

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRAInfo code (CA725)

Current Human Exposures Under Control

Facility Name: University of Texas Southwestern Medical Center at Dallas
Facility Address: 5323 Harry Hines Blvd., Dallas, Texas 76120
Facility EPA ID #: TXD071378822

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, GPRRA). 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).

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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		None reported
Air (indoors) ²		X		None reported
Surface Soil (e.g., <2 ft)		X		None reported
Surface Water		X		None reported; storm water permit
Sediment		X		None reported
Subsurface Soil (e.g., >2 ft)		X		None reported
Air (outdoors)		X		None reported; operating permit

- 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):

Groundwater: There is no evidence of contamination of groundwater in available files.

Air (indoors): No reported groundwater contamination with volatile constituents.

Surface and Subsurface Soils: There is no evidence of contamination of surface or subsurface soils in available files.

Surface Water and Sediment: There is no evidence of contamination of surface water or sediments in available files. Facility operates under a stormwater permit.

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.

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Air: The facility's air emissions are regulated under Air Account No. DB2459D. The facility has air operating permits and air new source permits.

Facility Description and Regulatory History

The University of Texas Southwestern Medical Center at Dallas (UTSMC) is located at 5323 Harry Hines Boulevard near Interstate 35 in Dallas, Texas. As of 1999, the UTSMC site contained approximately 89 acres of land. UTSMC is a state institute of higher learning with significant activities in teaching, healthcare, and basic and clinical research (Reference 18). UTSMC is a medical school and a biomedical research facility. There are more than 1,200 laboratories on the campus (Reference 12). The facility stores and processes hazardous waste generated on-site in container storage areas. The wastes generated are quite varied and primarily in small quantities (Reference 12). The wastes managed by the facility include hazardous wastes and Class 1, Class 2, and Class 3 nonhazardous wastes (Reference 18).

UTSMC is a large quantity generator of hazardous waste and a treatment storage and disposal facility (Reference 22). UTSMC was originally issued a Permit for Municipal Hazardous Waste Management Site by the Texas Water Commission (TWC) on December 6, 1988. This original permit was for storing and processing wastes in five container storage areas and an incinerator. The permitted container storage areas included the Environmental Control Storage Center (ECSC), the Acid Building Container Storage Units and the Environmental Control Processing Center (ECPC) (containing the incinerator and a container storage area) (Reference 1). The incinerator was never used; closure of the incinerator, the liquid injection system and the feed tank was accepted by the Texas Natural Resource Conservation Commission (TNRCC) on August 2, 1996 (Reference 10). Closure of the ECPC building was accepted by TNRCC in accordance with TNRCC Risk Reduction Rules Standard No. 1 on December 13, 1996. UTSMC was released from deed recordation and post-closure care requirements for the ECPC building (Reference 11). The UTSMC was issued a permit renewal on March 1, 2000 (Reference 19). This permit covered three hazardous waste storage areas, the Acid Storage Building, "S" Building Laboratory and the ECSC. According to the permit application, the ECSC was never built but was still planned to be constructed (Reference 16). A May 26, 2005 TCEQ conference record indicates that UTSMC was going to build a less than 90 day container storage area and convert it to a permitted unit through a permit modification or amendment (Reference 23). Further information on this unit was not found in the available files. In addition to the hazardous waste and several air operating permits and air new source permits, the facility operates under the following permits and registrations:

Petroleum Storage Tank Registration No. 3506
Stormwater Permit No. TXRNEP828 (Reference 25)

The available file materials included a complaint, compliance order and notice of opportunity for hearing dated March 12, 1997, which assessed a \$4,000 penalty for the storage of hazardous waste, in an improperly labeled drum, for greater than 90 days in an unpermitted area (References 13 and 14). No further information was available regarding this complaint, however, according to a September 6, 1999 compliance summary, at that time there were no outstanding violations and there had been no inspections or enforcement actions against UTSMC in the previous five years (Reference 18). A number of violations were noted during an EPA Compliance Evaluation Inspection in December 2002. A complaint was sent to UTSMC on September 25, 2003. The complaint contained three allegations which included, improperly stored hazardous wastes, failure to label used oil containers and failure to properly label a drum of waste paint with the words "Hazardous Waste" (Reference 22). There was no documentation of resolution to this complaint in the available file materials.

