

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: **Geneva Steel, LLC.**

Facility Address: **10 South Geneva Road, Vinyard, P. O. Box 2500, Provo, Utah 84603**

Facility EPA ID #: **UTD009086133**

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 "NO" (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 A Current Human Exposures Under Control EI**

A positive "Current Human Exposures Under Control" EI determination ("YES" 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).

**Current Human Exposures Under Control  
Environmental Indicator (EI) RCRIS code (CA725)**

2. Are groundwater, soil, surface water, sediments, or air **media** known or reasonably suspected to be “contaminated”<sup>1</sup> 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	<b>X</b>	—	—	_____
Air (indoors) <sup>2</sup>	—	<b>X</b>	—	_____
Surface Soil (e.g., <2 ft)	<b>X</b>	—	—	_____
Surface Water	—	<b>X</b>	—	_____
Sediment	<b>X</b>	—	—	_____
Subsurface. Soil (e.g., >2 ft)	<b>X</b>	—	—	_____
Air (outdoors)	—	<b>X</b>	—	_____

\_\_\_\_\_ If no (for all media) - skip to #6, and enter “YES” 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 “NO” status code.

**Rationale and Reference(s):**

---

<sup>1</sup>“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).

<sup>2</sup>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.

Media	Location	Contaminant	Action Level (MCLs, Reg. III RBCs)	Maximum Detected
Groundwater	GPW-68	Benzene	5 ug/L	780,000 ug/L
	MW-112S	Arsenic	.045 ug/L	396 ug/L
	SWMUG-2.13	Lead	.015 mg/L	2.8 mg/L
	SWMUG-2.13	PAH (BaP)	0.0092 ug/L	88 ug/L
	SWMUG-2.19/2.01	Cadmium	.01 mg/L	.2 mg/L
	xxxx	Chromium (Total)	37 mg/L	xxx mg/L
	SWMUG-2.06	TPH	1 mg/L	381 mg/L
	SWMUG-2.18	Naphthalene	1500 ug/L	8190 mg/L
	SWMUG-2.19/2.01	Free Cyanide	.7 mg/L	1.5 mg/L
	Soils/Sediments	SWMUG-2.19/2.01	PAH (BaP)	400 ug/L
SWMUG-1.02		Benzene	99mg/kg	115,872 ug/kg
SWMUG-2.19/2.01		Lead	400 mg/kg	28,861 mg/kg
SWMUG-2.19/2.01		Cadmium	40 mg/kg	85.2 mg/kg
xxx		Chromium	1,000,000 mg/kg	xxx
SWMUG2.02		TPH	100 mg/kg	887000 mg/kg
SWMUG-1.04		Aroclor-1260 (PCB)	.1 mg/kg	1.02 mg/kg
SWMUG-2.19/2.01		PAH (BaP)	4000 ug/kg	697,637 ug/kg
SWMUG-2.19/2.01		PAH (BaA)	39,000 ug/kg	105,103 ug/kg
SWMUG-2.19/2.01		Chrysene	390,000 ug/kg	811,673 ug/kg

**References:**

1. Final RFI Task III – Part 4. 1996. Screening Investigation report, Geneva Steel Facility. EPA ID No. UTD009086133
2. Data Summary Report, July 2000. Groundwater Investigation At The Geneva Steel Facility

**Environmental Indicator (EI) RCRIS code (CA725)**

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>	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food <sup>3</sup>
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
<del>Surface Water</del>	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

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 YES 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.

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

\_\_\_\_\_ If unknown (for any "Contaminated" Media - Human Receptor combination) - skip to #6 and enter "NO" status code

**Rationale and Reference(s):**

**Residents - Exposure to Contaminants via :**

**Groundwater:**

No complete pathway exists. No residents at the Geneva facility and Groundwater is not a source of water for human consumption.

**Soil (Surface):**

No complete pathway exists. Contaminated surface soil is within the Geneva Steel facility boundary with gated access. No residents live on site.

**Soil (Subsurface):**

No complete pathway exists. Contaminated subsurface soil is within the Geneva Steel property boundary with gated access. No residents on site.

