DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA750)
Migration of Contaminated Groundwater Under Control

Facility Name: **Electronic Parts Specialty Company (EPSCO)**
Facility Address: **41 Coles Avenue, Lumberton Township, New Jersey, 08048**
Facility EPA ID#: **NJD002361665**

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EIs developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While final remedies remain the long-term objectives of the RCRA Corrective Action program, the EIs are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993 (GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated groundwater and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration / Applicability of EI Determinations

EI Determination status codes should remain in the RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

Facility Information

The Electronic Parts Specialty Company (EPSCO) is located on a 4.83 acre site at the eastern terminus of Coles Avenue in Lumberton Township, New Jersey. From the early 1900s to the mid-1940s, the site was reported to be part of the Lumberton Dairy and was used primarily for agriculture and dairy farming. EPSCO has been an active metal preparation and electroplating/coating facility since the mid 1940s. The

property is currently zoned as planned industrial (I2) and contains two permanent buildings (plating building and office building), an unfinished building foundation, an unlined, partially backfilled and abandoned lagoon and overflow area, and several greenhouses (Attachment 1). The property is primarily surrounded by residential property, including the residential community known as the Bobby's Run/Woodlands at Lumberton Development to the northeast and southeast. A small tributary to the South Branch of Rancocas Creek, known as Bobby's Run, is located approximately 700 feet south of the site.

EPSCO's primary operations consist of electroplating steel and aluminum parts for electronic and computer components. EPSCO utilizes three processes to obtain the final required coating, including electroplating, anodizing, and bondarizing. Material used in these processes include sodium cyanide, zinc oxide, zinc cyanide, sodium hydroxide, nitric acid, sulfuric acid, zinc phosphate, trichloroethane, perchloroethylene, muriatic aid, chromate, fluoroboric acid, and nickel acetate. Historically, some parts were also painted in a paint booth that was located in the plating building, which has since been removed. The plating and painting processes have generated various types of hazardous waste including F007 (zinc electroplating waste), F008 (plating bath sludge), and F003 (paint and solvent waste). According to the New Jersey Department of Environmental Protection (NJDEP) Case Manager, the facility has significantly reduced their electroplating operations and now generates minimal quantities of electroplating waste. The waste is stored in 55-gallon drums on an asphalt pad between the current plating building and the office building, for less than 90 days. EPSCO also operates a greenhouse/plant nursery at the site.

EPSCO was issued a Directive on April 6, 1990, per the Spill Compensation and Control Act (N.J.S.A. 58:10-23 et seq.). NJDEP transferred this site into the Division of Publicly Funded Site Remediation (DPFSR) on August 6, 1990. Per the Directive, NJDEP initiated an in-house Remedial Investigation (RI) in 1991. Investigation activities have indicated that soil and groundwater have been adversely impacted by volatile and inorganic contamination as a result of activities at the EPSCO site. Volatile and inorganic contamination has also impacted nearby Bobby's Run. NJDEP has evaluated and selected remedial alternatives for the site, which are outlined in the Final Decision Document, dated October, 1998. Implementation of the soil remedial alternatives have started with partial demolition of the plating building in July, 1999, and the excavation and off-site disposal of hot spot soil contamination in April, 2000. The remedial action selected for groundwater is an on-site extraction and treatment system. According to the NJDEP Case Manager, the extraction and treatment system is being designed and is expected to begin operating in late 2002 or early 2003 (Ref. 9).

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

   X If yes - check here and continue with #2 below.

   ___ If no - re-evaluate existing data, or

   ___ If data are not available, skip to #8 and enter "IN" (more information needed) status code.

Summary of Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs):
Previous investigations indicate that activities within the plating building and disposal in the lagoon were the primary sources of environmental contamination at the EPSCO site. However, a review of the building layout, facility operations (past and present), and disposal methods has identified other areas which may have contributed contaminants to the environment. A paragraph providing a historical waste management overview for the facility is outlined first, followed by brief discussion of each SWMU/AOC. A facility map is provided in Attachment 1.

General Waste Management Overview

EPSCO utilized 55-gallon drums or other holding receptacles in the plating building to maintain electroplating chemicals and rinse water. EPSCO immersed parts into the drums or containers, which at times caused an overflow that was collected in a below floor grade level catch basin/holding tank (SWMU 1). The catch basin/tank was located inside of the plating building and was covered by a metal grate walkway. The catch basin was connected to a central concrete drain which was emptied by two discharge lines (SWMU 2). From 1945 to 1985, spent plating waste was discharged directly into the shallow percolation lagoon (SWMU 2) via the discharge lines. During periods of high precipitation, the lagoon would overflow into the adjacent wooded area ("overflow area") east of the lagoon. From 1985 to approximately 1995, waste collected in the catch basin was diverted to an on-site mobile tanker (SWMU 3) for less than a 90 days, at which time the wastes were transferred off site by a licensed hauler. After removal of the mobile tanker in 1995, wastes were pumped into 55-gallon drums and held in the drum storage area (SWMU 3) inside the plating building prior to being transported to a permitted facility. Inspections conducted by NJDEP indicated that waste materials from the plating building may have also been conveyed to a septic tank and leach field area (SWMU 4), and the local sanitary sewer system (SWMU 5). Results of the RI indicated that wastes managed in the plating building were also released to building sub-slab areas (AOC A) due to spills and overflow (Ref. 1).

