EPA Region 5 Records Ctr.
283971

SITE ASSESSMENT REPORT
FOR
THE DIAMOND SHAMROCK SITE
PAINESVILLE TOWNSHIP, LAKE COUNTY, OHIO
TDD: S05-0110-002
DOCUMENT CONTROL NUMBER: 176-2A-ABCA

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Prepared for:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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Table of Contents

Section		Page
1	Introduction	1-1
2	Site Background	2-1
	2.1 Site Description	2-1
	2.2 Site History	2-1
3	Environmental Investigation Activities	3-1
	3.1 Historical Assessment and Investigation Activities	3-1
	3.2 Site Observations	3-3
4	Discussion of Potential Threats	4-1

Appendix		Page
A	Site Location Map	A-1
B	Site Photographs	B-1

SECTION 1

INTRODUCTION

During October 2001, the Roy F. Weston, Inc., (Weston®) Superfund Technical Assessment and Response Team (START) was directed by the United States Environmental Protection Agency (U.S. EPA) to assist U.S. EPA On-Scene Coordinator (OSC) Jim Augustyn by conducting a site assessment at the Diamond Shamrock Site in Painesville Township, Lake County, Ohio. The site assessment activities were conducted under Technical Direction Document (TDD) number S05-0110-002.

The objective of this site assessment was to gather site-specific information pertaining to previous activities at the site and how those activities have impacted, or may pose a threat, to the surrounding environment. Specific objectives of the site assessment are as follows:

Determine if previously documented hazardous wastes remain at the facility.

Conduct a site reconnaissance and document existing wastes at the site.

Compile background information, including laboratory data, as to the extent and parameters of hazardous wastes remaining at the facility.

Evaluate the potential for environmental, human health, and wildlife impacts of potential releases of hazardous materials from the site.

This site assessment report is organized into the following sections:

Introduction - The introduction provides a brief description of the objective and scope of the site

assessment activities.

Site Background - The site background provides a site description and a compressed site history of historical ownership, work activities, and operations at the site.

Environmental Investigation Activities - The environmental investigation activities section describes the site assessment activities including: U.S. EPA walk-through, documentation of site conditions, historical sample collection and analysis, and potential waste areas at the site.

Discussion of Potential Threats - The conclusions and recommendations section summarizes the findings of the investigation activities based on the environmental threats which exist at the site.

SECTION 2

SITE BACKGROUND

2.1 Site Description

The Diamond Shamrock Site (Site) is located along Fairport Nursery Road in Painesville Township, Lake County, Ohio (Figure 1). The geographical coordinates for the area of the site included in this investigation are latitude 41°45'37" N and longitude 81°15'13" W. The Site is located in a light industrial area on the shores of Lake Erie. The Site is comprised of an approximately 40-acre parcel of land, formerly part of an industrial 1,100-acre parcel, which was used as a coal coking and related treatment operations facility. The subject area is known as "Study Area 2" (based on historical Ohio EPA and U.S. EPA studies) and is bound on the north by Lake Erie and to the west, east, and south by lots overgrown with vegetation interspersed with remnants of the former 1,100-acre facility. At least one of the buildings on the 1,100-acre parcel formerly housed Diamond Shamrock operations and is currently being used for a small industrial business. Many areas of the 1,100-acre parcel are fenced. Residential and other light industry areas surround the 1,100-acre parcel to the east, west, and south. The Grand River, a navigable waterway, is located less than 1/8 mile to the south of the property.

