Appendix 13

ESTATE OF LESTER NOLAN LANDFILL
WILMINGTON, DELAWARE

SIRB ID: DE-0165

GENERAL SITE INFORMATION

Site Name: Estate of Lester Nolan Landfill

SIRB ID Number: DE-0165

Site Location and Description: The property of the Estate of Lester Nolan is located north and east of the intersection of New Castle Avenue and New York Avenue, just north of Route 495, in Wilmington, Delaware. The entire property is 34.79 acres in size and has been used as an industrial facility since the early 1900s.

Currently, the Estate of Lester Nolan property is the site of an operating wire fabricating plant, Insteel Wire Products (Insteel). Surrounding land uses include: Conrail railroad tracks bordering the property to the north and northeast; highway 495 bordering the property to the east; New Castle Avenue bordering the property to the west; and New York Avenue bordering the property to the south.

The subject of the investigations, an unauthorized landfill, is located on the northeast side of the Insteel Wire Fabrication building. The site, as defined by the Nolan Estate/DNREC Voluntary Cleanup Program (VCP) Settlement Agreement, covers approximately four acres and is generally bounded by the Insteel manufacturing facility and a wetland area. The actual extent of the landfill, based on Remedial Investigation (WIK, 1996) results, is approximately 2.9 acres. The landfill surface is relatively flat with pieces of wood and metal exposed across the surface. The landfill supports sparse vegetative growth over the main fill area and thick growth at the edges.

A previous investigation revealed the presence of two separate waste disposal areas separated by an isolated wetland area. The main disposal area, which covers an area of approximately 45,000 square feet, is referred to as the East Landfill. The second disposal area, which covers an area of approximately 15,000 square feet, is referred to as the West Landfill. Fill materials encountered within the two landfills included: metal wire, wood, brick, concrete, cinder blocks, asbestos, plastic, tires, and drums.

Previous Site Uses: The chain of title for the Nolan Estate (as found by WIK Associates, Inc. in the files from the Recorder of Deeds of New Castle County) indicates that the 34.79 acre property was previously comprised of three parcels. The title records prior to 1912 are not

available for most of the site. However, the title does show that the property has been owned by a series of metal-working companies since the early 1900s.

Based on the historical information reviewed, it appears that the main factory building was constructed during 1904 with an addition constructed in the early 1970s. The property is located in an area that has been heavily industrialized since the late 1800s and early 1900s. The area was a center of large-scale steel and iron parts manufacturing supporting the railroad and shipbuilding industries. The site has been used for heavy industrial manufacturing since its development in 1904. A review of available aerial photographs indicated that landfilling may have begun in the 1950s and continued until the 1980s.

Site Regulatory Status: This section briefly summarizes previous investigations performed on the site through the SIRB program. A current SIRB regulatory status is also included.

Preliminary Assessment (DNREC, 1987)

A Preliminary Assessment (PA) was conducted by the DNREC Preliminary Assessment/Site Inspection (PA/SI) Group in July 1987. The objective of this PA was to investigate the reported fill area which was discovered by DNREC Environmental Protection Officers. According to the DNREC report, the fill area had been reportedly used by Forbes Steel for at least 20 years to dispose of scrap metal, waste wire-drawing soap, iron rod scale, and an assortment of other solid wastes. DNREC characterized the site as an approximate one-acre area of land bordered by a small pond. No samples were collected during this assessment.

The Preliminary Assessment report submitted to EPA by DNREC recommended that no further investigations were required because the disposed material consisted primarily of scrap iron and other non-hazardous materials. At that time, DNREC proposed referring the site to the State DNREC Solid Waste Branch for further action.

Site Inspection (DNREC, 1988)

After reviewing the PA report, EPA requested DNREC proceed with further investigation of the site. A Site Inspection (SI) was conducted by DNREC in September 1988. A total of one surface water and seven soil/sediment samples were collected from selected points in the landfill area and from the on-site pond. Samples were analyzed for a range of organic and inorganic parameters.