SWMU 1, Catch Basin/Holding Tank: This unit was located in the eastern portion of the plating building and held various types of metal and solvent waste from electroplating operations. RI sampling results indicated that prior electroplating activities resulted in metals and volatile organic compound (VOC) contamination in soil and groundwater (Ref. 1). According to the NJDEP Case Manager, this unit was taken out of service when the eastern portion of the plating building was demolished in July, 1999 (Ref. 9). Approximately 1,200 tons of contaminated surface soil (hazardous for cadmium and lead) was removed in the area of the former plating building in April, 2000, and shipped off site for disposal (Refs. 8, 10).

SWMU 2, Lagoon/Overflow Area/Associated Piping: From 1945 to 1983, approximately 40,000 gallons/day of metal and solvent waste were discharged from the plating building via concrete underground piping to the lagoon/overflow area. In 1983, EPSCO reduced the waste stream to approximately 330 gallons/day. In 1985, EPSCO was forced to discontinue use of the unpermitted lagoon. RI results indicated that prior disposal activities at this unit resulted in metal and VOC contamination in soil and groundwater (Ref. 1). Data colleted during the RI also indicated that residual sludges in the impoundment contained hazardous constituents at concentrations that may act as a secondary source of contamination. In April, 2000, approximately 800 tons of contaminated surface soil (hazardous for cadmium and lead) was removed from the piping and lagoon area and shipped off site for disposal (Refs. 8, 10). The impoundment has been partially covered, but contaminated surface soil is still exposed in some areas. The lagoon and a portion of the piping area is surrounded by a chain link fence to limit potential exposure. In addition, NJDEP is currently in the final remedial design phase and evaluating two possible remedial alternatives: installation of a site-wide cap, or excavation of all soil contamination above the NJ Impact to Ground Water Soil Cleanup Criteria (NJ IGWSCC). Implementation of either of these alternatives will limit further potential migration to groundwater (Ref. 6).

SWMU 3, Waste Storage Areas:

SWMU 3A, Mobile Tanker: From 1985 to 1995, a mobile tanker was used to hold metal plating and solvent wastes collected in the catch basin/tank (SWMU 1) (Ref. 1). No information was available relative to the location or size of this unit. According to NJDEP representatives, however, the unit is no longer present at the facility (Ref. 9). Available documentation does not attribute any of the site contamination to releases from this unit.

SWMU 3B, Drum Storage Area: After removal of the mobile tanker (SWMU 3A), metal plating and solvent wastes collected in the catch basin/tank (SWMU 1) were placed in 55-gallon drums and stored in a drum storage area in the northeast portion of plating building for periods up to 90 days. Because the waste was stored for less than 90 days and then transferred off site to a permitted facility, no permit was required. This area was located in a portion of the plating building that has been demolished. Soil and groundwater contamination has not been attributed to this particular unit because the drum storage area was located in the same part of the facility as the catch basin (SWMU 1) which has been attributed to the widespread soil and groundwater contamination in the vicinity of this unit (Refs. 1, 7).

SWMU 3C, Current Waste Storage Area: According to the NJDEP Case Manager, electroplating operations at EPSCO have been significantly reduced. Limited amounts of waste are currently generated and stored in 55-gallon drums on an asphalt pad between the plating building and the office building. Wastes are stored at this location for less than 90 days. No releases or violations have been documented with respect to this waste storage area (Ref. 9).

SWMU 4, Septic Tank and Leach Field Area: During an NJDEP inspection on February 24, 1981, an unregulated septic system was discovered. This unit was located just southwest of the plating building. Subsurface drainage lines connected the catch basin/holding tank (SWMU 1) to

the septic system and directed metal plating and solvent waste to the septic tank. Subsurface drainage lines also connected the facility restrooms in the plating building to the leach field located just south of the septic system. RI soil samples collected in this area detected elevated levels of target analyte list (TAL) metals above the NJDEP soil cleanup criteria, suggesting that plating wastes were indeed discharged from the catch basin/holding tank (SWMU 1) to the septic system tank (Ref. 1). Approximately 1,200 tons of contaminated soil (hazardous for cadmium and lead) was removed in the area of the former plating building, which encompassed this unit, in April, 2000, and shipped off site for disposal (Refs. 8, 10).

