

**CLOSURE REPORT
ENAMEL STORAGE PIT AND PIPELINE**

**GENERAL MOTORS CORPORATION
FORMER GM-LEEDS ASSEMBLY PLANT
KANSAS CITY, MISSOURI**

Burns	Waste
&	Consultants,
McDonnell	Inc.

ENGINEERS-GEOLOGISTS-SCIENTISTS - 100% EMPLOYEE-OWNED

LEEDS006026

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ENAMEL STORAGE PIT AND PIPELINE**

**GENERAL MOTORS CORPORATION
FORMER GM-LEEDS ASSEMBLY PLANT
KANSAS CITY, MISSOURI**

FEBRUARY 1995

90-242-4-002

**Burns & McDonnell Waste Consultants, Incorporated
Engineers—Scientists—Geologists
Overland Park, Kansas**

LEEDS006027

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LIST OF ACRONYMS AND ABBREVIATIONS

BMWCI	Burns & McDonnell Waste Consultants, Inc.
CCE	C-C Enviroklean
ESP	Enamel Storage Pit
GM	General Motors Corporation
MDNR	Missouri Department of Natural Resources
MS/MSD	Matrix Spike/Matrix Spike Duplicate
MW	Monitoring Well
PID	Photoionization Detector
ppm	parts per million
SB	Soil Boring
SVOC	Semivolatile Organic Compound
SWLO	Southwest Laboratory of Oklahoma, Inc.
TP	Test Pit
TPH	Total Petroleum Hydrocarbons
UST	Underground Storage Tank
VOC	Volatile Organic Compound

1.0 INTRODUCTION

1.1 PROJECT BACKGROUND

In the spring of 1992, Burns & McDonnell Waste Consultants, Inc. (BMWCI) prepared the Enamel Storage Pit and Abandoned Pipeline Assessment Report (ESP Report) for the General Motors Corporation (GM) former GM-Leeds Assembly Plant located in Kansas City, Missouri. The ESP Report, summarized in Section 1.3, was prepared for the following purposes:

- To characterize potential subsurface contamination associated with the former Enamel Storage Pit (ESP), thought to contain 12 unregulated underground storage tanks (USTs), and an associated kerosene pipeline located under the slab of the first floor of the Leeds Assembly Plant
- To study the fate and transport of the chemicals encountered
- To assess any potential impacts on human health and the environment related to the contamination at the site

On June 5, 1992, the ESP Report was submitted to the Leaking Underground Storage Tank Unit of the Missouri Department of Natural Resources (MDNR). On June 18, 1992, a meeting was held with representatives from MDNR, GM, and BMWCI to discuss the findings of the ESP Report and determine a course of action. According to the Health Impact Assessment, no remedial action was required; however, GM proposed the following actions:

1. Remove and dispose of ESP contents.
2. Remove and dispose of ESP walls, flooring, and surrounding contaminated soil if there is reason to suspect cross-contamination between the inside of the ESP and its surroundings (e.g., cracks or holes in ESP walls and floors, groundwater movement through ESP).

3. Excavate and dispose of abandoned kerosene pipeline and contaminated soil exceeding a target level of 500 parts per million (ppm) of total petroleum hydrocarbons (TPH) associated with the pipeline between the ESP and the Power House (see Figure 2-1).
4. Backfill the ESP and excavation associated with the pipeline, and replace flooring.

MDNR accepted GM's proposed course of action. A Work Plan and Site Health and Safety Plan were prepared by BMWCI to discuss the preparation of plans and specifications for the field activities, describe steps to collect confirmation samples at the site, and specify the health and safety protocol to be followed by the BMWCI field representative during the project. C-C Enviroklean (CCE), a Kansas City, Kansas, based remediation contractor, was selected to perform the field activities according to plans and specifications prepared by BMWCI. MDNR was notified of the site activities prior to mobilization and provided with a preliminary schedule.

1.2 PURPOSE AND SCOPE OF REPORT

This Closure Report is prepared to discuss the remedial activities for this project so far and the related chemical data obtained. In addition to providing MDNR with the status of the project, a recommendation regarding further action is given in Section 3.2 of this report.

1.3 SUMMARY OF ESP REPORT

The ESP and pipeline were part of the original construction of the plant in 1928 and taken out of service sometime in the 1930s. There is no record of the removal of this equipment, therefore it was assumed to be in place. The dimensions of the ESP are 34 feet by 40 feet by 24 feet deep. Based upon historical drawings, the ESP was built to house 12 tanks for the storage and mixing of various types of enamel and primer paint prior to use on automobile parts. Six large tanks (approximately 5,300 gallons each) and four smaller tanks (less than 200 gallons each) were on the upper level of the ESP. Two

tanks (between 1,000 and 2,000 gallons each) were on the level directly below the four smaller tanks. When the tanks were removed from service during the 1930s the ESP was backfilled with sand and covered with a 10-inch concrete floor slab. Because the tanks are below the ground surface, they are viewed as underground storage tanks (USTs). Since the tanks were abandoned prior to 1986, they are unregulated. In addition, two other pipelines were assumed to be present: a 1.5-inch kerosene pipeline and a 2-inch gasoline pipeline. The kerosene and gasoline pipelines were not connected to the piping in the ESP.

Following discussions on site location, geology and hydrogeology, and history and description, protocol related to investigation activities were presented in the ESP Report. These activities included:

- Drilling and Monitoring Well Installation
- Subsurface Soil Sampling
- Groundwater Sampling
- Sample Container Packaging and Shipping
- Decontamination

TPH levels exceeding 100 mg/kg were found in subsurface soil samples from three borings along the pipeline. The highest level encountered was 1840 mg/kg in MW-202 (sample locations are shown on Figure 2-1). The highest level of volatile organic compounds (VOCs) was 7960 $\mu\text{g/kg}$. This sample was taken within the ESP and contained acetone and 4-methyl-2-pentanone. Semivolatile organic compounds (SVOCs) were detected in several borings at levels up to 3500 $\mu\text{g/kg}$. The SVOC most frequently detected was 2-methylnaphthalene. Groundwater samples showed TPH levels of 25 mg/L (MW-202) or below and SVOCs of 5 $\mu\text{g/L}$ or less.

Migration of subsurface contamination is limited by the building roof and floor, which prevent precipitation from reaching the soil, prevent migration of soil particles or vapor into the air, and retard aerobic biodegradation of contaminants. Given the slow rate of groundwater migration and substantial

distance to the Blue River, over 1,000 years would pass before any contaminants could reach the river.

Current site conditions do not pose any significant risk to human health or the environment because of the incomplete exposure pathways mentioned above. Health impacts posed by disturbing the concrete flooring and removing the tanks were evaluated. Use of the highest detected concentrations of chemicals and conservative exposure assumptions show that, even in this scenario, it would be very unlikely for workers to experience any adverse health effects.

For reasons relating to contaminant fate and transport and the Health Impact Assessment, BMWCI recommended that no additional action be taken at the site. As explained in Section 1.1, GM decided to perform the closure activities described in this report. The process was initiated in December of 1992.

* * * * *

2.0 WORK SUMMARY

The field activities performed during this project are summarized in this section. Analytical results are presented and discussed following the description of site activities.

2.1 ENAMEL STORAGE PIT

The concrete slab above the ESP was removed by December 7, 1992. Afterwards, CCE removed the sand backfill from the ESP as shown in Photo 1 (Photos referenced in the text can be found in Appendix A). The sand was stockpiled on plastic sheeting inside the plant. Water was encountered in the ESP approximately 4 feet below the floor and a vacuum truck was used to remove water from the excavation (Photo 2). As excavation continued, water was continuously encountered and removed by the vacuum truck. The water removed from the excavation was discharged to GM's industrial sewer (Photo 3), where it was conveyed to a holding basin to be analyzed and released to the sanitary sewer system.

Initially this water was thought to be groundwater; however, on December 9, a 6-inch diameter, cast iron pipe was located on the east side of the ESP, approximately 8 feet from the surface. Water, which did not appear to be contaminated, was flowing from this pipe into the ESP. An inflatable plug was used to stop this flow. According to GM, the pipe was most likely a storm water collection line from the roof of the building. Once it was plugged, no additional water flowed into the ESP.

