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REPORTS

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11/93 - PHASE III

Brown McCarroll & Oaks Hartline

Austin, Texas

ENSR

Phase III Removal Action Report
Exxon Chemical Company Facility
1715 Dal Paso Street
Hobbs, New Mexico

ENSR Consulting and Engineering

November 1993

Document Number 1009-005-111

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CONTENTS

EXECUTIVE SUMMARY E-1

1.0 INTRODUCTION 1-1

2.0 FACILITY BACKGROUND 2-1
2.1 Previous Investigations 2-1

3.0 FIELD ACTIVITIES 3-1
3.1 Program Objectives 3-1
3.2 Removal Action Activities 3-1
3.2.1 Excavation and Sampling in Impacted Areas 3-1
3.2.1.1 Main Building Area Excavation 3-2
3.2.1.2 Septic Tank Area Excavation 3-4
3.2.2 Storage of Excavated Soils 3-6
3.2.3 Sampling and Disposal of Excavated Soils 3-6
3.2.4 Main Building Sump 3-7
3.2.5 Restoration of the Yard Area 3-7

4.0 FIELD AND LABORATORY QA/QC CONTROL 4-1
4.1 Sample Handling and Preservation Methods 4-1
4.2 Decontamination of Sampling Equipment 4-1
4.3 Chain-of-Custody Control and Record Keeping Procedures 4-1
4.4 Field QA/QC Sampling 4-2
4.5 Laboratory QA/QC Methods 4-2

5.0 ANALYTICAL RESULTS 5-1
5.1 Analytical Data 5-1
5.2 Summarized Analytical Results 5-1

APPENDIX

Analytical Data Packages

LIST OF TABLES

5-1 Analytical Results for Verification Soil Samples 5-3
5-2 Analytical Results of Sample of Contaminated Caliche in Floor of Septic Tank - 2 5-5
5-3 Analytical Results of Waste Classification Sample from Contents of Septic Tank - 2 5-6
5-4 Analytical Results of In-situ Waste Classification Samples 5-7
5-5 Analytical Results of Waste Classification Sample of Sump Liquid 5-8

LIST OF FIGURES

2-1 Site Location 2-2
2-2 Property Boundaries 2-3
2-3 Fenced Yard Area Site Plot Plan 2-4
3-1 Verification Sample Locations 3-3

EXECUTIVE SUMMARY

ENSR Consulting and Engineering (ENSR) and its subcontractor, Forklift Enterprises, Inc., performed a Removal Action at the Exxon Chemical Company (Exxon) facility located at 1715 Dal Paso Street in Hobbs, New Mexico in July and August 1993. The objective of the Removal Action was to remove hydrocarbon contaminated soils noted during previous investigations.

ENSR conducted a Phase I Preliminary Assessment of the Dal Paso facility in August 1991. As a result of the Phase I findings, ENSR conducted a Phase II Site Inspection in January 1992. The objectives of the Site Inspection were to :

- identify the presence and nature of known or suspected contamination in areas identified during the Phase I Preliminary Assessment, and

- delineate the horizontal and vertical extent of contamination that may require removal.

The analytical results of soil samples collected during the Site Inspection revealed one area within the facility yard with Total Petroleum Hydrocarbon (TPH) concentrations exceeding the State of New Mexico action level of 100 mg/kg and two areas (including the area of TPH contamination) with elevated levels of total lead. Both of the areas, the waste oil storage area and the immediately adjacent truck washing area, are located at the rear of the main building.

Based upon the findings of the Preliminary Assessment and the Site Inspection, ENSR prepared a workplan for a Phase III Removal Action at the Dal Paso facility. The workplan entitled "Removal Action Workplan for Facility Owned by Exxon Chemical Company in Hobbs, New Mexico (1715 Dal Paso Street)" was prepared in February 1993 and was submitted to the State of New Mexico Oil Conservation Division (OCD) for approval. The OCD granted approval of the workplan in May 1993.

The objectives of the Removal Action were to:

- remove the contaminated soil identified during the Phase I Preliminary Assessment and the Phase II Site Inspection which exceeded the State of New Mexico action levels for TPH and contained elevated levels of total lead;

- dispose of the contaminated soil at a nearby landfill;

- collect verification samples from the excavation to ensure that all contaminated soils above State of New Mexico action levels have been removed; and

- backfill and compact the excavation with clean soil and restore surface conditions by covering the area with a new layer of crushed rock(caliche).

To accomplish these objectives, ENSR:

- removed approximately 1488 cubic yards of contaminated soil from the main building area and the newly discovered septic tank (see below);

- disposed of the contaminated soil at the Controlled Recovery, Inc.(CRI) landfill near Hobbs, New Mexico;

- collected verification samples from the excavations to confirm that the contaminated soil above State action levels had been removed; and

- backfilled and compacted the excavations with clean soil and covered the main building excavation with a new layer of caliche.

During the Removal Action a second septic tank (Septic Tank-2) containing heavily hydrocarbon contaminated soil was discovered just east of the previously known and investigated septic tank (Septic Tank-1). The contaminated soil within the septic tank was excavated and removed down to a layer of dense, highly fractured native caliche at an approximate depth of 16 feet. At this point, further excavation was not practical because of the difficulty of digging into the dense rock. The contamination extended below the excavation floor to an unknown depth within the fractures in the caliche. With OCD approval the contamination was left in place.

1.0 INTRODUCTION

A Phase I Preliminary Assessment was conducted by ENSR at the Dal Paso site in August and September 1991. The Preliminary Assessment identified areas of the facility yard that required further investigation. Consequently, ENSR conducted a Phase II Site Inspection at the facility in January 1992. Based upon the findings of both the Preliminary Assessment and the Site Inspection, ENSR prepared a workplan for a Phase III Removal Action at the site. Following Oil Conservation Division(OCD) approval of the workplan in May 1993, ENSR and its subcontractor, Forklift Enterprises Inc., performed a Phase III Removal Action at the site in July and August 1993.

2.0 FACILITY BACKGROUND

Exxon purchased the site at 1715 Dal Paso Street in Hobbs, New Mexico in 1987. NL Treating operated the site from 1969 to 1987. Previously, NL McCullough operated the site from the 1940s to 1969. NL Treating and NL McCullough shared the site from 1969 to 1984.

The subject property covers approximately 7 acres in Lea County and consists of a fenced yard area adjacent to a vacant field extending north, south, and west from the fenced area. The fenced yard area contains three buildings and former storage areas for aboveground tanks and drums. A trailer is located just outside the fenced area adjacent to the main building on Dal Paso Street. The buildings inside the fenced area are:

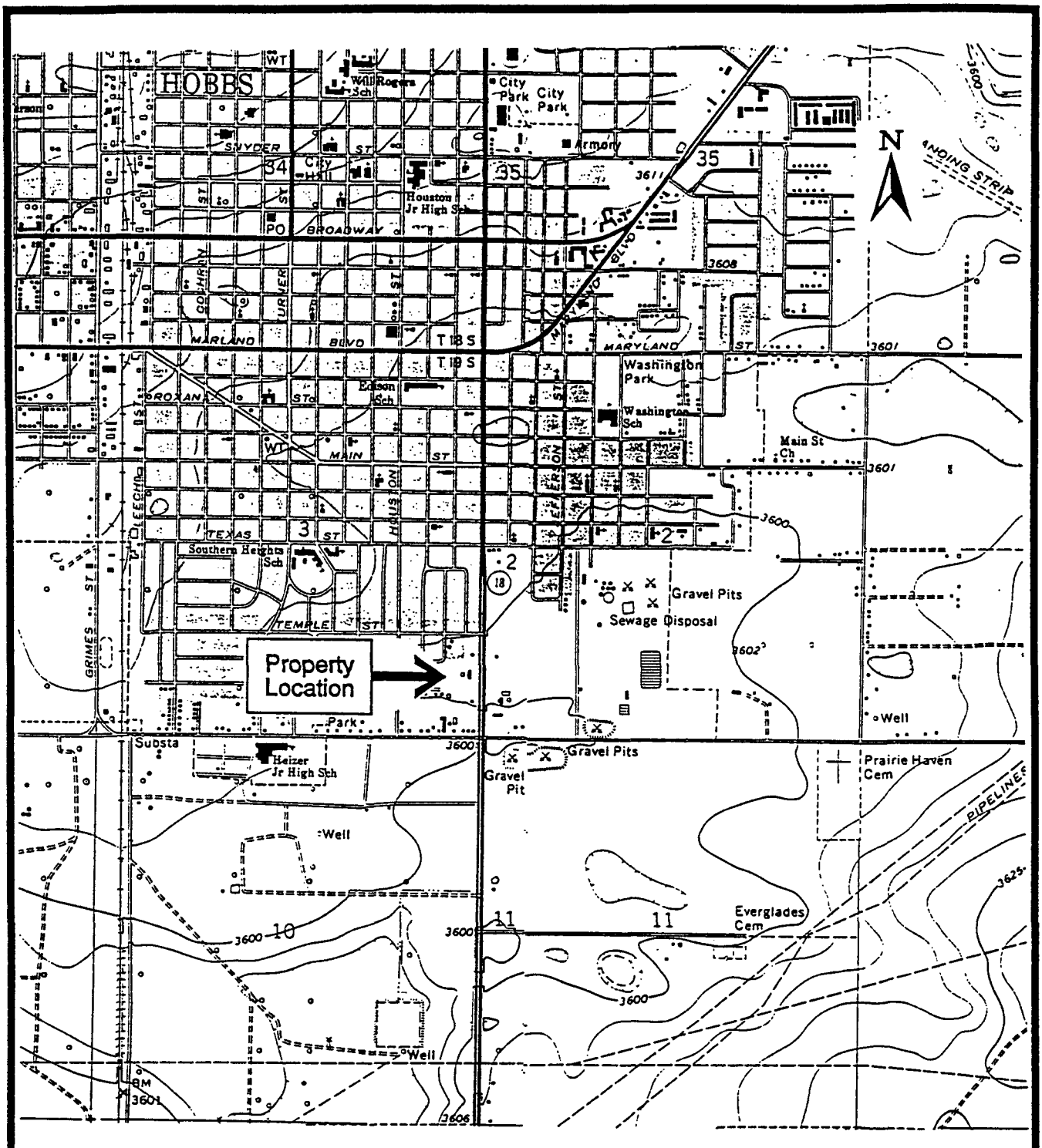
- the main building containing a storage area and office space,
- a building containing truck bays and storage space (Building No. 1 on the site plot plan) to the west of the main building, and
- a small building (Building No. 2 on the site plot plan) formerly used for storage of radioactive materials.

The site location is shown on Figure 2-1. The property boundaries are shown on Figure 2-2, and a Site Plot Plan is shown on Figure 2-3.

Exxon currently uses the property for administrative purposes only. With the exception of the office trailer, the property and buildings are currently vacant and unused. NL used the property as a storage yard for chemicals used in oil and gas production. NL McCullough used the property to store materials and equipment used in the oil well service industry.

2.1 Previous Investigations

ENSR conducted a Phase I Preliminary Assessment in 1991 at the Dal Paso site. Investigatory activities included site visits, interviews with personnel that worked at the facility, facility records review, and state agency or EPA files research. The results were presented to Brown McCarroll and Oaks Hartline in a June 1992 report entitled "Phase I Environmental Due Diligence Assessment of Exxon Chemical Company 1715 Dal Paso Street, Hobbs, New Mexico."



Source: USGS, Hobbs, West, N. Mex. quadrangle, 1969. Photo Revised 1979.

QUADRANGLE LOCATION

Scale

0 1Mile

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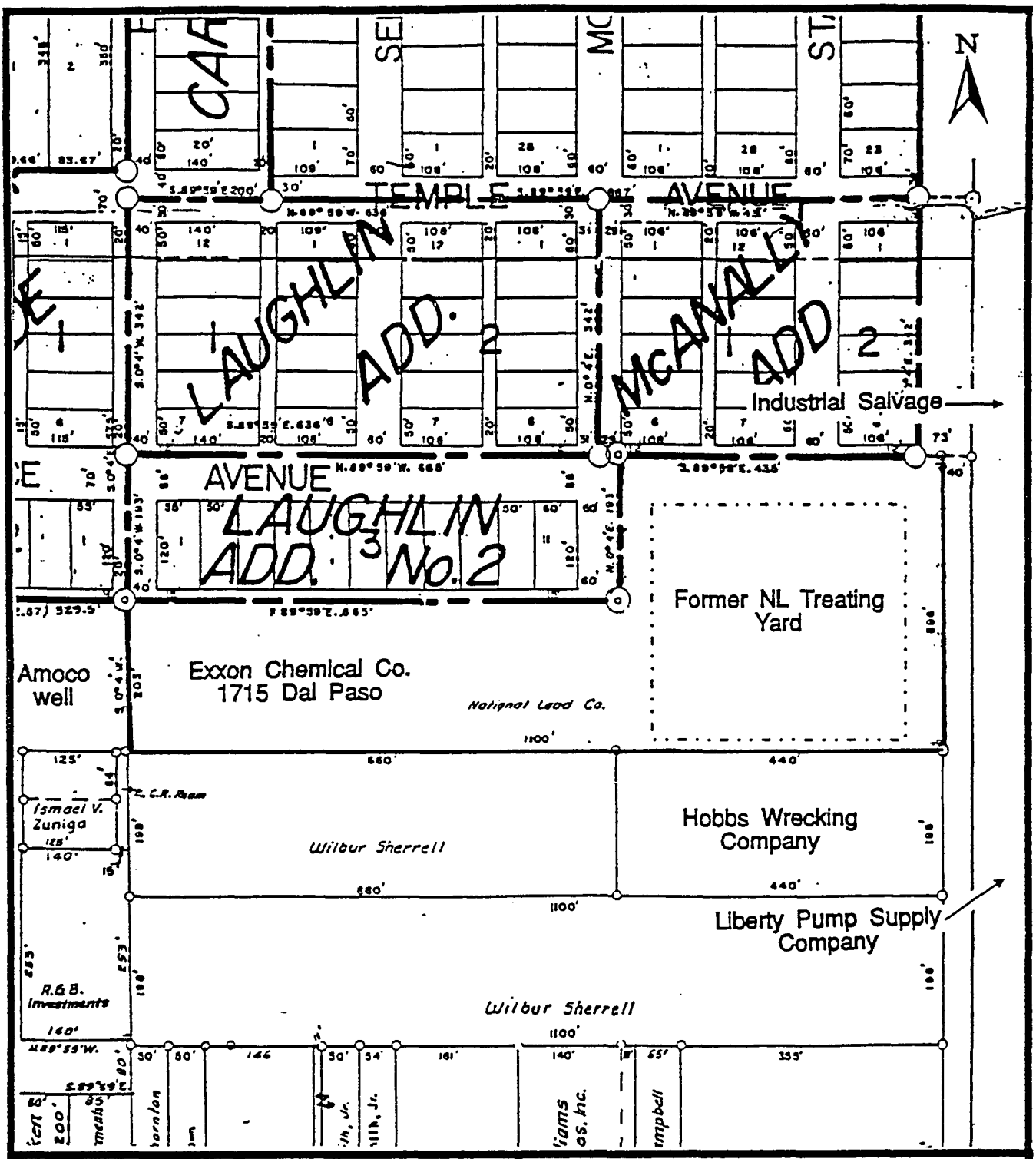
FIGURE 2-1

PROPERTY LOCATION

1715 DAL PASO
HOBBS, NEW MEXICO

DRAWN BY:	DATE:	PROJECT NO.:
CHK'D BY:	REVISED:	DWG.NO.:



Source: Commercial Appraisal Report for Exxon Company, U.S.A. May 9, 1989.

Scale: 1 inch = 200 feet

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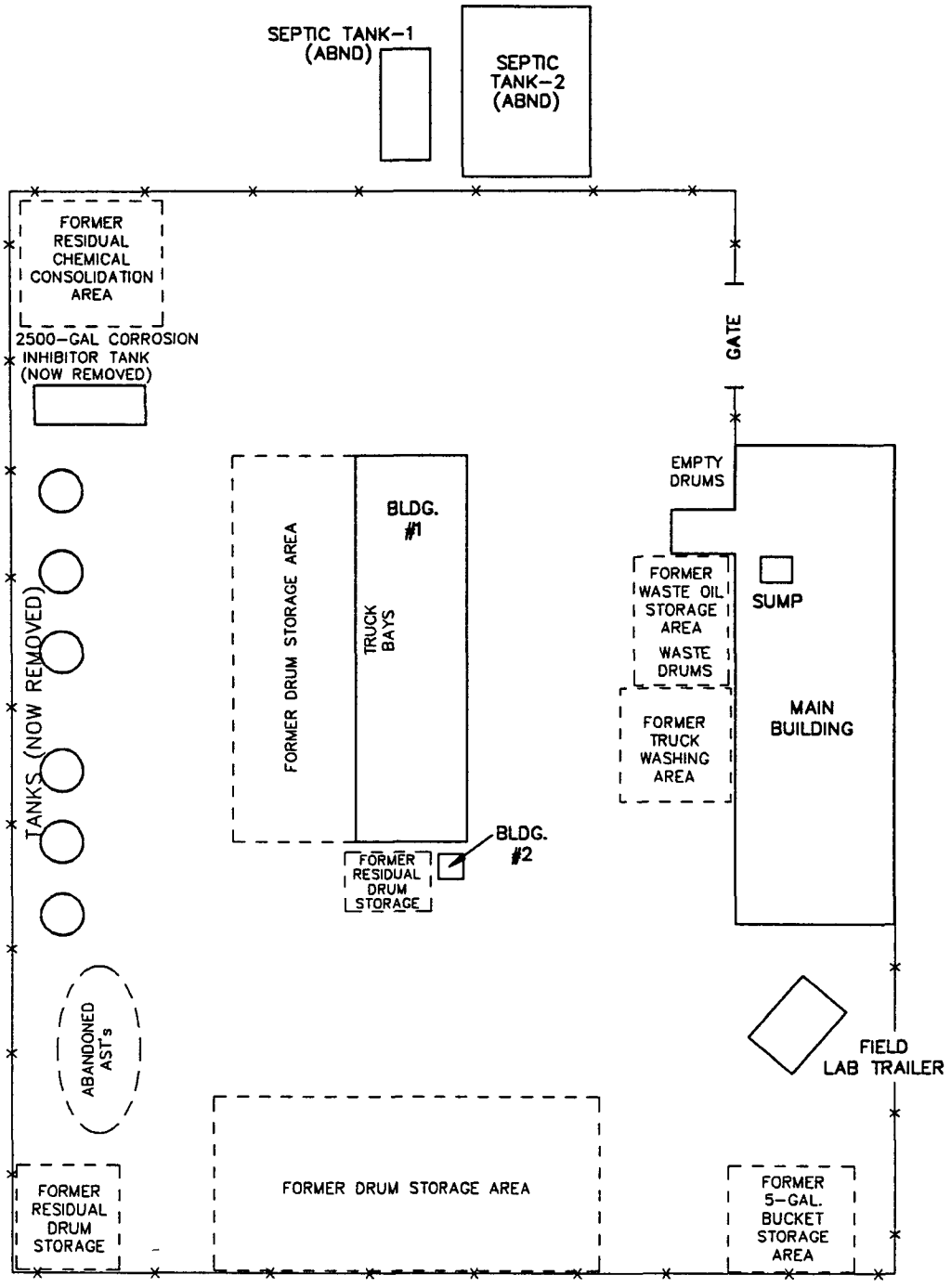
FIGURE 2-2
PROPERTY BOUNDARIES
1715 DAL PASO
HOBBS, NEW MEXICO

DRAWN BY:	DATE:	PROJECT NO.:
CHK'D BY:	REVISED:	DWG.NO.:



NOT TO SCALE

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FIGURE 2-3
FENCED YARD AREA PLOT PLAN
EXXON CHEMICAL COMPANY FACILITY
HOBBS, NEW MEXICO

DRAWN: SJF/SH	DATE: 6-9-92	PROJECT NUMBER:
APPV'D:	REVISED: 9-23-93	1009-001-150

CE100953

The Preliminary Assessment revealed areas of the facility yard that required additional investigation. As a result, ENSR conducted a Phase II Site Inspection at the site in January 1992. The findings were presented to Brown McCarroll and Oaks Hartline in a June 1992 report entitled " Phase II Site Inspection, Exxon Chemical Company Facility, 1715 Dal Paso Street, Hobbs, New Mexico."

The Site Inspection identified, through soil sample analysis and visual observation, two areas of hydrocarbon and/or lead contamination at the rear of the main building within the facility yard. Soil sample analysis confirmed the presence of TPH contamination above the State action level of 100 mg/kg as well as elevated levels of total lead in those areas. The contaminated areas are:

- waste oil storage area, and
- truck washing area.

Both areas are shown on Figure 2-2. Later waste characterization sampling of these two above areas revealed TCLP lead concentrations to be below 5 mg/l, thereby classifying the soils as nonhazardous for disposal purposes.

3.0 FIELD ACTIVITIES

ENSR Consulting and Engineering and its subcontractor, Forklift Enterprises Inc., performed the Removal Action at the Dal Paso site in July and August 1993.

3.1 Program Objectives

The objectives of the Removal Action were to excavate, remove, and dispose of contaminated soils that exceeded the OCD action levels for TPH and/or contained elevated levels of total lead.

The Removal Action used the OCD-approved workplan and the following OCD guidelines for the clean-up of hydrocarbon-contaminated soils:

- TPH - 100 mg/kg (EPA 8015(m), EPA 418.1),
- BETX (Total) - 100 mg/kg (TCLP, 8020), and
- Lead - 5 mg/l (TCLP).

3.2 Removal Action Activities

3.2.1 Excavation and Sampling in Impacted Areas

Hydrocarbon and lead contaminated soil was removed from the following two areas at the rear of the facilities main building:

- waste oil storage area, and
- truck washing area.

These areas were excavated due to the analytical results of soil samples collected during the Site Inspection as well as the physical evidence of contamination noted during the Site Inspection. Contamination was shown by soil sample analysis to exist from the surface to a depth of approximately 6 inches.

During the Removal Action activities, an exploratory trench was cut into an area just east of the previously investigated septic tank, Septic Tank-1, to determine whether a second septic tank existed at the site. This activity revealed the presence of a previously unknown septic tank, Septic Tank-2. A layer of very heavily hydrocarbon-contaminated soil was found in the bottom of the trench. The newly discovered septic tank had been filled with sand and abandoned at an

undetermined time in the past. Prior to its discovery, the location of Septic Tank-2 was a slightly elevated, sandy area adjacent to Septic Tank-1 that was covered with scattered grass and weeds.

The contaminated soil within the septic tank was excavated during the Removal Action. The contaminated soil was excavated down to a depth of approximately 16 feet, where a layer of dense, highly fractured native caliche was encountered. At this point, further excavation was not practical because of the dense rock. The contamination within the rock extended to an unknown depth. With OCD approval, the excavation was terminated and the remaining contamination was sampled and then left in place.

Verification samples were collected from both the main building and the septic tank excavations prior to backfilling with clean soil. Front end loaders, backhoes, and a bulldozer were utilized at various times to remove the contaminated soil.

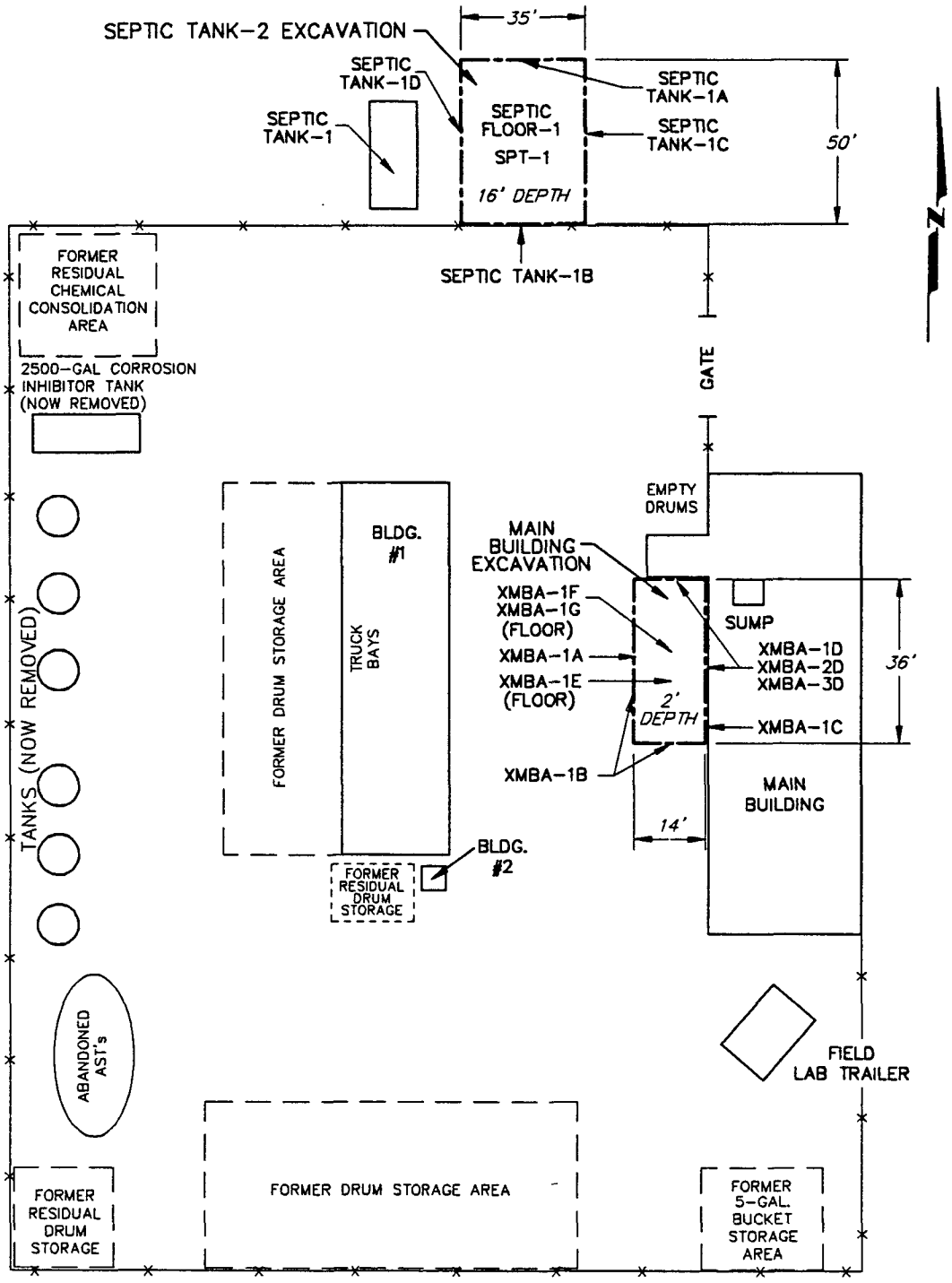
Approximately 1,488 cubic yards of contaminated soil was removed from the main building area and the second septic tank area. The excavations are shown on Figure 3-1. The analytical results of the soil samples collected during the Removal Action are presented in Section 5.0.

