

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

RCRA Corrective Action Environmental Indicator (EI) RCRAInfo code (CA725) Current Human Exposures Under Control

Facility Name: Crucible Specialty Metals Landfill
Facility Address: State Fair Boulevard
Facility EPA ID #: NYD085161008

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EIs) 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 EIs 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 EIs 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 RCRAInfo national database ONLY as long as they remain true (i.e., RCRAInfo status codes must be changed when the regulatory authorities become aware of contrary information).

**Current Human Exposures Under Control
Environmental Indicator (EI) RCRAInfo Code (CA725)**

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 is not available skip to #6 and enter "IN" (more information needed) status code.

Background - The Crucible Specialty Metals (Crucible) landfill is located on the west side of Onondaga Lake in the town of Geddes adjacent to the New York State Fairgrounds parking lot (See Figure 1). Crucible operated the landfill from 1973 until 1989 for the disposal of wastes generated as part of the steel mill's operation. Hazardous waste was disposed of in the landfill from 1973 to 1982. The hazardous wastes disposed consisted of: 1) Waste caustic solids (characteristic for chromium); 2) Acid Pickling Sludge (characteristic for chromium); and EAF (K061) and AOD (characteristic for chromium) dusts. The landfill was capped and closed in 1988 & 1989. The landfill is located on property owned by Onondaga County.

The Landfill sits on top of an approximate 60 foot deposit of Solvay Waste. Groundwater generally flows from the state fair parking lot towards the landfill and then radial from the landfill towards Nine mile creek and Onondaga Lake (Figures 2 & 3)

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		
Air (indoors) ²		X		
Surface Soil (e.g., <2 ft)		X		
Surface Water		X		
Sediment		X		

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).

²Recent 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.

**Current Human Exposures Under Control
Environmental Indicator (EI) RCRAInfo Code (CA725)**

	YES	NO	?	Rationale/Key Contaminants
Subsurface Soil (e.g., >2 ft)		X		
Air (outdoors)		X		

 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.

 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):

Inspections and monitoring of the landfill during the post-closure period indicate the landfill cap is performing as designed and groundwater has not been impacted by the landfill. (Crucible Landfill 2008 Annual Monitoring and Inspection Report, February 2009)

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

<u>“Contaminated” Media</u>	Potential <u>Human Receptors</u> (Under Current Conditions)						
	Residents	Workers	Day-Care	Construction	Trespassers	Recreation	Food ³
Groundwater	NO	NO	NO	NO	---	---	NO
Air (indoors)	NO	NO	NO		---	---	
Soil (surface, e.g., <2 ft)	NO	NO	NO	NO	NO	NO	NO
Surface Water	NO	NO	---	---	NO	NO	NO
Sediment	NO	NO	---	---	NO	NO	NO
Soil (subsurface e.g., >2 ft)	---	---	---	NO	---	---	NO
Air (outdoors)	NO	NO	NO	NO	NO	---	---

Instructions for Summary Exposure Pathway Evaluation Table:

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

Current Human Exposures Under Control
Environmental Indicator (EI) RCRAInfo Code (CA725)

Page 4

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).
- _____ 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):

- 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."
- _____ If yes (exposures could be reasonably expected to be "significant" (i.e.,

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.

Current Human Exposures Under Control
Environmental Indicator (EI) RCRAInfo Code (CA725)

Page 5

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)

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):

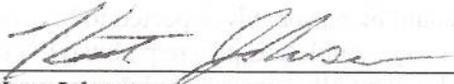
6. Check the appropriate RCRA Info status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

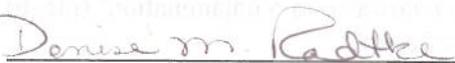
 X YE - Yes, “Current Human Exposures Under Control” has been verified. Based on a review of the information contained in this EI Determination, “Current Human Exposures” are expected to be “Under Control” at the Crucible Specialty Metals Landfill, State Fair Boulevard, Geddes, New York under current and reasonably expected conditions. This determination will be re-evaluated when the Agency/State becomes aware of significant changes at the facility.

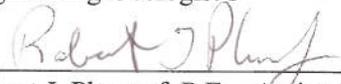
_____ NO - “Current Human Exposures” are NOT “Under Control.”