The top of the tanks was encountered approximately 11 feet below the floor surface (Photo 4) on December 15, 1992. The nine tanks located in the main area of the ESP were filled with sand (Photo 5). One of the tanks contained approximately 500 gallons of what appeared to be a paint-water mixture. The liquid was removed from the tank and placed into 55-gallon drums (Photo 6) for characterization and proper disposal.

To facilitate their removal, each of the tanks was opened and the sand was removed (Photo 7). The tanks were then cut into sections and extracted from the ESP. Afterwards, they were cleaned and prepared for shipment. All of the tanks were transported to Langely Recycling Co. as scrap metal.

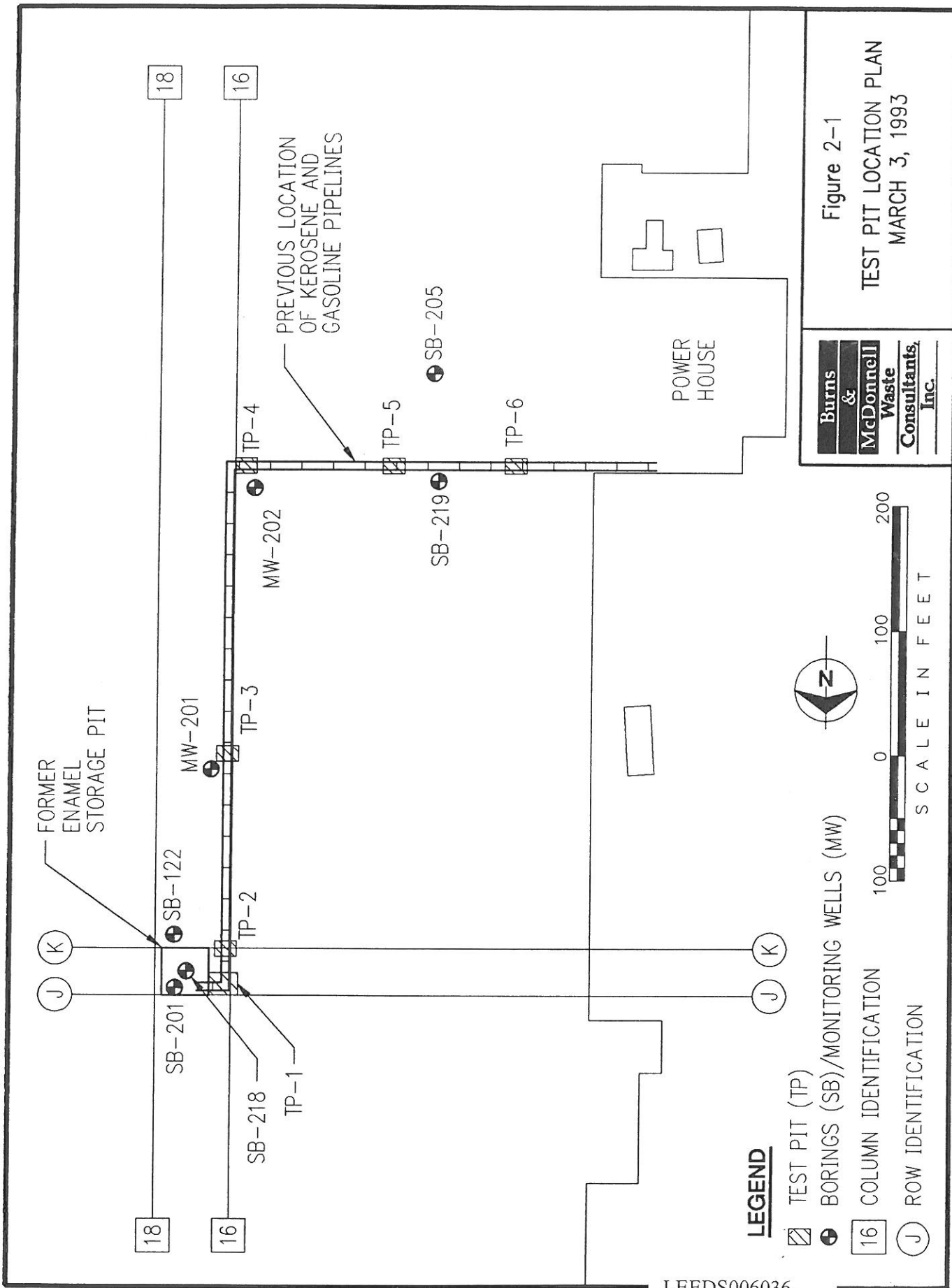
Following tank removal, the sand remaining in the ESP was removed and the pit walls were inspected. No observed cracks or fractures were found in the pit walls or floor (Photos 8, 9, 10, 11, and 12). There was no indication of groundwater flow through the ESP during the three days following excavation. Prior to backfilling the excavation with granular material, all piping entering the pit was filled with non-shrinking grout (Photo 13).

CCE began filling the ESP with granular backfill on January 14, 1993. They completed backfilling the ESP on January 15, 1993 (Photo 14).

2.2 KEROSENE PIPELINE

According to GM's proposed project approach, the kerosene pipeline and an adjacent gasoline pipeline were to be removed and any related contaminated soil excavated to a target cleanup level of 500 ppm TPH. The work plan specified the collection of soil samples at 20-foot intervals along the pipeline for characterization and confirmation.

CCE began removal of the pipelines by first attempting to locate the elbow west of the ESP (See Figure 2-1). Work began on December 2, 1992, by removing concrete over the presumed location of the pipeline elbow. Following concrete removal on December 7, CCE used shovels to dig down approximately 4 feet (Photo 15). The pipeline was not located, so CCE decided to trench eastward to the ESP in an effort to locate the kerosene pipeline (Photos 16 and 17). A 1 1/2-inch diameter pipe was found approximately 15 feet west of the ESP at a depth of 6 feet below grade. The pipe extended eastward and terminated at the ESP. It appeared to be in good condition. A second 1 1/2-inch diameter pipe



was located near the west end of the first. The 3-foot section of pipe had corrosion holes greater than 1/2-inch in diameter (Photo 18).

In an effort to locate the remainder of either of the two pipes, CCE used a backhoe to continue the original excavation near the piping elbow to a depth of 10 feet. Neither of the pipes were found.

Between December 11, 1992, and February 2, 1993, five additional test pits (TP-2 through TP-6) were installed at strategic locations along the presumed location of the pipeline (see Figure 2-1). TP-2 was installed approximately 30 feet south of TP-1 on the north-south section of the pipeline. TP-3 was installed near Monitoring Well MW-201. TP-4 was installed at the intersection of the north-south and east-west sections of the pipeline (Photo 19). TP-5 and TP-6 were installed along the southern east-west section of the pipeline. Test pits were approximately 6 feet wide, 8 feet long, and 8 to 14 feet deep. The pipeline was not located in any of the five additional test pits (TP-2 to TP-6).

An investigation of plant activities in the area revealed that a foundation was constructed in 1951 as part of a plant expansion parallel to the pipeline and located only 8 feet away. BMWCI speculates that the pipeline was removed as part of that construction.

2.2.1 Analytical Results

A petroleum odor was detected from the soil during excavation of each of the test pits. On February 2, BMWCI collected soil samples from four (TP-2, 3, 5, and 6) of the six test pits to assess the level of contamination associated with each. The samples were collected using a backhoe and sent to Southwest Laboratory of Oklahoma Inc. (SWLO) to be analyzed for TPH using the Missouri Modified Method 418.1.

