015	1/25/2015
460-89049-4	NE-4	01/12/2015	1/23/2015	1/25/2015
460-89049-5	NE-5	01/12/2015	1/23/2015	1/25/2015
460-89049-6	NE-6	01/13/2015	1/23/2015	1/25/2015
460-89049-7	C-23	01/12/2015	1/16/2015	1/17/2015
460-89049-8	C-24	01/12/2015	1/16/2015	1/17/2015
460-89049-9	C-25	01/12/2015	1/16/2015	1/17/2015
460-89114-26	SE5-A	01/14/2015	1/16/2015	1/16/2015
460-89114-27	SE5-B	01/14/2015	1/16/2015	1/16/2015
460-89114-28	SE5-C	01/14/2015	1/16/2015	1/16/2015
460-89114-29	SE5-D	01/14/2015	1/16/2015	1/16/2015
460-89114-30	SE5-E	01/14/2015	1/16/2015	1/16/2015
460-89114-31	SE6-A	01/14/2015	1/16/2015	1/16/2015
460-89114-32	SE6-B	01/14/2015	1/16/2015	1/16/2015
460-89114-33	SE6-C	01/14/2015	1/16/2015	1/16/2015
460-89114-34	SE6-D	01/14/2015	1/16/2015	1/16/2015
460-89114-35	SE6-E	01/14/2015	1/16/2015	1/16/2015
460-89114-36	SE7-A	01/14/2015	1/16/2015	1/16/2015
460-89114-37	SE7-B	01/14/2015	1/16/2015	1/16/2015
460-89114-38	SE7-C	01/14/2015	1/16/2015	1/16/2015

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Lab ID	Sample ID	Date Collected	Date Extracted	Date Analyzed
460-89114-39	SE7-D	01/14/2015	1/16/2015	1/16/2015
460-89114-40	SE7-E	01/14/2015	1/16/2015	1/16/2015
460-89114-41	SE8-A	01/14/2015	1/16/2015	1/16/2015
460-89114-42	SE8-B	01/14/2015	1/16/2015	1/16/2015
460-89114-43	SE8-C	01/14/2015	1/16/2015	1/16/2015
460-89114-44	SE8-D	01/14/2015	1/16/2015	1/16/2015
460-89114-45	SE8-E	01/14/2015	1/16/2015	1/16/2015
460-89114-46	10-12E-5	01/14/2015	1/16/2015	1/17/2015
460-89114-47	10-12E-6	01/14/2015	1/22/2015	1/22/2015
460-89221-1	SE9-A	01/14/2015	1/20/2015	1/20/2015
460-89221-2	SE9-B	01/14/2015	1/20/2015	1/21/2015
460-89221-3	SE9-C	01/14/2015	1/20/2015	1/21/2015
460-89221-32	13-6N1A	01/15/2015	1/20/2015	1/20/2015
460-89221-34	13-6A	01/15/2015	1/20/2015	1/20/2015
460-89221-4	SE9-D	01/14/2015	1/20/2015	1/21/2015
460-89221-5	SE9-E	01/14/2015	1/20/2015	1/21/2015
460-89221-6	SE10-A	01/14/2015	1/23/2015	1/23/2015
460-89221-7	SE10-B	01/14/2015	1/23/2015	1/23/2015
460-89221-8	SE10-C	01/14/2015	1/23/2015	1/23/2015
460-89342-12	SE-11A	01/16/2015	1/21/2015	1/21/2015
460-89342-13	SE-11B	01/16/2015	1/21/2015	1/21/2015
460-89342-14	SE-11C	01/16/2015	1/21/2015	1/21/2015
460-89342-15	SE-11D	01/16/2015	1/21/2015	1/21/2015
460-89342-16	SE-11E	01/16/2015	1/21/2015	1/21/2015
460-89342-17	SE-12A	01/16/2015	1/21/2015	1/21/2015
460-89342-18	SE-12B	01/16/2015	1/21/2015	1/21/2015
460-89342-19	SE-12C	01/16/2015	1/21/2015	1/21/2015
460-89342-20	SE-12D	01/16/2015	1/21/2015	1/21/2015
460-89342-21	SE-12E	01/16/2015	1/21/2015	1/21/2015
460-89342-22	SE-13A	01/16/2015	1/21/2015	1/21/2015
460-89342-23	SE-13B	01/16/2015	1/21/2015	1/21/2015
460-89342-24	SE-13C	01/16/2015	1/21/2015	1/21/2015
460-89342-25	SE-13D	01/16/2015	1/21/2015	1/21/2015
460-89342-26	SE-13E	01/16/2015	1/21/2015	1/21/2015
460-89342-27	SE-14A	01/16/2015	1/28/2015	1/28/2015
460-89342-28	SE-14B	01/16/2015	1/28/2015	1/28/2015
460-89342-29	SE-14C	01/16/2015	1/28/2015	1/28/2015
460-89342-30	SE-14D	01/16/2015	1/28/2015	1/28/2015
460-89342-31	SE-14E	01/16/2015	1/28/2015	1/28/2015
460-89342-32	8/19-14FD1	01/16/2015	1/21/2015	1/21/2015
460-89342-34	SE-15A	01/16/2015	1/21/2015	1/21/2015
460-89342-35	SE-15B	01/16/2015	1/21/2015	1/21/2015
460-89342-36	SE-15C	01/16/2015	1/21/2015	1/21/2015
460-89342-37	SE-15D	01/16/2015	1/21/2015	1/21/2015
460-89342-38	SE-15E	01/16/2015	1/21/2015	1/22/2015
460-89342-39	SE-16A	01/16/2015	1/21/2015	1/22/2015
460-89342-40	SE-16B	01/16/2015	1/21/2015	1/22/2015
460-89342-41	SE-16C	01/16/2015	1/21/2015	1/22/2015
460-89342-42	SE-16D	01/16/2015	1/21/2015	1/22/2015
460-89342-43	SE-16E	01/16/2015	1/21/2015	1/22/2015
460-89342-44	SE-17A	01/16/2015	1/28/2015	1/28/2015
460-89342-45	SE-17B	01/16/2015	1/28/2015	1/28/2015
460-89342-46	SE-17C	01/16/2015	1/28/2015	1/28/2015
460-89342-47	SE-17D	01/16/2015	1/28/2015	1/28/2015
460-89342-48	SE-17E	01/16/2015	1/28/2015	1/28/2015
460-89342-49	SE-18A	01/16/2015	1/21/2015	1/22/2015
460-89342-50	SE-18B	01/16/2015	1/21/2015	1/22/2015
460-89342-51	SE-18C	01/16/2015	1/21/2015	1/22/2015
460-89342-52	SE-18D	01/16/2015	1/21/2015	1/22/2015
460-89342-53	SE-18E	01/16/2015	1/21/2015	1/22/2015
460-89342-54	SE-19C	01/16/2015	1/21/2015	1/22/2015
460-89342-55	SE-19D	01/16/2015	1/21/2015	1/22/2015
460-89342-56	SE-19E	01/16/2015	1/21/2015	1/22/2015

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Lab ID	Sample ID	Date Collected	Date Extracted	Date Analyzed
460-89342-57	SE-20A	01/16/2015	1/21/2015	1/22/2015
460-89342-58	SE-20B	01/16/2015	1/21/2015	1/22/2015
460-89342-59	SE-20C	01/16/2015	1/21/2015	1/22/2015
460-89342-60	SE-20D	01/16/2015	1/21/2015	1/22/2015
460-89342-61	SE-20E	01/16/2015	1/21/2015	1/22/2015
460-89342-67	C11-E1	01/16/2015	1/21/2015	1/22/2015
460-89342-68	C11-E2	01/16/2015	1/28/2015	1/28/2015
460-89342-69	C11-N1	01/16/2015	1/21/2015	1/21/2015
460-89342-70	C11-N2	01/16/2015	1/28/2015	1/28/2015
460-89342-71	C11-W1	01/16/2015	1/21/2015	1/21/2015
460-89342-72	C11-W2	01/16/2015	1/28/2015	1/28/2015
460-89362-1	SE-10D	01/19/2015	1/28/2015	1/28/2015
460-89362-10	13-9E1B	01/19/2015	1/28/2015	1/28/2015
460-89362-11	13-9E2A	01/19/2015	1/28/2015	1/28/2015
460-89362-12	13-9E2B	01/19/2015	1/28/2015	1/28/2015
460-89362-13	13-9S1A	01/19/2015	1/21/2015	1/21/2015
460-89362-17	13-6E1A	01/19/2015	1/21/2015	1/22/2015
460-89362-18	13-6E1B	01/19/2015	1/28/2015	1/28/2015
460-89362-19	13-6S1A	01/19/2015	1/21/2015	1/22/2015
460-89362-2	SE-10E	01/19/2015	1/28/2015	1/28/2015
460-89362-20	13-6S1B	01/19/2015	1/28/2015	1/28/2015
460-89362-21	13-6S2A	01/19/2015	1/28/2015	1/29/2015
460-89362-22	13-6S2B	01/19/2015	1/28/2015	1/29/2015
460-89362-3	C11-S1	01/19/2015	1/21/2015	1/21/2015
460-89362-4	C11-S2	01/19/2015	1/28/2015	1/28/2015
460-89362-5	13-9B	01/19/2015	1/21/2015	1/21/2015
460-89362-7	13-9W1A	01/19/2015	1/21/2015	1/21/2015
460-89362-8	13-9W1B	01/19/2015	1/28/2015	1/28/2015
460-89362-9	13-9E1A	01/19/2015	1/21/2015	1/21/2015
460-115513-5-DL	SE-9F	06/14/2016	6/17/2016	6/19/2016
460-115513-6	SE-9G	06/14/2016	6/25/2016	6/27/2015

Table 4 - Lot 2 Soil and Concrete Sample Collection, Extraction, and Analysis Dates  
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Lot 2 PCB Soil and Concrete Sample Dates				
Lab ID	Sample ID	Date Collected	Date Extracted	Date Analyzed
460-90690-1	PR1a	02/18/2015	2/23/2015	2/23/2015
460-90690-2	PR1b	02/18/2015	2/23/2015	2/24/2015
460-90690-3	PR2a	02/18/2015	2/23/2015	2/24/2015
460-90690-4	PR2b	02/18/2015	2/23/2015	2/24/2015
460-90690-5	PR3a	02/18/2015	2/23/2015	2/24/2015
460-90690-6	PR3b	02/18/2015	2/23/2015	2/24/2015
460-90690-7	PR4a	02/18/2015	2/23/2015	2/23/2015
460-90690-8	PR4b	02/18/2015	2/23/2015	2/23/2015
460-90690-9	PR5a	02/18/2015	2/23/2015	2/24/2015
460-90690-10	PR5b	02/18/2015	2/23/2015	2/24/2015
460-90690-11	R1	02/19/2015	2/23/2015	2/23/2015
460-90690-12	R2	02/19/2015	2/23/2015	2/23/2015
460-90690-13	R3	02/19/2015	2/23/2015	2/23/2015
460-90690-14	R4	02/19/2015	2/23/2015	2/23/2015
460-90690-15	CO1	02/19/2015	2/23/2015	2/24/2015
460-90690-16	CO2	02/18/2015	2/23/2015	2/24/2015
460-90690-17	CO3	02/19/2015	2/23/2015	2/24/2015
460-90690-18	CO4	02/18/2015	2/23/2015	2/24/2015
460-90690-19	CO5	02/18/2015	2/23/2015	2/24/2015
460-90690-20	CO6	02/18/2015	2/23/2015	2/24/2015
460-90690-21	I1	02/19/2015	2/23/2015	2/23/2015
460-90690-23	FM14a	02/19/2015	2/23/2015	2/23/2015
460-90690-24	FM14b	02/19/2015	2/23/2015	2/23/2015
460-90690-25	P9	02/19/2015	2/23/2015	2/23/2015
460-90690-26	FM13a	02/19/2015	2/23/2015	2/23/2015
460-90690-27	FM13b	02/19/2015	2/23/2015	2/25/2013
460-90690-28	BP1	02/19/2015	2/23/2015	2/25/2013
460-90690-29	BP2	02/19/2015	2/23/2015	2/25/2013
460-90690-30	BP3	02/19/2015	2/23/2015	2/25/2013
460-90690-31	BP4	02/19/2015	2/23/2015	2/25/2013
460-90690-32	OH1	02/19/2015	2/23/2015	2/25/2013
460-90690-33	OH1a	02/19/2015	2/23/2015	2/25/2013
460-90690-34	OH2	02/19/2015	2/23/2015	2/25/2013
460-90690-35	OH2a	02/19/2015	2/23/2015	2/25/2013
460-90690-36	OV1	02/19/2015	2/23/2015	2/25/2013
460-90690-37	OV1a	02/19/2015	2/23/2015	2/25/2013
460-90690-38	OV2	02/19/2015	2/23/2015	2/24/2015
460-90690-39	OV2a	02/19/2015	2/23/2015	2/24/2015
460-90741-1	LD1	02/20/2015	2/24/2015	2/25/2015
460-90741-2	LD2	02/20/2015	2/24/2015	2/25/2015
460-90741-3	LD3	02/20/2015	2/24/2015	2/26/2015
460-90741-4	P1	02/20/2015	2/24/2015	2/26/2015
460-90741-5	P2	02/20/2015	2/24/2015	2/25/2015
460-90741-6	P3	02/20/2015	2/24/2015	2/25/2015
460-90741-7	FM12a	02/20/2015	2/24/2015	2/25/2015
460-90741-8	FM12b	02/20/2015	2/24/2015	2/25/2015
460-90741-9	TR1	02/20/2015	2/24/2015	2/25/2015
460-90741-10	TR2	02/20/2015	2/24/2015	2/25/2015
460-90741-11	TR3	02/20/2015	2/24/2015	2/25/2015
460-90741-12	TR4	02/20/2015	2/24/2015	2/25/2015
460-90741-13	TR5	02/20/2015	2/24/2015	2/25/2015
460-90741-14	TR6	02/20/2015	2/24/2015	2/25/2015
460-90741-15	TR7	02/20/2015	2/24/2015	2/25/2015
460-90796-1	FM1a	02/23/2015	2/25/2015	2/25/2015
460-90796-2	FM1b	02/23/2015	2/25/2015	2/25/2015
460-90796-3	FM2a	02/23/2015	2/25/2015	2/25/2015
460-90796-4	FM2b	02/23/2015	2/25/2015	2/26/2015
460-90796-5	FM3	02/23/2015	2/25/2015	2/26/2015
460-90796-6	FM3a	02/23/2015	2/25/2015	2/26/2015
460-90796-7	FM4	02/23/2015	2/25/2015	2/26/2015
460-90796-8	FM4a	02/23/2015	2/25/2015	2/26/2015
460-90796-9	FM5	02/23/2015	2/25/2015	2/26/2015
460-90796-10	FM5a	02/23/2015	2/25/2015	2/26/2015

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Lab ID	Sample ID	Date Collected	Date Extracted	Date Analyzed
460-90796-11	FM6	02/23/2015	2/25/2015	2/26/2015
460-90796-12	FM7	02/23/2015	2/25/2015	2/26/2015
460-90796-13	FM7a	02/23/2015	2/25/2015	2/26/2015
460-90796-14	FM8a	02/23/2015	2/25/2015	2/26/2015
460-90796-15	FM8b	02/23/2015	2/25/2015	2/26/2015
460-90796-16	FM10a	02/23/2015	2/25/2015	2/26/2015
460-90796-17	FM10b	02/23/2015	2/25/2015	2/26/2015
460-90796-18	FM11a	02/23/2015	2/25/2015	2/26/2015
460-90796-19	FM11b	02/23/2015	2/25/2015	2/26/2015
460-90796-21	P4	02/23/2015	2/25/2015	2/26/2015
460-90796-22	P5	02/23/2015	2/25/2015	2/25/2015
460-90796-23	P6	02/23/2015	2/25/2015	2/25/2015
460-90796-24	P7	02/23/2015	2/25/2015	2/25/2015
460-90796-25	P8	02/23/2015	2/25/2015	2/25/2015
460-90796-26	P9	02/23/2015	2/25/2015	2/25/2015
460-90796-27	P11	02/23/2015	2/25/2015	2/25/2015
460-90796-28	RP1	02/23/2015	2/25/2015	2/25/2015
460-90796-29	RP2	02/23/2015	2/25/2015	2/25/2015
460-90796-30	RP3	02/23/2015	2/25/2015	2/25/2015
460-90796-31	RP4	02/23/2015	2/25/2015	2/25/2015
460-90858-1	B1a	02/24/2015	2/26/2015	2/27/2015
460-90858-2	B1b	02/24/2015	2/26/2015	2/27/2015
460-90858-3	B1c	02/24/2015	2/26/2015	2/27/2015
460-90858-4	B1d	02/24/2015	2/26/2015	2/27/2015
460-90858-5	B1e	02/24/2015	2/26/2015	2/27/2015
460-90858-6	B2a	02/24/2015	2/26/2015	2/27/2015
460-90858-7	B2b	02/24/2015	2/26/2015	2/27/2015
460-90858-8	B2c	02/24/2015	2/26/2015	2/27/2015
460-90858-9	B2d	02/24/2015	2/26/2015	2/27/2015
460-90858-10	B2e	02/24/2015	2/26/2015	2/27/2015
460-90858-11	B3a	02/24/2015	2/26/2015	2/27/2015
460-90858-12	B3b	02/24/2015	2/26/2015	2/27/2015
460-90858-13	B3c	02/24/2015	2/25/2015	2/27/2015
460-90858-14	B3d	02/24/2015	2/25/2015	2/27/2015
460-90858-15	B3e	02/24/2015	2/25/2015	2/27/2015
460-90858-16	B5a	02/24/2015	2/25/2015	2/27/2015
460-90858-17	B5b	02/24/2015	2/25/2015	2/27/2015
460-90858-18	B5c	02/24/2015	2/25/2015	2/27/2015
460-90858-19	B5d	02/24/2015	2/25/2015	2/27/2015
460-90858-20	B5e	02/24/2015	2/25/2015	2/27/2015
460-90858-21	B6a	02/24/2015	2/25/2015	2/27/2015
460-90858-22	B6b	02/24/2015	2/25/2015	2/27/2015
460-90858-23	B6c	02/24/2015	2/25/2015	2/27/2015
460-90858-24	B6d	02/24/2015	2/25/2015	2/27/2015
460-90858-25	B6e	02/24/2015	2/25/2015	2/27/2015
460-90858-26	B7a	02/24/2015	2/25/2015	2/27/2015
460-90858-27	B7b	02/24/2015	2/25/2015	2/27/2015
460-90858-28	B7c	02/24/2015	2/25/2015	2/27/2015
460-90858-29	B7d	02/24/2015	2/25/2015	2/27/2015
460-90858-30	B7e	02/24/2015	2/25/2015	2/27/2015
460-90858-31	B10a	02/24/2015	2/25/2015	2/27/2015
460-90858-32	B10b	02/24/2015	2/25/2015	2/27/2015
460-90858-33	B10c	02/24/2015	2/26/2015	2/27/2015
460-90858-34	B10d	02/24/2015	2/26/2015	2/27/2015
460-90858-35	B10e	02/24/2015	2/26/2015	2/27/2015
460-90858-36	B11a	02/24/2015	2/26/2015	2/27/2015
460-90858-37	B11b	02/24/2015	2/26/2015	2/27/2015
460-90858-38	B11c	02/24/2015	2/26/2015	2/27/2015
460-90858-39	B11d	02/24/2015	2/26/2015	2/27/2015
460-90858-40	B11e	02/24/2015	2/26/2015	2/27/2015
460-90858-41	B12a	02/24/2015	2/26/2015	2/28/2015
460-90858-42	B12b	02/24/2015	2/26/2015	2/28/2015
460-90858-43	B12c	02/24/2015	2/26/2015	3/2/2015



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Lab ID	Sample ID	Date Collected	Date Extracted	Date Analyzed
460-90858-44	B12d	02/24/2015	2/26/2015	2/28/2015
460-90858-45	B12e	02/24/2015	2/26/2015	2/28/2015
460-90888-1	P10	02/25/2015	2/26/2015	3/2/2015
460-90888-2	TR8	02/25/2015	2/26/2015	2/28/2015
460-90888-3	AE-1	02/25/2015	2/26/2015	2/28/2015
460-90888-4	AE-1a	02/25/2015	2/26/2015	2/28/2015
460-90888-5	AE-2	02/25/2015	2/26/2015	2/28/2015
460-90888-6	AE-2a	02/25/2015	2/26/2015	2/28/2015
460-90888-7	SM1	02/24/2015	2/26/2015	2/28/2015
460-90888-8	SM2	02/24/2015	2/26/2015	2/28/2015
460-90888-10	B4a	02/25/2015	2/26/2015	3/1/2015
460-90888-11	B4b	02/25/2015	2/26/2015	3/1/2015
460-90888-12	B4c	02/25/2015	2/26/2015	3/1/2015
460-90888-13	B4d	02/25/2015	2/26/2015	3/1/2015
460-90888-14	B4e	02/25/2015	2/26/2015	3/1/2015
460-90888-15	B8a	02/25/2015	2/26/2015	3/1/2015
460-90888-16	B8b	02/25/2015	2/26/2015	3/2/2015
460-90888-17	B8c	02/25/2015	2/26/2015	2/26/2015
460-90888-18	B8d	02/25/2015	2/26/2015	2/27/2015
460-90888-19	B8e	02/25/2015	2/26/2015	2/26/2015
460-90888-20	B9a	02/25/2015	2/26/2015	2/26/2015
460-90888-21	B9b	02/25/2015	2/26/2015	2/26/2015
460-90888-22	B9c	02/25/2015	2/26/2015	2/26/2015
460-90888-23	B9d	02/25/2015	2/26/2015	2/26/2015
460-90888-24	B9e	02/25/2015	2/26/2015	2/26/2015
460-90931-7	C1	02/25/2015	2/27/2015	2/28/2015
460-90931-8	C2	02/25/2015	2/27/2015	2/28/2015
460-90931-9	C3	02/25/2015	2/27/2015	2/28/2015
460-90931-10	C4	02/25/2015	2/27/2015	2/28/2015
460-90931-11	C5	02/25/2015	2/27/2015	3/2/2015
460-90931-12	C6	02/25/2015	2/27/2015	2/28/2015
460-90931-13	C7	02/25/2015	2/27/2015	2/28/2015
460-90931-14	C8	02/25/2015	2/27/2015	2/28/2015
460-90931-15	C9	02/25/2015	2/27/2015	2/28/2015
460-90931-16	C10	02/25/2015	2/27/2015	2/28/2015
460-90931-17	C11	02/25/2015	2/27/2015	2/28/2015
460-90931-18	C12	02/25/2015	2/27/2015	2/28/2015
460-90931-19	WB1	02/25/2015	2/27/2015	2/28/2015
460-90931-20	WB2	02/25/2015	2/27/2015	3/2/2015
460-90931-21	WB3	02/25/2015	2/27/2015	2/28/2015
460-95268-1	31a	05/20/2015	5/24/2015	5/26/2015
460-95268-2-DL	31b	05/20/2015	5/24/2015	5/27/2015
460-95268-3-DL	31c	05/20/2015	5/24/2015	5/27/2015
460-95268-4-DL	31d	05/20/2015	5/24/2015	5/27/2015
460-95268-5	31e	05/20/2015	5/24/2015	5/26/2015
460-95268-6	31f	05/20/2015	5/24/2015	5/26/2015
460-95268-7	32a	05/20/2015	5/24/2015	5/26/2015
460-95268-8	32b	05/20/2015	5/24/2015	5/26/2015
460-95268-9	32c	05/20/2015	5/24/2015	5/26/2015
460-95268-10	32d	05/20/2015	5/24/2015	5/26/2015
460-95268-11	32e	05/20/2015	5/24/2015	5/26/2015
460-95268-12	32f	05/20/2015	5/24/2015	5/26/2015
460-95268-13	24a	05/20/2015	5/24/2015	5/26/2015
460-95268-14	24b	05/20/2015	5/24/2015	5/26/2015
460-95268-15	24c	05/20/2015	5/24/2015	5/26/2015
460-95268-16	24d	05/20/2015	5/24/2015	5/26/2015
460-95268-17	24e	05/20/2015	5/24/2015	5/26/2015
460-95268-18	24f	05/20/2015	5/24/2015	5/26/2015
460-95268-19	19a	05/20/2015	5/24/2015	5/26/2015
460-95268-20	19b	05/20/2015	5/24/2015	5/26/2015
460-95268-21	19c	05/20/2015	5/24/2015	5/27/2015
460-95268-22	19d	05/20/2015	5/24/2015	5/27/2015
460-95268-23	19e	05/20/2015	5/24/2015	5/27/2015