In general, the analytical results indicated concentrations of several metals (barium, copper, iron, lead, magnesium, nickel, and zinc) were elevated above background in both the soil and surface water samples. The most significant detection was for lead, which ranged in concentration from 1.5% to 8.5% in the surficial soils of the landfill. While low levels of organics were reported, the samples were generally found to be free of significant quantities of organics.

UST Removal (WIK, 1989)

According to DNREC Underground Storage Tank Branch (DNREC-USTB) files, six USTs were present at the site prior to 1986. The following information was contained in DNREC-USTB files:

Tank #	Date Installed	Volume (gallons)	Contents
1	1-1-72	3,000	Gasoline
2	1-1-67	7,000	Diesel
3	1-1-74	1,500	Heating Oil
4	1-1-65	3,000	Gasoline
5	1-10-73	1,500	Diesel
6	1-10-66	3,000	Gasoline

In May of 1989, WIK Associates, Inc. (WIK) removed tanks 2, 3 and 4 from an area just south of the landfill. Sampling was conducted in accordance with DNREC-USTB regulations. DNREC-USTB files indicated that tank 4 was filled with groundwater. The laboratory results of soil samples collected from tank 4 (located southwest of the landfill) indicated slightly elevated levels of TPH and BTEX. DNREC-USTB files indicate that tanks 5 and 6 were removed prior to 1987. The files did not contain any information regarding tank conditions or evidence of contamination.

Site Investigation (WIK, 1993)

During November 1993, WIK conducted a Site Investigation of the landfill. The purpose of the investigation was to delineate the nature and extent of buried materials in the fill area. Ten test pits were installed using a backhoe. The average thickness of the fill was observed to be approximately eight feet. Observations also indicated that most of the fill material consisted of

steel scrap with drums, concrete, wood, rubber hose, corrugated fiberglass sheeting, glass and miscellaneous trash and plastic. About 50% of the waste materials encountered appeared to meet the regulatory definition of solid wastes.

During the excavation of the test pits, groundwater was encountered in 8 of 9 test pits. Groundwater contamination in the form of a sheen or free phase hydrocarbon product was noted in four of the test pits. The hydrocarbons were described as brown or black liquid.

Three soil samples were collected and analyzed for Total Petroleum Hydrocarbons (TPH) and Volatile Organic Compounds (VOCs). The laboratory results indicated that all three soil samples contained elevated levels of TPH, ranging from 39,700 to 73,700 mg/kg. One volatile organic compound (ethyl benzene) was detected in one soil sample at a concentration of 2.4 mg/kg.

Based on the above, WIK recommended that the solid waste be removed to an authorized disposal facility. DNREC reviewed WIK's report and conducted an additional site visit on January 20, 1994. DNREC subsequently directed the Nolan Estate to proceed with a Remedial Investigation of the landfill area in order to evaluate the extent of contamination to the groundwater, wetland areas and landfill soils.

Remedial Investigation (WIK, 1996)

The objective of the Remedial Investigation (RI) was to determine the aerial extent of the unauthorized landfill and to assess the environmental impact of the filled area on site soil, sediment, surface water and groundwater. The work was completed under a Voluntary Cleanup Program (VCP) Agreement between the Estate of Lester Nolan and the Delaware Department of Natural Resources and Environmental Control (DNREC).

Based on the findings of the RI, the primary contaminants of concern for the Nolan Estate Landfills were lead, petroleum hydrocarbons, and asbestos. Lead-impacted soils were generally restricted to the upper 3 to 4 feet of the landfill. Lead was found to be leachable under extremely acidic (pH 2) conditions, as shown by Toxicity Characteristic Leaching Procedure (TCLP) testing. However, under normal site conditions (groundwater pH in the range of 6.5 to 7.5) lead tended to be relatively immobile. This was demonstrated by the fact that groundwater throughout the site, even directly beneath the landfills, was not impacted by lead.