The results of the seven soil samples are summarized in Table 2-1. The table lists important information including the TPH concentration, depth of sample, photoionization detector (PID) reading, and general comments. Sample depths

Table 2-1
Test Pit Soil Sample Results

February 2, 1993

Sample ID	Location	Depth (ft)	Lab Episode No.	Time of Collection	PID Rdg. (ppm)	TPH (mg/kg)	Comments
14K-7S	TP-2	7	12515.07	4:30 pm	350	460	Very wet debris
12N-7S	TP-3	7	12515.06	4:20 pm	400	110	Sewage/diesel odor
8U-5S	TP-5	5	12515.01	1:00 pm	60	ND(10.0)	Very wet, odor
8U-9S	TP-5	9	12515.02	1:20 pm	170	155	Some odor
8U-10.5S	TP-5	10.5	12515.03	2:00 pm	1000	540	Odor, black soil
4U-8S	TP-6	8	12515.04	3:20 pm	700	ND(10.0)	Strong odor
4U-14S	TP-6	14	12515.05	3:40 pm	60	ND(10.0)	Very slight odor

PID - Photoionization Detector

ND - Not detected. Detection limit shown in parentheses.

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ranged between 5 and 14 feet below the floor slab. It is important to note that no TPH was detected in the shallowest or deepest samples. The highest concentration detected (540 mg/kg) was in TP-5, 10.5 feet below the slab. The remaining samples showed less than 500 mg/kg of TPH with three of those being reported below detectable limits. (The original laboratory data is provided in Appendix B.). A quality control evaluation of the data was performed by BMWCI.

2.2.2 Quality Control Evaluation of the Laboratory Data

The seven test pit samples listed in Table 2-1 were received by SWLO on February 4, 1993, for TPH analysis and logged as Episode No. 12515. The Missouri Modified Method 418.1 was performed on all seven samples within the appropriate holding time limits. The associated laboratory blank and matrix spike/matrix spike duplicate (MS/MSD) were reported to indicate laboratory quality control performance. No TPH was detected in the laboratory blank, indicating no appreciable laboratory contamination occurred during analysis of test pit samples. The percent recoveries (110 and 111 percent) and relative percent difference (-1 percent) for the MS/MSD analysis do not indicate any problems with recovery of TPH or duplication of results. In conclusion, the TPH data received from SWLO for the seven test pit samples is valid for representing site conditions.

* * * * *

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 CONCLUSIONS

The field portion of this project was initiated on December 1, 1992. All of the USTs contained in the ESP were intact and were filled with sand. All tanks and other materials in the ESP were successfully removed and properly disposed. There were no observed cracks in the pit walls or floors to allow migration of contaminants from the ESP. During previous discussions, MDNR concluded that the ESP walls and flooring need not be removed under these circumstances. Currently, the ESP has been backfilled and the floor has been replaced.

Only a 15-foot portion of the abandoned pipeline was located during excavation. This portion of the line and the surrounding soil were removed for disposal. A total of six test pits were excavated at various locations along the assumed pipeline route in an attempt to locate the kerosene line. The line was not encountered in any of these; therefore, it is reasonable to assume that it has already been removed during previous earthwork at the plant.

Seven soil samples were collected from four of the test pits along the pipeline. Only Sample TP-5 slightly exceeded 500 mg/kg of TPH. This slight exceedence did not warrant additional action in the vicinity of sample TP-5. Previous groundwater sampling along the kerosene line (discussed in the ESP Report) showed no significant groundwater contamination. Sampling activities performed during this phase of the project support the contaminant fate and transport and Health Impact Assessment conclusions presented in the ESP Report.

3.2 RECOMMENDATIONS

The recommendation presented in the ESP report was that no additional action was necessary. However, GM, in keeping with their corporate program, chose to remove and dispose of the USTs. They included the removal of the kerosene line and soil along the kerosene line exceeding the target cleanup level of

500 mg/kg TPH. The USTs were successfully removed and disposed of during this project. The kerosene line appears to have been removed previously. Based upon subsurface soil sampling, most of the soil along the former kerosene line has TPH levels of approximately 500 mg/kg or less. BMWCI recommends that the remaining soil along the former kerosene pipeline route be left in place for the following reasons:

- There is no kerosene line to excavate.
- The soil along the former pipeline is typically below the 500 mg/kg target cleanup level.
- No significant groundwater contamination exists in the area related to the soil along the former pipeline.
- For reasons discussed in the ESP Report, it is unlikely that significant migration of contaminants would occur in this area.
- The Health Impact Assessment for this area (also in the ESP Report) states that there is no significant impact upon human health and the environment from the contamination detected in the vicinity of the ESP and pipeline.