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460-95268-24	19f	05/20/2015	5/24/2015	5/27/2015
460-95268-25	18a	05/20/2015	5/26/2015	5/26/2015
460-95268-26	18b	05/20/2015	5/26/2015	5/26/2015
460-95268-27	18c	05/20/2015	5/26/2015	5/27/2015
460-95268-28	18d	05/20/2015	5/26/2015	5/26/2015
460-95268-29	18e	05/20/2015	5/26/2015	5/26/2015
460-95268-30	18f	05/20/2015	5/26/2015	5/26/2015
460-95268-31-DL	LD3Na	05/21/2015	5/26/2015	5/27/2015
460-95268-32	LD3Nb	05/21/2015	5/26/2015	5/27/2015
460-95268-33	LD3Nc	05/21/2015	5/26/2015	5/26/2015
460-95268-34	LD3Nd	05/21/2015	5/26/2015	5/27/2015
460-95268-35	LD3Ne	05/21/2015	5/26/2015	5/26/2015
460-95268-36	LD3Nf	05/21/2015	5/26/2015	5/26/2015
460-95268-37	LD3Ng	05/21/2015	5/26/2015	5/26/2015
460-95268-38	LD3Ea	05/21/2015	5/26/2015	5/26/2015
460-95268-39	LD3Eb	05/21/2015	5/26/2015	5/26/2015
460-95268-40	LD3Ec	05/21/2015	5/26/2015	5/27/2015
460-95268-41	LD3Ed	05/21/2015	5/26/2015	5/27/2015
460-95268-42	LD3Ee	05/21/2015	5/26/2015	5/27/2015
460-95268-43	LD3Ef	05/21/2015	5/26/2015	5/27/2015
460-95268-44	LD3Eg	05/21/2015	5/26/2015	5/27/2015
460-95268-45	LD3Da	05/21/2015	5/26/2015	5/27/2015
460-95268-46	LD3Db	05/21/2015	5/26/2015	5/27/2015
460-95268-47	LD3Dc	05/21/2015	5/26/2015	5/27/2015
460-95268-48	LD3Dd	05/21/2015	5/26/2015	5/27/2015
460-95268-49	LD3De	05/21/2015	5/26/2015	5/27/2015
460-95268-50	LD3Df	05/21/2015	5/26/2015	5/27/2015
460-95268-51	LD3Dg	05/21/2015	5/26/2015	5/27/2015
460-95268-52	LD3Sa	05/21/2015	5/26/2015	5/27/2015
460-95268-53	LD3Sb	05/21/2015	5/26/2015	5/27/2015
460-95268-54	LD3Sc	05/21/2015	5/26/2015	5/27/2015
460-95268-55	LD3Sd	05/21/2015	5/26/2015	5/27/2015
460-95268-56	LD3Se	05/21/2015	5/26/2015	5/27/2015
460-95268-57	LD3Sf	05/21/2015	5/26/2015	5/27/2015
460-95268-58	LD3Sg	05/21/2015	5/26/2015	5/27/2015
460-95268-59	12a	05/21/2015	5/26/2015	5/27/2015
460-95268-60	12b	05/21/2015	5/26/2015	5/27/2015
460-95268-61	12c	05/21/2015	5/26/2015	5/27/2015
460-95268-62	12d	05/21/2015	5/26/2015	5/27/2015
460-95268-63	12e	05/21/2015	5/26/2015	5/27/2015
460-95268-64	12f	05/21/2015	5/26/2015	5/27/2015
460-95268-65	11a	05/21/2015	5/26/2015	5/26/2015
460-95268-66	11b	05/21/2015	5/26/2015	5/26/2015
460-95268-67	11c	05/21/2015	5/26/2015	5/26/2015
460-95268-68	11d	05/21/2015	5/26/2015	5/26/2015
460-95268-69	11e	05/21/2015	5/26/2015	5/26/2015
460-95268-70	11f	05/21/2015	5/26/2015	5/26/2015
460-95338-1	9a	05/22/2015	5/28/2015	5/28/2015
460-95338-2	9b	05/22/2015	5/28/2015	5/28/2015
460-95338-3	9c	05/22/2015	5/28/2015	5/28/2015
460-95338-4	9d	05/22/2015	5/28/2015	5/28/2015
460-95338-5	9e	05/22/2015	5/28/2015	5/28/2015
460-95338-6	9f	05/22/2015	5/28/2015	5/28/2015
460-95338-7	5a	05/22/2015	5/28/2015	5/28/2015
460-95338-8	5b	05/22/2015	5/28/2015	5/28/2015
460-95338-9	5c	05/22/2015	5/28/2015	5/28/2015
460-95338-10	5d	05/22/2015	5/28/2015	5/28/2015
460-95338-11	5e	05/22/2015	5/28/2015	5/28/2015
460-95338-12	5f	05/22/2015	5/28/2015	5/28/2015
460-95338-13	3a	05/22/2015	5/28/2015	5/28/2015
460-95338-14	3b	05/22/2015	5/28/2015	5/28/2015
460-95338-15	3c	05/22/2015	5/28/2015	5/28/2015
460-95338-16	3d	05/22/2015	5/28/2015	5/28/2015

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460-95338-17	3e	05/22/2015	5/28/2015	5/28/2015
460-95338-18	38a	05/22/2015	5/28/2015	5/28/2015
460-95338-19	38b	05/22/2015	5/28/2015	5/29/2015
460-95338-20	38c	05/22/2015	5/28/2015	5/29/2015
460-95338-21	38d	05/22/2015	5/26/2015	5/26/2015
460-95338-22	38e	05/22/2015	5/26/2015	5/26/2015
460-95338-23	39a	05/22/2015	5/27/2015	5/27/2015
460-95338-24	39b	05/22/2015	5/27/2015	5/27/2015
460-95338-25	39c	05/22/2015	5/27/2015	5/27/2015
460-95338-26	39d	05/22/2015	5/27/2015	5/27/2015
460-95338-27	39e	05/22/2015	5/27/2015	5/27/2015
460-95338-28	39f	05/22/2015	5/27/2015	5/27/2015
460-95338-29	2a	05/22/2015	5/27/2015	5/27/2015
460-95338-30	2b	05/22/2015	5/27/2015	5/27/2015
460-95338-31	2c	05/22/2015	5/27/2015	5/27/2015
460-95338-32	2d	05/22/2015	5/27/2015	5/27/2015
460-95338-33	1a	05/22/2015	5/27/2015	5/27/2015
460-95338-34	1b	05/22/2015	5/27/2015	5/28/2015
460-95338-35	1c	05/22/2015	5/27/2015	5/28/2015
460-95338-36	1d	05/22/2015	5/27/2015	5/28/2015
460-95338-37	1e	05/22/2015	5/27/2015	5/28/2015
460-95504-1	4a	05/26/2015	5/28/2015	5/29/2015
460-95504-2	4b	05/26/2015	5/28/2015	5/29/2015
460-95504-3	4c	05/26/2015	5/28/2015	5/29/2015
460-95504-4	4d	05/26/2015	5/28/2015	5/29/2015
460-95504-5	4e	05/26/2015	5/28/2015	5/29/2015
460-95504-6	6a	05/26/2015	5/28/2015	5/29/2015
460-95504-7	6b	05/26/2015	5/28/2015	5/29/2015
460-95504-8	6c	05/26/2015	5/28/2015	5/29/2015
460-95504-9	6d	05/26/2015	5/28/2015	5/29/2015
460-95504-10	7a	05/26/2015	5/28/2015	5/30/2015
460-95504-11	7b	05/26/2015	5/28/2015	5/30/2015
460-95504-12	7c	05/26/2015	5/28/2015	5/30/2015
460-95504-13	7d	05/26/2015	5/28/2015	5/30/2015
460-95504-14	B8Da	05/26/2015	5/28/2015	5/30/2015
460-95504-15	B8Db	05/26/2015	5/28/2015	5/30/2015
460-95504-16	8a	05/26/2015	5/28/2015	5/30/2015
460-95504-17	8b	05/26/2015	5/28/2015	5/30/2015
460-95504-18	8c	05/26/2015	5/29/2015	5/30/2015
460-95504-19	8d	05/26/2015	5/29/2015	5/30/2015
460-95504-20	8e	05/26/2015	5/29/2015	5/30/2015
460-95504-21	15a	05/26/2015	5/29/2015	5/30/2015
460-95504-22	15b	05/26/2015	5/29/2015	6/1/2015
460-95504-23	15c	05/26/2015	5/29/2015	5/30/2015
460-95504-24	15d	05/26/2015	5/29/2015	5/30/2015
460-95504-25	15e	05/26/2015	5/29/2015	5/30/2015
460-95504-26	16a	05/26/2015	5/29/2015	5/30/2015
460-95504-27	16b	05/26/2015	5/29/2015	6/1/2015
460-95504-28	16c	05/26/2015	5/29/2015	6/1/2015
460-95504-29	16d	05/26/2015	5/29/2015	6/1/2015
460-95504-30	16e	05/26/2015	5/29/2015	5/30/2015
460-95504-31	17a	05/27/2015	5/29/2015	5/30/2015
460-95504-32	17b	05/27/2015	5/29/2015	5/30/2015
460-95504-33	17c	05/27/2015	5/29/2015	5/30/2015
460-95504-34	23a	05/27/2015	5/29/2015	5/30/2015
460-95504-35	23b	05/27/2015	5/29/2015	5/30/2015
460-95504-36	23c	05/27/2015	5/29/2015	5/30/2015
460-95504-37	23d	05/27/2015	5/29/2015	5/30/2015
460-95504-38	23e	05/27/2015	5/29/2015	5/30/2015
460-95504-39	30a	05/27/2015	5/29/2015	5/30/2015
460-95504-40	30b	05/27/2015	5/29/2015	5/30/2015
460-95504-41	30c	05/27/2015	5/29/2015	5/30/2015
460-95504-42	30d	05/27/2015	5/29/2015	5/30/2015

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Lab ID	Sample ID	Date Collected	Date Extracted	Date Analyzed
460-95504-43	30e	05/27/2015	5/29/2015	5/30/2015
460-95504-44	30f	05/27/2015	5/29/2015	5/30/2015
460-95504-45	29a	05/27/2015	5/29/2015	5/30/2015
460-95504-46	29b	05/27/2015	5/29/2015	5/30/2015
460-95504-47	29c	05/27/2015	5/29/2015	5/30/2015
460-95504-48	29d	05/27/2015	5/29/2015	5/30/2015
460-95504-49	29e	05/27/2015	5/29/2015	5/30/2015
460-95504-50	21a	05/27/2015	5/29/2015	5/30/2015
460-95504-51	21b	05/27/2015	5/29/2015	5/30/2015
460-95504-52	21c	05/27/2015	5/29/2015	5/30/2015
460-95504-53	21d	05/27/2015	5/29/2015	5/30/2015
460-95504-54	21e	05/27/2015	5/29/2015	5/30/2015
460-95504-55	22a	05/27/2015	6/1/2015	6/1/2015
460-95504-56	22b	05/27/2015	6/1/2015	6/1/2015
460-95504-57	22c	05/27/2015	6/1/2015	6/1/2015
460-95504-58	22d	05/27/2015	6/1/2015	6/1/2015
460-95630-1	28a	05/28/2015	6/3/2015	6/4/2015
460-95630-2	28b	05/28/2015	6/3/2015	6/4/2015
460-95630-3	28c	05/28/2015	6/3/2015	6/4/2015
460-95630-4	28d	05/28/2015	6/3/2015	6/4/2015
460-95630-5	28e	05/28/2015	6/3/2015	6/4/2015
460-95630-6	28f	05/28/2015	6/3/2015	6/4/2015
460-95630-7-DL	CC-LD	05/28/2015	6/3/2015	6/4/2015
460-95630-8	27a	05/28/2015	6/3/2015	6/4/2015
460-95630-9	27b	05/28/2015	6/3/2015	6/4/2015
460-95630-10	27c	05/28/2015	6/3/2015	6/4/2015
460-95630-11	27d	05/28/2015	6/3/2015	6/4/2015
460-95630-12	27e	05/28/2015	6/3/2015	6/4/2015
460-95630-13	34a	05/28/2015	6/3/2015	6/3/2015
460-95630-14	34b	05/28/2015	6/3/2015	6/3/2015
460-95630-15	34c	05/28/2015	6/3/2015	6/3/2015
460-95630-16	34d	05/28/2015	6/3/2015	6/3/2015
460-95630-17	34e	05/28/2015	6/3/2015	6/3/2015
460-95630-22-DL	26a	05/28/2015	6/3/2015	6/4/2015
460-95630-23-DL	26b	05/28/2015	6/3/2015	6/4/2015
460-95630-24-DL	26c	05/28/2015	6/3/2015	6/4/2015
460-95630-25-DL	26d	05/28/2015	6/3/2015	6/4/2015
460-95630-26-DL	26e	05/28/2015	6/3/2015	6/4/2015
460-95630-27	26f	05/28/2015	6/3/2015	6/3/2015
460-95630-28	33a	05/29/2015	6/3/2015	6/3/2015
460-95630-29	33b	05/29/2015	6/3/2015	6/3/2015
460-95630-30-DL	33c	05/29/2015	6/3/2015	6/4/2015
460-95630-31-DL	33d	05/29/2015	6/3/2015	6/4/2015
460-95630-32-DL	33e	05/29/2015	6/3/2015	6/4/2015
460-95630-33	25a	05/29/2015	6/3/2015	6/3/2015
460-95630-34-DL	25b	05/29/2015	6/3/2015	6/4/2015
460-95630-35-DL	25c	05/29/2015	6/3/2015	6/4/2015
460-95630-36-DL	25d	05/29/2015	6/3/2015	6/4/2015
460-95630-37	25e	05/29/2015	6/3/2015	6/4/2015
460-95630-38	25f	05/29/2015	6/3/2015	6/4/2015
460-95630-39	B2Da	05/29/2015	6/3/2015	6/4/2015
460-95630-40	B2Db	05/29/2015	6/3/2015	6/4/2015
460-95630-42	14a	05/29/2015	6/3/2015	6/4/2015
460-95630-43	14b	05/29/2015	6/3/2015	6/4/2015
460-95630-44	14c	05/29/2015	6/3/2015	6/4/2015
460-95630-45	14d	05/29/2015	6/3/2015	6/4/2015
460-95630-46	14e	05/29/2015	6/3/2015	6/4/2015
460-95630-47-DL	14f	05/29/2015	6/3/2015	6/4/2015
460-95809-1	RP5a	06/03/2015	6/7/2015	6/8/2015
460-95809-2	RP5b	06/03/2015	6/7/2015	6/8/2015
460-95809-3	RP6a	06/03/2015	6/7/2015	6/8/2015
460-95809-4	RP6b	06/03/2015	6/8/2015	6/8/2015
460-95809-5	RP7a	06/03/2015	6/8/2015	6/8/2015

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Lab ID	Sample ID	Date Collected	Date Extracted	Date Analyzed
460-95809-6	RP7b	06/03/2015	6/8/2015	6/8/2015
460-95809-7	RP8a	06/03/2015	6/8/2015	6/8/2015
460-95809-8	RP8b	06/03/2015	6/8/2015	6/8/2015
460-95809-10	FM10-1a	06/03/2015	6/8/2015	6/8/2015
460-95809-11	FM10-1b	06/03/2015	6/8/2015	6/8/2015
460-95809-12	FM10-2a	06/03/2015	6/8/2015	6/8/2015
460-95809-13	FM10-2b	06/03/2015	6/8/2015	6/8/2015
460-95809-14	FM10-3a	06/03/2015	6/8/2015	6/8/2015
460-95809-15	FM10-3b	06/03/2015	6/8/2015	6/8/2015
460-95809-16	FM10-4a	06/03/2015	6/8/2015	6/8/2015
460-95809-17	FM10-4b	06/03/2015	6/8/2015	6/8/2015
460-95809-18	FM10-5a	06/03/2015	6/8/2015	6/8/2015
460-95809-19	FM10-5b	06/03/2015	6/8/2015	6/8/2015
460-95809-20	FM10-6a	06/03/2015	6/8/2015	6/8/2015
460-95809-21	FM10-6b	06/03/2015	6/8/2015	6/8/2015
460-95809-22	FM10-7a	06/03/2015	6/8/2015	6/8/2015
460-95809-23	FM10-7b	06/03/2015	6/8/2015	6/8/2015
460-95809-24	BP8a	06/03/2015	6/8/2015	6/8/2015
460-95809-25	BP8b	06/03/2015	6/8/2015	6/8/2015
460-95810-2	FM6-B	06/03/2015	6/8/2015	6/9/2015
460-95810-3	FM6-C	06/03/2015	6/11/2015	6/11/2015
460-95810-4	AC-2	06/03/2015	6/8/2015	6/9/2015
460-95810-5	AC-2B	06/03/2015	6/11/2015	6/11/2015
460-95810-6	AC-6	06/03/2015	6/8/2015	6/9/2015
460-95812-1	PR3Da	06/01/2015	6/4/2015	6/5/2015
460-95812-2	PR3Db	06/01/2015	6/4/2015	6/5/2015
460-95812-3	PR3Dc	06/01/2015	6/4/2015	6/5/2015
460-95812-4	PR3Dd	06/01/2015	6/4/2015	6/5/2015
460-95812-5	13a	06/01/2015	6/4/2015	6/5/2015
460-95812-6	13b	06/01/2015	6/4/2015	6/7/2015
460-95812-7	13c	06/01/2015	6/4/2015	6/7/2015
460-95812-8	13d	06/01/2015	6/4/2015	6/7/2015
460-95812-9	13e	06/01/2015	6/4/2015	6/7/2015
460-95812-10	20a	06/01/2015	6/4/2015	6/7/2015
460-95812-11	20b	06/01/2015	6/4/2015	6/7/2015
460-95812-12	20c	06/01/2015	6/4/2015	6/7/2015
460-95812-13	20d	06/01/2015	6/4/2015	6/7/2015
460-95812-14	20e	06/01/2015	6/4/2015	6/7/2015
460-95812-15	20f	06/01/2015	6/4/2015	6/7/2015
460-95812-16	PR1Da	06/02/2015	6/4/2015	6/7/2015
460-95812-17	PR1Db	06/02/2015	6/4/2015	6/7/2015
460-95812-18	PR1Dc	06/02/2015	6/4/2015	6/7/2015
460-95812-19	PR1Dd	06/02/2015	6/10/2015	6/10/2015
460-95812-20	10a	06/02/2015	6/4/2015	6/7/2015
460-95812-21	10b	06/02/2015	6/4/2015	6/7/2015
460-95812-22	10c	06/02/2015	6/4/2015	6/7/2015
460-95812-23	10d	06/02/2015	6/4/2015	6/7/2015
460-95812-24	10e	06/02/2015	6/4/2015	6/7/2015
460-95812-25	10f	06/02/2015	6/4/2015	6/7/2015
460-95812-26	PR5Da	06/02/2015	6/4/2015	6/7/2015
460-95812-27	PR5Db	06/02/2015	6/4/2015	6/7/2015
460-95812-28	PR5Dc	06/02/2015	6/4/2015	6/7/2015
460-95812-29	32Ea	06/02/2015	6/4/2015	6/5/2015
460-95812-30	32Eb	06/02/2015	6/4/2015	6/6/2015
460-95812-31	32Ec	06/02/2015	6/4/2015	6/7/2015
460-95812-32	32Ed	06/02/2015	6/4/2015	6/6/2015
460-95812-33	32Ee	06/02/2015	6/4/2015	6/6/2015
460-95812-34	32Ef	06/02/2015	6/4/2015	6/6/2015
460-95938-1	AC-5	06/04/2015	6/8/2015	6/9/2015
460-95938-3	AC-7	06/04/2015	6/8/2015	6/9/2015
460-95938-5	AC-4	06/04/2015	6/8/2015	6/9/2015
460-95939-1	BP5a	06/04/2015	6/8/2015	6/9/2015
460-95939-2	BP5b	06/04/2015	6/8/2015	6/9/2015

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Lab ID	Sample ID	Date Collected	Date Extracted	Date Analyzed
460-95939-3	BP6a	06/04/2015	6/8/2015	6/9/2015
460-95939-4	BP6b	06/04/2015	6/8/2015	6/9/2015
460-95939-5	BP7a	06/04/2015	6/8/2015	6/9/2015
460-95939-6	BP7b	06/04/2015	6/8/2015	6/9/2015
460-95939-7	FM6-3a	06/04/2015	6/8/2015	6/9/2015
460-95939-9	FM6-2a	06/04/2015	6/8/2015	6/9/2015
460-95939-11	FM6-4a	06/04/2015	6/8/2015	6/9/2015
460-95939-13	FM6-5a	06/04/2015	6/8/2015	6/9/2015
460-95939-15	FM6-1a	06/04/2015	6/8/2015	6/9/2015
460-95939-16	FM6-1b	06/04/2015	6/15/2015	6/16/2015
460-95939-17	FM6-7a	06/04/2015	6/8/2015	6/9/2015
460-95939-19	FM6-6a	06/04/2015	6/8/2015	6/9/2015
460-95939-20	FM6-6b	06/04/2015	6/15/2015	6/16/2015
460-95939-21	NE-1a	06/04/2015	6/8/2015	6/9/2015
460-95939-22	NE-1b	06/04/2015	6/8/2015	6/9/2015
460-95939-23	NE-2a	06/04/2015	6/8/2015	6/9/2015
460-95939-24	NE-2b	06/04/2015	6/8/2015	6/9/2015
460-95939-25	NE-3a	06/04/2015	6/8/2015	6/9/2015
460-95939-26	NE-3b	06/04/2015	6/8/2015	6/9/2015
460-95939-27	NE-4a	06/04/2015	6/8/2015	6/9/2015
460-95939-28	NE-4b	06/04/2015	6/8/2015	6/9/2015
460-95961-1	P10-1a	06/04/2015	6/9/2015	6/9/2015
460-95961-2	P10-1b	06/04/2015	6/9/2015	6/9/2015
460-95961-3	P10-2a	06/04/2015	6/9/2015	6/9/2015
460-95961-4	P10-2b	06/04/2015	6/9/2015	6/9/2015
460-95961-5	P10-4a	06/04/2015	6/9/2015	6/9/2015
460-95961-6	P10-4b	06/04/2015	6/9/2015	6/9/2015
460-95961-19	AC-1a	06/05/2015	6/9/2015	6/10/2015
460-95961-21	AC-8a	06/05/2015	6/9/2015	6/10/2015
460-95961-23	315a	06/05/2015	6/9/2015	6/10/2015
460-95961-24	315b	06/05/2015	6/9/2015	6/10/2015
460-95961-25	315c	06/05/2015	6/9/2015	6/10/2015
460-95961-26	315d	06/05/2015	6/9/2015	6/10/2015
460-95961-27	315e	06/05/2015	6/9/2015	6/10/2015
460-95961-28	315f	06/05/2015	6/9/2015	6/10/2015
460-96300-1	AW-1a	06/11/2015	6/15/2015	6/15/2015
460-96300-2	AW-1b	06/11/2015	6/15/2015	6/16/2015
460-96300-3	AW-1c	06/11/2015	6/15/2015	6/17/2015
460-96300-4	AC-12a	06/11/2015	6/15/2015	6/16/2015
460-96300-5	AC-12b	06/11/2015	6/15/2015	6/16/2015
460-96300-6	AC-9a	06/11/2015	6/15/2015	6/16/2015
460-96300-7	AC-9b	06/11/2015	6/15/2015	6/16/2015
460-96300-13	AC-10a	06/11/2015	6/15/2015	6/17/2015
460-96300-14	AC-10b	06/11/2015	6/15/2015	6/16/2015
460-96300-15	AC-11a	06/11/2015	6/15/2015	6/16/2015
460-101755-1	AW-2a	09/24/2015	9/30/2015	9/30/2015
460-101755-2	AW-2b	09/24/2015	9/30/2015	9/30/2015
460-101755-3	AW-2c	09/24/2015	9/30/2015	9/30/2015
460-101755-7	ABE-2a	09/24/2015	9/30/2015	9/30/2015
460-101755-8	ABE-2b	09/24/2015	9/30/2015	9/30/2015
460-101755-9	ABE-2c	09/24/2015	9/30/2015	9/30/2015
460-101755-10-DL	ABE-3a	09/24/2015	9/30/2015	9/30/2015
460-101755-11-DL	ABE-3b	09/24/2015	9/30/2015	9/30/2015
460-101755-12-DL	ABE-3c	09/24/2015	9/30/2015	9/30/2015
460-101755-13	ABE-4a	09/24/2015	9/30/2015	9/30/2015
460-101755-14	ABE-4b	09/24/2015	9/30/2015	9/30/2015
460-101755-15	ABE-4c	09/24/2015	9/30/2015	9/30/2015
460-101755-16	ABE-7a	09/24/2015	10/6/2015	10/6/2015
460-101755-17	ABE-7b	09/24/2015	10/6/2015	10/6/2015
460-101755-18	ABE-7c	09/24/2015	10/6/2015	10/6/2015
460-101755-22	ABE-1a	09/25/2015	9/30/2015	9/30/2015
460-101755-23	ABE-1b	09/25/2015	9/30/2015	9/30/2015
460-101755-24	ABE-1c	09/25/2015	9/30/2015	9/30/2015

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Lab ID	Sample ID	Date Collected	Date Extracted	Date Analyzed
460-102379-6	Del-1a	10/06/2015	10/9/2015	10/9/2015
460-102379-7	Del-1b	10/06/2015	10/9/2015	10/11/2015
460-102379-8	Del-1c	10/06/2015	10/9/2015	10/11/2015
460-102379-9	Del-1d	10/06/2015	10/9/2015	10/11/2015
460-102379-10	Del-1e	10/06/2015	10/9/2015	10/11/2015
460-102379-11	Del-1f	10/06/2015	10/9/2015	10/11/2015
460-102379-12	Del-2a	10/06/2015	10/9/2015	10/11/2015
460-102379-13	Del-2b	10/06/2015	10/9/2015	10/11/2015
460-102379-14	Del-2c	10/06/2015	10/9/2015	10/11/2015
460-102379-15	Del-2d	10/06/2015	10/9/2015	10/11/2015
460-102379-16	Del-2e	10/06/2015	10/9/2015	10/11/2015
460-102379-17	Del-2f	10/06/2015	10/9/2015	10/11/2015
460-115513-1	8/19-21E	06/14/2016	6/17/2016	6/19/2016
460-115513-8-DL	PR5D	06/14/2016	6/17/2016	6/19/2016
460-115513-9-DL	PR5E	06/14/2016	6/25/2016	6/27/2016
460-115513-10	PR5F	06/14/2016	6/28/2016	6/28/2016
460-115513-13	14G	06/15/2016	6/17/2016	6/19/2016
460-115513-17-DL	10G	06/15/2016	6/17/2016	6/19/2016
460-115513-18	10H	06/15/2016	6/25/2016	6/27/2016
460-115513-20	13F	06/15/2016	6/17/2016	6/19/2016
460-115513-24	PR-2C	06/15/2016	6/17/2016	6/19/2016
460-115513-28	20G	06/15/2016	6/17/2016	6/19/2016
460-115563-1	B6-F	06/16/2016	6/17/2016	6/19/2016
460-115563-5	FM-13C	06/16/2016	6/17/2016	6/19/2016
460-115553-1	CC-LD2	06/16/2016	6/20/2016	6/20/2016