3.2.1.1 Main Building Area Excavation

The main building area excavation consisted of the following two immediately adjacent areas that were excavated together:

- waste oil storage area, and
- the truck washing area.

The two areas were shown by analysis of soil samples collected during the Site Inspection to have elevated levels of total lead and/or hydrocarbon contamination exceeding the State action of 100 mg/kg of TPH. The excavation was rectangular in shape and measured approximately 36 feet by 17 feet with a 2 to 2.5 foot depth. The depth of the hydrocarbon contamination observed during removal activities varied from approximately 6 inches in the western portion of the excavation to approximately 2.5 feet along the east wall of the excavation beneath the main building wall. A petroleum odor was detected during removal activities that ranged from slight



NOT TO SCALE

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FIGURE 3-1
VERIFICATION SAMPLE LOCATIONS
EXXON CHEMICAL COMPANY FACILITY
HOBBS, NEW MEXICO

DRAWN: SJF/SH	DATE: 6-9-92	PROJECT NUMBER:
APPV'D:	REVISED: 9-28-93	1009-001-150

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in the western portion of the excavation to strong beneath the concrete slab that was removed from the eastern portion of the excavation.

Initially, four composite verification soil samples were collected from the excavation walls (XMBA-1A through XMBA-1D) and three composite verification soil samples (XMBA-1E through XMBA-1G,) including one QA/QC field duplicate, were collected from the excavation floor. Analytical results showed all of the samples except one, XMBA-1D, to be within acceptable regulatory limits for TPH, BETX, and TCLP lead. Sample XMBA-1D had a TPH concentration of 389 mg/kg but was below detection limit for BETX and TCLP lead.

Sample XMBA-1D was collected from the sidewall beneath the concrete slab along the east side of the excavation. Following receipt of the analytical data, the slab was removed to allow for further excavation. Upon removing the slab, a thin layer of heavily hydrocarbon-contaminated soil was observed just beneath the slab. The layer of contaminated soil appeared to be approximately 3 to 4 inches thick. The contaminated soil beneath the slab was excavated to a maximum depth of 2.5 feet along the west wall of the main building. Following the additional excavation, the area was resampled. Composite verification sample XMBA-2D was collected from the excavation wall beneath the west wall of the building. Analysis of sample XMBA-2D revealed a TPH concentration of 148 mg/kg which was still above the action level of 100 mg/kg. A small amount of additional soil was removed, and a third verification sample was collected from the area. Analysis of sample XMBA-3D indicated all analytical parameters to be within acceptable regulatory limits. The area was then backfilled with clean soil and compacted. A layer of caliche was then spread across the area. The verification sample locations are shown on Figure 3-2. The analytical results of the main building soil samples are presented on Table 5-1.

3.2.1.2 Septic Tank Area Excavation

As part of the Removal Action the previously known and abandoned septic tank (Septic Tank-1) at the site was to be backfilled with clean soil. Earlier sampling of soils adjacent to the septic tank, during and after the Site Inspection, revealed no contamination to be present. The debris within the septic tank, consisting of concrete chunks of the collapsed roof and various steel pipe and rods, was removed and transported to the City of Hobbs landfill. The septic tank was then backfilled with clean soil and compacted.

Following the backfilling of the above septic tank (Septic Tank-1), an exploratory trench was dug with a backhoe in a slightly elevated sandy area that was covered with weeds and grass immediately to the east of Septic Tank-1. The purpose of the trench was to investigate the possible existence of a second septic tank at the facility. At a depth of approximately 6 feet, very

heavily hydrocarbon-contaminated soil was encountered indicating the presence of the second septic tank(Septic Tank-2). The contaminated soil from the newly discovered septic tank was sampled for waste classification prior to removal as required by the OCD. The sample, SPT-2, was analyzed for:

- TCLP volatile organic compounds,
- TCLP semi-volatile organic compounds,
- TCLP metals, and
- the RCRA characteristics of reactivity, corrosivity, flashpoint, and ph.

Analysis of sample SPT-2 indicated soil contamination was nonhazardous but its TPH concentration exceeded the State action level of 100 mg/kg at 9,241 mg/kg. Trace amounts of barium, mercury, and selenium were detected but were well below regulatory limits. No volatile or semi-volatile organic compounds were detected sample SPT-2. The analytical results of sample SPT-2 are presented on Table 5-3.

Excavation of the TPH-contaminated soil began after the analytical results of sample SPT-2 were received and submitted to the OCD. The upper sand fill and the underlying contaminated soil were excavated down to the top of a dense layer of highly fractured native caliche at an approximate depth of 16 feet. During excavation a clay pipe was observed protruding from the southeastern portion of the east wall at an approximate depth of two to three feet. The pipe appeared to be coming from the main building which contained the sump. Approximately 30 yards of sand from the upper few feet of fill within the septic tank did not exhibit any physical evidence of contamination and was not transported off-site. Hydrocarbon contamination was evident within the fractured native caliche beneath Septic Tank-2 and extended to an undetermined depth. With OCD approval, some contaminated caliche was left in place because it extended beyond the practical limits of the excavation. The resulting excavation measured approximately 50 feet by 35 feet with a depth of 16 feet.

Following the excavation of Septic Tank-2 four composite verification samples, Septic -1A through Septic-1D, were collected from the excavation walls and analyzed for TPH and BETX(the samples were not analyzed for TCLP lead since lead was found to be below detection limit in the Septic Tank-2 waste classification sample, SPT-2). Sample analysis indicated the soil of all four walls to be within acceptable regulatory limits. At the request of the OCD a sample, Septic floor-1, was collected from the contaminated caliche in the excavation floor and analyzed for:

- Total volatile organic compounds,
- Total semi-volatile organic compounds,
- Total RCRA metals, and

- TPH.

Analysis of sample Septic Floor-1 revealed the contaminated caliche to be nonhazardous, with a TPH concentration of 1,489 mg/kg. Several metals as well as several volatile and semi-volatile organic compounds were found at concentrations above detection limits. Arsenic, barium, chromium, and mercury were detected at concentrations of 4.8 mg/kg, 134.0 mg/kg, 9.0, and 0.15 mg/kg, respectively. The volatile compounds ethylbenzene and total xylenes were detected at concentrations of 8.726 mg/kg and 23.675 mg/kg, respectively. The semi-volatile compounds naphthalene, 2-methylnaphthalene, phenanthrene, and bis(2-ethylhexyl)phthalate were detected at concentrations of 0.226 mg/kg, 2.149 mg/kg, 0.233 mg/kg, and 0.836 mg/kg, respectively.

Following receipt of the analytical results of the septic tank excavation verification samples, the excavation was backfilled with clean soil and compacted.

The septic tank excavation soil sample locations are shown on Figure 3-3. The analytical results of the septic tank samples are presented on Table 5-2.

3.2.2 Storage of Excavated Soils

Most of the contaminated soil was loaded directly onto the trucks during excavation activities. Initially, however, excavated contaminated soils were stored on site when insufficient trucks were available to transport the soil directly to the landfill. The soil was placed on and covered by plastic sheeting until the soil could be transported to the CRI landfill.

3.2.3 Sampling and Disposal of Excavated Soils

In addition to the waste classification sample, SPT-2, collected from the contaminated soil within the second septic tank, other Removal Action waste classification samples were collected. At the request of the OCD, two in-situ waste classification soil samples were collected at the site prior to the Removal Action field activities. One of the samples, DP-1, was collected from the contaminated areas at the rear of the main building and the second sample, DP-2, was collected from soil adjacent to Septic Tank-1. Both samples were analyzed for:

- TCLP volatile organic compounds,
- TCLP semi-volatile organic compounds,
- TCLP metals, and
- RCRA characteristics (corrosivity, reactivity, flashpoint, ph).

The analytical results of the waste classification samples indicate that the soil should be classified as nonhazardous. The analytical results are presented on Table 5-3.

Permission was sought from the OCD to dispose of the excavated soils at the CRI landfill near Hobbs, New Mexico. The OCD approved disposal of the excavated soil when it approved the Removal Action workplan in May 1993. The OCD approval originally applied to soil excavated from the main building area, as no contamination had been found in the soil adjacent to Septic Tank-1. Following discovery of the hydrocarbon-contaminated soil within the second septic tank, additional approval was sought from the OCD to dispose of these soils at the CRI landfill as well. The OCD granted approval to dispose of the soil at CRI shortly before Septic Tank-2 excavation activities commenced. Approximately 1,488 cubic yards of contaminated soil removed from both excavations was disposed of at the landfill during the Removal Action.

3.2.4 Main Building Sump

During the Removal Action, the sand and debris filled sump inside the main building was to be cleaned out and filled with concrete. The sand and debris and a small amount of hydrocarbon-stained sand from the base of the sump was removed and disposed of at the CRI landfill. During removal of the sump contents, a second cell to the sump was discovered. The second cell was covered by a concrete slab with a small dirt and dust covered lid that was not observed until the contents of the original cell were being removed. The second cell contained approximately 20 gallons of water that was covered with a blue-green sheen. The liquid was sampled for waste classification. The sample, Sump Liquid-1, was analyzed for:

- TCLP volatile organic compounds,
- TCLP semi-volatile organic compounds,
- TCLP metals, and
- RCRA characteristics of reactivity, corrosivity, flashpoint, and ph.

Analysis of the sample revealed concentrations of barium and mercury that were well below regulatory limits. Resultingly, the sump liquid is nonhazardous for disposal. The analytical results of this sample are presented on Table 5-5.

3.2.5 Restoration of the Yard Area

The excavated areas were backfilled and compacted with clean sand from a local sandpit. The source of the backfill sand was the same as that used for backfill for the West Marland site. Since the backfill had been sampled for TPH and BETX prior to backfilling the excavations at the

West Marland site, no additional backfill sampling was conducted during the Dal Paso site Removal Action.

A layer of caliche was spread across the main building excavation after backfilling to replace the caliche removed for excavation activities.

4.0 FIELD AND LABORATORY QA/QC CONTROL

4.1 Sample Handling and Preservation Methods

Once samples were collected, they were placed in appropriate pre-cleaned jars. Labels, written in indelible ink, were then affixed to the sample containers.

Samples were wrapped in protective material to prevent breakage and placed in rigid, thermally insulated coolers. Sealed bags of ice were used to ensure proper preservation. Samples were sent to the Analytikem laboratory in Houston, Texas and to Environ Express laboratory in La Porte, Texas.

4.2 Decontamination of Sampling Equipment

Sampling equipment was decontaminated between each sample. The decontamination procedure for the equipment used in sample collection was:

- Scrubbing equipment with solution of alconox (non-phosphate detergent) and distilled (D.I.) water,
- Rinsing equipment with D.I. water, and
- Allowing equipment to air dry.

The decontamination procedure served to remove any contamination from the sampling equipment between samples to prevent sample cross-contamination.

4.3 Chain-of-Custody Control and Record Keeping Procedures

Proper Chain-of-Custody (COC) procedures were followed. A COC form was completed and shipped with the samples to the laboratory. The COC form served to document sample custody from the time of collection to its receipt by the laboratory.

All chain-of-custody forms are presented with the complete laboratory data packages in Appendix A. All field activities were documented in a log dedicated to this Removal Action. The logbook is stored in the project files in the ENSR Houston, Texas office.

4.4 Field QA/QC Sampling

QA/QC sampling in the field consisted of duplicate soil sampling and collection of an equipment blank sample.

One duplicate soil sample was collected during the Removal Action. The purpose of the duplicate sample was to verify the accuracy of the analytical instruments used to analyze the samples at the laboratory. The duplicate sample was collected by placing the soil to be sampled in a clean stainless steel mixing bowl and mixing the material thoroughly. The soil was then split between two sample jars. The duplicate sample collected at the site was composite verification sample XMBA-1G, which was a duplicate of XMBA-1F. The duplicate sample was analyzed for the same parameters (TPH, BETX, and TCLP lead) as the sample it duplicated.

The equipment blank sample, Eq. Blk., was also analyzed for TPH and BETX. The equipment blank sample was collected by pouring D. I. water over a freshly decontaminated stainless steel hand trowel during soil sample collection. The rinsate was collected directly into the sample jars. Equipment blank sampling verifies the efficiency of the sampling equipment decontaminating procedure.

The analytical results of the QA/QC sampling are presented on Table 5-1.

4.5 Laboratory QA/QC Methods

Laboratory quality control measures included the use of internally generated spike samples, and other instrument or calibration checks. The quality control measures are:

Check Standards

Check standards, at concentrations representing the midpoint of the calibration curve, were analyzed at a frequency of once every 10 to 15 samples. Results were used to verify the standard calibration curve used.

Spiked Samples

One out of every 10 samples was spiked with a known quantity of standard. For these spikes, two aliquots of a sample were taken; one was spiked and both were extracted and analyzed. The results were used to detect sample matrix interferences.

Duplicates

One duplicate analysis was performed for every 10 samples.

Method Blanks

One method blank was analyzed for every 10 samples.

Laboratory QA/QC results are included in the laboratory data packages in Appendix A.

5.0 ANALYTICAL RESULTS

This section presents the analytical results of the samples collected during the Removal Action at the former Exxon facility. This section also presents the analytical results of the waste classification sample collected prior to the Removal Action. The complete laboratory data packages with the analytical methods used and all laboratory QA/QC procedures are listed in Appendix A.

5.1 Analytical Data

Table 5-1 presents the analytical results for the verification soil samples collected from the main building excavation and the field QA/QC samples.

Table 5-2 presents the analytical results of the samples collected from the septic tank-2 excavation floor.

Table 5-3 presents the analytical results of the waste classification sample collected from the contaminated soil within Septic Tank-2 and Table 5-4 presents the analytical results of the waste classification samples collected prior to the Removal Action field activities.

5.2 Summarized Analytical Results

TPH

With the exception of the two soil samples collected from the floor of septic tank-2, all final verification soil samples were below detection limit for TPH. The TPH concentration of the two Septic Tank-2 floor samples, SPT-2 and Septic floor-1, were 9,241 mg/kg and 1,489 mg/kg, respectively.

BETX

All of the final verification soil samples were within acceptable regulatory limits for total BETX. The total BETX concentrations ranged from below detection limit to 0.032 mg/kg in XMBA-1F. The total BETX concentration of sample Septic floor-1, collected from the contaminated caliche in the floor of Septic Tank-2 was 32.401 mg/kg.

OTHER ANALYTICAL

Analysis of the septic tank floor sample, Septic floor-1, found the following contaminants listed below to exceed detection limit. The detection limits are in parenthesis.

Metals

Arsenic	4.8 mg/l	(0.1 mg/l)
Barium	134.0 mg/l	(0.1 mg/l)
Chromium	9.0 mg/l	(0.1 mg/l)
Mercury	0.15 mg/l	(0.01 mg/l)

Volatile Organic Compounds

Ethylbenzene	8.726 mg/kg	(0.500 mg/kg)
Total Xylene	23.675 mg/kg	(0.500 mg/kg)

Semi-Volatile Compounds

Naphthalene	0.226 mg/l	(0.250 mg/kg)
2-Methylnaphthalene	2.149 mg/kg	(0.250 mg/kg)
Phenanthrene	0.233 mg/kg	(0.250 mg/kg)
Bis(2-ethylhexyl)phthalate	0.836 mg/kg	(0.250 mg/kg)

Table 5-1
Summary of Analytical Results
Main Building Area Excavation
Verification Soil Samples

TPH/BETX Analysis													
Sample ID	Date	Sample Type (G) Grab (C) Composite	Depth	TPH mg/kg		Benzene mg/kg		Ethylbenzene mg/kg		Toluene mg/kg		Xylenes mg/kg	
				Level Det.	Det. Limit	Level Det.	Det. Limit	Level Det.	Det. Limit	Level Det.	Det. Limit	Level Det.	Det. Limit
XMBA-1D	7-27-93	C	0' - 2'	389	25	—	—	—	—	—	—	—	—
XMBA-2D[1]	8-03-93	C	0' - 2 1/2	148	25	—	—	0.001	0.001	0.002	0.001	0.008	0.003
XMBA-3D[2]	8-10-93	C	0' - 2 1/2	—	—	—	—	—	—	0.002	0.001	0.010	0.003
XMBA-1F	7-27-93	C	2 1/2'	—	—	—	—	—	—	—	—	0.032	0.003

[1] Resample of XMBA-1D area after additional excavation.
[2] Second resample of XMBA-1D area after additional excavation.

Note:

Concentrations of TCLP lead were all below detection limit.

Table 5-1
Summary of Analytical Results
Septic Tank - 2 Excavation
Verification Soil Samples

TPH/BETX Analysis													
Sample ID	Date	Sample Type (G) Grab (C) Composite	Depth	TPH mg/kg		Benzene mg/kg		Ethylbenzene mg/kg		Toluene mg/kg		Xylenes mg/kg	
				Level Det.	Det. Limit	Level Det.	Det. Limit	Level Det.	Det. Limit	Level Det.	Det. Limit	Level Det.	Det. Limit
Septic - 1C	8-26-93	C	7' - 13'	---	---	---	---	---	---	0.002	0.001	0.005	0.003
Septic floor - 1	8-26-93	C	16'	1,489	25	--	--	8.726	0.500	--	--	23.675	0.500

Table 5-2
Summary of Analytical Results
Composite Sample of Contaminated Caliche in Floor of Septic Tank - 2

Date Sampled: 8-26-93 **Sample ID: Septic Floor - 1**

Total RCRA Metals		
Analytical Parameter	**Concentration Detected mg/kg**	**Detection Limit mg/kg**
Arsenic	4.8	0.1
Barium	134.0	0.1
Chromium	9.0	0.1
Mercury	0.15	0.01
Total Semi-Volatile Organic Compounds		
Parameter	**Concentration mg/kg**	**Detection Limit mg/kg**
Naphthalene	0.226	0.250
2-Methylnaphthalene	2.149	0.250
Phenanthrene	0.233	0.250
Bis(2-ethylhexyl)phthalate	0.836	0.250

Table 5-3
Summary of Analytical Results
Septic Tank - 2
Waste Classification Sample

Date Sampled: 8-10-93 **Sample ID: Septic Tank - 2**

Analytical Parameter TCLP Metals (mg/l)	Regulatory Threshold Limit	Level Detected	Detection Limit
Barium	100.0	2.6	0.1
Mercury	0.2	0.04	0.01
Selenium	1.0	0.1	0.1
TPH (mg/kg)	100	948	25

1. No TCLP volatile or semi-volatile organic compounds were dectected above detection limit.
2. RCRA characteristics were within regulatory limits.

Table 5-4
Summary of Analytical Results
In-Situ Waste Classification Samples

Date Sampled: 9-3-92 **Sample Type: Composite**

Analtyical Parameters	Regulatory Threshold Limit	Sample ID: DP-1[1] Depth: 0'-2'		Sample ID: DP-2[2] Depth: 6'-8'	
TCLP Metals (mg/l)		**Level Detected**	**Detection Limit**	**Level Detected**	**Detection Limit**
Barium	100.0	1.2	0.5	1.2	0.5
Lead	5.0	0.1	0.02	0.02	0.02

1. DP-1 - Stained soil from main building area

2. DP-2 - Soil adjacent to septic tank -1

No TCLP volatile or semi-volatic organic compounds were detected above detection limit.

RCRA characteristics were within regulatory limits.

Table 5-5
Summary of Analytical Results
Sump Liquid
Waste Classification Sample

Date Sampled: 9-15-93 **Sample ID: Sump Liquid - 1**

Analytical Parameter TCLP Metals (mg/l)	Regulatory Threshold Limit	Level Detected	Detection Limit
Barium	100.0	4.5	0.1
Mercury	0.2	0.16	0.01

1. No TCLP volatile or semi-volatile organic compounds were dectected above detection limit.

2. RCRA characteristics were within regulatory limits.

Analytical Data Packages

1009-005-111
SPT-2

Express Laboratories
401 North 11th • La Porte, Texas 77571
(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: SP-2 Attn: S. KUYKENDAHL
Client: EXXON - HOBBS Proj. No: 1009005111
Proj. Location: DAL PASO Environ ID: 20747
Sample Matrix: SOIL Sample Depth: Sampled: 08/ 10 / 93
Received: 08/ 11 / 93 Reported: 08/ 13 / 93 Invoice No.: 4085

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	9,241	< 25	25

Analyst: J.M. Date Extracted: 08/12/93 Date Analyzed: 08/12/93 @ 01:06
Standard : DIESEL

John E. Keller
John E. Keller, Ph.D.

1009-005-111
SPT-2

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: SPT-2 Attn: S. KUYKENDALL

Client: EXXON - HOBBS Proj. No: 1009005111

Proj. Location: DAL PASO Environ ID: 20747

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 10 / 93

Received: 08/ 11 / 93 Reported: 08/ 17 / 93 Invoice No.: 4085

TCLP RCRA METALS (METHOD 1311)

Metals	Method	Results mg/l	Detection Limit mg/kg	Max Conc.
Arsenic	7061	< 0.1	0.1	5.0
Barium	7080	2.6	0.1	100.0
Cadmium	7130	< 0.1	0.1	1.0
Chromium	7190	< 0.1	0.1	5.0
Lead	7420	< 0.1	0.1	5.0
Mercury	7470	0.04	0.01	0.2
Selenium	7741	0.1	0.1	1.0
Silver	7760	< 0.1	0.1	5.0

Analyst: A.R. Date Extracted: 08/16/93 Date Analyzed: 08/16/93 @ 08:03

John E. Keller

John E. Keller, Ph.D.

Environ Express Laboratories
401 North 11th St.
La Porte, Texas 77571

CONSCI

Attn: Steve Henning
Certificate #: 30811002
Sample ID: 20747 SPT-2
Date Received: 08/11/93

Invoice #:

TOXICITY CHARACTERISTIC CONSTITUENTS AND REGULATORY LEVELS

Analyte	Concentration mg/Kg	Detection Limit mg/Kg	Regulatory Level mg/Kg
Benzene	ND	0.005	0.5
Carbon tetrachloride	ND	0.005	0.5
Chlorobenzene	ND	0.005	100.0
Chloroform	ND	0.005	6.0
o-Cresol	ND	0.005	200.0
m-Cresol	ND	0.005	200.0
p-Cresol	ND	0.005	200.0
Cresol	ND	0.005	200.0
1,4-Dichlorobenzene	ND	0.005	7.5
1,2-Dichloroethane	ND	0.005	0.5
1,1-Dichloroethylene	ND	0.005	0.7
2,4-Dinitrotoluene	ND	0.005	0.13
Hexachlorobenzene	ND	0.005	0.13
Hexachloro-1,3-butadiene	ND	0.005	0.5
Hexachloroethane	ND	0.005	3.0
Methyl ethyl ketone	ND	0.005	200.0
Nitrobenzene	ND	0.005	2.0
Pentachlorophenol	ND	0.005	100.0
Pyridine	ND	0.005	5.0
Tetrachloroethylene	ND	0.005	0.7
Trichloroethylene	ND	0.005	0.5
2,4,5-Trichlorophenol	ND	0.005	400.0
2,4,6-Trichlorophenol	ND	0.005	2.0
Vinyl Chloride	ND	0.005	0.2

Parameter	Methods	Results	Units	Analyst	Date
Re. Sulfide	SW 7.3.3.2	<0.10	mg/Kg	GAB	08/12/93
Re. Cyanide	SW 7.3.4.1	<0.10	mg/Kg	GAB	08/12/93
Corrisivity	SW 9045	9.25		GAB	08/12/93
Ignitability	SW 1010	>230	°F	GAB	08/12/93

Michael A. Sommer II, Ph.D.