2.2 Site History

The site history and summary of previous activities at the Site is based on historical documents provided to U.S. EPA from Ohio EPA and includes previous site investigation reports. The entire 1,100-acre former Diamond Shamrock facility has been subject to environmental investigations and is known as the Diamond Shamrock Painesville Works Site. Study Area 2, a 40-acre parcel included in the Diamond Shamrock Painesville Works Site investigations, consisted of a coal coking and related treatment operations that produced coke for use in Diamond Shamrock operations and for sale to foundries. This 40-acre property is the focus of this report. Diamond Shamrock operated by-product ovens to recover ammonia, gas, and tar

distillates from the coal coking processes. These by-products were used at other site processes or sold to outside parties. As part of the recovery process, waste ammonia liquors were generated and were then subsequently mixed with cooling water and storm drain water. This mixture, which exceeded discharge limits for several parameters including phenols, ammonia, oil and grease, and cyanide, was then directly discharged into Lake Erie. The Diamond Shamrock Site operated from 1924 through 1976 which was then sold to Erie Coke and Chemical Company in 1976 (a subsidiary of Mercier Corporation). The Erie Coke and Chemical Company continued the coal coking and recovery processes until September 1982. During operations, iron oxide metal filings and coke tar were created as waste products. The company was notified in 1984 that the iron oxide filings were toxic for chrome. Wastewater from Erie Coke and Chemical continued to contain ammonia, cyanide, phenols, oil and grease and no permit for discharge was obtained.

In July 1980, due to exceeding the regulations concerning the time period of hazardous materials storage, Erie Coke and Chemical was named as a small quantity generator and a treatment storage and/or disposal facility by Ohio EPA. In July 1984 the property was sold to National GG Industries. In December 1988, Mercier Corporation (parent company of Erie Coke and Chemical Company) merged with Scepter Management Corporation, Inc. into Scepter Management Corporation. Other former owners or associated companies include Ace Lakefront Properties, Inc., Scepter Management Corporation (successor to Mercier Corp.), and Chemical Land Holdings. The identified current owner of the 40-acre property is Erie-Coke Properties, Inc.

SECTION 3

ENVIRONMENTAL INVESTIGATION ACTIVITIES

3.1 Historical Assessment and Investigation Activities

Under order from a 27 September 1995 Ohio EPA Director's Final Findings and Orders, a Phase 1 assessment was conducted at the former Diamond Shamrock site in Study Area 2. As part of this investigation, *Secor* International Incorporated (consultant firm hired by the PRP group [*Secor*]) conducted a walk-through of the property in conjunction with the Ohio EPA. During the walk-through, partially demolished and unsafe structures were noted, some of which contained residual process materials. Seventeen separate areas were identified during the walk-through to be potential and/or suspect waste areas. The following items summarize some of the potential left-over process material identified to be present and is summarized from the *Documentation Report For Interim Remedial Measures At Study Area 2 Of The Diamond Shamrock Painesville Works Site* (*Secor*, 1999) . Although other materials were identified beyond those presented in the following list, these materials comprise the major areas of concern identified to be present at the site.

Black Tar Pile: A pile of approximately 80 cubic yards of black material was observed near the three-story process building in Study Area 2. A sample of the material was collected, after breaking through the hard and weathered surface of the pile, which was a black tar-like material. Analytical results of the sample revealed the presence of toxicity characteristic and leaching procedure (TCLP) levels of benzene at 3.1 milligrams per liter (mg/L). This material is in an open environment and is subject to weathering and potential leaching to surrounding areas.

91 Waste Piles: In addition to the black tar-like pile, 91 other piles of material were observed within the study area. These piles were divided into three categories based on the physical makeup of the material comprising each pile. Category 1 material, 89 of the 91 piles, consists of black,

silty fine to medium sand-like material, with traces of gravel, brick, and other debris as inclusions. One sample, a composite of these 89 piles, was collected from this category by the PRP contractor and submitted for laboratory analysis. The two remaining piles were each designated into their own respective category. Category 2 material was described as black, sand-sized, angular material similar to pulverized coal. Category 3 material was described as a fine, black, silty material with some colored inclusions. Two samples, one from each of the two remaining piles (Category 2 and 3), were collected and also submitted for laboratory analysis.