_____ IN - More information is needed to make a determination.

Current Human Exposures Under Control
Environmental Indicator (EI) RCRAInfo Code (CA725)
Page 6

Completed by:  Date: 3-29-2010
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Director:  Date: 3-30-2010
Robert J. Phaneuf, P.E. - Acting Director
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Division of Solid and Hazardous Materials

Locations where References may be found:

New York State Department of Environmental Conservation, Central Office
Division of Solid and Hazardous Materials
625 Broadway 9th Floor
Albany, New York 12233-7252

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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.

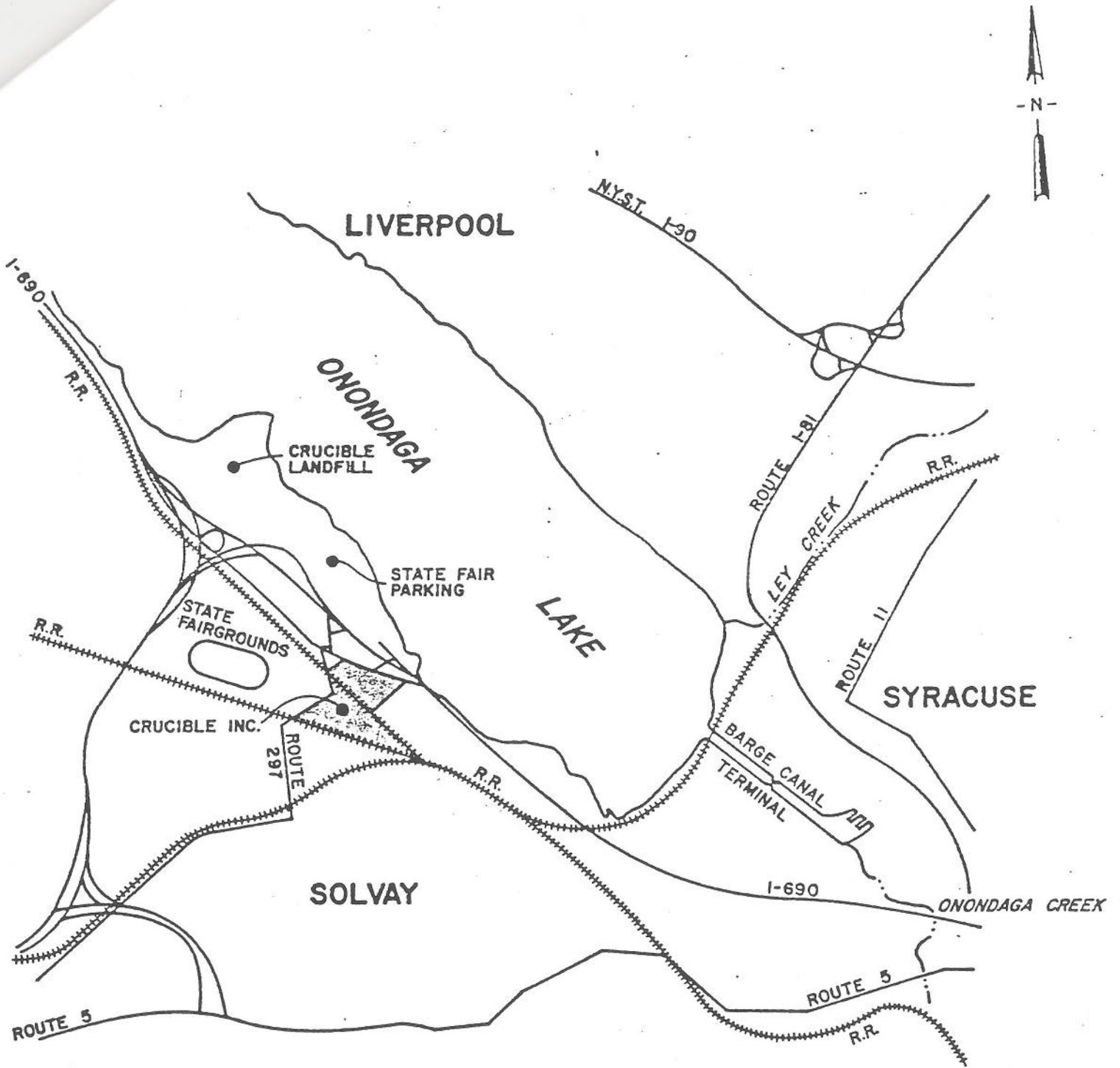


FIGURE 1
LOCATION PLAN

CRUCIBLE INC.