1009-005-111
XMBA-3D

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: XMBA-3D Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009005111

Proj. Location: DAL PASO Environ ID: 20748

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 10 / 93

Received: 08/ 11 / 93 Reported: 08/ 13 / 93 Invoice No.: 4085

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	0.001	< 0.001	0.001
Ethylbenzene	0.002	< 0.001	0.001
Xylenes	0.010	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/12/93 Date Analyzed: 08/12/93 @ 00:19
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 08/12/93 Date Analyzed: 08/12/93 @ 00:16
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: BTEX	METHOD: 5030/8020	MATRIX: SOIL
ANALYST: J.M.	DETECTION LIMIT: 1	UNITS: PPM (mg/kg)
DATE: 08/10/93	SAMPLES IN SET: 18	FREQUENCY: 1/20

SAMPLES:	20665, 20669, 20671, 20686-20693, 20748, 20752-20756
	20760

MATRIX SPIKE [MS] / MATRIX SPIKE DUPLICATE [MSD] ANALYSIS

SAMPLE MATRIX	[A] SAMPLE ANALYSIS PPB ug/kg	[B] SPIKE ADDED PPB ug/kg	[C] MS ANALYSIS PPB ug/kg	[D] MS REC-OVERY %	[E] MSD ANALYSIS PPB ug/kg	[F] MSD REC-OVERY %	[G] REL DIFF %	QC RD %	LIMITS REC RANGE %
BENZENE	< 1	100	86	86	95	95	10	20	51-107
TOLUENE	< 1	100	83	83	93	93	11	20	44-108
ETHYLBENZENE	< 1	100	77	77	88	88	13	20	47-111
XYLENES	< 3	300	267	89	290	97	9	20	43-119

% MS RECOVERY [D] = 100 * |[C - A]| / [B]

% MSD RECOVERY [F] = 100 * |[E - A]| / [B]

% RELATIVE DIFFERENCE [G] = 200 * |[D - F]| / [D + F]

ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER, Ph.D

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: TPH (GC)	METHOD: 8015M	MATRIX: SOIL
ANALYST: J.K.	DETECTION LIMIT:<25	UNITS: PPM (mg/kg)
DATE: 08/11/93	SAMPLES IN SET: 2	FREQUENCY: 1/20

SAMPLES:	20747-20748

MATRIX SPIKE [MS] ANALYSIS

SAMPLE ID	[A] SAMPLE ANALYSIS PPM mg/kg	[B] SPIKE ADDED PPM mg/kg	[C] MS TOTAL PPM mg/kg	[D] MS ANALYSIS PPM mg/kg	[E] RECOVERY %
MATRIX	< 25	100	100	112	112

MATRIX DUPLICATE [MD] ANALYSIS

SAMPLE ID	[F] ORIG. SAMPLE ANALYSIS PPM mg/kg	[G] MD ANALYSIS PPM mg/kg	[H] RELATIVE DIFFERENCE %
MATRIX	109	112	3

MS TOTAL [C] = [A] + [B]
SAMPLE ANALYSIS [A] = [F + G] / 2
% RECOVERY [E] = 100 * ¦[D - A]¦ / [B]
% RELATIVE DIFFERENCE [H] = 200 * ¦[F - G]¦ / [F + G]
ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER, Ph.D

CHAIN OF CUSTODY RECORD

ENVIRON EXPRESS LABORATORIES
401 North 11th, La Porte, Texas 77571
(713) 471-0951 / (800) 880-0156
Fax No. (713) 471-5821

ENVIRON Express Laboratories

Page 1 of

Project No.: 1009-005-111
Project Name: Exxon-Hobbs
Project Location: Dal Paso
Turn Around Time: Check One: ☐ 1 day ☑ 2 days ☐ 5 days (ASAP)

Sampler's Affiliation: ENSR C&E
Sampler's Name (PRINT): J S KUYKENDALL
Sampler's: (Signature) [signature]

Results to: Scott Kuykendall phone 5209900 fax 5206502
Sampler Remarks: TPH by 8015
Address: 3000 Richmond
City: Houston Tx 77098
Lab Remarks:
Invoice to: SAME No. ( )

LABORATORY ANALYSIS
Reference EPA Method #

Lab Number	Field Sample No./Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	BTEX 8020	TPH ~~418.1~~ 8015	Total Lead	TCLP Lead 1311	EPTOX Lead 1310					
20747	SPT-2	8-10-93 1100	✓		4oz ~~soil~~ glass	Soil	4°C		✓								TPH
	SPT-2	8-10-93 1100	✓		4oz	Soil	4°C										TCLP Volatiles
	SPT-2	8-10-93 1100	✓		4oz	Soil	4°C										TCLP Semi-volatiles
	SPT-2	8-10-93 1100	✓		4oz	Soil	4°C										TCLP Metals
	SPT-2	8-10-93 1100	✓		4oz	Soil	4°C										pH, Corrosivity
	SPT-2	8-10-93 1100	✓		4oz	Soil	4°C										Flash point Reactivity
	SPT-2	8-10-93 1100	✓		4oz	Soil	4°C										EXTRA
	SPT-2	8-10-93 1100	✓		4oz	Soil	4°C										EXTRA
20748	XMBA-3D	8-10-93 0915		✓	4oz	Soil	4°C	✓	✓								DUE: 8-12-93 INV. #4085

Relinquished by: (Signature) [signature] Date: 8-10-93 Time: 1400 Received By: (Signature) [signature] Date: 8/11 Time: 1025 Intact ✓

Relinquished by: (Signature) Date: Time: Received By: (Signature) Date: Time: Intact

1009-005-111
XMBA-1A

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: XMBA-1A Attn: S. KUYKENDAHL

Client: EXXON Proj. No: 1009005111

Proj. Location: DAL PASO, HOBBS Environ ID: 20297

Sample Matrix: SOIL Sample Depth: _____ Sampled: 07/ 27 / 93

Received: 07/ 28 / 93 Reported: 07/ 29 / 93 Invoice No.: 4015

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 07/29/93 Date Analyzed: 07/29/93 @ 01:06
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 07/29/93 Date Analyzed: 07/29/93 @ 02:34
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-005-111
XMBA-1A

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Customer: ENSR Sample ID: XMBA-1A Attn: S. KUYKENDAHL

Client: EXXON Proj. No: 1009005111

Proj. Location: DAL PASO, HOBBS Environ ID: 20297

Sample Matrix: SOIL Sample Depth: Sampled: 07/ 27 / 93

Received: 07/ 28 / 93 Reported: 08/ 02 / 93 Invoice No.: 4015

Test Method 1311/7420	Result PPM (mg/l)	Blank PPM (mg/l)	Detection Limit PPM (mg/l)
Lead (TCLP)	< 1	< 1	1

Analyst: J.K. Date Extracted: 07/29/93 Date Analyzed: 07/29/93 @ 16:03
Standard : 7420 - 5.2

John E. Keller

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1009-005-111
XMBA-1B

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Customer: ENSR Sample ID: XMBA-1B Attn: S. KUYKENDAHL

Client: EXXON Proj. No: 1009005111

Proj. Location: DAL PASO, HOBBS Environ ID: 20298

Sample Matrix: SOIL Sample Depth: Sampled: 07/ 27 / 93

Received: 07/ 28 / 93 Reported: 07/ 29 / 93 Invoice No.: 4015

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 07/29/93 Date Analyzed: 07/29/93 @ 01:41
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 07/29/93 Date Analyzed: 07/29/93 @ 03:23
Standard : DIESEL

John E. Keller

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1009-005-111
XMBA-1B

Express Laboratories

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Customer: ENSR Sample ID: XMBA-1B Attn: S. KUYKENDAHL

Client: EXXON Proj. No: 1009005111

Proj. Location: DAL PASO, HOBBS Environ ID: 20298

Sample Matrix: SOIL Sample Depth: Sampled: 07/ 27 / 93

Received: 07/ 28 / 93 Reported: 08/ 02 / 93 Invoice No.: 4015

Test Method 1311/7420	Result PPM (mg/l)	Blank PPM (mg/l)	Detection Limit PPM (mg/l)
Lead (TCLP)	< 1	< 1	1

Analyst: J.K. Date Extracted: 07/29/93 Date Analyzed: 07/29/93 @ 16:03
Standard : 7420 - 5.2

John E. Keller

John E. Keller, Ph.D.

1009-005-111
XMBA-1C

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(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: XMBA-1C Attn: S. KUYKENDAHL

Client: EXXON Proj. No: 1009005111

Proj. Location: DAL PASO, HOBBS Environ ID: 20299

Sample Matrix: SOIL Sample Depth: Sampled: 07/ 27 / 93

Received: 07/ 28 / 93 Reported: 07/ 29 / 93 Invoice No.: 4015

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 07/28/93 Date Analyzed: 07/28/93 @ 18:33
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 07/29/93 Date Analyzed: 07/29/93 @ 04:13
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-005-111
XMBA-1C

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: XMBA-1C Attn: S. KUYKENDAHL

Client: EXXON Proj. No: 1009005111

Proj. Location: DAL PASO, HOBBS Environ ID: 20299

Sample Matrix: SOIL Sample Depth: _____ Sampled: 07/ 27 / 93

Received: 07/ 28 / 93 Reported: 08/ 02 / 93 Invoice No.: 4015

Test Method 1311/7420	Result PPM (mg/l)	Blank PPM (mg/l)	Detection Limit PPM (mg/l)
Lead (TCLP)	< 1	< 1	1

Analyst: J.K. Date Extracted: 07/29/93 Date Analyzed: 07/29/93 @ 16:03
Standard : 7420 - 5.2

John E. Keller

John E. Keller, Ph.D.

1009-005-111
XMBA-1D

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: XMBA-1D Attn: S. KUYKENDAHL

Client: EXXON Proj. No: 1009005111

Proj. Location: DAL PASO, HOBBS Environ ID: 20300

Sample Matrix: SOIL Sample Depth: _____ Sampled: 07/ 27 / 93

Received: 07/ 28 / 93 Reported: 07/ 29 / 93 Invoice No.: 4015

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 07/28/93 Date Analyzed: 07/28/93 @ 19:09
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	389	< 25	25

Analyst: J.M. Date Extracted: 07/29/93 Date Analyzed: 07/29/93 @ 05:04
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-005-111
XMBA-1D

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: XMBA-1D Attn: S. KUYKENDAHL

Client: EXXON Proj. No: 1009005111

Proj. Location: DAL PASO, HOBBS Environ ID: 20300

Sample Matrix: SOIL Sample Depth: Sampled: 07/ 27 / 93

Received: 07/ 28 / 93 Reported: 08/ 02 / 93 Invoice No.: 4015

Test Method 1311/7420	Result PPM (mg/l)	Blank PPM (mg/l)	Detection Limit PPM (mg/l)
Lead (TCLP)	< 1	< 1	1

Analyst: J.K. Date Extracted: 07/29/93 Date Analyzed: 07/29/93 @ 16:03
Standard : 7420 - 5.2

John E. Keller

John E. Keller, Ph.D.

1009-005-111
XMBA-1E

Express Laboratories

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(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: XMBA-1E Attn: S. KUYKENDAHL

Client: EXXON Proj. No: 1009005111

Proj. Location: DAL PASO, HOBBS Environ ID: 20301

Sample Matrix: SOIL Sample Depth: _____ Sampled: 07/ 27 / 93

Received: 07/ 28 / 93 Reported: 07/ 29 / 93 Invoice No.: 4015

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 07/28/93 Date Analyzed: 07/28/93 @ 19:46
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 07/29/93 Date Analyzed: 07/29/93 @ 05:54
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-005-111
XMBA-1E

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: XMBA-1E Attn: S. KUYKENDAHL

Client: EXXON Proj. No: 1009005111

Proj. Location: DAL PASO, HOBBS Environ ID: 20301

Sample Matrix: SOIL Sample Depth: Sampled: 07/ 27 / 93

Received: 07/ 28 / 93 Reported: 08/ 02 / 93 Invoice No.: 4015

Test Method 1311/7420	Result PPM (mg/l)	Blank PPM (mg/l)	Detection Limit PPM (mg/l)
Lead (TCLP)	< 1	< 1	1

Analyst: J.K. Date Extracted: 07/29/93 Date Analyzed: 07/29/93 @ 16:03
Standard : 7420 - 5.2

John E. Keller

John E. Keller, Ph.D.

1009-005-111
XMBA-1F

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: XMBA-1F Attn: S. KUYKENDAHL

Client: EXXON Proj. No: 1009005111

Proj. Location: DAL PASO, HOBBS Environ ID: 20302

Sample Matrix: SOIL Sample Depth: _____ Sampled: 07/ 27 / 93

Received: 07/ 28 / 93 Reported: 07/ 29 / 93 Invoice No.: 4015

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	0.032	< 0.003	0.003

Analyst: J.M. Date Extracted: 07/29/93 Date Analyzed: 07/29/93 @ 08:10
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 07/29/93 Date Analyzed: 07/29/93 @ 06:43
Standard : DIESEL

John E. Keller, Ph.D.

1009-005-111
XMBA-1F

Express Laboratories

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Customer: ENSR Sample ID: XMBA-1F Attn: S. KUYKENDAHL

Client: EXXON Proj. No: 1009005111

Proj. Location: DAL PASO, HOBBS Environ ID: 20302

Sample Matrix: SOIL Sample Depth: _____ Sampled: 07/ 27 / 93

Received: 07/ 28 / 93 Reported: 08/ 02 / 93 Invoice No.: 4015

Test Method 1311/7420	Result PPM (mg/l)	Blank PPM (mg/l)	Detection Limit PPM (mg/l)
Lead (TCLP)	< 1	< 1	1

Analyst: J.K. Date Extracted: 07/29/93 Date Analyzed: 07/29/93 @ 16:03
Standard : 7420 - 5.2

John E. Keller

John E. Keller, Ph.D.

1009-005-111
XMBA-1G

Express Laboratories

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Customer: ENSR Sample ID: XMBA-1G Attn: S. KUYKENDAHL

Client: EXXON Proj. No: 1009005111

Proj. Location: DAL PASO, HOBBS Environ ID: 20303

Sample Matrix: SOIL Sample Depth: Sampled: 07/ 27 / 93

Received: 07/ 28 / 93 Reported: 07/ 29 / 93 Invoice No.: 4015

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.032	< 0.003	0.003

Analyst: J.M. Date Extracted: 07/29/93 Date Analyzed: 07/29/93 @ 04:38
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 07/29/93 Date Analyzed: 07/29/93 @ 07:32
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-005-111
XMBA-1G

Express Laboratories

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(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: XMBA-1G Attn: S. KUYKENDAHL

Client: EXXON Proj. No: 1009005111

Proj. Location: DAL PASO, HOBBS Environ ID: 20303

Sample Matrix: SOIL Sample Depth: Sampled: 07/ 27 / 93

Received: 07/ 28 / 93 Reported: 08/ 02 / 93 Invoice No.: 4015

Test Method 1311/7420	Result PPM (mg/l)	Blank PPM (mg/l)	Detection Limit PPM (mg/l)
Lead (TCLP)	< 1	< 1	1

Analyst: J.K. Date Extracted: 07/29/93 Date Analyzed: 07/29/93 @ 16:03
Standard : 7420 - 5.2

John E. Keller

John E. Keller, Ph.D.

1009-005-111
EQ BLK

Express Laboratories

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(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: EQ BLK Attn: S. KUYKENDAHL

Client: EXXON Proj. No: 1009005111

Proj. Location: DAL PASO, HOBBS Environ ID: 20304

Sample Matrix: WATER Sample Depth: _____ Sampled: 07/ 27 / 93

Received: 07/ 28 / 93 Reported: 07/ 29 / 93 Invoice No.: 4015

Test Method 5030/8020	Result PPB (ug/l)	Blank PPB (ug/l)	Detection Limit PPB (ug/l)
Benzene	< 1	< 1	1
Toluene	< 1	< 1	1
Ethylbenzene	< 1	< 1	1
Xylenes	< 3	< 3	3

Analyst: J.M. Date Extracted: 07/28/93 Date Analyzed: 07/28/93 @ 11:37
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/l)	Blank PPM (mg/l)	Detection Limit PPM (mg/l)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 07/28/93 Date Analyzed: 07/28/93 @ 21:34
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: BTEX	METHOD: 5030/8020	MATRIX: SOIL
ANALYST: J.M.	DETECTION LIMIT: 1	UNITS: PPM (mg/kg)
DATE: 07/28/93	SAMPLES IN SET: 12	FREQUENCY: 1/20
SAMPLES:	20289-20290, 20292-20294, 20297-20303	

MATRIX SPIKE [MS] / MATRIX SPIKE DUPLICATE [MSD] ANALYSIS

SAMPLE MATRIX	[A] SAMPLE ANALYSIS PPB ug/kg	[B] SPIKE ADDED PPB ug/kg	[C] MS ANALYSIS PPB ug/kg	[D] MS REC-OVERY %	[E] MSD ANALYSIS PPB ug/kg	[F] MSD REC-OVERY %	[G] REL DIFF %	QC RD %	LIMITS REC RANGE %
BENZENE	< 1	100	93	93	100	100	7	20	51-107
TOLUENE	< 1	100	94	94	81	81	15	20	44-108
ETHYLBENZENE	< 1	100	94	94	85	85	10	20	47-111
XYLENES	< 3	300	289	96	254	85	12	20	43-119

% MS RECOVERY [D] = 100 * |[C - A]| / [B]

% MSD RECOVERY [F] = 100 * |[E - A]| / [B]

% RELATIVE DIFFERENCE [G] = 200 * |[D - F]| / [D + F]

ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER, Ph.D

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: BTEX	METHOD: 602	MATRIX: WATER
ANALYST: J.M.	DETECTION LIMIT: 1	UNITS: PPB (ug/l)
DATE: 07/28/93	SAMPLES IN SET: 18	FREQUENCY: 1/20

SAMPLES:	20178, 20235-20242, 20259-20263, 20286, 20295-20296
	20304

MATRIX SPIKE [MS] / MATRIX SPIKE DUPLICATE [MSD] ANALYSIS

SAMPLE MATRIX	[A] SAMPLE ANALYSIS PPB (ug/l)	[B] SPIKE ADDED PPB (ug/l)	[C] MS ANALYSIS PPB (ug/l)	[D] MS REC-OVERY %	[E] MSD ANALYSIS PPB (ug/l)	[F] MSD REC-OVERY %	[G] REL DIFF %	QC RD %	LIMITS REC RANGE %
BENZENE	< 1	100	98	98	100	100	2	20	49-117
TOLUENE	< 1	100	102	102	105	105	3	20	53-117
ETHYLBENZENE	< 1	100	104	104	108	108	4	20	53-119
XYLENES	< 3	300	312	104	324	108	4	20	56-116

% MS RECOVERY [D] = 100 * ¦[C - A]¦ / [B]
% MSD RECOVERY [F] = 100 * ¦[E - A]¦ / [B]
% RELATIVE DIFFERENCE [G] = 200 * ¦[D - F]¦ / [D + F]
ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER, Ph.D

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: TPH (GC)	METHOD: 8015M	MATRIX: SOIL
ANALYST: J.K.	DETECTION LIMIT:<25	UNITS: PPM (mg/kg)
DATE: 07/28/93	SAMPLES IN SET: 20	FREQUENCY: 1/20

SAMPLES:	20289-20290, 20292-20294, 20297-20303, 20353-20356
	20358-20361

MATRIX SPIKE [MS] ANALYSIS

SAMPLE ID	[A] SAMPLE ANALYSIS PPM mg/kg	[B] SPIKE ADDED PPM mg/kg	[C] MS TOTAL PPM mg/kg	[D] MS ANALYSIS PPM mg/kg	[E] RECOVERY %
MATRIX	< 25	100	100	115	115

MATRIX DUPLICATE [MD] ANALYSIS

SAMPLE ID	[F] ORIG. SAMPLE ANALYSIS PPM mg/kg	[G] MD ANALYSIS PPM mg/kg	[H] RELATIVE DIFFERENCE %
MATRIX	115	111	4

MS TOTAL [C] = [A] + [B]
SAMPLE ANALYSIS [A] = [F + G] / 2
% RECOVERY [E] = 100 * ¦[D - A]¦ / [B]
% RELATIVE DIFFERENCE [H] = 200 * ¦[F - G]¦ / [F + G]
ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER, Ph.D

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: TPH (GC)	METHOD: 8015M	MATRIX: WATER
ANALYST: J.K.	DETECTION LIMIT:<25	UNITS: PPM (mg/l)
DATE: 07/27/93	SAMPLES IN SET: 14	FREQUENCY: 1/20

SAMPLES:	20235-20242, 20264-20268, 20304

MATRIX SPIKE [MS] ANALYSIS

SAMPLE ID	[A] SAMPLE ANALYSIS PPM mg/kg	[B] SPIKE ADDED PPM mg/kg	[C] MS TOTAL PPM mg/kg	[D] MS ANALYSIS PPM mg/kg	[E] RECOVERY %
MATRIX	< 25	100	100	106	106

MATRIX DUPLICATE [MD] ANALYSIS

SAMPLE ID	[F] ORIG. SAMPLE ANALYSIS PPM mg/kg	[G] MD ANALYSIS PPM mg/kg	[H] RELATIVE DIFFERENCE %
MATRIX	106	104	2

MS TOTAL [C] = [A] + [B]
SAMPLE ANALYSIS [A] = [F + G] / 2
% RECOVERY [E] = 100 * ¦[D - A]¦ / [B]
% RELATIVE DIFFERENCE [H] = 200 * ¦[F - G]¦ / [F + G]
ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER, Ph.D

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: LEAD (TCLP)	METHOD: 1311/7420	MATRIX: SOIL
ANALYST: A. ROEHRICK	DETECTION LIMIT: 1	UNITS: PPM (mg/l)
DATE: 07/29/93	SAMPLES IN SET: 7	FREQUENCY: 1/20

SAMPLES:	20297-20303

MATRIX SPIKE [MS] ANALYSIS

SAMPLE ID	[A] SAMPLE ANALYSIS PPM mg/l	[B] SPIKE ADDED PPM mg/l	[C] MS TOTAL PPM mg/l	[D] MS ANALYSIS PPM mg/l	[E] RECOVERY %
MATRIX	< 1	10	10	9	90

MATRIX DUPLICATE [MD] ANALYSIS

SAMPLE ID	[F] ORIG. SAMPLE ANALYSIS PPM mg/l	[G] MD ANALYSIS PPM mg/l	[H] RELATIVE DIFFERENCE %
MATRIX	9	9	0

MS TOTAL [C] = [A] + [B]
SAMPLE ANALYSIS [A] = [F + G] / 2
% RECOVERY [E] = 100 * ¦[D - A]¦ / [B]
% RELATIVE DIFFERENCE [H] = 200 * ¦[F - G]¦ / [F + G]
ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER, Ph.D

CHAIN OF CUSTODY RECORD

Page 1 of _____

ENVIRON EXPRESS LABORATORIES
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Fax No. (713) 471-5821

Project No.	Project Name	Project Location	Turn Around Time: Check One
1009-005-111	Exxon	Dal Paso-Hobbs	☑ 1 day ☐ 2 days ☐ 5 days

Sampler's Affiliation: ENSR C+E
Sampler's Name (PRINT): J Scott Kuykendall
Sampler's: (Signature) J Scott Kuykendall
LABORATORY ANALYSIS Reference EPA Method #

Results to: Scott Kuykendall phone 713-520 9900 fax 713-520 6802
Sampler Remarks:

Address: 3000 Richmond
TPH by GC

City: Houston TX 77098
Lab Remarks:

Invoice to: SAME No. ( )

Lab Number	Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	BTEX 8020	TPH 418.1	Total Lead 6010	TCLP Lead 1311	EPTOX Lead 1310					
20297	XMBA-1A	7-27-93 1120		✓	4oz	Soil	4°C	✓	✓		✓						
20298	XMBA-1B	7-27-93 1125		✓	4oz	Soil	4°C	✓	✓		✓						
20299	XMBA-1C	7-27-93 1130		✓	4oz	Soil	4°C	✓	✓		✓						
20300	XMBA-1D	7-27-93 1135		✓	4oz	Soil	4°C	✓	✓		✓						
20301	XMBA-1E	7-27-93 1137		✓	4oz	Soil	4°C	✓	✓		✓						
20302	XMBA-1F	7-27-93 1140		✓	4oz	Soil	4°C	✓	✓		✓						
20303	XMBA-1G	7-27-93 1145		✓	4oz	Soil	4°C	✓	✓		✓						
20304	Eq blk	7-27-93 1155		✓	32oz	~~Soil~~ Liquid SK	4°C	✓	✓		✓						
		7- -93		✓		Soil	4°C	✓	✓		✓						DUE: 1-29-93 INV # 4015
		7- -93		✓		Soil	4°C	✓	✓		✓						

Relinquished by: (Signature)	Date: Time:	Received By: (Signature)	Date: Time:	Intact
J Scott Kuykendall	7-27-93 1415		7/28 1100	—
Relinquished by: (Signature)	Date: Time:	Received By: (Signature)	Date: Time:	Intact

1009-006-111
XMBA-2D (DAL PASO)

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: XMBA-2D Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20569

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 03 / 93

Received: 08/ 04 / 93 Reported: 08/ 05 / 93 Invoice No.: 4052

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	0.001	< 0.001	0.001
Ethylbenzene	0.002	< 0.001	0.001
Xylenes	0.008	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/04/93 Date Analyzed: 08/04/93 @ 17:35
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	148	< 25	25

Analyst: J.M. Date Extracted: 08/05/93 Date Analyzed: 08/05/93 @ 03:17
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-006-111
XMBA-2D (DAL PASO)

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: XMBA-2D Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009006111

Proj. Location: WEST MARLAND Environ ID: 20569

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 03 / 93

Received: 08/ 04 / 93 Reported: 08/ 06 / 93 Invoice No.: 4052

Test Method 1311/7420	Result PPM (mg/l)	Blank PPM (mg/l)	Detection Limit PPM (mg/l)
Lead (TCLP)	< 1	< 1	1

Analyst: J.K. Date Extracted: 08/06/93 Date Analyzed: 08/06/93 @ 08:03
Standard : 7420 - 5.2

John E. Keller

John E. Keller, Ph.D.

