

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action

Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name: Cresticon, Inc. (formerly Pfaltzgraff Co./formerly Cole Office Environments)

Facility Address: 1201-1209 Eden Road (formerly 640 Whiteford Road), York, PA 17402

Facility EPA ID #: PAD052917846

- I. Has all available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, 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?

If yes – check here and continue with #2 below.

If no – re-evaluate existing data, or

If data are not available skip to #6 and enter “IN” (more information needed) status code.

BACKGROUND

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 EI 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 “Current Human Exposures Under Control” EI

A positive “Current Human Exposures Under Control” EI determination (“YE” status code) indicates that there are no “unacceptable” human exposures to “contamination” (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all “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 objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The “Current Human Exposures Under Control” EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program’s overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in 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).

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2. Are groundwater, soil, surface water, sediments, or air media known or reasonably suspected to be “contaminated”¹ above appropriately protective risk-based “levels” (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	<u>Yes</u>	<u>No</u>	<u>?</u>	<u>Rationale/Key Contaminants</u>
Groundwater	<u>X</u>			Volatile Organic Compounds (VOCs) and Metals.
Air (indoors) ²		<u>X</u>		No record of contamination
Surface Soil (e.g., <2 ft)		<u>X</u>		No record of contamination.
Surface Water		<u>X</u>		No surface water media are relevant on site.
Sediment		<u>X</u>		No sediment media are relevant on site.
Subsurf. Soil (e.g., >2 ft)	<u>X</u>			VOCs and Metals.
Air (outdoors)		<u>X</u>		No record of contamination.

_____ If no (for all media) - skip to #6, and enter “YE,” status code after providing or citing appropriate “levels,” and referencing sufficient supporting documentation demonstrating that these “levels” are not exceeded.

X If yes (for any media) - continue after identifying key contaminants in each “contaminated” medium, citing appropriate “levels” (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

_____ If unknown (for any media) - skip to #6 and enter “IN” status code.

Rationale and Reference(s):

General Facility Information

The former Pfaltzgraff/Cole Office Environments Facility is located in Springettsbury Township in York County, near York Pennsylvania. The subject property is located on the south side of Arsenal Road (Rt. 30) and north of the Harrisburg-Baltimore Expressway (Rt. 83). The property was undeveloped until the early 1960s when it was purchased by Cole Division, Litton Corporation. Construction of the Facility building began in 1965 with additions in 1967-1968. From the late 1960s up until 1989, the property was used for the fabrication of parts and the assembly of office furniture which included zinc, nickel and chromium electroplating, iron phosphatizing and painting operations. Between 1989 and 1991, the building was vacant and the property was not used. From 1991 to 1993, a skid repair business operated in the western-most extension of the Facility, and from 1990 to 1998, approximately 40,000 square feet of the Facility was rented to Pfaltzgraff Company for use as a warehouse. Currently, the property is owned by

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 appropriately protective risk-based “levels” (for the media, that identify risks within the acceptable risk range).

² Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

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Kinsley Properties (under K/G Whiteford Limited Partnership) and leased to Worthington Industries, Inc. who manufactures steel pallets and custom steel packaging materials. The site, which is located in an industrial area, is occupied by one building, paved parking lots, grass areas, trees, and small brush areas

On July 6, 1997, the former Pfaltzgraff/Cole Office Environments Facility submitted Notices of Intent to Remediate (NIR) (1) chromium and nickel in soil and groundwater, (2) volatile organic compounds (VOCs) in regional groundwater, and (3) paint thinner constituents in soils in accordance with the provisions of Pennsylvania's Land Recycling and Environmental Remediation Standards Act (Act 2). To maintain consistency with prior PADEP Act 2 documentation, the former Pfaltzgraff/Cole Office Environments Facility will be referred to as Cole Office Environments or Facility throughout this report

Soil and Groundwater Investigations

Former Solvent UST Area (Area B)

The former solvent UST Area included four steel underground storage tanks (USTs): two (2) 2,000-gallon USTs, one (1) 6,000-gallon paint thinner UST, and one (1) 6,000-gallon aromatic 100 solvent UST. All of the USTs were excavated, cleaned, and removed from the site in October 1991. During removal, one of the 6,000-gallon USTs was observed to have visible holes on the bottom and both ends of the tank. The remaining three (3) USTs were rusted and pitted. Following removal of the USTs, visibly stained soil or soil with positive photoionization detector readings was excavated and disposed. The excavation was backfilled with clean soil and gravel.