SWMU 5, Municipal Sanitary Sewer System: On December 5, 1986 the NJ Bureau of Hazardous Waste Engineering (BHWE) inspected the catch basin/tank (SWMU 1) area and discovered that it was also connected to the municipal sewer system. No further information was provided on the location of the former sewer connection. The catch basin/tank (SWMU 1) has been removed and thus is no longer discharging to the municipal sanitary sewer system. NJDEP representatives indicated that the sewer connection was evaluated for releases along with other potential sources in the RI. The results of this investigation have not been documented at this time. The source (SWMU 1) has been removed and thus there is no further potential for wastes to be discharged to the municipal sanitary sewer system via this unit and its associated connections.

SWMU 6A, 6B, 6C, Underground Storage Tanks: In the past, three underground storage tanks (UST) of undocumented capacity were located at the EPSCO facility. According to the RI Report, one tank was located west of the plating building and contained fuel oil (SWMU 6A), another tank was located on the north side of the office building and its contents were not documented (SWMU 6B), and the third tank holds fuel oil and was in operation at the time of the RI (SWMU 6C). Total petroleum hydrocarbon (TPH) contamination was not detected above NJ soil standards in the area of the three USTs (Ref. 1).

AOC A, Building Sub-Slab Areas: During electroplating operations in the plating building, waste materials would at times spill out of holding drums and containers onto the building floor. According to available documentation, wastes may have been released to soil beneath the plating building via cracks in the slab floor. RI characterization efforts detected metals and VOC contamination in soil beneath the plating building. However, this contamination has also been attributed to releases from the catch basin/holding tank (SWMU 1) and discharge piping (SWMU 2) (Ref. 7). Approximately 1,200 tons of contaminated surface soil (hazardous for cadmium and lead) was removed in the area of the former plating building in April, 2000, and shipped off site for disposal (Refs. 8, 10).

In summary, all SWMUs/AOCs are inactive or have been removed with the exception of the current waste storage area (SWMU 3C) and the UST north of the office building (SWMU 6C). Contamination has been attributed to SWMU 1, SWMU 2, SWMU 4, and AOC A. However, due to the extent of contamination it is possible that other units at the facility contributed to the soil and groundwater contamination associated with the EPSCO facility. Groundwater and soil contamination has been fully delineated but is still undergoing remediation and/or remedial action (Ref. 7). Remedial actions for soil include hot spot excavation and removal, which was completed in April, 2000, fencing, and capping. NJDEP is currently evaluating two alternatives for the final remedial action for soil to determine which is more feasible. The alternatives include installation of a site-wide cap or excavation of all soil above the NJ IGWSCC (Ref. 9). The remedial action selected for groundwater is an on-site extraction and

treatment system. According to the NJDEP Case Manager, the extraction and treatment system is being designed and is expected to begin operating in late 2002 or early 2003 (Ref. 9).

References:

1. Remedial Investigation Report for Electronic Parts Specialty Co. Site, Lumberton Township, Burlington County, New Jersey. Prepared by L. Robert Kimball and Associates Architects and Engineers, Inc. Dated March, 1997.
2. Remedial Alternatives Analysis Report for Electronic Parts Specialty Co. Site, Lumberton Township, Burlington County, New Jersey. Prepared by L. Robert Kimball and Associates Architects and Engineers, Inc. Dated April, 1998.
3. Division of Publicly Funded Site Remediation Public Meeting to Discuss the Proposed Decision Document for the Electronic Parts Specialty Co. Site. Prepared by L.B.S., Inc. Dated June 9, 1998.
4. Letter from Robert Merenich, Reisenburger & Kizner, P.C., to Heather Swartz, NJDEP Bureau of Community Relations, re: Comments on Proposed Decision Document regarding Electronic Parts Specialty Co., Lumberton Township, Burlington County, New Jersey. Dated June 24, 1998.
5. Responsiveness Summary, Electronic Parts Specialty Co., Lumberton Township, Burlington County, New Jersey. Prepared by NJDEP. Dated August 31, 1998.
6. Final Decision Document, Electronic Parts Specialty Co., Lumberton Township, Burlington County, New Jersey. Prepared by NJDEP. Dated October 2, 1998.
7. Draft Additional Remedial Investigation Report for Electronic Parts Specialty Co. Site, Lumberton Township, Burlington County, New Jersey. Prepared by L. Robert Kimball and Associates Architects and Engineers, Inc. Dated August, 2000.
8. Letter from Craig Wallace, NJDEP, to Elizabeth Butler, USEPA, re: Recent Activities at the Electronic Parts Specialty Co. Site. Dated January 29, 2001.
9. Telephone conversations between Craig Wallace, NJDEP, and Elizabeth Butler, USEPA, re: Status of EPSCO Remedial Activities. December 2000 through February 2001.
10. Fax from Craig Wallace, NJDEP, to Elizabeth Butler, USEPA, re: “Hot Spot” removal sketch for the Electronic Parts Specialty Co. Project. Dated February 13, 2001.