* * * * *

APPENDIX A
SITE PHOTOGRAPHS

LEEDS006042

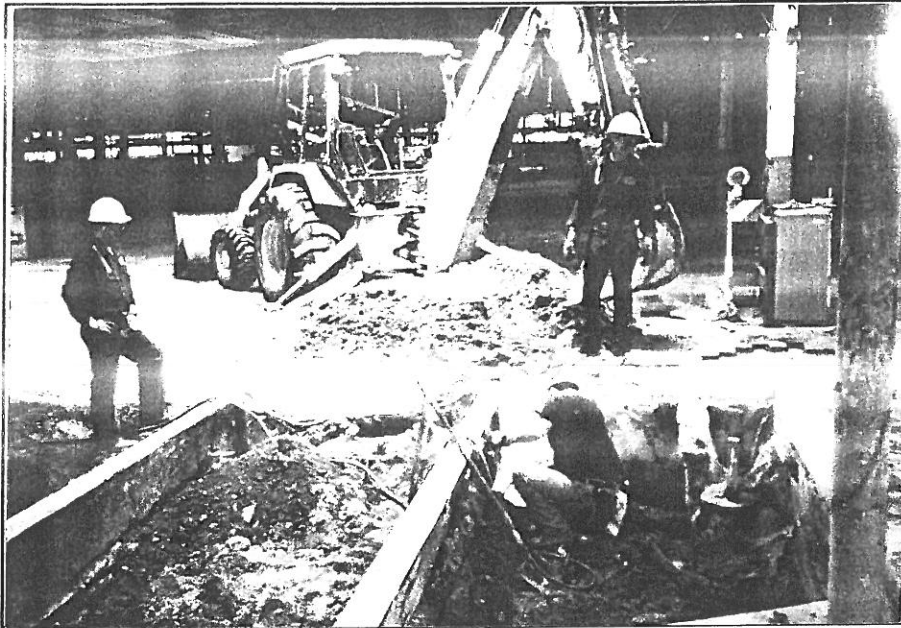


PHOTO 1 - CCE REMOVING SAND BACKFILL FROM THE ESP WITH BACKHOE

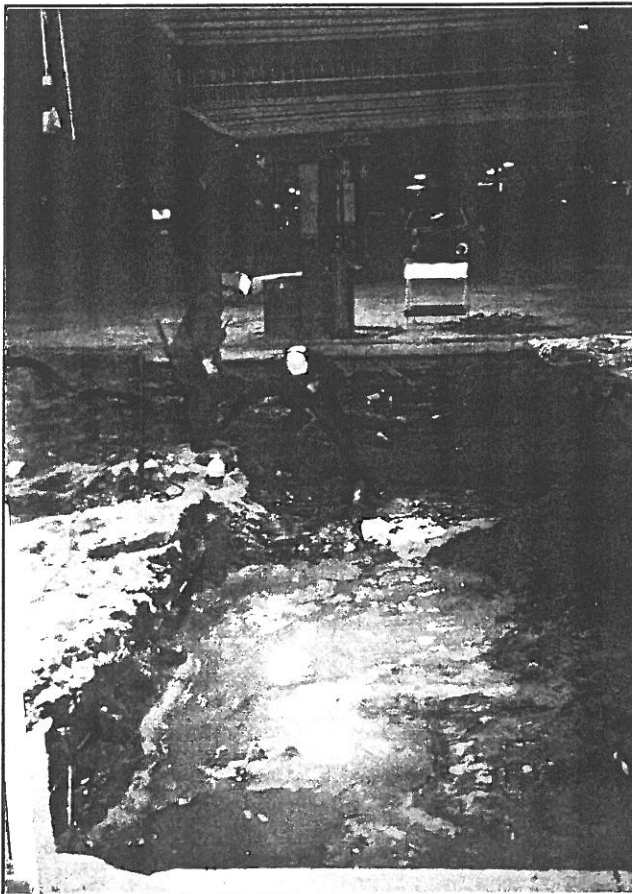


PHOTO 2
WORKER
REMOVING
WATER FROM
ESP

LEEDS006043

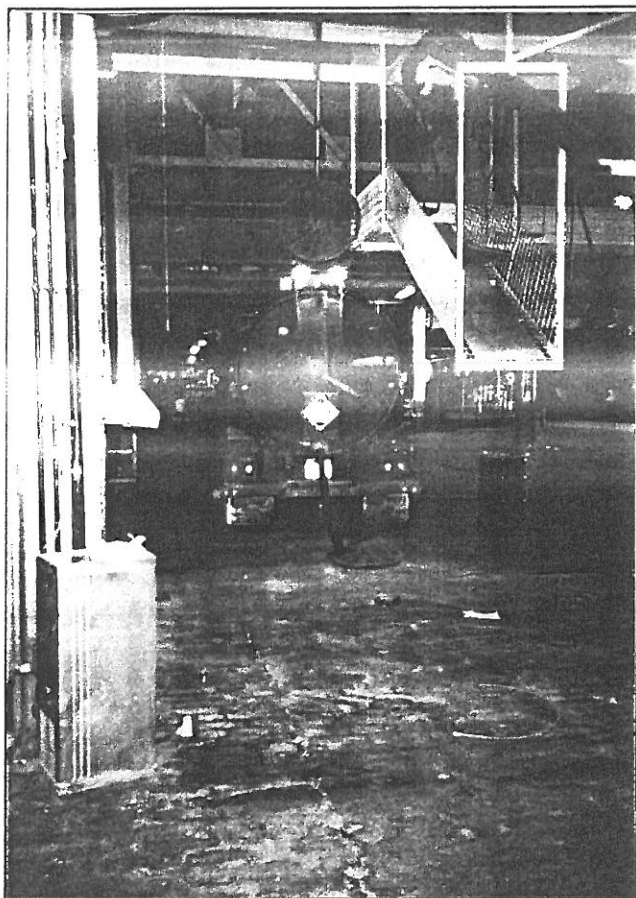


PHOTO 3
WATER
REMOVED FROM
ESP BEING
DISCHARGED
TO GM'S
INDUSTRIAL
SEWER

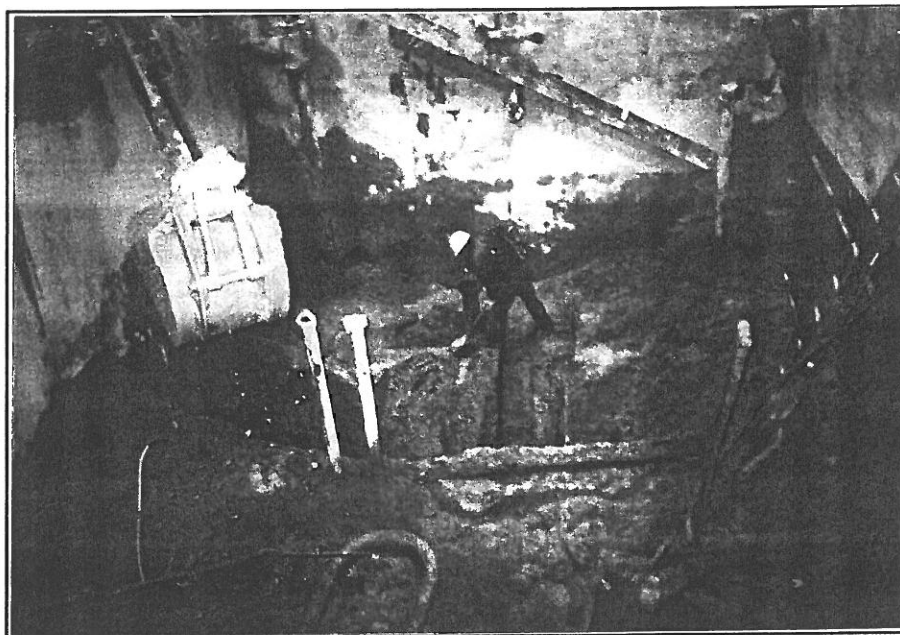


PHOTO 4 - WORKER REMOVING SAND FROM THE TOP SURFACE OF,
THE TANKS

LEEDS006044

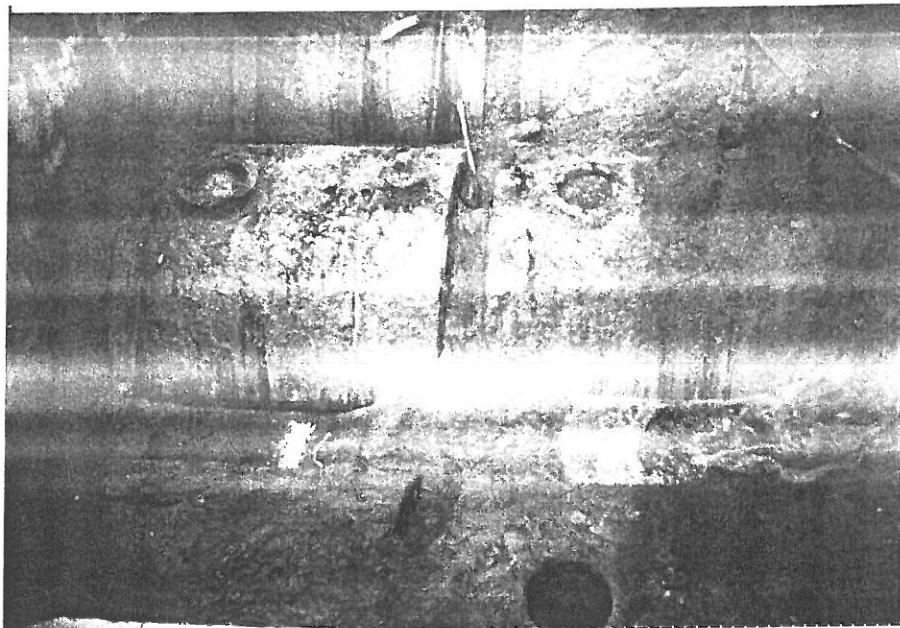


PHOTO 5 - TANKS IN ESP FILLED WITH SAND