A RCRA Facility Investigation (RFI) dated January 22, 1990 detected chromium, mercury, formaldehyde, chloroform and dichloromethane in the soil and groundwater around the Acid Storage Building of UTSMC at levels below health-based risk levels (Reference 3). TWC concluded that there was a release but the concentration of hazardous constituents was below the health-based risk levels per the May 1989 EPA RFI Guidance. No further action was required (Reference 4).

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References

1. TWC Permit for Municipal Hazardous Waste Management Site; UTSMC; issued December 6, 1988.
2. Letter to Julius Weeks, UTSMC; from Allyn Davis, EPA; Transmittal of Hazardous Waste Permit; dated January 13, 1989.
3. Letter to Minor Brooks Hibbs, TWC; from Sarah Keenan, UTSMC; RCRA Facility Investigation Report; dated February 14, 1990.
4. Letter to Sarah Keenan, UTSMC; from Minor Brooks Hibbs, TWC; RCRA Facility Investigation Report; dated April 12, 1990.
5. Letter to Allen Beinke, TWC; from Sarah Keenan, UTSMC; Request by the UTSMC for a Class 1 Permit Modification to the Closure Requirements; dated May 10, 1991.
6. Letter to Sarah Keenan, UTSMC; from Charles Mauk, TWC; Closure of Incinerator; dated June 13, 1991.
7. Map of the UTSMC; revised August 1995.
8. Letter to Sarah Keenan, UTSMC; from Vikki Rosales, FY: 93 Haz Waste Fac Fee; dated January 4, 1996.
9. Letter to Peter Fitzgerald, UTSMC; from Wade Wheatley, TNRCC; The UTSMC Hazardous Waste Permit No. HW-50165, Acceptance of Unit Closure; dated August 2, 1996.
10. Letter to Peter Fitzgerald, UTSMC; from Wade Wheatley, TNRCC; UTSMC Hazardous Waste Permit No. HW-50165, Acceptance of Unit Closure (Closure Report attached); dated August 2, 1996.
11. Letter to Peter Fitzgerald, UTSMC; from Richard Clarke, TNRCC; UTSMC ECPCB Approval of Closure/Remediation Final Report (report attached); dated December 13, 1996.
12. Letter to Karen Cleveland, TNRCC; from Sarah Keenan, UTSMC; Annual Site Activity Report for Calendar Year 1996 (partial report attached); dated August 29, 1997.
13. Complaint, Compliance Order, and Notice of Opportunity for Hearing; EPA; dated September 12, 1997.
14. Consent Agreement and Consent Order; EPA; dated September 12, 1997.
15. TNRCC Permit Application, Part A; dated May 27, 1998.
16. TNRCC Permit Application, Part B; dated May 27, 1998.
17. Letter to Donald Carlson, UTSMC; from TNRCC (incomplete letter, missing second page); UTSMC ECPCB Approval of Closure Final Report; dated December 11, 1998.
18. Technical and Executive Summary; UTSMC; Prepared by Dipak Bhakta, TRNCC; dated December 10, 1999.
19. TNRCC Permit for Industrial Solid Waste Management Site; UTSMC; issued March 1, 2000.
20. Review Notice of Registration; last change date August 28, 2001.
21. TNRCC Core Data Request; to UTSMC; complete August 9, 2002.
22. Letter to UTSMC; from Samuel Coleman, EPA; Complaint, Compliance Order and Notice of Opportunity for Hearing; dated September 25, 2003.
23. TNRCC Conference Record; UTSMC Less than 90 Day Container Storage Area and Convert to a Permitted Unit; dated May 24, 2005.
24. RCRAInfo Comprehensive Corrective Action Report, dated December 28, 2005.
25. TCEQ Central Registry Query – Regulated Entity Information, accessed June 22, 2006.
26. Facility maps

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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)

“Contaminated” Media	Residents	Workers	Day-Care	Construction	Trespassers	Recreation Food ³
Groundwater						
Air (indoors)						
Soil (surface, e.g., <2 ft)						
Surface Water						
Sediment						
Soil (subsurface e.g., >2 ft)						
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).

___ 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):

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**”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., 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 “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):

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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.

Recommended Action Items:

TechLaw, Inc. attempted to contact TCEQ for more information concerning the planned construction, verification of resolution of the September 25, 2003 complaint and any current issues not found in the available file materials but could not reach a TCEQ representative. Therefore, EPA may wish to further research these issues to confirm this EI determination.