Table 5 - Lots 1 and 2 Groundwater Sample Collection, Extraction, and Analysis Dates  
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Lot 1 and Lot 2 Monitoring Well PCB Sampling Dates				
Lab ID	Sample ID	Date Collected	Date Extracted	Date Analyzed
460-90674-9	MW-10*	02/19/2015	2/20/2015	2/21/2015
460-90674-11	MW-5*	02/19/2015	2/20/2015	2/21/2015
460-95417-14	MW-5*	05/26/2015	5/27/2015	5/29/2015
460-95417-15	MW-10*	05/26/2015	5/27/2015	5/29/2015
460-99860-1	C-MW-7D-27.5	08/19/2015	8/21/2015	8/23/2015
460-99860-2	C-MW-7D-32.5	08/19/2015	8/21/2015	8/23/2015
460-99860-3	C-MW-7	08/19/2015	8/21/2015	8/23/2015
460-99860-5	P-MW-7D-31.9	08/19/2015	8/21/2015	8/23/2015
460-99860-6	P-MW-7D-26.9	08/19/2015	8/21/2015	8/23/2015
460-99860-7	P-MW-7	08/19/2015	8/21/2015	8/23/2015
460-99929-1	P-MW-5	08/20/2015	8/21/2015	8/23/2015
460-99929-2	P-MW-10	08/20/2015	8/21/2015	8/23/2015
460-99929-4	C-MW-6	08/20/2015	8/21/2015	8/24/2015
460-102883-2	C-MW-7D 27.5	10/15/2015	10/19/2015	10/20/2015
460-102883-3	C-MW-7D 32.5	10/15/2015	10/19/2015	10/20/2015
460-102883-4	C-MW-7	10/15/2015	10/19/2015	10/20/2015
460-102883-5	C-MW-9 9.2	10/15/2015	10/19/2015	10/20/2015
460-102883-6	C-MW-9 13.2	10/15/2015	10/19/2015	10/20/2015
460-102883-7	C-MW-8 7.5	10/15/2015	10/19/2015	10/20/2015
460-102883-8	C-MW-8 12.5	10/15/2015	10/19/2015	10/20/2015
460-102883-9	C-MW-6	10/15/2015	10/19/2015	10/21/2015
460-102883-10	C-MW-6D	10/15/2015	10/19/2015	10/20/2015
460-102942-2	P-MW-7D 26.9	10/16/2015	10/19/2015	10/20/2015
460-102942-3	P-MW-7D 31.9	10/16/2015	10/19/2015	10/19/2015
460-102942-4	P-MW-7	10/16/2015	10/19/2015	10/19/2015
460-102942-5	P-MW-5	10/16/2015	10/19/2015	10/19/2015
460-102942-6	P-MW-10	10/16/2015	10/19/2015	10/21/2015
460-115481-2	C-MW-9-9	06/15/2016	6/17/2016	6/19/2016
460-115481-3	C-MW-9-13.2	06/15/2016	6/17/2016	6/19/2016
460-115481-4	C-MW-2D-27.6	06/15/2016	6/17/2016	6/19/2016
460-115481-5	C-MW-2D-32.6	06/15/2016	6/17/2016	6/19/2016
460-115481-6	C-MW-2	06/15/2016	6/17/2016	6/19/2016
460-115481-7	C-MW-7D-27.4	06/15/2016	6/17/2016	6/19/2016
460-115481-8	C-MW-7D-32.4	06/15/2016	6/17/2016	6/19/2016
460-115481-9	C-MW-7	06/15/2016	6/17/2016	6/19/2016
460-115481-10	C-MW-3	06/15/2016	6/17/2016	6/19/2016
460-115571-2	C-MW-8-7.5	06/16/2016	6/20/2016	6/21/2016
460-115571-2	C-MW-8-7.5 (dissolved)	06/16/2016	6/20/2016	6/21/2016
460-115571-3	C-MW-8-12.5	06/16/2016	6/20/2016	6/21/2016
460-115571-3	C-MW-8-12.5 (dissolved)	06/16/2016	6/20/2016	6/21/2016
460-115571-4-DL	C-MW-6	06/16/2016	6/20/2016	6/21/2016
460-115571-4	C-MW-6 (dissolved)	06/16/2016	6/20/2016	6/21/2016
460-115571-5	C-MW-6D	06/16/2016	6/20/2016	6/21/2016
460-115571-5	C-MW-6D (dissolved)	06/16/2016	6/20/2016	6/21/2016
460-115571-6	C-MW-4D-27.8	06/16/2016	6/20/2016	6/21/2016
460-115571-7	C-MW-4D-32.8	06/16/2016	6/20/2016	6/21/2016
460-115571-8	C-MW-4	06/16/2016	6/20/2016	6/21/2016
460-115571-9	C-MW-3	06/16/2016	6/20/2016	6/21/2016
460-115387-2	P-MW-3D-27.7	06/14/2016	6/15/2016	6/16/2016
460-115387-3	P-MW-3D-32.7	06/14/2016	6/15/2016	6/16/2016
460-115387-4	P-MW-5	06/14/2016	6/15/2016	6/17/2016
460-115387-4	P-MW-5 (dissolved)	06/14/2016	6/16/2016	6/16/2016
460-115387-5	P-MW-10	06/14/2016	6/15/2016	6/17/2016
460-115387-5	P-MW-10 (dissolved)	06/14/2016	6/16/2016	6/17/2016
460-115387-6	P-MW-8D-27	06/14/2016	6/15/2016	6/16/2016
460-115387-7	P-MW-8D-32	06/14/2016	6/15/2016	6/16/2016
460-115387-8	P-MW-7D-26.9	06/14/2016	6/15/2016	6/16/2016
460-115387-9	P-MW-7D-31.9	06/14/2016	6/15/2016	6/16/2016
460-115387-10	P-MW-7	06/14/2016	6/15/2016	6/16/2016
460-115334-2	P-MW-4	06/13/2016	6/15/2016	6/16/2016
460-115334-3	P-MW-9	06/13/2016	6/15/2016	6/16/2016
460-115334-4	P-MW-2	06/13/2016	6/15/2016	6/16/2016
460-115334-5	P-MW-1	06/13/2016	6/15/2016	6/16/2016
460-115334-6	P-MW-6	06/13/2016	6/15/2016	6/16/2016
460-115334-7	P-MW-3	06/13/2016	6/15/2016	6/16/2016

\* Sample Collected from Lot 1 MWs

C-x Wells are on Lot 2

P-x Wells are on Lot 1



Table 6 - Block 403 Sample 17-12 Soil PCB Concentration, Sample Collection, Extraction, and Analysis Dates  
USEPA Risk Based Plan Application USEPA Comment Response Letter  
50 Center Street and 450 South Avenue  
Block 401, Lots 1 and 2  
Garwood, New Jersey

Block 403 PCB Soil Sample Data						
Lab ID	Sample ID	Date Collected	Date Extracted	Date Analyzed	Total PCB Result (mg/kg)	MDL (mg/kg)
460-72123-3	17-12	3/6/2014	3/12/2014	3/13/2014	ND (0.08)*	0.023

\*Not Detected, the reporting limit is shown

# **ATTACHMENT B**

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**Figures**

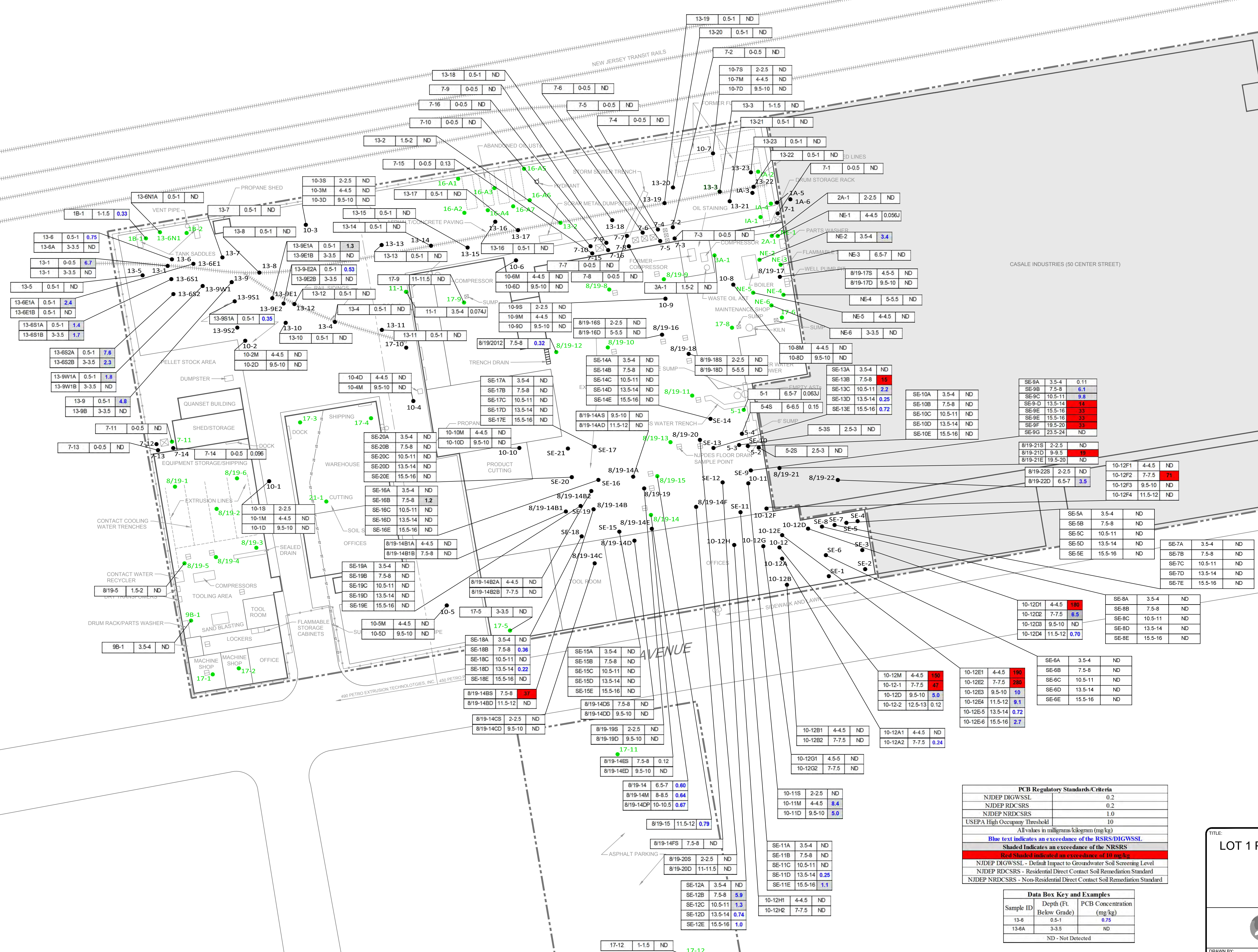
**EcolSciences, Inc.**

Environmental Management & Regulatory Compliance





CENTER STREET



PCB Regulatory Standards/Criteria	
NIDEP DIGWSSL	0.2
NIDEP RDGSR	0.2
NIDEP NRDCSR	1.0
USEPA High Occupancy Threshold	10

All values in milligrams/kilogram (mg/kg)

Blue text indicates an exceedance of the RSRs/DIGWSSL  
 Shaded indicates an exceedance of the NRDRS  
 Red Shaded indicates an exceedance of 10 mg/kg

Data Box Key and Examples		
Sample ID	Depth (Fl. Below Grade)	PCB Concentration (mg/kg)
13-6	0.5-1	0.75
13-6A	3-3.5	ND

ND - Not Detected

**LEGEND**

- APPROXIMATE PROPERTY LINE
- FLOOR DRAIN
- POLE TRANSFORMERS
- PAD TRANSFORMERS
- RI SOIL SAMPLE LOCATION
- SI SOIL SAMPLE LOCATION

0 30 60 90  
SCALE: 1"=30'

**LOT 1 PCB SOIL SAMPLE RESULTS MAP**

450 & 490 SOUTH AVENUE  
GARWOOD, NEW JERSEY

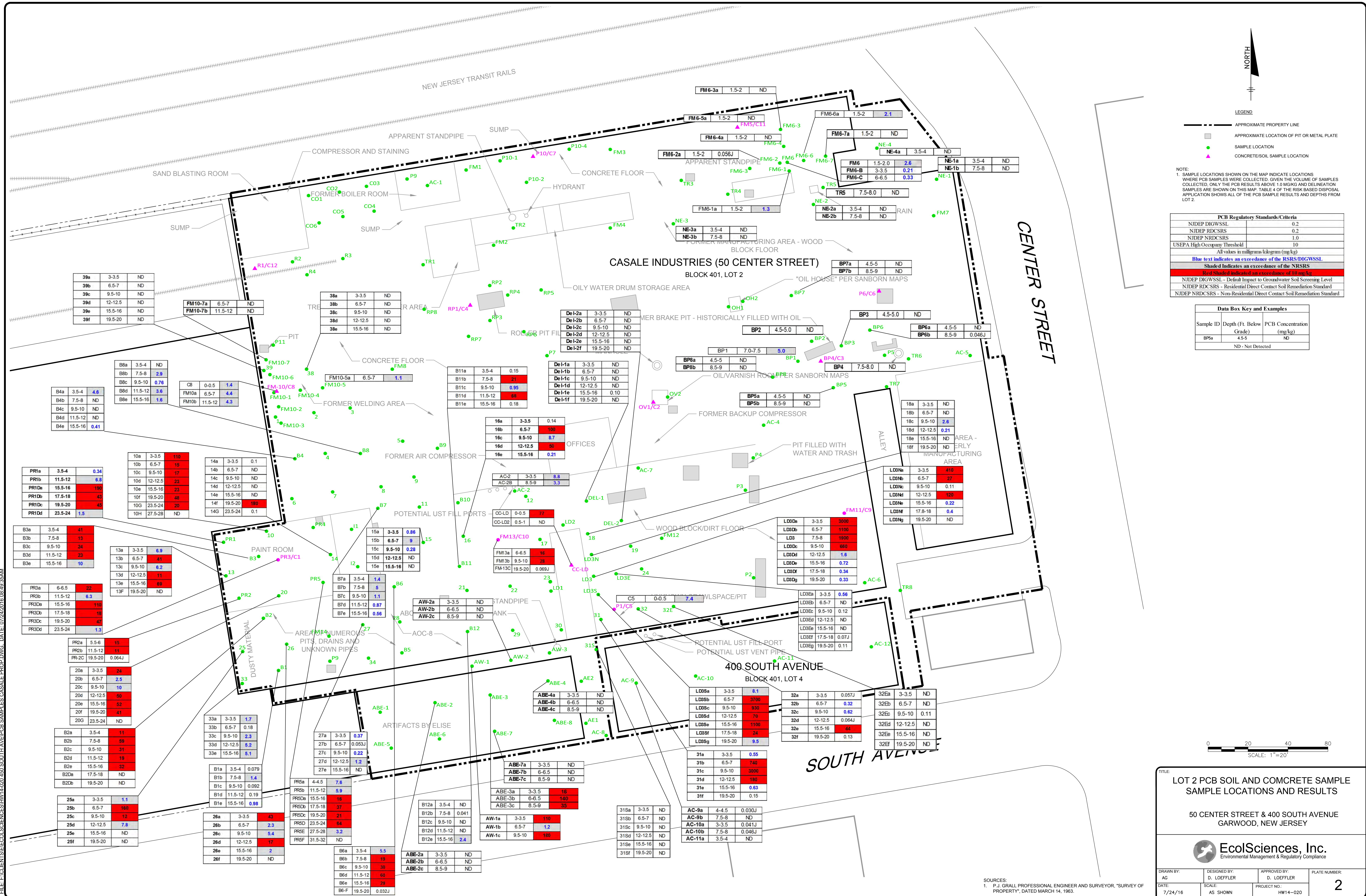


SOURCES:  
1. P.J. GRALL PROFESSIONAL ENGINEER AND SURVEYOR, "SURVEY OF PROPERTY", DATED MARCH 14, 1963.

DRAWN BY: AG	DESIGNED BY: D. LOEFFLER	APPROVED BY: D. LOEFFLER	PLATE NUMBER: 1
DATE: 7/24/16	SCALE: AS SHOWN	PROJECT NO.: HW14-020	



FILE: CLIENTS\ECOLOGICAL\HW14-020\_450 SOUTH AVENUE PCB SAMPLES CASALE PROP.DWG. DATE: 07/24/2015 09:49:35AM



**LEGEND**

- APPROXIMATE PROPERTY LINE
- APPROXIMATE LOCATION OF PIT OR METAL PLATE
- SAMPLE LOCATION
- ▲ CONCRETE/SOIL SAMPLE LOCATION

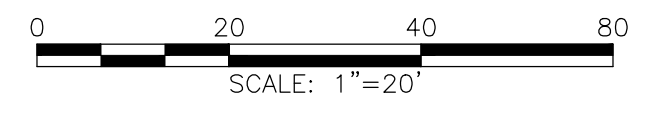
NOTE:  
 1. SAMPLE LOCATIONS SHOWN ON THE MAP INDICATE LOCATIONS WHERE PCB SAMPLES WERE COLLECTED. GIVEN THE VOLUME OF SAMPLES COLLECTED, ONLY THE PCB RESULTS ABOVE 1.0 MG/KG AND DELINEATION SAMPLES ARE SHOWN ON THIS MAP. TABLE 4 OF THE RISK BASED DISPOSAL APPLICATION SHOWS ALL OF THE PCB SAMPLE RESULTS AND DEPTHS FROM LOT 2.

**PCB Regulatory Standards/Criteria**

NJDEP DIGWSSL	0.2
NJDEP RDSCRS	0.2
NJDEP NRDCRS	1.0
USEPA High Occupancy Threshold	10
All values in milligrams/kilogram (mg/kg)	
Blue text indicates an exceedance of the RSRS/DIGWSSL	
Shaded indicates an exceedance of the NRCS	
Red shaded indicates an exceedance of 10 mg/kg	
NJDEP DIGWSSL - Default Impact to Groundwater Soil Screening Level	
NJDEP RDSCRS - Residential Direct Contact Soil Remediation Standard	
NJDEP NRDCRS - Non-Residential Direct Contact Soil Remediation Standard	

**Data Box Key and Examples**

Sample ID	Depth (Ft. Below Grade)	PCB Concentration (mg/kg)
BP5a	4.5-5	ND
ND	ND	ND



**LOT 2 PCB SOIL AND CONCRETE SAMPLE SAMPLE LOCATIONS AND RESULTS**

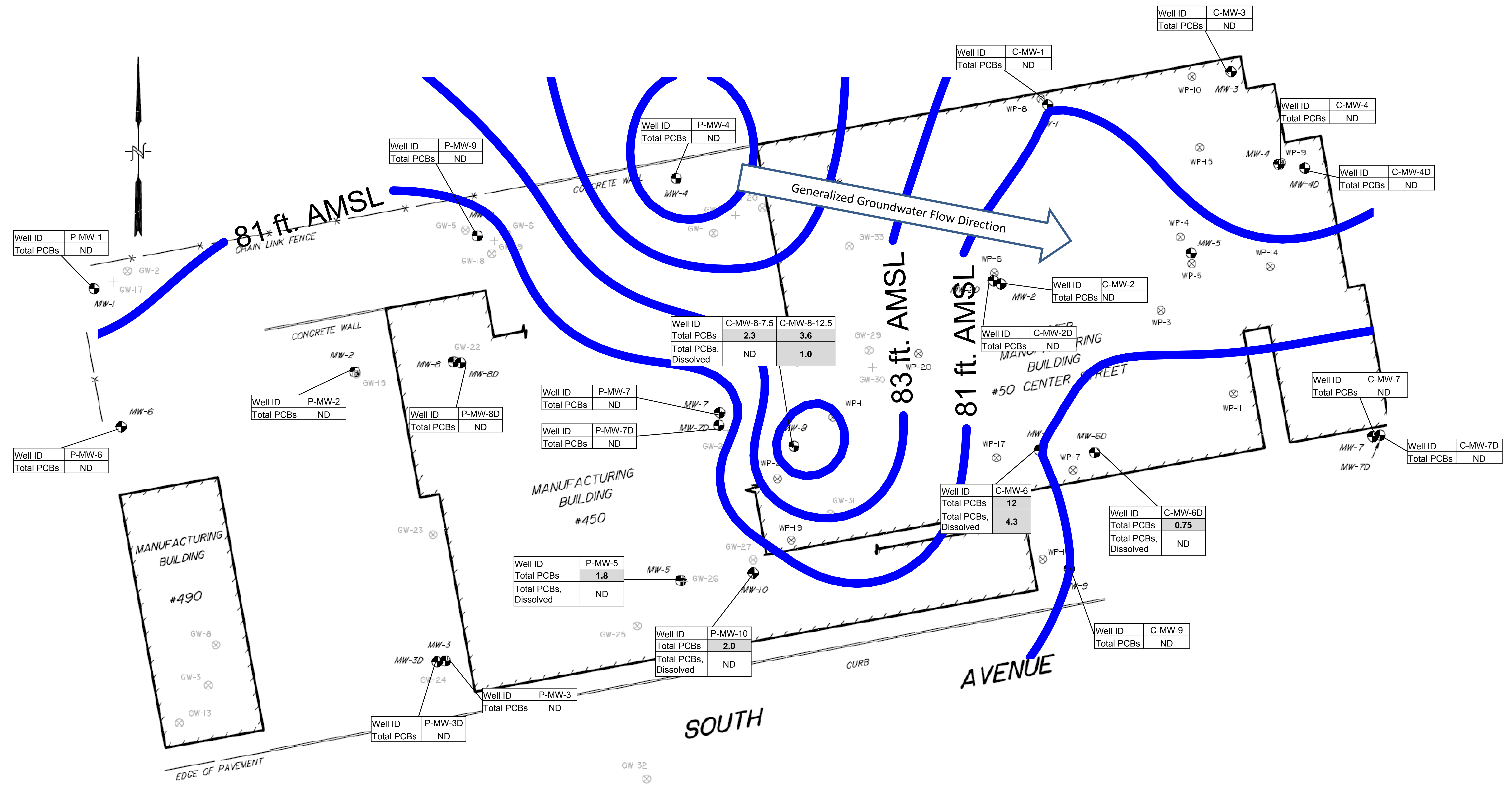
50 CENTER STREET & 400 SOUTH AVENUE  
GARWOOD, NEW JERSEY



DRAWN BY: AG	DESIGNED BY: D. LOEFFLER	APPROVED BY: D. LOEFFLER	PLATE NUMBER: 2
DATE: 7/24/16	SCALE: AS SHOWN	PROJECT NO.: HW14-020	

SOURCES:  
 1. P.J. GRALL PROFESSIONAL ENGINEER AND SURVEYOR, "SURVEY OF PROPERTY", DATED MARCH 14, 1983.