The petroleum hydrocarbons found at the site, based on field observations and laboratory analysis, appear to be mixed throughout the fill. According to DNREC Underground Storage Tank Branch (USTB) records and as described above, six USTs were present at the site prior to 1986. One of the gasoline tanks was found to be leaking. A slight oil sheen was visible on groundwater in test pits, but no measureable petroleum thickness was present in the monitoring wells or piezometers. These observations indicated that there was no longer any free-phase source of petroleum hydrocarbon present at the landfills.

Asbestos (chrysotile) is mixed throughout the landfills in the form of small rolls of thin material, about one inch long and 1/4 inch in diameter. Asbestos (amosite) was also found in the East Landfill in the form of fibrous board.

Based on the hydrogeologic and analytic data collected during the Remedial Investigation, WIK Associates Inc., drew the following conclusions regarding the landfill at the Estate of Lester Nolan:

1. The East and West Landfills contain solid waste and asbestos.
2. Surficial soil in the East and West Landfills has been impacted by lead and petroleum hydrocarbons.
3. An isolated area of surficial soil west of the West Landfill has been impacted by lead and petroleum hydrocarbons.
4. Throughout most of the East and West Landfills, lead and petroleum hydrocarbon concentrations decrease rapidly with depth. Isolated hot spots exist at depth in both landfills.
5. The potential for off-site migration of contaminants appears to be minimal based on the following:
    - Lead from landfill soil has been shown to be relatively immobile. Groundwater, even within the landfills, does not contain lead above regulatory levels.
    - Petroleum hydrocarbons do not appear to have migrated beyond either landfill.
    - Surface water within on-site wetlands A & B is isolated from off-site wetlands.

Based on the findings of the Remedial Investigation, the major risk associated with the site is direct contact with contaminated media (soil, surface water, and sediment). The site will require remedial action to remove the direct contact risk. Potential Remedial Alternatives are addressed in the accompanying Feasibility Study for the Estate of Lester Nolan landfill.

Feasibility Study (Weston, 1996)

This Feasibility Study analyzed several remedial design alternatives proposed for redevelopment of the Nolan landfill areas. A possible future use of the landfill areas would be a storage location/facility to be used by Insteel. This proposed use requires the area to be able to support heavy equipment and bundles of bulk wire after remedial actions have been completed.

Based on a detailed evaluation of five alternative remedial designs, Weston concluded that installation of a closure cover system addresses all of the remedial action objectives in a cost effective manner compared to other alternatives. Weston provided the following closure cover system options: Final installation of either a vegetated top soil cover or a flexible pavement cover. Insteel would not be able to use the land as a storage area under the vegetative top soil cover option.

Final Plan of Remedial Action (DNREC, 1997)

In July 1997, DNREC issued a *Final Plan of Remedial Action for the Estate of Lester Nolan Landfill Site*. The Final Plan presents DNREC's final selection of remedial activities to occur at the Nolan Landfill.

The remedy outlined in the Final Plan (Alternative 5) consisted of a closure cover system constructed of either:

1. A geomembrane (a minimum 40 mil thickness), protective geotextile and geocomposite drainage layer underlying a vegetated top soil cover; or
2. A geomembrane (a minimum 40 mil thickness) and separation/filter geotextile underlying an aggregate subbase and a flexible pavement section.

These options are essentially identical except for the surficial layer and the geocomposite drainage layer included with the vegetation cover option. A separation/filter geotextile installed below the aggregate subbase was included in the pavement option to prevent fines from entering into the subbase.

Remedial Design/Remedial Action Work Plan (WIK, 2000)

Based primarily on cost, the Estate of Lester Nolan selected a geomembrane, protective geotextile, and geocomposite drainage layer underlying a vegetated topsoil cover design (option 1, listed above). A *Remedial Design/Remedial Action Work Plan* (RAWP) was submitted to DNREC in June 2000.