PHOTO 6 - LIQUID REMOVED FROM TANK BEING TRANSFERRED TO
55-GALLON DRUMS

LEEDS006045

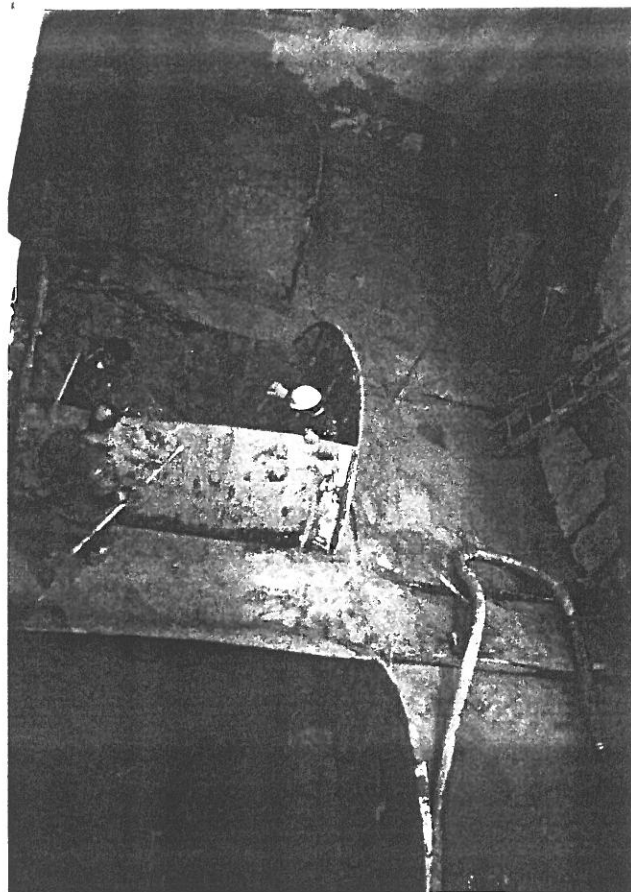


PHOTO 7 - WORKERS REMOVING SAND FROM TANK IN
ESP

LEEDS006046

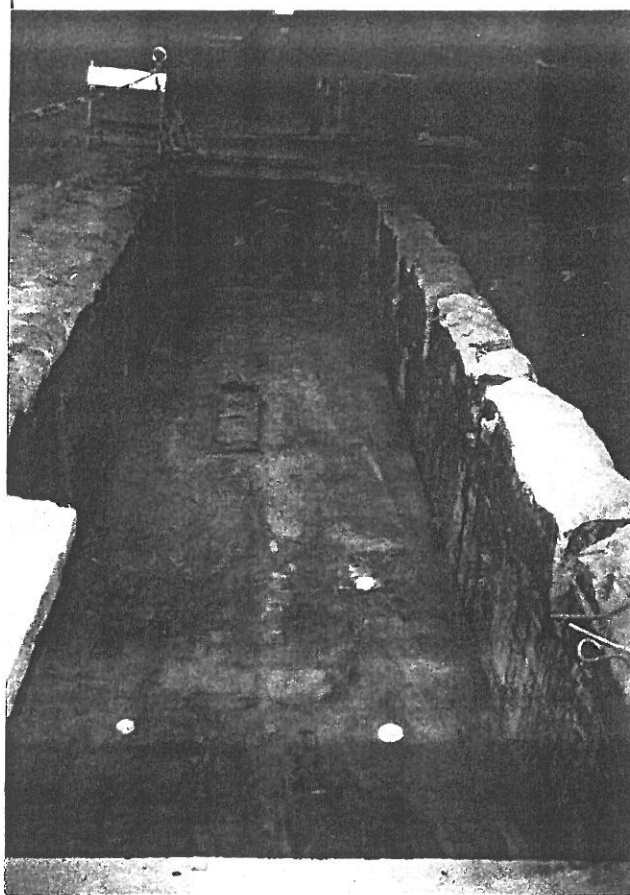


PHOTO 8 - SECONDARY COMPARTMENT OF ESP

LEEDS006047

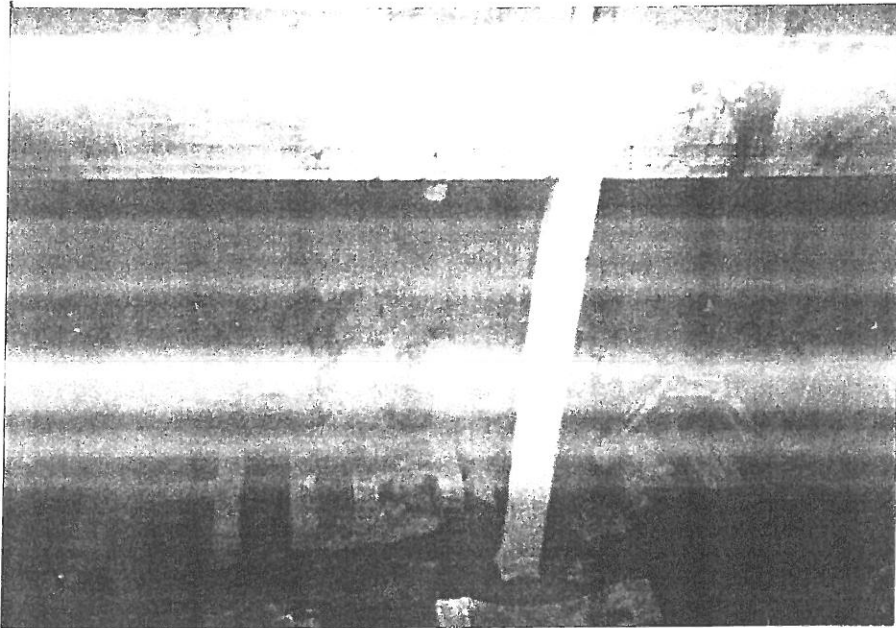


PHOTO 9 - ESP (LOOKING EAST)

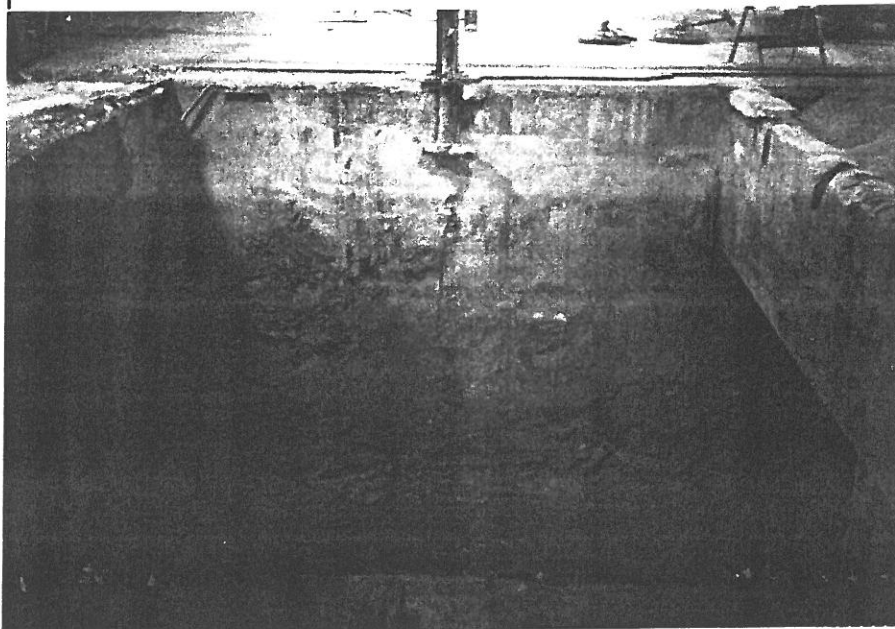


PHOTO 10 - ESP (LOOKING NORTH)

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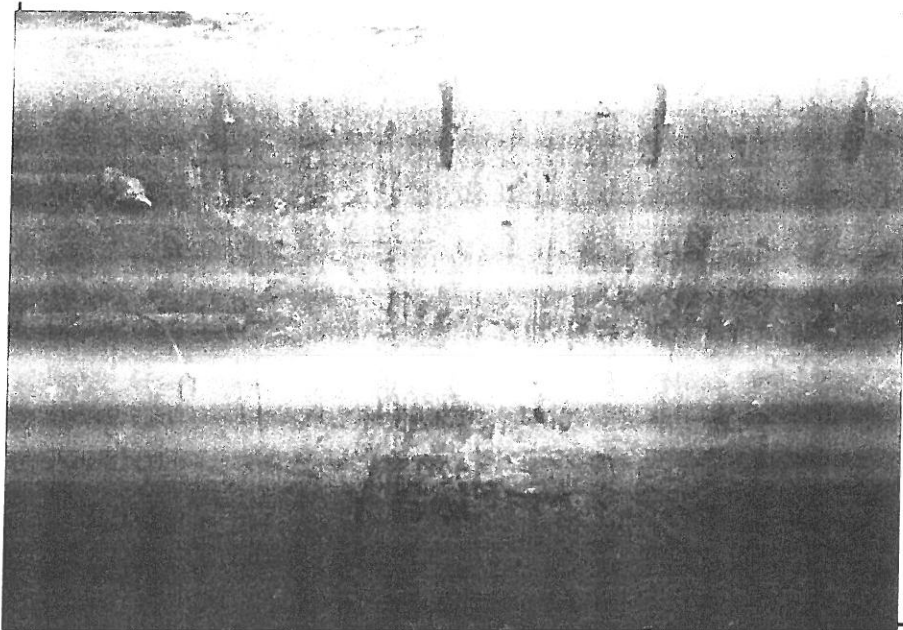


PHOTO 11 - ESP (LOOKING WEST)

