

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

**RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA750)**

Migration of Contaminated Groundwater Under Control

Facility Name: HTSI
 Facility Address: 4460 Singleton Boulevard, Dallas, TX 75212
 Facility EPA ID #: TXD980624035
 TCEQ Solid Waste Registration ID #: 50029

1. Has all available relevant/significant information on known and reasonably suspected releases to the groundwater media, 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 #8 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 "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "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 "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

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).

**Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)**

Page 2

2. Is groundwater known or reasonably suspected to be “contaminated”¹ above appropriately protective “levels” (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

If yes - continue after identifying key contaminants, citing appropriate “levels,” and referencing supporting documentation.

If no - skip to #8 and enter “YE” status code, after citing appropriate “levels,” and referencing supporting documentation to demonstrate that groundwater is not “contaminated.”

If unknown - skip to #8 and enter “I0020N” status code.

Rationale and Reference(s): Site is a permitted, former RCRA TSD facility that has not been in such use since December 2004 (however, the permit is active and will remain so until the RFI is complete). RCRA clean closure of surface units was conducted in 2004 per TCEQ-approved closure plan. As part of clean-closure of the surface, waste equipment and structures were decontaminated, and waste equipment was disposed of or re-used at other facility. Rinsate samples of equipment and structures were collected and results were within closure plan requirements. RCRA clean closure of the site’s surface was approved by TCEQ- Industrial Hazardous Waste (IHW) Permits Section in May 2006. Site has concrete and asphalt pavement. COCs exceeding applicable TRRP Tier 1 and Tier 2 Residential PCLs were detected in on-site and off-site groundwater. Affected groundwater is present in a narrow (~200-ft wide) sandy/gravelly channel within a confined-alluvial saturated zone present in the 24 to 58-foot depth range, overlain by a 24 to 45-ft thick silty/clayey unsaturated zone (Quaternary Alluvium), and underlain by a 300 to 400-ft thick shale and clay unit of low-permeability (Eagle Ford Shale). COCs include certain VOCs/Chlorinated Solvents, SVOCs, Metals and TPH. On-site contaminated groundwater is present under pavement and clayey soil. There is no known domestic, agricultural, or industrial use of the contaminated groundwater zone within the affected property (on-site or off-site) and off-site contaminated groundwater is isolated within the 24 to 58-foot depth interval with clayey soil unaffected by HTSI operations overlying it (see Sep 2005 APAR for further details). Off-site property owners were notified of RFI/TRRP activities and findings in 2005, as required by TRRP. HTSI is awaiting TCEQ-CAS approval of the APAR before submitting a Response Action Plan (RAP) to address contaminated media.

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 appropriate “levels” (appropriate for the protection of the groundwater resource and its beneficial uses).

**Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)**

Page 3

3. Has the migration of contaminated groundwater stabilized (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"² as defined by the monitoring locations designated at the time of this determination)?

 X If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"²).

 If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"²) - skip to #8 and enter "NO" status code, after providing an explanation.

