



ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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JAMES W. WARR
DIRECTOR

September 30, 1998

DON SIEGELMAN
GOVERNOR

M-E-M-O-R-A-N-D-U-M

TO: Stephen A. Cobb, Chief *SA*
Hazardous Waste Branch
Land Division

FROM: Metz P Duites *MPD*
Industrial Facilities Section
Hazardous Waste Branch
Land Division

RE: Evaluation of the Status of Fuels and Chemicals, Inc. under the RCRIS Corrective
Action Environmental Indicator Event Codes (CA725 and CA750)
U.S. EPA I.D. Number: ALD 980 559 850

Facsimiles: (334)
Administration: 271-7950
Air: 279-3044
Land: 279-3050
Water: 279-3051
Groundwater: 270-5631
Field Operations: 272-8131
Laboratory: 277-6718

I. PURPOSE OF MEMORANDUM

This memorandum is written to formalize an evaluation of the status of Fuels and Chemicals, Inc. (FCI), Coaling, Alabama, in relation to the following corrective action event codes defined in the Resource Conservation and Recovery Information System (RCRIS):

- 1) Current Human Exposures Under Control (CA725),
- 2) Migration of Contaminated Groundwater Under Control (CA750).

Concurrence by the Hazardous Waste Branch Chief is required prior to entering these event codes into RCRIS. Dating and signing at the appropriate location within Attachments 1 and 2 satisfies your concurrence with the interpretations provided in the following paragraphs and the subsequent recommendations.

II. HISTORY OF ENVIRONMENTAL INDICATOR EVALUATIONS AT THE FACILITY AND REFERENCE DOCUMENTS

This particular evaluation is the first evaluation for Fuels and Chemicals, Inc. (FCI).

The discussions, interpretations and conclusions on contamination and exposures at the facility are based on the following reference documents:

- Personal Interview of Mr. Arnold Mayberry (ADEM Site Assessment Unit), September 30, 1999
- Quarterly Groundwater Monitoring Analysis, March 16, 1998



- Memorandum with enclosed report from Mr. Arnold Mavberrv to Mr. David Lovoy (ADEM Water Division), August 10, 1997
- Work Plan for Removal Action, August 16, 1994
- U.S. EPA Unilateral Administrative Order, May 2, 1994
- Preliminary Assessment for Fuels and Chemicals, January 20, 1994
- U.S. EPA Administrative Order on Consent, July 20 1993

III. FACILITY SUMMARY

Fuels and Chemicals, Inc. was a treatment, storage and disposal facility located on a 56-acre plot of land 15 miles east of the city of Tuscaloosa and approximately one mile east of the town of Coaling, Alabama. The facility is located in a very rural setting and was originally used as a reclaimed strip mining area. The company was founded in September 1981 and changed its name from T&S Salvage, Inc. to its present name of Fuels and Chemicals, Inc. (FCI) in August 1982.

On March 1, 1982, ADEM issued FCI an NPDES permit to regulate discharges to the firepond, which receives wastewater from the oil/water separator and runoff from the diked containment area surrounding the Boiler House tanks. The permit was reissued on April 16, 1987. ADEM had issued FCI NOVs on at least two occasions for exceeding NPDES Permit limits for oil and grease during December 1988 and during October through December 1989.

From May 1986 until September 1992, when the facility was abandoned, FCI operated as a used oil recycler that blended waste oils with fuel oils to produce a product fuel. Product solvent was also used during the blending process. On May 15, 1986, FCI received its Part B operating permit authorizing the treatment and storage of specified hazardous wastes in four tanks to be blended with waste oil and sold as fuel. Improper management of the hazardous wastes for approximately the last three years of operation at the facility allowed uncontrolled releases of various chemicals and residues onto the ground.

FCI was issued a notice of violation (NOV) during an August 27, 1987 inspection for an inadequate list of SWMUs and for not submitting a SWMU investigation plan. A June 16, 1989 inspection found the facility out of compliance with waste analysis, closure assurance plan, and security requirements. An April 16, 1990 inspection of the facility indicated that FCI failed to perform internal tank inspections, record dates of any repairs or other remedial actions, revise closure cost estimates, measure tank wall and bottom shell thickness, and assess remaining tank life through visual inspections and tank measurements.

