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:	Colfax Treating Company, L.L.C.
Facility Address:	3600 Koppers Street, Alexandria, Louisiana
Facility EPA ID #:	LAD 069 524 981; AI# 97707

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 #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 AMigration 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).

2. Is **groundwater** known or reasonably suspected to be **Acontaminated@**[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?

__X__ 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 "IN" status code.

Rationale and Reference(s):

The two hazardous waste management units subject to post-closure ground water monitoring are (1) Chatlin Lake Canal (closed surface impoundment) and (2) Vacuum Pump Cooling Water Pond (closed surface impoundment) at the Colfax Treating Company, L.L.C. facility (Site location and Facility plot map shown in Figures 1and 2).

In 1986, the facility completed closure of the process water ponds and the portion of the former Chatlin Lake Canal on the property as RCRA TSD units. The primary waste from these units was bottom sediment sludge from the treatment of wastewaters from wood-preserving processes that used creosote and/or pentachlorophenol (K001). The facility installed a groundwater recovery system as a means of corrective action. Groundwater is recovered from eight recovery wells located along the closed section of the former Chatlin Lake Canal and pumped to a continuous mix aeration basin for biological treatment. The groundwater is then discharged to the City of Alexandria POTW by authority of a City Discharge Permit. Compliance monitoring and corrective action is on going.

An on-going RFI that began in late 1999/early 2000 and quarterly/semi-annual groundwater sampling continue to show that groundwater is known to be contaminated above appropriate protective levels. The recent Annual 2004 Groundwater Monitoring Report specifically documents elevated levels of naphthalene, phenolics, and organics in the upper aquifer groundwater (Figures 3-5).

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[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).

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):

There are nine plume defining wells present at the Colfax facility. These monitoring wells include MW-1N, MW-5B, MW-10C, MW-12B, MW-13, MW-22A, MW-34, MW-35 and MW-36. The plume defining wells are analyzed for 28 semi-volatile constituents, three volatile constituents, specific conductivity, pH, and total phenolics. The parameter list for three of the quarterly samples for the point of compliance wells is the same. On an annual basis, groundwater samples from the five point of compliance wells are analyzed for the LAC 33:V.3325.Table 4 parameters to determine if additional hazardous constituents are present. If the annual sampling indicates any hazardous constituents are present, then those constituents are added to the quarterly monitoring list.

Three of the quarterly samples from each recovery well are analyzed for 28 semi-volatile constituents. The remaining quarterly sample from each recovery well is analyzed for the 28 semi-volatile constituents, three volatile constituents, specific conductivity, pH and total phenolics. Recovery wells MW-6R, MW-23R and MW-24R are also point-of-compliance wells. Three quarterly samples from these wells are analyzed for the semi-volatile constituents, volatile constituents, specific conductivity, pH, and total phenolics. The remaining quarterly sample is analyzed for the LAC 33:V.3325.Table 4 parameters.

The groundwater monitoring reports indicate the presence of volatile and semi-volatile organic constituents and inorganic constituents at concentrations that exceed the practical quantitation limit, the EPA established drinking water standard, or the alternate concentration limit established by the administrative authority under LAC 33:I.Chapter 13, Risk Evaluation/Corrective Action Program (RECAP). However, monitoring wells MW-35 and MW-36 (Figure 7) were recently installed to define the plume in both the eastern and western directions of the formal canal. These areas were the only areas in question as far as plume migration was concerned. Recent groundwater sampling results of these two wells indicate non-detects for all parameters, thus defining the horizontal extent of the contaminant plume.

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[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.

The existence of a groundwater contaminant removal system is also positively controlling the migration of the contaminant plume. Eight recovery wells (MW-4R, MW-6R, MW-7R, MW-8R, MW-16R, MW17R, MW-23R and MW-24R) are used for recovering groundwater and organic constituents throughout the site. This has caused the groundwater flow in and around the facility to flow toward the recovery wells as shown in a potentiometric surface map from October 14, 2004 (Figure 6).

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

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

X 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):

Off-site migration of constituents resulting in exposure in surface water from the two surface impoundments has not been identified and is not expected to occur. Current and former RFI data concludes that the extent of contamination is delineated and the ground water data does not indicate that off-site impacts are present.

The Chatlin Lake Canal was closed and filled in 1986 (Corrective Action and Groundwater Monitoring Plan, November 1993) and at that time ceased to act as a surface water body. The 2004 Annual Groundwater Monitoring and Corrective Action Report support the fact that no groundwater from the closed Chatlin Lake Canal and the Vacuum Pump Cooling Water Pond is in contact with a surface water body. All contaminant isopleth maps (Figures 3-5) along with recently acquired analytical results received via facsimile on June 9, 2005, for monitoring wells MW-35 and MW-36 (Figure 7), show that the horizontal extent of groundwater contamination is defined.

The existence of a groundwater contaminant removal system is also positively controlling the migration of the contaminant plume. Eight recovery wells (MW-4R, MW-6R, MW-7R, MW-8R, MW-16R, MW17R, MW-23R and MW-24R) are used for recovering groundwater and organic constituents throughout the site. This has caused the groundwater flow in and around the facility to flow toward the recovery wells as shown in a potentiometric surface map from October 14, 2004 (Figure 6).

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 judgement/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):

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[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?"

X — 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):

Groundwater at the Colfax Treating Facility is monitored by a network of eight plume defining wells, eight point of compliance/recovery wells, two upgradient wells, and 22 piezometers in the upper aquifer and one upgradient well, one monitoring well, two point of compliance wells, one plume defining monitoring well, and three piezometers in the lower aquifer (Tables 1 and 2). An updated Sampling and Analysis Plan (Attachment 1) was recently submitted and is under review to comply with the Hazardous Waste Post-Closure Permit Renewal to satisfy Louisiana Administrative Code (LAC) 33:V. Chapter 33. Based on the review of this Plan, Colfax Treating appears to be in compliance with all groundwater monitoring rules and regulations applicable for this facility.

Corrective Action groundwater monitoring will continue under the Compliance Monitoring Program and for the life of the post closure period. The Recovery System has been actively remediating impacted groundwater and will continue until a determination has been made that it may cease (Table 3). The Recovery System is also influencing the flow of groundwater toward the facility and should continue to do so in the future as seen in Figure 6.

Due to the ongoing groundwater monitoring at the Colfax Treating Facility as well the groundwater recovery system active within the facility, the migration of contaminated groundwater is considered to be under control at this time.

8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Contro 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 **Colfax Treating Facility, LLC** facility, EPA ID # **LAD 069 524 981** , located in **Alexandria, Louisiana**. 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) Travis Williams Date 6/28/05
(print) Travis Williams
(title) Geologist 2

Supervisor (signature) N M Dave Date 6/28/05
(print) Narendra M. Dave
(title) Geological Manager
(EPA Region or State) Louisiana

Locations where References may be found:
Louisiana Department of Environmental Quality Records File Room, On-site facility records and correspondence files, Colfax Treating Company, LLC, 3600 Koppers Street, Alexandria, LA 71301

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ATTACHMENTS AVAILABLE UPON REQUEST