

# ADEM



## ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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DIRECTOR

October 20, 1999

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GOVERNOR

### MEMORANDUM

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

**FROM:** Heather Deese *HHD*  
Industrial Facilities Section  
Hazardous Waste Branch  
Land Division

**SUBJECT:** Evaluation of the Status of Systech Environmental Corporation Under the RCRIS  
Corrective Action Environmental Indicator Event Codes (CA725 and CA750)  
EPA I.D. Number: ALD 981 019 045

Facsimiles: (334)

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Land: 279-3050  
Water: 279-3051  
Groundwater: 270-5631  
Field Operations: 272-8131  
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### I. PURPOSE OF MEMO

This memo is written to formalize an evaluation of the status of Systech Environmental Corporation (Systech) 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 locations 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 second for Systech. The first evaluation was completed on March 31, 1998. Status code IN (more information needed) was entered for event code CA725 (human exposures controlled) and status code NR (no release to groundwater) was entered for event code CA750 (groundwater releases controlled) for Systech in the previous evaluation. CA725 IN was entered because the Alabama Department of Environmental Management (ADEM) did not have sampling data that had been required by the July 1993 RCRA Facility Assessment (RFA). A copy of the earlier evaluation memorandum is attached.

Documents used to prepare this evaluation were the RCRA Facility Assessment Report dated September 21, 1993, the Public Notice Document for No Further Corrective Action dated August 11, 1999 and the Closure Certification Report dated May 1999.



### III. FACILITY SUMMARY

Systech Environmental Corporation is a 4.62-acre facility located on Arcola Road, approximately two miles east of the city of Demopolis, Alabama. The facility has been closed and no longer manages hazardous waste. Former activities at the site include storage of flammable hazardous wastes and blending of these wastes into an alternate fuel source for a neighboring cement kiln. The fuel was piped from the Systech tanks directly to the cement kiln.

A cement manufacturing facility has been in operation at the site since 1905. In the early 1980's, General Portland Company (General Portland) purchased the cement manufacturing facility including the Systech site, which at the time was an undeveloped portion of the property. Lafarge Corporation (Lafarge) assumed ownership of the entire property when General Portland and Lafarge merged in 1986. The property was reorganized in 1988 into a cement manufacturing area and a separate waste-derived fuel (WDF) area. Systech assumed ownership of the WDF facility on September 15, 1988. The cement manufacturing operations were purchased by Medusa Corporation (Medusa) in February 1993. Southdown purchased the cement manufacturing operations from Medusa in 1998. Subsequent to the purchase of the cement operation, the decision was made by Southdown to discontinue the use of WDF.

The Systech facility was issued an Alabama Hazardous Wastes Management and Minimization Act (AHWMMA) operating permit by ADEM on September 29, 1989. This permit allowed Systech to store and blend hazardous waste. The permitted fuel blending operation consisted of a container storage building, six storage tanks and two process tanks. The maximum storage capacity of the container storage building was 96,000 gallons of hazardous waste. The six storage tanks were permitted to store a total of 400,000 gallons of hazardous waste and the process tanks were permitted to store a total of 11,000 gallons of hazardous waste. Waste was received by Systech in containers or in bulk shipments by truck or rail. Both containerized and bulk shipments of waste were subjected to sampling to ensure that the waste stream was the same as that listed on the accompanying manifest and also to ensure that the waste was suitable for blending into WDF. If not acceptable, waste shipments would be rejected and returned to the generator. Containerized shipments of accepted waste were stored in the container storage building until the contents of the containers were transferred to one of the two processing tanks. Bulk shipments of accepted waste were transferred to one of the four smaller storage tanks. Waste was transferred from the two process tanks and the four smaller storage tanks for blending in one of the two larger storage tanks. The other large storage tank was acted as a feed tank for the cement kiln. The tanks were equipped with agitators and mixers to keep solid particles suspended in the liquid portion of the waste. WDF was pumped from the feed tank directly to the cement kiln on the adjacent property.

The facility began closure activities on December 31, 1998 with the receipt of the final volume of commercial hazardous waste. All wastes remaining after this date were blended into fuel and burned by the cement kiln. The container storage building and tanks were cleaned to remove any hazardous waste residue according to the closure plan in the AHWMMA permit. Sampling to confirm that no hazardous wastes or residues were left in place was also conducted. Clean closure of the site was certified by the Department on July 23, 1999. The AHWMMA permit was allowed to expire on September 28, 1999.

A site-wide RCRA Facility Assessment (RFA) was conducted by an U.S. Environmental Protection Agency (USEPA) contractor on July 15, 1993. The RFA indicated 24 Solid Waste Management Units (SWMUs). SWMU 24, the Inactive Fuel Oil Tank required Confirmatory Sampling (CS). The material contained in this tank was sampled and was determined to be non-hazardous on March 24, 1994.