Category 1 material analytical results indicated the presence of polychlorinated biphenyls (PCBs), arsenic, benzo(a)flouranthene, beryllium, chromium, and chrysene. Since the sample submitted for analysis was composited from 89 separate piles, actual results in any one pile may be higher than or less than those received from the composite sample. Based on the analytical results reported, *Secor* labeled the material as non-hazardous (Table 3 of the above referenced report). The Category 2 pile was also labeled as non-hazardous. There was, however, the presence of detectable levels of arsenic, benzo(a)anthracene, benzo(a)pyrene, benzo(a)flouranthene, beryllium, and indeno(1,2,3-cd)pyrene in the material as detected by laboratory analysis. The Category 3 pile was also labeled as non-hazardous. Analysis of this material revealed the presence of detectable levels of arsenic, benzo(a)anthracene, benzo(a)pyrene, benzo(a)flouranthene, chromium, chrysene, dibenzo(a,h)anthracene, heptachlor epoxide, indeno(1,2,3-cd)pyrene, and lead.

Vertical Steel Storage Tanks (Process building): An estimated 13 cubic yards of residual waste, listed as K145 waste by previous assessments is present in the lines which ran from the tanks.

Cylindrical Tank (Process building): An approximate volume of 2,000 gallons of liquid which exceeds the characteristic of toxicity for benzene is present in the cylindrical tank located in the process building.

Gas Sphere: A gas sphere, whose supporting structure is crumbling and rusting, is present at the site and contains hazardous liquid waste. The liquid in the tank was sampled during the previously

mentioned event. Analytical results of the liquid revealed the presence of benzene at 50 milligrams per liter (mg/l) and cyanide at 25.5 mg/l.

Ohio EPA-Sampled Drums: One drum previously sampled by Ohio EPA (drum DS02), revealed the presence of lead in the material at 112 mg/l for toxicity characteristic leaching procedure lead. This material is therefore hazardous based on the definition of the characteristics of toxicity located in 40 Code of Federal Regulations.

3.2 Site Observations

On October 10, 2001, START accompanied U.S. EPA OSC Augustyn and Ohio EPA representatives on a walk-through of the site. START collected limited photo-documentation and video-documentation.

During the walk-through, START noted the black tar pile to the south of the process building as well as a spill coming from an opening in the northwest corner of the building (black, tar-like material of high viscosity). START also noted various 55-gallon drums at the property, and documented two drums in an on-site building which is located to the southeast of the process building.

To the east of the process building, and adjacent to Lake Erie, START noted a large spherical gasoline storage ball. START noted that the brick support structure and steel support structure are showing signs of disrepair. Previous sampling events at the facility indicate that there is approximately 11,200 gallons of benzene and cyanide contaminated liquid in the sphere. The final major area of note during the walkthrough was the location of two electrical transformers which have not yet been sampled. START documented the location of the transformers for future investigations.

In addition to the areas observed where known hazardous waste exists, many other waste materials were also noted. These areas include waste piles of granular material, various tanks and many 55-gallon drums.

4. Discussion of Potential Threats

Paragraph (b) (2) of Part 300.415 of the National Contingency Plan (NCP) lists factors to be considered when determining the appropriateness of a potential removal action at a site. The following discussion presents a summary of those factors which are applicable to the Diamond Shamrock site.

- **Actual or potential exposure of nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants.** Analytical results from samples collected by *Secor* in 1997 from the black tar pile (approximately 80 cubic yards of material), two tanks inside the process building (2,000 gallons of liquid, and 17 cubic yards of solid material), and a gas sphere (11,200 gallons), revealed levels of benzene up to 100 times the TCLP regulatory limit (0.5 mg/l) according to Title 40 Code of Federal Regulations (40 CFR) 261.24. In addition, K-listed wastes have been identified to be present in vertical steel storage tanks (13 cubic yards of material). In addition to the benzene-contaminated waste materials, the two tanks in the process building exhibit characteristics of K-listed wastes.

  A railroad tank car is on site with approximately 1,500 gallons of liquid. The material does not exhibit toxicity characteristics but does contain 82.3 mg/l of cyanide as well as dissolved PNA compounds. The lid to the tank car was not bolted or sealed.

