

**FIVE-YEAR REVIEW REPORT  
FOR THE  
DUTCHTOWN TREATMENT PLANT SUPERFUND SITE  
ASCENSION PARISH, LOUISIANA**

**September 2002**

**Prepared By:**

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914849



**FIRST FIVE-YEAR REVIEW FOR  
DUTCHTOWN TREATMENT PLANT SUPERFUND SITE  
ASCENSION PARISH, LOUISIANA**

This memorandum documents the U.S. Environmental Protection Agency's (EPA) approval of the Dutchtown Treatment Plant (Dutchtown) Superfund Site's Five-Year Review Report.

**Summary of Five-Year Review Findings**

The selected remedy at the site included monitoring natural attenuation of ground water; maintaining the existing clay cap and fence; implementing institutional controls in the form of access restrictions, installation of signs, restrictions on future use of property, deed notices, and/or restrictions on use of ground water from site water wells; closing out the well on the Watts property; and drilling a replacement well. Remedial action (RA) began in July 1997 with site mobilization, and with construction completion in January 1998. Operation and maintenance (O&M) activities were scheduled quarterly for the first year after RA, then semiannually from years 2 through 5. O&M after that was scheduled annually. The remedy appears to be performing as intended and is currently protective of human health and the environment.

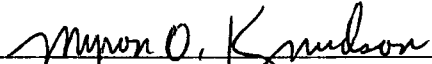
The cap on monitoring well 8 has a broken hinge, piezometer well P-1 has a missing lock, and there is excess vegetative growth around monitoring well MW-12. Monitoring wells MW-14 and MW-20 were lost during highway ditch system maintenance. Vegetation along the site fence is overgrown and has the potential to damage the fence. There is excessive erosion on the clay cap. Linear regression that was used for ground water concentration trend analysis is not a suitable method. It may be unnecessary to sample every monitoring well. A deed notice has not yet been filed.

**Actions Needed**

The broken hinge on monitoring well MW-8 should be replaced. Vegetation around monitoring well MW-12 should be removed. If monitoring wells MW-14 and MW-20 can be found, they should be plugged and abandoned. Piezometer well P-1 should be locked. Vegetation endangering the integrity of the fence should be removed. Small plant growth close to the northwest corner of the clay cap should be removed. The eroded clay cap should be repaired. The Mann-Kendall or the Seasonal Kendal test should be used for ground water concentration trend analysis. A new ground water monitoring plan using fewer wells should be developed. A deed notice should be filed.

**Determinations**

I have determined that the remedy for the Dutchtown site, which addresses remediation of soil and monitoring of ground water, is protective of human health and the environment.

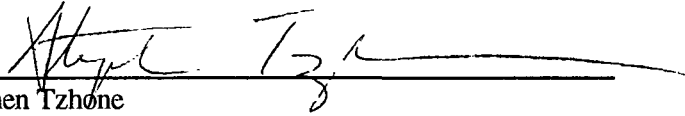
  
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Myron O. Knudson, P.E.

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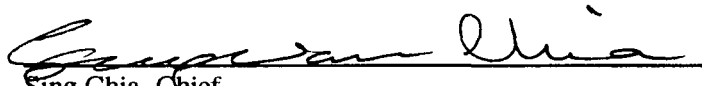
Director  
Superfund Division  
U.S. Environmental Protection Agency Region 6

CONCURRENCES:

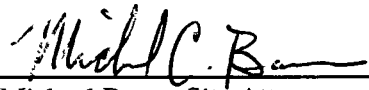
FIRST FIVE-YEAR REVIEW  
DUTCHTOWN TREATMENT PLANT SUPERFUND SITE

  
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Stephen Tzhone  
Remedial Project Manager

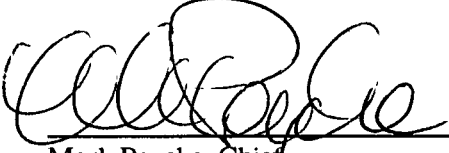
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Sing Chia, Chief  
LA/OK Project Management Section

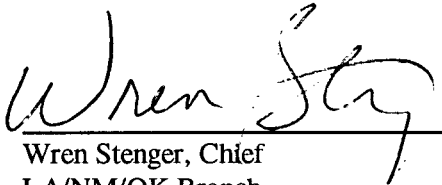
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Date 9/12/02

  
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Date 9/16/02

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## ACRONYMS AND ABBREVIATIONS

ARAR	Applicable or relevant and appropriate requirement
AGM	ARCADIS Geraghty & Miller, Inc.
bgs	Below ground surface
BTEX	Benzene, toluene, ethylbenzene, xylene
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
Dutchtown	Dutchtown Treatment Plant/Dutchtown Oil Treatment
EPA	U.S. Environmental Protection Agency Region 6
ERA	Expedited Response Action
LAC	Louisiana Administrative Code
LDEQ	Louisiana Department of Environmental Quality
LDOTD	Louisiana Department of Transportation and Development
MCL	Maximum contaminant level
µg/L	Micrograms per liter (ppb)
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
O&M	Operation and maintenance
P&A	Plugged and abandoned
ppb	Parts per billion
ppm	Parts per million
PRP	Potentially responsible parties
RA	Remedial action
RAC	Response Action Contract
RAO	Remedial action objectives
RD	Remedial design
RECAP	Risk Evaluation/Corrective Action Program
RI/FS	Remedial investigation/feasibility study
ROD	Record of Decision
Tetra Tech	Tetra Tech EM Inc.

## EXECUTIVE SUMMARY

The U.S. EPA, Region 6 has conducted a five-year review of the O&M activities implemented at the Dutchtown Treatment Plant Superfund site (also known as Dutchtown Oil Treatment) in Ascension Parish, Louisiana. This review was conducted from May through August 2002. This report documents the results of the review. Tetra Tech EM Inc. (Tetra Tech) received Work Assignment No. 934-FRRE-06ZZ from the EPA under Response Action Contract (RAC) No. 68-W6-0037. Under this work assignment, Tetra Tech was authorized to assist EPA in conducting the five-year review of the RA. The purpose of five-year reviews is to determine whether the remedies at each site are protective of human health and the environment.

The 5-acre Dutchtown site is located at the intersection of Interstate Highway 10 and Louisiana Highway 74 near the community of Dutchtown in Ascension Parish, Louisiana (Figure 1). The site is surrounded by residential and commercial property. The Dutchtown Middle School is located a half mile to the west of the site. As stated in the 1994 record of decision (ROD), the reported population within a 1-mile radius of the site was 1,836, of which approximately 369 people were within the Dutchtown community.

Between 1965 and 1982, the site received waste oils and other waste materials (solvents and petrochemical wastes) from off-site sources, processed them, and redistributed them. In August 1983, the State of Louisiana ordered the suspension and proper closure of operations at the site. On January 17, 1984, the State declared the site abandoned after failure by facility owners to properly close the site in accordance with regulations.

Following the declaration of site abandonment, the Louisiana Department of Environmental Quality (LDEQ) conducted a series of investigations and presented a site closure strategy plan to EPA in June 1985. The EPA completed a series of site investigations from July 1985 to March 1987, and an emergency response was performed in March 1987 to clean up an on-site spill resulting from site vandalism. The site was proposed for inclusion on the National Priorities List (NPL) on January 22, 1987, and was promulgated on the NPL on July 27, 1987.

On March 25, 1988, EPA issued an action memorandum to perform an Expedited Response Action (ERA). On May 23, 1990, a consent decree to design and implement the ERA was signed by the potentially responsible parties (PRPs). The ERA was conducted by the PRPs from January 1991,



through August 1991. It involved the removal of waste oil from the holding pond, waste oil pit, and storage tanks, as well as the removal and treatment of stormwater from the pits and holding ponds. The pond and pit were backfilled with fly ash-stabilized soil that had been washed to reduce benzene concentration below 4 parts per million (ppm). A french drain was also installed in the waste oil pit to recover contaminated ground water and compacted caps of clay were imported to cover the backfilled holding pond, french drain, and areas previously occupied by the storage tank. A 6-foot chain link fence was erected around 5 acres of the site.

During the ERA, the remedial investigation/feasibility study (RI/FS) for the site was initiated and completed with the signing of the ROD on June 20, 1994. Of the two shallow water bearing units from 0 feet to 14 feet and from 30 feet to 35 feet below ground surface (bgs), only the upper unit was found to be contaminated. However, this upper unit was identified as a Class III ground water unit (unusable ground water source) and no risk pathways were identified between this unit and any potential receptor population. Thus, the selected remedy for the site was monitored natural attenuation and institutional controls.

On December 30, 1996, EPA issued an unilateral administrative order (UAO) to the PRPs for implementation of the selected remedy. On February 4, 1997, the PRPs notified compliance with the UAO and initiated remedial design/remedial action (RD/RA) activities. On July 24, 1997, EPA approved RD/RA work plans and under EPA supervision, the PRPs conducted the RA from July 1997 to December 1997. Since most of the contamination had been addressed during the ERA, the RA only involved installation of a new monitoring well, the plugging and abandoning a residential well, and the initiation of O&M activities. The constructed remedies are operational and performing as intended.

O&M at the Dutchtown site includes maintenance to the clay cap constructed above treated soil, ground water monitoring, and fence inspection. Ground water monitoring was scheduled quarterly for the first year of O&M, semiannually from years 2 to 5, and annually from years 6 to 30. Other O&M activities were scheduled on an annual basis.

Documents reviewed for this five-year review included the (1) 1994 ROD; (2) O&M Work Plan; (3) Revised RA Report; (4) Natural Attenuation Reports - years 1 through 5; (5) Addendum to the Health and Safety Plan; and (6) U.S. Geological Survey Memorandum—Comments on the Fifth Year Natural Attenuation Evaluation Report. This five-year review included a site inspection and interviews with

residents and State personnel. The clay cap showed no signs of damage. Vegetation along the on-site fence is overgrown, and could potentially damage the fence in some places.

Responses to the site survey questionnaire were generally favorable. No complaints or concerns were noted. Mr. Robert Holden, chairman of the Dutchtown Steering Committee, had several comments on site operations, and proposed changes to the remedy and site O&M in his response to the survey, which is included in Appendix C of this report.

Issues during this five-year review included: (1) a broken hinge on monitoring well MW-8; (2) excess vegetation around monitoring well MW-12; (3) missing lock on piezometer well P-1; (4) excess vegetation along the fence; (5) excess small plant growth close to northwest corner of the clay cap; (6) erosion on the clay cap; (7) monitoring wells MW-14 and MW-20 lost during interstate ditch maintenance; (8) an unfiled deed notice; (9) unsuitable ground water concentration trend analysis using linear regression; and (10) unnecessary ground water sampling.

Recommendations and follow-up actions include: (1) repair of the monitoring well hinge; (2) removal of excess vegetation around monitoring well MW-12; (3) replacement of lock on piezometer well P-1; (4) clearing of vegetation impacting the integrity of the fence; (5) removal of small plant growth at northwest corner of clay cap; (6) repairing eroded clay cap; (7) plugging and abandoning monitoring wells MW-14 and MW-20, if possible; (8) filing a deed notice; (9) performing ground water concentration trend analysis using the Mann-Kendall or the Seasonal Kendall test; and (10) developing a new ground water monitoring plan using fewer wells.

The Dutchtown site remedy is currently protective of human health and the environment, and the objectives of the ROD are being met.

**Five-Year Review Summary Form**

SITE IDENTIFICATION		
Site Name (from WasteLAN): Dutchtown Treatment Plant Superfund Site		
EPA ID (from WasteLAN): LAD980879449		
Region: 6	State: LA	City/County: Ascension Parish
SITE STATUS		
NPL Status: <input type="checkbox"/> Final <input checked="" type="checkbox"/> Deleted <input type="checkbox"/> Other (specify) <u>First Five-Year Review</u>		
Remediation Status (choose all that apply): <input type="checkbox"/> Under Construction <input type="checkbox"/> Operating <input checked="" type="checkbox"/> Complete		
Multiple OUs?* <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	Construction Completion Date: <u>December 1997</u>	
Has site been put into reuse? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		
REVIEW STATUS		
Reviewing Agency: <input checked="" type="checkbox"/> EPA <input type="checkbox"/> State <input type="checkbox"/> Tribe <input type="checkbox"/> Other Federal Agency _____		
Author Name: Tetra Tech EM Inc.		
Author Title: N/A	Author Affiliation: Environmental Contractor	
Review Period:** <u>05/01/2002</u> to <u>08/16/2002</u>		
Date(s) of Site Inspection: <u>6/12/2002</u>		
Type of review:*** <input checked="" type="checkbox"/> Statutory <input type="checkbox"/> Policy <input type="checkbox"/> Post-SARA <input type="checkbox"/> Pre-SARA <input type="checkbox"/> NPL-Removal only <input type="checkbox"/> Non-NPL Remedial Action Site <input type="checkbox"/> NPL State/Tribe-lead <input type="checkbox"/> Regional Discretion		
Review Number: <input checked="" type="checkbox"/> 1 (first) <input type="checkbox"/> 2 (second) <input type="checkbox"/> 3 (third) <input type="checkbox"/> Other (specify) _____		
Triggering Action:**** <input checked="" type="checkbox"/> Actual RA On-site Construction at OU # <u>0</u> (sitewide) <input type="checkbox"/> Actual RA Start at OU # _____ <input type="checkbox"/> Construction Completion <input type="checkbox"/> Previous Five-Year Review Report <input type="checkbox"/> Other (specify) _____		
Triggering Action Date (from WasteLAN): <u>8/11/97</u>		
Due Date (Five Years After Triggering Action Date): <u>8/11/02</u>		

## Five-Year Review Summary Form

### Issues:

- Broken hinge on monitoring well MW-8
- Excess vegetation around monitoring well MW-12
- Missing lock on piezometer well P-1
- Excess vegetation along fence
- Excess small plant growth close to northwest corner of clay cap
- Erosion on clay cap
- Monitoring wells MW-14 and MW-20 were lost during interstate ditch maintenance
- Deed notice has not been filed
- Linear regression not a suitable ground water concentration trend analysis tool
- Unnecessary ground water sampling

### Recommendations and Follow-up Actions:

Hinge on monitoring well MW-8 should be repaired, and excess vegetation around monitoring well MW-12 should be removed. Piezometer well P-1 should be locked. Vegetation endangering the integrity of the fence should be removed. Small plant growth close to the northwest corner of clay cap should be removed. Eroded clay cap should be repaired. If possible, monitoring wells MW-14 and MW-20 should be plugged and abandoned. Deed notice should be filed. The Mann-Kendall or the Seasonal Kendall test should be used for trend analysis. A new ground water sampling plan should be developed using fewer wells.

### Protectiveness Statement(s):

The remedial action is currently protective of human health and the environment.

### Other Comments:

None.

## 1.0 INTRODUCTION

The purpose of five-year reviews is to determine whether the remedy at the site is protective of human health and the environment. The methods, findings, and conclusions of the reviews are documented in Five-Year Review reports. In addition, Five-Year Review reports identify issues found during the review, if any, and recommendations to address them.

The U.S. Environmental Protection Agency Region 6 (EPA) is preparing this five-year review pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) §121(c) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). CERCLA §121(c), as amended, states:

If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented.

NCP Part 300.430(f)(4)(ii) states:

If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.

This is the first five-year review for the Dutchtown site. The triggering action for this review is the start date of RA construction on-site (August 11, 1997). Due to the fact that hazardous substances, pollutants, or contaminants remain at the Dutchtown site above levels that allow for unrestricted use and unlimited exposure, a five-year review is required.

## 2.0 SITE CHRONOLOGY

Table 1 lists the chronology of events for the Dutchtown site.

