

PCB Mass Loading Phase II
North American Smelting Company Property
SIRS ID: DE-0230
Wilmington, Delaware



Appendix 23

NORTH AMERICAN SMELTING COMPANY PROPERTY

WILMINGTON, DELAWARE

SIRS ID: DE-0230

GENERAL SITE INFORMATION

Site Name: North American Smelting Company Property

SIRS ID Number: DE-0230

Site Location and Description:

The North American Smelting Company Property (NASCO) is located at 1 Hausel Road in Wilmington, Delaware (Figure 1). The site is approximately 215 acres in size and consists of one tax parcel (#2606700003). The site is a portion of land within the Port of Wilmington and is surrounded by industrial and commercial land. There are railroad tracks running through the southwest portion of the site. The Port of Wilmington is bounded to the north by the Christina River and to the east by the Delaware River. The property is currently owned by Diamond State Port Corporation.

The Lobdell Canal and Christina River are located to the northwest and north of the Site. Surface water is expected to discharge to these water bodies, which ultimately discharge to the Delaware River.

Previous Site Uses:

The North American Smelting Company Property operated as a scrap aluminum, brass, and lead smelting facility from the 1930s until 1984. In 1978, lead operations were discontinued due to inability to meet air emissions standards. From 1984 to 1996, the facility was leased to port tenants for vehicle maintenance and bulk storage of sodium nitrate and urea. Historical records indicate that the US government used the western and northern portions of the site to store stockpiles of fluorspar ore (calcium fluorite). The stockpiles were removed by 1998. In 1997, the buildings on the property were demolished and all hazardous and solid wastes were disposed of with DNREC oversight. Since 1997, new warehouse facilities have been constructed and the property has been used to store miscellaneous equipment and materials.

Site Regulatory Status:

This section briefly summarizes previous investigations performed on the site through the SIRS program. Many of the documents on the DNREC Environmental Navigator were not legible and hard copies were unavailable. However, if the title and data were legible, the report was discussed below. A current SIRS regulatory status is also included.

Preliminary Assessment (DNREC, 1990)

DNREC prepared a Preliminary Assessment (PA) of the site in March 1990. The digital copy of the PA was illegible. After performing the PA, DNREC recommended a Site Inspection to investigate potential metal and PCB contamination of soil, surface water, and groundwater.

Site Inspection (DNREC, 1991)

DNREC performed a Site Inspection (SI) of the site on June 12, 1990. At the time, the only remnants of the NASCO operation were the lead smelting area (building/warehouse) and a portion of the aluminum chipping emission control system (baghouse, afterburner, and scrubber). A total of 20 surface water, sediment, and soil samples including duplicates and blanks were collected as part of the SI. Analysis of soil and sediment samples revealed semivolatile organics, PAHs, PCBs, and heavy metals. Specifically, elevated levels of PCBs were detected in sediment samples from drainage ditches on the east side of the property, soil samples from the southern side of the property, and a soil sample from the vicinity of the transformers on the northern side of the property. Surface water samples collected from on-site drainage ditches had high concentrations of heavy metals. Four old electrical transformers were reported on-site, but the lessee stated that the EPA had already investigated them and found them to be non-hazardous.

Surface and subsurface soil data was available and is included in this PCB mass loading analysis.

Site Investigation (WIK Associates, 1996)

This SI was conducted in December 1995 as a follow-up to the 1991 DNREC SI. The SI was summarized in the 1997 WIK Associates Demolition/Environmental Report. During the investigation, some of the environmental issues observed were suspected asbestos-containing-material, potential PCB-containing equipment, drums and soil waste (which were removed and disposed of in March 1996), underground/aboveground storage tanks (removed and disposed of in July 1996), and soil staining near the vehicles.

Phase II Investigation (WIK Associates, 1996)

WIK Associates performed a Phase II Investigation to refine the bid specification for demolition of the facility. The Phase II Investigation Report was unavailable at the time of this evaluation but was summarized in the 1998 Interim Remedial Action Report and the 1997 WIK Associates Demolition/Environmental Report with a summary of the data.