  The black tar pile is uncovered and left exposed to the elements. During hot summer days tar flow does occur from the pile and additional contamination can occur via rain or animal contact. All containers on site have corroded parts which may fail at any time. Much of this waste is less than 100 yards from Lake Erie, and the shore of the lake has historically, and continues to, erode inland. Evidence of unauthorized pedestrian access (tire tracks, drink containers, trash, etc...) is abundant at the site. These individuals could come in contact with exposed waste and pose a release threat

of benzene-contaminated materials through acts of potential vandalism.

- **Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release.** During the site reconnaissance approximately 8 tanks of varying volume, and several drums were observed. All containers had rusted parts which may fail at any time. The black tar pile is exposed to the elements and tar flow is observable during hot days. A black tar-like material was observed to be slowly leaking from a vertical tank in an on-site building and flowing north toward Lake Erie. Historical documentation of the site details the flow of this material during warm weather and the hardening of this material in cold weather. These actions of the material are typical of the physical characteristics and properties of coal tar-type materials. With sufficient rainfall, contaminants can migrate from the pile and flow to other parts of the complex and directly into Lake Erie. Benzene releases to the ground during periods of rain should be considered a threat. The gas sphere holding approximately 11,200 gallons of highly benzene-contaminated material is rusting at the valves and on the structural supports. A failure of these valves or this tank in general would cause a direct release of this material to the ground and very likely directly into Lake Erie. Within 1 mile of this tank are two public beaches, two marinas, and the water intake for the City of Fairports drinking water plant. Additionally, two electrical transformers were observed on site and it is unknown if the oil in them is contaminated with poly-chlorinated biphenyls.

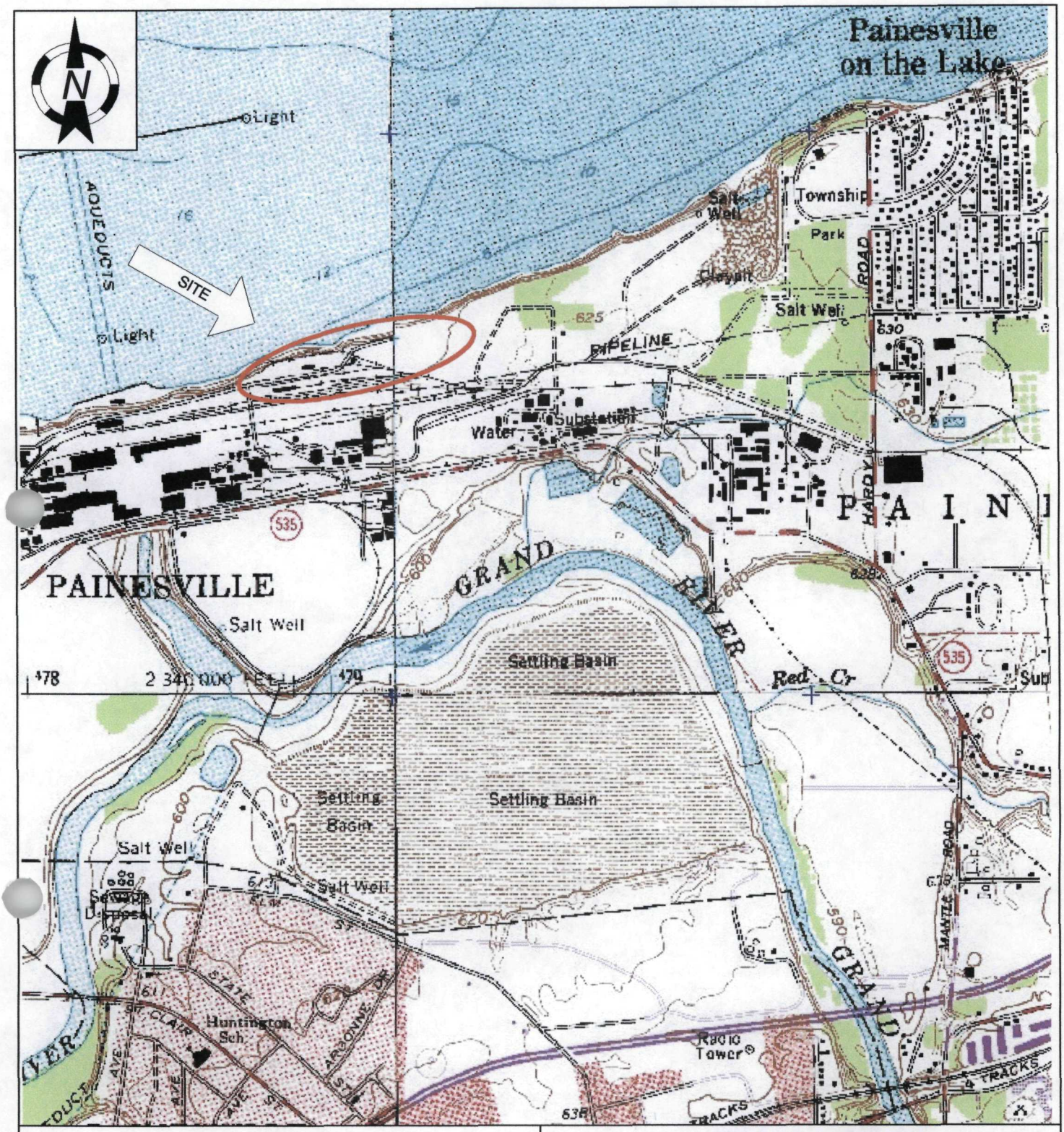
- **Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.** Northeast Ohio receives a substantial amount of rainfall during the spring and autumn seasons; winter temperatures are normally below freezing and significant snowfall occurs. This subjects structures to potential rusting and damage from freeze-thaw cycles. Weather conditions will continue to contribute to contaminated runoff from the black tar pile and will further degrade the bulk storage containers which are already rusting. Also, brick buildings and brick supports which