**TABLE 1**  
**CHRONOLOGY OF SITE EVENTS**

Date	Event
1965 to 1982	Site operated as an oil refinery and reclamation facility
August 1983	LDEQ issues order for proper site closure
January 17, 1984	LDEQ declares site abandoned
November 1984-June 1985	LDEQ site investigation and referral to EPA
July 1985-March 1987	EPA site investigations
March 1987	EPA emergency response to clean spill from site vandalism
January 22, 1987	EPA proposes site for inclusion on NPL
July 27, 1987	EPA finalizes site for inclusion on NPL
December 1987-January 1988	EPA conducts removal assessment
February 1988	EPA issues engineering evaluation/cost analysis
March 25, 1988	EPA issues ERA action memorandum
May 23, 1990	PRPs sign ERA consent decree
January 1991-August 1991	PRPs conduct ERA site activities
November 30, 1992	PRPs' RI report completed
May 19, 1993	PRPs' FS report completed
October 28, 1993	EPA conducts formal public meeting on proposed remedy
June 20, 1994	EPA ROD signed
December 30, 1996	EPA issues order for RD/RA
February 4, 1997	PRPs comply with order and initiates RD/RA work plans
July 24, 1997	EPA approves RD/RA work plans
July 1997-December 1997	PRPs conduct RA
December 12, 1997	PRPs' RA report completed
January 12, 1998	EPA PCOR completed
August 24, 1999	EPA FCOR completed

**TABLE 1 (Continued)**

**CHRONOLOGY OF SITE EVENTS**

<b>Date</b>	<b>Event</b>
November 16, 1999	EPA deletes site from NPL
July 1997 through September 1998	Year 1 natural attenuation and monitoring
October 1998 through October 1999	Year 2 natural attenuation and monitoring
November 1999 through August 2000	Year 3 natural attenuation and monitoring
September 2000 through August 2001	Year 4 natural attenuation and monitoring
October 2001 through July 2002	Year 5 natural attenuation, monitoring, and statistical evaluation

Notes:

NPL            National Priorities List  
PRP           Potentially responsible party  
RA            Remedial action  
RD            Remedial design  
RI/FS        Remedial investigation and feasibility study

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### 3.0 BACKGROUND

The Dutchtown site is a former waste oil reclamation plant located at the intersection of Interstate Highway 10 and Louisiana Highway 74 near Dutchtown in Ascension Parish, Louisiana (Figure 1). The 5-acre site is surrounded by residential and commercial property. The Dutchtown Middle School is located a half mile to the west of the site. As stated in the 1994 ROD, the reported population within a 1-mile radius of the site was 1,836, of which approximately 369 people were within the Dutchtown community.

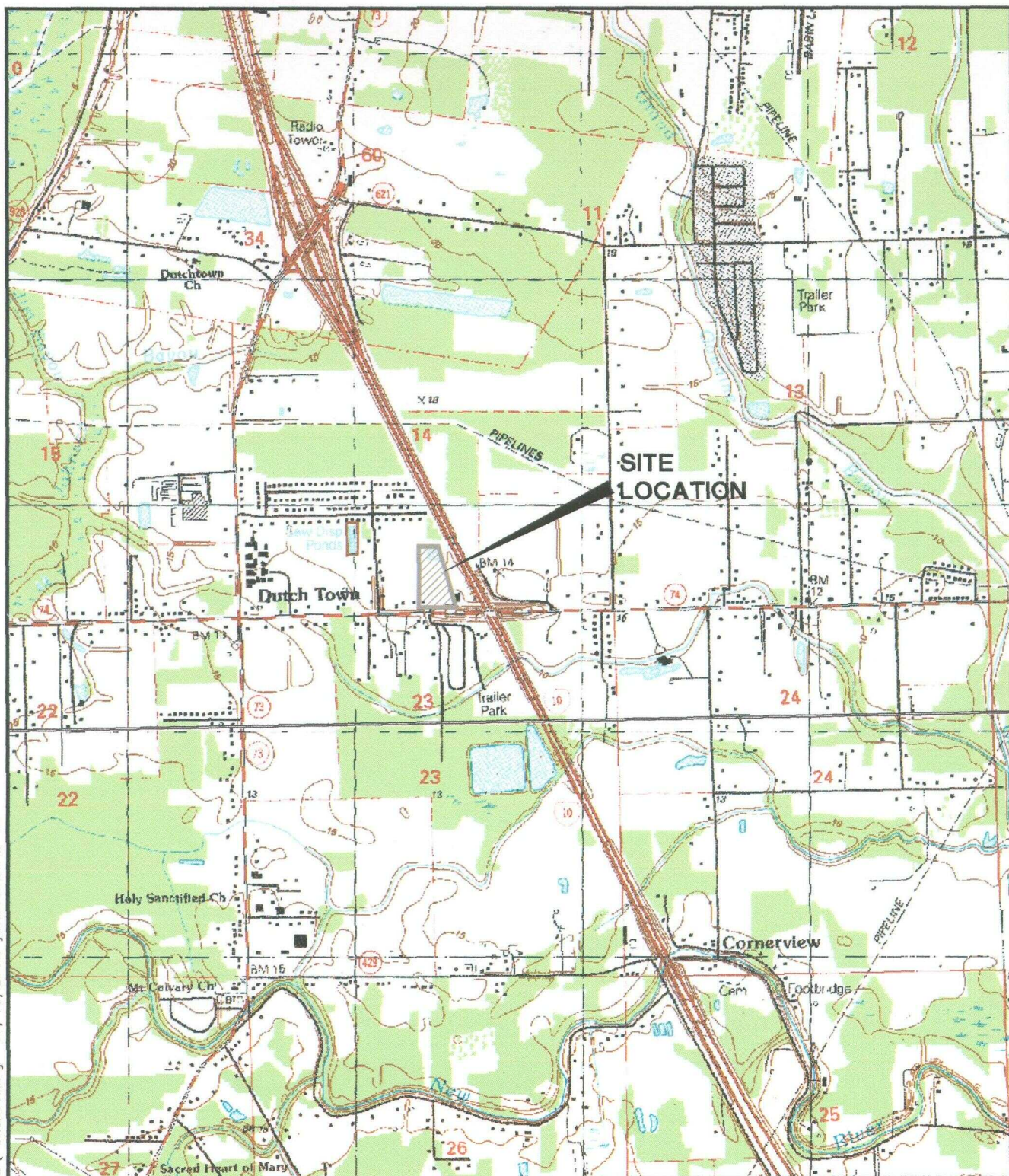
The 5-acre plot contained a 0.8-acre holding pond, a 0.07-acre waste oil pit, seven aboveground vertical storage tanks, two small horizontal tanks, and a railroad tank car used as a horizontal tank.

Between 1965 and 1982, the site received waste oils and other waste materials (solvents and petrochemical wastes) from off-site sources, processed them, and redistributed them. In August 1983, the State of Louisiana ordered the suspension and proper closure of operations at the site. On January 17, 1984, the State declared the site abandoned after failure by facility owners to properly close the site in accordance with regulations.

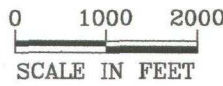
Following the declaration of site abandonment, the LDEQ conducted a series of investigations and presented a site closure strategy plan to EPA in June 1985. Following the presentation of the site closure strategy plan by the LDEQ, EPA conducted a series of site investigations in 1985, and investigative sampling in 1986 and 1987. Emergency response was required in March 1987 to clean up a spill that resulted from vandalism to the rail tank car and finished oil storage tank. The site was then proposed for inclusion on the NPL on January 22, 1987, and was promulgated on the NPL on July 27, 1987.



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Site Location



SCALE IN FEET



DUTCHTOWN TREATMENT PLANT  
ASCENSION PARISH, LOUISIANA

FIGURE 1  
SITE LOCATION MAP

PREPARED FOR:



BY:



SOURCE: MODIFIED FROM USGS, PRAIRIEVILLE,  
LOUISIANA QUADRANGLE, 1993

On March 25, 1999, EPA issued an action memorandum to perform an ERA. On May 23, 1990, the PRPs signed a consent decree to design and implement the ERA. The ERA was conducted from January 1991 through August 1991. It involved the removal of 449,810 gallons of waste oil from the holding pond, waste oil pit, and storage tanks, as well as the removal and treatment of 3,451,999 gallons of stormwater from the pits and holding ponds. Seepage of contaminated ground water into the excavated pond led to the installation of a french drain that would enable its recovery and treatment during the RI/FS phase. A total of 75,792 gallons of ground water was recovered through August 1992. The pond and pit were backfilled with 4,400 cubic yards of fly ash-stabilized soil that had been washed to reduce benzene concentration below 4 ppm.

Following the completion of the ERA, compacted caps of imported clay were installed over the backfilled holding pond, french drain in the excavated waste oil pit, and areas previously occupied by the storage tanks. The compacted clay cap is 18-inches over the backfilled holding pond and waste oil pit and 6-inches over the areas occupied by the storage tanks. The site was also surrounded by a 6-foot chain link fence.

During the ERA, the RI/FS for the site was initiated. On November 30, 1992, the RI report was completed, and on May 19, 1993, the FS report was completed. The RI/FS identified two water bearing units: an upper unit from 0 feet to 14 feet below ground surface (bgs), and the other lower unit from 30 feet to 35 feet bgs. None of these identified water bearing units were used for drinking water and only the upper unit was found to be contaminated. However, no risk pathways were identified between this upper Class III ground water unit (unusable ground water source) and any potential receptor population.

Surface and subsurface soils were found to be residually contaminated near their on-site sources. The residual contamination lay below a clay cap and all surface and subsurface soils were within EPA's acceptable risk range. In addition, further analysis of contaminant transport modeling also predicted that contaminant concentrations would be well below maximum contaminant level (MCLs) before reaching the shallowest drinking water aquifer (encountered at 100 feet bgs, and extended to 300 feet bgs).

A formal public meeting was conducted on October 28, 1993 on proposed EPA remedies to address the unusable upper water bearing unit and residual soil contamination found at the site. Following the formal public comment period, the ROD for the site was signed on June 20, 1994. The ROD selected monitored natural attenuation and institutional controls for the site.

On December 30, 1996, EPA issued a UAO to the PRPs for implementation of the selected remedy. On February 4, 1997, the PRPs notified compliance with the UAO and initiated RD/RA activities. On July 24, 1997, EPA approved the RD/RA work plans and under EPA supervision, the PRPs conducted the RA from July 1997 to December 1997. A PRPs' RA report was completed on December 12, 1997. The RA involved the installation of a new monitoring well, plugging and abandoning a residential well, and the initiation of O&M activities. Table 2 shows the details of the ground water monitoring well network that is currently at the site for O&M activities.

On January 12, 1998, EPA Region 6 prepared a preliminary close out report to EPA Headquarters on the Dutchtown site. On August 24, 1999, a final close out report was submitted to EPA Headquarters and on November 16, 1999, the Dutchtown site was deleted from the NPL.

**TABLE 2**

**MONITORING WELL CONSTRUCTION DETAILS**

Well Designation	Screen Interval (Feet bgs)	Well Size and Material
<b>Shallow Zone Monitoring Wells</b>		
MW-2	7-12	4-inch PVC
MW-2A	7-12	4-inch PVC
MW-3	7-12	4-inch PVC
MW-3A	7-12	4-inch PVC
MW-4A	7-12	4-inch PVC
MW-6	7-12	4-inch PVC
MW-8	7-12.2	4-inch PVC
MW-9	6-11	4-inch PVC
MW-10	4-9.5	4-inch PVC
MW-11	4-9	4-inch PVC
MW-12	4-9	4-inch PVC
MW-13	4-10	4-inch PVC
MW-14 <sup>1</sup>	8-13	4-inch PVC
MW-15	6-11	4-inch PVC
MW-16	7-12	4-inch PVC
MW-17	7.5-12.5	4-inch PVC
MW-21 <sup>2</sup>	4-14	2-inch PVC

**TABLE 2 (Continued)**

**MONITORING WELL CONSTRUCTION DETAILS**

<b>Well Designation</b>	<b>Screen Interval (Feet bgs)</b>	<b>Well Size and Material</b>
<b>Deep Zone Monitoring Wells</b>		
MW-1	30-35	4-inch PVC
MW-7	31-36	4-inch PVC
MW-18	24-34	4-inch PVC
MW-19	22.5-32.5	4-inch PVC
MW-20 <sup>1</sup>	26-31	4-inch PVC

Notes:

bgs    Below ground surface  
PVC    Polyvinyl chloride

<sup>1</sup>        Monitoring wells that were lost

<sup>2</sup>        Monitoring well MW-21 was installed during the  
remedial        action

## 4.0 REMEDIAL ACTIONS

The following sections discuss the remedies selected, remedy implementation, and system operations.

### 4.1 REMEDIES SELECTED

The FS determined that natural attenuation was the best remedy to meet the remedial action objectives (RAO) for the site. The RAOs as stated in the ROD were:

- Prevent human exposure to contaminated water
- Prevent contamination of underlying 150-foot drinking water aquifer
- Restore contaminated shallow ground water, based on its classification, for future use

The selected remedy included:

- Monitoring ground water to determine if current conditions improve through time, remain constant, or worsen. This included installation and monitoring of both on-site and adjacent property wells.
- Implementing contingency measures at the site if ground water monitoring indicates a confirmed 30 percent increase in contaminant concentrations (either vertically or horizontally). The contingency measures, if warranted, may include: installation of additional monitoring wells, increasing the frequency of sampling, construction of a slurry wall, active extraction of contaminated ground water, or in-situ treatment.
- Implementing institutional controls in the form of access restrictions, including installation of signs, restrictions on future use of property, fencing and a deed notice, and/or restriction on use of ground water from site water wells.
- Installing additional monitoring wells to provide additional data on plume movement towards any drinking water wells and/or beneath Interstate Highway 10 (I-10).
- Maintaining the existing cap and fence.
- Closing out the residential well on Watts property and drilling a replacement well.

## 4.2 REMEDY IMPLEMENTATION

The RA work plan was approved in July 1997, and RA on-site construction began in August 1997. The RA completed at this site included the following major work elements:

- One new 15-foot deep monitoring well was installed east of I-10 on the property of Babin and Smith, Inc. The well was screened in the bottom 10 feet. Since this well was located in a pasture, it was completed flush with the ground surface to avoid damage during mowing. The monitoring well was provided with a locking cap for security.
- The 260-foot deep Watts water well was plugged and abandoned (P&A) using a cement-bentonite slurry in accordance with the Louisiana Department of Transportation and Development (LDOTD) Water Well Rules, Regulations, and Standards. Although the remedy called for the drilling of a replacement well, this was not implemented because municipal water supply to the residence already served as an alternate drinking water source. Instead, an equivalent amount was paid in compensation.
- Fences were inspected and maintained, and "Danger Keep Out," signs were installed every 200 feet. The clay cap was inspected and found to be free of defects.
- The site monitoring wells were sampled and analyzed for benzene, toluene, ethylbenzene, and xylene (BTEX) using EPA method 8020. An inoperable pump led to only one of the two drinking water wells at Dutchtown Middle School being sampled. Monitoring wells MW-14 and MW-20, located outside the fenced area parallel to the I-10 drainage ditch, could not be found. After an extensive search guided by historical survey data, and confirming that earth moving activities had occurred near the wells between 1992 and 1997 as part of Interstate ditch maintenance, it was concluded that monitoring wells MW-14 and MW-20 were lost. These wells were therefore not sampled; furthermore, the PRP contractor proposed that monitoring wells MW-14 and MW-20 be left unaddressed due to their inconsequence in plume delineation.