A site-wide RCRA Facility Assessment (RFA) was conducted by an U.S. Environmental Protection Agency (USEPA) contractor on July 15, 1993. The RFA indicated 24 Solid Waste Management Units (SWMUs). SWMU 24, the Inactive Fuel Oil Tank required Confirmatory Sampling (CS). The material contained in this tank was sampled and determined to be non-hazardous on March 24, 1994.

All remaining SWMUs were determined to require No Further Action (NFA) at that time, and no new SWMUs or Areas of Concern (AOCs) have been identified since that time. The determination by ADEM to terminate the corrective action process due to NFA for all SWMUs was public noticed at the Demopolis Public Library from August 11, 1999 until September 27, 1999. No public comments were received, and ADEM finalized the termination of corrective action on September 30, 1999.

The previous EI determination of CA725 IN was based on the assumption that SWMU 24, the Inactive Fuel Oil Tank, required further investigation under the RFA that had not been conducted. Since the previous evaluation, ADEM has received and reviewed information on SWMU 24 which indicated that the material in that tank was non-hazardous.

#### **IV. CONCLUSION FOR CA725**

The appropriate status code to be entered for RCRIS code CA725 (Current Human Exposures Under Control) is "YE." The facility site has been clean-closed and no contamination remains on-site.

#### **V. CONCLUSION FOR CA750**

The appropriate status code to be entered for RCRIS code CA750 (Migration of Groundwater Under Control) is "YE." There were no releases to groundwater during the operation of the Systech facility. Therefore the migration of groundwater at the site does not require controls.

#### **VI. SUMMARY OF FOLLOW-UP ACTIONS**

Since the facility is completely closed, human exposures have been controlled and there have been no releases to groundwater, no follow-up actions are necessary.

Attachments:           1. CA725:     Current Human Exposures Under Control  
                          2. CA750:     Migration of Contaminated Groundwater Under Control  
                          3. Previous EI Evaluation dated March 31, 1998

HHD/sep:L:SYSTECHEIM2

File:   Systech/ALD 981 019 045/Marengo County/Haz. Waste Correspondence

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

Facility Name: Systech Environmental Corporation  
Facility Address: Arcola Road, Demopolis, AL  
Facility EPA ID #: ALD 981 019 045

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 used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received/approved) to track changes in the quality of the environment. The two current EI 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 will 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 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, EI are near-term objectives that are 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 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”<sup>1</sup> 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) <sup>2</sup>    |     | ✓  |   |                            |
| 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.

**Rationale and Reference(s):** All wastes were removed from the site during closure, and sampling conducted during closure indicated no contaminants or residuals above background/risk-based concentrations.

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?

<sup>1</sup>“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).

<sup>2</sup>Recent 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.

| Summary Exposure Pathway Evaluation Table                   |                 |               |                 |                     |                   |                   |                         |
|---|-----------------|---------------|-----------------|---------------------|-------------------|-------------------|-------------------------|
| Potential <b>Human Receptors</b> (Under Current Conditions) |                 |               |                 |                     |                   |                   |                         |
| <b>“Contaminated” Media</b>                                 | <b>Resident</b> | <b>Worker</b> | <b>Day Care</b> | <b>Construction</b> | <b>Trespasser</b> | <b>Recreation</b> | <b>Food<sup>3</sup></b> |
| <u>Groundwater</u>  | -               | -             | -               | -                   | -                 | -                 | -                       |
| <u>Air (indoors)</u>  | -               | -             | -               | -                   | -                 | -                 | -                       |
| <u>Soil (surface, e.g., &lt;2 ft)</u>                       | -               | -             | -               | -                   | -                 | -                 | -                       |
| <u>Surface Water</u>  | -               | -             | -               | -                   | -                 | -                 | -                       |
| <u>Sediment</u>   | -               | -             | -               | -                   | -                 | -                 | -                       |
| <u>Soil (subsurface, e.g., &gt;2 ft)</u>                    | -               | -             | -               | -                   | -                 | -                 | -                       |
| <u>Air (outdoors)</u>                                       | -               | -             | -               | -                   | -                 | -                 | -                       |

Note: In order to focus the evaluation on the most probable combinations some potential “Contaminated” Media - Human Receptor combinations (Pathways) do not have assigned spaces in the above table. While these combinations may not be probable in most situations they may be possible in some settings and should be added as necessary.

\_\_\_\_\_ If no (pathways are not complete for any contaminated media-receptor combination) - skip to #6, and enter “YE” status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet to analyze major pathways).

\_\_\_\_\_ If yes (pathways are complete for any “Contaminated” Media - Human Receptor combination) - continue after providing supporting explanation.

\_\_\_\_\_ If unknown (for any “Contaminated” Media - Human Receptor combination) - skip to #6 and enter “IN” status code

Rationale and Reference(s): N/A

4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be “**significant**”<sup>4</sup> (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)?

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

<sup>4</sup>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.

