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:	Refined Metals Corporation.
Facility Address:	3700 South Arlington Avenue, Beech Grove, Indiana
Facility EPA ID #:	IND 000 718 130

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?

X 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).

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)?

	Yes	No	?	Rationale / Key Contaminants
Groundwater	x			lead and arsenic
Air (indoors) [2]		x		
Surface Soil (e.g., <2 ft)	x			lead, arsenic, chromium cadmium and mercury
Surface Water		x		
Sediment	x			lead and arsenic
Subsurf. Soil (e.g., >2 ft)	x			lead, arsenic, cadmium,. Chromium and mercury
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.

[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 and Reference(s): The heavy metals listed above have been detected in soils, ditch sediments and groundwater in varying concentrations exceeding the recommended PRG and the Risk Integrated System of Cleanup (RISC) levels set by the IDEM. For example, lead concentration in soils range from 32,000mg/kg to 216mg/kg,, arsenic concentration range from 323mg/kg to 3.9mg/kg e.t.c. Lead and arsenic are the only metals detected above MCL in the onsite monitoring wells.

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)

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

___ 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 ___ _____

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

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): The heavy metals identified in onsite soils and groundwater exceeding the PRG and the IDEM RISC threshold are complete pathways for construction workers. The metals detected above the PRG in ditch sediment is a complete pathway for trespassers. Construction workers involved in closure activities may potentially have exposure to contaminated soil. These pathways are not complete for residents, day care, onsite workers, trespassers, recreation or food because access to the soil is restricted by a fence and security camera. The groundwater is not used as a drinking water source. Therefore, it is not a complete pathway.

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."

X 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): Trespassers are not expected to have significant exposures because there is a six foot high chain link fence topped with barbed wire and the gate is either locked or guarded. Construction workers in the area would be exposed to soil with heavy metals concentrations higher than the 750mg/kg PRG threshold and the RISC proposed by IDEM. For example, construction workers working on closure activities would be exposed to contaminated soil and groundwater.

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

X 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

[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.

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): The assumption used to calculate PRGs are more conservative than the actual exposure onsite. With the exception of the adjacent drainage ditch which in the past received runoffs from the facility, a greater proportion of the contaminated areas are located within the facility boundary and the land is zoned for industrial use. With respect to the drainage ditch, there is an ongoing interim measures in place to address the contamination. Contaminated sediment are currently been excavated from the ditch and taken offsite for disposal. This temporary measure was taken, pending selection of final remedy of the ditch. In addition, the outdoor and indoor waste piles have been completely removed, the Breaker building has been dismantled and the facility is no longer operational. The entire facility grounds have been paved over with concrete. The facility is also fenced and the main entry point is controlled by security guard. The site is not used for habitation, has no full time residents, and does not house any educational, healthcare, day care, or play ground facilities. No recreational areas are located within the facility boundary, and no growth of crops, grazing of livestock, harvesting of fish occurs on the property. Consequently, the only exposure to the impacted soils/sediment is through very infrequent trespasser activities in the area within the ditch. Furthermore, the potential for disturbance in the area is almost nonexistent because the area is covered with concrete soils are not expected to either become airborne through disturbance or to be transported from the area via worker foot gear. Therefore, potential exposures to the impacted soils are negligible. Exposures to construction workers will be under acceptable limits because the activities will be conducted in accordance with the health and safety plan included in the closure plan. This plan refers to OSHA standards.

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):

X YE - Yes, "Current Human Exposures Under Control" has been verified. Based on a review of the information contained in draft RFI report, "Current Human Exposures" are expected to be "Under Control" at the **Refined Metals Corporation** facility, EPA ID # **IND 000 718 130**, located at **3700 South Arlington Ave. IN.** 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	(signature)		Date	
	(print)	Jonathan Adenuga		
	(title)	Project Manager, U.S. EPA.		

Supervisor	(signature)		Date	
	(print)	Joseph M. Boyle		
	(title)	Chief Enforcement & Compliance Assurance Branch		
	(EPA Region or State)			

Locations where References may be found:
U.S. EPA Region 5 7th Floor Record Center 77 West Jackson Blvd. Chicago, Illinois 60604

Contact telephone and e-mail numbers

(name)	Jonathan Adenuga
(phone #)	(312) 886-7954
(e-mail)	adenuga.jonathan@epa.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.