WIK Associates collected samples of mixed waste debris, dusts, surface wipes, standing surface and ground waters, potential PCB equipment, and soils potentially contaminated with PCBs. Mixed waste debris was sampled and PCBs ranged from not detected to 1.39 mg/kg. Dust samples had Aroclor 1260 at a concentration of 2.06 mg/kg. Surface wipe samples were collected but not analyzed for PCBs. Standing surface and ground water samples were analyzed and had detectable concentrations of PCBs. Potential PCB electrical equipment and the soil below the equipment were sampled for PCBs and all the concentrations were below minimum detectable thresholds.

The sample IDs for the water samples on the sample location figure did not match the data included in the report and therefore they were not analyzed in this evaluation. However, the surface soil data was available and is included in this PCB mass loading analysis.

Asbestos Investigation (Harvard Environmental, 1996)

The 1998 Interim Remedial Action Report mentions that an asbestos survey was completed at the site in April 1996. Asbestos was found in mastics, transite roofing and debris, galbestos/air coat, thermal system insulation, and flooring.

Port Area Metals Assessment (Weston, 1996)

To determine if previous industrial operations affected the surrounding areas, the EPA collected samples from parks, residential areas, and public housing. They were analyzed for metals but not PCBs. A sample map was not included so the sample locations were not included in this evaluation.

Site Inspection and Field Review (DNREC, 1996)

In July 1996, DNREC personnel and a WIK project manager inspected the Site, focusing on known and suspected underground storage tanks (USTs). They inspected the material underlying two excavated petroleum USTs on the property and there appeared to be clean fill around the USTs and no significant releases. Exploratory excavations were performed in the areas of suspected UST areas. There is no indication that samples were collected.

Tank Removal Closure Report (WIK Associates, 1996)

In October 1996, WIK Associates submitted a Tank Removal Closure Report to DNREC. The report summarized the tank removal activities of four USTs and two dispensers during July 1996. Based on field screening, the soil surrounding the tanks and dispensers appeared to be impacted by petroleum constituents. However, TPH and BTEX concentrations in soil samples were below DNREC action levels at the time. Samples were not analyzed for PCBs and therefore were not included in this evaluation.

Plans & Specifications Demolition/Environmental Report (WIK Associates & Harvard Environmental, 1997)

In March 1997, WIK Associates and Harvard Environmental completed a report on behalf of Diamond State Port Corporation. It summarized the proposed demolition at the Site and presented data from previous investigations.

Facility Evaluation Work Plan (WIK Associates, 1997)

In October 1997, WIK Associates completed a Facility Evaluation (FE) Work Plan of an approximately 6 acre area that was part of the NASCO facility. It discussed the plans to collect soil samples and evaluate the associated risk based on analytical results.

Remedial Investigation/Feasibility Study (WIK Associates, 1998)

A Remedial Investigation/Feasibility Study (RI/FS) was completed for the site to examine the contamination resulting from historic land use and identify possible remedial alternatives. A total of ten surface soil samples, were collected throughout the six acre site and analyzed for eight RCRA metals, PAHs, and PCBs. Low PCB concentrations were detected in nine of the ten samples, ranging from 0.094 mg/kg to 2.1 mg/kg. Overall, WIK Associates concluded that surficial soils were impacted by PCBs, lead, and benzo[a]pyrene, and that the site should be capped with concrete and/or asphalt to minimize contact with contaminated soil.

Since spatial data was not available for the report, the data could not be included in this analysis.

Interim Remedial Action Report (WIK Associates, 1998)

WIK Associates prepared the Interim Remedial Action Report on behalf of the Diamond State Port Corporation. The objectives of the Interim Remedial Action included removal and disposal

of heavy metal containing dust in the building, asbestos containing materials, and mixed waste piles as well as demolition and removal of the NASCO facility structure. Waste streams were sampled before they were disposed. One sample (WS-05) contained low levels of PCBs (less than 0.5 mg/kg) and was disposed of as asbestos-containing waste. Five additional samples had slightly elevated concentrations of PCBs (less than 5 mg/kg) and were disposed of as hazardous waste due to cadmium concentrations. The report stated that none of the waste stream samples had PCB concentrations exceeding TSCA limits. Upon completion of the remedial action, only a clean concrete slab was remaining at the prior NASCO facility location. WIK Associates recommended a Facility Evaluation and additional remedial alternatives if needed.

Note: All samples were considered in this evaluation with the exception of TS-01 from the pressure washing settling tank, which was a temporary tank brought onsite to contain wash water.