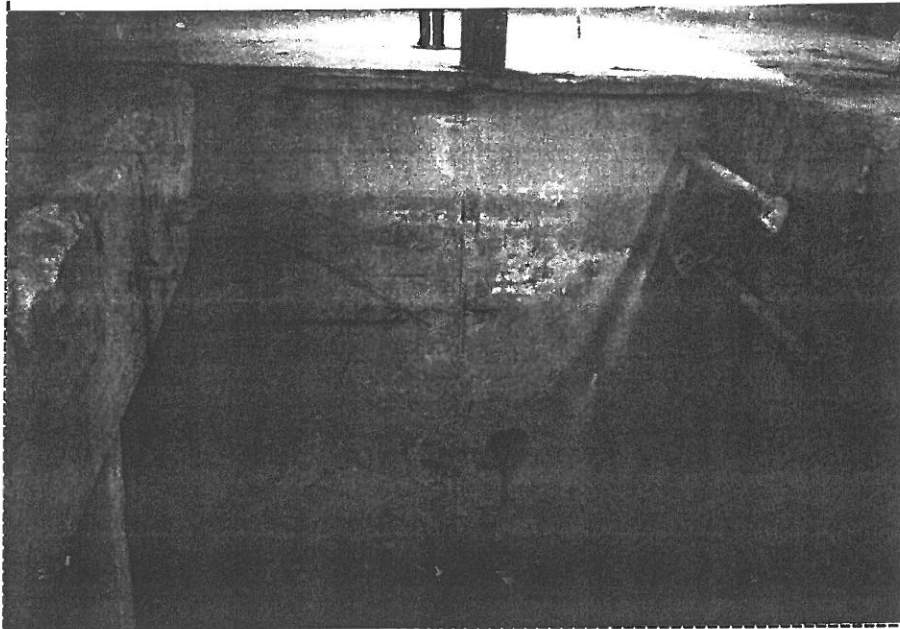


PHOTO 12 - ESP (LOOKING SOUTH)