Supplemental PCB-Soil Interim Action Report (WIK, 2001)

In December 2000 and January 2001, while preparing for landfill closure, WIK discovered a total of 22 small and 1 large electric capacitors within the Estate of Lester S. Nolan Landfill (the Landfill) limits. These capacitors were discovered in two different areas of the Landfill during grading operations.

WIK notified the DNREC–SIRB, of the capacitors, and outlined a plan for their removal and off-site disposal. DNREC directed that an interim remedial action be performed, including removal of the capacitors and any impacted soil, and confirmation sampling and analysis of the remaining soil.

Location #1 (22 Small Electrical Capacitors)

On December 5, 2000, while clearing out an area in preparation for the Landfill perimeter swale construction, WIK discovered a total of nine capacitors on the ground surface and to a depth of 6-inches below ground surface (bgs) along the eastern boundary of the East Landfill. All of the capacitors were found in a relatively small area. The capacitors were empty except for an oily residue. On December 5, 2000, WIK collected a sample of the oily residue from one of the small capacitors and analyzed it for PCBs at Mid-Atlantic Laboratory of Claymont, Delaware. The residue was found to contain 66.7% by weight of PCB Aroclor 1254. A soil sample below the capacitors contained 51 mg/kg of Aroclor 1254. Delaware's remediation standard for restricted use is 3.0 mg/kg for PCB Aroclor 1254.

On December 12, while removing the initial nine capacitors, WIK located an additional 13 capacitors. All of the capacitors were in close proximity to each other. The 22 small capacitors were approximately 18 inches tall, 12 inches wide, and 4 inches thick. The capacitors were silver with two brown ceramic insulators on top of each unit.

All 22 capacitors were located in a small, densely vegetated area. WIK removed all of the capacitors, recorded the capacitor data plate information, and placed them into five drums for off-site disposal.

Location #2 (1 Large Electrical Capacitor)

On January 4, 2001, WIK discovered a single capacitor located just under the ground surface along the western edge of the East Landfill. This location is referred to as Electric Capacitor Location #2. The large capacitor was found buried approximately 6 inches below the ground surface and measured 27 inches tall, 14 inches wide and 4 inches thick. The capacitor was silver in color and no ceramic insulators were found on this unit.

Soil Removal Operations

Location #1 (22 Small Electrical Capacitors)

On December 21, 2000, WIK performed an initial soil removal in Location #1 under DNREC - SIRB oversight. An area 10 ft wide by 13 ft long by 2 ft deep was excavated and staged in the temporary containment area. The base and sidewalls of the excavation were sampled. All 13 of the soil samples collected including Quality Assurance / Quality Control (QA/QC) samples were submitted to STL Edison for HSCA analysis of PCBs. Results of the samples showed that PCBs were detected at concentrations up to 14,000 mg/kg. Based on the sample results, soil PCB concentrations were above the remediation criteria and additional excavation was required.

On January 17, 2001, an additional two feet of soil was removed in all directions to a depth of four feet across the area, resulting in an excavation approximately 14 ft wide by 17 ft by 4 ft deep. Samples of the sidewalls and from the bottom (based on a 2.5-foot grid) were then collected and transported to the on-site DNREC-SIRB chemist for analysis using field immunoassay kits. A total of 62 soil samples were collected and analyzed. The screening results indicated a significant decrease in soil containing PCB concentrations in the remaining soil; however several sections of the excavation contained soil with elevated PCB concentrations that required further removal.

On January 24, 2001, WIK returned to remove isolated areas of PCB-impacted soil identified by the confirmation samples. After removing these areas, screening samples were again collected and analyzed, and the process was repeated. By the end of the day, only two small areas required additional excavation.

On January 29, 2001, WIK performed a discrete soil removal in two isolated areas, and concluded the excavation after two rounds of soil removal and sampling. Four large concrete boulders were also encountered in the excavation. They were sampled by scraping off soil that adhered to the sides of the concrete and placing it in a bag for the DNREC chemist to analyze. The screening results indicated that two of the boulders contained PCBs at concentrations greater than 10 mg/kg. These two boulders were subsequently crushed into small pieces and placed into the soil stockpile for off-site disposal. The other two boulders were left in place.