Shallow Overburden Wells						
Well ID	Depth to Product (ft. below TOC)	Depth to water (ft. below TOC)	NORTHING	EASTING	P.V.C. Elevation	Groundwater Elevation
P-MW-1	ND	9.71	662445.08	539852.71	91.07'	81.36
P-MW-2	ND	6.07	662393.97	540012.49	85.80'	79.73
P-MW-3	ND	6.93	662217.31	540067.73	86.74'	79.81
P-MW-4	ND	1.54	662512.69	540209.00	90.37'	88.83
P-MW-5	ND	10.07	662266.49	540211.81	89.36'	79.29
P-MW-6	ND	11.52	662360.60	539869.32	91.79'	80.27
P-MW-7	ND	9.72	662369.21	540235.75	89.14'	79.42
P-MW-9	ND	10.72	662477.39	540087.34	90.76'	80.04
P-MW-10	ND	9.08	662271.16	540256.17	88.91'	79.83
C-MW-1	ND	8.91	662557.59	540436.25	89.90'	80.99
C-MW-2	ND	10.03	662447.94	540407.62	89.61'	79.58
C-MW-3	ND	8.21	662577.85	540548.47	89.97'	81.76
C-MW-4	ND	6.97	662521.28	540577.68	89.58'	82.61
C-MW-6	ND	10.79	662346.27	540431.2	89.76'	78.97
C-MW-7	ND	10.34	662354.61	540635.26	87.52'	77.18
C-MW-8	ND	2.64	662348.81	540281	89.48'	86.84
C-MW-9	ND	6.70	662273.75	540449.68	85.71'	79.01

Deep Overburden Wells						
Well ID	Depth to Product (ft. below TOC)	Depth to water (ft. below TOC)	NORTHING	EASTING	P.V.C.	Groundwater Elevation
P-MW-3D	ND	7.38	662216.74	540062.69	86.49'	79.11
P-MW-7D	ND	11.77	662361.44	540235.20	89.23'	77.46
P-MW-8D	ND	11.13	662399.63	540077.05	89.48'	78.35
C-MW-2D	ND	10.34	662449.97	540403.1	89.58'	79.24
C-MW-4D	ND	13.10	662519.09	540593.67	89.16'	76.06
C-MW-6D	ND	12.41	662344.76	540465.02	89.69'	77.28
C-MW-7D	ND	10.46	662355.37	540639.74	87.19'	76.73

Shallow Overburden Wells with product (excluded)						
Well ID	Depth to Product (ft. below TOC)	Depth to water (ft. below TOC)	NORTHING	EASTING	P.V.C.	Groundwater Elevation
P-MW-8	9.63	9.75	662400.38	540072.60	89.46'	-
C-MW-5	11.96	12.41	662466.95	540524.21	89.68'	-

Parameter	NJDEP/USEPA Standard
Total PCBs	0.5
Total PCBs, Dissolved	0.5

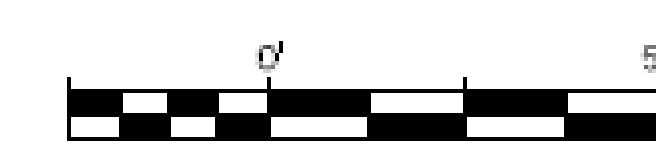
All values in ug/L ND – Not Detected

- WP-2 ⊗ = TEMPORARY WELL POINT ( 2015 )
- GW-26 ⊗ = TEMPORARY WELL POINT ( 2014 )
- GW-28 + = PROPOSED TEMPORARY WELL POINT ( 2014 )
- MW-5 ⊕ = MONITOR WELL

Contour and Groundwater Elevations in ft. AMSL (feet Above Mean Sea Level)  
Flow Direction Based on Shallow, Overburden wells

PLOTTING  
BOROUGH OF GARWOOD  
UNION COUNTY, NEW JERSEY  
GERALD G. DEGROAT, L.S.  
LAND SURVEYING & PLANNING  
10, BOX 10, SCHOOLEY'S MOUNTAIN, NEW JERSEY 07870

N.J. LAND SURVEYOR L.I.C. NO. 26791  
N.J. PROFESSIONAL PLANNER L.I.C. NO. 2399  
SCALE 1" = 50'  
MARCH 5, 2014



REVISED APRIL 2, 2014  
REVISED FEBRUARY 25, 2015  
REVISED JUNE 23, 2015  
REVISED OCTOBER 27, 2015

### June 2016 Groundwater Sampling Results and Flow Direction

USEPA Risk-Based Plan Addendum  
450 & 490 South Avenue and 50 Center Street  
Block 401, Lots 1 and 2  
Garwood, New Jersey

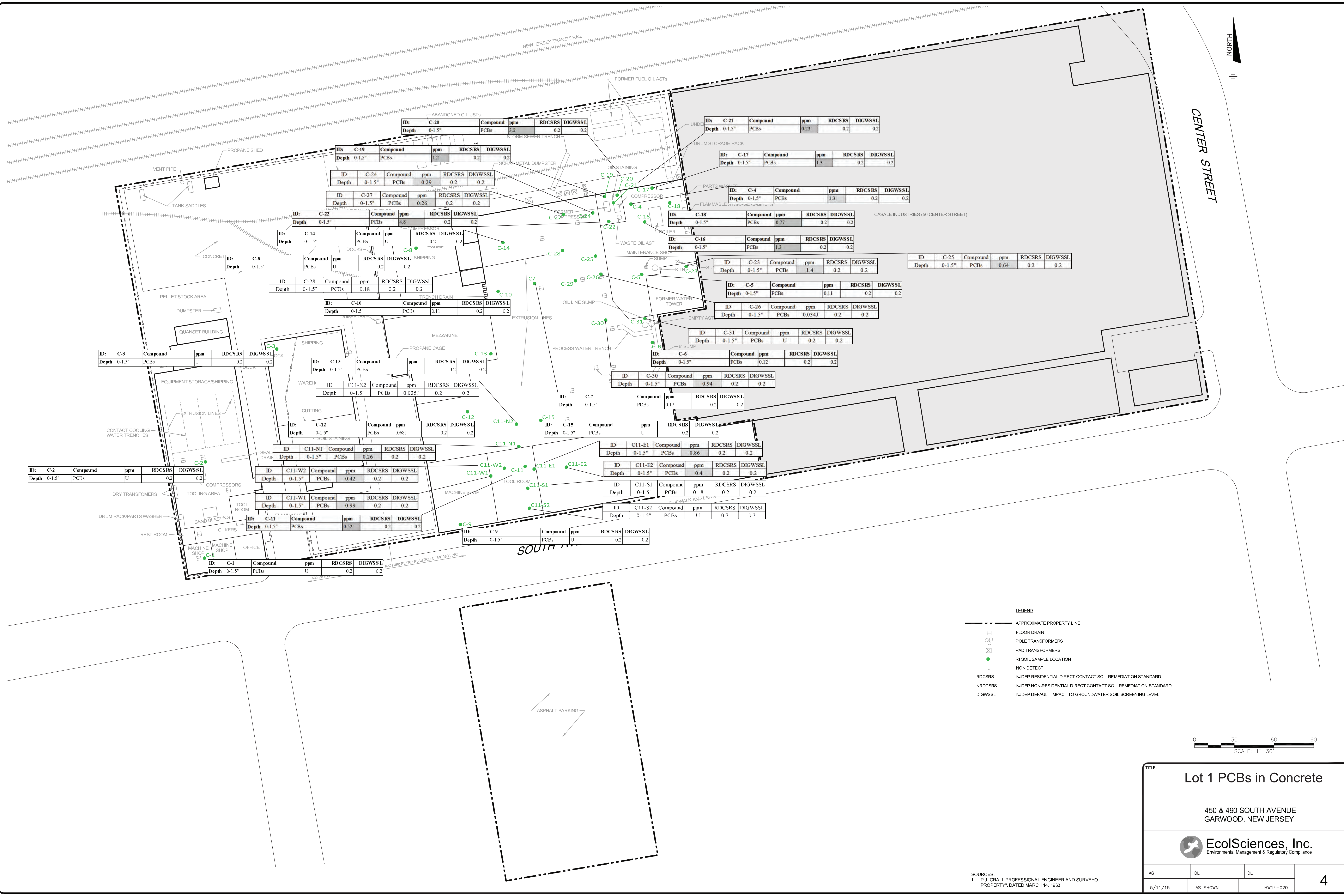


July, 2016  
Scale: As Shown

Figure Number  
**3**



FILE: D:\CLIENTS\REGULATIONS\HW14-020-450 SOUTH AVENUE\MAP3.DWG, DATE: 05/11/2015 11:17:09AM

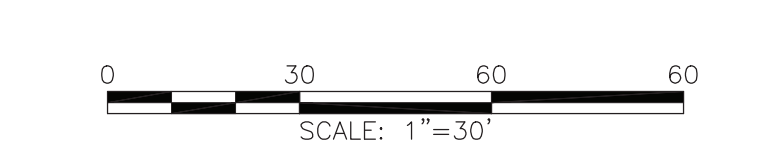


CENTER STREET

SOUTH AVENUE

LEGEND

- APPROXIMATE PROPERTY LINE
- FLOOR DRAIN
- POLE TRANSFORMERS
- ⊠ PAD TRANSFORMERS
- RI SOIL SAMPLE LOCATION
- U NON DETECT
- RDCSRS NJDEP RESIDENTIAL DIRECT CONTACT SOIL REMEDIATION STANDARD
- NRDCSRS NJDEP NON-RESIDENTIAL DIRECT CONTACT SOIL REMEDIATION STANDARD
- DIGWSSL NJDEP DEFAULT IMPACT TO GROUNDWATER SOIL SCREENING LEVEL



Lot 1 PCBs in Concrete

450 & 490 SOUTH AVENUE  
GARWOOD, NEW JERSEY



SOURCES:  
1. P.J. GRALL PROFESSIONAL ENGINEER AND SURVEYOR  
PROPERTY, DATED MARCH 14, 1963.

AG	DL	DL	4
5/11/15	AS SHOWN	HW14-020	



FILE: \CLIENTS\ECOLSCIENCES\HW14-020\_450\_SOUTH AVENUE\PCB SAMPLES CASALE PROP.DWG. DATE: 09/28/2016 11:03:03AM



**LEGEND**

- APPROXIMATE PROPERTY LINE
- APPROXIMATE LOCATION OF PIT OR METAL PLATE
- SAMPLE LOCATION
- ▲ CONCRETE/SOIL SAMPLE LOCATION

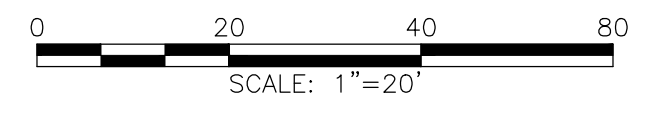
NOTE:  
 1. SAMPLE LOCATIONS SHOWN ON THE MAP INDICATE LOCATIONS WHERE PCB SAMPLES WERE COLLECTED. GIVEN THE VOLUME OF SAMPLES COLLECTED, ONLY THE PCB RESULTS ABOVE 1.0 MG/KG AND DELINEATION SAMPLES ARE SHOWN ON THIS MAP. TABLE 4 OF THE RISK BASED DISPOSAL APPLICATION SHOWS ALL OF THE PCB SAMPLE RESULTS AND DEPTHS FROM LOT 2.

**PCB Regulatory Standards/Criteria**

NJDEP DIGWSSL	0.2
NJDEP RDCSR	0.2
NJDEP NRDCSR	1.0
USEPA High Occupancy Threshold	10
All values in milligrams/kilogram (mg/kg)	
Blue text indicates an exceedance of the RSRs/DIGWSSL	
Shaded indicates an exceedance of the NRSRs	
Red shaded indicates an exceedance of 10 mg/kg	
NJDEP DIGWSSL - Default Impact to Groundwater Soil Screening Level	
NJDEP RDCSR - Residential Direct Contact Soil Remediation Standard	
NJDEP NRDCSR - Non-Residential Direct Contact Soil Remediation Standard	

**Data Box Key and Examples**

Sample ID	Depth (Ft. Below Grade)	PCB Concentration (mg/kg)
BP5a	4.5-5	ND
ND - Not Detected		



TITLE: **LOT 2 PCB IN CONCRETE RESULTS**

50 CENTER STREET & 400 SOUTH AVENUE  
GARWOOD, NEW JERSEY

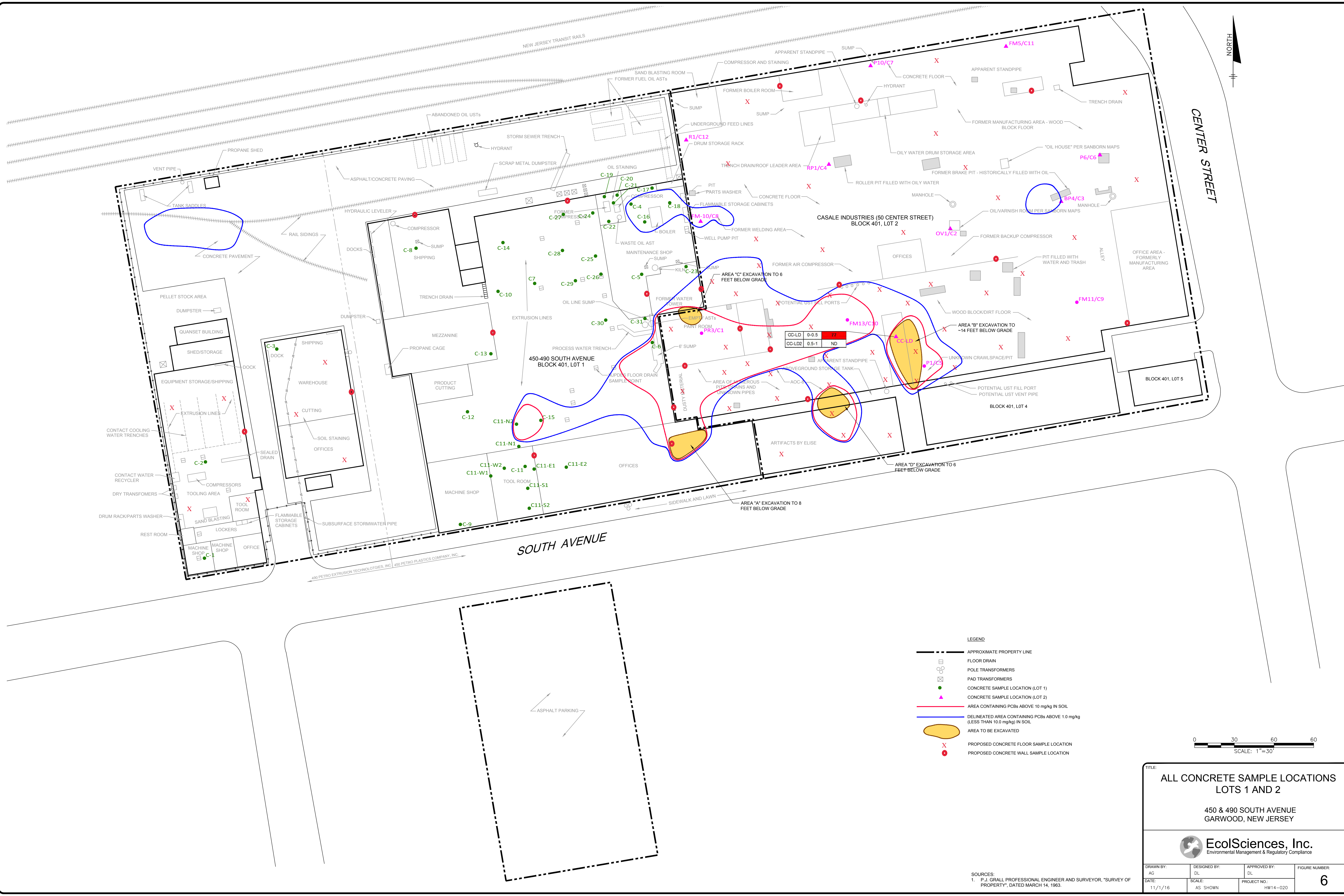
**EcoSciences, Inc.**  
Environmental Management & Regulatory Compliance

DRAWN BY: AG	DESIGNED BY: D. LOEFFLER	APPROVED BY: D. LOEFFLER	PLATE NUMBER: <b>5</b>
DATE: 9/28/16	SCALE: AS SHOWN	PROJECT NO.: HW14-020	

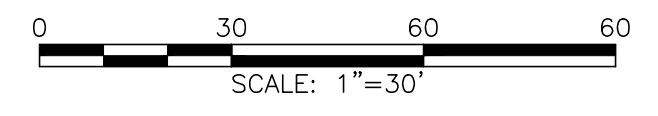
SOURCES:  
 1. P.J. GRALL PROFESSIONAL ENGINEER AND SURVEYOR, "SURVEY OF PROPERTY", DATED MARCH 14, 1963.



FILE: D:\CLIENTS\ECOLSCIENCES\HW14-020 450 SOUTH AVENUE\COMP. DATA\MAP.DWG. DATE: 11/04/2016 09:50:23AM



- LEGEND**
- APPROXIMATE PROPERTY LINE
  - FLOOR DRAIN
  - POLE TRANSFORMERS
  - PAD TRANSFORMERS
  - CONCRETE SAMPLE LOCATION (LOT 1)
  - ▲ CONCRETE SAMPLE LOCATION (LOT 2)
  - AREA CONTAINING PCBs ABOVE 10 mg/kg IN SOIL
  - DELINEATED AREA CONTAINING PCBs ABOVE 1.0 mg/kg (LESS THAN 10.0 mg/kg) IN SOIL
  - AREA TO BE EXCAVATED
  - X PROPOSED CONCRETE FLOOR SAMPLE LOCATION
  - PROPOSED CONCRETE WALL SAMPLE LOCATION



TITLE:  
**ALL CONCRETE SAMPLE LOCATIONS  
LOTS 1 AND 2**

450 & 490 SOUTH AVENUE  
GARWOOD, NEW JERSEY



SOURCES:  
1. P.J. GRALL PROFESSIONAL ENGINEER AND SURVEYOR, "SURVEY OF PROPERTY", DATED MARCH 14, 1963.

DRAWN BY: DL	DESIGNED BY: DL	APPROVED BY: DL	FIGURE NUMBER: 6
DATE: 11/1/16	SCALE: AS SHOWN	PROJECT NO.: HW14-020	



# **ATTACHMENT C**

---

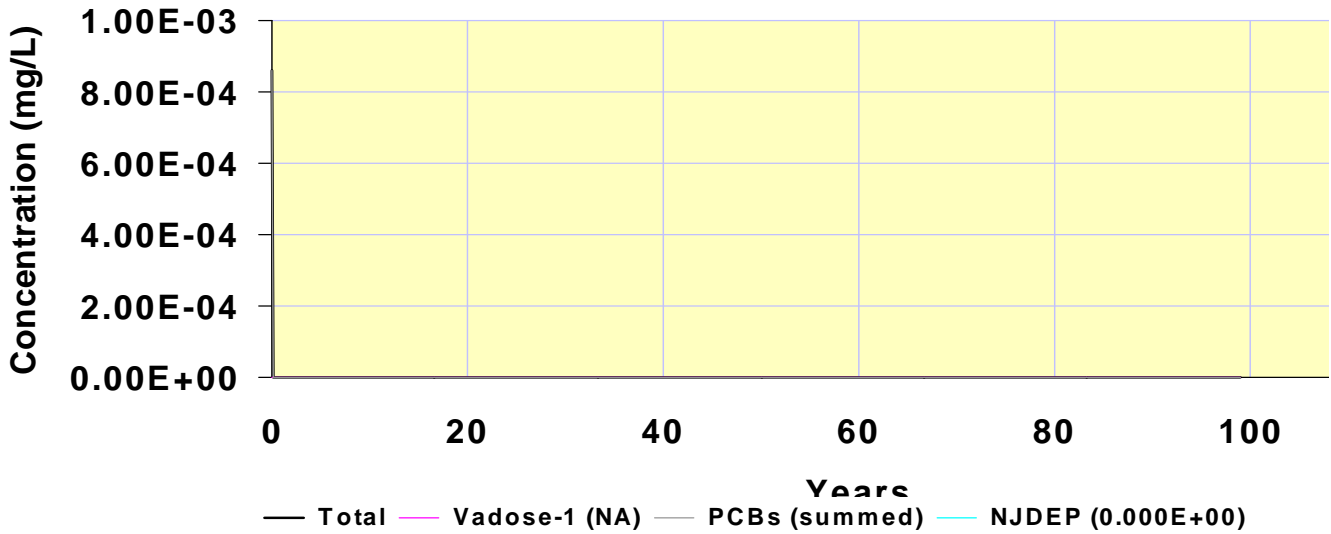
**SeSoil/AT123D Printout Sheets**

**EcolSciences, Inc.**

Environmental Management & Regulatory Compliance

# POC-1

## Garwood PCBs



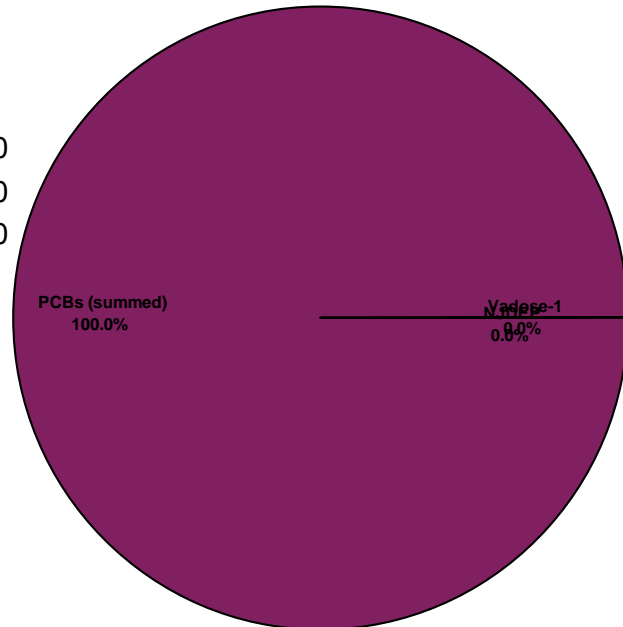
**Maximum Concentration: 8.600E-04 mg/L**

**Year of Maximum Concentration: 0.00**

### Input Parameters

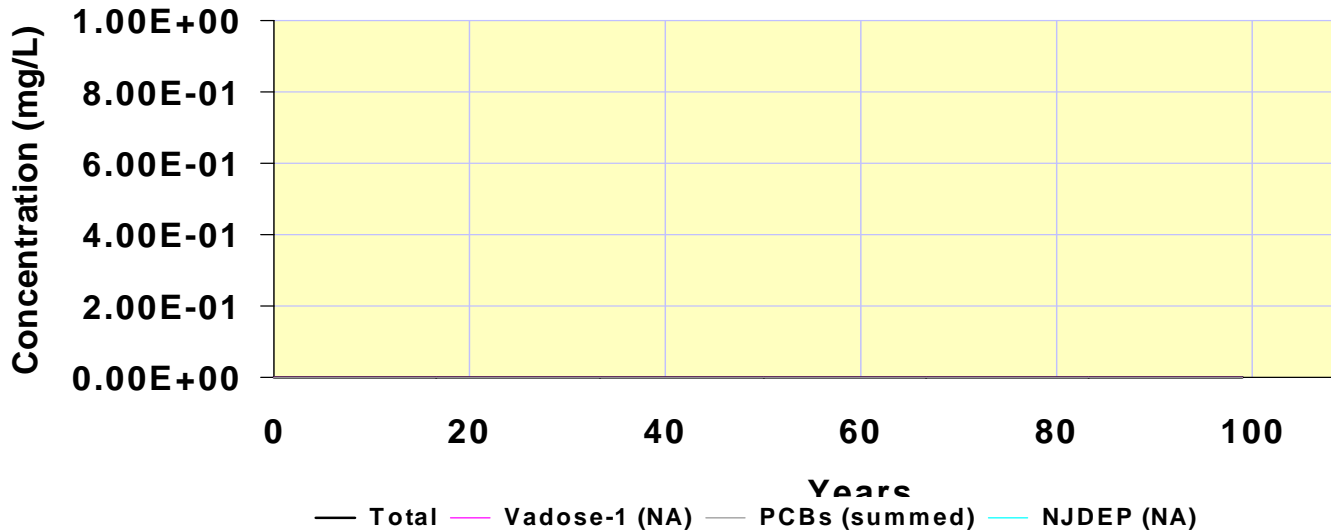
Organic Carbon Content (percent): 0.20000  
 Effective Porosity: 0.30000  
 Hydraulic Gradient (m/m): 0.00500

Dispersivities	Meters	Feet
Longitudinal:	3.361E+00	1.102E+01
Lateral:	3.361E-01	1.102E+00
Vertical:	3.362E-02	1.103E-01



<b>Aquifer Width:</b>	Infinite m	Infinite ft
<b>Aquifer Depth:</b>	Infinite m	Infinite ft
<b>Retardation Factor:</b>		1.808E+04
<b>Soil Bulk Density:</b>	1.500E+03 kg/m <sup>3</sup>	1.500E+00 g/cm <sup>3</sup>
<b>Molecular Diffusion:</b>	2.880E-06 m <sup>2</sup> /hr	8.000E-06 cm <sup>2</sup> /sec
<b>Decay Coefficient:</b>	0.000E+00 1/hr	0.000E+00 1/day
<b>Hydraulic Conductivity:</b>	1.400E-04 m/hr	3.888E-06 cm/sec
<b>Carbon Adsorption Coeff:</b>		0.3090E+0 (ug/g)(ug/ml)
<b>Kd:</b>	3.615E+00 m <sup>3</sup> /kg	3.615E+03 (ug/g)(ug/ml)
<b>Retarded Darcy Velocity:</b>		1.291E-10 m/hr      3.586E-10 cm/sec
<b>Retarded Longitudinal Disp. Coefficient:</b>		9.650E-10 m <sup>2</sup> /hr      2.680E-09 cm <sup>2</sup> /sec
<b>Retarded Lateral Dispersion Coefficient:</b>		5.745E-10 m <sup>2</sup> /hr      1.595E-09 cm <sup>2</sup> /sec
<b>Retarded Vertical Dispersion Coefficient:</b>		5.354E-10 m <sup>2</sup> /hr      1.487E-09 cm <sup>2</sup> /sec

## POC-2 Garwood PCBs



Maximum Concentration: 0.000E+00 mg/L

Year of Maximum Concentration: 0.00

### Input Parameters

Organic Carbon Content (percent): 0.20000

Effective Porosity: 0.30000

Hydraulic Gradient (m/m): 0.00500

Dispersivities	Meters	Feet
Longitudinal:	3.361E+00	1.102E+01
Lateral:	3.361E-01	1.102E+00
Vertical:	3.362E-02	1.103E-01

~~PCBs (summed)~~  
0.000%

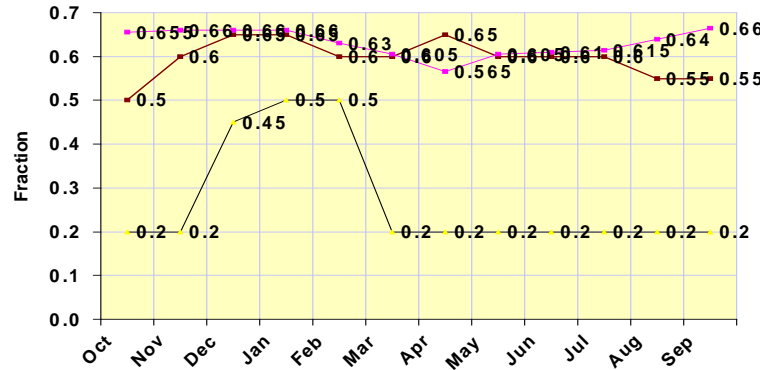
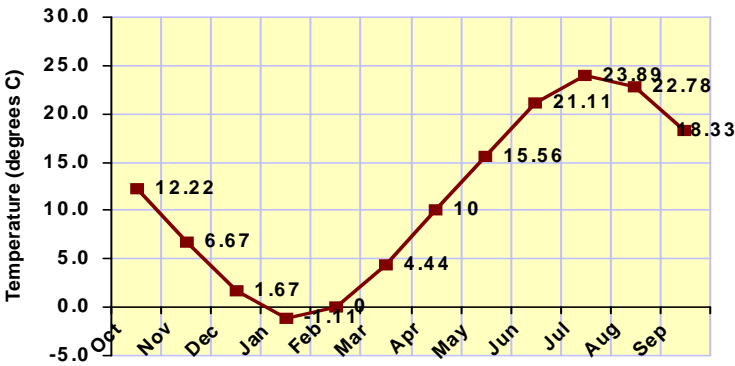
Aquifer Width:	Infinite m	Infinite ft
Aquifer Depth:	Infinite m	Infinite ft
Retardation Factor:		1.808E+04
Soil Bulk Density:	1.500E+03 kg/m <sup>3</sup>	1.500E+00 g/cm <sup>3</sup>
Molecular Diffusion:	2.880E-06 m <sup>2</sup> /hr	8.000E-06 cm <sup>2</sup> /sec
Decay Coefficient:	0.000E+00 1/hr	0.000E+00 1/day
Hydraulic Conductivity:	1.400E-04 m/hr	3.888E-06 cm/sec
Carbon Adsorption Coeff:		0.3090E+0 (ug/g)(ug/ml)
Kd:	3.615E+00 m <sup>3</sup> /kg	3.615E+03 (ug/g)(ug/ml)
Retarded Darcy Velocity:		1.291E-10 m/hr    3.586E-10 cm/sec
Retarded Longitudinal Disp. Coefficient:		9.650E-10 m <sup>2</sup> /hr    2.680E-09 cm <sup>2</sup> /sec
Retarded Lateral Dispersion Coefficient:		5.745E-10 m <sup>2</sup> /hr    1.595E-09 cm <sup>2</sup> /sec
Retarded Vertical Dispersion Coefficient:		5.354E-10 m <sup>2</sup> /hr    1.487E-09 cm <sup>2</sup> /sec