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: BTEX	METHOD: 5030/8020	MATRIX: SOIL
ANALYST: J.M.	DETECTION LIMIT: 1	UNITS: PPM (mg/kg)
DATE: 08/04/93	SAMPLES IN SET: 20	FREQUENCY: 1/20

SAMPLES:	20531-20540, 20569-20577, 20580

MATRIX SPIKE [MS] / MATRIX SPIKE DUPLICATE [MSD] ANALYSIS

SAMPLE MATRIX	[A] SAMPLE ANALYSIS PPB ug/kg	[B] SPIKE ADDED PPB ug/kg	[C] MS ANALYSIS PPB ug/kg	[D] MS REC-OVERY %	[E] MSD ANALYSIS PPB ug/kg	[F] MSD REC-OVERY %	[G] REL DIFF %	QC RD %	LIMITS REC RANGE %
BENZENE	< 1	100	88	88	82	82	7	20	51-107
TOLUENE	< 1	100	91	91	85	85	7	20	44-108
ETHYLBENZENE	< 1	100	95	95	87	87	9	20	47-111
XYLENES	< 3	300	281	94	261	87	8	20	43-119

% MS RECOVERY [D] = 100 * |[C - A]| / [B]

% MSD RECOVERY [F] = 100 * |[E - A]| / [B]

% RELATIVE DIFFERENCE [G] = 200 * |[D - F]| / [D + F]

ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER, Ph.D

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: TPH (GC)	METHOD: 8015M	MATRIX: SOIL
ANALYST: J.K.	DETECTION LIMIT:<25	UNITS: PPM (mg/kg)
DATE: 08/03/93	SAMPLES IN SET: 16	FREQUENCY: 1/20

SAMPLES:	20507-20509, 20512-22524

MATRIX SPIKE [MS] ANALYSIS

SAMPLE ID	[A] SAMPLE ANALYSIS PPM mg/kg	[B] SPIKE ADDED PPM mg/kg	[C] MS TOTAL PPM mg/kg	[D] MS ANALYSIS PPM mg/kg	[E] RECOVERY %
MATRIX	< 25	100	100	95	95

MATRIX DUPLICATE [MD] ANALYSIS

SAMPLE ID	[F] ORIG. SAMPLE ANALYSIS PPM mg/kg	[G] MD ANALYSIS - PPM mg/kg	[H] RELATIVE DIFFERENCE %
MATRIX	95	95	0

MS TOTAL [C] = [A] + [B]

SAMPLE ANALYSIS [A] = [F + G] / 2

% RECOVERY [E] = 100 * ¦[D - A]¦ / [B]

% RELATIVE DIFFERENCE [H] = 200 * ¦[F - G]¦ / [F + G]

ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER, Ph.D

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: LEAD (TCLP)	METHOD: 1311/7420	MATRIX: SOIL
ANALYST: A. ROEHRICK	DETECTION LIMIT: 1	UNITS: PPM (mg/l)
DATE: 08/06/93	SAMPLES IN SET: 16	FREQUENCY: 1/20

SAMPLES:	19969, 19982, 20202, 20531-20542, 20569

MATRIX SPIKE [MS] ANALYSIS

SAMPLE ID	[A] SAMPLE ANALYSIS PPM mg/l	[B] SPIKE ADDED PPM mg/l	[C] MS TOTAL PPM mg/l	[D] MS ANALYSIS PPM mg/l	[E] RECOVERY %
MATRIX	< 1	10	10	10	100

MATRIX DUPLICATE [MD] ANALYSIS

SAMPLE ID	[F] ORIG. SAMPLE ANALYSIS PPM mg/l	[G] MD ANALYSIS PPM mg/l	[H] RELATIVE DIFFERENCE %
MATRIX	10	10	0

MS TOTAL [C] = [A] + [B]
SAMPLE ANALYSIS [A] = [F + G] / 2
% RECOVERY [E] = 100 * ¦[D - A]¦ / [B]
% RELATIVE DIFFERENCE [H] = 200 * ¦[F - G]¦ / [F + G]
ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER, Ph.D

ENVIRON
Express Laboratories

CHAIN OF CUSTODY RECORD

ENVIRON EXPRESS LABORATORIES
401 North 11th, La Porte, Texas 77571
(713) 471-0951 / (800) 880-0156
Fax No. (713) 471-5821

Project No.	Project Name	Project Location	Turn Around Time: Check One
1009-006-111	Exxon - Hobbs	West Marland	☑ 1 day ☐ 2 days ☐ 5 days

Sampler's Affiliation: ENSR C & E	Sampler's Name (PRINT): JS Kuykendall
Results to: Scott Kuykendall phone 520 9900 fax 520 6802	Sampler's: (Signature) JS Kuykendall
Address: 3000 Richmond	Sampler Remarks: TCLP by 8015
City: Houston Tx 77098	Lab Remarks:
Invoice to: Same No. ( )	

LABORATORY ANALYSIS
Reference EPA Method #

Lab Number	Field Sample No./ Identification	Date and Time	Grab	Comp.	Sample Container (Size/Mat'l)	Sample Type (Liquid, Sludge, Etc.)	Preservative	BTEX 8020	TPH 418.1	Total Lead	TCLP Lead 1311	EPTOX Lead 1310	
20569	XMBA-2D (Dal Pasa)	8-3-93 0920		✓	4oz x2	Soil	4°C	✓	✓		✓		
20570	Floor-1A	8-3-93 1235		✓	4oz	Soil	4°C	✓	✓				
20571	Floor-1B	8-3-93 1240		✓	4oz	Soil	4°C	✓	✓				
20572	Floor-1C	8-3-93 1244		✓	4oz	Soil	4°C	✓	✓				
20573	Floor-1D	8-3-93 1248		✓	4oz	Soil	4°C	✓	✓				
20574	Floor-1E	8-3-93 1252		✓	4oz	Soil	4°C	✓	✓				
20575	Floor-1F	1256 8-3-93		✓	4oz	Soil	4°C	✓	✓				
20576	Floor-1G	1300 8-3-93		✓	4oz	Soil	4°C	✓	✓				
20577	Floor-1H	8-3-93 1305		✓	4oz	Soil	4°C	✓	✓				DUE: 8-5-93 INV.# 4052

Relinquished by: (Signature) JS Kuykendall	Date: 8-3-93 Time: 1430	Received By: (Signature)	Date: 8/4 Time: 1015	Intact
Relinquished by: (Signature)	Date: Time:	Received By: (Signature)	Date: Time:	Intact

1009-005-111
SEPTIC-1A

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: SEPTIC-1A Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009005111

Proj. Location: DAL PASO Environ ID: 21322

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 26 / 93

Received: 08/ 27 / 93 Reported: 08/ 30 / 93 Invoice No.: 4153

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/28/93 Date Analyzed: 08/28/93 @ 22:33
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 08/28/93 Date Analyzed: 08/28/93 @ 22:30
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-005-111
SEPTIC-1B

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: SEPTIC-1B Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009005111

Proj. Location: DAL PASO Environ ID: 21323

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 26 / 93

Received: 08/ 27 / 93 Reported: 08/ 30 / 93 Invoice No.: 4153

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/28/93 Date Analyzed: 08/28/93 @ 23:08
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 08/28/93 Date Analyzed: 08/28/93 @ 23:19
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-005-111
SEPTIC-1C

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: SEPTIC-1C Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009005111

Proj. Location: DAL PASO Environ ID: 21324

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 26 / 93

Received: 08/ 27 / 93 Reported: 08/ 30 / 93 Invoice No.: 4153

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	0.002	< 0.001	0.001
Xylenes	0.005	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/28/93 Date Analyzed: 08/28/93 @ 23:42
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 08/29/93 Date Analyzed: 08/29/93 @ 00:07
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-005-111
SEPTIC-1D

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: SEPTIC-1D Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009005111

Proj. Location: DAL PASO Environ ID: 21325

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 26 /93

Received: 08/ 27 / 93 Reported: 08/ 30 / 93 Invoice No.: 4153

Test Method 5030/8020	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Benzene	< 0.001	< 0.001	0.001
Toluene	< 0.001	< 0.001	0.001
Ethylbenzene	< 0.001	< 0.001	0.001
Xylenes	< 0.003	< 0.003	0.003

Analyst: J.M. Date Extracted: 08/29/93 Date Analyzed: 08/29/93 @ 00:52
Standard : 8020 - 5.2

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	< 25	< 25	25

Analyst: J.M. Date Extracted: 08/29/93 Date Analyzed: 08/29/93 @ 00:56
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-005-111
SEPTIC FLOOR-1

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: SEPTIC FLOOR Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009005111

Proj. Location: DAL PASO Environ ID: 21326

Sample Matrix: SOIL Sample Depth: Sampled: 08/ 26 / 93

Received: 08/ 27 / 93 Reported: 08/ 30 / 93 Invoice No.: 4153

Test Method 8015M	Result PPM (mg/kg)	Blank PPM (mg/kg)	Detection Limit PPM (mg/kg)
Petroleum Extractables	1,489	< 25	25

Analyst: J.M. Date Extracted: 08/29/93 Date Analyzed: 08/29/93 @ 01:45
Standard : DIESEL

John E. Keller

John E. Keller, Ph.D.

1009-005-111
SEPTIC FLOOR-1

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: SEPTIC FLOOR Attn: S. KUYKENDAHL

Client: EXXON - HOBBS Proj. No: 1009005111

Proj. Location: DAL PASO Environ ID: 21326

Sample Matrix: SOIL Sample Depth: _____ Sampled: 08/ 26 / 93

Received: 08/ 27 / 93 Reported: 08/ 31 / 93 Invoice No.: 4153

TOTAL RCRA METALS

Metals	Method	Results mg/l	Detection Limit mg/kg	Max Conc.
Arsenic	7061	4.8	0.1	5.0
Barium	7080	134.0	0.1	100.0
Cadmium	7130	< 0.1	0.1	1.0
Chromium	7190	9.0	0.1	5.0
Lead	7420	< 0.1	0.1	5.0
Mercury	7470	0.15	0.01	0.2
Selenium	7741	< 0.1	0.1	1.0
Silver	7760	< 0.1	0.1	5.0

Analyst: A.R. Date Extracted: 08/30/93 Date Analyzed: 08/30/93 @ 14:00

John E. Keller

John E. Keller, Ph.D.

Environ Express Laboratories
401 North 11th St.
La Porte, Texas 77571

CONSCI

Attn: Steve Henning

Invoice #:

Certificate #: 30827003
Sample ID: 21326 Septic Floor-1
Date Received: 08/27/93

BASE/NEUTRAL & ACID EXTRACTABLES (METHOD 625)

Base/Neutral Extractables

	Concentration mg/Kg	Detection Limit mg/Kg
Bis(2-chloroethyl)ether	ND	0.250
1,3 Dichlorobenzene	ND	0.250
1,4 Dichlorobenzene	ND	0.250
1,2 Dichlorobenzene	ND	0.250
Bis(2-chloroisopropyl)ether	ND	0.250
Hexachloroethane	ND	0.250
N-Nitrosodi-n-propylamine	ND	0.250
Nitrobenzene	ND	0.250
Isophorone	ND	0.250
Bis(2-Chloroethoxy)methane	ND	0.250
Hexachlorocyclopentadiene	ND	0.250
1,2,4 Trichlorobenzene	ND	0.250
Naphthalene	0.226	0.250
Hexachlorobutadiene	ND	0.250
Acenaphthylene	ND	0.250
Dimethyl phthalate	ND	0.250
2,6 Dinitrotoluene	ND	0.250
Acenaphthene	ND	0.250
2-Chloronaphthalene	ND	0.250
2,4 Dinitrotoluene	ND	0.250
Fluorene	ND	0.250
4-Chlorophenyl phenyl ether	ND	0.250
Diethyl phthalate	ND	0.250
2-Methylnaphthalene	2.149	0.250

Michael A. Sommer II, Ph.D.

CONSCI

Environ Express Laboratories
Certificate #: 30827003
Sample ID: 21326 Spectic Floor-1
Date Received: 08/27/93

BASE/NEUTRAL & ACID EXTRACTABLES (METHOD 625)

Base/Neutral Extractables

	Concentration mg/Kg	Detection Limit mg/Kg
4-Bromophenyl phenyl ether	ND	0.250
Hexachlorobenzene	ND	0.250
Phenanthrene	0.233	0.250
Anthracene	ND	0.250
Di-n-butylphthalate	ND	0.250
Fluoranthene	ND	0.250
Pyrene	ND	0.250
Benzidine	ND	0.250
Benzyl Butyl phthalate	ND	0.250
Chrysene	ND	0.250
Benzo(a)anthracene	ND	0.250
3,3-Dichlorobenzidine	ND	0.250
Di-n-octylphthalate	ND	0.250
Bis(2-ethylhexyl)phthalate	0.836	0.250
Benzo(b)fluoranthene	ND	0.250
Benzo(k)fluoranthene	ND	0.250
Benzo(a)pyrene	ND	0.250
Indeno(1,2,3-cd)pyrene	ND	0.250
Dibenzo(a,h)anthracene	ND	0.250
Benzo(ghi)perylene	ND	0.250
N-Nitrosodimethylamine	ND	0.250
N-Nitrosodiphenylamine	ND	0.250

Michael A. Sommer II, Ph.D.

CONSCI

Environ Express Laboratories
Certificate #: 30827003
Sample ID: 21326 Septic Floor-1
Date Received: 08/27/93

Acid Extractables

	Concentration mg/Kg	Detection Limit mg/Kg
Phenol	ND	0.250
2-Chlorophenol	ND	0.250
2-Nitrophenol	ND	0.250
2,4-Dimethylphenol	ND	0.250
2,4-Dichlorophenol	ND	0.250
4-Chloro-3-methylphenol	ND	0.250
2,4,6-Trichlorophenol	ND	0.250
2,4-Dinitrophenol	ND	0.250
4-Nitrophenol	ND	0.250
2-Methyl-4,6-dinitrophenol	ND	0.250
Pentachlorophenol	ND	0.250

Surrogate Recoveries:

2-Fluorophenol	140 %
Phenol-d5	105 %
Nitrobenzene	104 %
2-Fluorobiphenyl	103 %
Terphenyl-d14	90 %

Michael A. Sommer II, Ph.D.

Environ Express Laboratories
Certificate #: 30827003
Sample ID: 21326 Septic Floor-1
Date Received: 08/27/93

VOLATILE ORGANICS (METHOD 624)

Parameter	Concentration mg/Kg	Detection Limit mg/Kg
Chloromethane	ND	0.500
Bromomethane	ND	0.500
Vinyl chloride	ND	0.500
Chloroethane	ND	0.500
Methylene chloride	ND	0.500
Trichlorofluoromethane	ND	0.500
1,1-Dichloroethene	ND	0.500
1,1-Dichloroethane	ND	0.500
trans-1,2-Dichloroethene	ND	0.500
Chloroform	ND	0.500
1,2 Dichloroethane	ND	0.500
1,1,1-Trichloroethane	ND	0.500
Carbon tetrachloride	ND	0.500
Bromodichloromethane	ND	0.500
1,2-Dichloropropane	ND	0.500
trans-1,3-Dichloropropene	ND	0.500
Trichloroethene	ND	0.500
Benzene	ND	0.500
1,1,2-Trichloroethane	ND	0.500
cis-1,3-Dichloropropene	ND	0.500
2-Chloroethylvinyl ether	ND	0.500
Bromoform	ND	0.500
1,1,2,2-Tetrachloroethane	ND	0.500
Tetrachloroethene	ND	0.500
Toluene	ND	0.500
Chlorobenzene	ND	0.500
Ethyl benzene	8.726	0.500
Dibromochloromethane	ND	0.500
1,2-Dichlorobenzene	ND	0.500
1,3-Dichlorobenzene	ND	0.500
1,4-Dichlorobenzene	ND	0.500
m+p-Xylene	11.532	0.500
o-Xylene	12.143	0.500
Styrene	ND	0.500

Michael A. Sommer II, Ph.D.

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: BTEX	METHOD: 5030/8020	MATRIX: SOIL
ANALYST: J.M.	DETECTION LIMIT: 1	UNITS: PPM (mg/kg)
DATE: 08/28/93	SAMPLES IN SET: 15	FREQUENCY: 1/20
SAMPLES:	21235- 21243, 21280, 21320, 21322-21325	

MATRIX SPIKE [MS] / MATRIX SPIKE DUPLICATE [MSD] ANALYSIS

SAMPLE MATRIX	[A] SAMPLE ANALYSIS PPB ug/kg	[B] SPIKE ADDED PPB ug/kg	[C] MS ANALYSIS PPB ug/kg	[D] MS REC-OVERY %	[E] MSD ANALYSIS PPB ug/kg	[F] MSD REC-OVERY %	[G] REL DIFF %	QC RD %	LIMITS REC RANGE %
BENZENE	< 1	100	97	97	93	93	4	20	51-107
TOLUENE	< 1	100	97	97	92	92	5	20	44-108
ETHYLBENZENE	< 1	100	96	96	91	91	5	20	47-111
XYLENES	< 3	300	287	95	277	92	3	20	43-119

% MS RECOVERY [D] = 100 * |[C - A]| / [B]

% MSD RECOVERY [F] = 100 * |[E - A]| / [B]

% RELATIVE DIFFERENCE [G] = 200 * |[D - F]| / [D + F]

ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER, Ph.D

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: TPH (GC)	METHOD: 8015M	MATRIX: SOIL
ANALYST: J.K.	DETECTION LIMIT:<25	UNITS: PPM (mg/kg)
DATE: 08/28/93	SAMPLES IN SET: 5	FREQUENCY: 1/20

SAMPLES:	21322-21326

MATRIX SPIKE [MS] ANALYSIS

SAMPLE ID	[A] SAMPLE ANALYSIS PPM mg/kg	[B] SPIKE ADDED PPM mg/kg	[C] MS TOTAL PPM mg/kg	[D] MS ANALYSIS PPM mg/kg	[E] RECOVERY %
MATRIX	< 25	100	100	86	86

MATRIX DUPLICATE [MD] ANALYSIS

SAMPLE ID	[F] ORIG. SAMPLE ANALYSIS PPM mg/kg	[G] MD ANALYSIS PPM mg/kg	[H] RELATIVE DIFFERENCE %
MATRIX	86	88	2

MS TOTAL [C] = [A] + [B]

SAMPLE ANALYSIS [A] = [F + G] / 2

% RECOVERY [E] = 100 * |[D - A]| / [B]

% RELATIVE DIFFERENCE [H] = 200 * |[F - G]| / [F + G]

ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER, Ph.D

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: LEAD (TCLP)	METHOD: 1311/7420	MATRIX: SOIL
ANALYST: A. ROEHRICK	DETECTION LIMIT: 1	UNITS: PPM (mg/l)
DATE: 08/29/93	SAMPLES IN SET: 18	FREQUENCY: 1/20

SAMPLES:	21326,221341-21357

MATRIX SPIKE [MS] ANALYSIS

SAMPLE ID	[A] SAMPLE ANALYSIS PPM mg/l	[B] SPIKE ADDED PPM mg/l	[C] MS TOTAL PPM mg/l	[D] MS ANALYSIS PPM mg/l	[E] RECOVERY %
21326	< 1	10	10	7	70

MATRIX DUPLICATE [MD] ANALYSIS

SAMPLE ID	[F] ORIG. SAMPLE ANALYSIS PPM mg/l	[G] MD ANALYSIS PPM mg/l	[H] RELATIVE DIFFERENCE %
21326	7	7	0

MS TOTAL [C] = [A] + [B]
SAMPLE ANALYSIS [A] = [F + G] / 2
% RECOVERY [E] = 100 * |[D - A]| / [B]
% RELATIVE DIFFERENCE [H] = 200 * |[F - G]| / [F + G]
ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER, Ph.D

CHAIN OF CUSTODY RECORD

Page ___ / ___ of ___

ENVIRON EXPRESS LABORATORIES
401 North 11th, La Porte, Texas 77571
(713) 471-0951 / (800) 880-0156
Fax No. (713) 471-5821

Project No.	Project Name	Project Location	Turn Around Time: Check One
1009-005-111	~~Exxon~~ Exxon - Hobbs	Dal Paso	☑ 1 day ☐ 2 days ☐ 5 days

Sampler's Affiliation:	Sampler's Name (PRINT): JS Kuykendall	LABORATORY ANALYSIS Reference EPA Method #
ENSR C & E	Sampler's: (Signature) JScott Kuykendall	

Results to: Scott Kuykendall	phone 520 990c fax 520 6802	Sampler Remarks:
Address: 3300 Richmond		TPH by 8015
City: Houston TX		Lab Remarks:
Invoice to:	No. ( )	

Lab Number	Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat.)	Sample Type (Liquid, Sludge, Etc.)	Preservative	BTEX 8020	TPH ~~418.1~~ 8015	Total Lead	TCLP Lead 1311	EPTOX Lead 1310					
21322	Septic - 1A	8-26-93 1330		✓	8oz um	Soil	4°C	✓	✓								
21323	Septic - 1B	8-26-93 1330		✓	8oz um	Soil	4°C	✓	✓								
21324	Septic - 1C	8-26-93 1330		✓	8oz um	Soil	4°C	✓	✓								
21325	Septic - 1D	8-26-93 1330		✓	8oz um	Soil	4°C	✓	✓								DUE: 8-30-93 INV.# 4153
21326	Septic Floor - 1	8-26-93 1330	✓		8oz um	Soil	4°C	✓	✓								
	Septic Floor - 1	8-26-93 1330	✓		8oz um	Soil	4°C										TOTAL Volatiles
	Septic Floor - 1	8-26-93 1330	✓		8oz um	Soil	4°C										TOTAL Semi-Volatiles
	Septic Floor - 1	8-26-93 1330	✓		8oz um	Soil	4°C										TOTAL RCRA METALS
✓	Septic Floor 1	8-26-93 1330	✓		8oz um	Soil	4°C										EXTRA

Relinquished by: (Signature)	Date: 8-26-93 Time: 1415	Received By: (Signature)	Date: 8/27 Time: 1000	Intact
JS Kuykendall		R Wheeler		✓
Relinquished by: (Signature)	Date: Time:	Received By: (Signature)	Date: Time:	Intact

1009005-111
SUMP LIQUID-1

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: SUMP LIQ-1 Attn: B. ESTES

Client: EXXON - HOBBS, NEW MEXICO Proj. No: 1009005111

Proj. Location: DAL PASO Environ ID: 21909

Sample Matrix: LIQUID Sample Depth: _____ Sampled: 09/ 15 / 93

Received: 09/ 15 / 93 Reported: 09/ 28 / 93 Invoice No.: 4230

TCLP RCRA METALS (METHOD 1311)

Metals	Method	Results mg/l	Detection Limit mg/l	Max Conc.
Arsenic	7061	< 0.1	0.1	5.0
Barium	7080	4.5	0.1	100.0
Cadmium	7130	< 0.1	0.1	1.0
Chromium	7190	< 0.1	0.1	5.0
Lead	7420	< 0.1	0.1	5.0
Mercury	7470	0.16	0.01	0.2
Selenium	7741	< 0.1	0.1	1.0
Silver	7760	< 0.1	0.1	5.0

Analyst: J.K. Date Extracted: 09/23/93 Date Analyzed: 09/23/93 @ 13:45

John E. Keller

John E. Keller, Ph.D.

mba labs/houston labs
MICRO BIOLOGICAL AND BIOCHEMICAL ASSAY LABS
P.O. BOX 9461 HOUSTON, TEXAS 77261
TELEPHONE (713)928-2701 (800)472-1485 FAX (713)928-9063

LABORATORY IDENTIFICATION
JS4187 - 1

ANALYSIS CERTIFICATE

10/10/93

CUSTOMER IDENTIFICATION	CUSTOMER	CONTACT/CONTRACTOR
21909 SUMP LIQUID	Environ Express Laboratories	Roxanne Wheeler

PROJECT#	PROJECT NAME	PO #	RELEASE #	CHARGE#

DATE RECEIVED	DATE COMPLETED	MATRIX	TYPE	PRESERV	CONTAINER	DATE SAMPLED	TIME SAMPLED
09/17/93	09/28/93	SOIL	GR	REFRIG	GLASS	09/17/93	00:00

PARAMETER	RESULT	DET. LIMIT	UNITS	METHOD	DATE	INIT
Preparation TCLP ZHE	Done		su	EPA1311	09/21/93	NG
Preapation TCLP Semivolatiles Ext	Done		su	EPA1311	09/21/93	NG
TCLP VOA'S						
Benzene	<0.02		mg/l	SW846-8240	09/23/93	YA
Carbon Tetrachloride	<0.02		mg/l	SW846-8240	09/23/93	YA
Chlorobenzene	<0.02		mg/l	SW846-8240	09/23/93	YA
Chloroform	<0.02		mg/l	SW846-8240	09/23/93	YA
1,2 Dichloroethane	<0.02		mg/l	SW846-8240	09/23/93	YA
1,1 Dichloroethylene	<0.02		mg/l	SW846-8240	09/23/93	YA
Methyl Ethyl Ketone	<0.02		mg/l	SW846-8240	09/23/93	YA
Tetrachloroethylene	<0.02		mg/l	SW846-8240	09/23/93	YA
Trichloroethylene	<0.02		mg/l	SW846-8240	09/23/93	YA
Vinyl Chloride	<0.02		mg/l	SW846-8240	09/23/93	YA
TCLP Semi-volatiles						
o cresol	<0.02		mg/l	SW846-8270	09/28/93	YA
m cresol	<0.02		mg/l	SW846-8270	09/28/93	YA
p cresol	<0.02		mg/l	SW846-8270	09/28/93	YA
cresol	<0.02		mg/l	SW846-8270	09/28/93	YA
1,4 Dichlorobenzene	<0.02		mg/l	SW846-8270	09/28/93	YA
2,4 Dinitrotoluene	<0.02		mg/l	SW846-8270	09/28/93	YA
Hexachlorobenzene	<0.02		mg/l	SW846-8270	09/28/93	YA
Hexachlorobutadiene	<0.02		mg/l	SW846-8270	09/28/93	YA
Hexachloroethane	<0.02		mg/l	SW846-8270	09/28/93	YA
Nitrobenzene	<0.02		mg/l	SW846-8270	09/28/93	YA
Pentachlorophenol	<0.02		mg/l	SW846-8270	09/28/93	YA
Pyridine	<0.02		mg/l	SW846-8270	09/28/93	YA
2,4,5 Trichlorophenol	<0.02		mg/l	SW846-8270	09/28/93	YA
2,4,6 Trichlorophenol	<0.02		mg/l	SW846-8270	09/28/93	YA

Approved By : _____ Lab Director/Lab Manager

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: LEAD (TCLP)	METHOD: 1311/7420	MATRIX: SOIL
ANALYST: A. ROEHRICK	DETECTION LIMIT: 1	UNITS: PPM (mg/l)
DATE: 09/22/93	SAMPLES IN SET: 5	FREQUENCY: 1/20

SAMPLES:	21909-21912, 21917

MATRIX SPIKE [MS] ANALYSIS

SAMPLE ID	[A] SAMPLE ANALYSIS PPM mg/l	[B] SPIKE ADDED PPM mg/l	[C] MS TOTAL PPM mg/l	[D] MS ANALYSIS PPM mg/l	[E] RECOVERY %
MATRIX	< 1	10	10	11	110

MATRIX DUPLICATE [MD] ANALYSIS

SAMPLE ID	[F] ORIG. SAMPLE ANALYSIS PPM mg/l	[G] MD ANALYSIS PPM mg/l	[H] RELATIVE DIFFERENCE %
MATRIX	11	11	0

MS TOTAL [C] = [A] + [B]
SAMPLE ANALYSIS [A] = [F + G] / 2
% RECOVERY [E] = 100 * ¦[D - A]¦ / [B]
% RELATIVE DIFFERENCE [H] = 200 * ¦[F - G]¦ / [F + G]
ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER, Ph.D

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: CHROME TCLP	METHOD: 3050/7190	MATRIX: SOIL
ANALYST: A. ROEHRICK	DETECTION LIMIT: 1	UNITS: PPM (mg/l)
DATE: 09/22/93	SAMPLES IN SET: 5	FREQUENCY: 1/20

SAMPLES:	21909-21912, 21917

MATRIX SPIKE [MS] ANALYSIS

SAMPLE ID	[A] SAMPLE ANALYSIS PPM mg/l	[B] SPIKE ADDED PPM mg/l	[C] MS TOTAL PPM mg/l	[D] MS ANALYSIS PPM mg/l	[E] RECOVERY %
MATRIX	< 1	10	10	9	90

MATRIX DUPLICATE [MD] ANALYSIS

SAMPLE ID	[F] ORIG. SAMPLE ANALYSIS PPM mg/l	[G] MD ANALYSIS PPM mg/l	[H] RELATIVE DIFFERENCE %
MATRIX	9	9	0

MS TOTAL [C] = [A] + [B]
SAMPLE ANALYSIS [A] = [F + G] / 2
% RECOVERY [E] = 100 * ¦[D - A]¦ / [B]
% RELATIVE DIFFERENCE [H] = 200 * ¦[F - G]¦ / [F + G]
ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER, Ph.D

CHAIN OF CUSTODY RECORD

Page_____ of _____

ENVIRON Express Laboratories

ENVIRON EXPRESS LABORATORIES
401 North 11th, La Porte, Texas 77571
(713) 471-0951 / (800) 880-0156
Fax No. (713) 471-5821

Project No.	Project Name	Project Location	Turn Around Time: Check One
1009005-111	EXXON - Hobbs, New Mexico	Dal Paso	☐ 1 day ☐ 2 days ☒ 5 days

Sampler's Affiliation: FORKLIFT ENTERPRISES, INC., for ENSR

Sampler's Name (PRINT): CLYDE HARRISON, JR.