2. Is **groundwater** known or reasonably suspected to be "**contaminated**"[1] above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

   X If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

   ____ If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

   ____ If unknown - skip to #8 and enter "IN" status code.

Rationale:

The unsaturated zone beneath the site is comprised of the Mount Laurel Sand and the Upper Wenonah Formation. Underlying the Upper Wenonah Formation is the Middle Wenonah Formation, which is the uppermost aquifer beneath the site. The water table is approximately 17 feet below ground surface (bgs) at the site, and the top of the aquifer is approximately 20 feet bgs at EPSCO. Groundwater flows to the south and south-southeast, and discharges to Bobby's Run south of the site (Ref. 4). According to site topographic maps, Bobby's Run is less than 10 feet above sea level near the site. The Middle Wenonah aquifer extends to a depth of approximately 45 feet below sea level in this area, indicating that a significant portion of the aquifer flow may continue beneath the stream, contributing to recharge of the aquifer. The Middle Wenonah Formation is part of the New Jersey Coastal Plain Sole Source Aquifer, and up to 1.5 million gallons per day are pumped from this aquifer in Burlington County.

Significant groundwater contamination has been documented, and the contamination has been reliably attributed to releases from SWMUs and AOCs at the facility. During the RI, 21 monitoring wells were installed and sampled at the site and downgradient areas. Hazardous constituents, including arsenic, cadmium, nickel, lead, chromium, tetrachloroethene (PCE), and trichloroethene (TCE), have been detected in groundwater beneath and downgradient of the site at concentrations exceeding New Jersey Ground Water Quality Criteria (NJ GWQC) by up to four orders of magnitude. Groundwater flows to south and the south-southeast beneath the site, and contamination has been detected in the uppermost aquifer beneath the site and downgradient to the nearest stream, Bobby's Run.

Table 1 below identifies the constituents detected in the Middle Wenonah aquifer above NJ GWQC for Class II (potable) groundwater during RI sampling conducted between November, 1995 and August, 1996 (Ref. 1).

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

Table 1 - Monitoring Wells with Concentrations Exceeding the NJ GWQC during the RI (μg/L)

Constituent	Well Locations with Concentrations Exceeding NJ GWQC	Max. Conc.	NJ GWQC
VOCs			
1,1-Dichloroethene	MW-3D	42	2
1,2-Dichloroethene (total)	MW-3D, MW-3DL, MW-6	190	110
Methylene Chloride	MW-3, MW-3DL, MW-5, MW-7, MW-11, MW-13, MW-15, MW-16, MW-17, MW-20	30	2
PCE	MW-2, MW-3, MW-3D, MW-3DL, MW-4, MW-5, MW-5D, MW-6, MW-6DL, MW-7, MW-7DL, MW-8, MW-9, MW-9D, MW-13, MW-13DL, MW-14, MW-16, MW-17, MW-18, MW-19, MW-19D, MW-19DL, MW-20, MW-10DL, MW-22	1,800	1
TCE	MW-2, MW-3, MW-3D, MW-3DL, MW-4, MW-5, MW-5D, MW-6, MW-6DL, MW-7, MW-7DL, MW-8, MW-9, MW-9D, MW-12, MW-13, MW-13DL, MW-14, MW-15, MW-16, MW-17, MW-18, MW-19, MW-19D, MW-19DL, MW-20, MW-20DL, MW-22	270	1
Inorganics			
Arsenic	MW-5, MW-7, MW-8, MW-9, MW-9D, MW-11, MW-12, MW-17, MW-18, MW-20	40.5	8
Cadmium	MW-2, MW-3, MW-3D, MW-5, MW-7, MW-7-1, MW-7-2, MW-19, MW-19D, MW-20, MW-22	428	4
Chromium	MW-2, MW-3, MW-5, MW-5D, MW-7, MW-7-1, MW-7-2	499	100
Lead	MW-5, MW-7, MW-7-1, MW-8, MW-9, MW-12, MW-17, MW-20	47.9	10
Nickel	MW-9, MW-12, MW-14, MW-20	137	100
Cyanide	MW-3, MW-3D	251	200

D - Duplicate, DL - Dilution

Based upon the RI results presented in Table 1, groundwater has been impacted above NJ GWQC in both on- and off-site locations. In general, the highest levels of VOC contamination were in on-site MW-3, MW-5, and MW-7 and off-site MW-13 and MW-16. Detected concentrations of metals in groundwater were highest in the area of the plating building and lagoon/overflow area.

References:

1. Remedial Investigation Report for Electronic Parts Specialty Co. Site, Lumberton Township, Burlington County, New Jersey. Prepared by L. Robert Kimball and Associates Architects and Engineers, Inc. Dated March, 1997.
2. Draft Additional Remedial Investigation Report for Electronic Parts Specialty Co. Site, Lumberton Township, Burlington County, New Jersey. Prepared by L. Robert Kimball and Associates Architects and Engineers, Inc. Dated August, 2000.
3. USEPA, Region 2 New Jersey Coastal Plain Sole Source Aquifer web site. (http://www.epa.gov/region02/water/aquifer/coast/coastpln.htm).
4. **Telephone conversations between Craig Wallace, NJDEP, and Elizabeth Butler, USEPA, re: Status of EPSCO Remedial Activities. December 2000 through February 2001.**

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"[2] as defined by the monitoring locations designated at the time of this determination)?

