DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action

Environmental Indicator (EI) RCRA Info code (CA725)

Current Human Exposures Under Control

Facility Name: Hubbell Lighting, Inc.
Facility Address: 2000 Electric Way, Christiansburg, Virginia 24073
Facility EPA ID #: VAD058913294

1. 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 RCRA Info as long as they remain true (i.e., in RCRA Info status codes must be changed when the regulatory authorities become aware of contrary information).

Site Description

The Hubbell Lighting, Inc. (Hubbell) facility is located at 2000 Electric Way in Christiansburg, Virginia (**Figure 1**). The facility is located in a mainly industrial/commercial area. However, there are several residential properties also in the area. The facility is located on the east side of Christiansburg, north of Routes 81 and 460, and east of Route 468. The topography in the area of Christiansburg consists of rolling hills and interspersed valleys.

The facility property has two large manufacturing buildings (comprising approximately 330,000 square feet), wastewater treatment plant, asphalt parking lots and roadways, and landscaped areas. The buildings were constructed between the 1960s and 1990s. The facility manufactures electric light poles and electric indoor and outdoor lights. The manufacturing facility includes the vertical integration of spinning, anodizing, and assembly operations. The facility also has an accredited National Institute of Standards and Technology photometric lab and operates in-house thermal and wet location testing facilities.

Numerous hazardous chemicals, non-hazardous chemicals, and petroleum products are used in the manufacturing process. The raw chemicals and petroleum products are stored in small aboveground storage tanks (ASTs), 55-gallon drums, and carboys. The facility is a small quantity generator of hazardous waste and maintains permits for categorical discharges to the local municipality. The hazardous and non-hazardous wastes generated at the facility are stored in ASTs, 55-gallon drums, carboys, and small containers pending disposal/treatment.

The property is relatively flat with a slight slope to the north. Crab Creek is located approximately 400-feet north of the facility and Wilson Creek is located at northeast of the facility. There are parking areas on the southern and eastern sides of the buildings. To the rear or north of the main buildings are the several smaller buildings including the pole shop and the wastewater treatment plant. The facility and surrounding area are served by a municipal water supply operated by the Town of Christiansburg. There are reported to be two potable water supply wells located within 0.25 miles of the facility. The facility is also served by a municipal sewer for plant sewage and treated industrial wastewater.

By Letter of Commitment dated September 12, 2006, Hubbell agreed to conduct a Site Investigation of their facility located in Christiansburg, Virginia under the U.S. EPA Facility Lead Corrective Action Program. The purpose of the investigation was to evaluate the potential impact to the environment from the activities conducted at the facility's historical and present areas of concern (AOCs) and Solid Waste Management Units (SWMUs). The site investigation was performed on July 18 and 19, 2009 and the results from the investigation assisted in this Environmental Indicator determination.

The following reports and documents were considered in the preparation of this EI report:

- ICOR, Ltd., *RCRA Site Visit Report – Final, Hubbell Lighting, Inc., Christiansburg, Virginia,* dated June 21, 2006.
- EMGC, *Corrective Action Work Plan, Community Relations Plan, and Health and Safety Plan, Hubbell Lighting, Inc., Christiansburg, Virginia,* dated May 2009.
- EMGC, *Site Investigation Results Summary, Hubbell Lighting, Inc., Christiansburg, Virginia,* dated September 2009.

1. 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)?

	Yes	No	?	Rationale/Key Contaminants
Groundwater	___	X	___	
Air (indoors)[2]	___	X	___	
Surface Soil (e.g., <2 ft)	X	___	___	Metals, SVOCs, and VOCs
Surface Water	___	X	___	
Sediment	___	X	___	
Subsurf. Soil (e.g., >2 ft)	X	___	___	Metals, SVOCs, and VOCs
Air (outdoors)	___	X	___	

_____ 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):

Elevated concentrations of several metals were detected in the surface soils during the recent July 2009 field investigation. Each metal was well below its USEPA residential risk-based concentration (RBCs) with the exception of arsenic. Arsenic exceeded both residential and industrial RBCs but was well within the range of the background samples collected from around the site. Background samples taken from the site indicated naturally occurring elevated concentrations of metals in both the surface and subsurface soils.

Various volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) were observed at elevated concentrations in the surface soil. None of the VOCs or SVOCs exceeded industrial or residential RBCs.

Groundwater is currently not used as a potable or irrigation water supply at the Hubbell facility. Groundwater usage by properties surrounding or located in close proximity to the facility is unknown; however, two potable water supply wells are known to exist within 0.25 miles of the Hubbell facility. The facility and surrounding area are provided potable water from the municipal water supply operated by the City of Christiansburg. A temporary monitoring well was installed 17 feet below grade during the field investigation but produced no water after 30 hours. The groundwater table is believed to be approximately 180 feet below grade and there were no reported releases on site to suggest groundwater contamination. In addition the low concentrations observed in the surface and subsurface soil samples during the field investigation suggest that it is unlikely that groundwater has been impacted from site operations.