## 4.3 OPERATION AND MAINTENANCE

O&M requirements for the site as stated in the O&M work plan are as follows:

- Ground water sampling and analysis for BTEX will be performed quarterly for the first year, semi-annually for the next four years, and annually from then on until cleanup goals are attained. During these sampling events, static water levels will be measured, and wells suspected of containing free phase contaminants will be tested for such.

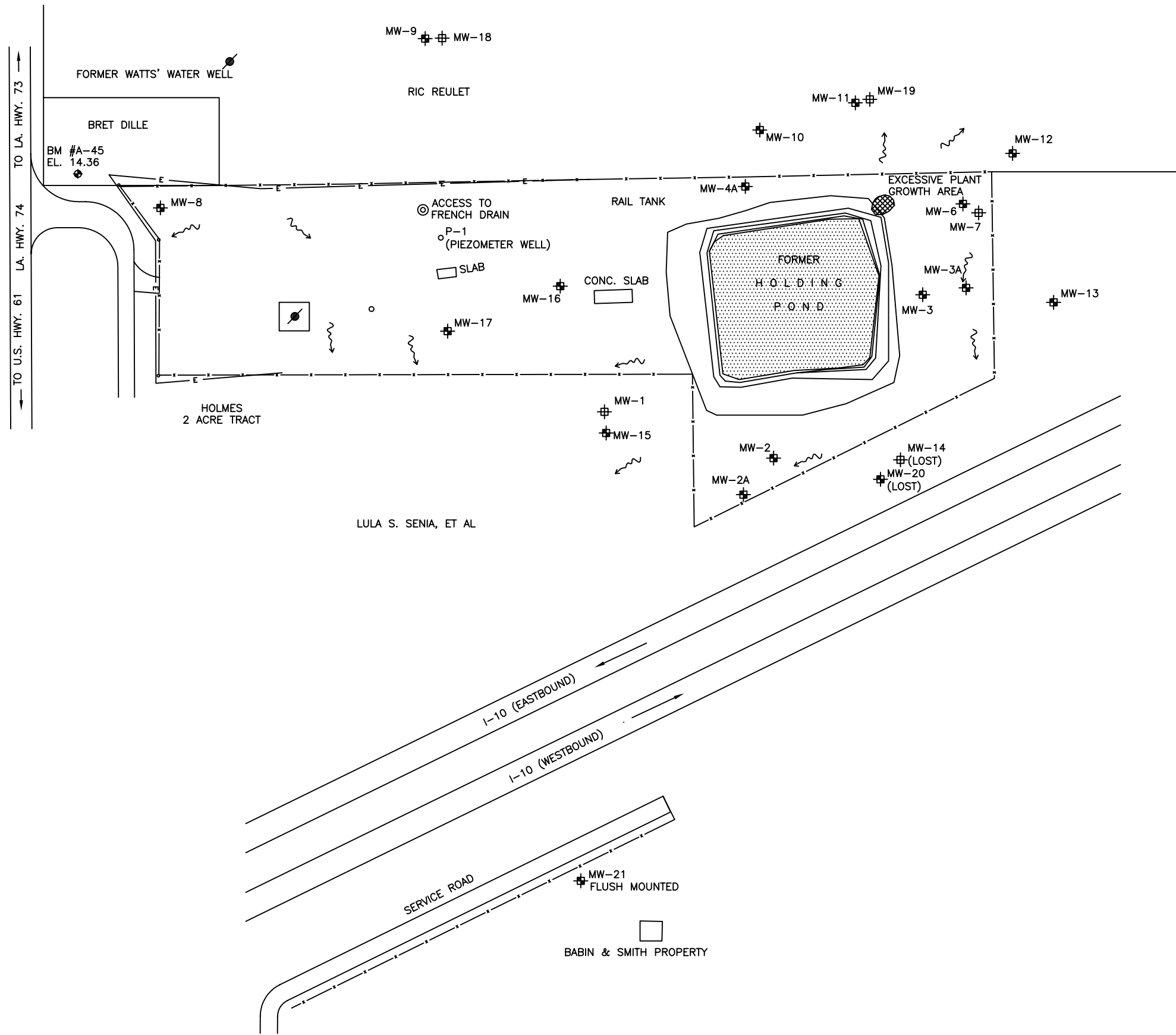
- Conditions (30 percent increase in concentration in shallow aquifer wells) that trigger contingency measures for the site will be evaluated after the first year of monitoring. A detailed explanation of the procedure is available in the site's O&M work plan.
- The clay cap and perimeter fence will be inspected annually by a licenced engineer in the State of Louisiana.
- A natural attenuation evaluation report will be prepared annually.
- Every 5 years, a statistical evaluation of ground water monitoring data will be performed for each well to deduce a trend.
- The site will be evaluated for attainment of cleanup standards.

The current ground water monitoring network (see Figure 2) at the Dutchtown site consists of 14 shallow zone (ranging from 4 feet to 13 feet bgs) monitoring wells and 4 deep zone (ranging from 22.5 feet to 36 feet bgs) monitoring wells. This does not include monitoring wells MW-14 and MW-20, which were lost during Interstate ditch maintenance. The ROD also calls for inclusion of two Ascension Parish School Board wells (DOTD Wells 179 and 427), located at the Dutchtown Middle School, to be included in the monitoring program. However, these wells were discovered to have inoperable pumps at subsequent sampling events, along with, the Dutchtown Middle School being connected to the municipal water supply system.

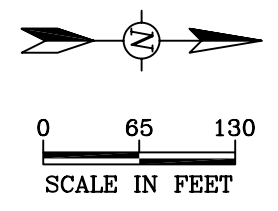
The O&M work plan was prepared in July 1997, and O&M activities initiated with the August 1997 ground water sampling event (completed during the RA). The other quarterly ground water sampling events during the first year of O&M took place in November 1997, February 1998, and May 1998. Semi-annual ground water sampling events occurred in (1) November 1998 and May 1999 during the second year; (2) November 1999 and May 2000 during the third year; (3) November 2000 and May 2001 during the fourth year; and (4) November 2001 and May 2002 during the fifth year. According to the ROD and the site's O&M work plan, the fifth year brings semi-annual ground water sampling to an end, and marks the beginning of an annual sampling schedule.

Samples were analyzed for BTEX using EPA Method 8020 during the first two years of O&M, and EPA Method 8021 during the next three. Ground water elevations were measured during every sampling event.







- EXPLANATION**
- MW-1 ⊕ DEEP ZONE MONITOR WELL LOCATION AND DESIGNATION
  - MW-2 ⊕ SHALLOW ZONE MONITOR WELL LOCATION AND DESIGNATION
  - INACTIVE WATER WELL
  - ~ SURFACE DRAINAGE DIRECTION



**DUTCHTOWN OIL SITE  
DUTCHTOWN, LOUISIANA**

**FIGURE 2  
MONITOR WELL LOCATION MAP**

PREPARED FOR:  BY: 

SOURCE: MODIFIED FROM ARCADIS G&M, MONITORING WELL LOCATION MAP, MAY 2001.

Monitoring wells have been inspected and maintained every year. Fairly substantial upgrades were made to monitoring wells MW-2, MW-2A, MW-3, MW-3A, MW-4A, MW-6, and MW-7 during the first year of O&M. Monitoring well maintenance after that involved only minor repairs such as replacing broken locks and hinges.

The clay cap and fence were also inspected every year by an engineer licensed in the State of Louisiana. The engineer's reports were included as an attachment to every natural attenuation report.

Damaged portions of the fence on the northwest corner and eastern side of the site were repaired during the first year of O&M. During that time, warning signs were placed at the entrance gate. These signs were replaced with newer ones later during the second year of O&M. Areas around the fence were cleared of major vegetation during the first two years of O&M. The engineer's reports in the third and fourth years of O&M recorded the presence of overgrown vegetation along the fence, and indicated that the fence had sustained damage to some parts. As evident from the natural attenuation reports, these issues were either not addressed or measures taken to address them were not recorded. The engineer's comment in the fifth year natural attenuation report reads, "Portions of the fence are heavily vegetated and could not be evaluated. The fence generally appears to be structurally sound. Vegetation (including small trees) should be removed from this and other heavily vegetated areas of the fence."

During the first year of O&M, erosion gullies were noted at the south edge of the clay cap over the former holding pond. This was repaired in the second year of O&M. Except for several spots where minor erosion was noted, the cap was reported to be in good condition during the third, fourth, and fifth years of O&M.

#### **4.4 OPERATION AND MAINTENANCE COSTS**

Table 3 shows costs that were incurred for O&M field activities.

**TABLE 3**

**COSTS FOR O&M FIELD ACTIVITIES**

<b>Cost Reporting Period</b>	<b>O&amp;M Costs</b>
April 1997 through March 1998	\$31,000
April 1998 through March 1999	\$38,000
April 1999 through March 2000	\$24,000
April 2000 through March 2001	\$15,000
April 2001 through March 2002	\$21,000
April 2002 through Present	\$7,000

Notes:

O&M            Operation and Maintenance

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## **5.0 FIVE-YEAR REVIEW PROCESS**

Dutchtown's first five-year review was led by Mr. Stephen Tzhone, EPA Remedial Project Manager. This five-year review consisted of a review of relevant documents (see Appendix A), a review of standards, interviews, and a site inspection. The completed report will be made available in the information repository (Ascension Parish Library, Gonzales Branch, Louisiana) upon completion. Notice of its completion will be placed in the local newspaper, and local contacts will be notified by letter. A brief summary of this report will be distributed to community members.

## **6.0 FIVE-YEAR REVIEW FINDINGS**

The following sections present the findings of this five-year review.

### **6.1 SURVEYS**

In accordance with the requirements of the five-year review guidance, Tetra Tech contacted several key individuals by mail in order to obtain their opinions with regard to issues associated with the site. Mr. Ric Reulet who was present during the site visit was handed questionnaires for himself, and his neighbors Bret Dille, and Kling Shafter. Questionnaires were provided to the following people based on their knowledge of the site:

- Robert Holden, Chairman, Dutchtown Steering Committee
- Martha Germanis, Site owner
- Ric Reulet, Owner of neighboring property
- Bret Dille, Owner of neighboring property
- Kling Shafter, Local resident
- Thomas Stafford, LDEQ
- Carl Robichaux, Ascension Parish Engineer/Floodplain Manager
- Harold Marchand, President of Ascension Parish

The Superfund Site Survey Forms from those who responded are included in Appendix C. Responses to the site survey questionnaire included no complaints or concerns. Mr. Robert Holden, chairman of the Dutchtown Steering Committee, had several comments on site operations and proposed changes to the remedy and site O&M, which are included in Appendix C of this report.

## **6.2 SITE INSPECTION**

A site inspection was conducted on June 12, 2002, to assess the condition of the site and the measures employed to protect human health and the environment from the contaminants still present at the site. Attendees included (1) Mr. Robert Holden of Liskow & Lewis; (2) Mr. George Cramer of AGM; (3) Mr. Lance Fontenot of AGM; (4) Ms. Martha Germanis, the site owner; (5) Mr. Rick Reulet, the owner of the neighboring property; (6) Mr. Thomas Stafford of LDEQ; (7) Mr. Stephen Tzhone of EPA; and (8) Mr. Chitranjan Christian of Tetra Tech. The site visit report is provided in Appendix B of this document.

There were no visual signs or evidence of contamination at the site. With exceptions, most monitoring wells visually inspected were in good condition, clearly labeled, protected from impact, and securely encased (lock and cover). The exceptions were: (1) the hinge on monitoring well MW-8 was broken; (2) piezometer well P1 located west of MW-17 was not locked; and (3) excess vegetation was noticed around off-site monitoring well MW-12. The grass cover at the site, including that on the clay cap, appeared healthy and well maintained, with one exception—there was excessive vegetative growth at the northwest corner of the clay cap. Vegetation along the fence seemed overgrown, and in some places had the potential to damage the fence.

## **6.3 RISK INFORMATION REVIEW**

Below is a discussion of risk-related issues pertinent to the Dutchtown site.

### 6.3.1 Applicable or Relevant and Appropriate Requirements

The Remedial Action Goals section of the 1994 ROD identified the following goals for the Dutchtown Superfund Site RA (EPA 1994):

“The risk assessment associated with the RI could not identify a pathway between the shallow water-bearing unit and any potential receptor population. Since no pathway was identified, a numerical health-based cleanup level based on exposure cannot be developed. According to the EPA (OSWER Directive 9283.1-2), health-based drinking water levels are usually not appropriate for Class III ground water. Environmental considerations and prevention of plume expansion determine cleanup levels for Class III ground water.

Since exposure to surface and subsurface soils at the site are not expected to result in any excess risk/hazard to human health and the environment under current and no action conditions, and since no current or future exposure pathway was identified for the contaminated shallow aquifer, there are no numerical cleanup standards for soils or ground water.”

Therefore, no applicable or relevant and appropriate requirements (ARAR) relating to risk-based media concentrations exist for soils and shallow ground water (existing to 14 feet bgs) at the Dutchtown site.

The RAOs set forth in the 1994 ROD relating to ground water were as follows:

1. Prevent human exposure to contaminated water,
2. Prevent contamination of the underlying 150-foot drinking water aquifer, and
3. Restore contaminated shallow ground water, based on its classification, for future use.

Based on the second RAO listed above for the third water bearing unit (which exists at approximately 150 ft bgs, below a clay layer), one of the goals of long-term monitoring was to assess ground water concentrations in the 30-foot bgs unit as a sentinel for the 150-foot drinking water aquifer in comparison to MCL; however, MCLs were not specifically listed as an ARAR in the 1994 ROD.

One of the requirements of a five-year review is to determine if there are any new requirements that may pertain to the site. Tetra Tech's analysis indicates that although there is a newly promulgated State of Louisiana program to evaluate risk, it does not pertain to the Dutchtown site due to a grandfathering provision. The Louisiana Risk Evaluation/Corrective Action Program ([RECAP]; Title 33, Part I,

Chapter 13 of the Louisiana Administrative Code [LAC]) was promulgated on June 20, 2000, but is not applicable to LDEQ-approved activities under corrective action plans approved before the effective date of the RECAP (LAC 33 Chapter I §1305). Therefore, since the 1994 ROD was approved by LDEQ prior to the effective date of RECAP, RECAP is not a new ARAR for the Dutchtown Superfund site.

ARARs pertaining to remedial action activities at the Dutchtown Superfund site are divided into chemical-, location-, and action-specific categories, which are discussed below.

### **6.3.2 Chemical-specific ARARS**

Chemical-specific ARARs are usually health- or risk-based numerical values or methodologies that, when applied to site-specific conditions, result in the establishment of numerical values. These values establish the acceptable amount or concentration of a chemical that may remain in or be discharged to the ambient environment (EPA 1988). If more than one chemical-specific ARAR exists for a contaminant of concern, the most stringent level will be identified as an ARAR for the remedial action.

The 1994 ROD for the Dutchtown Superfund Site noted, “Since the ground water in the contaminated shallow aquifer is considered a Class III [nonpotable, poor-yield] aquifer, remediation to MCLs is not required. For this reason, there are no chemical specific ARARs that are applicable or relevant and appropriate for the site.” Since no change to the Class III status (poor yield of the aquifer, resulting in less than 150 gallons per day) has occurred, there are no new chemical-specific ARARs.