   X If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"[2].

   ____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"[2]) - skip to #8 and enter "NO" status code, after providing an explanation.

   ____ If unknown - skip to #8 and enter "IN" status code.

Rationale:

The RI characterized the groundwater flow system in the uppermost aquifer beneath the site, the Middle Wenonah aquifer. Groundwater contaminant concentrations exceed NJ GWQC at the site by several orders of magnitude for PCE, TCE, cadmium, and chromium, with the highest concentrations for most constituents observed at MW-5 and MW-7, in the vicinity of the former plating building (Ref. 1). The contaminant concentrations decrease from the source areas in the vicinity of the former Plating building south to Bobby's Run. Groundwater flows to the south and south-southeast at EPSCO and downgradient areas, with an average hydraulic gradient of 0.008. Bobby's Run south and southeast of the site is approximately 20 feet above sea level. Water levels decrease in elevation from EPSCO to downgradient wells to the south approaching Bobby's Run, reflecting the discharge from the aquifer to the creek. TCE was detected at up to 25 µg/l at MW-12, approximately 300 feet south of the plating building (Ref. 1). No VOCs have been detected at MW-11, southwest of MW-12. These data indicate that contaminant concentrations decrease downgradient of the releases at the EPSCO site, as groundwater flows towards the discharge area at Bobby's Run.

Bobby's Run receives discharge from the Middle Wenonah aquifer, as shown by the relative elevations of the creek and water levels in the aquifer (Ref. 1). Surface water concentrations of PCE at Bobby's Run have been detected at 2 µg/l, just above the New Jersey Surface Water Protection Criteria (NJ SWPC) of 1 µg/l. Because the aquifer discharges to Bobby's Run (Ref. 4) and contaminant concentrations decrease to the south from the source area at the site, groundwater contamination is stable at the site. NJDEP has planned to install a pump and treat system for contaminated groundwater, but no measures have been implemented to control migration of contaminated groundwater at this time.

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[2] "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

References:

1. Remedial Investigation Report for Electronic Parts Specialty Co. Site, Lumberton Township, Burlington County, New Jersey. Prepared by L. Robert Kimball and Associates Architects and Engineers, Inc. Dated March, 1997.
2. Draft Additional Remedial Investigation Report for Electronic Parts Specialty Co. Site, Lumberton Township, Burlington County, New Jersey. Prepared by L. Robert Kimball and Associates Architects and Engineers, Inc. Dated August, 2000.
3. Remedial Alternatives Analysis Report for Electronic Parts Specialty Co. Site, Lumberton Township, Burlington County, New Jersey. Prepared by L. Robert Kimball and Associates Architects and Engineers, Inc. Dated April, 1998.
4. **Telephone conversations between Craig Wallace, NJDEP, and Elizabeth Butler, USEPA, re: Status of EPSCO Remedial Activities. December 2000 through February 2001.**

4. Does "contaminated" groundwater **discharge** into **surface water** bodies?

_X_ If yes - continue after identifying potentially affected surface water bodies.

____ If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination"does not enter surface water bodies.

____ If unknown - skip to #8 and enter "IN" status code.

Rationale:

The RI identified discharges of contaminated groundwater from the Middle Wenonah aquifer to Bobby's Run south of the EPSCO facility, based on water level elevations in the aquifer and the creek, and based on PCE concentrations observed at surface water sampling locations SW-1 and SW-2. Monitoring well water level data also indicate that flow in the Middle Wenonah flows to south and south-southeast beneath the site towards Bobby's Run (Ref. 1). PCE was the only contaminant detected above the NJ SWPC, with a concentration of 2 μg/l at both sampling locations, just above the NJ SWPC of 1 μg/l for PCE. No other source of PCE in Bobby's Run was identified in the RI (Ref. 1).

References:

1. Remedial Investigation Report for Electronic Parts Specialty Co. Site, Lumberton Township, Burlington County, New Jersey. Prepared by L. Robert Kimball and Associates Architects and Engineers, Inc. Dated March, 1997.

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be **"insignificant"** (i.e., the maximum concentration[3] of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or ecosystems at these concentrations)?

   X If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration[3] of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgement/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or ecosystem.

   ____ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration[3] of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations[3] greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

   ____ If unknown - enter "IN" status code in #8.

Rationale:

Contamination detected at Bobby's Run was found in both samples (SW-1 and SW-2) at 2 µg/l of PCE, just above the NJ SWPC of 1 µg/l (Ref. 1). Sediment samples collected from Bobby's Run contained five metals above the 1992 Oak Ridge National Laboratory - Lowest Effect Level (ORNL-LEL) Sediment Guidelines, which were used by NJDEP as screening criteria for sediment contamination. All of these metals (cadmium, nickel, arsenic, and iron), with the exception of chromium, were detected in upstream samples at similar or higher concentrations in upstream sediment sample locations; therefore, NJDEP attributed these contaminants to off-site sources unrelated to EPSCO. Although chromium was detected only in downstream sediment samples, chromium was not detected in downgradient wetlands soil samples. Thus NJDEP concluded that the chromium detected in Bobby's Run sediment was not likely associated with the EPSCO facility.