# Climate Report

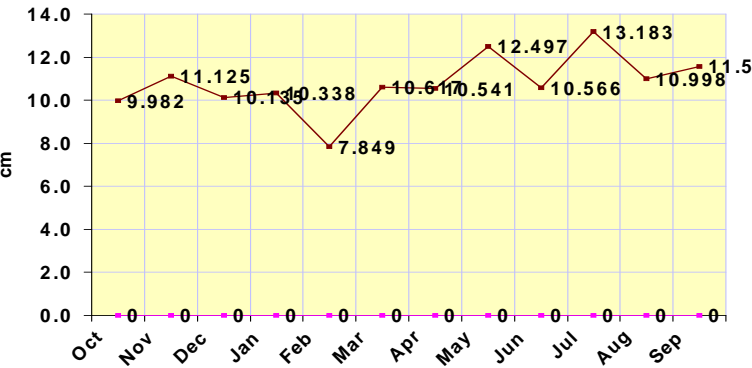
**Location Description:** WESTFIELD

**Climatic Input File:** F:\JOBS14\HW14-020\2016 INVESTIGATION FOR USEPA SUPPLEMENT\SESOIL

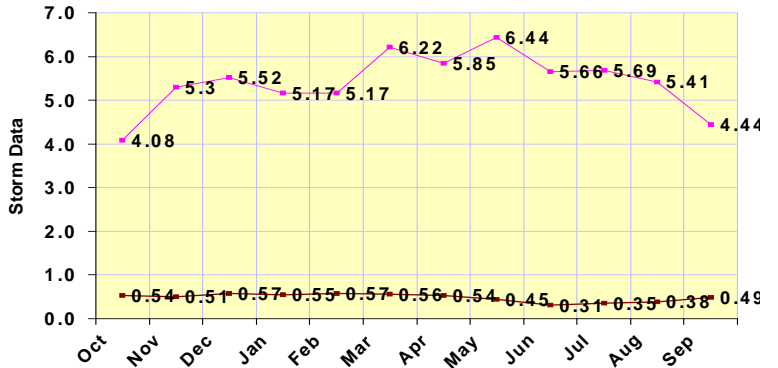
Month	Temperature		Precipitation		Evapotranspiration Rate		Storms		Cloud Cover	Albedo	Humidity
	°C	°F	cm	Inches	cm	Inches	# per Month	Length Days	Fraction	Fraction	Fraction
October	12.22	54.00	9.982	3.93	0.00	0.00	4.08	0.540	0.500	0.200	0.655
November	6.67	44.01	11.125	4.38	0.00	0.00	5.30	0.510	0.600	0.200	0.660
December	1.67	35.01	10.135	3.99	0.00	0.00	5.52	0.570	0.650	0.450	0.660
January	-1.11	30.00	10.338	4.07	0.00	0.00	5.17	0.550	0.650	0.500	0.660
February	0.00	32.00	7.849	3.09	0.00	0.00	5.17	0.570	0.600	0.500	0.630
March	4.44	39.99	10.617	4.18	0.00	0.00	6.22	0.560	0.600	0.200	0.605
April	10.00	50.00	10.541	4.15	0.00	0.00	5.85	0.540	0.650	0.200	0.565
May	15.56	60.01	12.497	4.92	0.00	0.00	6.44	0.450	0.600	0.200	0.605
June	21.11	70.00	10.566	4.16	0.00	0.00	5.66	0.310	0.600	0.200	0.610
July	23.89	75.00	13.183	5.19	0.00	0.00	5.69	0.350	0.600	0.200	0.615
August	22.78	73.00	10.998	4.33	0.00	0.00	5.41	0.380	0.550	0.200	0.640
September	18.33	64.99	11.557	4.55	0.00	0.00	4.44	0.490	0.550	0.200	0.665
Total			129.39	50.94	0.00	0.00					



— Cloud Cover — Humidity — Albedo



— Monthly Precip — Evaptrans

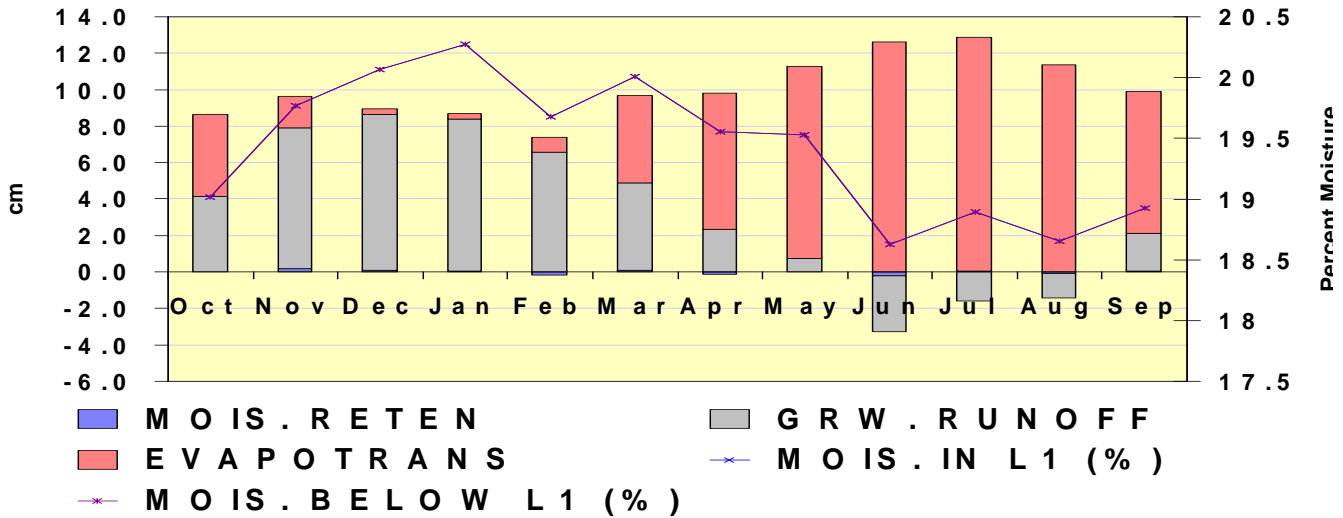
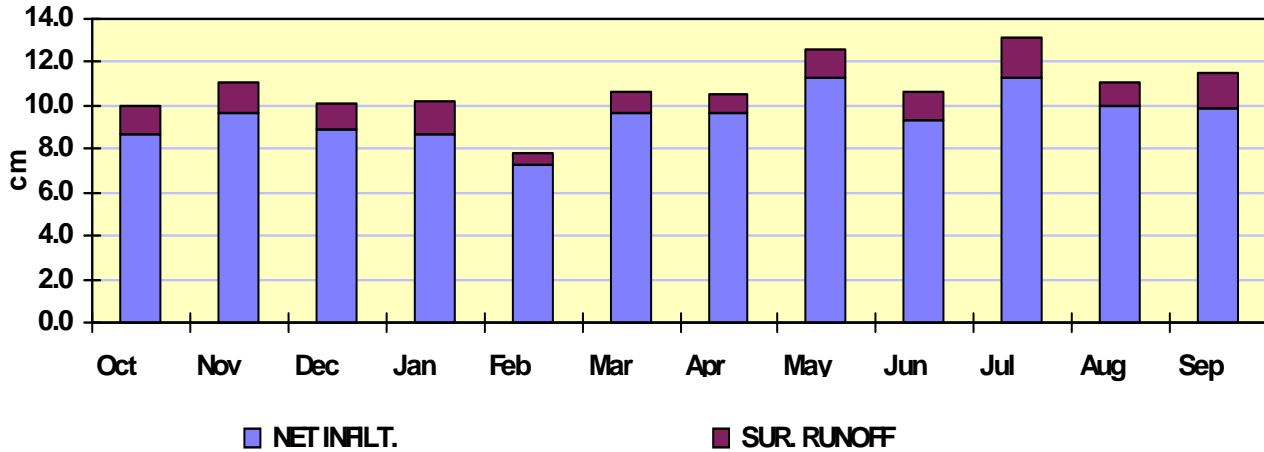


— Length — Number of Storms

# SESOIL Hydrologic Cycle Report

Scenario Description: Garwood PCBs

SESOIL Output File: C:\SEV7 WIN7\S01.OUT



	Surface Water Runoff		Net Infiltration		Evapotranspiration		Soil Moisture Retention		Groundwater Runoff (Recharge)		Soil Moisture	
	cm	Inches	cm	Inches	cm	Inches	cm	Inches	cm	Inches	Layer 1 Percent	Below Layer 1 Percent
Units	cm	Inches	cm	Inches	cm	Inches	cm	Inches	cm	Inches	Percent	Percent
October	1.30	0.51	8.67	3.41	4.51	1.78	0.02	0.01	4.13	1.63	19.02	19.02
November	1.48	0.58	9.65	3.80	1.75	0.69	0.19	0.07	7.70	3.03	19.77	19.77
December	1.11	0.44	8.94	3.52	0.30	0.12	0.08	0.03	8.56	3.37	20.07	20.07
January	1.58	0.62	8.67	3.41	0.30	0.12	0.05	0.02	8.31	3.27	20.28	20.28
February	0.60	0.24	7.26	2.86	0.83	0.33	-0.15	-0.06	6.58	2.59	19.68	19.68
March	0.94	0.37	9.68	3.81	4.81	1.89	0.08	0.03	4.78	1.88	20.01	20.01
April	0.85	0.33	9.70	3.82	7.46	2.94	-0.11	-0.04	2.35	0.93	19.56	19.56
May	1.27	0.50	11.27	4.44	10.56	4.16	-0.01	0.00	0.72	0.28	19.53	19.53
June	1.27	0.50	9.33	3.67	12.61	4.96	-0.23	-0.09	-3.05	-1.20	18.63	18.63
July	1.92	0.76	11.26	4.43	12.81	5.04	0.07	0.03	-1.61	-0.63	18.90	18.90
August	1.14	0.45	9.96	3.92	11.37	4.48	-0.06	-0.02	-1.34	-0.53	18.66	18.66
September	1.60	0.63	9.91	3.90	7.78	3.06	0.07	0.03	2.07	0.81	18.93	18.93
<b>Total</b>	<b>15.05</b>	<b>5.92</b>	<b>114.29</b>	<b>45.00</b>	<b>75.08</b>	<b>29.56</b>	<b>0.00</b>	<b>0.00</b>	<b>39.21</b>	<b>15.44</b>	<b>--</b>	<b>--</b>

# SESOIL Pollutant Cycle Report

Scenario Description: Garwood PCBs

SESOIL Output File: C:\SEV7 WIN7\S01.OUT

SESOIL Process	Pollutant Mass (µg)	Percent of Total
Volatilized	3.703E+08	0.05
In Soil Air	1.665E+06	0.00
Sur. Runoff	0.000E+00	0.00
In Washld	0.000E+00	0.00
Ads On Soil	7.593E+11	99.25
Hydrol Soil	0.000E+00	0.00
Degrad Soil	0.000E+00	0.00
Pure Phase	0.000E+00	0.00
Complexed	0.000E+00	0.00
Immobile CEC	0.000E+00	0.00
Hydrol CEC	0.000E+00	0.00
In Soil Moi	2.650E+07	0.00
Hydrol Mois	0.000E+00	0.00
Degrad Mois	0.000E+00	0.00
Other Trans	0.000E+00	0.00
Other Sinks	0.000E+00	0.00
Gwr. Runoff	0.000E+00	0.00
<b>Total Output</b>	<b>7.597E+11</b>	<b>99.30</b>
<b>Total Input</b>	<b>7.651E+11</b>	
<b>Input - Output</b>	<b>5.321E+09</b>	

Maximum leachate concentration: 0.000E+00 mg/l

**Climate File:** WESTFIELD  
 F:\JOBS14\HW14-020\2016 INVESTIGATION FOR USEPA SUPPLEMENT\SESOIL AND

**Chemical File:** PCBs (summed), NJDEP  
 F:\JOBS14\HW14-020\2016 INVESTIGATION FOR USEPA SUPPLEMENT\SESOIL AND AT123D\PCBS

**Soil File:** Loam  
 F:\JOBS14\HW14-020\2016 INVESTIGATION FOR USEPA SUPPLEMENT\SESOIL AND

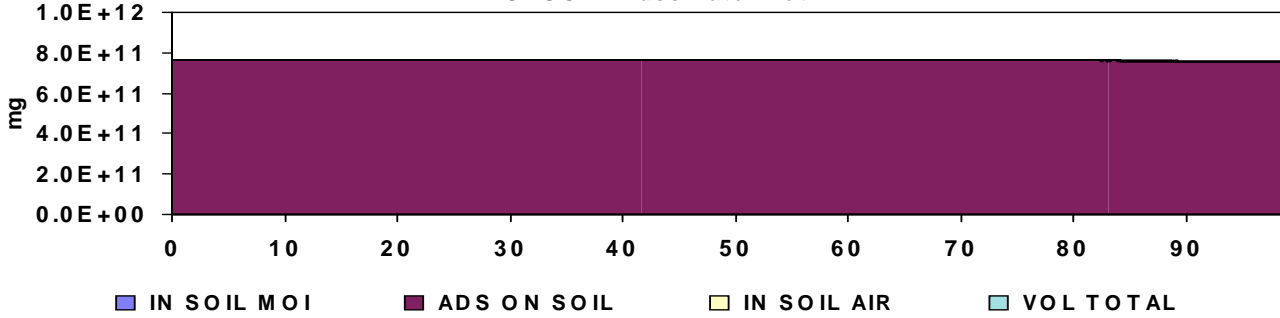
**Application File:** Garwood PCBs  
 F:\JOBS14\HW14-020\2016 INVESTIGATION FOR USEPA SUPPLEMENT\SESOIL AND

**Starting Depth:** 289.60 cm

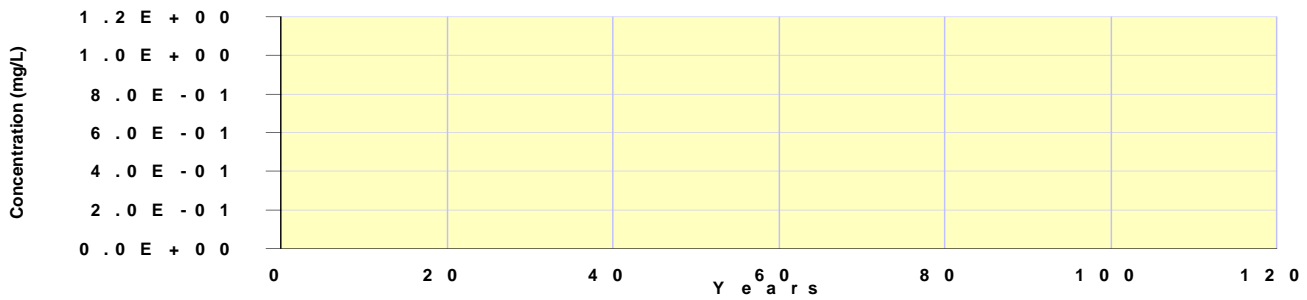
**Ending Depth:** 290.60 cm

**Total Depth:** 304.80 cm

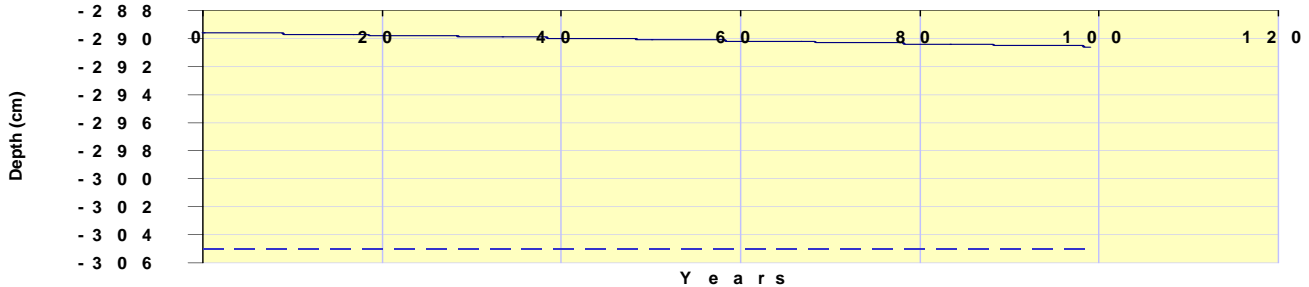
SESOIL Mass Fate Plot



Leachate Concentration



Contaminant Depth Plot



# SESOIL Profile and Load Report

Layer No.	Number of Sub-Layers	Thickness		Intrinsic Permeability cm <sup>2</sup>	Organic Carbon Content percent	Adsorption Coefficient $\frac{\mu\text{g/g}}{\mu\text{g/mL}}$	Cation Exchange Capacity $\frac{\text{mEq}}{100 \text{ g soil}}$	Freundlich Exponent unitless	Solid Phase Degradation Rate 1/day	Liquid Phase Degradation Rate 1/day	Soil pH
		cm	feet								
1	3	91.4	3.00	8.00E-10	1.17	0.00	0.00	1.00	0.00E+00	0.00E+00	7.00
2	3	91.4	3.00	8.00E-10	1.17	0.00	0.00	1.00	0.00E+00	0.00E+00	7.00
3	2	61.0	2.00	8.00E-10	1.17	0.00	0.00	1.00	0.00E+00	0.00E+00	7.00
4	2	61.0	2.00	8.00E-10	1.17	0.00	0.00	1.00	0.00E+00	0.00E+00	7.00

### Soil Parameters

Bulk Density (g/cm <sup>3</sup> )	1.50
Effective Porosity (fraction)	0.30
Soil Pore Disconnectedness	6.50

### Chemical Parameters

Water Solubility (μg/mL)	.700	Moles Ligand / Moles Chemical	0.00
Henry's Law (M <sup>3</sup> atm/mol)	2.60E-3	Ligand Molecular Weight (g/mol)	0.00
K <sub>oc</sub> Adsorp (μg/g)/(μg/mL)	309000	K <sub>oc</sub> Dedsorp (μg/g)/(μg/mL)	0.00
K <sub>d</sub> Adsorp (μg/g)/(μg/mL)	0.00	K <sub>d</sub> Dedsorp (μg/g)/(μg/mL)	0.00
Valence (g/mole)	0.00	Ligand Dissociation Constant	0.00
Air Diffusion (cm <sup>2</sup> /sec)	1.75E-2	Base Hydrolysis Rate(L/mol/day)	0.00
Water Diffusion (cm <sup>2</sup> /sec)	8.00E-6	Neutral Hydrolysis (L/mol/day)	0.00
Molecular Weight (g/mol)	326.00	Acid Hydrolysis (L/mol/day)	0.00

### Application Parameters

Area	cm <sup>2</sup>	2.28E+7
	ft <sup>2</sup>	2.45E+4
Latitude	degrees	40.7
Spill Index		1

Output File: Garwood PCBs  
C:\SEV7\WIN7\S01.OUT

Chemical File: PCBs (summed), NJDEP

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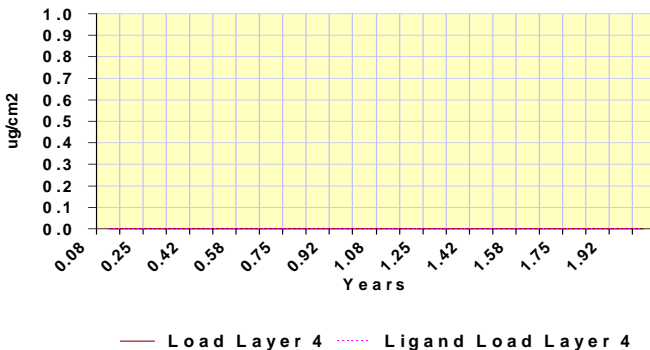
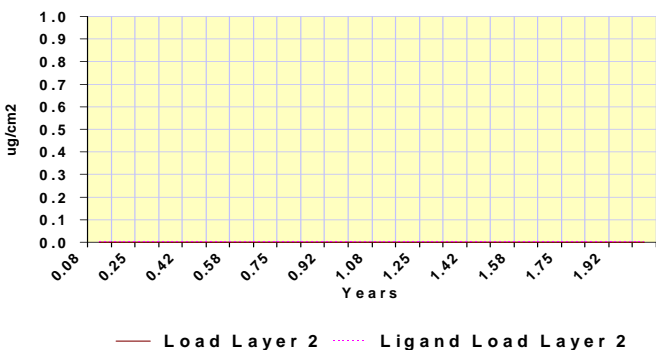
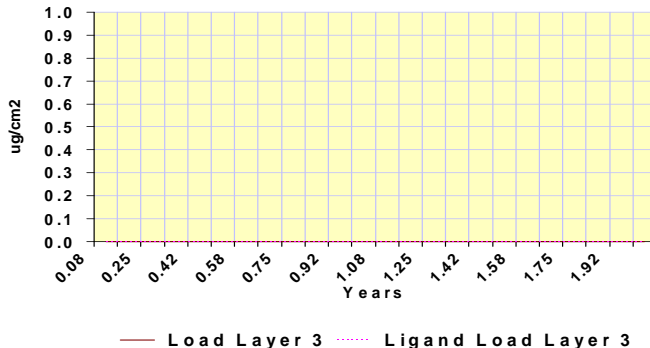
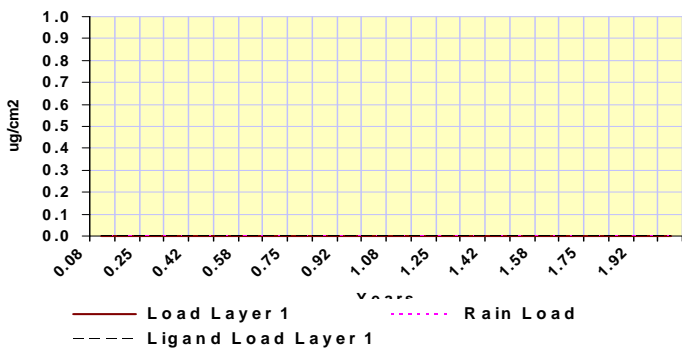
Soil File: Loam

F:\JOBS14\HW14-020\2016 INVESTIGATION FOR USEPA SUPPLEMENT\SESOIL AND AT123D\LOAMGARWOOD.SOI

Application File: Garwood PCBs

F:\JOBS14\HW14-020\2016 INVESTIGATION FOR USEPA SUPPLEMENT\SESOIL AND AT123D\PCBGARWOOD50.APL

Sublayer Loads	1	2	3	4	5	6	7	8	9	10
Layer 1 (ug/g)	5.00E+01	5.00E+01	5.00E+01							
Layer 2 (ug/g)	5.00E+01	5.00E+01	5.00E+01							
Layer 3 (ug/g)	1.60E+02	5.90E+01								
Layer 4 (ug/g)	3.50E+01	1.80E+02								



# **ATTACHMENT D**

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## **NJDEP Impact to Groundwater Pathway Memo and Approval**

**EcolSciences, Inc.**

Environmental Management & Regulatory Compliance





# EcolSciences, Inc.

Environmental Management & Regulatory Compliance

October 11, 2016

Mr. Kevin Schick, BEERA  
NJDEP Site Remediation Program  
401 East State Street  
P.O. Box 420  
Mailcode 401-05 W  
Trenton, New Jersey 08625

*Via Email and Certified Mail*

Re: Technical Consultation Summary Regarding Impact to Groundwater Pathway for PCBs  
December 2015 USEPA Application for PCB Risk Based Disposal Approval – Amended July 29,  
2016  
450 and 490 South Avenue  
Block 401, Lots 1 and 2  
Garwood, New Jersey  
NJDEP PI# 032470 & 631620

Dear Mr. Schick:

Thank you for participating in the Technical Consultation conference call with us on September 29, 2016 regarding the impact to groundwater pathway for polychlorinated biphenyls (PCBs) at the above-referenced Site. As you know, EcolSciences prepared an Application for a Risk-Based Disposal dated December 2015 (Application) on behalf of 490 South Avenue, LLC which was submitted to the USEPA. The USEPA issued a comment letter dated March 18, 2016. The USEPA, EcolSciences, 490 South Avenue, LLC, and the NJDEP (you and members of your staff) participated in a meeting/conference call on April 28, 2016 to discuss the issues. Subsequent to that meeting, EcolSciences conducted additional investigation and evaluation on behalf of 490 South Avenue, LLC and responded to the USEPA's comment letter in a Draft USEPA Comment Letter Response dated July 29, 2016.