In 1992, following tank removal activities, ten soil samples were collected from beneath the USTs and analyzed for VOCs. Aromatic solvent compounds, primarily naphthalene, were detected in the samples resulting in additional soil sampling from six soil borings and installation of one monitoring well (MW-7). Soils containing several non-chlorinated solvents, such as naphthalene, 1,2,4-trimethylbenzene, n-butylbenzene, were detected at concentrations greater than 0.1 ppm. Although groundwater monitoring results showed that the groundwater was not impacted by paint thinning compounds, tetrachloroethylene (PCE) and trichloroethylene (TCE) were detected at concentrations of 40.8 ppb and 69.7 ppb, respectively, in MW-7. The PCE and TCE groundwater contamination will be discussed further below.

Former Nickel-Chrome Plating Area (Area F)

In 1990, elevated concentrations of chromium (max. of 5,800 ppm) and nickel (max. of 5,400 ppm) were first detected in subsurface soils beneath the former metals plating sump area during a Phase I Investigation. The source of the contamination was determined to be the former nickel-chrome plating operations that were active at the site between 1968 and 1989. Chromium and nickel were dissolved in an acidic plating solution used in the electroplating process. In 1989, the plating operation ceased and the plating equipment was decommissioned and removed from the site. From 1990 to 2000, numerous soil and groundwater samples have been collected in the vicinity of the former metals plating area to characterize the extent of chromium and nickel contamination in the subsurface media. Soils, as well as shallow and bedrock groundwater sample analytical data indicated that chromium and nickel concentrations in the former metals plating area exceed medium-specific concentrations (MSCs) established for non-residential soil (chromium-420 mg/kg, nickel-56,000 mg/kg) and groundwater (chromium-100 µg/L, nickel-100 µg/L) standards.

The ranges of total chromium and total nickel concentrations in soil are 4.5 to 5,500 ppm and non-detect to 5,130 ppm, respectively. A review of the historical soil boring and soil analytical data indicate higher concentrations of chromium and, to a lesser extent nickel, in shallow soils near the former metals plating sump, with generally decreasing concentrations with depth and horizontal distance from the former sump. The approximate area of soil containing chromium concentrations above 100 ppm is approximately 107 feet by 78 feet in horizontal extent.

Groundwater samples were historically collected from monitoring wells installed in the area of soil with elevated chromium and nickel concentrations (i.e., P-1, DMW-1, MW-5, MW-6, GM-1S, and GM-1D). The groundwater samples were analyzed for total and dissolved chromium and nickel. The highest concentrations of chromium and

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nickel were detected in P-1; 1,400 mg/L of total chromium and 1,300 mg/L of dissolved chromium, and 150 mg/L of total nickel in 1992. A review of the chromium and nickel groundwater analytical results indicate that the presence of these metals in groundwater at concentrations above the method detection limits are located to the immediate area near the former metals sump. Groundwater with concentrations of chromium above 0.1 mg/L does not extend beyond an area approximately 250 feet in diameter, and groundwater with concentrations of nickel above 0.1 mg/L does not extend beyond an area approximately 150 feet in diameter.

Former Hazardous Material Storage Area (Area D)

The Former Hazardous Material Storage Area consisted of a 15-foot by 25-foot section of macadam. During a Phase II Investigation in September 1990, a soil vapor survey was conducted in this area to determine whether subsurface contamination was present. Three soil samples were collected from areas where greater than 1,000 ppm soil vapor was detected and analyzed for VOCs. The results of such sampling showed non-detect for all VOCs analyzed.