Based on screening results through January 29, the interim action at Location #1 was found to be complete. WIK subsequently submitted 20% of the attainment samples for HSCA confirmatory analysis.

Location #2 (1 Larger Electrical Capacitor)

On January 4, 2001, after discovering the single larger capacitor, WIK collected a soil sample from six inches below the capacitor and submitted it to DNREC for PCB analysis. The results of the soil screening showed that the soil sample contained PCBs at a concentration greater than 10 mg/kg.

On January 17, 2001, an area 7.5 ft wide by 7.5 ft long by 2 ft deep was excavated. The remaining soil was then sampled on a 2.5-foot grid. A total of 16 soil samples were collected and analyzed by DNREC's on-site mobile laboratory for PCB screening analysis. The DNREC screening showed that PCB concentrations in three samples were above 3 mg/kg. A second round of soil removal on the same day extended the excavation to 16 ft long by 8 ft wide by 3 ft deep. Confirmation soil sampling results indicated that one sidewall sample and one base sample still exceeded the clean-up criteria.

On January 24, 2001, WIK performed a discrete soil removal in the areas of EC2-27 and EC2-34. The results for all of the samples indicated that PCBs in the soil were below the detection limit.

WIK subsequently submitted 20% of the attainment samples for HSCA confirmatory analysis.

Demonstration of Attainment

Attainment at Electrical Capacitor Location #1

The most conservative measure of attainment, as presented in DNREC's Remediation Standards Guidance (DNREC, 1999) is "The highest measurement of a substance from the remediation area is not greater than the default or site-specific BGS, URS, or SSS (no exceedance rule)." Location #1 does not meet this standard because 9 of the 83 soil sample locations that were not excavated exceed the restricted use URS. However, the guidance recommends that other evaluation criteria are equally valid. In fact, the guidance states that "The 95% upper confidence level of the arithmetic mean of the samples collected for attainment purposes shall be at or below the remediation standard, provided the statistical analysis is applied in accordance with EPA approved methods on statistical analysis of environmental data." DNREC has defined a risk-based remediation standard as follows:

"Site-Specific Standard Calculation for a Single Analyte - In cases where there is a single analyte found at concentrations exceeding the URS, but at concentrations generally less than an order of magnitude above the URS, the respective URS may be modified to reflect the 1 in 100,000 risk level (carcinogenic compounds - order of magnitude increase) or hazard index of 1 (non-carcinogenic compounds - order of magnitude increase) level."

Using the 83 soil samples, which still remain in Location #1, WIK has evaluated the results against these criteria. In calculating the mean and 95% UCL of the mean, HSCA data was used where available; otherwise DNREC screening results were used. Where no PCBs were detected in the screening samples, a concentration of 0.5 mg/kg was assigned; and where the immunoassay results indicated a concentration between 10 and 30 mg/kg, a concentration of 20 mg/kg was assigned. Using these data results, WIK calculated a mean concentration of 2.34 mg/kg, and a 95% UCL of the mean of 2.85 mg/kg, below the 3.0 mg/kg default URS.

The output from the DNREC "Site-Specific Standard Calculator" in use at the time of the removal, using the 2.85 mg/kg concentration, is at the 1.0 in 1,000,000 risk level. This meets the 1 in 100,000 guideline and demonstrates attainment with the DNREC guidance.

Additionally, the area of the completed removal action is within the footprint of the landfill cap, eliminating any possible future direct contact exposure pathway now that the modified RCRA type "C" landfill cap is complete.

Attainment at Electrical Capacitor Location #2

The most conservative measure of attainment, as presented in DNREC's Remediation Standards Guidance is as follows:

"The highest measurement of a substance from the remediation area is not greater than the default or site-specific BGS, URS, or SSS (no exceedance rule)."

Electric Capacitor Location #2 meets this standard because none of the 46 screening samples or 8 HSCA samples exceed the restricted use URS. Only one sample contained a HSCA confirmatory result equal to DNREC's restricted use Remediation Standard of 3.0 mg/kg.