In addition, NJDEP performed an ecological evaluation to determine the impacts of releases at EPSCO on Bobby's Run (Ref. 1). In addition to sediment and surface water sampling, NJDEP performed a

[3] As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

wetlands evaluation, with habitat and vegetation classification and soil characterization. The ecological evaluation included an evaluation of transport pathways, species inventory, and wetlands impact evaluation. The ecological evaluation found no unacceptable impacts to Bobby's Run from contaminants released at the EPSCO facility.

References:

1. Remedial Investigation Report for Electronic Parts Specialty Co. Site, Lumberton Township, Burlington County, New Jersey. Prepared by L. Robert Kimball and Associates Architects and Engineers, Inc. Dated March, 1997.

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or ecosystems that should not be allowed to continue until a final remedy decision can be made and implemented[4])?

___ If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and ecosystems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR 2) providing or referencing an interim-assessment[5], appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialist, including an ecologist) adequately protective of receiving surface water, sediments, and ecosystems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

___ If no - (the discharge of "contaminated" groundwater can not be shown to be "**currently acceptable**") - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or ecosystem.

___ If unknown - skip to 8 and enter "IN" status code.

Rationale:

This question is not applicable. See response to question #5.

[4] Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

[5] The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or ecosystems.

7. Will groundwater **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

   X If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

   ____ If no - enter "NO" status code in #8.

   ____ If unknown - enter "IN" status code in #8.

Rationale:

NJDEP has selected a pump and treat system with reinjection of treated groundwater for remediation of groundwater contamination at the EPSCO facility. Implementation of this remedial action will include groundwater monitoring to evaluate performance of the remedy. Operation of the system will provide hydraulic containment for the contamination and will effective reduce contaminant concentrations in the aquifer (Ref. 1). According to the NJDEP Case Manager, the extraction and treatment system is currently being designed and is expected to begin operating in late 2002 or early 2003 (Ref. 3). In addition, highly contaminated soils at the EPSCO facility have been excavated and disposed of off site, reducing the impact of soil contamination on groundwater at the site (Ref. 2).

References:

1. Final Decision Document, Electronic Parts Specialty Co., Lumberton Township, Burlington County, New Jersey. Prepared by NJDEP. Dated October 2, 1998.
2. Draft Additional Remedial Investigation Report for Electronic Parts Specialty Co. Site, Lumberton Township, Burlington County, New Jersey. Prepared by L. Robert Kimball and Associates Architects and Engineers, Inc. Dated August, 2000.
3. Telephone conversations between Craig Wallace, NJDEP, and Elizabeth Butler, USEPA, re: Status of EPSCO Remedial Activities. December 2000 through February 2001.

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

_X_ YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the Electronic Parts Specialty Company Facility, EPA ID# NJD002361665, located at 41 Coles Avenue, in Lumberton Township, New Jersey. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater" This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

____ NO - Unacceptable migration of contaminated groundwater is observed or expected.

____ IN - More information is needed to make a determination.

Completed by: _____ Date:_____

Stuart Strum
Hydrogeologist
Booz·Allen & Hamilton

Reviewed by: _____ Date:_____

Richard Kuhlthau
Sr. Hydrogeologist
Booz·Allen & Hamilton/ASE

Also Reviewed by: _____ Date:_____

Elizabeth Butler, RPM
RCRA Programs Branch
EPA Region 2

_____ Date:_____

Barry Tornick, Section Chief
RCRA Programs Branch
EPA Region 2

Approved by: Original signed by:_____ Date: April 18, 2001

Raymond Basso, Chief
RCRA Programs Branch
EPA Region 2

Locations where references may be found:

References reviewed to prepare this EI determination are identified after each response. Reference materials are available at the USEPA Region 2, RCRA Records Center, located at 290 Broadway, 15th Floor, New York, New York, and the New Jersey Department of Environmental Protection Office located at 401 East State Street, Records Center, 6th Floor, Trenton, New Jersey.