During our April 28, 2016 meeting and subsequent telephone conversations with the USEPA, Mr. Jim Haklar of the USEPA provided EcolSciences with NJDEP's initial comments on the Impact to Groundwater Pathway (IGW) relative to PCBs, and Mr. Haklar indicated that EcolSciences' LSRP would need to address the IGW pathway in a manner that would be acceptable to the NJDEP and, ultimately, the USEPA. Once addressed to the satisfaction of the NJDEP, the IGW proposal will require final approval by the USEPA. The purpose of our technical consultation on September 29, 2016 was to discuss EcolSciences' IGW approach as set forth in the July 29, 2016 Draft Response to the USEPA as well as the information presented in the NJDEP's August 30, 2016 memorandum prepared by Paul Sanders, Ph.D. As noted by EcolSciences during the Technical Consultation, EcolSciences' approach applies NJDEP guidance to the extent possible; however, the unusual site-specific conditions (i.e. widespread PCBs at elevated concentrations in soil above, at, and below the water table, and the inability to develop a viable SSIGWSRS using SPLP testing) does not conform to the IGW scenarios/guidance typically encountered at New Jersey sites undergoing remediation. As such, direct application of the NJDEP IGW guidance for PCBs (other than capping in accordance with NJDEP guidance – further discussed below) is not practically feasible at this site.

As discussed during the September 29, 2016 Technical Consultation and emphasized in the NJDEP's memo, the IGW pathway for PCBs is primarily relevant in the two foot zone immediately above ground water due to the immobile nature of PCBs. This depth interval is approximately eight to ten feet below grade in the primary area of PCB impacts on the Site (although an isolated area of perched water is present at a depth of three feet below the present day building). The highest PCB concentration identified in soil within this zone is 3,000 milligrams/kilogram (mg/kg) at the soil/groundwater interface. EcolSciences is proposing a site-specific impact to groundwater standard of 190 milligrams/kilogram (mg/kg) for PCBs within this zone. The multiple lines of evidence technical justifications and Professional Judgment utilized in developing this SSIGWSRS (as described below) suggest that the SSIGWSRS may be higher than 190 mg/kg. Since all material containing PCB concentrations above 190 mg/kg will be removed from the site as proposed in the USEPA Application, the SSIGWSRS has been set at this concentration as supported by several factors. The multiple lines of evidence and EcolSciences' technical justifications for a SSIGWSRS of 190 mg/kg are as follows:

**1. *EcolSciences' Modified Application of the NJDEP's Observed Groundwater Conditions To Determine Compliance with the Impact to Groundwater Pathway Guidance***

Historical research indicates that the PCBs identified in the soil on the Site are primarily the result of discharges that occurred from abovegrade equipment and pits that extended deep below grade in conjunction with the die casting equipment operated by the Aluminum Company of America (ALCOA) at least 50 (and possibly as long as 75 years ago). Given the immobility of PCBs in the environment and the nature of ALCOA die casting equipment in the subgrade, the Conceptual Site Model (CSM) indicates that PCBs were directly discharged at various depths (including significant depths below the water table) on the Site and the elevated PCB concentrations at depth are not attributable to surficial or above-grade spills (i.e. vertical migration of PCB concentrations in the soil column is minimal). The CSM suggests that the higher concentrations at the Loading Dock are the result of a significant spill in the Loading Dock. **Based on this understanding, PCBs have been present in the soil at elevated concentrations above, at, and below the water table for at least 50 years.**

With the exception of the Loading Dock area (discussed below), the elevated PCB concentrations above, at and below the water table have not resulted in dissolved PCB concentrations above the NJDEP and USEPA groundwater quality standard<sup>1</sup>. Specifically, PCBs are present in soil below the water table at concentrations up to 190 mg/kg with no corresponding exceedances of the GWQS. **Given the direct groundwater contact of PCBs in the soil at concentrations 190 mg/kg for at least 50 years with no adverse impacts to the groundwater, PCBs remaining on the Site at 190 mg/kg or less in the soil are not anticipated to impact the groundwater in the future, even if present within two feet of the groundwater.**

**2. *Mathematical Ratio of Soil Concentrations to Groundwater Concentrations***

Dissolved PCBs are present in the groundwater at 4.3 micrograms/liter (1.0 µg/L) in monitoring well CMW-6 in the area of the Casale loading dock where PCB concentrations are present in the soil at the water table at 3,000 mg/kg. This groundwater concentration is almost six orders of magnitude lower than the soil concentration at this location. Higher concentrations of PCBs in the soil are also present up to 3,700 mg/kg at slightly shallower depths (three feet above the water table).

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<sup>1</sup> It should be noted that two groundwater samples were collected from monitoring well CMW-8 due to the saturated screen length. PCB concentrations from these two samples were non-detect and 1.0 microgram per liter. The average concentration of these two samples (0.5 µg/L), complies with the NJDEP and USEPA groundwater quality standards.

Since the Loading Dock spills occurred 50 to 75 years ago, it is not anticipated that PCB concentrations in groundwater would increase over time (i.e. the detrimental effects of PCBs at 3,000 mg/kg in contact with the groundwater has already occurred). Using a straightforward mathematical ratio to compare soil PCB concentrations to a corresponding groundwater concentration (i.e. 3,000 mg/kg of PCBs in the soil at the water table results in a groundwater concentration of 4.3 µg/L), PCBs in groundwater equivalent to the 0.5 µg/LNJDEP and USEPA GWQS would require at least a PCB soil concentration of 349 mg/kg. **Accordingly, the proposed SSIGWSRS for PCBs of 190 mg/kg is protective over time<sup>2</sup>.**

### 3. *Future Site Groundwater Use*

Historic fill material has been documented throughout the Site and historic fill-related contaminants have been documented in the onsite groundwater above the GWQS. Since historic fill will be remediated through the use of engineering and institutional controls, including the establishment of an indeterminate length Classification Exception Area (CEA) for historic fill contaminants pursuant to Section 5.3.2 of the Historic Fill Technical Guidance, there is an acknowledgement that the groundwater underlying the site will not meet the NJDEP GWQS in the future. As such, restoration of the groundwater to the GWQS for contaminants other than PCBs is not envisioned in the foreseeable future, irrespective of the presence of PCBs.

Although the groundwater will remain contaminated with fill material contaminants for an indeterminate length of time, remediation of the elevated concentrations of PCBs in soil above 190 mg/kg will occur nonetheless as part of redevelopment. Given the current significant PCB impacts in soil and the relatively minimal impacts to the groundwater only at one location where the PCB impacted soil will ultimately be removed (i.e. the loading dock area where PCBs are detected up to 3,700 mg/kg), it is reasonably anticipated that PCB concentrations in groundwater will decrease with time although a CEA for PCBs is anticipated. In that regard, PCBs in groundwater have been fully delineated (horizontally and vertically) and do not migrate offsite based on the site-specific groundwater analytical data. While SESOIL/AT123D modeling is typically not used for immobile contaminants (of which PCBs are considered to be), the use of this model relative more so to contaminant transport confirms the observed groundwater conditions and that the PCBs will not migrate offsite in the future as noted in our July 29, 2016 Draft Response to the USEPA.

### 4. *Capping for the Impact to Groundwater Pathway*

Although the three justifications discussed above do not require the placement of an impervious cap to address IGW, one NJDEP approved option to address IGW for PCBs is the installation of an impervious cap (NJDEP's March 2014 'Capping of Inorganic and Semivolatile Contaminants for the Impact to Ground Water Pathway'). The USEPA cap requirements in TSCA require a specific thicknesses of either asphalt or concrete (impervious coverage) or the installation of a soil cap having specific permeability ratings. The USEPA's permeability rating for green area caps meet NJDEP's the definition of an impervious cap. **The installation of an impervious cap throughout the portion of the Site impacted with**

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<sup>2</sup> As described in the Application, the significant PCB impacts in the soil at the Loading Dock will be excavated for offsite disposal at a TSCA landfill and the remaining PCB concentrations in this area will be below the SSIGWSRS of 190 mg/kg. This remedial action will lead to an improvement of the groundwater quality relative to PCBs.

**elevated concentrations of PCBs up to 190 mg/kg is an added measure of protection against PCB migration due to infiltration.**

The NJDEP guidance states that in instances where GWQS exceedances already exist, periodic monitoring of the ground water is required along with an approved CEA, Deed Notice, and Remedial Action Permits. As stated above, these engineering and institutional controls are already required for other contaminants (i.e. historic fill contaminants) on the site. PCBs in soil will be added to the Deed Notice, CEA, and Remedial Action Permits. Consistent with NJDEP's guidance, the CEA for PCBs will include long-term groundwater monitoring.

EcolSciences has relied upon the technical justifications and multiple lines of evidence discussed above to confirm that the IGW approach proposed in the USEPA Application is protective of human health and safety and the environment. It is EcolSciences' and the undersigned LSRP's professional opinion that the proposed SSIGWSRS of 190 mg/kg is appropriate and will be protective of human health and safety and the environment. Subsequent to approval of the Application by the USEPA, a complete RI/RAW for the entire Site will be submitted to the NJDEP. This Technical Consultation summary and your anticipated written concurrence with this summary will be included in the RI/RAW to support the proposed SSIGWSRS of 190 mg/kg. We appreciate your time as part of the Technical Consultation process. Please let us know if you have any additional questions or require further clarification. We look forward to receiving your concurrence with this summary of the September 29, 2016 Technical Consultation.

Very truly yours,

EcolSciences, Inc.



Peter A. Hansen, LSRP, LEP  
Vice President

cc: Mr. Jim Haklar, USEPA  
Paul Sanders, Ph.D.  
Edward Russo, 490 South Avenue, LLC  
Michael Schweitzer, LSRP  
David Loeffler



## David Loeffler

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**From:** Schick, Kevin <Kevin.Schick@dep.nj.gov>  
**Sent:** Friday, October 14, 2016 4:18 PM  
**To:** Peter Hansen  
**Cc:** haklar.james@epa.gov; Russo, Ed; David Loeffler; Michael Schweitzer  
**Subject:** RE: Garwood NJ USEPA RB PCB Application - NJDEP Technical Consultation Summary PI#032470

Hello Peter,

I have reviewed the technical information provided by Peter Hansen following our September 29, 2016 Technical Consultation conference call in which we discussed potential PCB soil impact to ground water issues. A USEPA Application for PCB Risk Based Disposal Approval (RBA) has been submitted that proposes to remediate PCBs to 10 mg/kg high occupancy / 50 mg/kg low occupancy areas in the surficial 6 feet and leave up to 190 mg/kg in limited areas below 6' depth. In response to the RBA both the USEPA and NJDEP had concerns regarding leaving such high levels at depth with regard to that condition leaving a potential source for future ground water contamination.

Following our conference call and the submission of the additional technical information, I am satisfied that the multiple lines of evidence provided support that the RBA and PCB concentrations proposed to be left at depth will not cause any unacceptable future source of ground water contamination. I am accepting the Technical Consultation summary submitted by LSRP Peter Hansen of EcolSciences without modification and will insert the summary in NJEMS under PI# 032470.

Note that this summary acceptance is provided to assist the LSRP in response to the USEPA with their concerns relative to the PCB impact to ground water issue and the pending RBA before them. PCBs and all other site specific contamination will need to be address by the LSRP in Key document submissions as required by state regulations and rules separate from the federal TSCA requirements and pending RBA.

*Kevin Schick*

NJDEP/Site Remediation Program  
Chief - Bureau of Environmental Evaluation & Risk Assessment  
P.O. Box 420  
Mailcode 401-05W  
Trenton, N.J. 08625  
(609) 984 – 1825 (Direct Line)  
[kevin.schick@dep.nj.gov](mailto:kevin.schick@dep.nj.gov)



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**From:** Peter Hansen [<mailto:PHansen@ecolsciences.com>]  
**Sent:** Tuesday, October 11, 2016 5:18 PM  
**To:** Schick, Kevin <[Kevin.Schick@dep.nj.gov](mailto:Kevin.Schick@dep.nj.gov)>  
**Cc:** Sanders, Paul <[Paul.Sanders@dep.nj.gov](mailto:Paul.Sanders@dep.nj.gov)>; [haklar.james@epa.gov](mailto:haklar.james@epa.gov); Russo, Ed <[EdRusso@russodevelopment.com](mailto:EdRusso@russodevelopment.com)>;

David Loeffler <[DLoeffler@ecosciences.com](mailto:DLoeffler@ecosciences.com)>; Michael Schweitzer <[MSchweitzer@ecosciences.com](mailto:MSchweitzer@ecosciences.com)>

**Subject:** Garwood NJ USEPA RB PCB Application - NJDEP Technical Consultation Summary PI#032470

Mr. Schick,

EcolSciences has prepared the attached summary of the September 29, 2016 Technical Consultation regarding PCBs and the Impact to Groundwater Pathway for the above-referenced site. We trust that this letter accurately summarizes the technical justifications and multiple lines of evidence we discussed during the call. We appreciate your time as part of the Technical Consultation process and look forward to receiving your concurrence with this summary. Please do not hesitate to call me should you have any questions.

-Peter

---

Peter A. Hansen, LSRP, LEP  
Vice President

**EcolSciences, Inc.**

75 Fleetwood Drive, Suite 250

Rockaway, New Jersey 07866

Ph. (973) 366 – 9500

Cell (973) 945 – 3494

Fx. (973) 366 – 9593

[phansen@ecosciences.com](mailto:phansen@ecosciences.com)

# **ATTACHMENT E**

---

**EHI, Inc. Building Materials Sampling Proposal**

**EcolSciences, Inc.**

Environmental Management & Regulatory Compliance



# Environmental Health Investigations, Inc.

655 West Shore Trail Sparta,  
New Jersey 07871

Phone/Fax: 973-729-5649  
[www.ehi-inc.com](http://www.ehi-inc.com)

## MEMORANDUM

To: Peter Hansen (Ecol Sciences)  
David Loeffler (Ecol Sciences)

From: William S. Kerbel, CIH

Cc: Adam Pasternack (Russo)

Re: Casale/Petro Garwood Property

Date: November 2, 2016

---

I conducted a walkthrough of the Casale/Petro property on Friday, October 28, 2016. The purpose of the walkthrough was to identify any building materials which could contain PCB's.

The following materials were identified:

1. **50 Center Street**
  1. Window Caulk
  2. Garage Door Caulk
  3. Floor Tar Associated with Wood Block Floor
  4. Window Glazing
  5. Roof Tar
  
2. **450 South Avenue**
  1. Window Caulk
  2. Window Glazing
  3. Asphalt Siding
  4. Waterproofing Tar
  5. Roof Tar

We recommend that one composite sample be collected of each of these materials for PCB analysis.



# **ATTACHMENT F**

---

## **Disposal Facility Permits**

**EcolSciences, Inc.**

Environmental Management & Regulatory Compliance



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
841 Chestnut Building  
Philadelphia, Pennsylvania 19107-4431

JUN 11 1996

Mr. Michael Koman  
Special Waste Coordinator  
Browning-Ferris Industries  
P.O. Box 128  
Morgantown, PA 19543

**Re: Acceptance of Non-Hazardous CERCLA Waste**

Dear Mr. Koman:

EPA is in receipt of your April 29, 1996 correspondence covering the acceptability of the following landfill to receive non-hazardous CERCLA waste.

1. BFI Conestoga Landfill (Morgantown, PA)

In response to your inquiry, this letter serves to inform you that the U.S. Environmental Protection Agency (EPA) Region III has determined that the RCRA Subtitle D Landfill is currently acceptable for receipt of Non-Hazardous CERCLA waste generated as a result of remedial or removal action.

On September 22, 1993, EPA amended the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300, by adding Section 300.440, now known as the Off-Site Rule (Rule). The Rule codifies the requirements contained in CERCLA Section 121(d)(3), and incorporates many provisions of the former Off-Site Policy. The Rule establishes the criteria and procedures for determining if facilities are acceptable for the receipt of Non-Hazardous CERCLA waste.

The rule requires that prior to a facility's initial receipt of CERCLA waste, EPA must determine if there are no relevant releases or relevant violations at the facility. EPA believes that an affirmative determination of "compliance" and "control of releases" are necessary before a facility may be deemed acceptable for the receipt of CERCLA wastes.

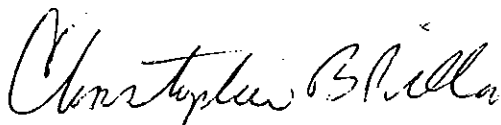
EPA has conducted the necessary evaluation based on inspection information provided by the Pennsylvania Department of Environmental Protection (PADEP). EPA has reviewed and relies upon PADEP inspections which demonstrate that the landfill

is currently in compliance. BFI Waste System must also comply with any regulations required by PADEP.

As of the date of this letter, the landfill is acceptable to receive CERCLA Non-Hazardous waste. Should any new information affecting this determination be obtained, EPA reserves the right to revisit the acceptability status of the landfill in accordance with the Rule.

If you have any questions concerning this matter, please contact Naomi Henry of my staff, the Region III CERCLA Off-Site Rule Coordinator, at (215) 566-3450.

Sincerely,



Christopher B. Pilla, Branch Chief  
RCRA Compliance & Enforcement Branch

cc: Naomi Henry (EPA)  
Michael Hendershot (EPA)  
Leon Kuchinski (PADEP)  
Susan Werner (PADEP)



Pennsylvania Department of Environmental Protection

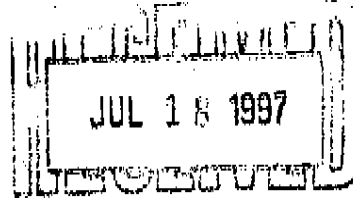
One Ararat Boulevard  
Harrisburg, PA 17110-9333

JUL 18 1997

717-657-4588  
FAX - 717-657-4446

Southcentral Regional Office

Mr. Dennis A. Dobry, District Vice President  
New Morgan Landfill Company, Inc.  
P.O. Box 128  
Morgantown, PA 19543-0128



Re: Form R Modification  
Conestoga Landfill  
Permit No. 101509  
New Morgan Borough, Berks County

Dear Mr. Dobry:

I am pleased to enclose a permit modification for approving minor changes to Conestoga Landfill's approved Form R. It is issued in accordance with the Pennsylvania Solid Waste Management Act, Act 97, as amended.

Compliance with the limitations and stipulations that have been set forth in your permit is mandatory. You have the right to appeal any limitation or stipulation as stated on your permit.

Any person aggrieved by this action may appeal, pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. Section 7514, and the Administrative Agency Law, 2 Pa. C.S. Chapter 5A, to the Environmental Hearing Board, Second Floor, Rachel Carson State Office Building, 400 Market Street, P.O. Box 8457, Harrisburg, PA 17105-8457, 717-787-3483. TDD users may contact the Board through the Pennsylvania Relay Service, 800-654-5984. Appeals must be filed with the Environmental Hearing Board within 30 days of receipt of written notice of this action unless the appropriate statute provides a different time period. Copies of the appeal form and the Board's rules of practice and procedure may be obtained from the Board. The appeal form and the Board's rules of practice and procedure are also available in Braille or on audiotape from the Secretary to the Board at 717-787-3483. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

If you have any questions concerning the enclosed permit and/or the requirements set forth by the Pennsylvania Solid Waste Management Act, please call me at the above number.

Sincerely,

Francis P. Fair  
Program Manager  
Waste Management Program

Enclosure

cc: New Morgan Borough  
Berks County Planning Commission

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
WASTE MANAGEMENT PROGRAM  
SOUTHCENTRAL REGION

FORM NO. 13-A

MODIFICATION TO SOLID WASTE DISPOSAL AND/OR PROCESSING PERMIT

Under the provisions of Act 97, the Solid Waste Management Act of July 7, 1980, as amended, Solid Waste Permit Number 101509, issued on June 24, 1994 to:

New Morgan Landfill Company, Inc.  
(Conestoga Landfill)  
P.O. Box 128  
Morgantown, PA 19543-0128

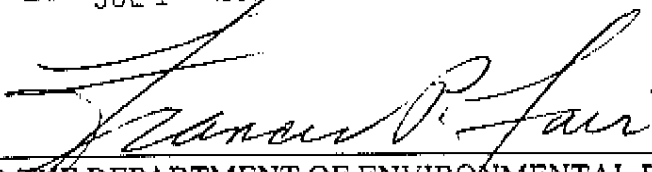
New Morgan Borough, Berks County

is hereby modified as follows:

This permit modification is issued approving minor changes to Conestoga Landfill's approved Form R. This approval is issued based on the following submissions:

1. Minor Permit Modification "Form R" Waste Analysis and Classification Plan, submitted under BFI cover letter, received March 17, 1997, consisting of the following:
  - Form A, Application for Municipal Waste Permit
  - Form B, Professional Certification
  - Form C-1, Compliance History Certification
  - Technical information supporting application
2. Additional information submitted under BFI cover letter, received May 28, 1997.

This modification shall be attached to the existing Solid Waste Permit described above and shall become a part thereof effective on JUL 15 1997

  
\_\_\_\_\_  
FOR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

*Minor Mod.*

New Morgan Landfill Company, Inc.  
Conestoga Landfill  
New Morgan Borough, Berks County  
Permit No. 101509  
Page 2

PERMIT CONDITIONS:

1. Nothing herein shall be construed to supersede, amend or authorize violation of the provisions of any valid and applicable local law ordinance, or regulation, provided that said local law, ordinance or regulation is not preempted by the Pennsylvania Solid Waste Management Act, the Act of July 7, 1980, Act 97, 35 P.S. 6018.101, et seq.



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES

One Ararat Boulevard  
Harrisburg, PA 17110

MAR 15 1994

(717) 657-4592

Southcentral Regional Office

Ms. Lyn O'Hare  
BFI - Conestoga Landfill  
New Morgan Landfill Company, Inc.  
P.O. Box 128  
Morgantown, PA 19543

Re: Major Permit Modification  
Form R - (Waste Analysis and  
Classification Plan)  
Permit No. 101509  
New Morgan Borough, Berks County

Dear Ms. O'Hare:

I am pleased to enclose a Permit Modification approving a Form R submission for New Morgan Landfill Company, Inc. received September 29, 1993. It is issued in accordance with the Pennsylvania Solid Waste Management Act, Act 97.

Compliance with the limitations and stipulations that have been set forth on your permit is mandatory. You have the right to appeal any limitation or stipulation as stated on your permit.

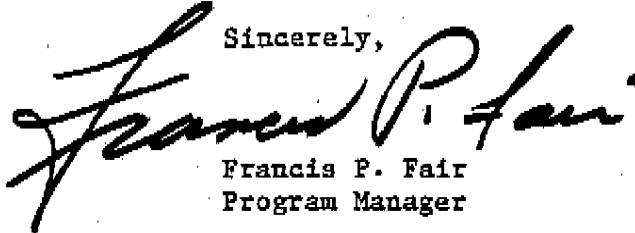
Any person aggrieved by this action may appeal, pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. Section 7514, and the Administrative Agency Law, 2 Pa. C.S. Chapter 5A, to the Environmental Hearing Board, Second Floor, Market Street State Office Building, 400 Market Street, P.O. Box 8457, Harrisburg, PA 17105-8457, (717) 787-3483. TDD users may contact the Board through the Pennsylvania Relay Service, (800) 654-5984. Appeals must be filed with the Environmental Hearing Board within 30 days of receipt of written notice of this action unless the appropriate statute provides a different time period. Copies of the appeal form and the Board's rules of practice and procedure may be obtained from the Board. The appeal form and the Board's rules of practice and procedure are also available in braille or on audiotape from the Secretary to the Board at (717) 787-3483. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

Ms. Lyn O'Hare

- 2 -

If you have any questions concerning the enclosed permit and/or the requirements set forth by the Pennsylvania Solid Waste Management Act, please call me at the above number.

Sincerely,

A handwritten signature in black ink that reads "Francis P. Fair". The signature is written in a cursive style with a large initial 'F'.

Francis P. Fair  
Program Manager

Enclosure

cc: New Morgan Borough Council  
Berks County Planning Commission



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
WASTE MANAGEMENT PROGRAM  
SOUTHCENTRAL REGION

FORM NO. 13-A

MODIFICATION TO SOLID WASTE DISPOSAL AND/OR PROCESSING PERMIT

Under the provisions of Act 97, the Solid Waste Management Act of July 7, 1980, Solid Waste Permit Number 101509 issued on June 24, 1992 to

New Morgan Landfill Company, Inc.  
P.O. Box 128  
Morgantown, PA 19543

is hereby modified as follows.

New Morgan Landfill Company, Inc. - Conestoga Landfill is hereby authorized to accept for disposal Residual, Municipal Waste-Like Residual, and Special Handling Wastes having characteristics substantially similar to those detailed in the Form R, Waste Analysis and Classification Plan received September 29, 1993 by the Department. This authorization is given subject to the following conditions:

1. Nothing herein shall be construed to supercede, amend, or authorize violation of the provisions of any valid and applicable local law, ordinance or regulation; provided that said local law, ordinance or regulation is not preempted by the Pennsylvania Solid Waste Management Act, the Act of July 7, 1980, Act 97, 35 P.S. §6018.101, et seq.
2. Compliance with this "Plan" in its entirety is a necessary condition for waste acceptance and disposal. Waste acceptance and disposal shall be conducted pursuant to policies and procedures set forth in Conestoga Landfill's Form R Plan including changes and revisions agreed to as of February 17, 1994. Technical approval of this "Plan" was granted in a letter dated February 17, 1994 from the Waste Management Program, Southcentral Regional Office to New Morgan Landfill Company, Inc. - Conestoga Landfill.

This modification shall be attached to the existing Solid Waste Permit described above and shall become a part thereof effective on (date) MAR 15 1994

  
\_\_\_\_\_  
FOR THE DEPARTMENT OF ENVIRONMENTAL RESOURCES

Page 1 of 4

New Morgan Landfill Company, Inc.