The greatest current hazard for a release of a hazardous waste to indoor or outdoor air would be from a malfunction of any air emission treatment system used at the facility or a release of raw hazardous chemicals

and waste or incompatible materials from the storage areas. There are several cyclones and knockout chambers at the facility and all raw hazardous chemicals and wastes currently stored at the facility are stored in aboveground storage tanks (ASTs), containers, and drums of good integrity. The workers and construction workers in the work environments are protected under the OSHA standards; therefore, it can reasonably be assumed that the indoor and/or outdoor air does not pose a risk above acceptable OSHA standards. In addition the low concentrations observed in the surface and subsurface soil samples during the field investigation make it unlikely that indoor or outdoor air have been impacted from site operations.

The Hubbell facility is not located within a 100-year flood plain. The closest surface water body is Crab Creek located approximately 400 feet north of the facility. There is no evidence of releases of contaminants to either the sediment or surface water at the site. In addition all raw hazardous chemicals and wastes currently stored at the facility are stored in areas that are provided with an impermeable surface (concrete) and secondary containment. The chemicals and wastes are also stored in ASTs, containers, and drums of good integrity. This along with the low concentrations observed in the surface and subsurface soil samples during the field investigation make it unlikely that sediment or surface water have been impacted from site operations.

Footnotes:

[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) suggests 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.

2. 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

Potential **Human Receptors** (Under Current Conditions)

Contaminated Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food[3]
Groundwater	NO	NO	NO	NO	NO	NO	NO
Air (indoors)	NO	NO	NO	NO	NO	NO	NO
Soil (surface, e.g. < 2 ft)	NO	YES	NO	YES	NO	NO	NO
Surface Water	NO	NO	NO	NO	NO	NO	NO
Sediment	NO	NO	NO	NO	NO	NO	NO
Soil (subsurface e.g. > 2 ft)	NO	NO	NO	YES	NO	NO	NO
Air (outdoors)	NO	NO	NO	NO	NO	NO	NO

* = off-site

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.

_____ 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).

__X__ 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

Section 3 – Rationale and Reference(s):

1. **Soil (surface, e.g. < 2 ft)**
   REFERENCE: All available information within the Department files.

   RATIONALE:

   Residents

   NO – The entire Hubbell facility, manufacturing areas, and hazardous materials storage areas are entirely surrounded by a chain link fence and access to the facility is limited to authorized employees and approved visitors. The facility is also monitored 24 hours a day by a security force and video cameras.

   Workers/Construction

   YES – Workers and construction workers at the facility may potentially be exposed to elevated contaminant concentrations if activities required them to alter surface soil. Any activities of this kind would be covered by the facility's health and safety plan.

   Day-Care

   NO – There is no information indicating the presence of a day-care on the facility.

   Trespassers

   NO – The entire Hubbell facility, manufacturing areas, and hazardous materials storage areas are entirely surrounded by a chain link fence and access to the facility is limited to authorized employees and approved visitors. The facility is also monitored 24 hours a day by a security force and video cameras.

   Recreation

   NO – There is no information indicating that any portion of the facility is for recreational use.

   Food

   NO – There is no information indicating that food is grown within the facility's boundary.

2. **Soil (subsurface e.g. > 2 ft)**
   REFERENCE: All available information within the Department files.

   RATIONALE:

   Construction

   YES – Construction workers at the facility may potentially be exposed to elevated contaminant concentrations if construction activities required them to excavate soils down to greater than two feet below the ground surface. Construction activities would be covered by the facility's health and safety plan.

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)?

__X__ 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):

Hubbell has completed its initial field investigation. Results indicated the prescence of metals at elevated concentrations but well below residential RBCs with the exception of arsenic. Arsenic concentrations from each SWMU were all within the range of concentrations collected from each background sample. VOCs and SVOCs were observed at elevated concentrations in the surface soil but none of the values exceeded industrial or residential RBCs.

[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.

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):

6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA 725), 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__ YE – Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in the EI Determination, "Current Human Exposures" are expected to be "Under Control" at the **Hubbell Lighting, Inc., EPA ID # VAD058913294**, located at **2000 Electric Way, Christiansburg, Virginia** under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State 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 Matthew M. Stepien Date 9-24-09
(signature)

Matthew M. Stepien
(print)

Environmental Engineer Sr.
(title)

Supervisor Durwood Willis Date 9/24/09
(signature)

Durwood Willis
(print)

Director, Office of Remediation Programs
(title)

Virginia – Region III
(EPA Region or State)

Locations where References may be found:

Virginia Department of Environmental Quality, Richmond, Virginia

Contact telephone and e-mail numbers

(name) Matthew M. Stepien
(phone #) (804) 698-4026
(e-mail) matthew.stepien@deq.virginia.gov

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.