Sampler's: (Signature) Clyde Harrison Jr

LABORATORY ANALYSIS
Reference EPA Method #

Results to: ENSR phone 713-520-9900 fax 713-520-6802

Sampler Remarks:

Address: 3000 Richmond Ave.

City: Houston, Texas 77098

Lab Remarks:

Invoice to: ENSR No. ( )

Lab Number	Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat.)	Sample Type (Liquid, Sludge, Etc.)	Preservative	BTEX 8020	TPH 418.1	Total Lead	TCLP Lead 1311	EPTOX Lead 1310	TCLP VOC	TCLP SEMI-VOC	TCLP Metals	
21909	Sump Liquid - 1	9/15/93 12N	X			Liquid	4°C					X	X	X		

DUE: 9-23-93
INV # 4230

Relinquished by: (Signature)	Date/Time	Received By: (Signature)	Date/Time	Intact
Clyde Harrison Jr	9/15/93 2Pm		9/15 1030	
Relinquished by: (Signature)	Date: Time:	Received By: (Signature)	Date: Time:	Intact

WASH BAY SUMP

Express Laboratories

401 North 11th • La Porte, Texas 77571

(713) 471-0951 • 1 (800) 880-0156 • FAX (713) 471-5821

Customer: ENSR Sample ID: Sump Liquid-1 (WASH BAY SUMP) Attn: S. KUYKENDALL

Client: EXXON CHEMICAL - HOBBS, N.M. Proj. No: _____

Proj. Location: S. DAL PASO - HOBBS, N.M. Environ ID: 22722

Sample Matrix: LIQUID Sample Depth: _____ Sampled: 10 / 20 / 93

Received: 10/ 21 / 93 Reported: 10/ 22 / 93 Invoice No.: 4347

Test Method	Result	Blank	Detection Limit
418.1	PPM (mg/l)	PPM (mg/l)	PPM (mg/l)
Petroleum Extractables	< 0.5	< 0.5	0.5

Analyst: J.M. Date Extracted: 10/21/93 Date Analyzed: 10/21/93 @ 15:00
Standard : 418.1 - 6.5.1

John E. Keller

John E. Keller, Ph.D.

ENVIRON QUALITY CONTROL REPORT

ANALYSIS: TPH	METHOD: 418.1	MATRIX: WATER
ANALYST: J.M.	DETECTION LIMIT: 1	UNITS: PPM (mg/l)
DATE: 10/21/93	SAMPLES IN SET: 3	FREQUENCY: 1/20

SAMPLES:	22710, 22721-22722

MATRIX SPIKE [MS] ANALYSIS

SAMPLE ID	[A] SAMPLE ANALYSIS PPM mg/l	[B] SPIKE ADDED PPM mg/l	[C] MS TOTAL PPM mg/l	[D] MS ANALYSIS PPM mg/l	[E] RECOVERY %
MATRIX	< 1	10	10	9	90

MATRIX DUPLICATE [MD] ANALYSIS

SAMPLE ID	[F] ORIG. SAMPLE ANALYSIS PPM mg/l	[G] MD ANALYSIS PPM mg/l	[H] RELATIVE DIFFERENCE %
MATRIX	9	9	0

MS TOTAL [C] = [A] + [B]
SAMPLE ANALYSIS [A] = [F + G] / 2
% RECOVERY [E] = 100 * ¦[D - A]¦ / [B]
% RELATIVE DIFFERENCE [H] = 200 * ¦[F - G]¦ / [F + G]
ND = NONE DETECTED WHEN ANALYZED

John E. Keller

JOHN KELLER, Ph.D

mba labs/houston labs
MICRO BIOLOGICAL AND BIOCHEMICAL ASSAY LABS
P.O. BOX 9461 HOUSTON, TEXAS 77261
TELEPHONE (713)928-2701 (800)472-1485 FAX (713)928-9063

LABORATORY IDENTIFICATION
J34657 - 2

ANALYSIS CERTIFICATE

10/26/93

CUSTOMER IDENTIFICATION	CUSTOMER	CONTACT/CONTRACTOR
22722	Environ Express Laboratories	Roxanne Wheeler

PROJECT#	PROJECT NAME	PO #	RELEASE #	CHARGE#

DATE RECEIVED	DATE COMPLETED	MATRIX	TYPE	PRESERV	CONTAINER	DATE SAMPLED	TIME SAMPLED
10/21/93	10/22/93	WATER	GR	REFRIG	GLASS	10/21/93	00:00

Sump Liquid-1

PARAMETER	RESULT	DET LIMIT	UNITS	METHOD	DATE	INIT
Flash Point	>150		Degs F	SW846-1010	10/22/93	MM
Corrosivity pH	8.18		su	SW846-9065	10/21/93	BK
Reactive Sulfide	<1		mg/L	SW846-9030.7342	10/22/93	VDJ
Cyanides						
Cyanide - Reactive	<0.02		mg/L	SW846-9010	10/21/93	NG

Approved By : _____ Lab Director/Lab Manager

mba labs/houston labs
MICRO BIOLOGICAL AND BIOCHEMICAL ASSAY LABS
P.O. BOX 8461 HOUSTON, TEXAS 77281
TELEPHONE (713)928-2701 (800)472-1485 FAX (713)928-8063

LABORATORY IDENTIFICATION
J54637 - 2

QUALITY CONTROL CERTIFICATE

10/26/93

CUSTOMER IDENTIFICATION
22722

CUSTOMER
Environ Express Laboratories

CONTACT/CONTRACTOR
Roxanne Wheeler

Sump Liquid-1

PARAMETER	UNITS	LAB ID	SAMPLE RESULT	DUP RESULT	SPIKE RESULT	SPIKE DUP	ACTUAL SPIKE	%R	R%D	%BLCK	BLANK RESULT
10/22/93 SW846-1010 - Flash Point											
Flash Point	Degs F	J54585 - 1	>150	>150				0			
10/22/93 SW846-9030,7342 - Reactive Sulfide											
Reactive Sulfide	mg/kg	J54629 - 1	<1	<1				0			

Approved By : _____ Lab Director/Lab Manager

MBA

ENVIRON
Express Laboratories

CHAIN OF CUSTODY RECORD

ENVIRON EXPRESS LABORATORIES
401 North 11th, La Porte, Texas 77571
(713) 471-0951 / (800) 880-0156
Fax No. (713) 471-5821

Project No.	Project Name	Project Location	Turn Around Time: Check One ☐ 1 day ☐ 2 days ☐ 5 days
Sampler's Affiliation:		Sampler's Name (PRINT): Sampler's: *(Signature)*	LABORATORY ANALYSIS Reference EPA Method #
Results to: ENVIRON	phone 471-0941 fax 471-5921	Sampler Remarks: RUSH NEED 10/22 NEED 11/26	
Address:			
City:		Lab Remarks:	
Invoice to: No. ( )			

Lab Number	Field Sample No./ Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat.)	Sample Type (Liquid, Sludge, Etc.)	Preservative	BTEX 8020	TPH 418.1	Total Lead	TCLP Lead 1311	EPTOX Lead 1310	TCC	KCI	
	22721				125ml	KI	ICE					X			
—	22722				1 11	KI	ICE						X		RUSH NEED 10/22

Relinquished by: *(Signature)*	Date: 11/21 Time: 1134	Received By: *(Signature)*	Date: Time:	Intact
Relinquished by: *(Signature)* H. V. Allen	Date: Time:	Received By: *(Signature)*	Date: Time:	Intact

AnalytiKEM *An American NuKEM Company*

AnalytiKEM Inc.
2925 Richmond Avenue
Houston, TX 77098
713/520-1495
713/520-9900
Fax: 713/523-7107

October 2, 1992

ENSR
3000 Richmond
Houston, TX 77098

Attention: Scott Kuykendall

Attached are reports of chemical analyses of samples received September 9, 1992. These analyses are:

Count	Test Code	Test Name	Test Method	Sampled	Matrix
3	Ag - -TCL-HOU	TCLP SILVER	EPA SW-846: 7760, ATOMIC ABSORPTION		TCLP_EXT
3	As - -TCI-HOU	TCLP ARSENIC	EPA SW-846: 6010, ICP		TCLP_EXT
3	BNA - - -HOU	SEMIVOLATILE ORGANICS	EPA SW-846: 3520,8270, LLE,GC/MS		TCLP_EXT
3	Ba - -TCL-HOU	TCLP BARIUM	EPA SW-846: 6010, ICP		TCLP_EXT
3	CORR -S- -HOU	CORROSIVITY ON SOLID	EPA SW-846: 1110, NACE STEEL COUPON	09/03/92	SOIL
3	Cd - -TCL-HOU	TCLP CADMIUM	EPA SW-846: 6010, ICP		TCLP_EXT
3	Cr - -TCL-HOU	TCLP CHROMIUM	EPA SW-846: 6010, ICP		TCLP_EXT
3	FP -S- -HOU	IGNITABILITY ON SOLID	EPA SW-846: 1010, PENSKY MARTIN	09/03/92	SOIL
3	H2S -S-REA-SWL	HYDROGEN SULFIDE, REACTIVE/SLD	EPA SW-846: 7.3.4.2, 9030	09/03/92	SOIL
3	HCN -S-REA-SWL	HYDROCYANIC ACID, REACTIVE/SLD	EPA SW-846: 7.3.3.2, 9010	09/03/92	SOIL
3	Hg - -TCL-HOU	TCLP MERCURY	EPA SW-846: 7470, COLD VAPOR		TCLP_EXT
3	Pb - -TCL-HOU	TCLP LEAD	EPA SW-846: 6010, ICP		TCLP_EXT
3	Se - -TCI-HOU	TCLP SELENIUM	EPA SW-846: 6010, ICP		TCLP_EXT
3	VOA - - -HOU	VOLATILE ORGANIC ANALYSES	EPA SW-846: 8240, GC/MS		TCLP_EXT
3	pH -S-COR-HOU	pH CORROSION ON SOLID	EPA SW-846: 9045	09/03/92	SOIL

Data contained in this report reflect a full quality control review and have met all applicable standards established by AnalytiKEM. AnalytiKEM quality assurance protocols are in accordance with EPA guidelines.

Should you have any questions, do not hesitate to contact me at (713) 520-1495.

LAB NO. A8972 CONT.

EXX22849

Very Truly Yours,

ANALYTIKEM

Larry Frantz
Lab Director

LF/lis

Enclosures: Analytical Summary, Analytical Report, Chain of Custody, Sample Receipt Checklist, Quality Control Logs, ANALYTIKEM ID #A8972-1T, ANALYTIKEM ID #A8972-2T, ANALYTIKEM ID #A8972-3T, SWL CERT. #92-09-118-01, SWL CERT. #92-09-118-02, SWL CERT. #92-09-118-03

LAB NO. A8972
PROJECT 1009-001-150 EXXON

AnalytiKEM *An American NuKEM Company*

AnalytiKEM Inc.
2925 Richmond Avenue
Houston, TX 77098
713/520-1495
713/520-9900
Fax: 713/523-7107

SAMPLE DISPOSAL LETTER

DATE: 10/02/92

TO: Scott Kuykendall

FROM: Larry Frantz, Lab Director

PROJ. NO.: 1009-001-150 LAB NO.: A8972 RECEIVED:09/09/92
EXXON

It is the policy of AnalytiKEM Laboratories to dispose of unanalyzed portions of samples thirty days following submittal of the hard copy data package. Samples from lab number A8972 are due for disposal on November 6, 1992.

Please indicate your preference for disposal below and return this form to Lab Receiving personnel by October 23, 1992. **No response will be interpreted as permission to dispose of the samples on November 6, 1992 and charge your project accordingly.**

( )A. AnalytiKEM's preferred policy for disposal is to dispose of unused samples, including samples not analyzed, by drumming and transporting by a federally licensed hazardous waste transportation firm at a cost of $6.50/Field ID. **In an effort to present all relative charges in a timely manner, disposal charges will appear upon this project's billing summary unless this letter is returned with instructions indicating otherwise.**

( )B. AnalytiKEM will return remaining samples, including samples not authorized for analysis to the originating site at our expense.
ADDRESS OF THE
ORIGINATING SITE: _____

_____

( )C. AnalytiKEM will hold your sample at a cost of $20.00/Field ID per quarter for refrigerated storage or $6.50/Field ID per quarter for ambient storage. The project will be billed in advance each quarter based upon the number of samples in storage at the beginning of the quarter. The minimum storage fee per project will be $50.00 to cover administrative costs.

( ) Refrigerated ( ) Ambient ____ Number of Samples or ALL

Should you have any questions, do not hesitate to contact me at (713) 520-1495.
SIGNATURE: _____
LF/lis

LAB NO. A8972
PROJECT 1009-001-150 EXXON

EXX22851

B09218313

Page 1 of 2

AnalytiKEM

An American NoKEM Company

2925 RICHMOND AVENUE HOUSTON, TX 77098 (713) 520-1495 FAX: (713) 523-7107

Analysis Request and Chain of Custody Record

Project no: 009-001-150,160

Client/Project Name: EXXon

Project Location: DALLAS / MARLAND

Lab ID No	Field Sample No / Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
		9-3-92			4oz				
1	DP-1	0830		✓	Tall x2	Soil	4°C	TCLP Volatiles	
		9-3-92			16oz				
1	DP-1	0830		✓	Amb	Soil		TCLP Semi Volatiles	
		9-3-92			16oz				
1	DP-1	0830		✓	SSwm	Soil		TCLP Metals	
		9-3-92			8oz				
1	DP-1	0830		✓	SSwm	Soil		TPH (GC)	
		9-3-92			8oz				
1	DP-1	0830		✓	Amb	Soil		Reactivity	
		9-3-92			8oz				
1	DP-1	0830		✓	SSwm	Soil		ph, corrosivity, flashpoint	
		9-3-92			4oz				
2	DP-2	0930		✓	Tall x2	Soil		TCLP Volatiles	
		9-3-92			16oz				
2	DP-2	0930		✓	Amb	Soil		TCLP Semi Volatiles	
		9-3-92			16oz				
2	DP-2	0930		✓	SSwm	Soil		TCLP Metals	
		9-3-92			8oz				
2	DP-2	0930		✓	SSwm	Soil	↓	TPH (GC)	

Samplers (Signature): [signature]

Affiliation: ENSR

Relinquished by: (Signature) [signature] Date: 9-3-92 Time: 1200

Relinquished by: (Signature) Date: Time:

Relinquished by: (Signature) Date: Time:

Received by: (Signature) Date: Time:

Received by: (Signature) Date: Time:

Received by Laboratory: (Signature) [signature] Date: 9-9- (illegible) Time: 9:10

COC Seal No:

REMARKS:

EXX22852

Data Results To:

1. Jay Swindle

2.

Laboratory No. A8922-

AnalytiKEM
An American NuKEM Company
2925 RICHMOND AVENUE HOUSTON, TX 77098 (713) 520-1495 FAX: (713) 523-7107

Analysis Request and Chain of Custody Record

Project no.: 1009-001-150160
Client/Project Name: Exxon
Project Location: Del Paso / Marland

Lab ID No	Field Sample No / Identification	Date and Time	Grab	Comp	Sample Container (Size/Mat'l)	Sample Type (Liquid Sludge, Etc.)	Preservative	ANALYSIS REQUESTED	LABORATORY REMARKS
2	DP-2	9-3-92 0930		✓	8oz Amb	Soil	4°C	Reactivity	
2	DP-2	9-3-92 0930		✓	8oz SS can	Soil	4°C	ph, corrosivity, flashpoint	
3	MR-1	9-3-92 1100		✓	4oz Teflx2	Soil	4°C	TCLP VOA	
3	MR-1	9-3-92 1100		✓	16oz Amb	Soil	4°C	TCLP Semi VOA	Jar broken - recd at lab 9-5-92
3	MR-1	9-3-92 1100		✓	16oz SS can	Soil	4°C	TCLP Metals	
3	MR-1	9-3-92 1100		✓	8oz SS can	Soil	4°C	TPH (GC)	
3	MR-1	9-3-92 1100		✓	8oz Amb	Soil	4°C	Reactivity	
3	MR-1	9-3-92 1100		–	8oz SS can	Soil	4°C	ph, corrosivity, flashpoint	

Samplers: (Signature) [signature]
Affiliation

Relinquished by: (Signature) [signature] Date: 9-3-92 Time: 1200
Received by: (Signature) Date: Time:
COC Seal No.

Relinquished by: (Signature) Date: Time:
Received by: (Signature) Date: Time:

Relinquished by: (Signature) Date: Time:
Received by Laboratory: (Signature) [signature] Date: 9-5 Time: 9:02 Intact: [illegible]

REMARKS:

EXX22853

Data Results To:
1. JAY Swindle
2.

Laboratory No. A89[illegible]

ANALYTIKEM LABORATORIES
SAMPLE RECEIPT CHECKLIST

Client: Exxon
Project Number: 005-001-50160
Laboratory Number: 78522

1. ✓ Shipped		Notes: Fed. Ex #946353132
___ Hand Delivered		No Ticket
2. ✓ COC Present on Receipt		Notes:
___ No COC		
3. ___ COC Tape on Shipping Container		Notes:
✓ No COC Tape on Shipping Container		Notes:
4. ✓ Samples Broken/Leaking		Notes: See Below
✓ Sample Intact on Receipt		Rusty Samples
___ Other (See Notes)		
5. ✓ Ambient on Receipt		Notes: See Below
___ Chilled on Receipt		
6. ___ Samples Preserved Correctly		Notes:
___ Improper Preservatives		
✓ N/A (None Recommended)		
___ Other (See Notes)		
7. ✓ Received Within Holding Time		Notes:
___ Not Received Within Holding Time		
___ N/A (None Recommended)		
___ Other (See Notes)		
8. ___ COC Tapes on Samples		Notes:
✓ No COC Tapes on Samples		
9. ✓ Discrepancies Between COC and Sample Labels		Notes: See Below
___ No Discrepancies Noted		
___ N/A (No COC Received)		

Inspected and Logged in by: [illegible] Date/Time 9-5-92 9:02

Additional Comments: Samples should have arrived Friday 9-4-92 but Dan said he didn't ship them because there were no labels. Scott K. called on 9-8-92 & said the samples were to be wet & ambient to [illegible]. One of the 4 oz Tall jar TCLP volatiles does not have

EXX22854

AnalytiKEM-Houston

Analytical Summary
10/13/92 11:12

Lab Number: A8972
Project: 1009-001-150
EXXON

Lab ID / *Field ID* / *Test* / *Matrix*	1 DP-1 SOIL	2 DP-2 SOIL	3 MR-1 SOIL	1T DP-1/ TCLP TCLP_EXT	2T DP-2/ TCLP TCLP_EXT	3T MR-1/ TCLP TCLP_EXT
Ag - -TCL-HOU	--	--	--	<0.01* MG/L	<0.01* MG/L	<0.01* MG/L
(MDL)				*(0.01)**	*(0.01)**	*(0.01)**
As - -TCI-HOU	--	--	--	<0.2* MG/L	<0.2* MG/L	<0.2* MG/L
(MDL)				*(0.2)**	*(0.2)**	*(0.2)**
BNA - - -HOU	--	--	--	ATTACHED UG/L	ATTACHED UG/L	ATTACHED UG/L
(MDL)				*()**	*()**	*()**
Ba - -TCL-HOU	--	--	--	1.2* MG/L	1.2* MG/L	1.2* MG/L
(MDL)				*(0.5)**	*(0.5)**	*(0.5)**
CORR -S- -HOU	SEE REM*	SEE REM*	SEE REM*	--	--	--
(MDL)	*()**	*()**	*()**			
Cd - -TCL-HOU	--	--	--	<0.010* MG/L	<0.010* MG/L	<0.010* MG/L
(MDL)				*(0.010)**	*(0.010)**	*(0.010)**
Cr - -TCL-HOU	--	--	--	<0.05* MG/L	<0.05* MG/L	<0.05* MG/L
(MDL)				*(0.05)**	*(0.05)**	*(0.05)**
FP -S- -HOU	SEE REM*	SEE REM*	SEE REM*	--	--	--
(MDL)	*()**	*()**	*()**			
H2S -S-REA-SWL	ATTACHED PPM	ATTACHED PPM	ATTACHED PPM	--	--	--
(MDL)	*()**	*()**	*()**			

* Please see attached Analytical Report for remarks.

Signatures of approval indicate quality assurance-quality control verification of analytical results, billing and enclosed documentation.

Approvals: _____ Date: 10/13/92 _____ Date: 10/13/92

***** CONTINUED *****

EXX22855

AnalytiKEM-Houston

Analytical Summary
10/13/92 11:12

Lab Number: A8972
Project: 1009-001-150
EXXON

Lab ID / *Field ID* / *Test /Matrix*	1 DP-1 SOIL	2 DP-2 SOIL	3 MR-1 SOIL	1T DP-1/ TCLP TCLP_EXT	2T DP-2/ TCLP TCLP_EXT	3T MR-1/ TCLP TCLP_EXT
HCN -S-REA-SWL	ATTACHED	ATTACHED	ATTACHED	--	--	--
	PPM	PPM	PPM			
(MDL)	*()**	*()**	*()**			
Hg - -TCL-HOU	--	--	--	<0.001*	<0.001*	<0.001*
				MG/L	MG/L	MG/L
(MDL)				*(0.001)**	*(0.001)**	*(0.001)**
Pb - -TCL-HOU	--	--	--	0.1*	0.02	0.02
				MG/L	MG/L	MG/L
(MDL)				*(0.02)**	*(0.02)**	*(0.02)**
Se - -TCI-HOU	--	--	--	<0.2*	<0.2*	<0.2*
				MG/L	MG/L	MG/L
(MDL)				*(0.2)**	*(0.2)**	*(0.2)**
TPH -S-GC -HOU	34	<25	270J*	--	--	--
	MG/KG	MG/KG	MG/KG			
(MDL)	*(25)*	*(25)*	*(460)**			
VOA - - -HOU	--	--	--	ATTACHED	ATTACHED	ATTACHED
				UG/L	UG/L	UG/L
(MDL)				*()**	*()**	*()**
pH -S-COR-HOU	8.57	8.13	8.06	--	--	--
	UNITS	UNITS	UNITS			
(MDL)	*(0.01)*	*(0.01)*	*(0.01)*			

* Please see attached Analytical Report for remarks.