However, the O&M work plan followed the (then proposed) RECAP methodology to calculate risk-based, chemical-specific ground water corrective action levels for comparison to Class III ground water monitoring data (see Table 4, Geraghty & Miller 1997a), indicating, “as long as the levels are below the risk-based levels and there is no complete exposure pathway, the regularly scheduled monitoring will be resumed; [otherwise,] other remedial actions... will be implemented.” The levels given in the O&M work plan may apply to the Class III shallow wells in the 7 to 12-foot bgs zone for monitoring (Geraghty & Miller 1997a), which are not subject to meeting MCLs because the aquifer, due to its poor yield, has no beneficial future use. The Class III risk-based levels introduced in the 1997 O&M work plan were not specified in the 1994 ROD, which stated (as noted above):

The risk assessment associated with the RI could not identify a pathway between the shallow water-bearing unit and any potential receptor population. Since no pathway was identified, a numerical health-based cleanup level based on exposure cannot be developed. According to the EPA (OSWER Directive 9283.1-2), health-based drinking water levels are usually not appropriate for Class III ground water. Environmental considerations and prevention of plume expansion determine cleanup levels for Class III ground water.

Thus, the Class III concentrations presented in Table 4 of the O&M work plan represent “environmental considerations and prevention of plume expansion” levels for the shallow zone, taking into account the natural attenuation factor of 173 used in the calculation (Geraghty & Miller 1997a). The underlying Class III values used in the O&M work plan calculation are still the current non-drinking water Class III protective concentrations for the current state program, the Louisiana RECAP. These values are shown in RECAP Table 3, which was last updated on September 19, 2000, and is available on the Internet at <http://www.deq.state.la.us/technology/recap/2000/index.htm>. Therefore, the chemical-specific ARARs developed in the O&M work plan are still current.

Based on the 1994 ROD, the deeper zone wells are to be compared to risk-based drinking water levels (or MCLs) to assess potential migration downward toward the nearest drinking water well (at 150 ft bgs). Comparisons to chemical-specific drinking water risk-based levels (or MCLs) would only be for the wells in the deeper (30 ft bgs) zone, which include MW-1, MW-7, MW-18, MW-19, and MW-20. However, no site-related contaminants have been detected in the deeper zone wells for the 1997 to 2002 data reviewed (see Section 6.4 below).

### **6.3.3 Location-specific ARARS**

Location-specific ARARs are restrictions placed on the concentration of hazardous substances or the conduct of activities solely because they are in special locations. Some examples of locations that might prompt a location-specific ARAR include wetlands, sensitive ecosystems or habitats, flood plains, and areas of historical significance. There are no location-specific ARARs for the site, per the 1994 ROD. No new location-specific requirements that may pertain to the Dutchtown site have been promulgated.



#### 6.3.4 Action-Specific ARARs

Action-specific ARARs are usually (1) technology- or activity-based requirements or limitations on actions taken with respect to hazardous wastes or (2) requirements to conduct certain actions to address particular site circumstances. These requirements are triggered by the particular remedial activities that are selected to accomplish a remedy. Because there are usually several alternative actions for any remedial site, very different requirements can come into play. These action-specific requirements do not in themselves determine the remedial alternative; rather, they indicate how a selected alternative must be achieved (EPA 1988).

No action-specific ARARs were explicitly identified for Alternative 2 (natural attenuation) for the ground water operable unit. Implicit ARARs not identified in the 1994 ROD for the Dutchtown site include the following:

1. Standards for cap and fence (engineering control) maintenance and post-closure care in the capped areas, to prevent exposure to subsurface soils, as noted in the 1994 ROD:  
  
“Clay caps will be monitored and maintained to ensure that cap integrity is retained. Such maintenance will prevent tree roots and burrowing/digging animals from disrupting the integrity of the clay cap and will, therefore, limit the potential for exposure to subsurface site constituents...”  
  
“During the semiannual inspections of the site, the fence will be inspected for holes, structural integrity, and/or other damage. Inadequate areas of fencing will be repaired within one month of inspection...The fence inspection schedule should be reevaluated after five years.”
2. Standards for post-closure ground water monitoring. As noted in the 1994 ROD:  
  
“The remedy calls for 30 years of monitoring to take place. Monitoring will be quarterly during the first year, semiannually during years two through five and annually thereafter up to year 30.”
3. Implementation of institutional controls, as per the 1994 ROD:

“Institutional controls are considered in conjunction with every proposed remedy. Institutional controls include actions that neither treat nor remove contaminants, but restrict contact with contaminants considered. These actions include ... posting signs, deed notices, and land use restrictions....”

“Site-use restrictions will be implemented as part of all alternatives to prohibit activities such as soil excavation and construction of buildings and/or installation of domestic water wells either at the site or on land adjacent to the site.”

The O&M work plan for the Dutchtown Superfund Site was prepared in July 1997 (Geraghty & Miller 1997a). O&M activities began in August 1997 (Geraghty & Miller 1997c). Inspection reports presented in the annual natural attenuation evaluation reports issued since the approval of the plan indicate that the remedy is functioning in compliance with the action-specific ARARs for the site (see Section 6.4.5 below).

## **6.4 DATA REVIEW**

A review of the previous natural attenuation evaluation reports through 2002 indicates that the procedures outlined in the O&M work plan (Geraghty & Miller 1997a) were conducted to ensure that the remedial action objectives are being met. Data associated with each of these remedial actions was reviewed, as summarized below.

### **6.4.1 Ground Water Monitoring Data Review**

Ground water data were reviewed for the 1997 through 2002 sampling events. Ground water data were not collected between 1992 and 1997 (Geraghty & Miller 1997a). During the first sampling event since 1992 (conducted in August 1997), a “significant decrease in constituent concentrations since 1992” was observed (Geraghty & Miller 1997c). All of the 30-foot (deep) zone wells were also non-detect for the BTEX constituents. Therefore, no evidence of constituent vertical migration to the deep zone appeared at or before August 1997.

As noted above, the deep zone wells are MW-1, MW-7, MW-18, MW-19, and MW-20 (which could not be located in August 1997). This well, along with shallow zone well MW-14, appear to have been destroyed as per the revised RA Report (Geraghty & Miller 1997c):

“Geraghty & Miller was not able to locate MW-14 and MW-20 ... located outside of the fenced area along the I-10 right-of-way... these two wells are flush-mounted wells.. [after] 8 hours attempting to locate the wells utilizing a shovel and other hand tools... Ferris & Associates was contracted to locate the wells utilizing the original survey data... [and] utilized a metal detector in an attempt to find the well covers. The surveyor was unable to locate the two wells. An additional technician was subsequently mobilized to the site and a metal detector and various hand tools including a push probe and shovel were used .... Again, the wells could not be located during this 4-hour search.... During the implementation of the RA... the ditch was being reworked and the area around the wells had been extensively disturbed. A bulldozer operator present in the area of the two wells noted that Ascension Parish maintains the ditches... It appears the well surface completions were removed sometime during the time interval of 1992 through 1997 as a result of operation and maintenance of the Interstate ditch system.”

This report implies that the MW-14 and MW-20 well casings are still in place somewhere along I-10. These casings have not been P&A according to state records and if the wells cannot be located, P&A may be impossible. The implications of unused monitoring wells in this location is that runoff from I-10 may collect in the right-of-way and percolate (preferentially) downward in the MW-14 and MW-20 casing to ground water, thus introducing stormwater runoff contaminants that would not normally be present into the shallow (MW-14) and deep (MW-20) zones.

Also, the Revised 1<sup>st</sup> Year Natural Attenuation Report (AGM 1998) revealed that:

“The Dutchtown Middle School has two drinking water wells (Figures 1 and 2). For the August and November sampling events, only one of the wells was in operation. Groundwater samples were collected from this well. The pump for the other well was not operational, and, therefore, groundwater samples from this well could not be collected. For the February and May 1998 sampling events, the pumping mechanisms for both wells were not operational and groundwater samples were not collected from the Dutchtown Middle School wells. According to personnel at the Dutchtown Middle School, the school is now connected to the municipal water supply system.”

Thus, the two Ascension Parish Board Wells, DOTD Wells 179 and 427, have not been sampled since then.

From 1997-2002, BTEX was not detected in any of the deep zone wells for any of the sampling events reported in the monitoring results (AGM 1998, 1999, 2000, 2001, 2002). Therefore, constituent vertical migration appears to be arrested before it reaches the 30-foot deep zone and thus is protective of the shallowest drinking water aquifer (encountered at 100 feet bgs, and extended to 300 feet bgs).

For the monitoring results reviewed (1997-2002), no concentrations of BTEX exceeded the Class III ground water corrective action levels (taking into account the natural attenuation factor of 173) set forth in the O&M work plan (Geraghty & Miller 1997a) for any of the sampling events reported (AGM 1998, 1999, 2000, 2001, 2002). The remedy is thus functioning to protect human health and the environment as designed in the 1994 ROD.

#### **6.4.2 Contingency Measures**

Because concentrations are not showing upward trends and concentrations in the deeper zone have not been detected, contingency measures (provided for in the 1994 ROD) have not been triggered. Thus, the remedy remains protective of human health and the environment.

#### **6.4.3 Implementing Institutional Controls**

Fencing present at the site is being maintained (see Section 6.4.5) as an engineering control. The institutional controls associated with the fence are signage, including the "Danger Keep Out" signs placed on the fence every 200 feet (Geraghty & Miller 1997c). However, the pre-final inspection conducted on October 29, 1997, resulted in additional action items, including additional warning signs to be placed at the entrance gate (Geraghty & Miller 1997c). As reported in various annual natural attenuation reports, signage is being maintained.

With regard to the remaining institutional controls, no documentation regarding the ROD-required restrictions on future use of the property, deed notice, and/or restriction on use of ground water from site water wells was located. Therefore, this portion of the remedy has not yet been implemented. To preclude future use of the site that may not be protective of human health and the environment, the

institutional controls called for in the 1994 ROD should be evaluated and appropriate deed notice language drafted to ensure protective future use of the site. The State of Louisiana (in accordance with La. Rev. Stat. Ann. §30:2039 [2000]; La. Admin. Code tit. 33 §3525 [1999]) bears the responsibility to enforce implementation of institutional controls in the form of deed notices by the property owners.

#### **6.4.4 Installing Additional Monitoring Wells**

According to the December 1997 Revised Remedial Action Report (Geraghty & Miller 1997c), one new monitoring well was installed at the site as required. The new well (MW-21) is located east of I-10 (on the opposite side of the Interstate from the Dutchtown Superfund site) on the pastureland property of Babin and Smith, Inc. This well has a 10-foot screen (to 13.67 ft bgs) but was only drilled to a depth of 16 ft bgs. Therefore, MW-21 data are useful for evaluating lateral migration of the plume but will not represent the deep zone (which exists at 30 ft bgs, beneath the clay layer).

#### **6.4.5 Maintaining the Existing Cap and Fence**

The RAO to protect human health and the environment by preventing direct contact, ingestion, and migration of the site wastes and contaminated soils continues to be met by the clay cap. The cap was initially inspected on August 4 through 8, 1997 (Geraghty & Miller 1997c), then annually, as documented in the yearly natural attenuation evaluation reports (AGM 1998, 1999, 2000, 2001, 2002). A registered professional engineer's inspection during the fifth year revealed signs of excessive erosion on the clay cap. However, the cap was generally noted to be in good condition, with little damage, settlement, slippage/failure, or dessication observed. The fence, gates, locks, and signs are in place. Although the fence required maintenance, access restrictions were generally verified sound as of June 20, 2002 (the latest reported inspection), and would limit access to the site, and preclude direct contact or ingestion of soils.

The pre-final inspection conducted on October 29, 1997, resulted in the requirement that the perimeter fence at the northeast and northwest corners and along the eastern side of the site be repaired (Geraghty & Miller 1997c). In addition, the fence and area around MW-12 were to be cleared of vegetation (Geraghty & Miller 1997c). These actions were reportedly conducted prior to May 1998 (AGM 1998).

Annual findings of the inspections are summarized as follows:

- In 1998, fencing was to be cleared of vegetation and two small erosional gullies (approximately 2-6 inches wide and 3-6 inches deep, and roughly 20 to 25 feet in length) were being repaired in July 1998 (AGM 1998).
- The cap was inspected in August 1999. The perimeter fence was cleared of major vegetation and repaired in the area facing Louisiana State Highway 74. Small erosional features observed at the southern edge of the clay cap (near the holding pond) were repaired (AGM 1999). Mowing was to occur in September 1999 (AGM 1999).
- The cap and fence were inspected on July 12, 2000. Findings included several small erosional features in the clay cap, which was otherwise in relatively good condition (AGM 2000). The fence was found to be leaning along the north edge due to vegetation, and a hole was detected on the northern side. Vegetation needed mowing, which was scheduled for November 2000 (AGM 2000).
- The cap and fence were inspected on July 2, 2001. The clay cap was found to be in relatively good condition with only several small erosional features (AGM 2001), and the fence appeared heavily vegetated but structurally sound.
- The cap and fence were inspected on June 20, 2002. Inspection of the clay cap revealed excessive erosion. However, the cap was still considered to be in relatively good condition (AGM 2002). The fence appeared heavily vegetated but structurally sound.

Thus, the existing engineering controls (the cap and perimeter fence) that prevent exposure to contaminants are reported as being maintained as indicated in the O&M work plan (Geraghty & Miller 1997a) and the remedy is protective of human health and the environment.

#### **6.4.6 Residential Well Replacement**

As noted in the December 1997 Revised Remedial Action Report, upon determining a new location for the residential well to be installed at the Watts property, it was discovered that the residence was already connected to a municipal water supply. Therefore, a cost compensation agreement was reached and provided as Appendix E to the report (Geraghty & Miller 1997c).

To prevent future exposure, the former Watts residence water well was P&A as documented in the December 1997 Revised Remedial Action Report (Geraghty & Miller 1997c). Thus, this portion of the remedy has been completed and remains protective of human health and the environment.

#### **6.4.7 Fifth Year Statistical Evaluation Review**

Trend analysis was performed by AGM (AGM 2002) using linear regression, and implied a decreasing trend in ground water contaminant concentrations. Linear regression methods, in particular, are susceptible to processes or errors commonly associated with the evaluation of contaminants in ground water. For example, linear regression would be unsuitable when: (1) seasonal cycles are present in the data; (2) data are characterized by measurements below the detection limit; or (3) data are collected over long time periods and analyses are provided by different laboratories, possibly using different analytical protocols. As is commonly found in ground water monitoring studies, trends are not expected to be linear. In addition, it is often difficult to meet the assumptions required to perform linear regression analysis.

The Mann-Kendall test would be a more appropriate trend analysis tool. The nonparametric Mann-Kendall test has been widely used for detecting monotonic trends in time-series of data (Gilbert, 1987; Helsel and Hirsch, 1992; Gibbons, 1994). Because the Mann-Kendall test uses only the relative magnitude of the data rather than their measured values, it has a number of desirable properties, including its applicability to data that is not normally distributed or has outliers. A modified version of the test, the Seasonal Kendall test, can also be used to account for seasonal differences in the data.

## 7.0 ASSESSMENT

The following conclusions support the determination that the remedy at the Dutchtown site is currently protective of human health and the environment.

### Question A: Is the remedy functioning as intended by the decision documents?

- **Remedial Action Performance**—The remedy has performed well.
- **System Operations/O&M**—Except for the discontinued sampling of Dutchtown Middle School wells, O&M ground water monitoring activities are being conducted according to plan.
- **Opportunities for Optimization**—Given the consistent detection of contaminants in just a few wells, the ground water monitoring plan should be modified to include only those wells that will: (1) provide data for statistical evaluation of concentration trends five years from now; or (2) serve as sentinels for migration of contaminants off site. Monitoring wells MW-3A, MW-4A, MW-6, and MW-7 must be among those included.
- **Early Indicators of Potential Remedy Failure**—None.
- **Implementation of Institutional Controls and Other Measures**—Site fencing and warning signs are being maintained. The part of the remedy requiring deed notice implementation has not yet been executed. The State of Louisiana (in accordance with La. Rev. Stat. Ann. §30:2039 [2000]; La. Admin. Code tit. 33 §3525 [1999]) bears the responsibility to enforce implementation of institutional controls in the form of deed notices by the property owners.