An additional investigation of VOCs, in addition to chromium and nickel concentrations in soil was conducted in the Former Hazardous Material Storage Area in October 1996. Two (2) soil borings (SB-4 and SB-5) were advanced to a depth of two feet and soil samples were collected and analyzed for VOCs and metals. The soil sample results indicate that VOCs were not present; however, chromium and nickel concentrations were detected in both samples. Elevated concentrations of chromium and nickel were detected in SB-4 at 668 ppm and 235 ppm, respectively. Whereas, chromium and nickel were detected in SB-5 at 21.7 ppm and 36.8 ppm, respectively.

PCE and TCE Site-Wide Groundwater Contamination

In 1991, groundwater was first sampled (from P-1) and analyzed for VOCs, and PCE and TCE were detected. PCE and TCE, which were not historically used at the former Cole Office Environments site, were not detected in any of the soil samples. Between 1991 and 2000, concentrations of PCE and TCE were detected in the groundwater at all monitoring wells across the site, with the exception of the downgradient monitoring wells MW-2 and MW-4. A review of PADEP files for the Harley-Davidson facility located upgradient and north of the former Cole Office Environments property, showed that PCE and TCE were first discovered in groundwater at the Harley-Davidson site in 1986. Since that time, numerous investigations have been conducted at the Harley-Davidson site. The source of the PCE and TCE on the Harley-Davidson property was reportedly caused by the application of these chemicals on the ground for purposes of weed control.

In 1997, R.E. Wright Environmental, Inc. (REWEI) conducted a study to determine groundwater flow directions and contaminant migration across the southern boundary of the Harley-Davidson property. The report was entitled the *Final Southern Property Boundary Area Interim Study Report* (REWEI 1997). Based on the results of the investigation in the southern property boundary area of the Harley-Davidson property, the following conclusions were presented in the report:

- "Groundwater containing total VOC concentrations exceeding 2 mg/l, consisting of TCE and PCE appears to be migrating off-site and to the south/southwest in the carbonate aquifer."
- "The combination of groundwater quality data and groundwater levels indicate the likelihood of migration of TCE and PCE with groundwater across the eastern portion of Harley-Davidson's southern property boundary."

These findings, coupled with the fact that PCE and TCE are detected in groundwater along the upgradient property boundaries at the former Cole Office Environments site, conclude that the presence of these compounds in groundwater at the subject site are from the upgradient Harley-Davidson site.

References:

- (1) Phase II Investigation, September 1990
- (2) Remedial Investigation Report for Cole Office Environments, September 1997
- (3) Final Report, Attainment of Background Standards for Volatile Organic Compounds in Groundwater for Cole

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Office Environments, July 2000

- (4) Final Report, Attainment of Statewide Health Standards for Heavy Metals in Groundwater for Cole Office Environments, July 2000
- (5) Remedial Investigation and Site Specific Final Report for Heavy Metals in Soils for Cole Office Environments, October 2000
- (6) Site-Specific Remedial Investigation and Statewide Health and Site-Specific Standards Final Report for Paint Thinner Constituents in Soil for Cole Office Environments, October 2000

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3. Are there **complete pathways** between “contamination” and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Contaminated Media	Potential Human Receptors (Under Current Conditions)							
	<u>Residents</u>	<u>Workers</u>	<u>Day-Care</u>	<u>Construction</u>	<u>Trespassers</u>	<u>Recreation</u>	<u>Food³</u>	
Groundwater	No	No	No	No	No	No	No	
Air (indoors)	No	No	No	No	No	No	No	
Soil (surface, e.g., <2 ft.)	--	--	--	--	--	--	--	
Surface Water	--	--	--	--	--	--	--	
Sediment	--	--	--	--	--	--	--	
Soil (subsurface e.g., >2 ft.)	No	No	No	No	No	No	No	
Air (outdoors)	--	--	--	--	--	--	--	

Instructions for Summary Exposure Pathway Evaluation Table

1. Strike-out specific Media including Human Receptors' spaces for Media which are not “contaminated” as identified in #2 above.
2. Enter “yes” or “no” for potential “completeness” under each “Contaminated” Media-- Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations some potential “Contaminated” Media - Human Receptor combinations (Pathways) do not have check spaces (“___”). While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

 X If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter “YE” status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

_____ If yes (pathways are complete for any “Contaminated” Media- Human Receptor combination) - continue after providing supporting explanation.