In April 1993, the U.S. EPA conducted an investigation to determine the types and quantity of hazardous wastes contained in the tanks at the site. On May 19, 1993, the hazardous waste operating permit was revoked and reissued requiring the site to close all hazardous waste management units and to conduct corrective action for all solid waste management units.

In July 1993, EPA issued a Consent Administrative Order for the removal of all tanks at the site. Eleven (11) parties performed a \$1.5 million removal and treatment of the liquid waste stored in drums and tanks on the site.

On May 2, 1994, the U.S. EPA issued a Unilateral Administrative Order to fifty (50) owners, operators, and generators to clean up the site. The order, issued under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also known as Superfund), required the parties to perform the remaining phase of the site cleanup, estimated to cost \$2 million. Under this order, the 50 parties were required to clean up on-site sludges, characterize and remove contaminated soil, and decommission tanks. The facility has been completely dismantled, with all remaining tanks, containers, drums, solvents, chemicals, and buildings removed and properly disposed of.

IV. CONCLUSION FOR CA725

It is recommended that **YE** be entered into RCRIS for **CA725** for Fuels and Chemicals. The site was abandoned and has been cleaned up by EPA. Contaminated soil has been removed, disposed of, and the excavated area backfilled with clean soil. Three constituents (1,1,1-Trichloroethane, Carbon Disulfide, and Trichloroethene) showed low levels in the groundwater. Possible exposure to contaminated groundwater is not likely because the contamination is contained within the property boundary and the abandoned site is located in a fairly remote area and is inaccessible to the public. The only way the site can be accessed is through a dirt road with locked gates at the beginning and end of the road. The site sits on top of a hill and vegetation grows abundantly and wildly.

V. CONCLUSION FOR CA750

It is recommended that **YE** be entered into RCRIS for **CA750** for Fuels and Chemicals, Inc. Following clean up of the site by EPA, ADEM's Site Assessment Unit conducted quarterly groundwater monitoring for three years until September 1997. The quarterly monitoring results showed decreasing levels of groundwater contamination until the last and final report dated September 2, 1997. As evidenced in the final report, groundwater contamination has been defined and is contained within the facility boundary and all constituents were below MCL except for 1,1,1-Trichloroethane, Carbon Disulfide, and Trichloroethene. Because the site has been abandoned and cleaned up, contaminated groundwater is expected to remain within the existing area of contamination. Natural attenuation will likely improve the condition of the contaminated groundwater.

VI. SUMMARY OF FOLLOW-UP ACTIONS

Fuels and Chemicals, Inc. site has been abandoned and cleaned up by the EPA. The Site is now secured and overgrown with abundant and wild vegetation. Final action conducted at the Site was on November 12 and 13, 1998, when four members of ADEM's Site Assessment Unit (Jeremy Stamps, Phil Skagg, Jerry Cheatwood, and Arnold Mayberry) traveled to the Site and conducted a final removal of all existing and remaining groundwater monitoring wells that are associated with Fuels and Chemicals, Inc.

Attachments: 1. CA725: Current Human Exposures Under Control
 2. CA750: Migration of Contaminated Groundwater Under Control

ATTACHMENT 1
DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
RCRA Corrective Action
Environmental Indicator (EI) RCRIS Code (CA725)
Current Human Exposures Under Control

Facility Name: Fuels and Chemicals, Inc.
Facility Address: Country Rd 14, Coaling, Alabama 35449
Facility EPA ID #: ALD 980 559 850

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 (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 the 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. 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)?

| Media | Yes | No | ? | Rationale/Key Contaminants |
|-------------------------------|-----|----|---|----------------------------|
| Groundwater | ✓ | | | |
| Air (indoors) ² | | ✓ | | |
| Surface Soil (e.g., <2 ft) | | ✓ | | |
| Surface Water | | ✓ | | |
| Sediment | | ✓ | | |
| Subsurface Soil (e.g., >2 ft) | | ✓ | | |
| Air (outdoors) | | ✓ | | |

_____ 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.

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.