 If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s): The HTSI facility was operational from the 1950s until 2004, under various ownerships culminating in HTSI's ownership from 1999-present. A RCRA TSD facility permit was issued by the TWC (a TCEQ predecessor agency) in 1984. The contamination detected in site soils and groundwater is believed to be historical in nature, pre-dating HTSI's ownership. As discussed in the Sep 2005 RFI/TRRP APAR for the site, past waste-handling and storage activities on unpaved ground appear to have been the genesis of the contamination. Since acquisition of the site in the mid 1980s from a previous owner, HTSI's predecessors and HTSI paved the site and operated the facility under strict TCEQ scrutiny and in accordance with all applicable regulations. Solvent recycling and waste handling activities were conducted in areas with secondary containment and incidental spills were cleaned up in accordance with spill procedures outlined in the facility's operating permit and closure plan. The presence of a well-defined plume of chlorinated solvents and breakdown products in the groundwater samples from the existing monitoring well network (over 60 monitoring wells and groundwater sampling points) further supports the belief that the contamination appears to be historical in nature. As stated elsewhere in this questionnaire, the facility's surface is clean-closed and all past waste-handling equipment has been removed from the site and waste processing and handling structures have been rinsed to meet closure plan and regulatory requirements. Clean closure of the surface was approved by the TCEQ in May 2006. Thus, no sources are present on-site that could cause the groundwater plume to grow or become unstable. The lateral and vertical extent of the groundwater contamination was successfully delineated as part of the RFI/TRRP Affected Property Assessment (APA) and documented as such in the Sep 2005 APAR along with supporting laboratory data, figures and interpretation. In reviewing available groundwater data it becomes readily evident that the contaminant plume is degrading, based on the steep concentration gradients observed between sampling locations (i.e., downgradient concentrations significantly lower than upgradient ones), and the identified distribution of parent and daughter chlorinated solvent constituents along the groundwater plume. The off-site portion if this degrading plume is present in an area with a very flat horizontal gradient (0.0003 ft/ft) and a groundwater velocity of 0.003 ft/day. Based on the historical nature of the contamination, the evidence of contaminant degradation, the low velocity of groundwater movement, and the low concentrations or absence of parent products in the outer limits of the plume, it is believed that the plume is either stable or even receding. Further, the contaminated groundwater zone is underlain by the Eagleford Shale, consisting of poorly-consolidated, pliable (i.e.; not prone to fracturing) shale and clay of low-permeability material, which is documented in literature to be 300-400 ft thick in the region, thus impeding vertical migration of COCs. Contamination in groundwater is documented in the site APAR to be confined to the zone itself with no evidence of vertical migration into the shale. Additional groundwater monitoring, including evaluation of natural attenuation indicator parameters, will be proposed in a Response Action Plan (RAP) for the site to generate the necessary data to further support these findings. Evidence exists in the form of groundwater sampling data in the public domain that the affected groundwater zone has also been contaminated by releases from other industrial entities in the area. The City of Dallas has approved Municipal Setting Designations (MSDs) for several facilities with known groundwater contamination in the industrial area in which the HTSI site is located.

² "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by

ENCLOSURE A

designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

**Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)**

6. Can the discharge of "contaminated" groundwater into surface water be shown to be "currently acceptable" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented⁴)?

_____ If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR 2) providing or referencing an interim-assessment,⁵ appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

_____ If no - (the discharge of "contaminated" groundwater can not be shown to be "currently acceptable") - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

_____ If unknown - skip to 8 and enter "IN" status code.

Rationale and Reference(s): Not applicable. See response to Items 3 and 4 above.

⁴ Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

⁵ The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)

Page 7

7. Will groundwater monitoring / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

If no - enter "NO" status code in #8.

If unknown - enter "IN" status code in #8.

Rationale and Reference(s): An RFI has been ongoing at the site under TCEQ-Corrective Action Section (CAS) oversight and approval. A TRRP Affected Property Assessment Report (APAR) was submitted to TCEQ-CAS in Sep 2005. TCEQ-CAS is reviewing the APAR and HTSI's response to comments (TCEQ comments received January 2006 and HTSI response submitted Nov 2006). Upon receipt of TCEQ's approval of the APAR, a Response Action Plan (RAP) will be prepared and submitted to the TCEQ for addressing contaminated media. As part of the ongoing RFI/TRRP process, additional rounds of groundwater monitoring will be conducted to support the remedy (ies) that will be proposed for, and implemented at, the site.

Relevant documents : Sep 2005 APAR; TCEQ-CAS' Jan 2006 APAR comment letter; HTSI's Nov 2006 Response Letter. TCEQ Contact: Rebecca Hilton, TCEQ-CAS

_____ *lesly williams*
3/1/07 APAR Approval

**Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)**

Page 8

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

YE - Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the HSTI facility, EPA ID #TXD980624035, located at 4460 Singleton Boulevard, Dallas, TX 75212. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater" This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

NO - Unacceptable migration of contaminated groundwater is observed or expected.

IN - More information is needed to make a determination.

Completed by (signature) Lesley Williamson Date 2/9/09
(print) Lesley Williamson
(title) TCEQ Project Manager

Supervisor (signature) [Signature] Date 2/9/09
(print) _____
(title) _____
Texas Commission on Environmental Quality

Locations where References may be found:

TCEQ Central Records, Austin, TX

Contact telephone and e-mail numbers:

Project Manager listed above
(512) 239-2200
lwilliam@tceq.state.tx.us

Final Note: The purpose of the Migration of Contaminated Groundwater EI is to verify that the groundwater plume is stable. A "YE" determination does not constitute a screening tool to end the corrective action process. The "YE" determination may be changed at any time as new information becomes available.