**Question B: Are the assumptions used at the time of remedy selection still valid?**

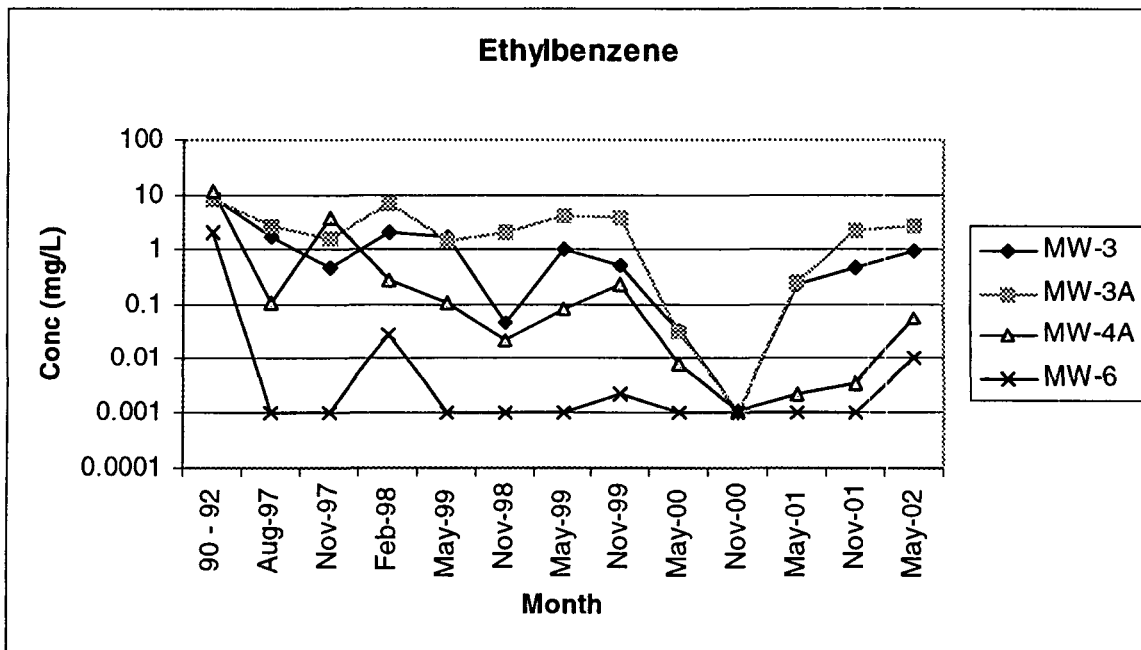
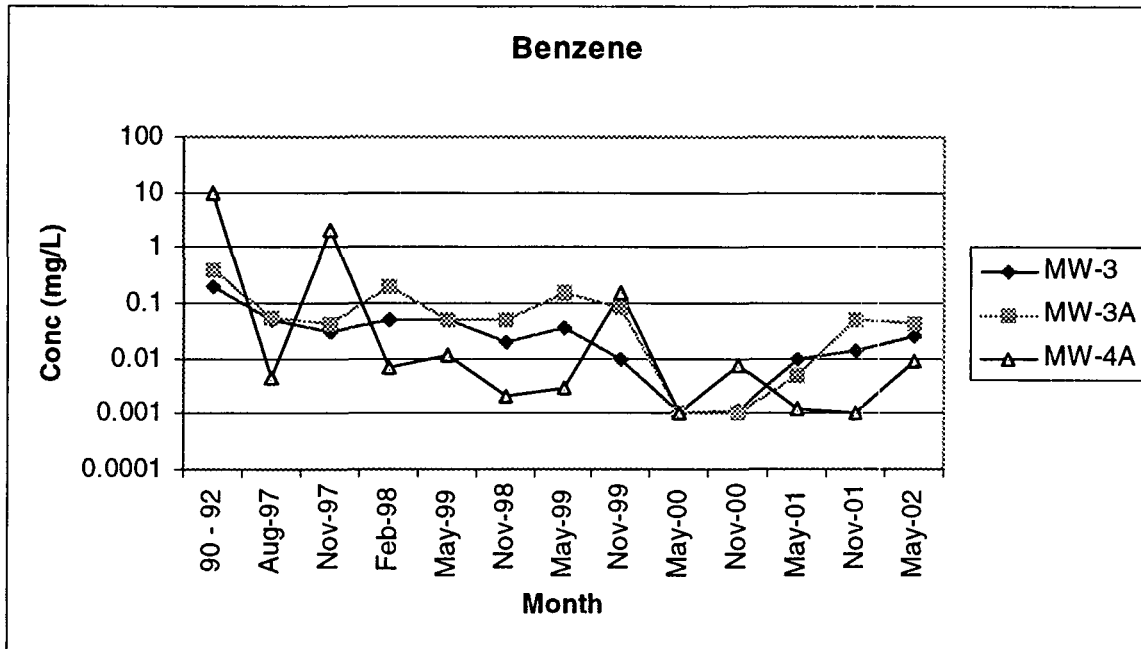
- **Changes in Standards and To-Be-Considered**—There are no changes that bear on the protectiveness of the remedy.
- **Changes in Exposure Pathways**—There are no changes that bear on the protectiveness of the remedy.
- **Changes in Toxicity and Other Contaminant Characteristics**—There are no changes that bear on the protectiveness of the remedy.
- **Changes in Risk Assessment Methodologies**—There are no changes that bear on the protectiveness of the remedy.
- **Expected Progress Towards Meeting RAOs**—An overall downward trend in ground water concentrations was evident until November 2000. Since then, contaminant concentrations in some wells have displayed an increasing trend (Figure 3). As explained in the site visit report, this is believed to be a result of seasonal variation. This increase does not trigger contingency measures, and RAOs are still being met.

**Question C: Has any other information come to light that could call into question the protectiveness of the remedy?**

No other information has been identified to question the protectiveness of the remedy.

FIGURE 3

CONTAMINANT CONCENTRATION IN GROUND WATER VERSUS TIME



Note:

1. Concentrations below the detection limit have been assumed equal to the detection limit
2. Benzene was not detected at MW-6 throughout the monitoring period

## 8.0 ISSUES

The following issues were noted:

1. **Well maintenance**—As noted in the site visit report, the cover on monitoring well MW-8 has a broken hinge that needs replacing; monitoring well MW-12 has excess vegetation around it; and piezometer well P-1 does not have a lock.
2. **Overgrown vegetation along fence**—As noted in the site visit report, there is overgrown vegetation along the site fence that could potentially damage it.
3. **Excess vegetation at northwest corner of clay cap**—As noted in the site visit report, there is small plant vegetation very close to the northwest corner of the clay cap. If the vegetation has lateral spreading roots, it could damage the clay cap.
4. **Clay cap erosion**—As recorded in the fifth year natural attenuation and evaluation report, there are signs of excessive erosion on the clay cap.
5. **Monitoring wells MW-14 and MW-20 not found**—As mentioned in the report, these monitoring wells, thought to be destroyed during highway ditch system maintenance, have not been found. Since they haven't been properly P&A, they serve as pathways for ground water contamination with stormwater pollutants.
6. **Unsuitable statistical analysis**—Linear regression is not a suitable tool for ground water contaminant concentration trend analysis at the Dutchtown site.
7. **Deed Notice**—The part of the remedy requiring deed notice implementation has not yet been executed.
8. **Unnecessary ground water sampling**—It may be unnecessary to sample every monitoring well.

Table 4 summarizes the identified issues associated with the Dutchtown site.

## **9.0 RECOMMENDATIONS AND FOLLOW-UP ACTIONS**

Table 5 summarizes the recommendations and follow-up actions for the Dutchtown site.

## **10.0 PROTECTIVENESS STATEMENTS**

The remedy for the site is protective of human health and the environment.

## **11.0 NEXT REVIEW**

This is a site that requires ongoing Five-Year Reviews. The next review will be conducted within the next five years after this review and within ten years of the triggering action date.

**TABLE 4**  
**IDENTIFIED ISSUES**

Issues	Currently Affects Protectiveness (Y/N)
<b>Monitoring Wells</b>	
Monitoring well MW-8 needs hinge replacement	N
Piezometer well P-1 needs a lock	N
Excess vegetation around off-site monitoring well MW-12	N
<b>Fence</b>	
Excess vegetation along the fence endangering its integrity	Y
<b>Surface Conditions</b>	
Excess small plant growth at northwest corner of clay cap	N
<b>Clay Cap</b>	
Excessive erosion observed on clay cap	N
<b>Ground Water</b>	
Monitoring wells MW-14 and MW-20 provide pathways for surface water migration to the aquifers	N
Linear regression not a suitable tool for trend analysis	N
Unnecessary ground water sampling	N
<b>Institutional Controls</b>	
Deed notice has not yet been implemented	Y

TABLE 5

## RECOMMENDATIONS AND FOLLOW-UP ACTIONS

Issues	Recommendations/ Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Follow-up Actions: Affects Protectiveness (Y/N)
The hinge on monitoring well MW-8 needs replacement	Replace hinge	PRP	EPA	ASAP	N
Piezometer well P-1 needs a lock	Provide lock	PRP	EPA	ASAP	N
Excess vegetation around off-site monitoring well MW-12	Clear vegetation	PRP	EPA	ASAP	N
Excess vegetation along fence	Vegetation endangering the integrity of the fence should be removed	PRP	EPA	ASAP	Y
Excess small plant growth at northwest corner of clay cap	Clear vegetation	PRP	EPA	ASAP	N
Excessive erosion on clay cap	Repair eroded cap	PRP	EPA	ASAP	N
Monitoring wells MW-14 and MW-20 not found	Plug and abandon if possible	PRP	EPA	ASAP	N
Linear regression not a suitable tool for trend analysis	Use the Mann-Kendall or the Seasonal Kendall test	PRP	EPA	Before the next trend analysis	N
Unnecessary ground water sampling	Develop new ground water monitoring plan using fewer wells	PRP	EPA	Before the next sampling event	N
<sup>1</sup> Deed notice not yet implemented	Implement deed notice	PRP/SITE OWNER	LDEQ	ASAP	Y

**TABLE 5 (Continued)**

**RECOMMENDATIONS AND FOLLOW-UP ACTIONS**

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Notes:

EPA U.S. Environmental Protection Agency  
LDEQ Louisiana Department of Environmental Quality  
PRP Potentially Responsible Party

<sup>1</sup> The State of Louisiana (in accordance with La. Rev. Stat. Ann. §30:2039 [2000]; La. Admin. Code tit. 33 §3525 [1999]) bears the responsibility to enforce implementation of institutional controls in the form of deed notices by the property owners.

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**APPENDIX A**  
**DOCUMENTS REVIEWED**  
**(One Page)**



## DOCUMENTS REVIEWED

- ARCADIS Geraghty & Miller, Inc. (AGM). 1998. Revised First Year Natural Attenuation Evaluation Report, Dutchtown Oil Treatment Site. Prepared for Dutchtown Steering Committee by AGM, Baton Rouge, LA. LA1511.0001.00003. September 2.
- AGM. 1999. Second Year Natural Attenuation Evaluation Report, Dutchtown Oil Treatment Site. Prepared for Dutchtown Steering Committee by AGM, Baton Rouge, LA. LA1511.0004. October 4.
- AGM. 2000. Third Year Natural Attenuation Evaluation Report, Dutchtown Oil Treatment Site. Prepared for Dutchtown Steering Committee by AGM, Baton Rouge, LA. LA001918.0001. August 9.
- AGM. 2001. Fourth Year Natural Attenuation Evaluation Report, Dutchtown Oil Treatment Site. Prepared for Dutchtown Steering Committee by AGM, Baton Rouge, LA. LA002026.0001. August 1.
- AGM. 2002. Fifth Year Natural Attenuation Evaluation Report, Dutchtown Oil Treatment Site. Prepared for Dutchtown Steering Committee by AGM, Baton Rouge, LA. LA002166.0001. July 17.
- Geraghty & Miller, Inc. (Geraghty & Miller). 1997a. Operation and Maintenance Work Plan, Dutchtown Oil Treatment Site. Prepared for Dutchtown Steering Committee by AGM, Baton Rouge, LA. LA1511.001. July.
- Geraghty & Miller. 1997b. Addendum to Health and Safety Plan, Dutchtown Oil Treatment Site. Prepared for Dutchtown Steering Committee by Geraghty & Miller, Baton Rouge, LA. LA1511.001. July.
- Geraghty & Miller. 1997c. Revised Remedial Action Report, Dutchtown Oil Treatment Site. Prepared for Dutchtown Steering Committee by Geraghty & Miller, Baton Rouge, LA. LA1511.001.003. December.
- Gibbons, R. D. 1994. Statistical Methods for Groundwater Monitoring. John Wiley & Sons, Inc. New York, New York.
- Gilbert, R. O. 1987. Statistical Methods in Environmental Pollution Monitoring. John Wiley & Sons, Inc. New York, New York.
- Helsel, D. R. and R. M. Hirsh. 1992. Statistical Methods in Water Resources. Elsevier. New York, New York.

U.S. Environmental Protection Agency (EPA). 1994. Record of Decision, Dutchtown Treatment Plant, Ascension Parish, LA. Operable Unit 01, Groundwater. EPA/ROD/R06-94/088. June 20.

U.S. Geological Survey (USGS). 2002. Memorandum from Roger Lee, Hydrogeologist, USGS to Stephen Tzhone, RPM, USEPA. Comments on Fifth Year Natural Attenuation Evaluation Report. July 31.

**APPENDIX B**  
**SITE VISIT REPORT**  
**(31 Pages)**

Five-Year Review Site Visit Report  
for the  
Dutchtown Treatment Plant Superfund Site  
Ascension Parish, Louisiana

June 26, 2002

PREPARED BY:

Region 6  
U.S. Environmental Protection Agency  
Dallas, TX 75202-2733

Work Assignment No.	:	934-FRFE-06ZZ
EPA Region	:	6
Date Prepared	:	June 26, 2002
Contract No.	:	68-W6-0037
Prepared by	:	Tetra Tech EM Inc.
Telephone No.	:	214-754-8765
EPA Work Assignment Manager	:	Mr. Stephen Tzhone
Telephone No.	:	(214) 665-8409

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3.0 SITE VISIT ACTIVITIES .....	3
4.0 FINDINGS .....	3
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## ACRONYMS AND ABBREVIATIONS

AGM	ARCADIS Geraghty & Miller, Inc.
bgs	Below ground surface
BTEX	Benzene, toluene, ethylbenzene, and xylene
Dutchtown	Dutchtown Treatment Plant
EPA	U.S. Environmental Protection Agency
ERA	Expedited Response Action
LDEQ	Louisiana Department of Environmental Quality
µg/L	Microgram per liter
NPL	National Priorities List
O&M	Operations and maintenance
ppm	Parts per million
PRP	Potentially responsible party
RA	Remedial action
RAC	Response Action Contract
RI/FS	Remedial investigation/feasibility study
ROD	Record of Decision
Tetra Tech	Tetra Tech EM Inc.

## 1.0 INTRODUCTION

Tetra Tech EM Inc. (Tetra Tech) received Work Assignment No. 934-FRFE-06ZZ from the U.S. Environmental Protection Agency (EPA) under Response Action Contract (RAC) No. 68-W6-0037. Under this work assignment, Tetra Tech is authorized to conduct a five-year review of the remedial action (RA) implemented at the Dutchtown Treatment Plant (Dutchtown) Superfund site, hereinafter referred to as the site.