Signatures of approval indicate quality assurance-quality control verification of analytical results, billing and enclosed documentation.

Approvals: _____ Date: 10/13/92 _____ Date: 10/13/92

EXX22856

AnalytiKEM-Houston

Analytical Report
10/13/92 11:10

EXXON	Field ID: DP-1	Date Sampled: 09/03/92
Proj. No.: 1009-001-150	Lab ID: 1	Time Sampled: 830
Lab No.: A8972	Matrix: SOIL (COMPOSITE)	Date Received:09/09/92

Parameter (Test Code) (Test Name) (Test Method)	Concentration	Units	Method Detection Limit	Date/Time Analysis Performed
CORR -S- -HOU CORROSIVITY ON SOLID EPA SW-846: 1110, NACE STEEL COUPON	SEE REM* *1			/ /
FP -S- -HOU IGNITABILITY ON SOLID EPA SW-846: 1010, PENSKY MARTIN	SEE REM* *2,3			/ /
H2S -S-REA-SWL HYDROGEN SULFIDE, REACTIVE/SLD EPA SW-846: 7.3.4.2, 9030	ATTACHED *4	PPM		09/14/92
HCN -S-REA-SWL HYDROCYANIC ACID, REACTIVE/SLD EPA SW-846: 7.3.3.2, 9010	ATTACHED *4	PPM		09/14/92
TPH -S-GC -HOU PETROLEUM HYDROCARBON BY GC EPA SW-846: 8015 MOD, GC	34	MG/KG	25	Ext.: 09/15/92 Anal.:09/16/92
pH -S-COR-HOU pH CORROSION ON SOLID EPA SW-846: 9045	8.57	UNITS	0.01	09/16/92 1620

*1 *UNABLE TO ANALYZE DUE TO SOLID MATRIX
*2 ABSORPTION OF WATER OR MANUAL FRICTION
*3 FLASHPOINT N/A, NON-LIQUID MATRIX NO FIRE CAUSED BY IGNITION
*4 SEE SWL CERT. #92-09-118-01

AnalytiKEM-Houston

Analytical Report
10/13/92 11:11

EXXON	Field ID: DP-2		Date Sampled: 09/03/92
Proj. No.: 1009-001-150	Lab ID: 2		Time Sampled: 930
Lab No.: A8972	Matrix: SOIL	(COMPOSITE)	Date Received:09/09/92

Parameter (Test Code) (Test Name) (Test Method)	Concentration	Units	Method Detection Limit	Date/Time Analysis Performed
CORR -S- -HOU CORROSIVITY ON SOLID EPA SW-846: 1110, NACE STEEL COUPON	SEE REM* *1			/ /
FP -S- -HOU IGNITABILITY ON SOLID EPA SW-846: 1010, PENSKY MARTIN	SEE REM* *2,3			/ /
H2S -S-REA-SWL HYDROGEN SULFIDE, REACTIVE/SLD EPA SW-846: 7.3.4.2, 9030	ATTACHED *4	PPM		09/14/92
HCN -S-REA-SWL HYDROCYANIC ACID, REACTIVE/SLD EPA SW-846: 7.3.3.2, 9010	ATTACHED *4	PPM		09/14/92
TPH -S-GC -HOU PETROLEUM HYDROCARBON BY GC EPA SW-846: 8015 MOD, GC	<25	MG/KG	25	Ext.: 09/15/92 Anal.:09/16/92
pH -S-COR-HOU pH CORROSION ON SOLID EPA SW-846: 9045	8.13	UNITS	0.01	09/16/92 1620

*1 *UNABLE TO ANALYZE DUE TO SOLID MATRIX
*2 ABSORPTION OF WATER OR MANUAL FRICTION
*3 FLASHPOINT N/A, NON-LIQUID MATRIX NO FIRE CAUSED BY IGNITION
*4 SEE SWL CERT. #92-09-118-02

AnalytiKEM-Houston

Analytical Report
10/13/92 11:11

EXXON	Field ID: MR-1	Date Sampled: 09/03/92
Proj. No.: 1009-001-150	Lab ID: 3	Time Sampled: 1100
Lab No.: A8972	Matrix: SOIL (COMPOSITE)	Date Received:09/09/92

Parameter (Test Code) (Test Name) (Test Method)	Concentration	Units	Method Detection Limit	Date/Time Analysis Performed
CORR -S- -HOU CORROSIVITY ON SOLID EPA SW-846: 1110, NACE STEEL COUPON	SEE REM* *1			/ /
FP -S- -HOU IGNITABILITY ON SOLID EPA SW-846: 1010, PENSKY MARTIN	SEE REM* *2,3			/ /
H2S -S-REA-SWL HYDROGEN SULFIDE, REACTIVE/SLD EPA SW-846: 7.3.4.2, 9030	ATTACHED *4	PPM		09/14/92
HCN -S-REA-SWL HYDROCYANIC ACID, REACTIVE/SLD EPA SW-846: 7.3.3.2, 9010	ATTACHED *4	PPM		09/14/92
TPH -S-GC -HOU PETROLEUM HYDROCARBON BY GC EPA SW-846: 8015 MOD, GC	270J* *5	MG/KG	460	Ext.: 09/15/92 Anal.:09/16/92
pH -S-COR-HOU pH CORROSION ON SOLID EPA SW-846: 9045	8.06	UNITS	0.01	09/16/92 1620

*1 *UNABLE TO ANALYZE DUE TO SOLID MATRIX
*2 ABSORPTION OF WATER OR MANUAL FRICTION
*3 FLASHPOINT N/A, NON-LIQUID MATRIX NO FIRE CAUSED BY IGNITION
*4 SEE SWL CERT. #92-09-118-03
*5 RESULT DETECTED BELOW MDL

AnalytiKEM-Houston

Analytical Report
10/13/92 11:11

EXXON	Field ID: DP-1/TCLP	Date Sampled: / /
Proj. No.: 1009-001-150	Lab ID: 1T	Time Sampled:
Lab No.: A8972	Matrix: TCLP_EXT	Date Received:09/09/92

Parameter (Test Code) (Test Name) (Test Method)	Concentration	Units	Method Detection Limit	Date/Time Analysis Performed
Ag - -TCL-HOU TCLP SILVER EPA SW-846: 7760, ATOMIC ABSORPTION	<0.01* *1	MG/L	0.01	09/21/92 1350
As - -TCI-HOU TCLP ARSENIC EPA SW-846: 6010, ICP	<0.2* *1	MG/L	0.2	09/24/92 853
BNA - - -HOU SEMIVOLATILE ORGANICS EPA SW-846: 3520,8270, LLE,GC/MS	ATTACHED *2,1	UG/L		Ext.: 09/18/92 Anal.:09/23/92
Ba - -TCL-HOU TCLP BARIUM EPA SW-846: 6010, ICP	1.2* *1	MG/L	0.5	09/24/92 853
Cd - -TCL-HOU TCLP CADMIUM EPA SW-846: 6010, ICP	<0.010* *1	MG/L	0.010	09/24/92 853
Cr - -TCL-HOU TCLP CHROMIUM EPA SW-846: 6010, ICP	<0.05* *1	MG/L	0.05	09/24/92 853
Hg - -TCL-HOU TCLP MERCURY EPA SW-846: 7470, COLD VAPOR	<0.001* *1	MG/L	0.001	09/22/92 1600
Pb - -TCL-HOU TCLP LEAD EPA SW-846: 6010, ICP	0.1* *1	MG/L	0.02	09/24/92 853

*1 *RESULT IS NOT SPIKE CORRECTED
*2 SEE ANALYTIKEM ID #A8972-1T

EXX22860

***** CONTINUED *****

AnalytiKEM-Houston

Analytical Report
10/13/92 11:11

EXXON	Field ID: DP-1/TCLP	Date Sampled: / /
Proj. No.: 1009-001-150	Lab ID: 1T	Time Sampled:
Lab No.: A8972	Matrix: TCLP_EXT	Date Received:09/09/92

Parameter (Test Code) (Test Name) (Test Method)	Concentration	Units	Method Detection Limit	Date/Time Analysis Performed
Se - -TCI-HOU TCLP SELENIUM EPA SW-846: 6010, ICP	<0.2* *1	MG/L	0.2	09/24/92 853
VOA - - -HOU VOLATILE ORGANIC ANALYSES EPA SW-846: 8240, GC/MS	ATTACHED *2,1	UG/L		Ext.: 09/17/92 Anal.:09/17/92

*1 *RESULT IS NOT SPIKE CORRECTED
*2 SEE ANALYTIKEM ID #A8972-1T

EXX22861

AnalytiKEM-Houston

Analytical Report
10/13/92 11:11

EXXON	Field ID: DP-2/TCLP	Date Sampled: / /
Proj. No.: 1009-001-150	Lab ID: 2T	Time Sampled:
Lab No.: A8972	Matrix: TCLP_EXT	Date Received:09/09/92

Parameter (Test Code) (Test Name) (Test Method)	Concentration	Units	Method Detection Limit	Date/Time Analysis Performed
Ag - -TCL-HOU TCLP SILVER EPA SW-846: 7760, ATOMIC ABSORPTION	<0.01* *1	MG/L	0.01	09/21/92 1350
As - -TCI-HOU TCLP ARSENIC EPA SW-846: 6010, ICP	<0.2* *1	MG/L	0.2	09/24/92 853
BNA - - -HOU SEMIVOLATILE ORGANICS EPA SW-846: 3520,8270, LLE,GC/MS	ATTACHED *2,1	UG/L		Ext.: 09/18/92 Anal.:09/23/92
Ba - -TCL-HOU TCLP BARIUM EPA SW-846: 6010, ICP	1.2* *1	MG/L	0.5	09/24/92 853
Cd - -TCL-HOU TCLP CADMIUM EPA SW-846: 6010, ICP	<0.010* *1	MG/L	0.010	09/24/92 853
Cr - -TCL-HOU TCLP CHROMIUM EPA SW-846: 6010, ICP	<0.05* *1	MG/L	0.05	09/24/92 853
Hg - -TCL-HOU TCLP MERCURY EPA SW-846: 7470, COLD VAPOR	<0.001* *1	MG/L	0.001	09/22/92 1600
Pb - -TCL-HOU TCLP LEAD EPA SW-846: 6010, ICP	0.02 *1	MG/L	0.02	09/24/92 853

*1 *RESULT IS NOT SPIKE CORRECTED
*2 SEE ANALYTIKEM ID #A8972-2T

***** CONTINUED *****

AnalytiKEM-Houston

Analytical Report
10/13/92 11:11

EXXON	Field ID: DP-2/TCLP	Date Sampled: / /
Proj. No.: 1009-001-150	Lab ID: 2T	Time Sampled:
Lab No.: A8972	Matrix: TCLP_EXT	Date Received:09/09/92

Parameter (Test Code) (Test Name) (Test Method)	Concentration	Units	Method Detection Limit	Date/Time Analysis Performed
Se - -TCI-HOU TCLP SELENIUM EPA SW-846: 6010, ICP	<0.2* *1	MG/L	0.2	09/24/92 853
VOA - - -HOU VOLATILE ORGANIC ANALYSES EPA SW-846: 8240, GC/MS	ATTACHED *2,1	UG/L		Ext.: 09/17/92 Anal.:09/17/92

*1 *RESULT IS NOT SPIKE CORRECTED
*2 SEE ANALYTIKEM ID #A8972-2T

EXX22863

AnalytiKEM-Houston

Analytical Report
10/13/92 11:11

EXXON	Field ID: MR-1/TCLP	Date Sampled: / /
Proj. No.: 1009-001-150	Lab ID: 3T	Time Sampled:
Lab No.: A8972	Matrix: TCLP_EXT	Date Received:09/09/92

Parameter (Test Code) (Test Name) (Test Method)	Concentration	Units	Method Detection Limit	Date/Time Analysis Performed
Ag - -TCL-HOU TCLP SILVER EPA SW-846: 7760, ATOMIC ABSORPTION	<0.01* *1	MG/L	0.01	09/21/92 1350
As - -TCI-HOU TCLP ARSENIC EPA SW-846: 6010, ICP	<0.2* *1	MG/L	0.2	09/24/92 853
BNA - - -HOU SEMIVOLATILE ORGANICS EPA SW-846: 3520,8270, LLE,GC/MS	ATTACHED *2,1	UG/L		Ext.: 09/18/92 Anal.:09/23/92
Ba - -TCL-HOU TCLP BARIUM EPA SW-846: 6010, ICP	1.2* *1	MG/L	0.5	09/24/92 853
Cd - -TCL-HOU TCLP CADMIUM EPA SW-846: 6010, ICP	<0.010* *1	MG/L	0.010	09/24/92 853
Cr - -TCL-HOU TCLP CHROMIUM EPA SW-846: 6010, ICP	<0.05* *1	MG/L	0.05	09/24/92 853
Hg - -TCL-HOU TCLP MERCURY EPA SW-846: 7470, COLD VAPOR	<0.001* *1	MG/L	0.001	09/22/92 1600
Pb - -TCL-HOU TCLP LEAD EPA SW-846: 6010, ICP	0.02 *1	MG/L	0.02	09/24/92 853

*1 *RESULT IS NOT SPIKE CORRECTED
*2 SEE ANALYTIKEM ID #A8972-3T

***** CONTINUED *****

AnalytiKEM-Houston

Analytical Report
10/13/92 11:12

EXXON	Field ID: MR-1/TCLP	Date Sampled: / /
Proj. No.: 1009-001-150	Lab ID: 3T	Time Sampled:
Lab No.: A8972	Matrix: TCLP_EXT	Date Received:09/09/92

Parameter (Test Code) (Test Name) (Test Method)	Concentration	Units	Method Detection Limit	Date/Time Analysis Performed
Se - -TCI-HOU TCLP SELENIUM EPA SW-846: 6010, ICP	<0.2* *1	MG/L	0.2	09/24/92 853
VOA - - -HOU VOLATILE ORGANIC ANALYSES EPA SW-846: 8240, GC/MS	ATTACHED *2,1	UG/L		Ext.: 09/17/92 Anal.:09/17/92

*1 *RESULT IS NOT SPIKE CORRECTED
*2 SEE ANALYTIKEM ID #A8972-3T

ORGANICS ANALYSIS DATA SHEET

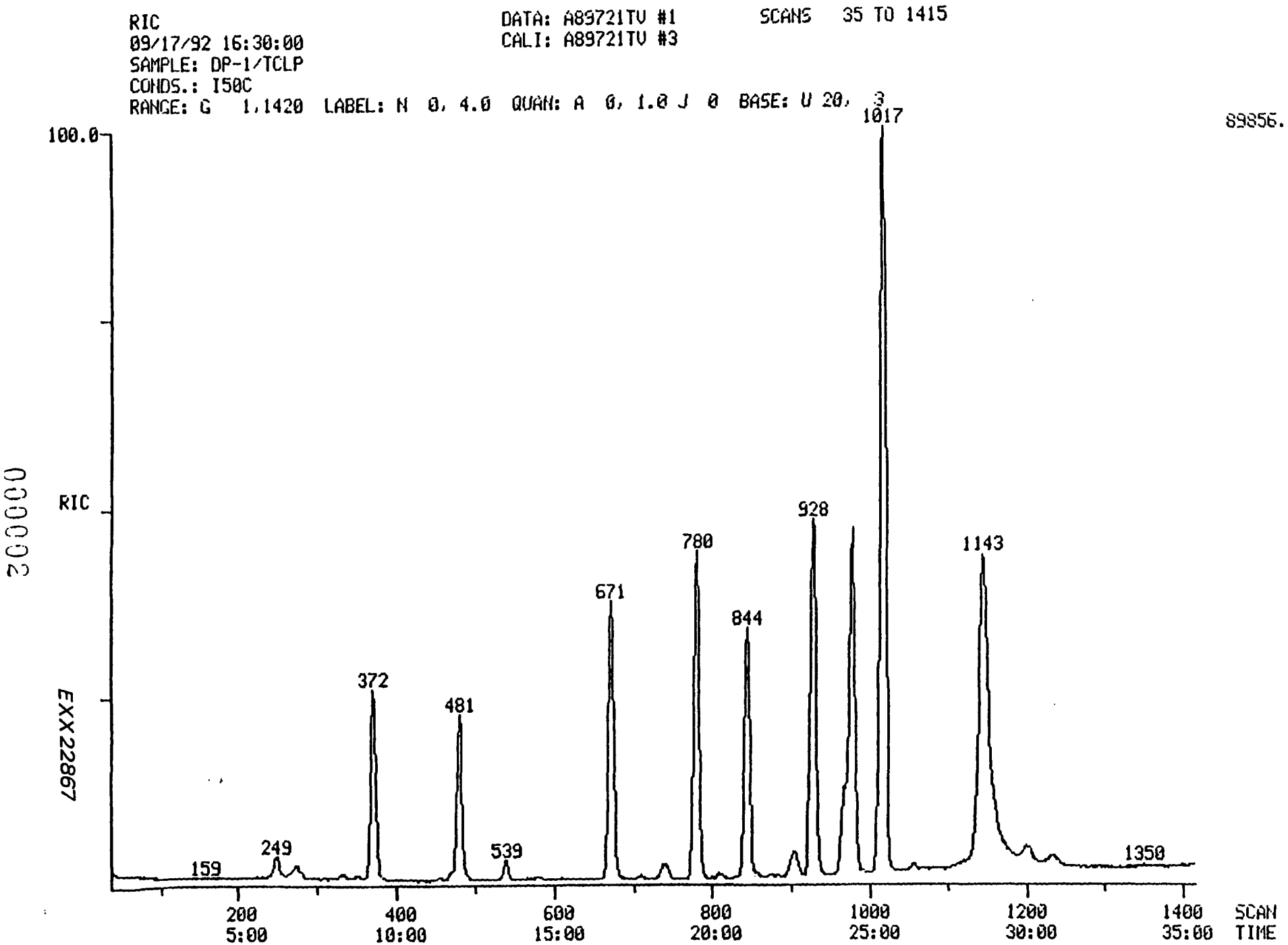
Laboratory Name:	AnalytiKEM-Hou	Concentration:	LOW	Date Extracted:	09/17/92
Lab Sample ID:	A8972-1T	Sample Matrix:	WATER	Date Analyzed:	09/17/92
Client Sample ID:	DP-1-TCLP	Percent Moisture:	100.0	Dilution Factor:	1.0

TCLP VOLATILE COMPOUNDS

CAS Number		ug/L		CAS Number		ug/L	
75-01-4	Vinyl Chloride	10	<	79-01-6	Trichloroethene	5	<
75-35-4	1,1-Dichloroethene	5	<	71-43-2	Benzene	5	<
67-66-3	Chloroform	5	<	127-18-4	Tetrachloroethene	5	<
107-06-2	1,2-Dichloroethane	5	<	108-90-7	Chlorobenzene	5	<
78-93-3	2-Butanone	10	<				
56-23-5	Carbon Tetrachloride . . .	5	<				

The Lab ID for data on this page is A89721TV.
< - Compound analyzed for but not detected. The reported value is the minimum attainable detection limit for the sample.
Data not spike corrected.

EXX22866


RIC
09/17/92 16:30:00
SAMPLE: DP-1/TCLP
CONDS.: I50C
DATA: A89721TV #1
CALI: A89721TV #3
SCANS 35 TO 1415
RANGE: G 1,1420 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3
89856.
100.0
RIC
3000000
EXX22867
159
249
372
481
539
671
780
844
928
1017
1143
1350
200
5:00
400
10:00
600
15:00
800
20:00
1000
25:00
1200
30:00
1400
35:00
SCAN
TIME

ORGANICS ANALYSIS DATA SHEET

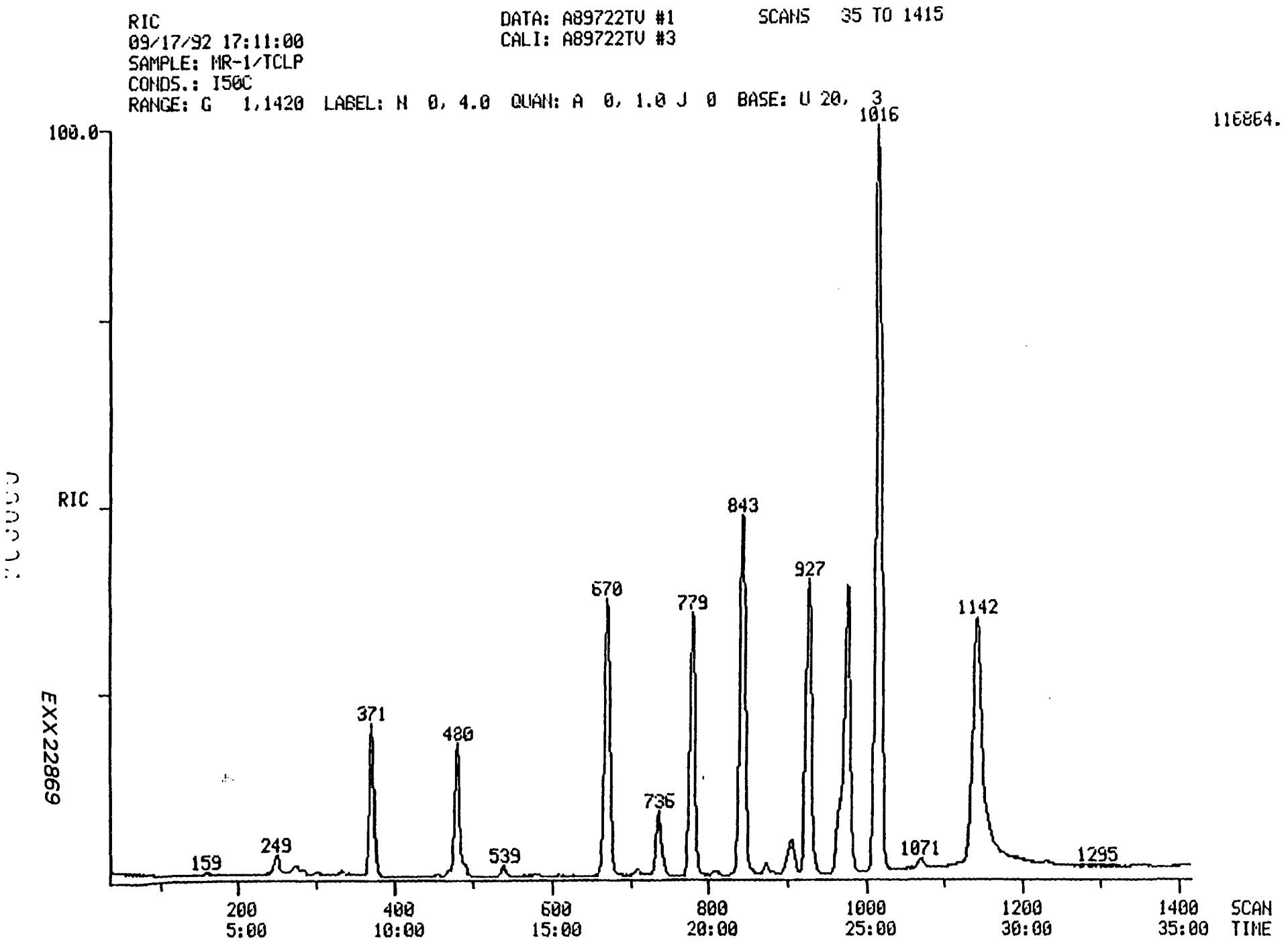
Laboratory Name:	AnalytiKEM-H..u	Concentration:	LOW	Date Extracted:	09/17/92
Lab Sample ID:	A8972-2T	Sample Matrix:	WATER	Date Analyzed:	09/17/92
Client Sample ID:	MR-1-TCLP	Percent Moisture:	100.0	Dilution Factor:	1.0

TCLP VOLATILE COMPOUNDS

CAS Number		ug/L		CAS Number		ug/L	
75-01-4	Vinyl Chloride	10	<	79-01-6	Trichloroethene	5	<
75-35-4	1,1-Dichloroethene	5	<	71-43-2	Benzene	5	<
67-66-3	Chloroform	5	<	127-18-4	Tetrachloroethene	5	<
107-06-2	1,2-Dichloroethane	5	<	108-90-7	Chlorobenzene	5	<
78-93-3	2-Butanone	10	<				
56-23-5	Carbon Tetrachloride . . .	5	<				

The Lab ID for data on this page is A89722TV.
< - Compound analyzed for but not detected. The reported value is the minimum attainable detection limit for the sample.
Data not spike corrected.

