

United States Environmental Protection Agency
Region IV
POLLUTION REPORT

Date: Tuesday, October 21, 2008

From: Matthew Huyser

Subject: Final POLREP

Industrial Metal Alloy

20 E Acadia Avenue, Winston-Salem, NC

Latitude: 36.0718000

Longitude: -80.2385000

POLREP No.:	11	Site #:	A4KK
Reporting Period:	3/1/2008-10/16/2008	D.O. #:	
Start Date:	11/6/2006	Response Authority:	CERCLA
Mob Date:	11/6/2006	Response Type:	Time-Critical
Demob Date:	3/1/2008	NPL Status:	Non NPL
Completion Date:	10/16/2008	Incident Category:	Removal Action
CERCLIS ID #:	NCN000409780	Contract #	
RCRIS ID #:			

Site Description

From 1956 until approximately 1976, Industrial Metal Alloy Company (IMACO) operated a solder manufacturing company at the Site. The Site's most recent operable owner, Taracorp, Inc., and its predecessor corporations leased the Site and continued solder manufacturing from 1976 through 1993. The building and property was donated to the North Carolina School of the Arts Foundation, Inc. and is currently being used as a warehouse. NK Holdings, LLC was formed in 2005 and is the corporate successor to Taracorp, Inc.

The Site is bordered on the south and west by a residential area with and on the north and east by commercial and light industrial properties. The IMACO property occupies approximately 1.25 acres, including one main building, an asphalt parking lot, and a wooded area at the rear of the Site running downhill to an unnamed tributary.

The Site was referred to EPA by the State of North Carolina Department of Environment and Natural Resources (NCDENR). EPA conducted a Removal Assessment of the Site in July, 2005 and an assessment of bordering properties in December, 2005.

Analytical results indicated that contamination occurs in the surface and subsurface soils above the removal action levels (RAL) for lead and arsenic. The maximum lead concentration detected in surface soils was 113,821 ppm, and the maximum arsenic concentration in surface soils was 430 ppm. Sediment samples taken from the unnamed tributary at the rear of the property detected elevated levels of inorganic contaminants which may migrate from the Site. The total impacted area of surface soils on the IMACO property and adjacent properties requiring a removal action was approximately 1.1 acres.

NK Holdings signed a consent agreement with EPA on September 20, 2006 to perform the removal work at the Site.

Brown & Caldwell (B&C) of Atlanta, GA was hired by NK Holdings to serve as a technical representative on their behalf and HEPACO of Charlotte, NC was hired to serve as the remediation contractor for the removal action.

B&C collected sediment samples from the unnamed tributary and located a single hotspot at a depth of 3-6" with lead levels measured at 1140 mg/kg. Delineation of an area around the hotspot found one location approximately 100 ft upstream and measured lead levels of 723 mg/kg at a depth of 0-3".

B&C then collected soils screening samples from four properties adjacent to the site. These initial soil samples were identified as Type I samples by their Removal Action Work Plan (RAWP) and were used to identify which parcels would require some or all surface soils to be excavated to remediate lead contamination. When sample results were received, B&C mobilized to the site to complete Type II and Type III sampling as defined in the RAWP which were used to delineate zones of contamination in a

20'x20' grid pattern. START also collected several surface soil samples in a pattern based on the Type II & III samples collected by B&C the previous week, in order to provide corroborative data to evaluate decisions made from B&C's samples. HEPACO, and B&C determined from the sampling results that no excavation would be necessary in 26 grid locations. The decisions were based on both B&C and EPA data collected from surface soils.

During Type II & III sampling, pieces of slag were found in various locations of the site, ranging from soft ball-sized to marble-sized chunks. Based on these observations, it was determined that slag material from the surface indicated visual contamination and would still be removed in the event that results of Type II and Type III sampling determine that excavation is unnecessary in a grid location.

HEPACO's site preparations included brush and tree removal from the IMACO lot, equipment removal from the Colter Electric Yard, construction of a silt fence around the cleared areas, construction of a security fence around operational areas, office trailer and decon trailer setup, utility setup, and constructing a combination truck entrance and equipment decontamination pad.

HEPACO conducted an in-house treatability study with samples collected from the site to evaluate the best treatment product and mixture ratio to immobilize the lead contamination. They concluded that using a 3% by-weight mixture of Triple Superphosphate (TSP) 0-45-0 fertilizer would adequately immobilize the lead, and the soil could then be disposed of as non-hazardous waste (TCLP<0.5mg/kg).

HEPACO conducted the excavation by adding TSP to several grid cells prior to digging at a volume of approximately 3% by weight. Soil was excavated at 6" intervals and stockpiled near a loading area, after which a confirmation sample was taken from the excavation floor and analyzed with a XRF. If the sample met cleanup criteria, it was stored to be sent later for laboratory analysis. If the sample exceeded cleanup criteria, another 6" layer was removed and a new sample was taken. Excavation was continued at 6" intervals up to a maximum depth of 24".

Excavation occurred on grids in two residential lots (8/10 East Acadia Ave and 2117 South Main St), the IMACO property (20 East Acadia Ave), the Colter Electric Yard (2100 Sunnyside Ave), and a 30-foot span of sediment from the unnamed tributary.

START collected split samples from approximately 1/3 to 1/4 of the confirmation samples taken from grid locations on the IMACO property, approximately 1/2 of the grid locations from adjacent properties, and all of the grid locations in the back yard of 2117 South Main Street. When results were returned, there was no grid where START's results exceed the screening level when HEPACO's did not. START remained on-Site and continue to collect split confirmation samples from approximately 1/4 to 1/8 of the grid locations on the IMACO lot until a sufficient reliability in the data collected by HEPACO was established.