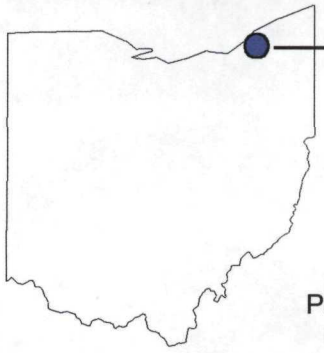
either house or support the tanks have been documented to be showing signs of wear and in some sections are crumbling.

- **The availability of other appropriate federal or state response mechanisms to respond to the release.** OEPA does not have adequate finances or resources to respond to a time-critical removal of this size.

Appendix A

Site Location Map





Painesville Township,
Lake County, Ohio

Roy F. Weston, Inc.
7123 Pearl Road, Suite 101
Middleburg Heights, Ohio

Superfund Technical Assistance and Response Team - 2
Region V

TITLE:	Site Location Map		
SITE:	Diamond Shamrock		
TDD:	S05-0110-002	**APPENDIX**	1
CITY: Painesville Twp.	**STATE:** OH	**SCALE:**	1:24,000
SOURCE: USGS Topographic Map		**DATE:**	1985

Appendix B

Site Photographs

SITE: Diamond Shamrock
PHOTO NO: 1 **DIRECTION:** West
PHOTOGRAPHER: J. Kimble

DATE: 10 October 2001
SUBJECT: A view of an oil-like liquid on the ground, east of the process building. Source unknown.

SITE: Diamond Shamrock
PHOTO NO: 2 **DIRECTION:** North
PHOTOGRAPHER: J. Kimble

DATE: 10 October 2001
SUBJECT: A view of a black tar pile located on the south side of the process building.

SITE: Diamond Shamrock
PHOTO NO: 3 **DIRECTION:** South
PHOTOGRAPHER: J. Kimble

DATE: 10 October 2001
SUBJECT: A view of a tank in the process building. Note the tar-like substance on the floor of the building.

SITE: Diamond Shamrock
PHOTO NO: 4 **DIRECTION:** East
PHOTOGRAPHER: J. Kimble

DATE: 10 October 2001
SUBJECT: A view of a tar-like material which has migrated from the process building's NW door.