LEEDS006049

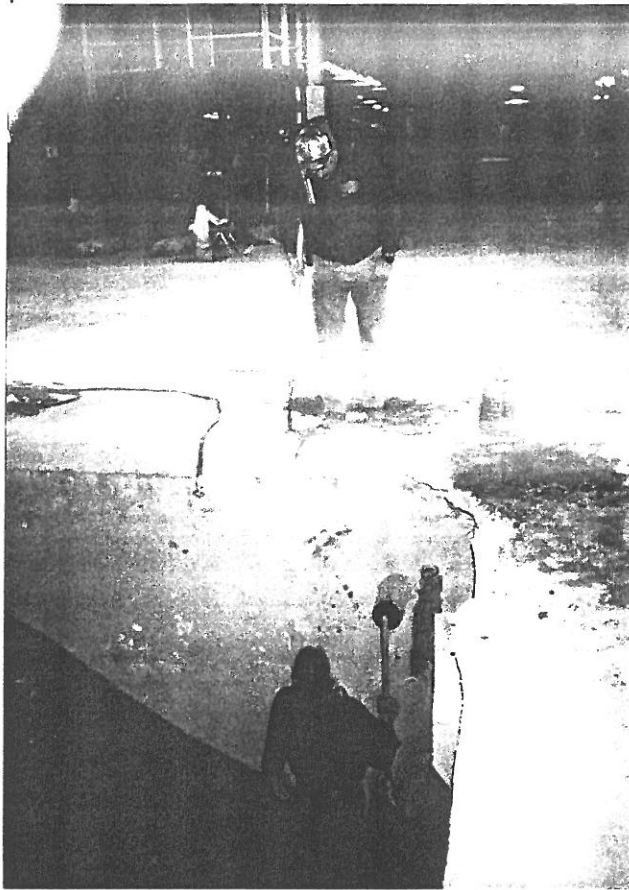


PHOTO 13
WORKERS FILLING
PIPES IN
SOUTHWEST CORNER
OF ESP WITH
NONSHRINKING
GROUT



PHOTO 14 - ESP BACKFILLED WITH CRUSHED ROCK

LEEDS006050



PHOTO 15 - WORKERS ATTEMPTING TO LOCATE KEROSENE PIPE
WEST OF THE ESP

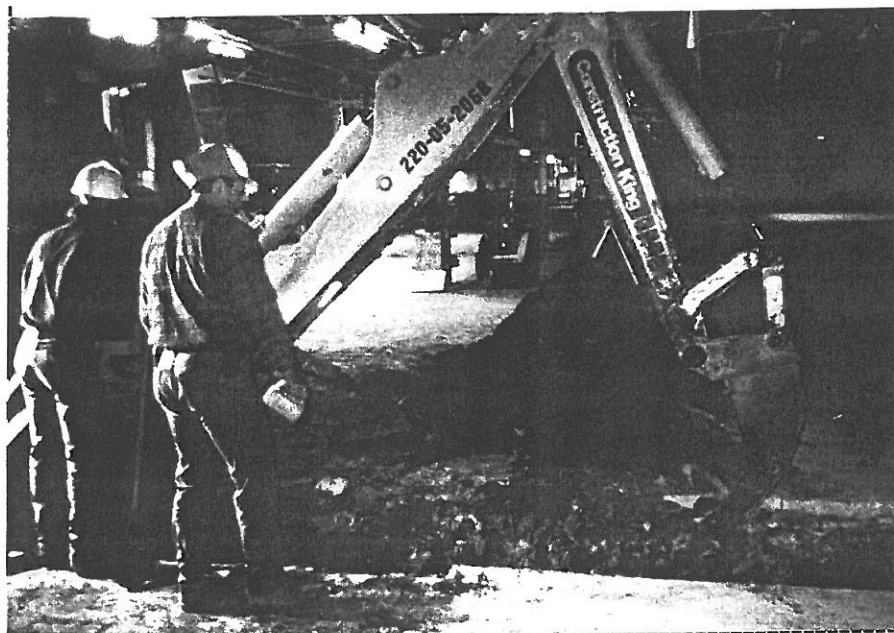


PHOTO 16 - BACKHOE TRENCHING TOWARD ESP FROM THE WEST

LEEDS006051

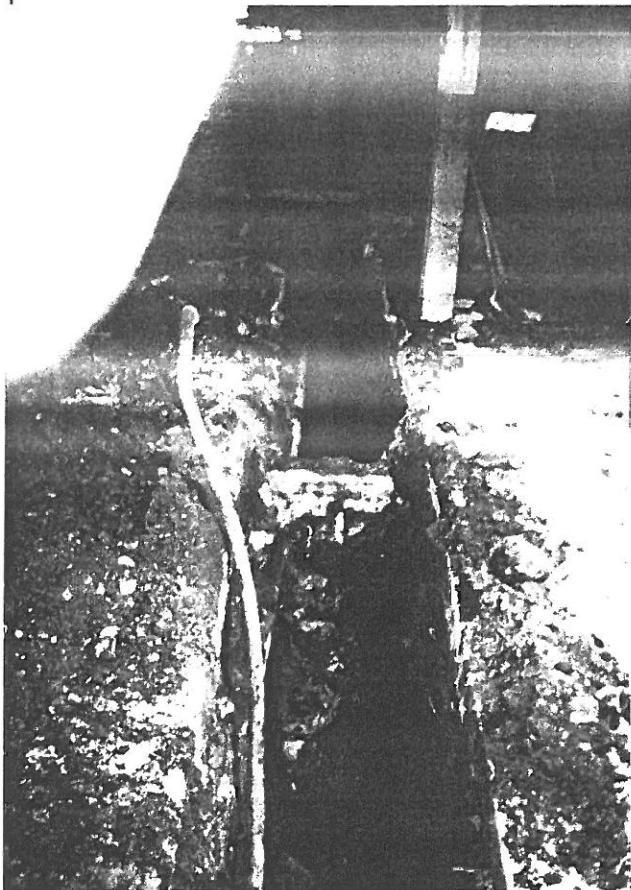


PHOTO 17
TRENCH WEST
OF THE ESP

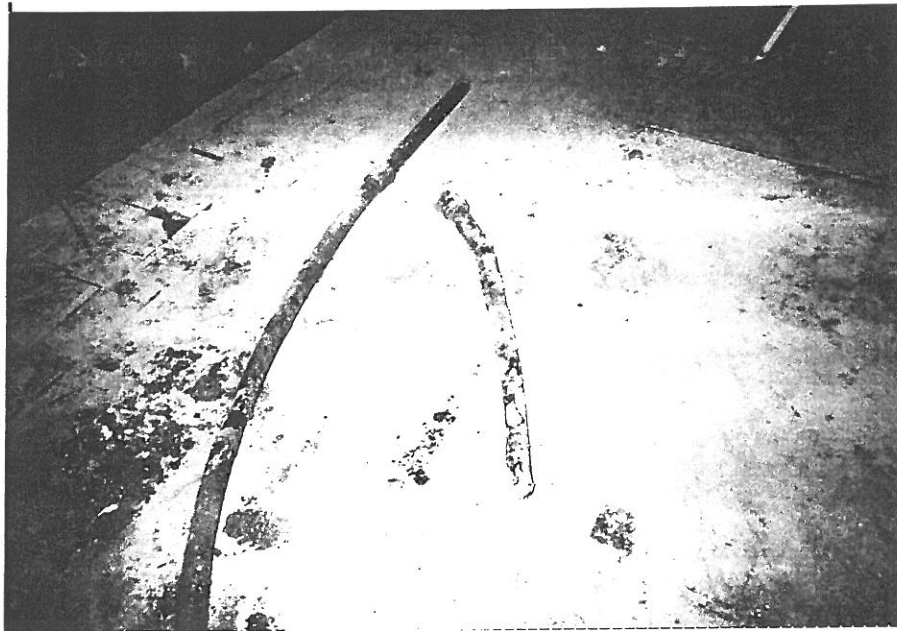


PHOTO 18 - SECTIONS OF PIPE FOUND IN TRENCH (NOTE
CORROSION HOLES IN PIPE ON THE RIGHT)

LEEDS006052

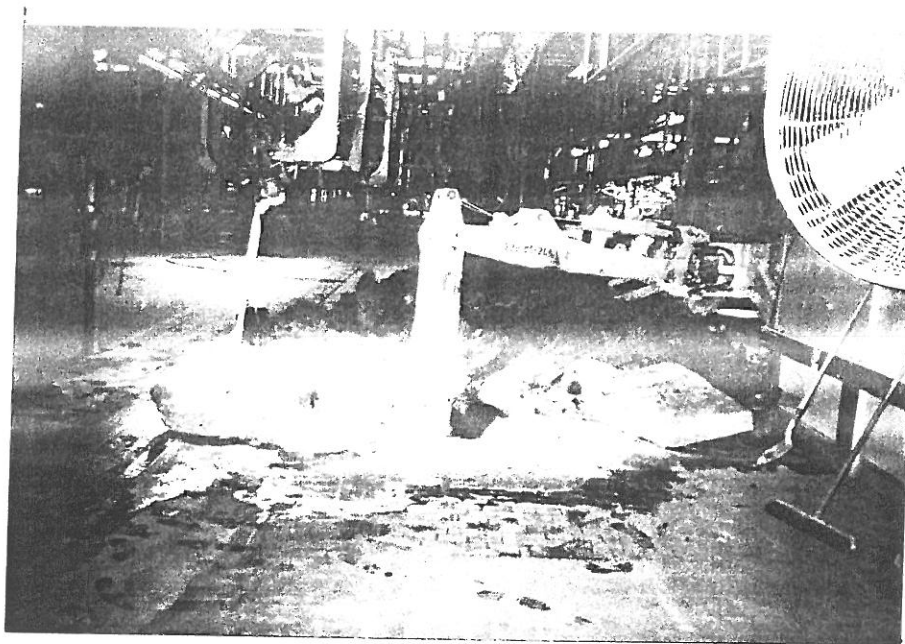
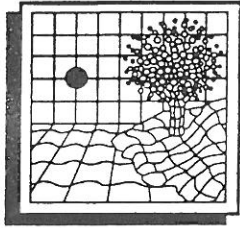


PHOTO 19 - BACKHOE DIGGING TEST PIT ALONG PRESUMED
LOCATION OF KEROSENE PIPELINE

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APPENDIX B
LABORATORY DATA

LEEDS006054



SOUTHWEST LABORATORY OF OKLAHOMA, INC.

February 17, 1993

Gopi Sandhu
BURNS & MCDONNELL WASTE CONSULTANTS
10881 Lowell Avenue
Overland Park, KS. 66210

SWLO ID: 12515.01 - 12515.07

Project ID: KC Site III

Dear Mr. Sandhu:

Enclosed please find the analytical results for your samples received in our laboratory on February 4, 1993, for the above captioned project.

If, in your review, you should have any questions or require additional information, please call.

Sincerely,

A handwritten signature in cursive script, appearing to read "R. Staggs".

Randy Staggs
Project Officer

RS/jt

Enclosures

LEEDS006055

Request for Chemical Analysis and Chain of Custody Record

Burns & McDonnell
Waste Consultants, Inc.
10881 Lowell Avenue, Suite 200
Overland Park, Kansas 66210
Tel: (816) 333-8787
Fax: (816) 822-3463

Document Control No.:

Laboratory: SWC

Address

Lab. Reference No. or
Episode No.:Attention: LOPI SANDHUCity/State/Zip Broken Arrow/OK/Telephone (918) 251-2658Project Name: KC SITE IIIProject Number: 90-242-4-002

Site, Group, or SWMU Name:

Sample Type

Matrix

Liquid

Solid

Gas

Composite

Grab

Number of
Containers

Remarks

Sample Point	Sample Designator	Round	Sample Event	Year	From	To	Sample Depth (in feet)	Date	Time	Samples Collected	Liquid	Solid	Gas	Composite	Grab	Number of Containers	Remarks
80-55		1		1993	5'	5'	5'	1/24/93	1 PM	1	X	X			X	1	Test Pit (new)
80-95		1		1993	9'	9'	9'	"	1:20 PM	1	X	X			X	1	" (new)
80-10-55		1		1993	10.5'	10.5'	10.5'	"	2:00 PM	1	X	X			X	1	" (new)
40-85		1		1993	8'	8'	8'	"	3:30 PM	1	X	X			X	1	" (new)
40-145		1		1993	14'	14'	14'	"	3:30 PM	1	X	X			X	1	" (new)
12N-75		1		1993	7'	7'	7'	"	4:20 PM	1	X	X			X	1	" (existing)
14K-75		1		1993	7'	7'	7'	"	4:30 PM	1	X	X			X	1	" (existing)

Sampler (signature):

[Signature]

Sampler (signature):

Special Instructions:

14-dry-wet/neutral/side surface

Relinquished By: (signature)

[Signature]

Date/Time

2/24/93 5:30 PM

Received By:

[Signature]

Date/Time

2/24/93 9:00 AM

Condition of Shipping Container:

Good ☐ Fair ☐ Poor ☐ Yes ☐ No ☐

Ice Present in Container:

Yes ☐ No ☐

Relinquished By: (signature)

[Signature]

Date/Time

2/24/93 5:30 PM

Received By:

[Signature]

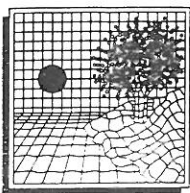
Date/Time

2/24/93 9:00 AM

Comments:

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Burns & McDonnell
Waste Consultants, Inc.
110592 form WCI-OP1



SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

BURNS & MCDONNELL WASTE CONSULTANTS
10881 LOWELL AVENUE
OVERLAND PARK, KS 66210
ATTN: GOPI SANDHU

REPORT: 12515.01

DATE: 02/17/93

SWLO #: 12515.01
PROJECT: KC SITE III
SAMPLE #: 8Y-5S
LOCATION: J

DATE SUBMITTED: 02/04/93

SAMPLE MATRIX : SOIL

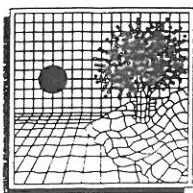
DEPTH FROM : 5.00

DEPTH TO : 5.00

PARAMETER	RESULTS**	DATE UNITS PREPARED	DATE ANALYZED	REFERENCE METHOD
MOD 418.1	10.0 U	mg/kg / /	02/08/93	MODIFIED 418.1