_____ If unknown (for any “Contaminated” Media- Human Receptor combination) - skip to #6 and enter “IN” status code.

Rationale and Reference(s):

Soil:

Former Solvent UST Area (Area B)

The former solvent UST area was remediated by removing the USTs and excavating obviously impacted soils. The excavation was backfilled with clean soil and gravel, which comprises the surface soil in this area. In addition, a soil vapor extraction (SVE) system was installed to address the residual paint thinning compounds detected in the soil

³ Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

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The SVE system operated from the middle of 1993 through the early part of 1994. In 1996, following operation of the SVE system, three (3) post-remediation borings were drilled to 18 feet below ground surface (bgs) around the UST excavation area and soil samples were collected and analyzed for the presence of VOCs. Not all of the residual paint thinner constituents detected in subsurface soils in the former solvent UST area had promulgated Statewide Health Standards at that time. For those constituents that did have Statewide Health Standards, the concentrations of detected constituents (chloroform, carbon tetrachloride, toluene, ethylbenzene, total xylenes, isopropylbenzene, 1,2-dibromo-3-chloropropane, and naphthalene) were at concentrations below the selected MSC Statewide Health Standards.

As for those constituents that did not have promulgated Statewide Health Standards back in 2000, Site-specific Standards were calculated and applied to the following constituents detected in soil in the area of the former USTs: n-butylbenzene, tert-butylbenzene, sec-butylbenzene, 2-chlorotoluene, 4-chlorotoluene, 1,1-dichloropropene, p-isopropyltoluene, n-propylbenzene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene. In order to calculate Site-specific soil MSCs, a groundwater MSC of 0.005 mg/L was assumed based on the approach presented in the Pennsylvania Code (250.310). The conservative groundwater MSC of 0.005 mg/L was used in the equation in section 250.308(a)(3) of the Pennsylvania Code to calculate Site-specific soil MSCs. The calculated soil MSCs were compared to the laboratory analytical results for soil samples collected following the remediation activities. The soil analytical results for the post-remediation samples indicate the concentrations of constituents, when detected, were below the calculated Site-specific standards.

Subsequent to 2000, Pennsylvania promulgated Statewide Health Standards for n-butylbenzene, tert-butylbenzene, sec-butylbenzene, n-propylbenzene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene. The current direct contact MSC Statewide Health Standards for non-residential subsurface soil was compared to the analytical results for the post-remediation soil samples collected from the former solvent UST area in 1996. Based on a review of the 1996 post-remediation soil sample analytical results, the paint thinner constituents listed above were detected at concentrations well below the current direct contact MSC Statewide Health Standards for non-residential subsurface soil.

In addition to post-remediation soil samples, groundwater samples were collected from monitoring well MW-7, located downgradient of the former USTs, during eight sampling events conducted from May 1999 through April 2000. The results indicated that the subject paint thinner constituents were not detected above method detection limits in any of the groundwater samples collected from MW-7. Therefore, groundwater has not been impacted by residual paint thinner constituents in the subsurface soil at the former solvent UST area. Therefore, EPA has been determined that a complete exposure pathway does not exist between the subsurface soil at the former solvent UST area and human receptors.

Former Nickel-Chrome Plating Area (Area F)

Between 1967 and 1989, a metals plating operation existed at the site, and as a result of metals plating solution being released during these operations, elevated concentrations of chromium and nickel have been detected in the subsurface soil beneath the concrete floor in the vicinity of the former nickel-chrome plating area. From 1990 to 1997, over 200 soil samples have been collected from various depths in over 50 soil borings advanced in the subsurface soils beneath the former nickel-chrome plating area. A review of the historical soil boring and soil analytical data indicate higher concentrations of chromium, and to a lesser extent nickel, in shallow soils near the former metals plating sump, with generally decreasing concentrations with depth and horizontal distance from the sump.