EXX22868


RIC
09/17/92 17:11:00
SAMPLE: MR-1/TCLP
CONDS.: I50C
RANGE: G 1,1420 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3
DATA: A89722TV #1
CALI: A89722TV #3
SCANS 35 TO 1415
116864.
100.0
RIC
EXX22869
159
249
371
480
539
670
736
779
843
927
1016
1071
1142
1295
200
5:00
400
10:00
600
15:00
800
20:00
1000
25:00
1200
30:00
1400
35:00
SCAN
TIME

ORGANICS ANALYSIS DATA SHEET

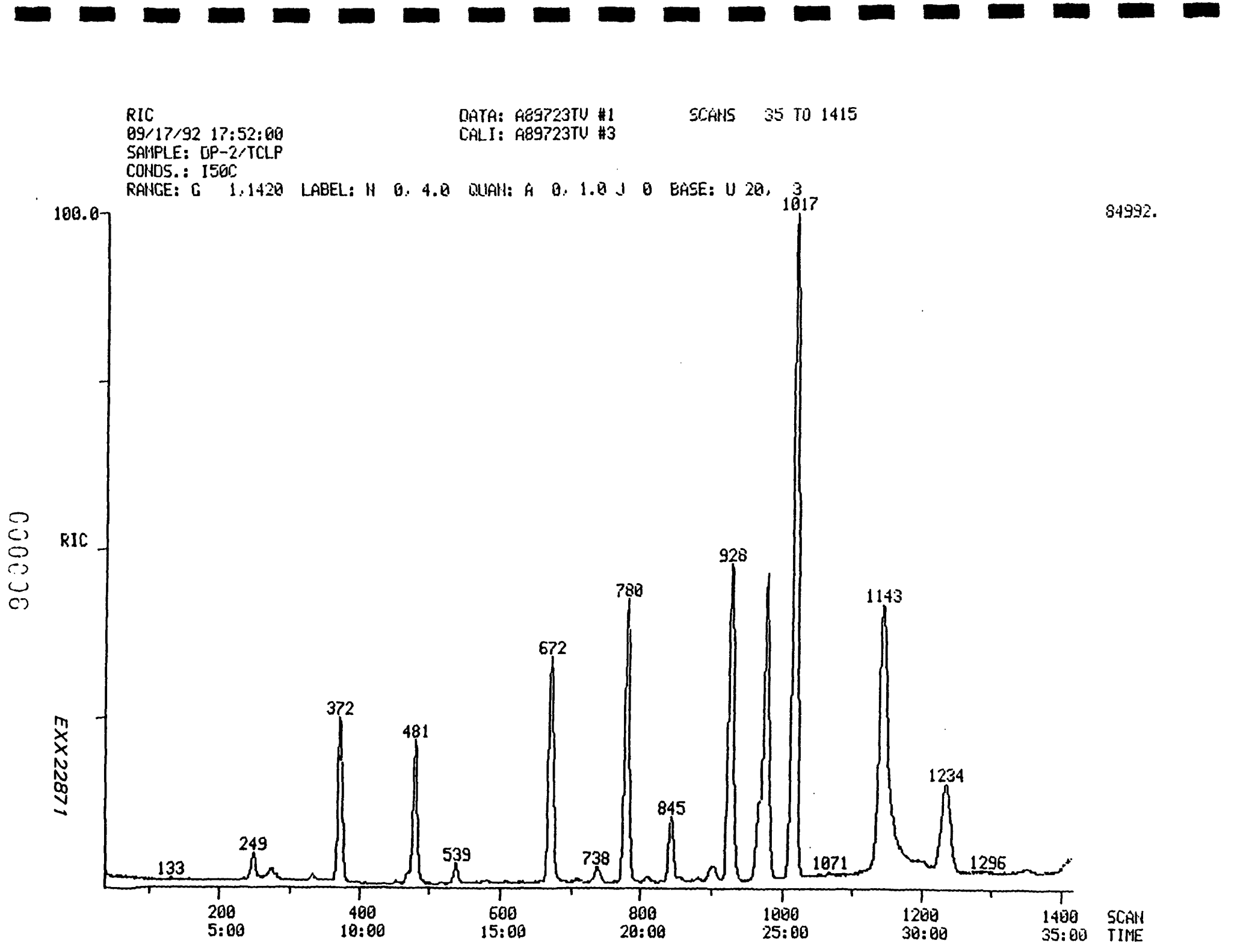
Laboratory Name:	AnalytiKEM-Hou	Concentration:	LOW	Date Extracted:	09/17/92
Lab Sample ID:	A8972-3T	Sample Matrix:	WATER	Date Analyzed:	09/17/92
Client Sample ID:	DP-2-TCLP	Percent Moisture:	100.0	Dilution Factor:	1.0

TCLP VOLATILE COMPOUNDS

CAS Number		ug/L		CAS Number		ug/L	
75-01-4	Vinyl Chloride	10	<	79-01-6	Trichloroethene	5	<
75-35-4	1,1-Dichloroethene	5	<	71-43-2	Benzene	5	<
67-66-3	Chloroform	5	<	127-18-4	Tetrachloroethene	5	<
107-06-2	1,2-Dichloroethane	5	<	108-90-7	Chlorobenzene	5	<
78-93-3	2-Butanone	10	<				
56-23-5	Carbon Tetrachloride . . .	5	<				

The Lab ID for data on this page is A89723TV.
< - Compound analyzed for but not detected. The reported value is the minimum attainable detection limit for the sample.
Data not spike corrected.

EXX22870


RIC
09/17/92 17:52:00
SAMPLE: DP-2/TCLP
CONDS.: 150C
DATA: A89723TV #1
CALI: A89723TV #3
SCANS 35 TO 1415
RANGE: G 1.1420 LABEL: N 0. 4.0 QUAN: A 0. 1.0 J 0 BASE: U 20. 3
100.0
84992.
RIC
EXX22871
133
249
372
481
539
672
738
780
845
928
1017
1071
1143
1234
1296
200
5:00
400
10:00
600
15:00
800
20:00
1000
25:00
1200
30:00
1400
35:00
SCAN
TIME

BROMOFLUOROBENZENE

Tuning Report
09/17/92 12:05:00 + 7:00
Instrument: I50C
#273 to #287 averaged - #307 to #318 - #255 to #260
Case Number: E

Data: BF091792C1 # 280
Cali: BF091792C1 # 3
Analyst: BPB
Laboratory: Z

Base m/z: 95
RIC: 7000.
Acct. No.: 8506-090
Contract: Z

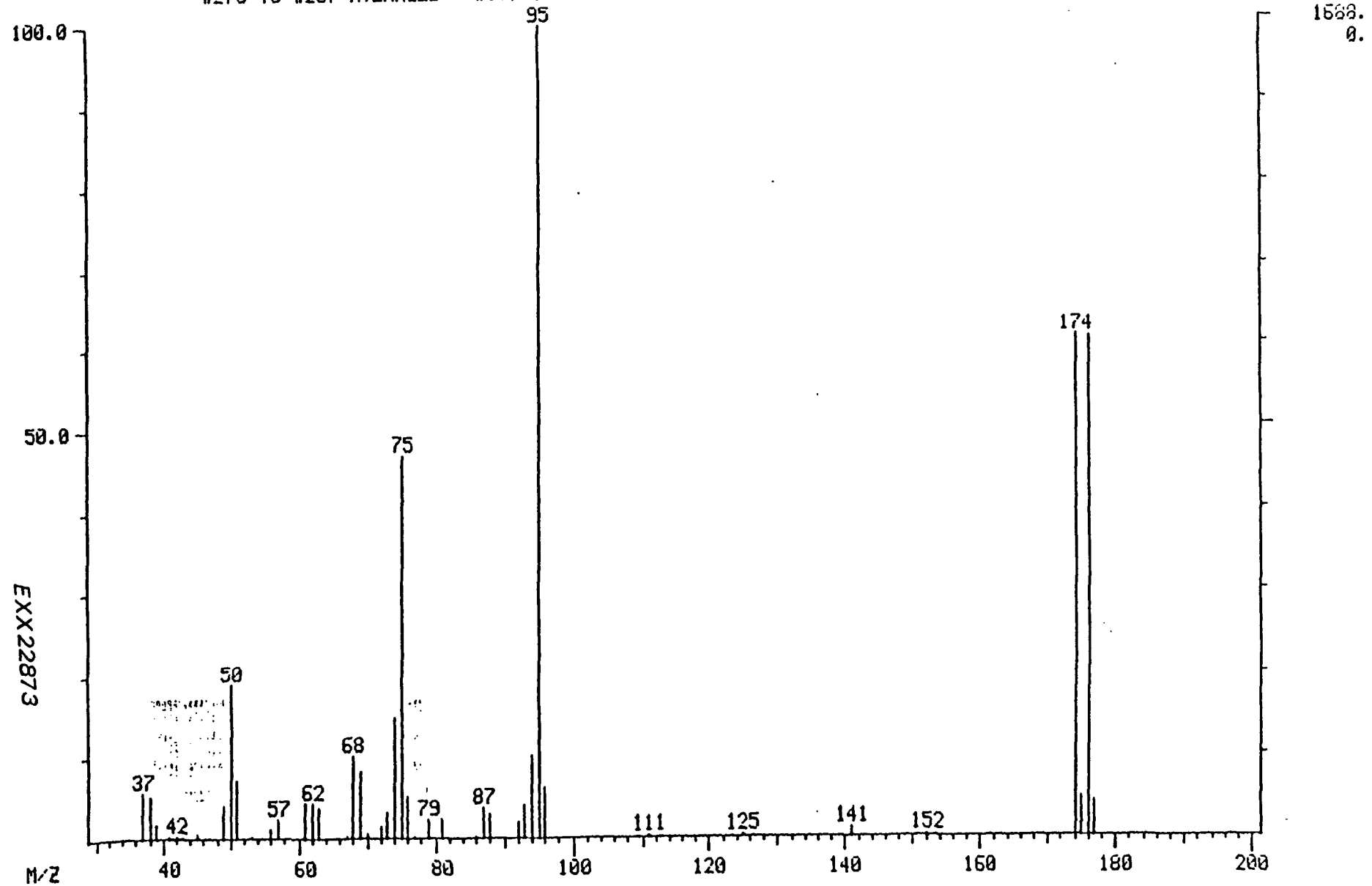
m/z	Intensity	% RA	Ion Abundance Criteria Min %	Max %	Mass	Actual	Status
50	317.	18.8	15.0	40.0	95	18.8	PASS
75	795.	47.1	30.0	60.0	95	47.1	PASS
95	1688.	100.0	100.0	---	---	100.0	PASS
96	104.	6.2	5.0	9.0	95	6.2	PASS
173	0.	0.0	---	2.0	174	0.0	PASS
174	1032.	61.1	50.0	---	95	61.1	PASS
175	81.	4.8	5.0	9.0	174	7.8	PASS
176	1024.	60.7	95.0	101.0	174	99.2	PASS
177	71.	4.2	5.0	9.0	176	6.9	PASS

EXX22872

MASS SPECTRUM
09/17/92 12:05:00 + 7:00
SAMPLE: BFB CALIBRATION
CONDS.: I50C
TEMP: 225 DEG. C
#273 TO #287 AVERAGED - #307 TO #318 - #255 TO #260

DATA: BF091792C1 #280
CALI: BF091792C1 #3

BASE M/Z: 95
RIC: 7000.



EXX22873

Mass List Data: BF091792C1 # 280 Base m/z: 95
09/17/92 12:05:00 + 7:00 Cali: BF091792C1 # 3 RIC: 7000.
Sample: BFB CALIBRATION
Conds.: I50C
#273 to #287 averaged - #307 to #318 - #255 to #260

36 0.00 0. Minima Min Inten: 0.
177 Maxima # 0

Mass		% RA	Inten.
36?	S	0.12	2.
37?	S	5.51	93.
38?	S	5.09	86.
39?	S	1.66	28.
41?	S	0.18	3.
42?	S	0.18	3.
45?	S	0.59	10.
49?	S	3.91	66.
50?	S	18.78	317.
51?	S	6.93	117.
53?	S	0.18	3.
56?	S	1.13	19.
57?	S	2.13	36.
60?	S	0.06	1.
61?	S	4.03	68.
62?	S	4.03	68.
63?	S	3.50	59.
67?	S	0.18	3.
68?	S	10.01	169.
69	S	8.12	137.
70	S	0.65	11.
72	S	1.36	23.
73	S	3.14	53.
74	S	14.57	246.
75	S	47.10	795.
76	S	4.86	82.
77	S	0.24	4.
79	S	2.31	39.
81	S	2.07	35.
84	S	0.12	2.
86	S	0.18	3.
87	S	3.67	62.
88	S	2.67	45.
92	S	2.01	34.
93	S	3.97	67.
94	S	9.83	166.
95	S	100.00	1688.
96	S	6.16	104.
111	S	0.24	4.
113	S	0.06	1.
125	S	0.18	3.
129	S	0.06	1.
141	S	1.01	17.
152	S	0.18	3.
155	S	0.12	2.
174	S	61.14	1032.
175	S	4.80	81.
176	S	60.66	1024.
177	S	4.21	71.

EXX22874

CONTINUING CALIBRATION CHECK
VOLATILE HSL COMPOUNDS

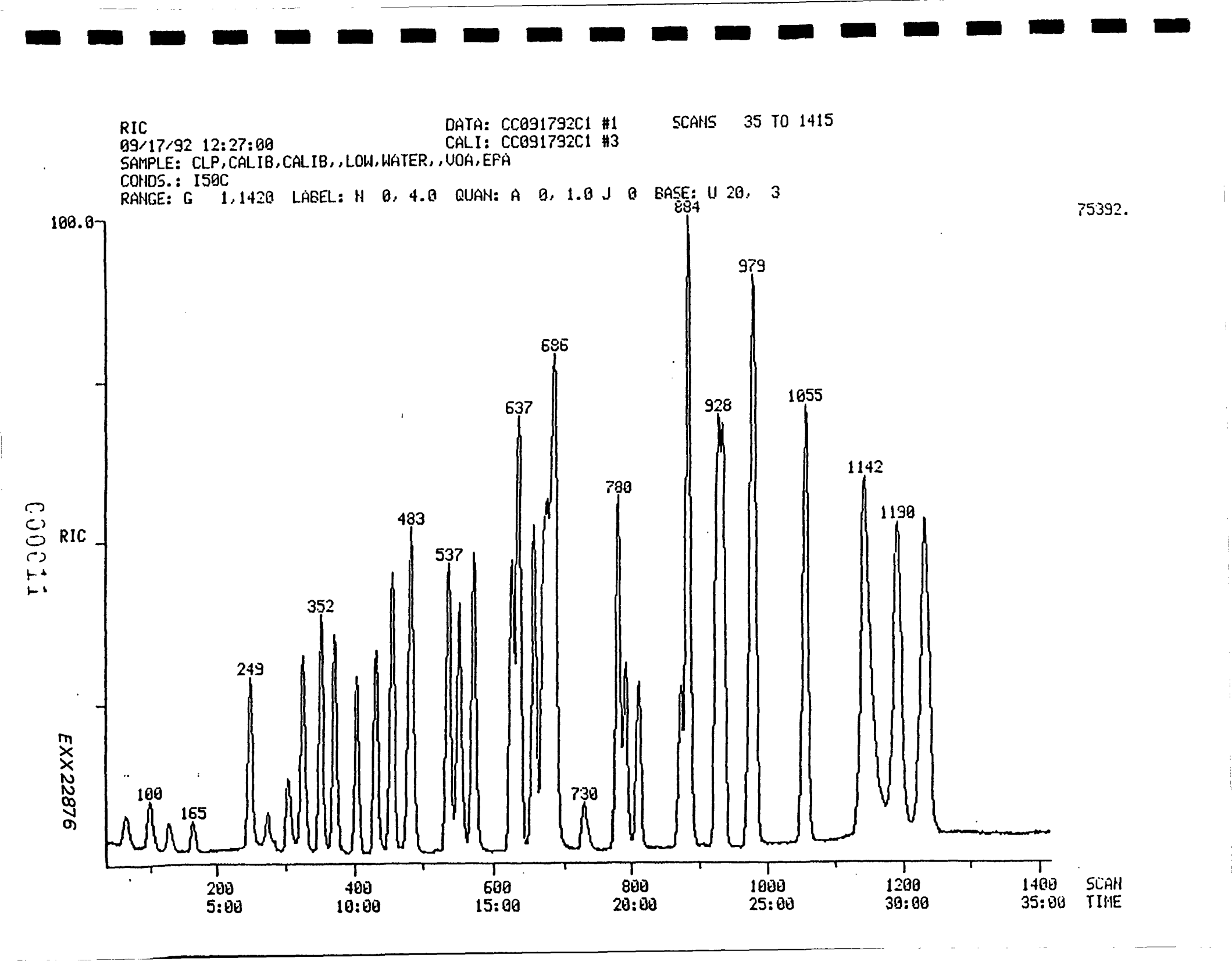
Case No: STAND Region: _____ Calibration Date: 09/17/92
Contractor: AnalytiKEM-Hou Time: 12:27
Contract No: _____ Laboratory ID: CC)91792C1
Instrument ID: I50C Initial Cali. Date: 09/15/92

Minimum RF for SPCC is 0.300 (1) Maximum %D for CCC is 25%

Compound	AVE RF	RF(50)	% D	CCC	SPCC
Chloromethane	0.985	0.770	21.8		* *
Bromomethane	0.988	0.840	15.0		
Vinyl Chloride	0.998	0.777	22.1	*	
Chloroethane	0.640	0.474	25.9		
Methylene Chloride	1.380	1.168	15.4		
Acetone	0.279	0.714	-155.9		
Carbon Disulfide	1.959	2.150	-9.7		
1,1-Dichloroethene	1.425	1.316	7.6	*	
1,1-Dichloroethane	3.633	3.118	14.2		* *
trans-1,2-Dichloroethene	1.663	1.447	13.0		
Chloroform	4.353	3.833	11.9	*	
1,2-Dichloroethane	3.140	2.821	10.2		
2-Butanone	0.026	0.057	-119.2		
1,1,1-Trichloroethane	0.694	0.671	3.3		
Carbon Tetrachloride	0.522	0.496	5.0		
Vinyl Acetate	0.090	0.091	-1.1		
Bromodichloromethane	0.717	0.706	1.5		
1,2-Dichloropropane	0.439	0.413	5.9	*	
cis-1,3-Dichloropropene	0.588	0.578	1.7		
Trichloroethene	0.394	0.377	4.3		
Dibromochloromethane	0.512	0.505	1.4		
1,1,2-Trichloroethane	0.335	0.319	4.8		
Benzene	0.934	0.906	3.0		
Trans-1,3-Dichloropropene	0.523	0.498	4.8		
Bromoform	0.348	0.333	4.3		* *
4-Methyl-2-Pentanone	0.469	0.548	-16.8		
2-Hexanone	0.332	0.572	-72.3		
Tetrachloroethene	0.376	0.363	3.5		
1,1,2,2-Tetrachloroethane	0.654	0.657	-0.5		* *
Toluene	0.785	0.744	5.2	*	
Chlorobenzene	0.974	0.897	7.9		* *
Ethylbenzene	0.542	0.525	3.1	*	
Styrene	0.921	1.046	-13.6		
Xylene (total)	0.581	0.651	-12.0		

RF(50) - Response Factor from daily standard file at 50 ug/l
AVE RF - Average Response Factor from initial calibration Form VI
%D - - - Percent Difference
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Mininum RF for Bromoform is 0.250

EXX22875


RIC
09/17/92 12:27:00
SAMPLE: CLP,CALIB,CALIB,,LOW,WATER,,VOA,EPA
CONDS.: I50C
RANGE: G 1,1420 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3
DATA: CC091792C1 #1
CALI: CC091792C1 #3
SCANS 35 TO 1415
75392.
100.0
RIC
CC091792C1
EXX22876
100
165
249
352
483
537
637
686
730
780
884
928
979
1055
1142
1190
200
5:00
400
10:00
600
15:00
800
20:00
1000
25:00
1200
30:00
1400
35:00
SCAN
TIME

VOLATILE ORGANICS ANALYSIS DATA SHEET

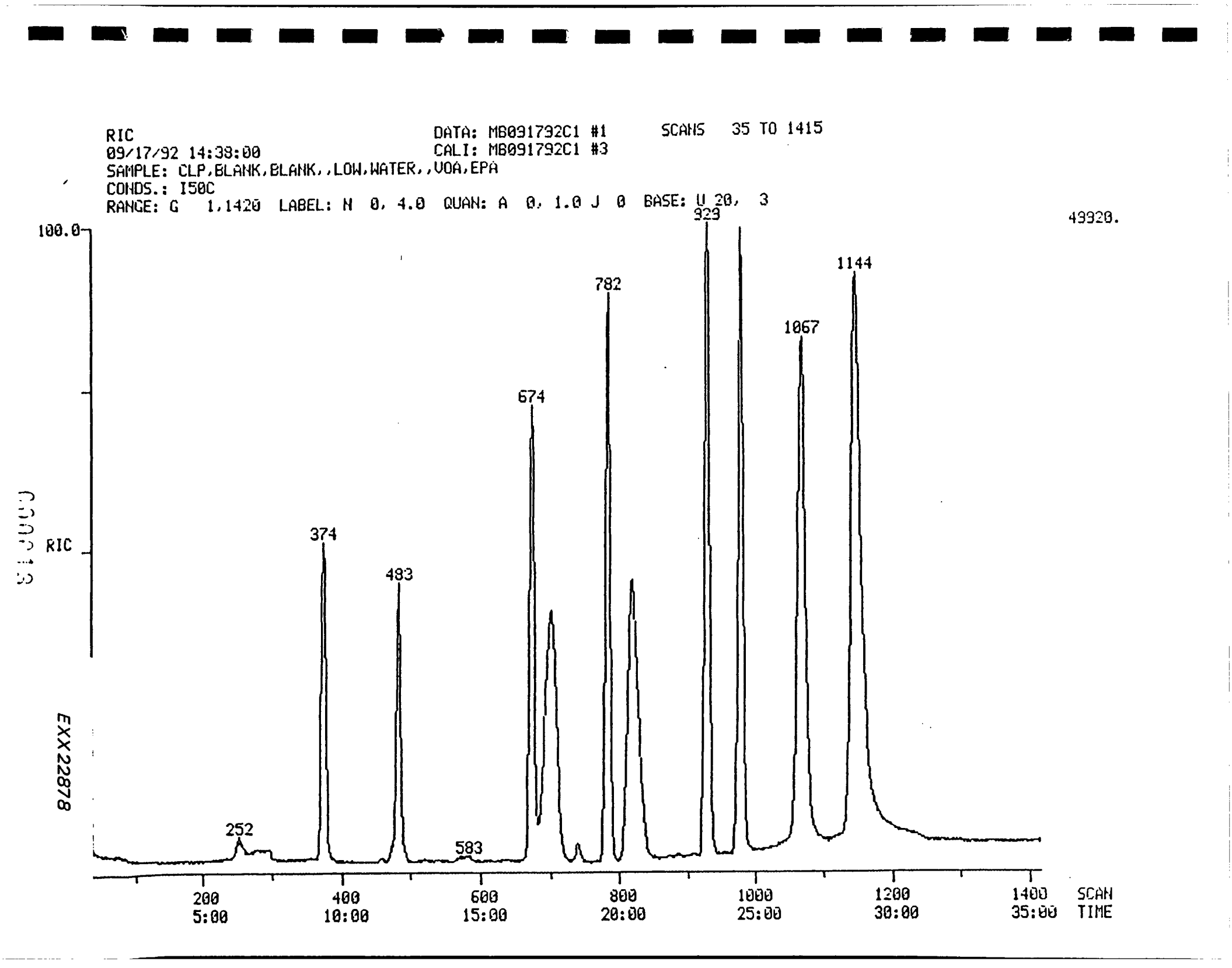
Laboratory Name:	AnalytiKEM-Hou	Concentration:	LOW	Date Extracted:	09/17/92
Lab Sample ID:	MB091792C1	Sample Matrix:	WATER	Date Analyzed:	09/17/92
Client Sample ID:	MB091792C1	Percent Moisture:	100.0	Dilution Factor:	1.0

VOLATILE COMPOUNDS

CAS Number		ug/L		CAS Number		ug/L	
74-87-3	Chloromethane	10	<	78-87-5	1,2-Dichloropropane	5	<
74-83-9	Bromomethane	10	<	10061-01-5	cis-1,3-Dichloropropene	5	<
75-01-4	Vinyl Chloride	10	<	79-01-6	Trichloroethene	5	<
75-00-3	Chloroethane	10	<	124-48-1	Dibromochloromethane	5	<
75-09-2	Methylene Chloride	6		79-00-5	1,1,2-Trichloroethane	5	<
67-64-1	Acetone	5	≈	71-43-2	Benzene	5	<
75-15-0	Carbon Disulfide	5	<	10061-02-6	Trans-1,3-Dichloropropene	5	<
75-35-4	1,1-Dichloroethene	5	<	110-75-8	2-Chloroethylvinyl ether	10	<
75-34-3	1,1-Dichloroethane	5	<	75-25-2	Bromoform	5	<
156-60-5	trans-1,2-Dichloroethene	5	<	108-10-1	4-Methyl-2-Pentanone	10	<
67-66-3	Chloroform	5	<	591-78-6	2-Hexanone	10	<
107-06-2	1,2-Dichloroethane	5	<	127-18-4	Tetrachloroethene	5	<
78-93-3	2-Butanone	10	<	79-34-5	1,1,2,2-Tetrachloroethane	5	<
71-55-6	1,1,1-Trichloroethane	5	<	108-88-3	Toluene	5	<
56-23-5	Carbon Tetrachloride	5	<	108-90-7	Chlorobenzene	5	<
108-05-4	Vinyl Acetate	5	<	100-41-4	Ethylbenzene	5	<
75-27-4	Bromodichloromethane	5	<	100-42-5	Styrene	5	<
				1330-20-7	Xylene (total)	5	<

The Lab ID for data on this page is MB091792C1.
≈ - Reported value is less than the detection limit.
< - Compound analyzed for but not detected. The reported value is the minimum attainable detection limit for the sample.