Tetra Tech visited the site to verify that all components of the remedies are operating in accordance with criteria established in the Record of Decision (ROD). This report summarizes the results of that visit.

## 2.0 BACKGROUND

The Dutchtown site is a former waste oil reclamation plant located at the intersection of Interstate Highway 10 and Louisiana Highway 74 near Dutchtown in Ascension Parish, Louisiana (Figure 1). The site covers approximately 5 acres, and is surrounded by residential and commercial property. The 1994 ROD reported that the population within a 1-mile radius of the site was 1,836, of which approximately 369 people were located within the Dutchtown community.

Between 1965 and 1982, the site received waste oils and other waste materials (solvents and petrochemical wastes) from off-site sources, processed them, and redistributed them. In 1984, after the State suspended operations at the site and the facility owners failed to properly close the site in accordance with regulations, the site was declared abandoned. Following Louisiana Department of Environmental Quality (LDEQ's) presentation of a closure strategy for the site, EPA conducted a series of site investigations in 1985 and investigative sampling in 1986 and 1987. Emergency response was required in 1987 to clean up a spill on site that had resulted from vandalism.

The site was proposed for inclusion on the National Priorities List (NPL) on January 22, 1987, and was promulgated on the NPL on July 27, 1987. In 1988, EPA issued an action memorandum to perform an Expedited Response Action (ERA). In 1990, the potentially responsible parties (PRP) signed a consent

decree to design and implement the ERA. The ERA was conducted from January 1991 through August 1991. It involved the removal of 449,810 gallons of waste oil from the holding pond, waste oil pit, and tanks, as well as the removal and treatment of 3,451,999 gallons of stormwater from the pits and holding ponds. Contaminated water seeped into the excavated pond, which led to the installation of a french drain that would enable recovery and treatment during the remedial investigation/feasibility study (RI/FS) phase. A total of 75,792 gallons of ground water was recovered through August 1992. The pond and pit were backfilled with 4,400 cubic yards of fly ash-stabilized soil that had been washed to reduce benzene concentrations below 4 parts per million (ppm). The site was also surrounded by a 6-foot chain link fence.

The RI/FS for the site was conducted from August 1989 to June 1994. Of the two shallow water bearing units from 0 feet to 14 feet below ground surface (bgs), and from 30 feet to 35 feet bgs, only the upper unit was found to be contaminated. The shallowest water bearing zone used for drinking water supply was encountered at 100 feet bgs, and extended to 300 feet bgs. Contaminant transport modeling predicted that contaminant concentrations would be well below maximum contaminant levels before they reached this aquifer. Surface and subsurface soils were found to be contaminated near their on-site sources. However, surface contamination either lay below a clay cap or fill material that was placed during the ERA, and therefore did not present a risk. Subsurface soil contamination was found in the saturated zone and would be addressed with ground water contamination during the RA. The ROD for the site was signed on June 20, 1994.

The RA at the site included installing a new monitoring well east of Interstate Highway 10, plugging and abandoning a residential well, inspecting the clay cap and fence, placing warning signs on the fence, and conducting the first quarterly ground water sampling event.

O&M at the site has included sampling and analyzing the ground water for benzene, toluene, ethylbenzene, and xylene (BTEX). The first quarter of sampling was conducted during the RA, and the next three during the first year of operation and maintenance (O&M). Thereafter, ground water sampling has been conducted on a semi-annual basis. Other O&M activities have included inspection and maintenance of the monitoring wells, fence, and clay cap on an annual basis.



### **3.0 SITE VISIT ACTIVITIES**

A site visit was conducted on June 12, 2002, to assess the condition of the site and determine if the measures employed to protect human health and the environment from the contaminants still present at the site were still effective.

The following individuals attended the site inspection:

- Robert Holden, Chairman, Dutchtown Steering Committee
- George Cramer, ARCADIS Geraghty & Miller, Inc. (AGM)
- Lance Fontenot, AGM
- Martha Germanis, Site owner
- Rick Reulet, Owner of neighboring property
- Thomas Stafford, LDEQ
- Stephen Tzhone, EPA
- Chitranjan Christian, Tetra Tech

The inspection evaluated the condition of some of the monitoring wells, the condition of the site drainage, vegetation, the condition of the clay cap, and the site fencing. Photographs taken during the site visit are presented in Exhibit A, and the completed five-year review site visit checklist is presented in Exhibit B. A summary of the findings from the site visit follows.

### **4.0 FINDINGS**

The weather conditions during the inspections were clear, dry, and warm. There were no visual signs or evidence of contamination at the site. With exceptions, most monitoring wells visually inspected were in good condition, clearly labeled, protected from impact, and securely encased (lock and cover). The

exceptions were: (1) the hinge on monitoring well MW-8 was broken; (2) piezometer well P1 located west of MW-17 was not locked; and (3) excess vegetation was noticed around off-site monitoring well MW-12. Off-site monitoring wells MW-1 and MW-15 were not inspected as the access gate was locked.

A wooden shack south of the clay cap houses the pump for an on-site water well that was installed during the RA. The well is no longer in use.

The french drain (Figure 2) that was installed prior to the RA to extract ground water is no longer in use. A riser, which is capped and locked, provides access to it. It was learned during the site visit that purge water produced during sampling events is disposed of into the french drain.

The grass cover at the site, including that on the clay cap, appeared well maintained. According to AGM (PRP contractor), the site is mowed every month. No erosion ruts or holes were observed on the cap. Monument elevations to monitor for settlement of the clay cap were not part of O&M for this site, therefore, no inferences can be drawn on the integrity of the cap from that respect.

Excessive vegetative growth was observed along the fence. The fence currently appears to be structurally sound, but some of the vegetation may need to be cleared to maintain its integrity and preserve its functionality as an access restriction.

Sampling techniques were discussed with the AGM representatives, and it appears that sampling has been conducted in accordance with the O&M work plan.

The influence of drought on the observed increase in concentrations during the last reported monitoring event was discussed with AGM personnel. According to AGM, there seemed to be a correlation between changes in ground water elevations and changes in concentrations. For wells where contaminants have been consistently detected, an increase in ground water elevation seemed to show a corresponding increase in contaminant concentrations, and a decrease in elevation corresponded to a

surface seems to indicate that concentration in ground water reflects concentration in soil in contact with it.

The issue of discontinued sampling of Dutchtown Middle School wells after May 1999 was discussed with AGM personnel. It was explained that these wells were no longer sampled after analyses had consistently failed to detect BTEX.

The following costs, according to the PRP's records, were incurred due to activities associated with the site.

**COSTS FOR ACTIVITIES ASSOCIATED WITH THE SITE**

<b>Cost Reporting Period</b>	<b>O&amp;M Costs</b>
April 1997 through March 1998	\$31,000
April 1998 through March 1999	\$38,000
April 1999 through March 2000	\$24,000
April 2000 through March 2001	\$15,000
April 2001 through March 2002	\$21,000
April 2002 through Present	\$7,000

Notes:

O&M            Operation and Maintenance

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## 5.0 REFERENCES

- ARCADIS Geraghty & Miller, Inc. (AGM). 1998. Revised 1<sup>st</sup> Year Natural Attenuation Evaluation Report, Dutchtown Oil Treatment Site. Prepared for Dutchtown Steering Committee by ARCADIS Geraghty & Miller, Baton Rouge, LA. LA1511.0001.00003. September 2.
- AGM. 1999. 2nd Year Natural Attenuation Evaluation Report, Dutchtown Oil Treatment Site. Prepared for Dutchtown Steering Committee by ARCADIS Geraghty & Miller, Baton Rouge, LA. LA1511.0004. October 4.
- AGM. 2000. 3rd Year Natural Attenuation Evaluation Report, Dutchtown Oil Treatment Site. Prepared for Dutchtown Steering Committee by ARCADIS Geraghty & Miller, Baton Rouge, LA. LA001918.0001. August 9.
- AGM. 2001. 4th Year Natural Attenuation Evaluation Report, Dutchtown Oil Treatment Site. Prepared for Dutchtown Steering Committee by ARCADIS Geraghty & Miller, Baton Rouge, LA. LA002026.0001. August 1.
- Geraghty & Miller, Inc. (Geraghty & Miller). 1997a. Operation and Maintenance Work Plan, Dutchtown Oil Treatment Site. Prepared for Dutchtown Steering Committee by Geraghty & Miller, Baton Rouge, LA. G&M Project No. LA1511.001. July.
- Geraghty & Miller. 1997b. Addendum to Health and Safety Plan, Dutchtown Oil Treatment Site. Prepared for Dutchtown Steering Committee by Geraghty & Miller, Baton Rouge, LA. G&M Project No. LA1511.001. July.
- Geraghty & Miller. 1997c. Revised Remedial Action Report, Dutchtown Oil Treatment Site. Prepared for Dutchtown Steering Committee by Geraghty & Miller, Baton Rouge, LA. G&M Project No. LA1511.001.003. December.
- U.S. Environmental Protection Agency (EPA). 1994. Record of Decision, Dutchtown Treatment Plant, Ascension Parish, LA. Operable Unit 01, Groundwater. EPA/ROD/R06-94/088. June 20.
- U.S. Environmental Protection Agency (EPA). 1994. Record of Decision, Dutchtown Treatment Plant, Ascension Parish, LA. Operable Unit 01, Groundwater. EPA/ROD/R06-94/088. June 20.

**EXHIBIT A**  
**PHOTOGRAPHS**  
**(4 Pages)**

**EXHIBIT B**  
**SITE VISIT CHECKLIST**  
**(13 Pages)**







10. Daily Access/Security Logs  Readily available  Up to date  N/A  
 Remarks: \_\_\_\_\_

**IV. O&M COSTS**

**1. O&M Organization**

- State in-house  Contractor for State  
 PRP in-house  Contractor for PRP  
 Other

**2. O&M Cost Records**

- Readily available  Up to date  
 Funding mechanism/agreement in place  Original O&M cost estimate  
 Breakdown attached

<u>Date</u>		<u>Total annual cost by year for review period, if available</u>		<u>Total Cost</u>
From	to	<u>Date</u>		
From	to	-	-	<input type="checkbox"/> Breakdown attached
From	to	-	-	<input type="checkbox"/> Breakdown attached
From	to	-	-	<input type="checkbox"/> Breakdown attached
From	to	-	-	<input type="checkbox"/> Breakdown attached
From	to	-	-	<input type="checkbox"/> Breakdown attached
From	to	-	-	<input type="checkbox"/> Breakdown attached
From	to	-	-	<input type="checkbox"/> Breakdown attached
From	to	-	-	<input type="checkbox"/> Breakdown attached

**3. Unanticipated or Unusually High O&M Costs During Review Period**

Nothing was noted.

**V. ACCESS AND INSTITUTIONAL CONTROLS**  Applicable  N/A

**A. Fencing**

1. Fencing damaged  Location shown on site map  Gates secured  N/A  
 Remarks: Excessive vegetative growth along fence that could cause damage.

**B. Other Access Restrictions**

1. Signs and other security measures  Location shown on site map  N/A  
 Remarks: Monitoring wells closed and locked.

**C. Institutional Controls**

**1. Implementation and enforcement**

Site conditions imply ICs not properly implemented  Yes  No  N/A  
Site conditions imply ICs not being fully enforced  Yes  No  N/A

Type of monitoring (e.g., self-reporting, drive by) Ground water monitoring  
Frequency Semi-annual  
Responsible party/agency PRP  
Contact

Name	Title	Date	Phone no.
<u>Robert Holden</u>	<u>Chairman, Dutchtown Steering Committee</u>	<u>6/12/02</u>	<u>(714) 449-8926</u>

Reporting is up-to-date  Yes  No  N/A  
Reports are verified by the lead agency  Yes  No  N/A

Specific requirements in deed or decision documents have been met  Yes  No  N/A  
Violations have been reported  Yes  No  N/A  
Other problems or suggestions:  Report attached  
\_\_\_\_\_.

**2. Adequacy**  ICs are adequate  ICs are inadequate  N/A

Remarks: Institutional controls in the form of deed notices have not yet been implemented.

**D. General**

**1. Vandalism/trespassing**  Location shown on site map  No vandalism evident

Remarks: \_\_\_\_\_

**2. Land use changes onsite**  N/A

Remarks: \_\_\_\_\_

**3. Land use changes offsite**  N/A

Remarks: \_\_\_\_\_

**VI. GENERAL SITE CONDITIONS**

**A. Roads**  Applicable  N/A

**1. Roads damaged**  Location shown on site map  Roads adequate  N/A

Remarks:

**B. Other Site Conditions**

Remarks:

**VII. LANDFILL COVERS**  Applicable  N/A

<b>A. Landfill Surface</b>		
<b>1. Settlement</b> (Low spots) Areal extent Depth Remarks: <u>Obtaining elevations to measure monument settlement not part of O&amp;M work plan.</u>	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Depth	<input checked="" type="checkbox"/> Settlement not evident
<b>2. Cracks</b> Lengths Remarks:	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Widths	<input checked="" type="checkbox"/> Cracking not evident <input type="checkbox"/> Depths
<b>3. Erosion</b> Areal extent Remarks:	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Depth	<input checked="" type="checkbox"/> Erosion not evident
<b>4. Holes</b> Areal extent Remarks:	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Depth	<input checked="" type="checkbox"/> Holes not evident
<b>5. Vegetative Cover</b> <input checked="" type="checkbox"/> Grass <input checked="" type="checkbox"/> Cover properly established <input type="checkbox"/> No signs of stress <input type="checkbox"/> Trees/Shrubs (indicate size and locations on a diagram) Remarks: In general, vegetative cover is well maintained. However, there is excessive vegetation very close to the northwest corner of the clay cap.		
<b>6. Alternative Cover</b> (armored rock, concrete, etc.) <input checked="" type="checkbox"/> N/A Remarks:		
<b>7. Bulges</b> Areal extent Remarks:	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Depth	<input checked="" type="checkbox"/> Bulges not evident
<b>8. Wet Areas/Water Damage</b> <input checked="" type="checkbox"/> Wet areas/water damage not evident <input type="checkbox"/> Wet areas <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Areal extent <input type="checkbox"/> Ponding <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Areal extent <input type="checkbox"/> Seeps <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Areal extent <input type="checkbox"/> Soft subgrade <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Areal extent <u>Remarks:</u>		
<b>9. Slope Instability</b> Areal extent Remarks:	<input type="checkbox"/> Slides <input type="checkbox"/> Location shown on site map	<input checked="" type="checkbox"/> No evidence of slope instability

<b>B. Benches</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A (Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)		
<b>1. Flows Bypass Bench</b> Remarks:	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A or okay
<b>2. Bench Breached</b> Remarks:	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A or okay
<b>3. Bench Overtopped</b> Remarks:	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A or okay
<b>C. Letdown Channels</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A (Channel lined with erosion control mats, rip rap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)		
<b>1. Settlement</b> Areal extent Depth Remarks:	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of settlement
<b>2. Material Degradation</b> Material type Remarks:	<input type="checkbox"/> Location shown on site map Areal extent	<input type="checkbox"/> No evidence of degradation
<b>3. Erosion</b> Areal extent Remarks:	<input type="checkbox"/> Location shown on site map Depth	<input type="checkbox"/> No evidence of erosion
<b>4. Undercutting</b> Areal extent Remarks:	<input type="checkbox"/> Location shown on site map Depth	<input type="checkbox"/> No evidence of undercutting
<b>5. Obstructions</b> <input type="checkbox"/> Location shown on site map Size Remarks:	Type Areal extent	<input type="checkbox"/> No obstructions
<b>6. Excessive Vegetative Growth</b> <input type="checkbox"/> No evidence of excessive growth <input type="checkbox"/> Vegetation in channels does not obstruct flow <input type="checkbox"/> Location shown on site map Remarks:	Type Areal extent	