Rationale and Reference(s): After the EPA cleaned up the site, ADEM's Site Assessment Unit conducted quarterly groundwater monitoring for three years until September 1997. The latest analytical results from ADEM Central Lab, dated March 16, 1998, indicated that all constituents were below MCL except for 1,1,1-Trichloroethane (5.61 µg/L), Carbon Disulfide (13.6 µg/L), and Trichloroethene (10.3 µg/L) from monitoring well MW-5. Carbon Disulfide (17.4 µg/L) from monitoring well MW-8 was above MCL as well. Based on the ADEM laboratory analysis, the Site Assessment Unit decided that routine periodic monitoring and sampling at the site was no longer necessary and recommended the closure and removal of all remaining monitoring wells.

On March 1, 1982, ADEM issued Fuels and Chemicals an NPDES permit to regulate discharges to a pond, which received wastewater from the oil/water separator and runoff from the diked containment area.

According to Mr. Arnold Mayberry from the Site Assessment Unit contaminated soil has been removed and disposed of prior to the installation of the monitoring wells. Confirmatory sampling was conducted at the excavated area and the results were satisfactory. Clean soil was then used to backfill the excavated area.

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?

| <u>Summary Exposure Pathway Evaluation Table</u> | | | | | | | |
|---|------------------|----------------|-----------------|---------------------|--------------------|-------------------|-------------------------|
| <u>Potential Human Receptors (Under Current Conditions)</u> | | | | | | | |
| <u>"Contaminated" Media</u> | <u>Residents</u> | <u>Workers</u> | <u>Day-Care</u> | <u>Construction</u> | <u>Trespassers</u> | <u>Recreation</u> | <u>Food³</u> |
| <u>Groundwater</u> | No | No | No | No | No | No | No |
| <u>Air (indoors)</u> | No | No | No | No | No | No | No |
| <u>Soil (surface, e.g., <2 ft)</u> | No | No | No | No | No | No | No |
| <u>Surface Water</u> | No | No | No | No | No | No | No |
| <u>Sediment</u> | No | No | No | No | No | No | No |
| <u>Soil (subsurface, e.g., >2 ft)</u> | No | No | No | No | No | No | No |
| <u>Air (outdoors)</u> | No | No | No | No | No | No | No |

- ✓ 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).

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

_____ 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): The Coaling city area is served by the city of Tuscaloosa Water Authority and all residences obtain potable water from the public water system. Fuels and Chemicals site was abandoned in September 1992 and EPA cleaned up the site in 1993. Only the groundwater was known to be contaminated with low level of 1,1,1-Trichloroethane, Carbon Disulfide, and Trichloroethene. This finding is based upon the latest groundwater analysis samples collected on September 1997. It is likely that groundwater natural attenuation has improved the condition of the low-level contamination at the site.

Prior to final removal of all remaining wells at the site, fish tissue samples were collected at the nearby pond and the analytical results did not show any sign of contamination.

Exposure to the groundwater contamination is unlikely because the site is located in a fairly remote area and is inaccessible to the public. The only way the Site can be accessed is through a dirt road with locked gates at the beginning and end of the road. The site sits on top of a hill and vegetation grows abundantly and wildily.

4. Can the exposures from any of the complete pathways identified in #3 be reasonably expected to be "significant" (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):

_____ 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.

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 RCRIS 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):

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 Fuels and Chemicals, Inc. facility, EPA ID # ALD 980 559 850, located at Coaling, Alabama, 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.

Completed by: metz p. drites Date: 9/30/99
Metz P. Drites
Environmental Engineer I

Supervisor: Stephen A. Cobb Date: 9/30/99
Stephen A. Cobb
Chief, Hazardous Waste Branch
Alabama Department of Environmental Management

Locations where References may be found:

- Personal Interview of Mr. Arnold Mayberry, ADEM Main Office
- Quarterly Groundwater Monitoring Analysis, ADEM Main Office
- Memorandum with enclosed report from Mr. Arnold Mayberry (ADEM Site Assessment Unit) to Mr. David Lovoy (ADEM Water Division), ADEM Main Office
- Preliminary Assessment for Fuels and Chemicals, ADEM Main Office
- U.S. EPA Unilateral Administrative Order, ADEM Main Office
- Work Plan for Removal Action, ADEM Main Office
- U.S. EPA Administrative Order on Consent, ADEM Main Office

Contact telephone and e-mail numbers:

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ATTACHMENT 2
DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
RCRA Corrective Action
Environmental Indicator (EI) RCRIS Event Code (CA750)
Migration of Contaminated Groundwater Under Control

Facility Name: Fuels and Chemicals, Inc.
Facility Address: Country Rd 14, Coaling, Alabama 35449
Facility EPA ID #: ALD 980 559 850

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?

