DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action
Environmental Indicator (EI) RCRAInfo code (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name:	Vopak Logistics Services, USA Inc.
Facility Address:	2759 Battleground Road, Deer Park , Texas
Facility EPA ID #:	TXD097673149

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 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).

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.

__X__ 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 "IN" status code.

Rationale and Reference(s):

Facility Description

Vopak is previously known as Empak, Inc. and is owned by Vopak Terminal Deer Park Inc. Vopak provides environmental services for tankers in areas of tank truck and rail car cleaning, purging, treating and disposal of waste. The facility treats and disposes of wastewater generated by the storage terminal's cleaning operations, ballast, and tanker cleaning, as well as other industrial sources. The facility is classified as a commercial treatment, storage and disposal (TSD) facility (HW 50025), and operates a commercial underground injection well under permit WDW-157.

The Vopak facility was built in late 1960s as a tank farm before it upgraded to a waste water treatment plant and separated from the terminal to its present status as a waste services operation. According to a January 24, 2001 Investigation Report, Vopak is on a 12 acre site at 2759 Battleground Road, Deer Park, Harris County, Texas, west of the Houston Ship Channel. Land use within one mile radius of the site is industrial, commercial and recreational. According to the Part B application, dated September 10, 2004, the plant is adjacent to the San Jacinto Battleground and State Park and is bordered by the Houston Ship Channel. In addition to the solid waste registration, Vopak has air quality account (HG0224P) and wastewater permit (WQ0001731) with TDEQ. According to Docket No. 96-0934-IHW, Executive Director's Response to Hearing Request regarding a Class 2 Permit Modification, the facility is on a 4.5 acres tract. A revised Notice of Application and Preliminary Decision for HW Permit Modification dated March 11, 2003 indicates the facility is on a 5.4720 acres.

The original HW Permit was originally issued on October 14, 1992, with several modifications over the following years. The 1992 Permit indicated five SWMUs required investigation under the Corrective Action Provisions of the Permit. A renewal permit was issued December 23, 2003. This permit indicated there were no units requiring investigation under Corrective Action Provisions of the Permit; however, the RCRAInfo Comprehensive Permitting Report indicates this permit was issued with HSWA Corrective Action (CA) scheduled. The most recent modification to the permit is a Class III Permit Modification dated March 13, 2006.

According to the January 24, 2001 Investigation Report, Vopak's Notice of Registration (NOR) lists 72 waste management units consisting of 55 active units, six closed units and 12 units not yet constructed. The active units comprise 44 permitted tanks, three permitted waste compactors; one permitted deep injection well; one permitted wastewater treatment plant; permitted container storage areas; and three less-than -90-day units. Permitted active RCRA units are designed with secondary containment systems. Closure certifications were available in the files for the closed units; all of which were tanks. No

[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).

information in the available files indicated any historical or active regulated land based units (landfill, surface impoundments etc). According to the Part B Application, Facility Siting Summary, point source discharge and effluent rainfall are regulated by Permit No. TPDES 0173. No information in the available files indicated significant uncontrolled releases or contamination to any media exceeding Texas Risk Reduction Program PCLs.

The five SWMUs listed in the 1992 permit and Table of Contents of the RFI Work Plan are:

- Truck Unloading Sump B-1
- Truck Unloading Sump B-2
- Wastewater Sump
- Filter Area (Road North of 1A and 1B Pad)
- Deepwell Injection (DWIS) Sewers and Sumps

It is assumed, based on the 2003 renewal permit, that no further action was required for these units. This assumption is supported by the RCRAInfo Comprehensive Corrective Action Report (CCAR) which indicates the CA process is terminated – no further action dated 02/18/1997. The CCAR also indicates a history of public notice on proposed remedy (11/22/1996). No file information was available to support these entries on the CCAR. Telephone conversations with the TCEQ Permit Writer and the Remediation Section conducted on April 24, 2006 confirmed that the facility has no historical or ongoing remediation or corrective action. No evidence of groundwater or soil contamination found in available file materials.

References:

- HW Permit No. 50025, dated October 14, 1992.
- RCRA Facility Investigation for EMPAK, INC., dated December 1992 "(Cover page and Table of Contents only were available. Text of report was not found in available files).
- Investigation Report, Vopak Industries, CEI Conducted on November 27, 28, and December 4, 2000, dated January 24, 2001.
- Investigation Report, Vopak Industries, IHW-Underground Injection Control Investigation Conducted on November 12and 19, 2001.
- Revised Notice of Application and Preliminary Decision for Hazardous Waste Permit Modification, Permit No. HW 50025; mailed March 11, 2003.
- HW Permit No. 50025, Renewal, dated December 23, 2003.
- RCRA Part B Application, Vopak Industries, submitted on September 10, 2004.
- RCRAInfo Comprehensive Permitting Report, run on December 22, 2005, Vopak Logistics Services, USA, Inc.
- RCRAInfo Comprehensive Corrective Action Report, run on December 28, 2005, Vopak Logistics Services, USA, Inc.
- Final Draft Permit Modification, HW Permit No. 50025, Vopak Logistics Services, dated March 13, 2006
- Communication Log; Ann Anderson, TechLaw Inc. with Mr. Chau Vo, TCEQ dated April 24, 2006.
- Communication Log, Ann Anderson, TechLaw, Inc. with Ms. Lyla Bechley, TCEQ dated April 24, 2006.

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)?

___ 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):

[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 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.

4. Does “contaminated” groundwater **discharge** into **surface water** bodies?

___ If yes - continue after identifying potentially affected surface water bodies.

___ If no - skip to #7 (and enter a “YE” status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater “contamination” does not enter surface water bodies.

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

Rationale and Reference(s):

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be "**insignificant"** (i.e., the maximum concentration[3] of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

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___ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration[3] of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgment/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

___ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration[3] of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing;
and 2) for any contaminants discharging into surface water in concentrations[3] greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

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

Rationale and Reference(s):

[3] As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

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 implemented[4])?

___ 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):

[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.

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):

8. Check the appropriate RCRAInfo 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).

X 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 Vopak Logistics Services USA Inc. facility, EPA ID # TXD097673149 , located at 2759 Battleground Road, Deer Park, TX. 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

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

Completed by (signature) Ann L. Anderson Date 4/21/06

(print) Ann Anderson

(title) TechLaw Inc.

Supervisor (signature) Date

(print)

(title)

(EPA Region or State)

Locations where References may be found:

Texas Commission on Environmental Quality
File Room, Building E
12118 N IH 35
Austin, TX 78753

Filed under: SWR 30567 and IHW Permit 50025

Contact telephone and e-mail numbers

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