**Worker - Exposure to Contaminants via:**

**Groundwater:**

No complete pathway exists. No on site wells used for production water supply or other activities that would place workers in contact with contaminated groundwater.

**Soil (Surface):**

Potential exists for complete pathway. Site workers however, wear protective clothing to limit dermal contact. Other potential routes of exposure could be inhalation which could be eliminated by use of face mask.

**Soil (Subsurface):**

No complete pathway. Worker will not be in contact with contaminated subsurface soils.

**Day-Care, Schools, Hospitals, etc - Exposure to Contaminant via:**

**Groundwater:**

No such facilities exist at the Geneva Steel facility.

**Soil (Surface):**

No such facilities exist at the Geneva Steel facility.

**Soil (Subsurface):**

No such facilities exist at the Geneva Steel facility.

**Construction Workers – Exposure to Contaminants via:**

**Groundwater:**

No complete pathway exists. No construction activities on site to subject construction workers to contaminated groundwater. During construction if any, personal protective equipment will be used.

**Soil (Surface):**

Potential for complete pathway exists if construction activities begin. Currently there are no such activities on site. This pathway may be eliminated through the use of personal protective equipment.

**Soil (Subsurface)**

No current construction activities on site. However potential exists but can be eliminated by use of personal protective equipment

**Trespassers – Exposures to Contaminants via:**

**Soils (Surface):**

Facility is gated with guarded entry points with strict security measures enforced 24 hours. Likelihood of trespassers on facility is almost non-existent.

**Recreation – Exposures to Contaminants via:**

**Soil (Surface):**

Facility is gated with guarded entry points with strict security measures enforced to eliminate unauthorized personnel. No complete pathway since there are no recreational activities on site.

**Food – In direct Exposures to Contaminants:**

**Groundwater:**

No complete pathway exists. No food is produced on site using on site groundwater.

**Soil (Surface):**

No complete pathways. No food is produced on site.

**Soil (Subsurface):**

No complete pathways. No food is produced on site.

## Current Human Exposures Under Control

Environmental Indicator (EI) RCRIS code (CA725)

Page 4

- 4 Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **“significant”** (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)?

   **No** 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 “YES” 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 AIN@ status code

### **Rationale and Reference(s):**

Workers and construction workers may potentially be exposed to contaminants in surface and subsurface soils. However, these potential exposure pathways are significantly reduced or even eliminated by the use of Personal Protective Equipment and Health and Safety Measures. On site construction workers at the Geneva Steel facility are trained to recognize potential risks and hazards associated with steel manufacturing. Workers are required to follow strict on-site Health and Safety procedures including the use of personal protective equipment. These measures invariably reduce possible exposures during excavation in areas of contamination.



**Current Human Exposures Under Control  
Environmental Indicator (EI) RCRIS code (CA725)**

Page 5

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 “YES” 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 ANO@ status code after providing a description of each potentially “unacceptable” exposure.

\_\_\_\_\_ If unknown (for any potentially “unacceptable” exposure) - continue and enter “NO” status code

**Rationale and Reference(s):**

**Current Human Exposures Under Control  
Environmental Indicator (EI) RCRIS code (CA725)**


Page 6

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):

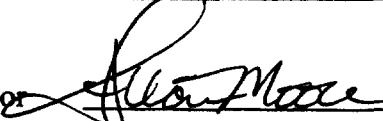
**YES** Yes, Current Human Exposures Under Control has been verified. Based on a review of the information contained in this EI Determination, Current Human Exposures are expected to be Under Control at the GENEVA Steel facility, EPA ID #UTD00908613, located at Vineyard, Utah, under current and reasonably 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   
Eric Baiden, Ph.D., P.G.  
Environmental Scientist

Date 8/12/03

Supervisor   
Allan Moore, P.G.  
Environmental Program Manager  
Utah Division of Solid & Hazardous Waste

Date 8/12/03

**Locations where References may be found:**

Utah Department of Environmental quality  
Division of Solid and Hazardous waste  
288 North 1460 West  
P. O. Box 144880  
Salt Lake City, UT 84114-8440

**Contact telephone and e-mail numbers**

(name) Allan Moore  
(phone #) 801-538-6170  
(e-mail) allanmoore@utah.gov