Permit No. 101509

Page 2

3. New Morgan Landfill Company, Inc. is authorized to accept and dispose of residual and special handling wastes associated with the following general categories:

<u>Residual Waste Code</u>	<u>Waste Category</u>
000	Combustion Residues
100	Metallurgical Process Residues
200	Sludges, Scales
300	Chemical Wastes
400	Generic Wastes
500	Special Handling Residues
600	Demolition Type Wastes
700	Industrial Equipment, Scrap
800	Non-Coal Mining Wastes
900	Other Specific Wastes (evaluation on a case-by-case basis)
Form S	Municipal Waste-Like Residual Wastes (see Form S and attachment)

4. New Morgan Landfill Company, Inc. may not accept Residual or Special Handling wastes whose chemical constituents are not consistent with the categories identified in the Plan's Tables 1, 3, and 4, waste classification and analytical requirements section. Residual or Special Handling wastes that do not fall within the classification of these categories or fall outside the scope of the Plan's analytical requirements cannot be accepted unless a major modification of this plan is approved by the Department.
5. New Morgan Landfill Company, Inc. shall submit a complete and accurate application to the Department requesting disposal of Residual and Special Handling wastes on appropriate Department forms - per each wastestream and per each generator of waste proposed for disposal. A complete application shall contain all information mandated by 25 Pa. Code Subsection 271.611 and 271.612.

Applications shall be sent to the Department's Southcentral Regional Office by certified mail or hand delivered. Acceptance of the waste may begin upon receiving written approval from the Department or after fifteen (15) business working days (hereinafter "waiting period") from the date the application was received by the Department. New Morgan Landfill Company, Inc. is authorized to accept a waste for disposal AFTER the 15-day "waiting period" if it does not hear from the Department WITHIN the 15-day "waiting period" regarding rejection or approval of a waste disposal submittal. However, the Department reserves the right to a final action and ruling regardless of whether or not it initially comments on a waste disposal submittal. If at any time after the 15-day waiting period it is determined that waste accepted is not consistent with the waste analysis and

New Morgan Landfill Company, Inc.  
Permit No. 101509  
Page 3

- classification plan or the design of the landfill site, the permittee shall be subject to any and all applicable enforcement actions stipulated by the Solid Waste Management Act and the Department's rules and regulations promulgated thereunder.
6. Municipal waste-like residual wastes that fall outside the scope of approved Form S general waste categories in Permit Condition 3 (including attached Form S list) cannot be accepted for processing and disposal. Acceptance of a new type of municipal waste-like residual waste at BFI - Conestoga Landfill requires the submittal of a new completed Form S to the Department for a review as a major permit modification including a \$600.00 application fee for municipal waste facilities.
  7. Acceptance of municipal special handling waste for disposal shall be subject to and governed by county flow control plans. Nothing contained within this permit or the approved Waste Analysis and Classification Plan shall supersede or alter county flow control plans or Act 101.
  8. Special Handling wastes are subject to any and all regulations promulgated under Subchapters D and E of Municipal Waste Regulations Chapter 273. Special Handling wastes shall additionally be subject to policies and procedures detailed in current and future official guidance documents concerning Special Handling wastes.
  9. An amended appendix to this permit shall be submitted to the Department on a quarterly basis which lists all residual and special handling wastes currently approved for disposal at Conestoga Landfill. The amended appendix shall provide information on the name of each generator, waste type, quantity, and date the waste was first accepted for disposal. The appendix shall also list the aforesaid information for small quantity wastestreams from large quantity generators.
  10. Small quantity waste generators as defined per Subsection 287.55 shall supply certification and/or documentation to the disposal facility on an annual basis that demonstrates their residual wastes comply with Subsection 287.132 and are consequently non-hazardous. These records shall be maintained at the disposal facility for inspection by representatives of the Department. Additionally, the information requested in Permit Condition No. 9 shall be collected from small quantity residual waste generators and maintained at the facility for inspection.
  11. The Department may require additional tests of certain types of residual, municipal waste-like residual, and special handling wastes in order to prevent potential harm or threat of harm to the health, safety, or welfare of the community or environment.

New Morgan Landfill Company, Inc.

Permit No. 10159

Page 4

12. Combined loads of residual, municipal waste-like residual, or wastes from small quantity generators can be received at Conestoga Landfill provided generator logs are maintained and that acceptance does not violate the generating county plan or any regulations adopted by the respective county.
13. All Residual, Municipal Waste-Like Residual, and Special Handling wastes accepted for disposal at Conestoga Landfill are subject to the fees required by the Municipal Waste Planning, Recycling and Waste Reduction Act (101).
14. Hazardous waste as defined under 25 Pa. Code 261 may not be accepted at the facility for disposal. Any residual waste generator whose analysis reaches 85% of the hazardous waste limit shall provide additional analysis, documentation, etc. to justify the waste is below hazardous waste limits.
15. New Morgan Landfill Company, Inc. shall notify the Department at the earliest possible time of any rejected waste loads. This notification shall include names of responsible persons or municipalities, and if possible, the method by which an alternative processing or disposal facility will be selected. Information regarding rejected loads shall be incorporated into the quarterly report detailed in Permit Condition No. 9.
16. The host county and municipality shall receive copies of the forms described in Permit Condition #5 and #6 concurrent with the submission to the Department unless an alternative notification timetable is approved by the county and municipality.
17. The annual landfill operation's report must include documentation that the analysis or certification required under Section 287.54 (Form 26R) for chemical analysis of waste is on file for each waste-stream from each large quantity generator. (Small quantity generators must provide at a minimum documentation that their wastes are characteristically non-hazardous.) If the Form 26R is not supplied by the generator on an annual basis to New Morgan Landfill Company, Inc., approval for acceptance of the waste for disposal will be suspended until the Form 26R is supplied.  
  
The Form 26R is to be kept on file for each residual waste generator at the landfill site.
18. This modification does not supersede the average and maximum daily waste acceptance volumes of the original permit issued June 24, 1992. Fluctuations in residual waste acceptance volumes must not exceed these limitations.
19. Sewage sludge accepted for disposal must be stabilized and pass the Paint Filter Liquids Test - SW846 Method 9095.
20. Asbestos waste may be accepted at Conestoga Landfill upon 24-hour advanced notification. The Department must be notified within five (5) days that the disposal occurred via a letter.

REQUEST FOR APPROVAL TO PROCESS/DISPOSE OF MUNICIPAL WASTE-LIKE RESIDUAL WASTE

Adhesive Waste-Water Soluble  
Asphalt (non-liquid) Solidified  
Ceramic Insulation Waste, Non-PCB Containing  
Electric Component Waste, Non-PCB containing  
(off-spec semiconductors, circuit boards, light ballasts, capacitors)  
Fiberboard Fabrication Dust  
Foam Type Wastes (Rigid Plastic Foam, Expanded Polystyrene Foam, Polyurethane,  
etc.)  
Fresh Air Intake Filters  
Furnace Insulation/Refractory Brick  
Gaskets  
Glass  
Incandescent Light Tubes/Bulbs (non-manufacturing)  
Lineoleum-like Waste  
Manufactured Building (prefabricated) Debris  
Markers and Paint Sticks  
Nylon Materials  
Obsolete Piping (PVC, Clay, Ductile, HDPE, Ceramic, Metal, ABS, etc.)  
Off-spec Cured Resins  
Paint Residue (Solidified) - Latex - < 5 gallon size  
Personal Protective Equipment (non-hazardous and non-medical tyvek suits,  
gloves, etc.)  
Photographic Waste (film, photopaper, negatives, outdated film)  
Rags, non-hazardous  
Respirator Cartridges  
Screen Waste (Plastic Vinyl, Metal)  
Soap Detergent Residue (non-liquid)  
Spill Materials from Foods  
Teflon Materials  
Tires  
Wire and Wire Scraps (Conduit, Electrical Insulation)

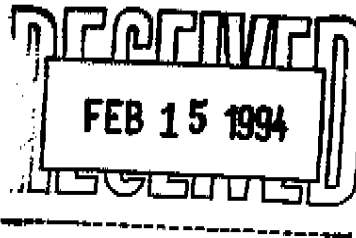
Revised 2/9/94



COMMONWEALTH OF PENNSYLVANIA  
 DEPARTMENT OF ENVIRONMENTAL RESOURCES  
 Harrisburg, PA 17110  
 February 8, 1994

Southcentral Regional Office

Lyn O'Hare  
 Compliance Manager  
 BFI - Conestoga Landfill  
 P.O. Box 128  
 Morgantown, PA 19543  
 Fax: (215) 524-9704



(717) 657-4588

Re: Additional Form S Waste  
 Type List Submittal Reply:  
 Comments and Edited List

Dear Lyn,

I have reviewed the applicable Form S waste type list that you faxed to me on January 19, 1994. I have reedited this list to include only those (approved) applicable Form S waste types that fall under the "\* Other" category. Waste types already covered under the Form S categories (e.g. carpet scraps, etc.) have been excluded, as well as those wastes that I have deemed to be "Residual" - Form U in nature. Consequently, the following list is provided to allow for the disposal of "Other" Form S waste types at BFI - Conestoga Landfill, not covered under the Form S categories:

- Adhesive (Waste-Water Soluble)
- Asphalt (non-liquid) Solidified
- Ceramic Insulation Waste, Non-PCB Containing
- Electric Component Waste, Non-PCB Containing (off-spec semiconductors, circuit boards, light ballasts, capacitors)
- Fiberboard Fabrication Dust
- Foam Type Wastes (Rigid Plastic Foam, Expanded Polystyrene Foam, Polyurethane, etc.)
- Fresh Air Intake Filters
- Gaskets
- Glass
- Incandescent Light Tubes/Bulbs (non-manufacturing)
- Linoleum-Like Waste
- Manufactured Building (prefabricated) Debris
- Markers and Paint Sticks
- Nylon Materials
- Obsolete Piping (PVC, Clay, Ductile, HDPE, Ceramic, Metal, ABS, etc.)
- Off-spec Cured Resins
- Paint Residue (Solidified) - Latex <5 gallon size)
- Personal Protective Equipment (non-hazardous and non-medical tyvek

suits, gloves, boots, etc.)  
Photographic Waste (film, photopaper, negatives, outdated film)  
Rags, Non-hazardous  
Respirator Cartridges  
Screen Waste (Plastic, Vinyl, Metal)  
Soap Detergent Residue (non-liquid)  
Spill Materials from Foods  
Teflon Materials  
Tires  
Wire and Wire Scraps (Conduit, Electrical Insulation)

ADD: Furnace Insulation/Refractory Brick

Leave Off Because Must Be Approved on Case-By-Case Basis:

Off-Spec Commercial Products in Original Containers  
Over-the-Counter Products (non-prescription pharmaceutical, food,  
cleaning products)  
Batteries, Dry-Type  
Detergents and Cleaning Agents (non-liquid)  
Powder Coatings  
Raw Materials in Original Containers  
Unusable, Outdated, or Off-Spec Commercial Products

If you have any questions or comments, please call or fax me at  
657-4446.

Sincerely,

  
John Spang  
Waste Management



Pennsylvania Department of Environmental Protection

909 Elmerton Avenue  
Harrisburg, PA 17110-8200

DEC 14 2007

717-705-4706  
FAX - 717-705-4930

Southcentral Regional Office

**CERTIFIED MAIL NO. 7007 0220 0002 6273 8219**

Mr. Matthew Kingsley, General Manager  
New Morgan Landfill Company, Inc.  
420 Quarry Road  
Morgantown, PA 19543-0128

Re: Disposal Area 1 Expansion  
Conestoga Landfill  
Permit No. 101509  
APS ID No. 473513  
New Morgan Borough, Berks County

Dear Mr. Kingsley:

Enclosed is a major permit modification to Solid Waste Permit No. 101509 for the operation of the Conestoga Landfill, issued in accordance with Article V of the Solid Waste Management Act, 35 P.S. Sections 6018.101, et seq.

This modification is issued approving Cells 15, 16, 17, 18, 19, 20, 21, 22, and 23 as shown on Drawing BFI-345E078(HA), Sheet 15HA of 26 dated July 17, 2002 (no revision date listed). This constitutes a volume of approximately 11,902,064 cubic yards and approximately 10,557,131 tons using a density of 1,774 pounds of waste per cubic yard of gross air space. At an average of 5,210 tons per day for 312 days a year (1,625,520 tons per year), the facility would have a minimum site life of approximately 6.5 years. Reference October 2007 submission *FOLLOW-UP RESPONSE II TO TECHNICAL REVIEW LETTER OF APRIL 9, 2007* Form 1 facility plan section 1.d *Expected Lift of Facility and Size*.

Compliance with the terms and conditions set forth in the permit is mandatory. You have the right to file an appeal as to these terms and conditions.

Any person aggrieved by this action may appeal, pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. Section 7514, and the Administrative Agency Law, 2 Pa. C.S. Chapter 5A, to the Environmental Hearing Board, Second Floor, Rachel Carson State Office Building, 400 Market Street, PO Box 8457, Harrisburg, PA 17105-8457, 717-787-3483. TDD users may contact the Board through the Pennsylvania Relay Service, 800-654-5984. Appeals must be filed with the Environmental Hearing Board within 30 days of receipt of written notice of this action unless the appropriate statute provides a different time period. Copies of the appeal form and the Board's rules of practice and procedure may be obtained from the Board. The appeal form and the Board's rules of practice and procedure are also available in braille or on audiotape from the Secretary to the Board at 717-787-3483. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.



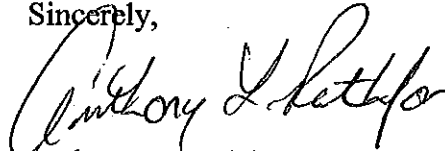
DEC 14 2007

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST REACH THE BOARD WITHIN 30 DAYS. YOU DO NOT NEED A LAWYER TO FILE AN APPEAL WITH THE BOARD.

IMPORTANT LEGAL RIGHTS ARE AT STAKE, HOWEVER, SO YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD (717-787-3483) FOR MORE INFORMATION.

If you have any questions about the enclosed permit or requirements of the Solid Waste Management Act, please call Mr. David Richard at 717-705-4908.

Sincerely,



Anthony L. Rathfon  
Program Manager  
Waste Management Program

Enclosure(s)

cc: New Morgan Borough  
Berks County Planning Commission

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
WASTE MANAGEMENT PROGRAM  
SOUTHCENTRAL REGION

FORM NO. 13-A

MODIFICATION TO SOLID WASTE DISPOSAL AND/OR PROCESSING PERMIT

Under the provisions of Act 97, the Solid Waste Management Act of July 7, 1980, as amended, Solid Waste Permit Number 101509, issued on June 24, 1992 to:

New Morgan Landfill Company, Inc.  
(Conestoga Landfill)  
PO Box 128  
Morgantown, PA 19543-0128

New Morgan Borough, Berks County

is hereby modified as follows:

- This permit modification is issued based upon the following submissions:
  1. Phases I and II Solid Waste Permit Application, prepared by Blazosky Associates, Inc., dated July 2002, consisting of the following:

**Volume 1 of 6**

- General Information Form
- Form A, Application for Municipal Waste Permit
- Proof of Public Notification
- Form B, Professional Certification
- Form B-1, Application for Certification
- Form C-1, Compliance History Certification
- Form D, Environmental Assessment Process for Municipal Waste Mgmt. Facilities
- Supporting Form D Information

This modification shall be attached to the existing Solid Waste Permit described above and shall become a part thereof effective on December 14, 2007.

  
\_\_\_\_\_  
FOR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEC 14 2007

**Volume 2**

- Form E, Contractual Consent of Landowner
- Form F, Soils Information – Phase I
- Form 1, Facility Plan
- Form 2, Map Requirements
- Form 6, Geologic Information Phase II
- Form 7, Hydrogeologic information Phase I

**Volume 3**

- Form 8, Municipal Waste Landfill Initial Groundwater Background Analysis – Phase I
- Form 11, Mineral Deposit Information
- Form 12, Alternative water supply Phase I
- Form 46, Relationship between Municipal Waste Management Plans and Permits

**Volume 4**

- Form 3, Map requirements – Phase II
- Form 14, Operation Plan – Phase II
- Form 18, Water Quality Monitoring system Phase II
- Form 24, Liner System – Phase II
- Form 25, Leachate Management – Phase II
- Form 28, Closure

**Volume 5**

- Form 45, Protection of Capacity
- Form 54, Background Meteorological Monitoring
- Form G (A), Air Resources Protection Dust Emissions Estimate and Control Plan
- Form G (B), Air Resources Protection NMOC Estimate and Control Plan
- Form H, Revegetation
- Form I, Soil Erosion and Sedimentation Controls
- Form J, Soils Information - Phase II
- Form K, Gas Management

**Volume 6**

- Form L, Contingency Plan for Emergency procedures
- Form Q, Request for Equivalency Review
- Form R, Waste Analysis and Classification Plan
- Form X, Radiation Protection Plan

- Drawings (Phase I):

- Drawing No. 1, Subsurface Investigation Map
- Drawing No. 1A, Subsurface Investigation Map – Match Sheet 1
- Drawing No. 1B, Subsurface Investigation Map – Match Sheet 2
- Drawing No. 1C, Subsurface Investigation Map – Match Sheet 3
- Drawing No. 2A, Property Map – Match Sheet 1
- Drawing No. 2B, Property Map – Match Sheet 2
- Drawing No. 2C, Property Map – Match Sheet 3
- Drawing No. 3A, ¼ - ½ Mile Radius Map – Match Sheet 1
- Drawing No. 3B, ¼ - ½ Mile Radius Map – Match Sheet 2
- Drawing No. 3C, ¼ - ½ Mile Radius Map – Match Sheet 3
- Drawing No. 3D, ¼ - ½ Mile Radius Map – Match Sheet 4
- Drawing No. 3E, ¼ - ½ Mile Radius Map – Match Sheet 5
- Drawing No. 3F, ¼ - ½ Mile Radius Map – Match Sheet 6
- Drawing No. 4, 3 Mile Radius Map
- Drawing No. 5, Geologic Map
- Drawing No. 6A, Geologic Cross Sections A-A'
- Drawing No. 6B, Geologic Cross Sections B-B'
- Drawing No. 6C, Geologic Cross Sections C-C'
- Drawing No. 7, Composite High Piezometric Surface Contour Map
- Drawing No. 8A, Soils Map – Match Sheet 1
- Drawing No. 8B, Soils Map – Match Sheet 2
- Drawing No. 9A, Wetlands Map – Match Sheet 1
- Drawing No. 9B, Wetlands Map – Match Sheet 2
- Drawing No. 10, Mine Subsidence Monitoring Network
- Drawing No. 11, Environmental Monitoring Plan

- Drawings (Phase II):

- Drawing No. 12, Subgrade Plan
- Drawing No. 13, Secondary Geomembrane & Leachate Detection Piping Plan
- Drawing No. 14, Primary Geomembrane & Leachate Collection Piping Plan
- Drawing No. 15A, Cell Development Plan – Phase 1
- Drawing No. 15B, Cell Development Plan – Phase 2
- Drawing No. 15C, Cell Development Plan – Phase 3
- Drawing No. 15D, Cell Development Plan – Phase 4
- Drawing No. 15E, Cell Development Plan – Phase 5
- Drawing No. 15F, Cell Development Plan – Phase 6
- Drawing No. 15G, Cell Development Plan – Phase 7
- Drawing No. 15H, Cell Development Plan – Phase 8
- Drawing No. 15I, Cell Development Plan – Phase 9
- Drawing No. 15J, Cell Development Plan – Phase 10
- Drawing No. 15K, Cell Development Plan – Phase 11
- Drawing No. 16, Final Grade Plan

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Drawing No. 17A, Disposal Area Cross Sections  
Drawing No. 17B, Disposal Area Cross Sections  
Drawing No. 17C, Disposal Area Cross Sections  
Drawing No. 18A, Liner & Cap System – Details and Specifications  
Drawing No. 18B, liner & Cap System – Perimeter Berm Details  
Drawing No. 19A, Leachate Management System – Sump and Riser Pipe Details  
Drawing No. 19B, Leachate Management System – Cleanout and Pipe Details  
Drawing No. 20, Miscellaneous Details  
Drawing No. 21, Borrow Area Plan  
Drawing No. 22, Erosion & Sedimentation Controls – Sedimentation Basin Plans  
Drawing No. 22A, Erosion & Sedimentation Controls - Sedimentation Basin Schedules & Details  
Drawing No. 23, Erosion & Sedimentation Controls – Watershed Plan  
Drawing No. 23A, Erosion & Sedimentation Controls – Channel Details  
Drawing No. 23B, Erosion & Sedimentation Controls – Culvert Details  
Drawing No. 23C, Erosion & Sedimentation Controls – Landfill Terrace Details  
Drawing No. 23D, Erosion & Sedimentation Controls – Landfill letdown Details  
Drawing No. 23E, Erosion & Sedimentation Controls – Miscellaneous Temporary Structure Details  
Drawing No. Erosion & Sedimentation Control Plan - 24, Landfill Administration Area  
Drawing No. 24A, Leachate Storage Tanks Details & Sections  
Drawing No. 25, Traffic Pattern Plan  
Drawing No. 26, Landfill Gas Management plan  
Drawing No. 26A, landfill Gas Management Details  
Drawing No. 26B, Landfill gas Management Flare Details

**Additional Phase II Drawings submitted and/or revised October 2007:**

Drawing No. 15HA, Cell Development Plan - Phase 8 Final Grades  
Drawing No. LPD-ES-1, Erosion & Sedimentation Control Plan – Existing Conditions/  
Proposed Cell Layout  
Drawing No. LPD-ES-2, Erosion & Sedimentation Control Plan -  
Drawing No. LPD-ES-3, Erosion & Sedimentation Control Plan -  
Drawing No. LPD-ES-4, Erosion & Sedimentation Control Plan -  
Drawing No. LPD-ES-5, Erosion & Sedimentation Control Plan -  
Drawing No. LPD-ES-6, Erosion & Sedimentation Control Plan -  
Drawing No. LPD-ES-7, Erosion & Sedimentation Control Plan -  
Drawing No. LPD-ES-8, Erosion & Sedimentation Control Plan -  
Drawing No. LPD-ES-9, Erosion & Sedimentation Control Plan -  
Drawing No. LPD-ES-10, Erosion & Sedimentation Control Plan -  
Drawing No. LPD-ES-11, Erosion & Sedimentation Control Plan -  
Drawing No. LPD-ES-12, Erosion & Sedimentation Control Plan -  
Drawing No. LPD-ES-13, Erosion & Sedimentation Control Plan -  
Drawing No. LPD-ES-14, Erosion & Sedimentation Control Plan -  
Drawing No. LPD-ES-14A, Erosion & Sedimentation Control Plan -

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2. Proof of public notification, submitted by Blazosky Associates, Inc., received August 26, 2002.
3. Proof of advertising in the Reading Eagle, submitted by Blazosky Associates, Inc., received September 23, 2002.
4. January 6, 2003 memo from Blazosky Associates, Inc. to Mr. Don Korzeniewski of DEP revising pages D-32 and D-33 of Form D, received January 7, 2003.
5. Phases I and II Bog Turtle Surveys, prepared by Normandean Associates, received April 4, 2003.
6. Supplement to Form D, Section J, Zoning and Land Use, prepared by Blazosky Associates, Inc., received July 18, 2003.
7. Response to the Department's April 25, 2003 Environmental Assessment Review letter, prepared by Blazosky Associates, Inc., received August 20, 2003.
8. August 4, 2004 letter from Conestoga Landfill limiting the acceptance of sewage sludge to no more than one percent of their average daily volume, received August 11, 2004.
9. Updated harms/benefits analysis, submitted by Blazosky Associates, Inc., received October 18, 2004.
10. Proof of advertising in the Reading Eagle of the revised application lowering the average daily volume, submitted by Blazosky Associates, Inc., received April 22, 2005.
11. GIS Analysis of Land Use on the Rural-Urban Fringe: The Impact of Land Use and potential local Disamenities on residential Property Values and on the location of residential Development in Berks county, Pennsylvania, Prepared by Stephen F. Thode, submitted under Blazosky Associates, Inc., cover, received September 8, 2005..
12. January 17, 2006 letter from Mr. Stephen M. Nolan of ReedSmith responding to the Department's December 30, 2005 letter concerning the Pennsylvania Supreme Court's October 27, 2007 ruling.
13. Response to the Department's December 15, 2005 second Environmental Assessment Review letter, submitted under Conestoga Landfill cover, received February 7, 2006.
14. April 17, 2006 letter from Mr. Stephen M. Nolan of ReedSmith clarifying benefits.
15. April 17, 2006 letter from Conestoga Landfill requesting the Landfill-Gas-To-Energy project be considered a benefit, received April 19, 2006.

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16. Response to the Department's October 31, 2006 field visit. This document is called Proposed Expansion Area 1 Head of Hollow Investigation, prepared by Taylor Geo Services, Inc. dated March 2007.
17. Response to the Department's April 9, 2007 technical review letter, prepared by Blazosky Associates, Inc., received May 1, 2007.
18. Follow-up response to the Department's April 9, 2007 technical review letter, prepared by Blazosky Associates, Inc., received July 19, 2007.
19. Post Construction Stormwater Management Infiltration Plan, prepared by Blazosky Associates, Inc., received August 10, 2007.
20. Additional follow-up response to the Department's April 9, 2007 technical review letter, prepared by Blazosky Associates, Inc., received October 15, 2007.
21. Updated C-1, Compliance History Certification, received October 26, 2007.
22. Revised bonding calculations/Berks County Agreement, prepared by Blazosky Associates, Inc., received October 31, 2007.

PERMIT CONDITIONS:

1. The Major Permit Modification for Allied Waste, New Morgan Landfill Company, Inc. Area I Expansion is approved for Cells 15, 16, 17, 18, 19, 20, 21, 22, and 23 as shown on Drawing BFI-345E078(HA), Sheet 15HA of 26 dated July 17, 2002. Cells 24, 25, and 26 as shown on Drawing BFI-345E046R1, Sheet 16 of 26 dated July 17, 2002 are hereby denied in accordance to exclusionary criteria found in 25 Pa. Code Section 273.202(6).
2. Conestoga Landfill has proposed mitigation of harms and has identified benefits of the project to the public as indicated in the application submissions included as part of this permit modification. Based upon the Department's evaluation of the environmental assessment, of which the harms/benefits analysis is part, it has been determined that the benefits of the project clearly outweigh the known and potential harms as required by Chapter 271.127(c) of the Municipal Waste Regulations. Failure to complete mitigation measures or failure to provide for all the benefits described in the permit modification submissions on which the Department based its analysis may result in suspension or revocation of the permit. The Department may also take additional appropriate enforcement actions.
3. A report must be included with the annual report due by June 30, 2008 describing all mitigation measures initiated and/or completed, and all benefits provided to date. Thereafter, a report must be included with each subsequent annual report.