<b>D. Cover Penetrations</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
<b>1. Gas Vents</b> <input type="checkbox"/> Active <input type="checkbox"/> Passive			
<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
<input type="checkbox"/> Evidence of leakage at penetration		<input type="checkbox"/> Needs O&M	<input type="checkbox"/> N/A
Remarks:			
<b>2. Gas Monitoring Probes</b>			
<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
<input type="checkbox"/> Evidence of leakage at penetration		<input type="checkbox"/> Needs O&M	<input type="checkbox"/> N/A
Remarks:			
<b>3. Monitoring Wells (within surface area of landfill)</b>			
<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
<input type="checkbox"/> Evidence of leakage at penetration		<input type="checkbox"/> Needs O&M	<input type="checkbox"/> N/A
Remarks:			
<b>4. Leachate Extraction Wells</b>			
<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled	<input type="checkbox"/> Good condition
<input type="checkbox"/> Evidence of leakage at penetration		<input type="checkbox"/> Needs O&M	<input type="checkbox"/> N/A
Remarks:			
<b>5. Settlement Monuments</b> <input type="checkbox"/> Located <input type="checkbox"/> Routinely surveyed <input checked="" type="checkbox"/> N/A			
Remarks:			
<b>E. Gas Collection and Treatment</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
<b>1. Gas Treatment Facilities</b>			
<input type="checkbox"/> Flaring	<input type="checkbox"/> Thermal destruction	<input type="checkbox"/> Collection for reuse	
<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs O&M		
Remarks:			
<b>2. Gas Collection Wells, Manifolds, and Piping</b>			
<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs O&M		
Remarks:			
<b>3. Gas Monitoring Facilities (e.g., gas monitoring of adjacent homes or buildings)</b>			
<input type="checkbox"/> Good condition	<input type="checkbox"/> Needs O&M	<input type="checkbox"/> N/A	
Remarks:			
<b>F. Cover Drainage Layer</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A			
<b>1. Outlet Pipes Inspected</b> <input type="checkbox"/> Functioning <input type="checkbox"/> N/A			
Remarks:			

<b>2. Outlet Rock Inspected</b>		<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
Remarks:			
<b>G. Detention/Sedimentation Ponds</b>		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
<b>1. Siltation</b>	Areal extent	Depth	<input type="checkbox"/> N/A
<input type="checkbox"/> Siltation not evident			
Remarks:			
<b>2. Erosion</b>	Areal extent	Depth	
<input type="checkbox"/> Erosion not evident			
Remarks:			
<b>3. Outlet Works</b>		<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
Remarks:			
<b>4. Dam</b>		<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
Remarks:			
<b>H. Retaining Walls</b>		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
<b>1. Deformations</b>	Horizontal displacement Rotational displacement	Vertical displacement	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Deformation not evident
Remarks:			
<b>2. Degradation</b>			<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Degradation not evident
Remarks:			
<b>I. Perimeter Ditches/Off-Site Discharge</b>		<input type="checkbox"/> Applicable	<input checked="" type="checkbox"/> N/A
<b>1. Siltation</b>	Areal extent	Depth	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Siltation not evident
Remarks:			
<b>2. Vegetative Growth</b>	<input type="checkbox"/> Vegetation does not impede flow	Type	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A
Areal extent			
Remarks:			
<b>3. Erosion</b>	Areal extent	Depth	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Erosion not evident
Remarks:			

<b>4. Discharge Structure</b> Remarks:	<input type="checkbox"/> Functioning <input type="checkbox"/> N/A
<b>VIII. VERTICAL BARRIER WALLS</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
<b>1. Settlement</b> Areal extent Remarks:	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> Settlement not evident <input type="checkbox"/> Depth
<b>2. Performance Monitoring</b> <input type="checkbox"/> Performance not monitored Frequency Head differential Remarks:	Type of monitoring  <input type="checkbox"/> Evidence of breaching
<b>IX. GROUND WATER/SURFACE WATER REMEDIES</b> <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A	
<b>A. Ground Water Extraction Wells, Pumps, and Pipelines</b> <input checked="" type="checkbox"/> Applicable <input type="checkbox"/> N/A	
<b>1. Pumps, Wellhead Plumbing, and Electrical</b> <input type="checkbox"/> Good condition <input type="checkbox"/> All required wells located <input type="checkbox"/> Needs O&M <input checked="" type="checkbox"/> N/A Remarks:	
<b>2. Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances</b> <input type="checkbox"/> Good condition <input type="checkbox"/> Needs O&M Remarks: <u>The french drain that was installed prior to the RA to extract ground water still exists. The drain is below grade and was not inspected. According to the PRP, it is being used to dispose of well purge water produced during sampling events.</u>	
<b>3. Spare Parts and Equipment</b> <input type="checkbox"/> Readily available <input type="checkbox"/> Good condition <input type="checkbox"/> Requires upgrade <input type="checkbox"/> Needs to be provided Remarks:	
<b>B. Surface Water Collection Structures, Pumps, and Pipelines</b> <input type="checkbox"/> Applicable <input checked="" type="checkbox"/> N/A	
<b>1. Collection Structures, Pumps, and Electrical</b> <input type="checkbox"/> Good condition <input type="checkbox"/> Needs O&M Remarks:	

<p><b>2. Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances</b></p> <p><input type="checkbox"/> Good condition      <input type="checkbox"/> Needs O&amp;M</p> <p>Remarks:</p>
<p><b>3. Spare Parts and Equipment</b></p> <p><input type="checkbox"/> Readily available      <input type="checkbox"/> Good condition      <input type="checkbox"/> Requires upgrade      <input type="checkbox"/> Needs to be provided</p> <p>Remarks:</p>
<p><b>C. Treatment System</b>      <input type="checkbox"/> Applicable      <input checked="" type="checkbox"/> N/A</p>
<p><b>1. Treatment Train</b> (Check components that apply)</p> <p><input type="checkbox"/> Metals removal      <input type="checkbox"/> Oil/water separation      <input type="checkbox"/> Bioremediation</p> <p><input type="checkbox"/> Air stripping      <input type="checkbox"/> Carbon absorbers</p> <p><input type="checkbox"/> Filters</p> <p><input type="checkbox"/> Additive (e.g., chelation agent, flocculent)</p> <p><input type="checkbox"/> Others</p> <p><input type="checkbox"/> Good condition      <input type="checkbox"/> Needs O&amp;M</p> <p><input type="checkbox"/> Sampling ports properly marked and functional</p> <p><input type="checkbox"/> Sampling/maintenance log displayed and up to date</p> <p><input type="checkbox"/> Equipment properly identified</p> <p><input type="checkbox"/> Quantity of ground water treated annually</p> <p><input type="checkbox"/> Quantity of surface water treated annually</p> <p>Remarks:</p>
<p><b>2. Electrical Enclosures and Panels</b> (Properly rated and functional)</p> <p><input type="checkbox"/> N/A      <input type="checkbox"/> Good condition      <input type="checkbox"/> Needs O&amp;M</p> <p>Remarks:</p>
<p><b>3. Tanks, Vaults, Storage Vessels</b></p> <p><input type="checkbox"/> N/A      <input type="checkbox"/> Good condition      <input type="checkbox"/> Proper secondary containment      <input type="checkbox"/> Needs O&amp;M</p> <p>Remarks:</p>
<p><b>4. Discharge Structure and Appurtenances</b></p> <p><input type="checkbox"/> N/A      <input type="checkbox"/> Good condition      <input type="checkbox"/> Needs O&amp;M</p> <p>Remarks:</p>
<p><b>5. Treatment Building(s)</b></p> <p><input type="checkbox"/> N/A      <input type="checkbox"/> Good condition (esp. roof and doorways)      <input type="checkbox"/> Needs repair</p> <p><input type="checkbox"/> Chemicals and equipment properly stored</p> <p>Remarks:</p>



**6. Monitoring Wells (Pump and treatment remedy)**

- Properly secured/locked       Functioning       Routinely sampled       Good condition  
 All required wells located       Needs O&M       N/A

Remarks:

**D. Monitored Natural Attenuation**

**1. Monitoring Wells (Natural attenuation remedy)**

- Properly secured/locked       Functioning       Routinely sampled       Good condition  
 All required wells located       Needs O&M       N/A

Remarks: Monitoring well MW-8 has a broken hinge that needs replacement. Piezometer well P-1 needs a lock. As recorded in previous natural attenuation reports, monitoring wells MW-14 and MW-20 were destroyed, and could not be located. Monitoring wells MW-1 and MW-15 were not inspected as they were inaccessible.

## X. OTHER REMEDIES

If there are remedies applied at the site that are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.

## XI. OVERALL OBSERVATIONS

### A. Implementation of the Remedy

Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc).

The remedy at the site is to minimize infiltration through potentially contaminated regions of the former holding pond by maintaining a clay cap and monitoring natural attenuation in the shallow ground water. The remedy appears to be well implemented.

### B. Adequacy of O&M

Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.

O&M procedures are adequate. However, excessive foliage along fence that could damage it should be removed.

### C. Early Indicators of Potential Remedy Failure

Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future.

There are no indicators for potential remedy failure.

**D. Opportunities for Optimization**

Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy.

**APPENDIX C**

**SURVEYS**

**(12 Pages)**

**SUPERFUND SITE SURVEY - FORM A****Site Name:** Dutchtown Oil Treatment**EPA Work Assignment No.:** 934-FRFE-06ZZ**Subject:** 5-Year Review Background Information Survey**Date:** 07/09/2002**Contact Made By:****Name:** Stephen Tzhone**Title:** Remedial Project Manager**Organization:** U.S. EPA**Telephone No.:** (800) 533-3508  
**E-Mail:** tzhone.stephen@epa.gov**Street Address:** 1455 Ross Avenue, Suite 1200  
**City, State, Zip:** Dallas, Texas 75202**Name:** Chitranjan Christian**Title:** Environmental Engineer**Organization:** Tetra Tech EM Inc.**Telephone No.:** (214) 754-8765  
**E-Mail:** chit.christian@ttemi.com**Street Address:** 350 N. St. Paul St., Suite 2600  
**City, State, Zip:** Dallas, Texas 75201**Individual Contacted:****Name:** Ric Reulet**Title:** Owner of neighboring property**Organization:****Telephone No.:** (225) 673-6129  
**E-Mail Address:****Street Address:** 37254 Highway 74  
**City, State, Zip:** Geismar, LA 70734**Survey Questions**

Should you choose to respond, please return your survey in the enclosed envelope to Chitranjan Christian by June 20, 2002.

1. What is your impression of the project (general sentiment)?

The site has been managed in a professional manner.

2. What effect have site operations had on the surrounding community?

They have had little effect on community with the exception of well head on my property which only makes grass cutting harder.

3. Are you aware of any community concerns regarding the site or its operation and administration? If so, please provide details.

Am aware of none.

**SUPERFUND SITE SURVEY - FORM A (continued)**

**Site Name:** Dutchtown Oil Treatment

**EPA Work Assignment No.:** 934-FRFE-06ZZ

**Subject:** 5-Year Review Background Information Survey

**Date:** 07/09/2002

**Survey Questions (Cont.)**

4. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please provide details.

None.

5. Do you feel well informed about the site's activities and progress?

No.

6. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?

Keep me informed of any changes.

**SUPERFUND SITE SURVEY - FORM A****Site Name:** Dutchtown Oil Treatment**EPA Work Assignment No.:** 934-FRFE-06ZZ**Subject:** 5-Year Review Background Information Survey**Date:** 06/07/2002**Contact Made By:****Name:** Stephen Tzhone**Title:** Remedial Project Manager**Organization:** U.S. EPA**Telephone No.:** (800) 533-3508**Street Address:** 1455 Ross Avenue, Suite 1200**E-Mail:** tzhone.stephen@epa.gov**City, State, Zip:** Dallas, Texas 75202**Name:** Chitranjan Christian**Title:** Environmental Engineer**Organization:** Tetra Tech EM Inc.**Telephone No.:** (214) 754-8765**Street Address:** 350 N. St. Paul St., Suite 2600**E-Mail:** chit.christian@ttemi.com**City, State, Zip:** Dallas, Texas 75201**Individual Contacted:****Name:** Martha Germanis**Title:** Site Owner**Organization:****Telephone No.:** (504) 277-4880**Street Address:** 3804 Karen Dr**E-Mail Address:****City, State, Zip:** Chalmette, LA 70043-2553**Survey Questions**

Should you choose to respond, please return your survey in the enclosed envelope to Chitranjan Christian by June 15, 2002.

1. What is your impression of the project (general sentiment)?

Seems to be well managed.

2. What effect have site operations had on the surrounding community?

Unaware of any effect on surrounding community since we do not live in immediate area.

3. Are you aware of any community concerns regarding the site or its operation and administration? If so, please provide details.

Not aware.

**SUPERFUND SITE SURVEY - FORM A (continued)**

**Site Name:** Dutchtown Oil Treatment

**EPA Work Assignment No.:** 934-FRFE-06ZZ

**Subject:** 5-Year Review Background Information Survey

**Date:** 5/23/2002

**Survey Questions (Cont.)**

4. Are you aware of any events, incidents, or activities at the site such as vandalism, trespassing, or emergency responses from local authorities? If so, please provide details.

Have no knowledge.

5. Do you feel well informed about the site's activities and progress?

Yes.

6. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?

None at this time.



**SUPERFUND SITE SURVEY - FORM B**

<b>Site Name:</b> Dutchtown Oil Treatment	<b>EPA Work Assignment No.:</b> 934-FRFE-06ZZ
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<b>Subject:</b> 5-Year Review Local Authority Survey	<b>Date:</b> 5/23/2002
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**Contact Made By:**

<b>Name:</b> Stephen Tzhone	<b>Title:</b> Remedial Project Manager	<b>Organization:</b> U.S. EPA
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<b>Telephone No.:</b> (800) 533-3508 <b>E-Mail:</b> tzhone.stephen@epa.gov	<b>Street Address:</b> 1455 Ross Avenue, Suite 1200 <b>City, State, Zip:</b> Dallas, Texas 75202
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<b>Name:</b> Chitranjan Christian	<b>Title:</b> Environmental Engineer	<b>Organization:</b> Tetra Tech EM Inc.
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<b>Telephone No.:</b> (214) 754-8765 <b>E-Mail:</b> chit.christian@ttemi.com	<b>Street Address:</b> 350 N. St. Paul St., Suite 2600 <b>City, State, Zip:</b> Dallas, Texas 75201
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**Individual Contacted:**

<b>Name:</b> Tom Stafford	<b>Title:</b> Environmental Scientist	<b>Organization:</b> Louisiana Department of Environmental Quality
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<b>Telephone No.:</b> (225) 765-0487 <b>E-Mail Address:</b> tstafford@deq.state.la.us	<b>Street Address:</b> 7290 Bluebonnet Blvc. <b>City, State, Zip:</b> Baton Rouge, LA 70810
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**Survey Questions**

Should you choose to respond, please return your survey via email, or postal service to Chitranjan Christian by June 15, 2002.

1. What is your impression of the project (general sentiment)?  
  
The work is complete. The site features are being well maintained.
  
2. Has your office conducted routine communications or activities (site visits, inspections, reporting activities, etc.) regarding the site? If so, please provide the purpose and results.  
  
We go out periodically to make sure that the fences are in place and that none of the wells have been vandalized.
  