Contact telephone and e-mail numbers:

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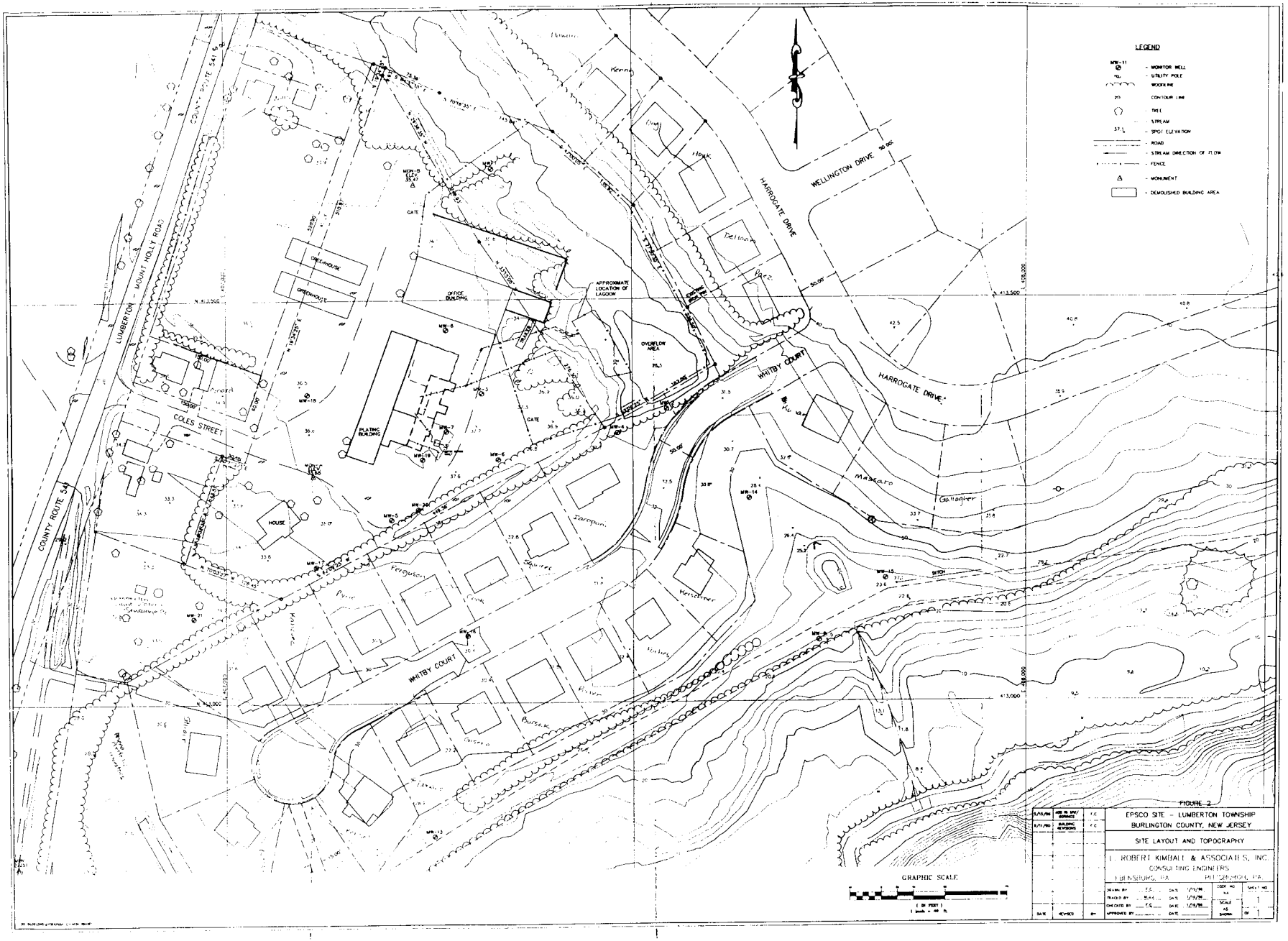
Attachments

The following attachments have been provided to support this EI determination.

- Attachment 1 - Facility Map
- Attachment 2 - Groundwater Contamination Areas
- Attachment 3 - Summary of Media Impacts Table