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**Permit Conditions 4 - 9 are for the Expansion Area I minus the last three Cells 24, 25, and 26:**

4. Weekly flow rates and turbidity shall be recorded for Springs 1 thru 4 until eight years after landfill closure.
5. Annual macroinvertebrate surveys shall be conducted on all streams and drainage ways associated with the project until eight years after landfill closure. The survey results shall be submitted with the Annual Operations Report. The surveys shall be coordinated with a Department aquatic biologist. Within 60 days of permit issuance, the applicant shall provide a description of all surface waters associated with this project. Each description shall include a POFU determination, consistent with the Department's Bureau of Mining and Reclamation Technical Guidance Document No. 563-2000-655 Surface Water Protection - Underground Bituminous Coal Mining Operations, Appendix A Stream Survey Protocol for Delineating Protected Stream Segments.
6. Background tritium sampling shall be conducted on the Expansion Area I groundwater monitoring wells in the following manner:
  - Quarterly after installation of each phase for one year
  - During the annual sampling event after the one year background sampling at any groundwater monitoring well where tritium was detected at or above 20,000 picocuries.
  - The tritium results shall be submitted with the groundwater data and in the same format.
7. Groundwater monitoring results shall be submitted as electronic media containing the electronic version of the appropriate Departmental groundwater monitoring report forms (Forms 19, 50, and 52) in lieu of a paper copy. The submission should also contain the groundwater data in a format acceptable to the Department, currently a 21 column, spreadsheet-type file. The media should be attached to a signed cover letter indicating that it represents an official submission of groundwater monitoring data to the Department. Data evaluation reports may be submitted in paper form or electronic versions. Laboratory analytical data may also be submitted with this data package or stored at the facility readily available to the Department upon request.
8. All well drilling and abandonment should be consistent with Act 610 Water Well Drillers License Act and the Pennsylvania Groundwater Monitoring Guidance Manual, and should be proposed to the Department for approval. Specifically:
  - When a well is to be abandoned, at least ten days before the well is sealed or filled, a Notice of Intent to Abandon shall be sent to the Water Well Licensing Service, Pennsylvania Geological Survey.
  - A Water Well Abandonment Form must be submitted upon completion of a well abandonment.
  - When a well is drilled, a copy of the Water Well Completion Report should be submitted.



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- Well abandonment and well completion forms should be sent to both the Department and to the Water Well Drillers Licensing Service, Pennsylvania Geological Survey.
9. Form 37 Certification of Facility Construction Activity, completed and sealed by a Pennsylvania-licensed professional geologist, shall be submitted to the Department within 30 days of completion of well drilling or abandonment. For Form 18 monitoring points, the Department must receive and approve a Form 37 before the monitoring points can be put into service.
  10. A record of the readings of the pressure transducers installed at the leachate collection and detection pumps must be kept and presented to the Department at regular inspection and upon demand. At no time shall the depth of the leachate above the primary liner exceed one foot. If the level of leachate above the primary liner should exceed one foot, the Department must be notified as soon as practical and steps taken immediately to reduce the volume of leachate on the primary liner.
  11. The bond for the site in the amount of \$50,340,603 is approved. The bond on record with the Department may be applied towards this amount. No waste may be disposed of in new cells under this permit until an additional bond is submitted to and executed by the Department
  12. Form 37, Certification of Facility Construction Activity, is to be submitted to the Southcentral Regional Office after each cell has been constructed with the approved design plans.
  13. The permittee shall not violate, or cause or assist in the violation of any provision of the Municipal Waste Planning, Recycling, and Waste Reduction Act, 53 P.S. Section 4000.101 et seq., or the terms or conditions of any Municipal Waste Management Plan approved by the Department under that Act.

The permittee shall not act in a manner contrary to any Municipal Waste Management Plan approval by the Department pursuant to the Municipal Waste Planning, Recycling, and Waste Reduction Act, nor shall the permittee fail to act in a manner that is consistent with any Municipal Waste Plan approved by the Department pursuant to that Act.

The permittee shall not allow solid waste generated outside the host county of the permitted facility to be received, disposed, or otherwise managed at the facility if the transportation to, or management at the facility would violate applicable laws in effect in the county or state in which the waste was generated, or state or local solid waste management plan in effect where the waste was generated.

14. Nothing herein shall be construed to supersede, amend or authorize violation of the provisions of any valid and applicable local law, ordinance, or regulation, provided that said local law, ordinance or regulation is not preempted by the Pennsylvania Solid Waste Management Act, the Act of July 7, 1980, Act 97, 35 P.S. 6018.101, et seq.

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
BUREAU OF WASTE MANAGEMENT

Permit  
For  
Solid Waste Disposal and/or Processing Facility  
FORM NO. 8

Permit No. 101509  
Date Issued June 24, 1992  
Date Expired June 24, 2002

Under the provisions of the Pennsylvania Solid Waste Management Act of July 7, 1980, Act 97, a permit for a solid waste disposal and/or processing at (municipality)

New Morgan Borough in the County of Berks

is granted to (applicant) New Morgan Landfill Company, Inc.

(address) 300 North Pottstown Pike, Suite S

Exton, PA 19341

This permit is applicable to the facility named as \_\_\_\_\_

Morgantown Landfill and described as:


New Morgan Landfill Company, Inc.  
Morgantown Landfill

Latitude - 40°, 10', 41"

Longitude - 75°, 54', 23"

This permit is subject to modification, amendment and supplement by the Department of Environmental Resources and is further subject to revocation or suspension by the Department of Environmental Resources for any violation of the applicable laws or the rules and regulations adopted thereunder, for failure to comply in whole or in part with the conditions of this permit and the provisions set forth in the application no. 101509 which is made a part hereof, or for causing any condition inimical to the public health, safety or welfare.

See attachment for waste limitations and/or special conditions

  
FOR THE DEPARTMENT OF ENVIRONMENTAL RESOURCES

(w/1P1)

THIS PERMIT IS NON-TRANSFERABLE

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COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
BUREAU OF WASTE MANAGEMENT

Permit  
For  
Solid Waste Disposal and/or Processing Facility  
FORM NO. 8

Permit No. 101509  
Date Issued June 24, 1992  
Date Expired June 24, 2002

1. This municipal waste permit is issued based upon application No. 101509 which was received in the Norristown Regional Office of the Department of Environmental Resources on November 24, 1987. This permit is for the construction and operation of the New Morgan Landfill Company, Inc. Morgantown Landfill located in New Morgan Borough, Berks County.

This Waste Management Permit Application was revised in accordance with the new Municipal Waste Management Rules and Regulations on September 23, 1988 and amended on January 17, 1989, August 3, 1991, January 22, 1992 and on May 28, 1992.

This approved application consists of the following documents.

- Form A received September 23, 1988, revised August 3, 1991  
Form B received September 23, 1988, revised August 8, 1991  
Form C received September 23, 1988, revised August 8, 1991  
Form D received September 23, 1988, revised August 8, 1991, and  
January 22, 1992  
Form E received September 23, 1988, revised August 3, 1991  
Form 1 received September 23, 1988, revised August 3, 1991 and on  
January 22, 1992  
Form 2 received September 23, 1988, revised August 8, 1991  
Form 3 received September 23, 1988, revised August 8, 1991  
Form 6 received September 23, 1988, revised August 8, 1991  
Form 7 received September 23, 1988 and revised August 8, 1991  
Form 8 received September 23, 1988 and revised August 8, 1991  
Form 11 received September 23, 1988 and revised August 3, 1991  
Form 12 received September 23, 1988, revised August 8, 1991,  
January 22, 1992, April 27, 1992, and on May 28, 1992  
Form 13 received September 23, 1988 and revised August 8, 1991  
Form 14 received September 23, 1988, revised January 27, 1989,  
August 8, 1991, January 22, 1992 and on May 28, 1992  
Form 15 received September 23, 1988, revised August 8, 1991 and on  
January 22, 1992

THIS PERMIT IS NON-TRANSFERABLE

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
BUREAU OF WASTE MANAGEMENT

Permit  
For  
Solid Waste Disposal and/or Processing Facility  
FORM NO. 8

Permit No. 101509  
Date Issued June 24, 1992  
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Form 16 received September 23, 1988, revised August 8, 1991 and on January 22, 1992  
Form 17 received September 23, 1988, revised on January 27, 1989, August 8, 1991 and on January 22, 1992  
Form 18 received September 23, 1988 and revised August 8, 1991  
Form 19 received September 23, 1988 and revised August 8, 1991  
Form 23 received September 23, 1988, revised on January 27, 1989 and on August 8, 1991  
Form 24 received September 23, 1988, revised on January 27, 1989, August 8, 1991 and on January 22, 1992  
Form 25 received September 23, 1988, revised on January 27, 1989, August 8, 1991 and on January 22, 1992  
Form 26 received September 23, 1988 and revised August 8, 1991  
Form 27 received September 23, 1988, revised August 8, 1991 and on January 22, 1992  
Form 28 received September 23, 1988, revised August 8, 1991 and on January 22, 1992  
Form 38A leachate detection HDPE pipe instead of PVC pipe received August 8, 1991 and revised on January 22, 1992  
Form 38B leachate collection HDPE pipe instead of PVC pipe received August 8, 1991 and revised on January 22, 1992  
Form 38C leachate detection zone aggregate material received August 8, 1991 and revised on January 22, 1992  
Form 38D protective cover gravel material above the primary liner received August 8, 1991 and revised on January 22, 1992  
Form 38E geonet material on the side slopes received August 8, 1991 and revised on January 22, 1992  
Form 38F geonet in the cap drainage layer received August 8, 1991 and revised on January 22, 1992  
Form 45 received August 8, 1991 and revised on January 22, 1992  
Form 46 received August 8, 1991 and revised on January 22, 1992  
Insurance documentation received on August 8, 1991 and revised on January 22, 1992  
Drawing No. 63 of 1 revised on May 28, 1992

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COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
BUREAU OF WASTE MANAGEMENTPermit  
For  
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FORM NO. 8Permit No. 101509  
Date Issued June 24, 1992  
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A set of plans and specifications consisting of the following plan sheet numbers: 1-86, D-1, 3-1, 3-2, 3-5, 3-6, 3-7, 3-10, 3-12, 3-16, 3-17, 3-18, 3-29 and 4-1 received August 3, 1991 and revised on January 22, 1992

Drawing No. 1 of 1 received June 1, 1992

A report on subsidence monitoring received April 7, 1992

Mine subsidence survey maps from 1969 to 1986 received April 7, 1992

Waste analysis plan allowing for the acceptance of the following categories of municipal waste requiring special handling and residual waste received August 3, 1991, revised January 22, 1992 and on May 28, 1992

1. Infectious/chemotherapeutic incinerator ash from infectious/chemotherapeutic incinerators
2. Autoclaved or processed infectious waste from
3. Municipal waste incinerator ash
4. Municipal sewage sludge/grit and screenings
5. Grinding sludge
6. Asbestos containing waste
7. Virgin fuel contaminated soils
8. Refractory waste
9. Flyash/bottom ash
10. Plastic waste
11. Foundry sand
12. Generic plant refuse
13. Empty raw material containers
14. Baghouse dust

This approved application includes a response to the Department's December 2, 1988 review letter received on January 27, 1989, a response to the Department's August 3, 1990 and March 21, 1991 review letters received on August 3, 1991, a response to the Department's December 5, 1991 review letter received January 22, 1992 and additional information received May 28, 1992.

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COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
BUREAU OF WASTE MANAGEMENT

Permit  
For  
Solid Waste Disposal and/or Processing Facility  
FORM NO. 8

Permit No. 101509  
Date Issued June 24, 1992  
Date Expired June 24, 2002

The contents of all the above listed documents are hereby incorporated in the permit as conditions with which the permittee must comply.

2. Nothing in this permit shall be construed to supersede, amend, or authorize violation of, the provisions of any valid and applicable local law, ordinance, or regulation, provided that said local law, ordinance, or regulation is not pre-empted by the Pennsylvania Solid Waste Management Act, the Act of July 7, 1980, Act 97, 35 P.S. 6018.101, et seq., and Act 101 of July 28, 1988 the Municipal Waste Planning, Recycling and Waste Reduction Act.
3. As a condition of this permit, and of the permittee's authority to conduct the activities authorized by this permit, the permittee hereby authorizes and consents to allow authorized employees or agents of the Department, without advanced notice or a search warrant, upon presentation of appropriate credentials, and without delay, to have access to and to inspect all areas on which solid waste management activities are being or will be conducted. The authorization and consent shall include consent to collect samples of waste, soil, wastewater, leachate water or gases, to take photographs, to perform measurements, surveys and other tests, to inspect any monitoring equipment, to inspect the methods of operation, and to inspect and/or copy documents, books or papers required by the Department to be maintained. This permit condition is referenced in accordance with Section 608 and 610 (7) of the Solid Waste Management Act, 35 P.S. Sections 6018.608 and 6018.610 (7). This condition in no way limits any other powers granted under the Solid Waste Management Act.
4. Form 37, certification of facility construction activity, is to be submitted to the Regional Solid Waste Manager in the Department's Regional Office after each pad of the landfill has been constructed in accordance with the approved design plans including the sub-base preparation, preparation of the witness zone, installation of the primary liner, installation of the leachate collection pipes and the preparation of the protection layer for the primary liner prior to the start of landfilling activities for each pad of the landfill site.

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COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
BUREAU OF WASTE MANAGEMENTPermit  
For  
Solid Waste Disposal and/or Processing Facility  
FORM NO. 8Permit No. 101509  
Date Issued June 24, 1992  
Date Expired June 24, 2002

5. A full-time third party quality assurance inspector must actively inspect all construction. If the inspector leaves the premises, the construction must cease. The inspector must be thoroughly familiar with all aspects of the design, and must also have a set of permit documents listed in Condition 1 with him at the permitted site. The inspector must keep a thorough log of all aspects of construction, especially any deviations or problems that occur. The inspector should have a pager, and use of a construction trailer equipped with a telephone capable of recording messages. Any deviation from this condition can only be done with written permission from the Department.
6. During the lining procedure, a calibrated lab quality tensiometer must be at the site and available for use.
7. No lustering of any materials may occur without approval from the Department.
8. The Department must have an adequate opportunity to inspect and approve all construction, especially the subbase, the compacted clay, the geomembrane, etc.
9. The method of measuring the depth of protective cover must be approved by the Department.
10. The Department reserves the right to require (geomembrane) destructive samples beyond what the engineer has specified in the permitted documents.
11. If there is more than one set of standards in the permitted documents for any materials (synthetics and/or natural) used in the construction of the landfill, the most stringent set of criteria must be used for evaluating the materials unless otherwise approved by the Department.

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COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL RESOURCES  
BUREAU OF WASTE MANAGEMENTPermit  
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12. Any final operation, design or other plan developed subsequent to permit issuance which exhibits changes in the structures, locations, specifications, control measures or other changes of substance shall be submitted to the Department for subsequent permit action. Any deviation from plans herein approved shall not be implemented before first obtaining a permit modification or approval from the Department.
13. Approval of any plans or facilities herein refers to functional design, but does not guarantee ability or operational efficiency. Failure of the measures and facilities herein approved to perform as intended, or as designed, or in compliance with the applicable Rules and Regulations of the Department, for any reason, shall be grounds for the revocation or suspension of this permit. Failure of the Permittee to comply with the terms of the permit or conditions, or failure of the Permittee to construct or operate the proposed facilities in conformity with the approved plans shall be grounds for the revocation or suspension of this permit.
14. Prior to the beginning of construction of the subbase for the liner, New Morgan Landfill Company Inc., their consultants, engineers, QA/QC personnel and any other persons who will be involved in any aspects of the QA/QC activities at the site must attend a pre-construction meeting with the Department.
15. The witness zone between the primary and secondary liner must be monitored on a weekly basis to determine the rate of flow, if any. These results must be submitted to the Regional Solid Waste Manager in the Department's Southcentral Regional Office.
16. A daily operational record is to be maintained in accordance with Section 273.311 of the Municipal Waste Management Rules and Regulations.
17. A quarterly operations report is to be submitted on or before the 20th day of April, July, October and January for the three month period ending the last day of March, June, September and December in accordance with Section 273.312 of the municipal waste regulations.

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COMMONWEALTH OF PENNSYLVANIA  
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BUREAU OF WASTE MANAGEMENTPermit  
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FORM NO. 8Permit No. 101509Date Issued June 24, 1992Date Expired June 24, 2002

18. An Annual Operations Report is to be submitted to the Department, the Berks County Planning Commission, Caernarvon Township and New Morgan Borough on or before June 30 of each year and in accordance with the format indicated in Chapter 273.312 of the Municipal Waste Management Rules and Regulations. This report is to cover the reporting period of the previous calendar year and is to include an annual topographic survey including the elevation and total volume of the area which has been filled. The annual report submitted to the Department is to be accompanied by the annual permit administration fee.
19. The sump areas of all landfill cells must be tested to the satisfaction of the Department to determine the integrity of the sump areas prior to certification or start of waste disposal operations.
20. Monitoring well and monitoring point Nos.: GMW-1U, GMW-2U, GMW-3U, GMW-4D, GMW-5D, GMW-6D, GMW-7D, GMW-8D, GMW-9D, GMW-10D, GMW-11D, GMW-12D, GMW-13D, GMW-14D, GMW-15D, GMW-16D, GMW-17D, GMW-18D, SMW-1, SMW-2, SMW-3 and SMW-4 are to be tested on a quarterly basis and on an annual basis starting one year after this permit has been issued for all parameters indicated in Form No. 19. The results of these tests are to be submitted to the Regional Solid Waste Manager in the Department's Southcentral Regional Office.
21. This facility is permitted to accept waste for disposal on six days during each week. The permitted days and hours of operation are Monday through Saturday, 5:00 a.m. - 8:00 p.m., or such other hours as the host municipality may set by ordinance, pursuant to Section 304(b)(2) of the Municipal Waste Planning, Recycling and Waste Reduction Act, 53 PS, Section 4000.304(b)(2). For purposes of the calculation of average or maximum daily volumes, each partial operating day shall be counted as one day.

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22. No more than 10,000 tons of municipal and residual waste may be received at this facility for disposal on any single operating day. This figure represents the maximum daily volume of the facility, pursuant to Section 1112 of Act 101, the Municipal Waste Planning, Recycling and Waste Reduction Act, 53 PS Section 4000.1112, which section also provides that a mandatory minimum civil penalty of \$100.00 per ton applies to any excess volume received for disposal at this facility for any reason.
23. The daily average volume of waste, calculated for each calendar quarter, that may be accepted at this facility for disposal, may not exceed 2,010 tons of municipal and residual waste. This volume includes:
- No more than a daily average of 1,000 tons/day of municipal waste from Berks County in accordance with the provisions of its county Municipal Solid Waste Management Plan approved by the Department pursuant to Section 505 of the Municipal Waste Planning, Recycling and Waste Reduction Act (Act 101).
  - No more than a daily average of 510 tons/day of residual waste. No municipal waste may be substituted for this residual waste portion of the average daily volume received on an average daily volume basis over the standard calendar year quarter.
  - No more than a daily average of 400 tons per day of municipal waste not directed to specific sites in Pennsylvania county municipal waste management plans may be received at this facility for disposal on an average daily volume basis over the standard calendar year quarter.
  - In the event that it becomes necessary to use this facility as a back up site for any approved county municipal waste management plan in which this site is designated as a back up facility the permittee shall submit a written request to the Department to increase the average daily volume for the amount specified in the plan for the duration of the unavailability of the primary site.

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24. This permit is, hereby, conditioned to prohibit the facility's receipt and disposal of municipal waste from any municipality whose department approved municipal waste management plan designates another facility for such disposal of its municipal wastes. However, this condition shall not apply in those instances where the plan designated facility is unable to accept waste in a manner that is consistent with the rules and regulations of the Department. Nothing in this paragraph shall be construed to restrict acceptance of source-separated materials at this facility for the purpose of recycling those materials.
25. In the event that the City of Philadelphia amends its Solid Waste Management Plan to include Morgantown Landfill as a facility designated to receive waste generated within the City, this facility may accept up to an average daily volume of 3,200 tons per day of municipal waste from Philadelphia in addition to the volumes permitted in Condition 23 above.
26. Any existing contracts for acceptance of municipal waste originating in Pennsylvania counties which do not designate the New Morgan Landfill Company, Inc. as the disposal site may not be extended or be renegotiated beyond their current end dates.
27. Any new source of municipal waste requiring special handling, or residual waste which is similar chemically, physically and/or biologically to generic waste stream categories in the approved application may be approved in writing by the Department under this permit.
28. All approved sources of residual waste and municipal waste requiring special handling are to be analyzed on an annual basis for parameters included in the approved Module No. 1, Form 35, Form 36 or Form 43 submission. The analysis reports are to be sent to the Regional Solid Waste Manager in the Southcentral Regional Office.
29. This facility may not accept for disposal, or for processing other than composting, truckloads composed primarily of leaf waste.

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30. This facility may not operate to receive waste unless the operator has established at least one drop-off center for the collection and sale of at least three recyclable materials chosen from the following:

Clear glass, colored glass, aluminum, steel, and Bi-metallic cans, high grade office paper, newsprint, corrugated paper and plastics. The drop-off center must be located at the facility or at a location that is easily accessible to substantial numbers of persons generating municipal waste that is processed or disposed of at the facility. The drop-off center shall be operated in compliance with Section 1502(b) of the Municipal Waste Planning, Recycling and Waste Reduction Act, 53 PS, Section 4000.1502(b).

31. No lead acid batteries shall be placed into mixed waste at this facility, discarded, or otherwise disposed of at this facility.
32. The treatment plant is to be operable for treating leachate within 3 years after waste is first deposited in the landfill.
33. Bench mark elevations for bench mark numbers 4, 5, 6 and 7 must be established prior to earth disturbance.
34. All easements or right-of-way agreements regarding placement of the leachate outfall line must be in place prior to the start of landfill construction activity.
35. The Department's air quality program must approve the gas flare/venting system prior to the construction of these units.
36. The mine subsidence survey must be updated on a semi-annual basis. All data from the survey monuments is to be submitted to the Regional Solid Waste Manager in the Department's Southcentral Regional Office.
37. Within fourteen days of the issuance date of this permit, the permittee shall submit a complete package of all information listed under Permit Condition 1 to the Regional Solid Waste Manager in the Department's Southcentral Regional Office.

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38. A twenty-foot long entrance-way must be used to enter the landfill footprint from the time the subbase is certified to the time the protective cover is being applied to the primary liner. The entrance-way will be made of pallets covered with geonet or some other equivalent material. The purpose of the entrance-way is to minimize the amount of stones, mud, etc. carried into the site inadvertently on boots and shoes. Any deviation from this condition can only occur with permission from the Department.
39. Within 30 days after permit issuance a citizen's advisory committee composed of area residents, Berks County officials, Caernarvon Township officials, New Morgan Borough officials, and community organization officials be formed to meet on a regular basis to discuss issues which may arise during construction and operation of the landfill.
40. The area of the site previously known as Area 2 and now identified as a Borrow Area shall not be allowed as an expansion area for landfilling. Area 2 is extremely close to the collapse features and associated deformation, fracturing and subsidence owing to mining. Area 2 cannot be monitored adequately for groundwater contamination.
41. The collateral bond dated February 6, 1992 between New Morgan Landfill Company, Inc. and the Department in the amount of \$23,275,870.00 is hereby approved as part of this Permit. \$5,819,000 has initially been executed by the Department. Year end payments of 1,745,687.00 are due within 45 days of the anniversary date of the permit each year starting in 1993 and continuing through 2002. Payments are to be submitted to the DER Southcentral Regional Office. This bond must be updated within 90 days after receipt of written notice from the Department in accordance with Chapter 271 of the Municipal Waste Management Rules and Regulations.

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# **ATTACHMENT G**

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## **Groundwater CEA Calculations**

**EcolSciences, Inc.**

Environmental Management & Regulatory Compliance

Groundwater PCB CEA Calculations  
Block 401, Lots 1 and 2  
Garwood, New Jersey

**Duration of CEA**

$t^{1/2}$ : Contaminant half-life (days)	2,920
k : Contaminant biodegradation rate (1 <sup>st</sup> order reaction)	0.0002 $k=0.693/t^{1/2}$
C : End Concentration [Groundwater Quality Standard (ug/L)]	0.5
C <sub>0</sub> : Initial Contaminant Concentration (ug/L)	4.3

time (days) =  $-(\ln(C/C^0))/k$

time (days) =  $-(\ln(0.5/4.3))/0.0002$

<b>time (days)</b>	<b>10758.81</b>
<b>time (years)</b>	<b>29.476</b>

**Distance of CEA**

<b>d (feet) = V<sub>c</sub>*t</b>	<b>0.012</b>
V <sub>c</sub>	1.15662E-06
t(days)	10785.81

Distance Backup information

Seepage Velocity (V <sub>s</sub> ) in ft/day = $K(i)/p$	0.022
K: hydraulic conductivity (ft/day)	1.1 Site Specific
i: hydraulic gradient	0.005 Site Specific
p: effective porosity	0.25 Site Specific
Retardation Factor (R) = $1+(BD*K_{ow}*F_{oc}/p)$	19021
BD : Soil Bulk Density	1.5 NJDEP guidance standard
K <sub>ow</sub>	63400
F <sub>oc</sub>	0.05 Site Specific (lowest)
p: effective porosity	0.25 Site Specific
Contaminant Transport Rate (V <sub>c</sub> ) in ft/day = $V_s/R$	1.15662E-06
V <sub>s</sub> (ft/day)	0.022
R	19021