\_\_\_ 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): N/A

5. Can “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): N/A

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 Systech Environmental Corporation facility, EPA ID #ALD 981 019 045, located on Arcola Road, Demopolis, Alabama under current and reasonably expected conditions. This determination will be re-evaluated if the Department 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: Heather Deese Date: October 20, 1999  
Heather Deese  
Environmental Engineer II

Supervisor: Stephen A. Cobb Date: October 20, 1999  
Stephen A. Cobb, Chief  
Hazardous Waste Branch  
Alabama Department of Environmental Management

<sup>5</sup>Locations where References may be found:

RCRA Facility Assessment, September 21, 1998 – ADEM Main Office  
Public Notice for No Further Corrective Action, August 11, 1999 – ADEM Main Office  
Closure Certification Report, May 1999 – ADEM Main Office

Contact telephone and e-mail numbers:

|           |                             |
|-----------|-----------------------------|
| (Name)    | <u>Heather Deese</u>        |
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<sup>5</sup>FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.



**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:** Systech Environmental Corporation  
**Facility Address:** Arcola Road, Demopolis, Alabama  
**Facility EPA ID #:** ALD 981 019 045

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 EIs 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 the RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when regulatory authorities become aware of contrary information).

2. Is **groundwater** known or reasonably suspected to be "**contaminated**"<sup>6</sup> 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.

Rationale and Reference(s): There were no releases to groundwater during the operation of the facility. The container storage building and the tank areas had secondary containment to prevent releases to groundwater. Sampling during closure also indicated that no contamination has been left in the soil at the site to provide a source for groundwater contamination.

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

\_\_\_\_\_ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining an "existing area of groundwater contamination"<sup>7</sup>) - 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): N/A

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.

<sup>6</sup>"Contamination" and "contaminated" describe 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).

<sup>7</sup>"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.

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

Rationale and Reference(s): N/A

5. Is the **discharge** of "contaminated" groundwater into surface water likely to be "**insignificant**" (i.e., the maximum concentration<sup>8</sup> of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., 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 concentration<sup>8</sup> 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 or 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<sup>8</sup> 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<sup>8</sup> 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): N/A

5. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impact to surface water, sediment or eco-systems that should not be allowed to continue until a final remedy is selected/implemented<sup>9</sup>)?

\_\_\_\_\_ 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,<sup>10</sup> appropriate to the potential for

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

<sup>9</sup>Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialists (e.g., ecologist) should be included in decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

<sup>10</sup>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.

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): N/A

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): N/A

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 Systech Environmental Corporation facility, EPA ID # ALD 981 019 045, located on 21 Arcola Road in Demopolis, Alabama. Specifically, this determination for this facility indicates that there is no "contaminated" groundwater at the site; therefore no controls or monitoring are required. This determination would be re-evaluated if the Department 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: Heather Deese Date: October 20, 1999  
Heather Deese  
Environmental Engineer II

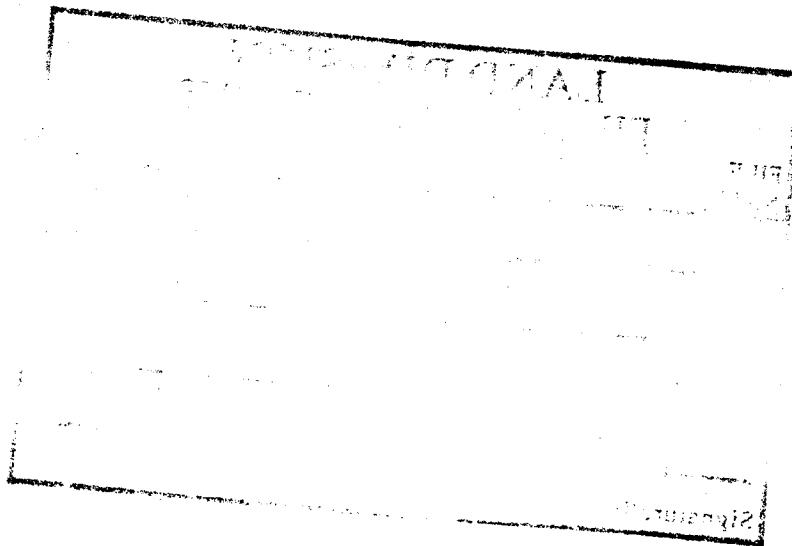
Supervisor: Stephen A. Cobb Date: October 20, 1999  
Stephen A. Cobb, Chief  
Hazardous Waste Branch  
Alabama Department of Environmental Management

<sup>11</sup>Locations where References may be found:

RCRA Facility Assessment, September 21, 1998 – ADEM Main Office  
Public Notice for No Further Corrective Action, August 11, 1999 – ADEM Main Office  
Closure Certification Report, May 1999 – ADEM Main Office

Contact telephone and e-mail numbers

|           |                             |
|-----------|-----------------------------|
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| (Phone #) | <u>(334) 271-7748</u>       |
| (e-mail)  | <u>hhd@adem.state.al.us</u> |



<sup>11</sup>FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.