The limited migration of chromium and nickel in the subsurface soils beneath the former metals plating sump is related to the chemistry of these metals and the reaction of the plating solutions in soil. When the chromium and nickel dissolved in the acidic plating solution reached the subsurface soils, the solution became neutralized and, as a result, the metals precipitated onto the subsurface soil substrate. To ensure that the chromium and nickel

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contaminated soils at the site do not pose a substantial risk to human health or the environment, a preliminary human health and ecological risk screening was completed as part of Pennsylvania's Act 2 process in 2000. The evaluation consisted of developing a site conceptual model, identifying potential exposure pathways, and identifying planned future land use. The site conceptual model was based on site geologic, hydrogeologic, and chemistry data collected during remedial investigation activities at the site between 1990 and 2000. The model indicated that the chromium and nickel in clayey silt soil was limited in extent to an area beneath the northeast portion of the facility building. With respect to exposure pathways, the potential for human ingestion of the soil or impacts to ecological receptors does not exist because the impacted soil is localized beneath the floor of the facility building. The concrete slab floor of the building acts as a barrier (i.e., engineering control) to direct contact with the soil, and there are no openings in the floor that could act as exposure pathways. In addition, a deed restriction was established in December 2000 to maintain the floor in the area of the former sump. As for future land use of the site, the current and future use of the property is industrial. The building structure will remain intact, and the roof membrane and concrete floor will be maintained as required by the deed restriction.

In addition to the preliminary human health and ecological risk screening, a fate and transport analysis was also conducted in 2000 as part of Pennsylvania's Act 2 process. The purpose of such analysis was to determine whether or not the on-site soil and groundwater concentrations of chromium and nickel posed a potential threat to offsite groundwater. The fate and transport analysis looked at (1) the migration of chromium and nickel from the soil into the underlying groundwater, and (2) transport of the affected groundwater to the downgradient property boundary. The results of the fate and transport analysis indicated that detectable concentrations of chromium and nickel in groundwater would not reach the property boundary in the foreseeable future. Therefore, the soils containing elevated chromium and nickel concentrations will not impact groundwater which could create an exposure pathway and affect human and/or ecological receptors.

Based on the information provided above, EPA has determined that the chromium and nickel contaminated subsurface soils located beneath the former metals plating sump do not represent a complete exposure pathway between such contaminated media and human receptors.

Former Hazardous Materials Storage Area (Area D)

In October 1996, two soil samples (SB-4 and SB-5) were collected from 0 to 2 feet and analyzed for metals. Elevated chromium and nickel concentrations were detected in SB-4 at 668 ppm and 235 ppm, respectively. Whereas, chromium and nickel were detected in SB-5 at 21.7 ppm and 36.8 ppm, respectively. At that time, both nickel and chromium concentrations were detected below the PADEP non-residential Statewide Health Standards. Since that time, the PADEP non-residential Statewide Health Standards for some constituents have changed. The current non-residential Statewide Health Standards for nickel and chromium are 56,000 ppm and 420 ppm, respectively. However, in light of the information presented above, EPA has determined that potential chromium and nickel contaminated soil in the Former Hazardous Materials Storage Area does not represent a complete exposure pathway between such contaminated media and human receptors. This determination is based on the fact that the Former Hazardous Materials Storage Area is now a paved parking lot which eliminates direct contact with potentially contaminated surface and subsurface soil. Furthermore, a review of groundwater monitoring analytical data gathered in 1999 and 2000 for monitoring well MW-12, which is located slightly downgradient of the Former Hazardous Materials Storage Area, shows that dissolved total chrome and dissolved nickel were not detected above the method detection limit (chromium – 0.010 mg/L, nickel – 0.025 mg/L).

Groundwater Contamination:

Former Nickel-Chrome Plating Area (Area F)

The chromium and nickel contaminated groundwater beneath the former metals plating sump does not present a complete pathway between contamination and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions at the former Cole Office Environments site. This determination was made based on a review of historical groundwater monitoring data, which shows that the chromium and nickel

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groundwater contamination is limited to the immediate area near the former metals plating sump. The explanation for the limited migration of chromium and nickel from the former metals plating sump is related to the chemistry of these metals.

