

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: GE Skeats High Power Laboratory
Facility Address: 7500 Lindbergh Boulevard
Facility EPA ID #: PAD 07 552 7804

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 Controls" 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	X			TCE, PCE (within 10-4 to 10-6 risk range)
Air (indoors) ²		X		
Surface Soil (e.g., <2 ft)	X			PAH, Metals (within 10-4 to 10-6 risk range)
Surface Water		X		
Sediment		X		
Subsurface Soil (e.g., >2 ft)	X			PAH (within 10-4 to 10-6 risk range)
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 support 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):

The former GE Skeats High Power Laboratory property is now part of the Philadelphia Processing and Distribution Center of the USPS in Philadelphia, PA. Buildings that occupied GE Skeats have been demolished. Past operations conducted at GE Skeats included load testing of electric transformers containing dielectric fluids with PCBs.

Several environmental investigations were completed at GE Skeats between 1999 and 2004. These investigations encompassed soil and groundwater.

Groundwater

Across the site, there are 20 monitoring wells which were used to assess groundwater quality between 1990 and 1999. The 1999 Request for Non-Use Aquifer Determination (NUAD), and the 1999 Phase II Environmental Site Assessment Report identified several contaminants found in the groundwater above EPA's screening values used to initially evaluate data: the Maximum Contaminant Level (MCL) for drinking water or the EPA Regional Screening Level Table standard for tap water.

The contaminants found in groundwater were: tetrachloroethylene (PCE) (MCL=5ug/l), trichloroethylene (TCE) (MCL=5ug/l), benzene (MCL=5ug/l), naphthalene (tap water=0.14ug/l), vinyl chloride (MCL=2ug/l), bis(2-ethylhexyl)phthalate (MCL=6ug/l), chromium (MCL=100ug/l), and manganese (tap water=320ug/l). Primarily,

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.

Rationale & References cont.

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these contaminants were found at levels only slightly exceeding their screening values. Only benzene, PCE, TCE and naphthalene were found at more increased concentrations and only very localized. There is no widespread distribution of any contaminants. No detection of these contaminants has been found at the downgradient or perimeter wells, which indicates contamination does not go off-site.

Stormwater and Septic Systems - PCE (5ug/l), 6 ug/l, - TCE (5ug/l), 5 ug/l, to 98 ug/l - Bis(2-ethylhexyl)phthalate (6ug/l), 7 ug/l - Manganese (320ug/l), 3030 ug/l	Hazardous Waste Storage Area - TCE (5ug/l), 5 ug/l - Chromium (100ug/l), 410 ug/l - Manganese (320ug/l), 412 ug/l
Two, 5,000-Gallon USTs North of Building 20 - Benzene (5ug/l), 66 pg/L and 45 ug/l - Naphthalene (0.14ug/l), 73 ug/l	Gale Oil/Water Separator - Vinyl chloride (2ug/l), 3.0 ug.l - Bis(2-ethylhexyl)phthalate (6ug/l), 6.4 ug/l
Building 22 A Subsurface Spill - PCE (5ug/l), 14 ug/l	Transil Oil Distribution System - TCE (5ug/l), 8 ug/l
High and Cap Yard - TCE (5ug/l), 6.9 ug/l - PCE (5ug/l), 6.7 ug/l	

Soil

A number of environmental investigations and clean-up activities have been completed at the site between 1980 and 2004. In 1998-1999, Weston conducted field activities based previous investigations. Their results are compiled in the 1999 Phase II Environmental Site Assessment Report which identified the following areas where soil samples exceeded EPA's risk screening values for direct contact with soils. The contaminants found in soil, and their screening values are: benzo(a)anthracene (2.1mg/kg), benzo(a)pyrene (0.21mg/kg), arsenic (1.6mg/kg), and lead (800mg/kg),

A total of 99 soil samples were taken across the site in 1998 and 1999. Analytical results show only six (6) samples locations slightly exceeding EPA's health-based standards. These were found primarily at shallow depth and only very localized. There is no widespread distribution of any contaminants.