SITE: Diamond Shamrock
PHOTO NO: 5 **DIRECTION:** Northeast
PHOTOGRAPHER: J. Kimble

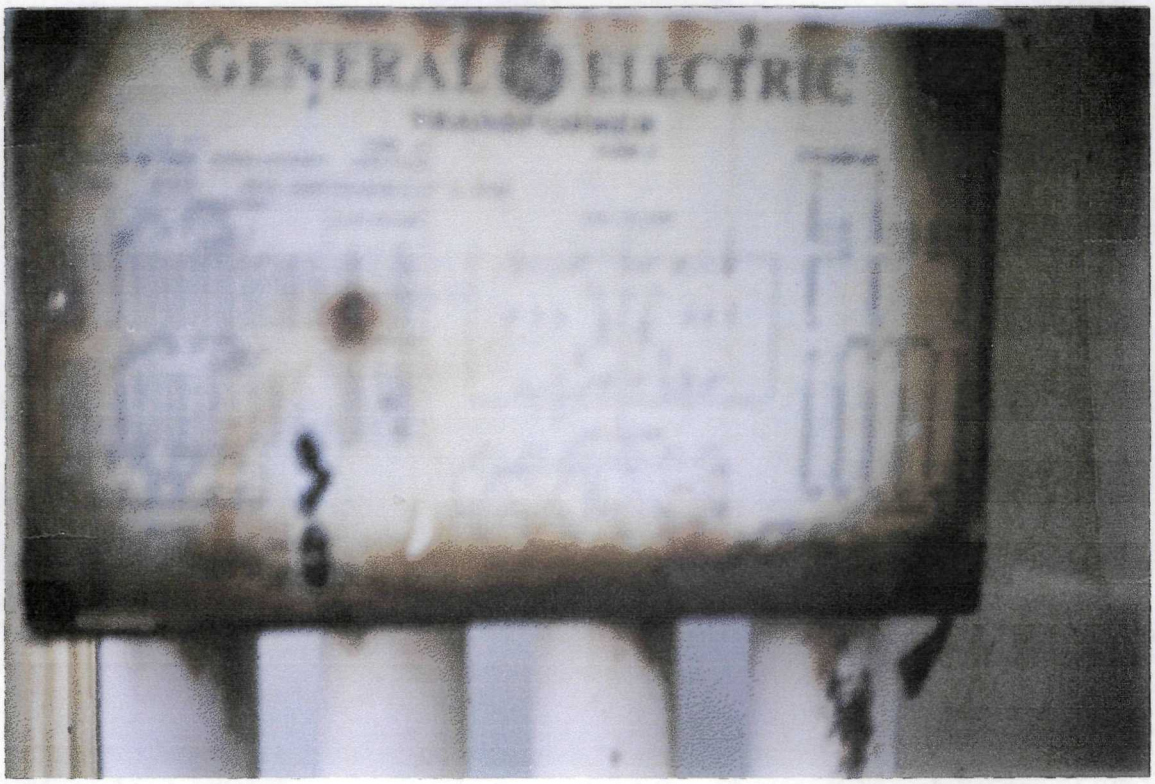
DATE: 10 October 2001
SUBJECT: A view of a rusting gas sphere. The sphere contains greater than 11,000 gallons of waste liquid.

SITE: Diamond Shamrock
PHOTO NO: 6 **DIRECTION:** Northwest
PHOTOGRAPHER: J. Kimble

DATE: 10 October 2001
SUBJECT: A view of an old structure next to two transformers.

SITE: Diamond Shamrock
PHOTO NO: 7 **DIRECTION:** West
PHOTOGRAPHER: J. Kimble

DATE: 10 October 2001
SUBJECT: A view of two small transformers. These transformers were not sampled.



SITE: Diamond Shamrock
PHOTO NO: 8 **DIRECTION:** South
PHOTOGRAPHER: J. Kimble

DATE: 10 October 2001
SUBJECT: A view of an information plate located on one of the two transformers.