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).

2. Is **groundwater** known or reasonably suspected to be "**contaminated**"⁶ 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 "IN" status code.

Rational and Reference(s): The Fuels and Chemicals site was abandoned in September 1992 and EPA cleaned up the site in 1993. Based upon the latest groundwater analysis for samples collected on September 1997, all constituents were below the MCL except for the 1,1,1-Trichloroethane (5.61 µg/L), Carbon Disulfide (17.4 µg/L), and Trichloroethene (10.3 µg/L). It is likely that groundwater natural attenuation has removed these remaining constituents in the groundwater at the site.

3. Has the **migration** of contaminated groundwater **stabilized** such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"⁶ 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"⁶.

If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"⁷) - skip to #8 and enter "NO" status code, after providing an explanation.

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

⁶"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).

⁷"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.

Rational and Reference(s): After the EPA cleaned up the site, ADEM's Site Assessment Unit conducted quarterly groundwater monitoring for three years until August 1997. The reports showed decreasing levels of groundwater contamination until the last and final report dated March 16, 1998. As evidenced in the final report and the referenced memorandum, the groundwater contamination is contained within the facility boundary and all constituents were below MCL except for 1,1,1-Trichloroethane, Carbon Disulfide, and Trichloroethene.

Because the site has been abandoned and possible sources of groundwater contamination have been removed, contaminated groundwater is expected to remain within the existing area of contamination. Natural attenuation will likely improve the condition of the contaminated groundwater.

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): There are no known drinking water intakes located within fifteen (15) downstream miles of the Site and no indications of a release of contaminants to surface water.

On March 1, 1982, ADEM issued Fuels and Chemicals an NPDES permit to regulate discharges to a pond, which received wastewater from an oil/water separator and runoff from a containment area. Because the site has already been abandoned and cleaned up by EPA, further discharges are not expected.

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be "**insignificant**" (i.e., the maximum concentration⁸ 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)?

_____ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration⁸ 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) providing 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 concentration⁸ 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 concentrations⁸ greater than 100 times their appropriate groundwater "levels," providing 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 identifying if there is evidence that the amount of discharging contaminants is increasing.

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

Rationale and Reference(s):

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 implemented⁹)?

_____ 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,¹⁰ 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.

⁸As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

⁹Note, 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.

¹⁰The 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.

Rationale and Reference(s):

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): Future periodic monitoring and sampling at the site is no longer needed. Final action conducted at the site was on November 12 and 13, 1998, when four members of ADEM's Site Assessment Unit (Jeremy Stamp, Phil Skagg, Jerry Cheatwood, and Arnold Mayberry) traveled to the site and conducted a final removal of all existing and remaining groundwater monitoring wells that are associated with Fuels and Chemicals, Inc. The site is now secured and overgrown with abundant and wild vegetation.

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 Fuels and Chemicals, Inc. facility, EPA ID # ALD 980 559 850, located at Coaling, Alabama. 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: Metz P. Duites Date: 9/30/99

Metz P. Duites
Environmental Engineer I

Supervisor: Stephen A. Cobb Date: 9/30/99

Stephen A. Cobb
Chief, Hazardous Waste Branch
Alabama Department of Environmental Management

Locations where References may be found:

- Personal Interview of Mr. Arnold Mayberry (ADEM Site Assessment Unit), ADEM Main Office
- Quarterly Groundwater Monitoring Analysis, ADEM Main Office
- Memorandum with enclosed report from Mr. Arnold Mayberry to Mr. David Lovoy (ADEM Water Division), ADEM Main Office
- Preliminary Assessment for Fuels and Chemicals, ADEM Main Office
- U.S. EPA Unilateral Administrative Order, ADEM Main Office
- Work Plan for Removal Action, ADEM Main Office
- U.S. EPA Administrative Order on Consent, ADEM Main Office

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