After confirmation sample results had been received and verified for consecutive grid locations, backfill and topsoil was added and graded to meet the original surface level. Analytical results reported no contaminants at elevated levels in the fill soils.

Early in the removal action, two sampling procedural changes were made. First, confirmation samples would use a ¼ inch screen and another 6" would be excavated if slag was visually observed in the sample. Second, disposal pile samples would also use a ¼ inch screen and samples would be crushed to fit through the screen prior to analysis.

Later on in the removal action, the XRF screening level for Type III (confirmation) analysis was reduced; this was requested due to observations that when XRF readings indicated a concentration 25% below the cleanup level, the laboratory reported concentrations above the cleanup level 50% of the time. The PRP, B&C and HEPACO agreed to this change in the field sampling procedure. No laboratory confirmation samples exceeded the cleanup level thereafter.

START reported that large portions of slag debris were spotted underneath the south west corner of the building located at 2100 Sunnyside Avenue. Surface and subsurface soils returned XRF readings of approximately 100-300ppm for lead. Slag pieces returned readings of more than 800ppm for lead. The soil was in a mound approximately 3 feet wide 2 feet high, and 20 feet long; the slag in this area was removed manually during the removal action.

HEPACO uncovered piping and a concrete slab at approximately 6" below ground surface in the Colter Electric Yard. Solvent smells were emitting from the grid locations, though no soil staining or free product was observed. The solvent odor could be detected at all locations on the site as far as 150 yards away, but PID/FID readings indicated that there were no VOCs present above Recommended Exposure Limits,

and the odor was absent the following day. Soil samples were collected by B&C and sent for analysis of VOCs, SVOCs, PCBs, Metals, Organics, Oils, and Greases. Results showed no sign of contamination or elevated levels of hazardous substances. BFI CMS Landfill reviewed the results and confirmed that there was no issue for disposal. Excavated soils, which had been segregated during sample analysis, were mixed and treated with soil from other grids. No concrete or piping was removed and the area was backfilled to the original ground surface.

HEPACO also uncovered a concrete vault at 1 foot below grade near the Colter Electric Yard. The vault was approximately 15 feet wide and 15 feet long with a concrete wall separating two long compartments, was 5 feet deep with no top, and was filled with wet soil. A sheen was observed on puddles of water and much of the soil appeared to be stained black; however, no odor was observed and a disturbance test of the sheen suggested that it was most likely bacteria. A 4-inch diameter metal pipe was excavated from the vault, but no remaining contents were observed. The function for this vault was undiscovered and North Carolina State records provided no indication of its existence or uses based on previous owners. Soil and water samples were collected from the vault and sent off-site for analysis of Metals, VOCs, SVOCs, PCBs, Mercury, as well as Oils and Greases per the landfill's request; nearly all compounds were non-detectable. No soils were excavated from the concrete vault, and the vault was not removed; the area was backfilled to the original ground surface.

The Colter Electric Yard had previously housed a furniture store building which burned down, and afterwards the lot was a used car lot and auto shop. There were no records with the City of Winston-Salem or State of North Carolina that explained the underground objects. The property owner was contacted but was unaware of their existence. A crusher run stone surface was added after backfilling in lieu of topsoil due to the equipment storage and traffic of large vehicles.

A large debris pile containing rubber, trash, and slag galls was at the southeast corner of the IMACO property and was excavated to original ground surface. The pile had an average depth of 8 feet and a total volume of approximately 90-100 cubic yards. XRF readings confirm lead levels ranging from 10,000ppm to 100,000ppm. Non-slag debris was mixed with the excavated soil for disposal. Slag balls were set aside for recycling, but when it was determined that no viable metal reclamation facility would accept the slag, they were crushed, mixed with excavated soil, and treated with TSP for disposal.

During excavation HEPACO uncovered a buried drum in the waste pile. The drum was removed and placed in a poly overpack. Limited sampling equipment on-site allowed only a visual observation of the contents and pH paper reading to be taken. The drum contained a white/yellow solid powder with a pH of 12. Level B PPE with spill protection clothing was worn for handling of unknown drums after the OSC was notified. PID meters were mobilized to the site to conduct additional air monitoring. Shortly thereafter, a second unknown drum was discovered. HEPACO conducted a Level B entry to handle and sample the contents of the drum. The drum contained a solid material with neutral pH. XRF readings of the material indicated elevated levels of lead up to 398ppm. The Winston-Salem Fire Department volunteered the use of their mobile spectrometer to sample the material. The readings indicated that the product was most likely an industrial cleaner. Both drums were disposed of at the end of the removal action as nonhazardous wastes.

Twenty grids were found by XRF to have lead concentrations above the screening level after excavating up to 24 inches. Due to language in the AOC which allows for an excavation limit of 24 inches, Type III samples (as established in the Sampling Plan) were collected for laboratory confirmation from these grids. HEPACO placed orange polyethylene fencing in the bottom of these excavation areas prior to backfilling to provide a visual warning barrier in case one or more of these locations should they be excavated in the future.

When excavation and backfilling was complete, HEPACO seeded and mulched areas of exposed topsoil. New growth was established within 3 months and washout ruts had become overgrown several months thereafter. The silt fence was removed in October, 2008 and a replacement perimeter fence with gates was constructed around the IMACO property on October 16, 2008.

Disposition of Wastes

Waste Stream	Quantity	Manifest #	Disposal Facility
Lead-contaminated soils stabilized with TSP (TCLP <0.5mg/kg)	4059.91 Tons		Allied Waste BFI/CMS Landfill (Concord, North Carolina)
Industrial detergent	1 Drum		Allied Waste BFI/CMS Landfill

	(partially filled)		(Concord, North Carolina)
Lead-contaminated debris stabilized with TSP	1 Drum (partially filled)		Allied Waste BFI/CMS Landfill (Concord, North Carolina)

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