Environmental Assessment Report (Duffield Associates, 2001)

Duffield Associates submitted an Environmental Assessment Report to DNREC on behalf of the Port of Wilmington in January 2001. However, the digital copy was illegible and a hard copy was not available. The report was not mentioned in the 2003 Environmental Site Assessment.

Environmental Site Assessment (Duffield Associates, 2003)

Duffield Associates completed the Environmental Assessment to investigate possible health and safety issues that could affect the construction and operation of a proposed truck fueling station. Review of the site's history showed industrial uses over at least the past 100 years, meaning that environmental issues could be present due to metals, petroleum, and coal-related compounds (including PAHs and PCBs). A total of 17 soil samples, including QA/QC samples, were collected and screened for metals, PAHs, and PCBs. No PCBs were detected through screening and overall, analyses showed no greater health risk for construction workers at the site than any other construction site in Delaware. The PCB data was included in this analysis.

Current Regulatory Status:

In July 1996, Diamond State Port Corporation entered into a Voluntary Cleanup Agreement with DNREC for the Former North American Smelting Company property. Various interim actions have taken place on the property, but there were no proposed or final plans. According to the

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DNREC Environmental Navigator, the DNREC-SIRS is no longer actively involved with the site.

SUMMARY OF SITE PCB INFORMATION

Site Investigation PCB Findings:

In the surface soil, PCBs were detected in 11 samples, with concentrations ranging from 0.064 mg/kg to 16 mg/kg. PCBs were detected in unsaturated subsurface soil at one location, NAS-12 (3.0 feet below ground surface (bgs)) at a concentration of 0.81 mg/kg. No saturated subsurface soil samples were collected and analyzed for PCBs.

The calculated 95% upper confidence limit (UCL) of the mean of the concentration of total PCBs observed in the surface soil (for overland flow calculations) is 12.0 mg/kg. Although the Site was not officially capped, the PCB-impacted areas are covered by asphalt or buildings, which prevents the impacted surface soil from eroding. Therefore, overland flow calculations were not performed for the Site. No groundwater samples were collected and analyzed for PCBs.

Concentrations of PCBs on Site			
Sample Matrix	Corresponding Figure	Analytical Methods	Range of Total PCBs
Surface Soil	Figure 2	Method 8082 and Screening Data	Not detected to 16 mg/kg
Subsurface Soil (unsaturated)	Figure 3	Method 8082 and Screening Data	Not detected to 0.81 mg/kg
Subsurface Soil (saturated)	Figure 4	Not Analyzed	Not Analyzed
Groundwater	Figure 5	Not Analyzed	Not Analyzed

A summary of all samples collected for PCB analyses are presented in Tables 1 and 2.

Acreage where PCBs detected:

The estimated surface soil area impacted by PCBs is 13.6 acres (Figure 2). The estimated subsurface unsaturated soil area impacted by PCBs is 2.0 acres in the vicinity of NAS-12 (Figure 3). According to the data available and analyzed by BrightFields, no subsurface saturated soil or groundwater samples were analyzed for PCBs so the respective areas impacted by PCBs cannot be determined.

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PCB Remediation Status:

There is no indication that PCB remediation is required for the North American Smelting Company Property.

PCB MASS LOADING SUMMARY

The majority of the North American Smelting Company Property is paved or covered by buildings; therefore, overland flow is not a likely mechanism of transport of PCB contamination at the property. No samples from the subsurface saturated zone or the groundwater were analyzed for PCBs; therefore, groundwater transport cannot be evaluated as a mechanism of transport for PCBs at the Property.

Overland Flow:

No overland flow calculations were performed for this site.

Groundwater Discharge Analysis:

No groundwater discharge analysis was performed for this site.

Site References:

Delaware Department of Natural Resources and Environmental Control (DNREC), 1990, A Preliminary Assessment of North American Smelting Company Site, March 1990.

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Duffield Associates, Inc., 2001, Environmental Assessment Report, Proposed Multi-Purpose Berth, January 2001.

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WIK Associates, Inc. & Harvard Environmental, Inc., 1997, Plans & Specifications for Contract D.S.P.C. 97:04-1, Demolition/Environmental, March 1997.

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WIK Associates, Inc., 1998, Interim Remedial Action Report, North American Smelting Company Facility, October 1998.

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Figures