Legend
CM – Composite monitor (within Solvay Waste)
DW – Deep well (greater than 100 feet)
MS – Screened location cluster of wells
PZ – Piezometer location
W – 2" diameter PVC well

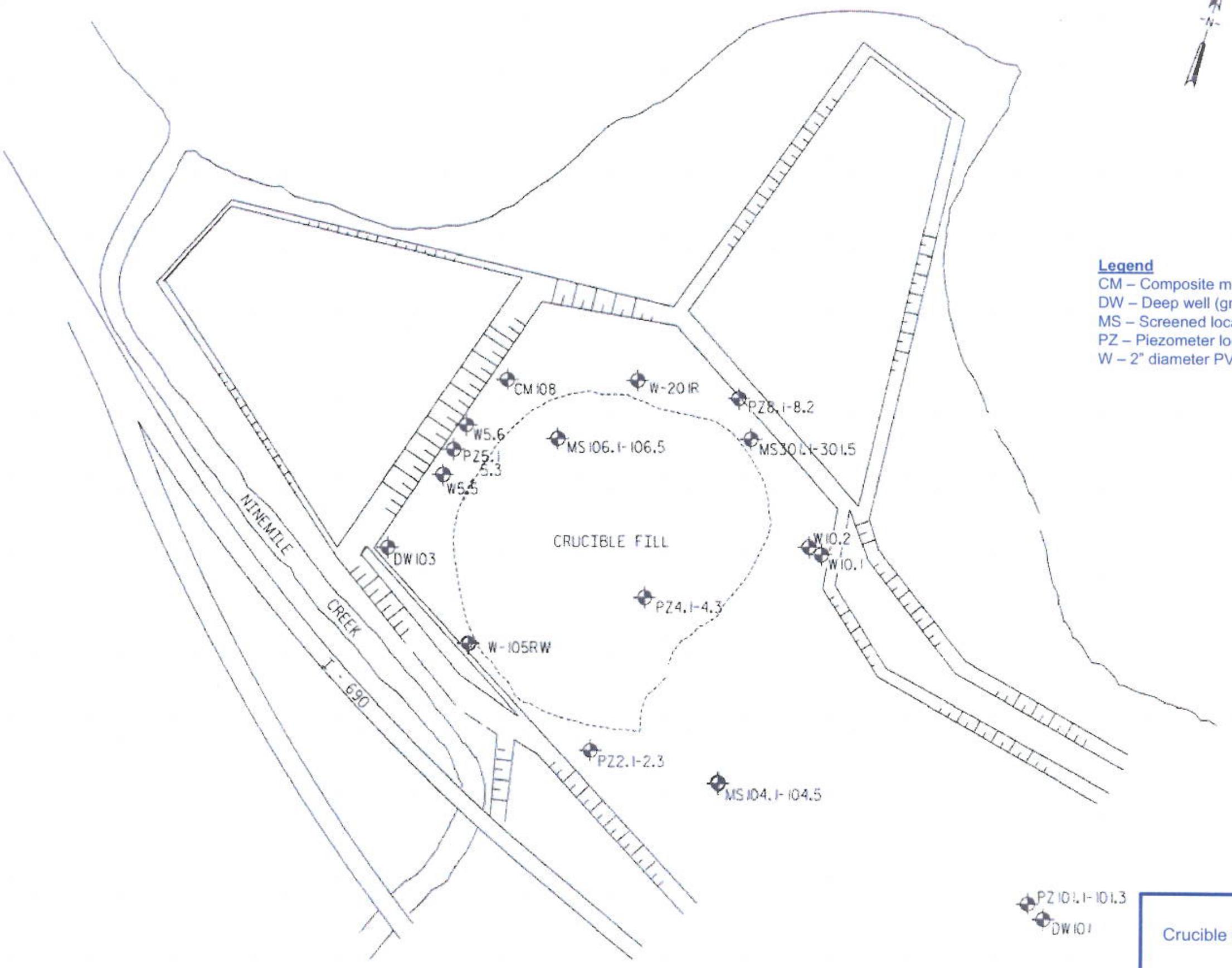
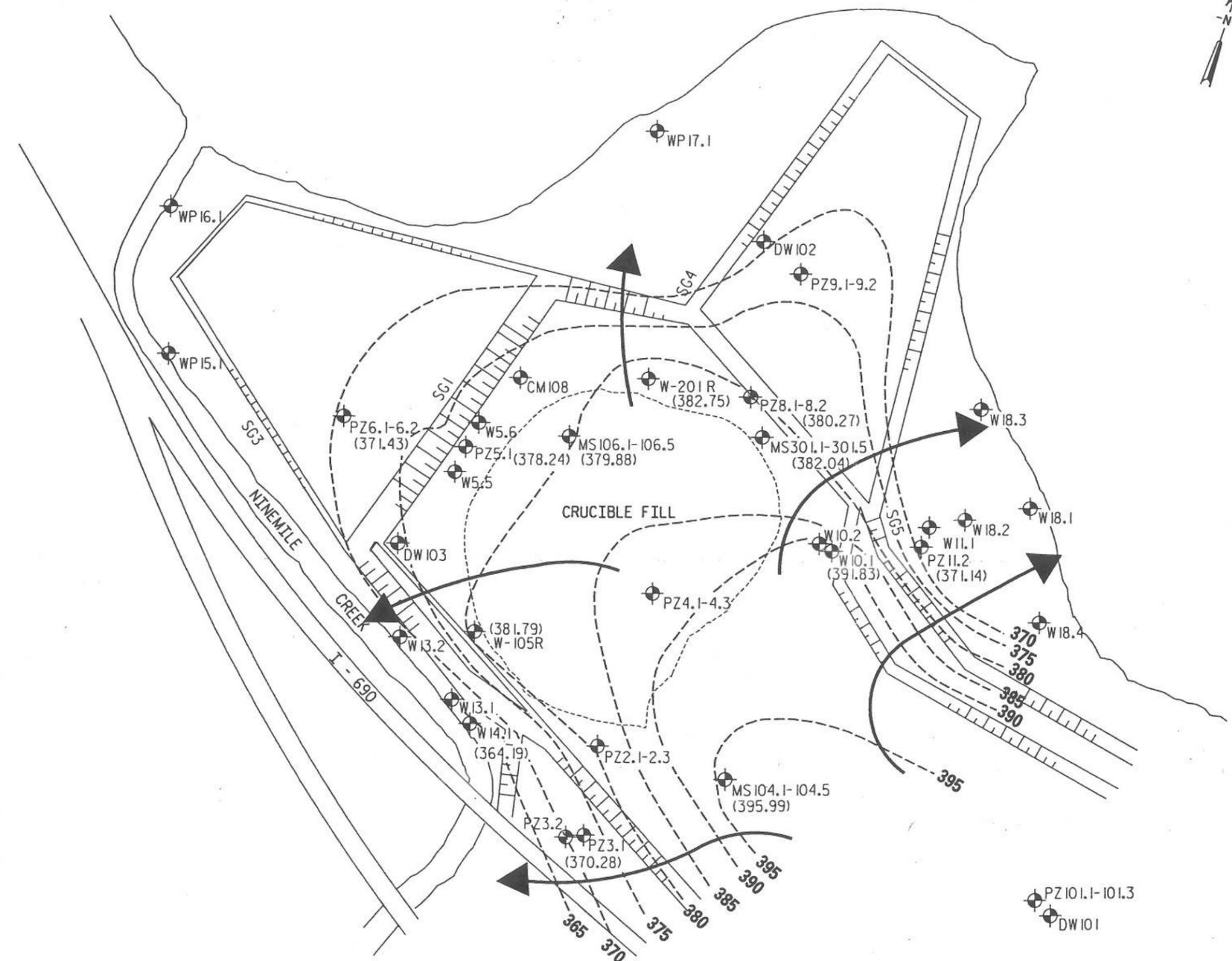


Figure 1
Crucible Specialty Metals Landfill
Site Map



LEGEND:

- CM - COMPOSITE MONITOR (WITHIN SOLVAY WASTE)
- DW - DEEP WELL (GREATER THAN 100 FEET)
- MS - SCREENED LOCATION CLUSTER OF FIVE 2" DIA. PVC PIPE
- PZ - PIEZOMETER LOCATION
- W - 2" DIA. PVC PIPE WELL
- ← INTERPRETED GROUNDWATER FLOW DIRECTION



CRUCIBLE SPECIALTY METALS LANDFILL		
GROUNDWATER CONTOURS AND FLOW DIRECTIONS		
 C&S COMPANIES	ENGINEERS DESIGN BUILD TECHNICAL RESOURCES OPERATIONS	FIGURE