3. Have there been any complaints, violations, or other incidents related to the site requiring a response by your office? If so, please provide details of the events and the results of the responses.  
  
Mrs. Germanis wants to either sell or lease the site. I have frequently been called upon to discuss the limitations on use of the site.

**SUPERFUND SITE SURVEY - FORM B (continued)**

**Site Name:** Dutchtown Oil Treatment

**EPA Work Assignment No.:** 934-FRFE-06ZZ

**Subject:** 5-Year Review Local Authority Survey

**Date:** 5/23/2002

**Survey Questions (Cont.)**

4. Do you feel well informed about the site's activities and progress?

Yes.

5. Have there been any changes in State laws and regulations that may impact the protectiveness of the ground water or soil remedies?

The laws would not change the "protectiveness" of the remedies. They would still function as well. But, no there are no regulatory requirements that would cause us to revisit the remedy.

6. Has the site been in compliance with permitting and reporting requirements?

Yes.

7. Do you have any comments, suggestions, or recommendations regarding the site's management or operation?

No.

**SUPERFUND SITE SURVEY - FORM C**

<b>Site Name:</b> Dutchtown Oil Treatment	<b>EPA Work Assignment No.:</b> 934-FRFE-06ZZ
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<b>Subject:</b> 5-Year Review Operation and Maintenance Survey	<b>Date:</b> 05/23/2002
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**Contact Made By:**

<b>Name:</b> Stephen Tzhone	<b>Title:</b> Remedial Project Manager	<b>Organization:</b> U.S. EPA
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<b>Telephone No.:</b> (214) 665-8409 <b>E-Mail:</b> tzhone.stephen@epa.gov	<b>Street Address:</b> 1455 Ross Avenue, Suite 1200 <b>City, State, Zip:</b> Dallas, Texas 75202
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<b>Name:</b> Chitranjan Christian	<b>Title:</b> Environmental Engineer	<b>Organization:</b> Tetra Tech EM Inc.
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<b>Telephone No.:</b> (214) 754-8765 <b>E-Mail:</b> chit.christian@ttemi.com	<b>Street Address:</b> 350 N. St. Paul St., Suite 2600 <b>City, State, Zip:</b> Dallas, Texas 75201
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**Individual Contacted:**

<b>Name:</b> Robert E. Holden	<b>Title:</b> Chairman, Dutchtown Steering Committee	<b>Organization:</b> Liskow & Lewis
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<b>Telephone No.:</b> (504) 556-4130 <b>E-Mail Address:</b> reholden@liskow.com	<b>Street Address:</b> 701 Poydras Street, Suite 5000 <b>City, State, Zip:</b> New Orleans, LA 70139-5099
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**Survey Questions**

Should you choose to respond, please return your survey via e-mail, or postal service to Chitranjan Christian by June 15, 2002.

1. What is your impression of the project (general sentiment)?

The project has progressed as originally envisioned. The ground water quality database assimilated through the ROD stipulated ground water monitoring program has demonstrated there is only a small, isolated area of constituents of concern (COCs) in shallow ground water in the immediate area of the Closed Holding Pond. It has been demonstrated that the COCs are being attenuated and degraded by naturally occurring biological processes. There are no indications of any off-site migration of the COCs. The remaining concentrations of COCs in shallow ground water are at a level that a risk assessment can be performed to demonstrate they do not pose a threat to human health or the environment.

**SUPERFUND SITE SURVEY - FORM C**

**Site Name:** Dutchtown Oil Treatment

**EPA Work Assignment No.:** 934-FRFE-96ZZ

**Subject:** 5-Year Review Operation & Maintenance Survey

**Date:** 5/23/2002

**Survey Questions (Continued)**

2. Please describe the on-site operation and maintenance (O&M) presence, including staff, frequency of site inspections, and (O&M) activities.

Ground water sampling events and routine monitor well O&M activities have been conducted in accordance with the schedule presented in the ROD (quarterly during the first two years, semiannually during years three through five). Inspections of the clay cap and security fence have been conducted on an annual basis in accordance with the schedule presented in the ROD. The results of these activities are documented in each annual report submitted to the agency. These activities are performed by ARCADIS (Baton Rouge, Louisiana office).

During the growing season, the site is mowed approximately once a month. These activities are performed by ProTech as a subcontractor to ARCADIS.

3. Please describe any significant changes in the O&M requirements, maintenance schedules, or sampling routines since start-up or in the last 5 years. Do they affect the protectiveness or effectiveness of the remedy?

No significant changes have occurred.

4. Have the O&M manual and Health and Safety Plan been updated to reflect site changes?

No changes to the site have occurred, therefore, the O&M manual and HASP have not required any updates.

5. Have there been unexpected O&M difficulties or costs at the site since start-up or in the last 5 years? If so, please provide details.

None

6. Can you provide insight to potential O&M problems?

N/A

7. Do you have any comments, suggestions, or recommendations regarding the project?

The Expedited Removal Action (ERA) conducted from 1991-92 and the Monitored Natural Attenuation Remedy conducted from 1997 to the present have successfully remediated the risks to public health and the environment. The Dutchtown Refining Site Participating Group believes that EPA should determine that the Monitored Natural Attenuation Remedy selected in the Record of Decision is complete. The following will summarize the basis for concluding that the ROD has been satisfied and describe the post ROD issues affecting the site.

**SUPERFUND SITE SURVEY - FORM C**

**Site Name:** Dutchtown Oil Treatment

**EPA Work Assignment No.:** 934-FRFE-96ZZ

**Subject:** 5-Year Review Operation & Maintenance Survey

**Date:** 5/23/2002

**Survey Questions (Continued)**

Expedited Removal Action Activities.

The ERA resulted in removal of the sources of contamination at the site, including the removal of waste oils and sludges from the holding pond, waste oil pit, and above-ground storage tanks. Contaminated soils in the vicinity of the pond and pit were treated for the removal of organics (soil washing and exothermic reactions with fly ash). Soils in the pond area were treated to reduce benzene concentrations to below 4 ppm. The washed soils were stabilized with flyash and backfilled. The restoration activities in the pond area consisted of mounding the stabilized soil, capping it with 3535 cubic yards of clay and 1330 cubic yards of topsoil and seeding it. The area of the vertical storage tanks was also brought to grade with 118 cubic yards of clay and 406 cubic yards of topsoil and was then seeded. The clay cap was added to the pond area to eliminate pathways of exposure to the public or the environment.

Natural Attenuation Performance Standards Have Been Satisfied.

The Natural Attenuation remedy has substantially reduced the Constituents of Concern (COCs) in the ground water to meet the Performance Standards established in Section 6.0 of the Operation and Maintenance Work Plan, May 1997. Ground water monitoring during the remedy phase has shown that only benzene and ethylbenzene continue to be detected in shallow ground water. These constituents have been reduced in concentration to levels below the applicable action levels. The O&M Work Plan provides that ground water monitoring may be discontinued when the following three conditions are met:

- Concentrations of BTEX in ground water are acceptable from a risk assessment standpoint;
- Contaminant plume is stable through time and is not enlarging horizontally nor vertically; and
- Contaminant concentrations are decreasing through time

The ground water monitoring during the first five years of the remedy demonstrates that these conditions have been met. COC concentrations are now below the applicable action levels. The COC concentrations are below the action levels identified in the risk assessment as part of the Remedial Investigation and are also below action levels applicable under the Louisiana Risk Evaluation/Corrective Action Program (RECAP) regulation (LDEQ's RECAP is the successor to the proposed Risk Based Corrective Action Program referred to in the O&M Work Plan).

**SUPERFUND SITE SURVEY - FORM C**

**Site Name:** Dutchtown Oil Treatment

**EPA Work Assignment No.:** 934-FRFE-96ZZ

**Subject:** 5-Year Review Operation & Maintenance Survey

**Date:** 5/23/2002

**Survey Questions (Continued)**

The following ground water risk based corrective action levels were previously calculated for the site as presented in the USEPA approved document entitled *Operation and Maintenance Work Plan (Geraghty & Miller, July 1997)*.

Benzene (2.249 mg/L)  
Toluene (526 mg/L)  
Ethylbenzene (169 mg/L)  
Xylenes, Total (160 mg/L)

All ground water samples since the remedy phase have been below the risk assessment action levels, and therefore it is appropriate to discontinue ground water monitoring and to plug and abandon the ground water wells.

Alternatively, utilizing the June 2000 LDEQ RECAP regulation, the following risk based corrective action levels were obtained from RECAP Table 3, assuming the ground water is Classification 3 and conservatively assuming no dilution factor.

Benzene (0.013 mg/L)  
Toluene (46 mg/L)  
Ethylbenzene (8.1 mg/L)  
Xylenes, Total (43 mg/L)

Under the RECAP regulation, a "dilution factor" is used to account for attenuation through the migration of constituents to the nearest surface water body. The nearest surface water body is 1200 feet from the site, but is located upgradient from the direction of ground water flow at the site. Assuming a thickness of the impacted ground water zone of 6-10 ft and a distance of 1200 feet to the nearest surface water body, the resulting dilution factor would be 86. The nearest downgradient water body is located at least 4000 feet away from the site, yielding a dilution factor of 220. Using either dilution factor, all COCs measured in ground water since the remedy phase have been below the RECAP action levels.

Benzene and ethylbenzene are the only two COCs that have been detected in ground water. Natural attenuation has reduced COC concentrations to below applicable action levels as has been demonstrated in the Natural Attenuation Evaluation Reports (years one through four have previously been submitted, year five will be submitted in June 2002 and the sampling results from the May 2002 sampling are addressed herein). In MW-4A, the monitoring well with the highest original concentration of benzene (by a substantial margin), concentrations have been reduced by three orders of magnitude from 1992 to 2002, from approximately 10 mg/L to 0.0091mg/L. In MW-3A, one of the two monitoring wells with the highest original levels of ethylbenzene, concentrations have been reduced from approximately 10 mg/L in 1992 to 2.7 mg/L in 2002; MW-3, which also originally had ethylbenzene concentrations of 10 mg/L in 1992, has been reduced in 2002 to ethylbenzene

**SUPERFUND SITE SURVEY - FORM C**

**Site Name:** Dutchtown Oil Treatment

**EPA Work Assignment No.:** 934-FRFE-96ZZ

**Subject:** 5-Year Review Operation & Maintenance Survey

**Date:** 5/23/2002

**Survey Questions (Continued)**

concentrations of 0.96 mg/L. The sampling results show that the current concentrations of COCs comply with allowable residual standards. For more detail, please review the Natural Attenuation Evaluation Reports. The Dutchtown Refining Site Participating Group therefore recommends that ground water sampling be discontinued and that all ground water wells be plugged and abandoned.

Reduced Ground Water Monitoring as Alternative.

Alternatively, and only in the event the EPA concludes that the ROD has not been completed at the present time, sixteen of the twenty monitor wells at the site have consistently measured non-detects and should be plugged and abandoned. Only monitor wells that detect COCs should continue to be monitored as part of the remedy. All offsite monitor wells are in this category and should be plugged and abandoned (in clockwise order, MW-1, MW-15, MW-21, MW-9, MW-18, MW-10, MW-19, MW-12, and MW-13). Similarly, the following onsite wells should be plugged and abandoned, from south to north, MW-8, MW-17, MW-16, MW-2A, MW-2, MW-6, and MW-7. These data also demonstrate that the plume is stable and decreasing and that contaminant concentrations are decreasing through time.

Post-ROD Activities.

The Dutchtown Refining Site Refining Site Participating Group believes that the Monitored Natural Attenuation Remedy should be deemed successful and that EPA oversight activities should be concluded. The Post ROD issues to be addressed include the clay cap area, the French Drain, and restricted site access.

1. Post ROD Issues Affecting the Pond Area and the Clay Cap.

The inspection and maintenance of the clay cap may no longer be needed to protect public health and the environment. If the inspection and maintenance of the clay cap can be deleted from site requirements without the substantial expenditure of resources, EPA should consider deleting this requirement. The demonstrated success of natural attenuation in the ground water is likely to have been similarly achieved in the soils in the pond area under the clay cap. Because those soils met a 4 ppm benzene standard in 1992, similar natural attenuation to that observed in ground water would have reduced the benzenes concentrations below action levels, allowing for discontinuance monitoring and maintenance of the clay cap. Alternatively, institutional controls to eliminate access to the capped area should allow the discontinuance of cap monitoring and maintenance. However, it should be recognized that annual costs of the inspection and maintenance of the clay cap are not large enough to justify the substantial expenditure of agency or private resources unless the EPA agrees that site conditions warrant a determination that no further EPA involvement at the site is appropriate. (In other words, if the Participating Group must continue with site operations anyway, it will be most cost effective simply to continue inspection and maintenance of the clay cap).

**SUPERFUND SITE SURVEY - FORM C**

**Site Name:** Dutchtown Oil Treatment

**EPA Work Assignment No.:** 934-FRFE-96ZZ

**Subject:** 5-Year Review Operation & Maintenance Survey

**Date:** 5/23/2002

**Survey Questions (Continued)**

2. Post ROD Issues Affecting the French Drain.

The ROD required the maintenance of the French Drain as a contingency remedy. The demonstrated effectiveness of the natural attenuation remedy shows that the French Drain may be closed in place. However, the French Drain is currently used for the re-injection of purge water from the site ground water monitor wells. If EPA agrees that the ground water monitoring should be discontinued, the French Drain should be closed. If EPA requires continued ground water monitoring, the French Drain should be left in place.

3. Post ROD Issues Affecting Site Access.

The Rod requires the restriction of site access through the use of fences and locked gates. If the remedy is deemed complete, and in an abundance of caution, the termination of EPA oversight should include a review of options to limit the use of the property to non-residential and non-food service commercial activities.



**APPENDIX D**

**PUBLIC NOTICE**

**(Two Pages)**

# **CAPITAL CITY PRESS**

Publisher of  
**THE ADVOCATE**

## ***PROOF OF PUBLICATION***

The hereto attached notice was published in **THE ADVOCATE**, a daily newspaper of general circulation published in Baton Rouge, Louisiana, and the Official Journal of the State of Louisiana, the City of Baton Rouge, and the Parish of East Baton Rouge, in the following issues:

**05/29/02**



**Legal/Public Notices Representative**

Sworn and subscribed before me  
by the person whose signature appears above  
in Baton Rouge, Louisiana, on

**May 29, 2002**



**Notary Public**

**My Commission Expires: Indefinite**

### **NOTICE**

The U.S. Environmental Protection Agency is currently conducting a Five-Year Review of the Dutchtown Treatment Plant Superfund site located at the intersection of Interstate Highway 10 and Louisiana Highway 74 in the vicinity of Dutchtown in Ascension Parish, Louisiana. The purpose of a Five-Year review is to determine whether the remedies chosen are protective of human health and the environment. Upon completion, the results of this Five-Year review will be made available to the public at the Ascension Parish Library repository. If you have any input or concerns regarding the activities taking place at the site, please contact Stephen Tzhone, EPA Remedial Project Manager at (800) 533-3508, or tzhone.stephen@epa.gov 2395326-may 29-11

**The Ascension Citizen**  
**PROOF OF PUBLICATION**

The hereto attached notice was published in *The Ascension Citizen*, a weekly newspaper of general circulation, published in Gonzales, Louisiana, Parish of Ascension in the issues of:

6/4 Public Notice

Samuel T. Sullivan  
Publisher

16.25 PAID IN FULL  
Total Cost of Publication

Proof of publication signed on this 14<sup>th</sup> day of June,  
in the year 2002.

Bradley Baker  
NOTARY SIGNATURE

6-21-04  
Term Expires

Attach copy below:

**PUBLIC NOTICE**

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**The Ascension Citizen**

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