Conclusions

Based on the findings of the Interim Action investigation, and on the proposed modified RCRA type "C" landfill cap construction approach, WIK concluded that all 23 capacitors and approximately 150 tons of PCB-impacted soil were safely excavated from the site. WIK recommended that the capacitors and soil stockpiled at the site be disposed in accordance with all applicable regulations and that the proposed capping of the Landfill be completed.

Subsequent to excavation activities, the capacitors and ten loads of PCB-impacted soil (175.7 tons) were properly disposed at off site facilities.

Project Closure Report (WIK, 2002)

This report documents all relevant activities associated with the closure of the Nolan Landfill and was prepared by WIK (responsible for site characterization, delineation of the limit of waste and implementation of the Remedial Design) and WESTON (responsible for development of the Remedial Design and Quality Assurance oversight during implementation of the Remedial Design).

After excavation of the capacitors and PCB-impacted soil, remedial construction activities continued at the site. The construction/field work performed during the RA included the following major tasks:

1. Clearing and grubbing
2. Air sampling

3. Tank abandonment
4. Sediment/stormwater basin and perimeter channel construction
5. Waste removals
6. Filling and grading of soil for proper slope and drainage
7. Installation of closure cover (liner, geotextiles, fill, topsoil)
8. Seeding and mulching
9. Removal and disposal of all wastes generated during the work

Based on observations made by WESTON during on-site inspections of closure construction activities, and upon review of as-built drawings and shop drawings, and on discussions with WIK personnel, WESTON concluded that the closure of the Nolan landfill has been completed in general accordance with the Design Drawings and Technical Specifications approved by DNREC with the exception of items noted in the closure report. The exceptions were approved, and the Nolan Landfill Closure was completed.

DNREC signed the Certificate of Completion of Remedy for the Nolan Landfill, and it was recorded in September 2003. The Certification of Completion of Remedy was contingent on implementation of an Operation and Maintenance Plan (O&M Plan).

Operations and Maintenance Report (BrightFields, 2008)

To ensure successful implementation of the Final Plan of Remedial Action prepared by DNREC in July 1997, BrightFields, Inc. (BrightFields), formerly WIK Associates, Inc., has been implementing the O&M Plan dated March 2003, which was approved as modified in July 2003 by DNREC. Operations and maintenance (O&M) activities have been ongoing at the site since the approval of the plan. Currently, BrightFields conducts O&M Inspections and Groundwater Sampling for the 4-acre Landfill site annually. The O&M Report detailed in this section describes the activities performed to verify the integrity of the closure cover system and verify the operation of the sediment/stormwater basin system. The main objectives of the O&M Inspections are to ensure that all constructed surfaces continue to be protected from deterioration, erosion, or other natural and man-made processes/activities that might allow migration of subsurface contaminants off-site or exposure of the public or the environment to these contaminants.

The O&M program at the Nolan Landfill generally comprises three parts: 1) Inspection of the landfill cover system and the inspection of the sediment/stormwater management structures 2) Groundwater sampling and reporting, and 3) Landscaping services to maintain the vegetative cover.

BrightFields completed the most recent annual landfill O&M and groundwater sampling round on July 31, 2008. This was the 15th time that the landfill had been inspected. Although minor vegetation growth problems were noted, the landfill cover and sediment stormwater systems were both in good condition.

The only groundwater contaminant of concern at this time is lead; therefore, groundwater is only analyzed for dissolved lead. Lead was not detected in groundwater from any of the three monitoring wells; furthermore, lead has never been detected above the Delaware Uniform Risk-Based Remediation Standard (URS) for Protection of Human Health in any groundwater sample collected to date.

