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: J.G. Wilson Site

Facility Address: 120 Jefferson Street, Chesapeake, Virginia 24504

Facility EPA ID #: VAR000000125

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 site known as the J.G. Wilson Site (120 Jefferson Street; Chesapeake, Virginia) is located on the east side of the Southern Branch of the Elizabeth River. The property is bounded to the north by a former Chesapeake Products fertilizer operation, to the west by the estuarine Elizabeth River Southern Branch, to the south by Poindexter Street, and to the east by a Norfolk-Portsmouth Beltline Railroad maintenance facility. The site was originally developed as a manufacturing facility for metal and wood overhead doors in 1905. On-site activities have included steel and iron working, galvanizing, wood working, painting, kiln drying, and metal plating. The site is currently vacant.

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By Letter of Commitment dated August 25, 2004, Truxton Development, LLC (Truxton) agreed to conduct a RCRA Facility Investigation (RFI) of the J.G. Wilson property under the U.S. EPA Facility Lead Corrective Action Program. In accordance with the approved RFI Work Plan multiple soil samples were collected from more than 60 locations on site. Two large areas were identified where lead and arsenic concentrations appeared to be locally elevated.

During the period from October 23, 2007 through November 3, 2007, Truxton Development and its contractors, excavated 10,708.44 tons of nonhazardous soil and transported it under manifest to the Southeastern Public ServiceAuthority's Suffolk landfill for use as alternate daily cover. The soil was removed to the water table from the two large areas, as well as localized hot spots. During these activities seven shallow groundwater monitoring wells were installed. Three wells were located on the former office parcel and four were installed on the main parcel. Only total arsenic and lead were measured at concentrations exceeding EPA Tap Water Risk-Based Concentrations or Maximum Contaminant Levels for drinking water.

With the excavation of all onsite contaminated soil to the water table it is expected that constituent of concern concentrations will continue to decline. The Virginia Department of Environmental Quality believes ongoing groundwater monitoring is required. Truxton has proposed ongoing groundwater monitoring confirming plume stability in conjunction with institutional controls prohibiting groundwater use.

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

- APEX, *Corrective Measures Work Plan, J.G. Wilson, Chesapeake, Virginia,* dated September 20, 2007.
- APEX, *Soil Summary Review, J.G. Wilson, Chesapeake, Virginia,* dated January 30, 2008.
- APEX, *Groundwater Monitoring Report, J.G. Wilson, Chesapeake, Virginia,* dated November 24, 2008.
- APEX, *Phase II Work Plan, J.G. Wilson, Chesapeake, Virginia,* dated May 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			Arsenic and Lead (See below)
Air (indoors)[2]		X		
Surface Soil (e.g., <2 ft)		X		
Surface Water		X		
Sediment		X		
Subsurf. Soil (e.g., >2 ft)		X		
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):

Two constituents of concern reported in groundwater above appropriate standards are arsenic and lead. Exceedances of groundwater MCLs or Action Levels for arsenic and lead have occurred throughout the site at various concentrations. Downgradient exceedances occur also with the most significant from MW-13.

Elevated upgradient contaminant concentrations appear to attenuate to below water quality standards prior to discharge into the Elizabeth River. The most recent concentrations in the two downgradient wells, MW-8 and MW-11, are either below or slightly above the MCL for a single constituent. This demonstrated attenuation reported from site wells allows the reasonable conclusion that contaminated groundwater discharges to the Elizabeth River at levels below the MCL and surface water quality criteria and standards. Therefore, surface water is not considered to be impacted from the site.

Surface and subsurface soils have been evaluated and determined to be below risk-based screening levels. The contaminated source areas of arsenic and lead were excavated and removed from the site. Without a source present on site, it is reasonable to believe there is no outdoor air impact from the site itself. The sediment may be contaminated however the contamination can not be attributed to releases from this facility therefore this media is not considered in further in this determination.

There are no buildings on the property therefore indoor air can not be considered an existing environmental exposure pathway. Indoor air concerns do not exist for arsenic and lead which remain in the site groundwater.

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	YES	NO	NO	NO
Air (indoors)	NO	NO	NO	NO	NO	NO	NO
Soil (surface, e.g. < 2 ft)	NO	NO	NO	NO	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	NO	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. Groundwater

REFERENCE: All available information within the Department files.

RATIONALE:

Residents/Workers

NO – On-site groundwater is not used. Prior to redevelopment institutional controls will be implemented to prevent the use of groundwater for consumption or general use to residents and workers on the property. The facility's water supply will be provided by a public water supply (PWS) and no contact with contaminated groundwater will occur at the site, except during routine groundwater monitoring. Groundwater monitoring 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.

Construction

YES – Construction workers at the facility may potentially be exposed to groundwater if construction activities required them to excavate down to the groundwater table. Construction activities would be covered by the facility's health and safety plan.

Trespassers

NO – Trespassing is prohibited from the site, however if it were to occur it is unlikely that the trespasser would be exposed to the groundwater table. All construction activities will be fenced off to prevent access from trespassers.

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.

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):

With the excavation of all onsite contaminated soil to the water table it is expected that constituent of concern concentrations will continue to decline in the groundwater. The Virginia Department of Environmental Quality believes ongoing groundwater monitoring is required. Truxton has proposed ongoing groundwater monitoring confirming plume stability in conjunction with institutional controls prohibiting groundwater use. As previously noted, construction workers will be protected by the facility's Health and Safety Plan. Prior to redevelopment, institutional controls will be implemented to prevent groundwater use for consumption or general use to residents and workers, except for groundwater monitoring.

[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 **J.G. Wilson Site, EPA ID # VAR000000125**, located at **120 Jefferson Street, Chesapeake, 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 9-1-09
(signature)

Matthew M. Stepien
(print)

Environmental Engineer Sr.
(title)

Supervisor Durwood R Willis Date 9/1/09
(signature)

Durwood Willis
(print)

Director, Office of Remediation Programs
(title)

Virginia – Region III
(EPA Region or State)

Locations where References may be found:

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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.