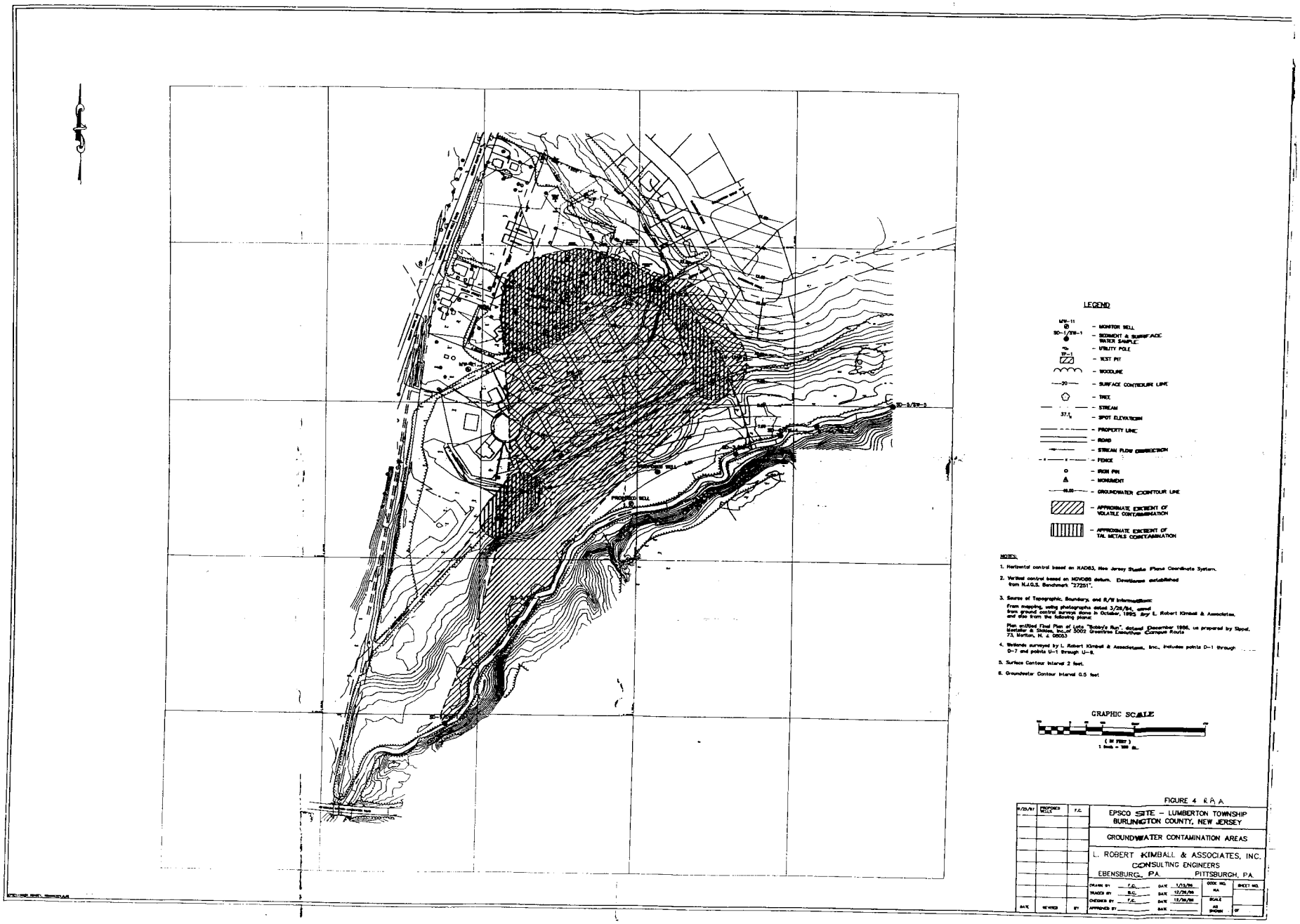
Attachment 1 - Facility Map

Source: Additional Remedial Investigation Report for EPSCO, August 2000



Attachment 2 - Groundwater Contamination Areas

Source: Remedial alternatives Analysis Report for EPSCO, April 1998



Attachment 3 - Summary of Media Impacts Table

Electronic Parts Specialty Company (EPSCO)

	GW	AIR (Indoors)	SURF SOIL	SURF WATER	SED	SUB SURF SOIL	AIR (Outdoors)	CORRECTIVE ACTION MEASURE	KEY CONTAMINANTS
SWMU 1. Catch Basin/Tank/Piping	Yes	No	No	Yes	Yes	Yes	No	▸ Building/unit demolition ▸ Hot Spot Excavation with Off-Site Disposal ▸ Groundwater Extraction, Treatment and Reinjection	Metals, VOCs
SWMU 2. Lagoon/Overflow Area	Yes	No	Yes	Yes	Yes	Yes	No	▸ Solid Waste Cap ▸ Fencing ▸ Groundwater Extraction, Treatment and Reinjection	Metals, VOCs
SWMU 3A, 3B, 3C. Waste Storage Areas	Yes	No	No	No	No	Yes	No	▸ Building/unit demolition ▸ Hot Spot Excavation with Off-Site Disposal ▸ Groundwater Extraction, Treatment and Reinjection	Metals, VOCs
SWMU 4. Septic Tank and Leach Field	Yes	No	No	Yes	Yes	Yes	No	▸ Hot Spot Excavation with Off-Site Disposal ▸ Groundwater Extraction, Treatment and Reinjection	Metals, VOCs

	GW	AIR (Indoors)	SURF SOIL	SURF WATER	SED	SUB SURF SOIL	AIR (Outdoors)	CORRECTIVE ACTION MEASURE	KEY CONTAMINANTS
SWMU 5. Sanitary Sewer System	No	No	No	No	No	No	No	NA	NA
SWMU 6A, 6B, 6C. Underground Storage Tanks	No	No	No	No	No	No	No	None	NA
AOC A. Building Sub-slab areas	Yes	No	No	Yes	Yes	Yes	No	▸ Building demolition ▸ Hot Spot Excavation with Off-Site Disposal ▸ Groundwater Extraction, Treatment and Reinjection	Metals, VOCs