**RESULTS REPORTED TO 3 SIGNIFICANT FIGURES

LEEDS006057



SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

BURNS & MCDONNELL WASTE CONSULTANTS
10881 LOWELL AVENUE
OVERLAND PARK, KS 66210
ATTN: GOPI SANDHU

REPORT: 12515.02

DATE: 02/17/93

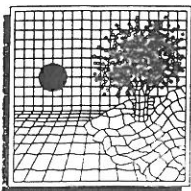
SWLO #: 12515.02
PROJECT: KC SITE III
SAMPLE #: 8X-9S
LOCATION: J

DATE SUBMITTED: 02/04/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 9.00
DEPTH TO : 9.00

PARAMETER	RESULTS**	UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MOD 418.1	155	mg/kg	/ /	02/08/93	MODIFIED 418.1

**RESULTS REPORTED TO 3 SIGNIFICANT FIGURES

LEEDS006058



SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

BURNS & MCDONNELL WASTE CONSULTANTS
10881 LOWELL AVENUE
OVERLAND PARK, KS 66210
ATTN: GOPI SANDHU

REPORT: 12515.03

DATE: 02/17/93

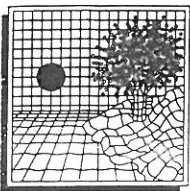
SWLO #: 12515.03
PROJECT: KC SITE III
SAMPLE #: 8V-10.5S
LOCATION: ✓

DATE SUBMITTED: 02/04/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 10.50
DEPTH TO : 10.50

PARAMETER	RESULTS**	DATE UNITS PREPARED	DATE ANALYZED	REFERENCE METHOD
MOD 418.1	540	mg/kg / /	02/08/93	MODIFIED 418.1

**RESULTS REPORTED TO 3 SIGNIFICANT FIGURES

LEEDS006059



SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

BURNS & MCDONNELL WASTE CONSULTANTS
10881 LOWELL AVENUE
OVERLAND PARK, KS 66210
ATTN: GOPI SANDHU

REPORT: 12515.04

DATE: 02/17/93

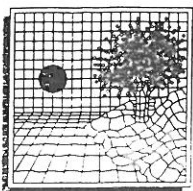
SWLO #: 12515.04
PROJECT: KC SITE III
SAMPLE #: 4X-8S
LOCATION: ✓

DATE SUBMITTED: 02/04/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 8.00
DEPTH TO : 8.00

PARAMETER	RESULTS**	DATE UNITS	DATE PREPARED	DATE ANALYZED	REFERENCE METHOD
MOD 418.1	10.0 U	mg/kg / /	02/08/93	MODIFIED	418.1

**RESULTS REPORTED TO 3 SIGNIFICANT FIGURES

LEEDS006060



SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

BURNS & MCDONNELL WASTE CONSULTANTS
10881 LOWELL AVENUE
OVERLAND PARK, KS 66210
ATTN: GOPI SANDHU

REPORT: 12515.05

DATE: 02/17/93

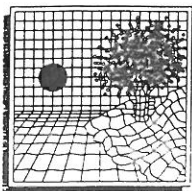
SWLO #: 12515.05
PROJECT: KC SITE III
SAMPLE #: 4X-14S
LOCATION: ✓

DATE SUBMITTED: 02/04/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 14.00
DEPTH TO : 14.00

PARAMETER	RESULTS**	DATE UNITS PREPARED	DATE ANALYZED	REFERENCE METHOD
MOD 418.1	10.0 U	mg/kg / /	02/08/93	MODIFIED 418.1

**RESULTS REPORTED TO 3 SIGNIFICANT FIGURES

LEEDS006061



SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

BURNS & MCDONNELL WASTE CONSULTANTS
10881 LOWELL AVENUE
OVERLAND PARK, KS 66210
ATTN: GOPI SANDHU

REPORT: 12515.06

DATE: 02/17/93

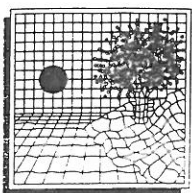
SWLO #: 12515.06
PROJECT: KC SITE III
SAMPLE #: 12N-7S
LOCATION:

DATE SUBMITTED: 02/04/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 7.00
DEPTH TO : 7.00

PARAMETER	RESULTS**	DATE UNITS PREPARED	DATE ANALYZED	REFERENCE METHOD
MOD 418.1	110	mg/kg / /	02/08/93	MODIFIED 418.1

**RESULTS REPORTED TO 3 SIGNIFICANT FIGURES

LEEDS006062



SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1701 West Albany • Broken Arrow, Oklahoma 74012 • Office (918) 251-2858 • Fax (918) 251-2599

BURNS & MCDONNELL WASTE CONSULTANTS
10881 LOWELL AVENUE
OVERLAND PARK, KS 66210
ATTN: GOPI SANDHU

REPORT: 12515.07

DATE: 02/17/93

SWLO #: 12515.07
PROJECT: KC SITE III
SAMPLE #: 14K-7S
LOCATION:

DATE SUBMITTED: 02/04/93
SAMPLE MATRIX : SOIL
DEPTH FROM : 7.00
DEPTH TO : 7.00

PARAMETER	RESULTS**	DATE UNITS PREPARED	DATE ANALYZED	REFERENCE METHOD
MOD 418.1	460	mg/kg / /	02/08/93	MODIFIED 418.1

**RESULTS REPORTED TO 3 SIGNIFICANT FIGURES

LEEDS006063

SOUTHWEST LABORATORY OF OKLAHOMA, INC.

1700 W. Albany • Broken Arrow, Oklahoma 74012 • 918-251-2858 • FAX: 918-251-2599

LABORATORY QUALITY CONTROL SEQUENCE

METHOD : TPH (FREON EXTRACTION: ANALYSIS BY IR)
ANALYSIS DATE : 02/08/93

LABORATORY BLANK

MATRIX : Soil
SAMPLE ID. : SBLK02089301
SAMPLE AMOUNT : 30G DILUTION FACTOR: 1

QUANTITATION LIMIT (mg/kg)

AMOUNT FOUND (mg/kg)

TPH 10.0 10.0 ND

MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

COMPOUND	SPIKE CONC. (mg/kg)	6564.01 SAMPLE CONC. (mg/kg) *	6564.01MS MATRIX SPIKE CONC. (mg/kg) *	PERCENT RECOVERY
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TPH	667	0	733	110%
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6564.01MSD MATRIX SPIKE DUPLICATE CONC. (mg/kg) *	PERCENT RECOVERY	RECOVERY PERCENT DIFFERENCE
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TPH	738	111%	-1%
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* DILUTION FACTORS NOT APPLIED TO THESE CONCENTRATIONS

6564.01 IS CLIENT SAMPLE NO: 8V-5S

LEEDS006064



February 28, 2001

Mr. Don Dicks
Environmental Engineer
Hazardous Waste Program
Missouri Department of Natural Resources
1738 East Elm Street
Jefferson City, MO 65101

Transmittal of Addendum No. 1 to Documentation Report for the Closure of a RCRA Drum Storage Pad at the Former General Motors Leeds Assembly Plant (EPA ID No. MOD000822668), 6817 Stadium Drive, Kansas City, Missouri

Dear Mr. Dicks:

Please find enclosed with this letter of transmittal, three final copies of the subject addendum report that we are submitting to you on behalf of General Motors. If you have questions or comments, please contact Reynold Tomes at (816) 822-3318, FAX (816) 822-3494 or e-mail [rtomes@burnsmcd.com].

Sincerely,

Reynold Tomes, R.G.
Project Manager

cc: Fred Rindhage, P.E., CHMM; General Motors
Brian Foy, P.E.; Burns & McDonnell
File

LEEDS006065