Chromium and nickel were originally dissolved in an acidic plating solution. Under low pH conditions, metallic ions have high solubility limits and low distribution coefficients (K_d). When the plating solution reached the subsurface soils, the solution became neutralized by the natural geochemistry of the subsurface soils. This changed the physical properties of the metals by lowering their solubility limits, increasing K_d , and transforming chromium from the hexavalent (toxic) to the trivalent (non-toxic) oxidation state. Each of these processes resulted in the precipitation of metals onto the soil substrate. This also resulted in the formation of a localized zone of high-adsorbed concentrations. The low dissolved concentrations are a result of equilibrium partitioning with this adsorbed material and the absence of observed mobility is caused by precipitation of metals onto the soil matrix when transported downgradient. These processes essentially bind the metals to the soil substrate so that they are effectively immobile and not likely to dissolve in and migrate with groundwater. Furthermore, the building concrete floor and rubber-coated roof overlying the sump area prevents precipitation or surface water from percolating through the soil and transporting the metals downward through the shallow soil zone.

In addition to the information presented above, a fate and transport analysis was also conducted to evaluate whether the highest observed concentrations in groundwater (1,400 mg/L chromium and 150 mg/L nickel) beneath the sump, at P-1, have the potential to migrate to the downgradient property boundary in the foreseeable future. The analysis was based upon site-specific parameters supplemented with appropriate literature values. The values used in the analysis affect calculated mobility. For each parameter, if a range of values was identified, the value that would result in the greatest calculated mobility was used as a conservative measure. The results of the fate and transport analysis indicate that chromium and nickel concentrations in groundwater at P-1 will not migrate off-site at levels above the respective MSCs in at least 30 years time.

To further ensure that there is not a direct exposure pathway for receptors to the chromium and nickel contaminated groundwater beneath the former metal sump area a deed restriction accompanied the sale of the property on December 20, 2000, between Cresticon, Inc. and K/G Whiteford Limited Partnership. The deed restriction provides that the floor in the area of the former metals plating sump shall be maintained and that onsite groundwater shall not be used, including potable and agricultural uses. Additionally, the former Cole Office Environments facility does not operate any on-site production wells, and obtains its water supply from York Water Company. Therefore, workers are not exposed to the contaminated groundwater. Also, the depth to the water table ranges from approximately 13 to 22 feet bgs, making it highly unlikely that construction or utility workers would be exposed to contaminated groundwater during excavation operations. Trespassers/recreational receptors do not have an exposure pathway to contaminated groundwater on this site. In summary, controls for human health exposure pathway for onsite groundwater contamination related to the releases from the plating sump area are in place.

Indoor Air Contamination:

Due to the fact that the groundwater beneath the former Cole Office Environments property is contaminated with PCE and TCE from the upgradient and north Harley-Davidson site, a vapor intrusion evaluation was conducted to determine if an indoor air pathway for VOCs exists at the subject site. For such evaluation, the PADEP Land Recycling Program Technical Guidance Manual – Section IV.A.4 (Vapor Intrusion into Buildings from Groundwater and Soil under the Act 2 Statewide Health Standard) was used. Under Act 2, compliance with the Background standard was sought and achieved by the former Cole Office Environments Facility based on the fact that PCE and TCE in groundwater migrated on to the subject site from an upgradient, offsite source. Application of the highest measurement comparison statistical analysis method resulted in Background standards of 110 µg/L for PCE and 410 µg/L for TCE, based on the highest values detected at wells MW-9 and MW-11, respectively. Based on the groundwater elevation data, these two wells monitored groundwater flowing from the upgradient source and were therefore, background wells. The concentrations of PCE and TCE detected in groundwater samples collected from

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the other wells monitored in accordance with the approved sampling and analysis plan were below the Background standards. As such, the attainment of the Background standards for the former Cole Office Environments site was demonstrated and accepted by PADEP.

In order to evaluate potential impact to indoor air from PCE and TCE in groundwater, the Background standards of 110 µg/L for PCE and 410 µg/L for TCE (highest concentrations detected on-site) were compared to the PADEP derived values (Groundwater Criteria/Screen (µg/L) for Protection of Indoor Air: Nonresidential [Commercial/Industrial] [Table 2]) of 70,000 µg/L for PCE and 24,000 µg/L for TCE. The Background standards were well below PADEP groundwater criteria for the protection of indoor air (nonresidential). Therefore, it can be concluded that the subsurface vapor to indoor air pathway is not a concern assuming a nonresidential exposure scenario.