Building 23A Spill Area -Benzo(a)anthracene (2.1mg/kg), 5.3mg/kg -Benzo(a)pyrene (0.21mg/kg), 4.8 mg/kg -Arsenic (1.6mg/kg), 5.8	Purported Burial Area 2 -Benzo(a)anthracene (2.1mg/kg), 24mg/kg -Benzo(a)pyrene (0.21 mg/kg), 22mg/kg -Arsenic (1.6mg/kg), 4.1mg/kg, 5.7mg/kg, 140mg/kg -Lead (800mg/kg), 1040mg/kg
Former Stormwater System -Benzo(a)anthracene (2.1mg/kg), 26mg/kg -Benzo(a)pyrene (0.21 mg/kg), 2.4mg/kg -Arsenic (1.6mg/kg), 6.3mg/kg	

Rationale & References cont.

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PCBs

As GE Skeats' primary operations involved PCB-containing fluids, separate investigations were performed to address characterization and remediation of the PCB-related contamination.

In 1999, in Buildings 20, 22, 22A, and 23, the concrete walls, ceilings and floors were cleaned of PCBs to meet the facility-chosen criteria of 4ppm. The buildings and structures were then demolished and the crushed concrete used for on-site fill under the new building. Any material which did not meet criteria was disposed of offsite in approved landfills. In addition, the PCB-impacted pre-gale oil separator, portions of the high yard drainage, the cap yard and test cells were disposed of off site as PCB-contaminated waste.

In 2003 additional investigation was conducted for impacted soils near former Building #20. A total of 672.22 tons of soil was excavated and removed off-site. Post-excavation sampling was conducted throughout the excavation. All post-excavation samples were below 10ppm for PCBs, the screening criteria chosen for the site. EPA's TSCA program determined that additional clean-up efforts were not needed.

Under TSCA site clean-up regulations, soils and crush concrete may be left on site provided the PCB concentration is below 10ppm in all samples and the area is under a cover. For this site, the cover is provided by a portion of the new building foundation and adjacent parking lot.

Exposure pathways

The site currently is 95% covered by buildings and paved parking lots, with landscaping at the perimeter. There is no current or expected exposure to workers at the facility to soils or groundwater. The groundwater at this site is not used for any potable, industrial or agricultural purposes.

Organic contaminants (VOCs and SVOCs) were found in the site soils and groundwater, in and near the location of the new Processing Center building. EPA evaluated the site data for potential vapor intrusion into the interior of the building. Based on the information contained in the May 1999 Request for Non-Use Aquifer Determination (NUAD) and the 1999 Phase II Environmental Site Assessment Report, the indoor air within the Processing Center and neighboring properties is not suspected to be impacted by VOC/SVOC contamination remaining in the site soils and groundwater.

References:

EPA Region III Office has excerpts of reports. Full reports may be found at PADEP Southeast Regional Office.

1. Preliminary Assessment (PA) Report, 1984, NUS Corporation
2. Draft Phase II Environmental Site Assessment for the Proposed Relocation of the Processing and Distribution Center, 1999, Weston (*partial report*)
3. Closure of Former Hazardous Waste Accumulation Area (Less than 90-day Storage), 1999, O'Brien & Gere Engineers Inc. (*partial report*)
4. Decontamination and Demolition Project, Project Closure Report, 1999, MARCOR Remediation Inc. (*partial report*)
5. Request for Non-Use Aquifer Determination, 1999, Weston
6. Remedial Action Report, 2004, Pennoni (*partial report*)
7. 7500 Lindbergh Boulevard Property, Vapor Intrusion Weight of Evidence Evaluation, EPA, date July 23, 2012

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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

Potential Human Receptors (Under Current Conditions)

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

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):

Groundwater: The groundwater at this site is not used for any potable or industrial or agricultural purposes. There is no current or expected exposure to groundwater.

Surface /Subsurface Soil: The site currently is completely covered by buildings, paved parking lots and landscaping. There is no current or expected exposure to human receptors at the facility.

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

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4. Can the exposures from any of the complete pathways identified in #3 be reasonably expected to be "significant" (i.e., potentially⁴ "unacceptable" levels) 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):

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.

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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 a "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 a "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):