Current Regulatory Status:

In 2003, the Estate provided notice to Insteel that the cleanup was complete and that it had paid all costs of the completed cleanup. Insteel then purchased the Nolan Property at a final settlement. In addition, the Estate of Lester Nolan filed a deed restriction on the site that limits the site to commercial use only, prohibits any land disturbing activities on the site without the prior written approval of DNREC, and prohibits the installation of any water well on the site, or use of groundwater at the site, without the prior written approval of DNREC.

An annual O&M inspection and groundwater sampling was completed at the Landfill as of January, 2009. Annual inspections will continue until 2013.

SUMMARY OF SITE PCB INFORMATION

Site Investigation PCB Findings:

In January of 2001, BrightFields removed approximately 150 tons of contaminated soil from two areas of The Lester Nolan Estate. A further explanation of the removal activities and sampling approaches is described above. After the removal in 2001 a cap cover system was implemented on site to ensure native soils were maintained on site. Because of the removal and cap placement there are no longer any "surficial" PCB concentrations remaining at The Lester Nolan Estate.

PCB concentrations are present in the subsurface unsaturated zone at concentrations ranging from non-detect to 28 mg/kg, which is above both the unrestricted and restricted use URS criteria. At the time of the investigation a statistical evaluation was performed to demonstrate that the 95% upper confidence level of the mean for the site for PCBs was below the restricted URS criteria of 3 mg/kg even with the concentrations that were remaining in the soil.

The PCBs that remain on site are currently not in a mobile phase. The type of cap cover system that is being implemented is preventing PCBs from becoming mobile because it is preventing water infiltration and erosion to occur on the native soils. Due to these engineering controls there is no PCB contaminated soil leaving the site via overland runoff or groundwater transport.

Concentrations of PCBs Remaining on Site			
Sample Matrix	**Corresponding Figure**	**Analytical Methods**	**Range of Total PCBs**
Surface Soil	Figures 2, 2a, and 2b	Method 8082	Not detected
Subsurface Soil (unsaturated)	Figure 3, 3a, and 3b	Method 8082	Not detected to 28 mg/kg
Subsurface Soil (saturated)	Figure 4, 4a, and 4b	Method 8082	Not detected
Groundwater	Figure 5	Not Analyzed	Not Analyzed

A summary of all samples collected for PCBs are presented in the attached Tables 1 through 3.

Acreage where PCBs detected:

Estimated unsaturated subsurface soil area impacted by PCBs is approximately 2 acres in the vicinity of the former removal areas (Figure 4, 4a, and 4b).

PCB Remediation Status

In 2001, WIK Associates oversaw the removal of approximately 150 tons of PCB contaminated soil in the vicinity of two hot spot areas defined by the location of former electrical capacitors. A further explanation of the removal activities and sampling approaches is described above.

PCB MASS LOADING SUMMARY

In its current condition The Estate of Lester Nolan is not contributing PCBs to surface waters because there is no mechanism of transport on the site. The levels of uncertainty associated with this assessment are discussed below.

Ground Cover and Canopy:

A site inspection was performed on July 31, 2008 to estimate the current site ground cover and canopy. The overall cap cover is in good condition at the site. The landfill cover and sediment stormwater systems were both in good condition.

Site Sediment and Erosion Control Practices:

A polyethylene sheeting cover system is in place, which prevents native soil from erosion.

Uncertainty Evaluation:

Specific Areas and Degree of Uncertainty for The Estate of Lester Nolan

Areas of uncertainty concerning The Estate of Lester Nolan include the following: Samples collected during the PCB removal action were not logged, so there is no documentation of the water table in the areas of the hot spot. BrightFields reviewed the closure report for the remediation project and found no discussion of groundwater in these areas and interviewed the on-site representatives who indicated groundwater was not encountered during these excavations. BrightFields has made the assumption for this evaluation that no samples that were collected in these areas were in contact with the groundwater table.

Sample locations were not clearly defined in the closure report for the remediation. Sample points were not logged using any coordinate system, but sketched based on the dimension of the removal area. Based on this evaluation the overall level of uncertainty associated with PCB mass loading from The Estate of Lester Nolan is **moderate to high**.

Site References:

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