Furthermore, as with the chromium and nickel groundwater contamination, the deed restriction that accompanied the sale of the property on December 20, 2000 provides a mechanism to eliminate the potential of a complete pathway between PCE and TCE contaminated groundwater and human receptors. And, as stated above, the former Cole Office Environments facility does not operate any on-site production wells, and obtains its water supply from York Water Company. Therefore, workers are not exposed to the contaminated groundwater. Also, the depth to the water table ranges from approximately 13 to 22 feet bgs, making it highly unlikely that construction or utility workers would be exposed to contaminated groundwater during excavation operations. Trespassers/recreational receptors do not have an exposure pathway to contaminated groundwater on this site.

References:

- (1) Phase II Investigation, September 1990
- (2) Remedial Investigation Report for Cole Office Environments, September 1997
- (3) Final Report, Attainment of Background Standards for Volatile Organic Compounds in Groundwater for Cole Office Environments, July 2000
- (4) Final Report, Attainment of Statewide Health Standards for Heavy Metals in Groundwater for Cole Office Environments, July 2000
- (5) Remedial Investigation and Site Specific Final Report for Heavy Metals in Soils for Cole Office Environments, October 2000
- (6) Site-Specific Remedial Investigation and Statewide Health and Site-Specific Standards Final Report for Paint Thinner Constituents in Soil for Cole Office Environments, October 2000

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4. Can the exposures from any of the complete pathways identified in #3 be reasonably expected to be “significant”⁴ (i.e., potentially “unacceptable” because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable “levels” (used to identify the “contamination”); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable “levels”) could result in greater than acceptable risks)?

_____ If no (exposures can not be reasonably expected to be significant (i.e., potentially “unacceptable”) for any complete exposure pathway)- skip to #6 and enter “YE” status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”

_____ If yes (exposures could be reasonably expected to be “significant” (i.e., potentially “unacceptable”) for any complete exposure pathway)- continue after providing a description (of each potentially “unacceptable” exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to “contamination” (identified in #3) are not expected to be “significant.”

_____ If unknown (for any complete pathway)- skip to #6 and enter “IN” status code

Rationale and Reference(s):

5. Can the “significant” exposures (identified in #4) be shown to be within acceptable limits?

_____ If yes (all “significant” exposures have been shown to be within acceptable limits)- continue and enter “YE” after summarizing and referencing documentation justifying why all “significant” exposures to “contamination” are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

_____ If no (there are current exposures that can be reasonably expected to be “unacceptable”)- continue and enter “NO” status code after providing a description of each potentially “unacceptable” exposure.

_____ If unknown (for any potentially “unacceptable” exposure)- continue and enter “IN” status code

Rationale and Reference(s):

⁴ If there is any question on whether the identified exposures are “significant” (i.e., potentially “unacceptable”) consult a human health Risk Assessment specialist with appropriate education, training and experience.

Current Human Exposures Under Control
Environmental Indicator (EI) RCRIS code (CA725)
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6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

YE – Yes, “Current Human Exposures Under Control” has been verified. Based on a review of the Information contained in this EI Determination, “Current Human Exposures” are expected to be “Under Control” at the former Cole Office Environments facility, EPA ID # PAD052917846, located at 1201-1209 Eden Road, York, PA 17402 under current and reasonably expected conditions. This determination will be re-evaluated if the Agency becomes aware of significant changes at the facility.

NO - “Current Human Exposures” are NOT “Under Control.”

IN - More information is needed to make a determination.

Completed by (signature)  Date 8/12/10
(print) Jeanna R. Henry
(title) Remedial Project Manager
Office of Pennsylvania Remediation
EPA Region III

Supervisor (signature)  Date 8-13-10
(print) Paul Gotthold
(title) Associate Director
Office of Pennsylvania Remediation
(EPA Region or State) EPA Region III

Locations where References may be found:

USEPA Region III
Land and Chemicals Division
1650 Arch Street
Philadelphia, PA 19103

PADEP
Southcentral Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110

Contact telephone and e-mail numbers

(name) Jeanna R. Henry
(phone) (215)814-2820
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FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.