EXX22877


RIC
09/17/92 14:38:00
DATA: MB091792C1 #1
CALI: MB091792C1 #3
SCANS 35 TO 1415
SAMPLE: CLP,BLANK,BLANK,,LOW,WATER,,VOA,EPA
CONDS.: I50C
RANGE: G 1,1420 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3
49920.
100.0
RIC
252
374
483
583
674
782
923
1067
1144
200
5:00
400
10:00
600
15:00
800
20:00
1000
25:00
1200
30:00
1400
35:00
SCAN
TIME
EXX22878

ORGANICS ANALYSIS DATA SHEET

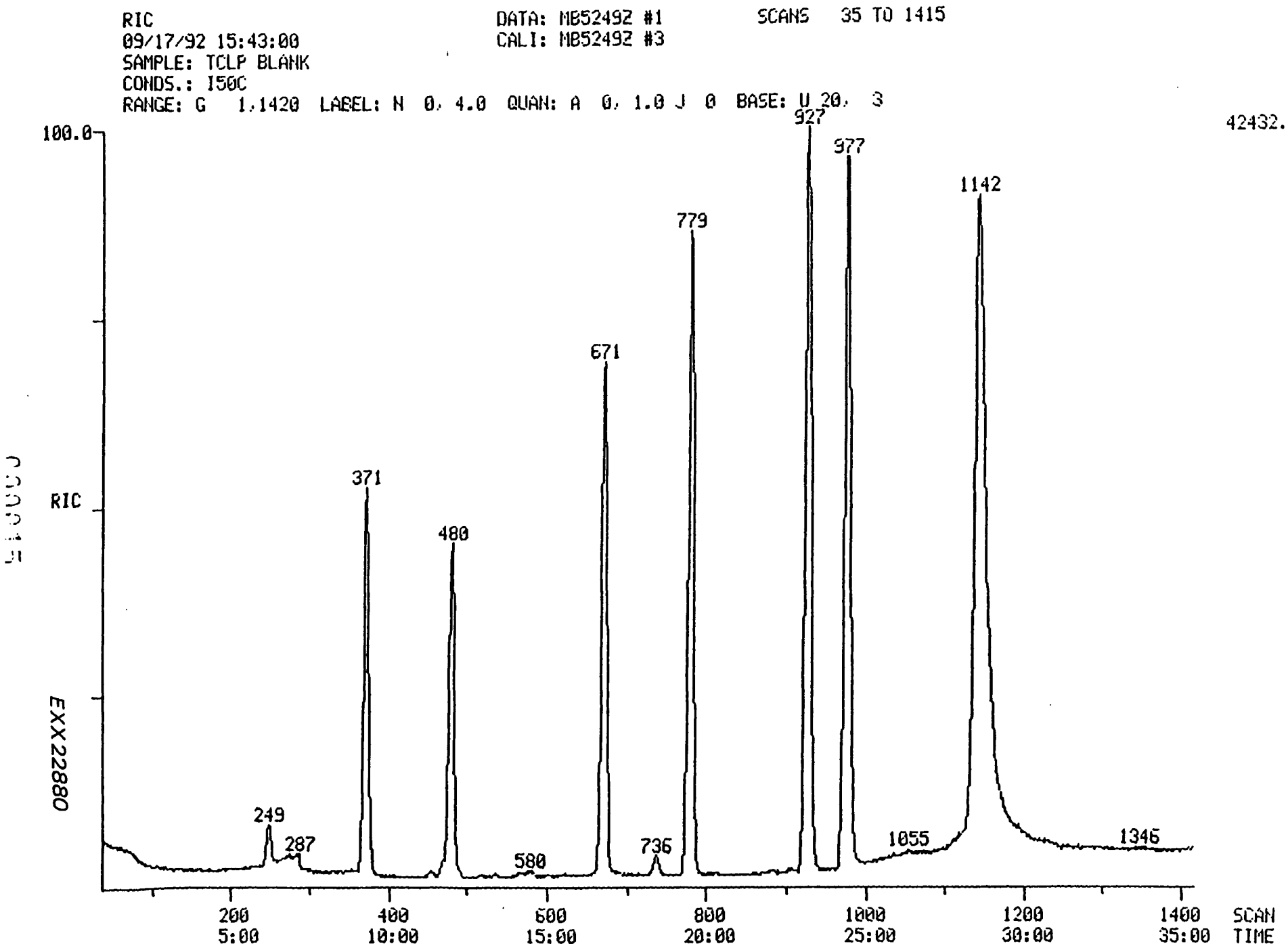
Laboratory Name:	AnalytiKEM-Hou	Concentration:	LOW	Date Extracted:	09/17/92
Lab Sample ID:	MB5249Z	Sample Matrix:	WATER	Date Analyzed:	09/17/92
Client Sample ID:	TCLP_BLANK	Percent Moisture:	100.0	Dilution Factor:	1.0

TCLP VOLATILE COMPOUNDS

CAS Number		ug/L		CAS Number		ug/L	
75-01-4	Vinyl Chloride	10	<	79-01-6	Trichloroethene	5	<
75-35-4	1,1-Dichloroethene	5	<	71-43-2	Benzene	5	<
67-66-3	Chloroform	5	<	127-18-4	Tetrachloroethene	5	<
107-06-2	1,2-Dichloroethane	5	<	108-90-7	Chlorobenzene	5	<
78-93-3	2-Butanone	10	<				
56-23-5	Carbon Tetrachloride . . .	5	<				

The Lab ID for data on this page is MB5249Z.
< - Compound analyzed for but not detected. The reported value is the minimum attainable detection limit for the sample.
Data not spike corrected.

EXX22879


RIC
09/17/92 15:43:00
SAMPLE: TCLP BLANK
CONDS.: 150C
RANGE: G 1.1420 LABEL: N 0. 4.0 QUAN: A 0. 1.0 J 0 BASE: U 20. 3
DATA: MB5249Z #1
CALI: MB5249Z #3
SCANS 35 TO 1415
42432.
100.0
RIC
EXX22880
249
287
371
480
580
671
736
779
927
977
1055
1142
1345
200
5:00
400
10:00
600
15:00
800
20:00
1000
25:00
1200
30:00
1400
35:00
SCAN
TIME

2A

WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: ANALYTIKEM-HOU _____ Contract: _____

Lab Code: HOUSTON Case No.: A8972 SAS No.: _____ SDG No.: A8972

	EPA SAMPLE NO.	SMC1 (TOL)#	SMC2 (BFB)#	SMC3 (DCE)#	OTHER	TOT OUT
01	DP-1-TCLP	101	101	112	109	0
02	DP-1-TCLP-MS	100	103	112	103	0
03	DP-2-TCLP	102	100	110	106	0
04	MR-1-TCLP	96	97	113	109	0
05	TCLP_BLANK	102	98	109	109	0
06	MB091792C1	100	98	111	111	0

	QC LIMITS
SMC1 (TOL) = Toluene-d8	(88-110)
SMC2 (BFB) = Bromofluorobenzene	(86-115)
SMC3 (DCE) = 1,2-Dichloroethane-d4	(76-114)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

EXX22881

ORGANICS ANALYSIS DATA SHEET

Laboratory Name:	AnalytiKEM-Hou	Concentration:	LOW	Date Extracted:	09/17/92
Lab Sample ID:	A8972-1TMS	Sample Matrix:	WATER	Date Analyzed:	09/17/92
Client Sample ID:	DP-1-TCLP-MS	Percent Moisture:	100.0	Dilution Factor:	1.0

TCLP VOLATILE COMPOUNDS

CAS Number		ug/L	%R	CAS Number		ug/L	%R
75-01-4	Vinyl Chloride	43	86	79-01-6	Trichloroethene	49	98
75-35-4	1,1-Dichloroethene	43	86	71-43-2	Benzene	49	98
67-66-3	Chloroform	47	94	127-18-4	Tetrachloroethene	54	108
107-06-2	1,2-Dichloroethane	48	96	108-90-7	Chlorobenzene	50	100
78-93-3	2-Butanone	57	114				BPB
56-23-5	Carbon Tetrachloride . . .	54	108				

The Lab ID for data on this page is A89721TVMS.
Data not spike corrected.

EXX22882

INITIAL CALIBRATION DATA
VOLATILE HSL COMPOUNDS

Case No: STAND Region: _____ Instrument ID: I50C
Contractor: AnalytiKEM-Hou Calibration Date: 09/15/92
Contract No: _____

Min AVE RF for SPCC is 0.300 (1) Max %RSD for CCC is 30%

Laboratory ID	IC0915020C1 CC091592C1	IC0915100C1 IC0915150C1		IC0915200C1				CCC*
Compound	RF(20)	RF(50)	RF(100)	RF(150)	RF(200)	AVE RF	% RSD	SPCC**
Chloromethane	1.281	1.110	0.718	0.832	0.983	0.985	22.6	* *
Bromomethane	1.232	1.036	1.054	0.835	0.781	0.988	18.4	
Vinyl Chloride	1.243	0.985	0.953	0.912	0.895	0.998	14.2	*
Chloroethane	0.766	0.636	0.633	0.572	0.593	0.640	11.8	
Methylene Chloride	1.676	1.292	1.333	1.308	1.291	1.380	12.1	
Acetone	0.470	0.531	0.140	0.136	0.120	0.279	72.7	
Carbon Disulfide	1.344	1.164	2.426	2.579	2.284	1.959	33.5	
1,1-Dichloroethene	1.717	1.420	1.363	1.365	1.259	1.425	12.2	*
1,1-Dichloroethane	4.142	3.466	3.670	3.519	3.370	3.633	8.4	* *
trans-1,2-Dichloroethene	2.030	1.636	1.649	1.544	1.458	1.663	13.2	
Chloroform	5.051	4.191	4.463	4.166	3.895	4.353	10.1	*
1,2-Dichloroethane	3.589	3.025	3.321	2.945	2.821	3.140	9.9	
2-Butanone	0.041	0.040	0.019	0.017	0.015	0.026	49.1	
1,1,1-Trichloroethane	0.781	0.761	0.670	0.660	0.598	0.694	10.9	
Carbon Tetrachloride	0.563	0.543	0.504	0.519	0.483	0.522	6.0	
Vinyl Acetate	0.071	0.041	0.129	0.120	0.087	0.090	40.2	
Bromodichloromethane	0.767	0.767	0.723	0.691	0.639	0.717	7.6	
1,2-Dichloropropane	0.488	0.433	0.454	0.417	0.403	0.439	7.6	*
cis-1,3-Dichloropropene	0.675	0.619	0.599	0.540	0.508	0.588	11.2	
Trichloroethene	0.467	0.392	0.387	0.366	0.357	0.394	11.0	
Dibromochloromethane	0.518	0.496	0.557	0.502	0.489	0.512	5.3	
1,1,2-Trichloroethane	0.389	0.311	0.363	0.313	0.300	0.335	11.5	
Benzene	1.101	0.982	0.930	0.858	0.798	0.934	12.5	
Trans-1,3-Dichloropropene	0.612	0.522	0.532	0.487	0.462	0.523	10.9	
2-Chloroethylvinyl ether	0.259	0.062	0.276	0.252	0.246	0.219	40.4	
Bromoform	0.313	0.322	0.379	0.364	0.362	0.348	8.3	* *
4-Methyl-2-Pentanone	0.437	0.351	0.521	0.526	0.511	0.469	16.0	
2-Hexanone	0.376	0.363	0.314	0.313	0.293	0.332	10.8	
Tetrachloroethene	0.466	0.392	0.340	0.353	0.330	0.376	14.7	
1,1,2,2-Tetrachloroethane	0.709	0.647	0.696	0.639	0.577	0.654	8.0	* *
Toluene	0.907	0.831	0.760	0.752	0.677	0.785	11.1	*
Chlorobenzene	1.054	0.981	0.992	0.952	0.893	0.974	6.0	* *
Ethylbenzene	0.634	0.564	0.535	0.511	0.467	0.542	11.5	*
Styrene	0.856	0.746	1.044	1.037	0.922	0.921	13.7	
Xylene (total)	0.562	0.489	0.647	0.639	0.569	0.581	11.1	
Toluene-d8	1.391	1.375	1.354	1.386	1.353	1.372	1.3	
Bromofluorobenzene	0.947	0.957	1.014	1.022	1.003	0.989	3.5	
1,2-Dichloroethane-d4	2.958	2.707	3.155	2.943	3.156	2.984	6.2	
Benzene-d6	1.043	0.998	0.979	0.941	0.937	0.980	4.5	

Response Factor (number is the amount of ug/L)
AVE RF - Average Response Factor
%RSD - - Percent Relative Standard Deviation
CCC - - Calibration Check Compounds (*)
SPCC - - System Performance Check Compounds (**)
(1) - - Minimum AVE RF for Bromoform is 0.250

EXX22883

TEST RESULTS BY SAMPLE

Sample: 01A A8972-1 Collected: 09/03/92
Job: RE REACTIVITY

Test Name	Method	Result	Units	Detection Limit	Date Started	Analyst
REACTIVITY CYANIDE	SW-846 7.3.3	<0.40	ppm	0.40	09/14/92	JA
REACTIVITY SULFIDE	SW-846 7.3.4	245	ppm	20	09/14/92	SJ

Sample: 02A A8972-2 Collected: 09/03/92
Job: RE REACTIVITY

Test Name	Method	Result	Units	Detection Limit	Date Started	Analyst
REACTIVITY CYANIDE	SW-846 7.3.3	<0.40	ppm	0.40	09/14/92	JA
REACTIVITY SULFIDE	SW-846 7.3.4	146	ppm	20	09/14/92	SJ

Sample: 03A A8972-3 Collected: 09/03/92
Job: RE REACTIVITY

Test Name	Method	Result	Units	Detection Limit	Date Started	Analyst
REACTIVITY CYANIDE	SW-846 7.3.3	<0.40	ppm	0.40	09/14/92	JA
REACTIVITY SULFIDE	SW-846 7.3.4	241	ppm	20	09/14/92	SJ

SOUTHWESTERN LABORATORIES QUALITY CONTROL LOG

MDL ________

METHOD OF ANALYSIS 376.1 PARAMETER Sulfide MATRIX Solid Liquid ANALYST S. Jackson DATE 9/4/92 TIME 700

CALIBRATION STANDARDS/BLANK	ABSORBANCE
L.R. (r) =	

STANDARDS	THEORETICAL CONCENTRATION	MEASURED CONCENTRATION	% RECOVERY
BLANK			
210	49.574	419	73%

LAB NUMBERS/SAMPLE ID NUMBERS IN THIS RUN:

92-09-131-1A, 92-09-08-1A-3A, 92-09-132 1A, 92-09-130-1A,
92-09-159-1A-4A ; 92-09-099-1B

QUALITY CONTROL DUPLICATES AND SPIKES

PERCENT RECOVERY CALCULATION: SPIKED SAMPLE - SAMPLE ÷ THEORETICAL x 100

LAB #-SAMPLE ID #	FIRST CONC.	DIL. FACTOR	REPL. CONC.	DIL. FACTOR	RANGE	%PRECISION	SPIKED SAMPLE CONC.	SAMPLE CONC.	THEO. CONC.	% RECOVERY
92-09-159-2A	153		152		1	0				

EXX22885

SOUTHWESTERN LABORATORIES QUALITY CONTROL LOG

MDL _____

SW 846 REIKN SLUDGE/

METHOD OF ANALYSIS EPA 335.3 PARAMETER CN_W MATRIX H2O ANALYST J ALLEN DATE 14 SEP 92 TIME 0800

CALIBRATION STANDARDS/BLANK	ABSORBANCE
STD 0.02	3.25
0.05	9.375
0.10	18.125
0.50	85 00
L.R. (r) = .99995	

STANDARDS	THEORETICAL CONCENTRATION	MEASURED CONCENTRATION	% RECOVERY
BLANK			
STD 0.50	.500	.5055	101
	.500	.5114	102

LAB NUMBERS/SAMPLE ID NUMBERS IN THIS RUN:

REIKN 92-09-099-1 ; 92-09-118-(1,2,3) ; 92-09-137-1 ; 92-09-153-1
92-09-159-(1,2,3,4) CN_W 92-09-076-(3,4)

QUALITY CONTROL DUPLICATES AND SPIKES

PERCENT RECOVERY CALCULATION: SPIKED SAMPLE - SAMPLE ÷ THEORETICAL × 100

LAB #-SAMPLE ID #	FIRST CONC.	DIL. FACTOR	REPL. CONC.	DIL. FACTOR	RANGE	%PRECISION	SPIKED SAMPLE CONC.	SAMPLE CONC.	THEO. CONC.	% RECOVERY
92-09-159-2	<0.02	12.5 ml / 25 ml	<0.02	12.5 ml / 25 ml	0	—	.2566	0	.250	104
92-09-159-4	<0.02	12.5 ml / 25 ml	<0.02	12.5 ml / 25 ml	0	—	.2611	0	.250	105

EXX22886

PRECISION % = FIRST CONC. - REPLICATE CONC. ÷ MEAN × 100

ANALYTIKEM – HOUSTON

SILVER QUALITY CONTROL LOG

EPA SW-846:7760, AA

DATE/TIME OF ANALYSIS: 21Sep92/1350 PAGE 1 OF 2

LAB NUMBER-SAMPLE	COMMENTS	CHECK STANDARDS	CONCENTRATION FOUND/TRUE
A9007 (12)	Method blank for JTr ~~A8T~~	SAMPLE BLANK	
A8931-(1-5)		METHOD BLANK	
A9027-(1-6)		ERA 2 PE STD	1.012/1.0
A9007A-LT	A9027 was <2 mg/kg.	INTERNAL STD.	
A8972-(1T-3T)			
A9021-1			

MATRIX SPIKE	PRECISION		MS DUPLICATE	ACCURACY				
LAB NUMBER-SAMPLE	MS % REC.	MSD % REC.	% RPD	SPIKE AMOUNT	MS RESULT	% REC.	MSD RESULT	% REC.
A9007-MB	107	–	–	0.1	0.107	107	–	–
A9007-2	112	106	5.5	0.1	0.112	112	0.106	106
(S) A8931-MB	115	–	–	↓	0.115	115	–	–
A8931-1	107	90	17.2	↓	0.107	107	0.090	90
A9027-MB	86	–	–	0.2	0.172	86	–	–
A9027-6	88	90	2.2	↓	0.176	88	0.179	90
A9007A-MB	88	–	–	0.1	0.088	88	–	–
A9007A-Extract Blk	82	↓	↓	↓	0.082	82	↓	↓
A9007A-6T	72	↓	↓	↓	0.072	72	↓	↓
A8972-MB	72	↓	↓	↓	0.072	72	↓	↓
-Extract Blk	84	↓	↓	↓	0.084	84	↓	↓
-1T	85	↓	↓	↓	0.085	85	↓	↓
-2T	87	↓	↓	↓	0.087	87	↓	↓

CONTROL LIMITS: AQUEOUS, 9-12 %RPD, 78-116 %REC.

SOLIDS, SAME %RPD, SAME %REC.

EXX22887

1 OUT OF 3 DUPLICATES WERE OUTSIDE OF QC LIMITS

0 OUT OF 16 SPIKE RECOVERIES WERE OUTSIDE OF QC LIMITS

ANALYST: Erick M Edwards/ENV QA/QC: [signature]

ANALYTIKEM – HOUSTON

SILVER QUALITY CONTROL LOG

EPA SW-846:7760, AA

DATE/TIME OF ANALYSIS: 21 Sep 92 / 1350 PAGE 2 OF 2

LAB NUMBER-SAMPLE	COMMENTS	CHECK STANDARDS	CONCENTRATION FOUND/TRUE
		SAMPLE BLANK	
		METHOD BLANK	
		P.E. STD.	
		INTERNAL STD.	

MATRIX SPIKE	PRECISION	MS DUPLICATE		ACCURACY				
LAB NUMBER-SAMPLE	MS % REC.	MSD % REC.	% RPD	SPIKE AMOUNT	MS RESULT	% REC.	MSD RESULT	% REC.
A8972-3T	86	–	–	0.1	0.086	86	–	–
A9021-mB	88	↓	↓	↓	0.088	88	↓	↓
A9021-1	87	91	4.5	↓	0.087	87	0.091	91

CONTROL LIMITS: AQUEOUS, 9-12 %RPD, 78-116 %REC.

SOLIDS, SAME %RPD, SAME %REC.

EXX22888

0 OUT OF 1 DUPLICATES WERE OUTSIDE OF QC LIMITS

0 OUT OF 4 SPIKE RECOVERIES WERE OUTSIDE OF QC LIMITS

ANALYST: [signature] / EWE QA/QC: [signature]

ANALYTIKEM - HOUSTON
ICAP QUALITY CONTROL LOG

DATE/TIME: 24 SEPT 92/0853 EPA SW-846:6010 PAGE 1 OF 3

LAB ID	A8972-(1T->3T)	A9021-1	A9041-(1->10) DIS	A9041-(1->10) TTL	A9062-1,3,5,6		
NOs							

PARAMETER		As	Se	Zn	Pb	Cd	Ni	Cr	Be	Cu	Ba
PE STDS	ERA-3	1.08 / 1.00	9.08 / 10.0	0.984 / 1.00	0.983 / 1.00	1.01 / 1.00	0.944 / 1.00	0.998 / 1.00	1.00 / 1.00	1.00 / 1.00	1.00 / 1.00

A8972-MB MS/MSD %REC	106	98	108	107	100					104
%RPD										
SPIKE AMT.	2.0	2.0	1.0	0.1	0.2					2.0
A8972-EB MS/MSD %REC	102	99	97	99	97					116
%RPD										
SPIKE AMT.	2.0	2.0	1.0	0.1	0.2					2.0
A8972-1T MS/MSD %REC	96	97	76	100	93					78
%RPD										
SPIKE AMT.	2.0	2.0	1.0	0.1	0.2					2.0
A8972-2T MS/MSD %REC	111	96	77	80	78					80
%RPD										
SPIKE AMT.	2.0	2.0	1.0	0.1	0.2					2.0

CONTROL LIMITS:

AQUEOUS	%RPD.										
	%REC.										
SOLIDS	%RPD.										
	%REC.										

-0- OUT OF -0- DUPLICATES WERE OUTSIDE OF QC LIMITS
0 OUT OF 24 SPIKE RECOVERIES WERE OUTSIDE OF QC LIMITS

COMMENTS: EXX22889

ANALYST: James Matthews/JM QA/QC: Ted E McKinney/TEM

ANALYTICHEM - HOUSTON
ICAP QUALITY CONTROL LOG

DATE/TIME: 24SEPT92/0853 EPA SW-846:6010 PAGE 2 OF 3

	As	Se	Zn	Pb	Cd	Ni	Cr	Be	Cu	Ba	
A8972-3T MS/MSD %REC	112	112		82	78		70			62	
%RPD											
SPIKE AMT.	2.0	2.0		1.0	0.1		0.2			2.0	
A9021-MB MS/MSD %REC			88	88	90	88	86		99		
%RPD											
SPIKE AMT.			1.0	1.0	0.1	1.0	0.2		0.2		
A9021-1 MS/MSD %REC			88/86	93/92	88/86	91/90	88/89		92/91		
%RPD			2.30	1.08	2.30	1.10	1.13		1.09		
SPIKE AMT.			1.0	1.0	0.1	1.0	0.2		0.2		
A9041-MB MS/MSD %REC D:SS			93	93	92	94	91		104	94	
%RPD											
SPIKE AMT.			1.0	1.0	0.1	1.0	0.2		0.2	2.0	
A9041-3 MS/MSD %REC D:SS			77/88	79/83	65/72	84/88	84/89		*/*	85/85	
%RPD			13.33	4.94	10.22	4.65	5.78		2.43	0	
SPIKE AMT.			1.0	1.0	0.1	1.0	0.2		0.2	2.0	
A9041-MB MS/MSD %REC Total			89	91	87	88	120		104	94	
%RPD											
SPIKE AMT.			1.0	1.0	0.1	1.0	0.2		0.2	2.0	

CONTROL LIMITS:

AQUEOUS	%RPD											
	%REC.											
SOLIDS	%RPD											
	%REC.											

0/2 OUT OF 13/52 DUPLICATES WERE OUTSIDE OF QC LIMITS
2/52 OUT OF 52 SPIKE RECOVERIES WERE OUTSIDE OF QC LIMITS

COMMENTS: EXX22890

ANALYST: James Mathis/JM QA/QC: Jeff McKown/JM

ANALYTIXEM - HOUSTON
ICAP QUALITY CONTROL LOG

DATE/TIME: 24 SEPT 92/0853 EPA SW-846:6010 PAGE 3 OF 3

	Zn	Pb	Cd	Ni	Cr	Be	Cu	Ba			
A9041-10 MS/MSD %REC TOTAL	84/77	88/84	87/95	89/88	*/*		92/92	81/82			
%RPD	8.70	4.65	8.79	1.13	0.66		0	1.23			
SPIKE AMT.	1.0	1.0	0.1	1.0	0.2		0.2	2.0			
A9062-MB MS/MSD %REC		86			88		82				
%RPD											
SPIKE AMT.		1.0			0.2		0.2				
A9062-1 MS/MSD %REC		81/81			66/71		72/74				
%RPD		0			7.30		2.74				
SPIKE AMT.		1.0			0.2		0.2				
MS/MSD %REC											
%RPD											
SPIKE AMT.											
MS/MSD %REC											
%RPD											
SPIKE AMT.											
MS/MSD %REC											
%RPD											
SPIKE AMT.											

EXX22891

CONTROL LIMITS:

AQUEOUS	%RPD												
	%REC.												
SOLIDS	%RPD												
	%REC.												

0/2 OUT OF 10/23 DUPLICATES WERE OUTSIDE OF QC LIMITS
0/2 OUT OF 23 SPIKE RECOVERIES WERE OUTSIDE OF QC LIMITS

COMMENTS: * spike lost to high analyte concentration

ANALYST: James Matthews/SM QA/QC: Ted McKelvey/TM

AnalytiKEM—Houston

QUALITY CONTROL LOG

Parameter: Ignitability on Solid

Method of Analysis: EPA SW-846, 1010

Page: 1 of 1

Matrix: Soil

Date/Time: 9-16-92 / 1740

Lab Numbers	Detection Limits
*A9007-6	
*A8972-1,2,3	

Calibration Stds./Blk	Absorbance/Conc.

Correlation Coefficient:

Comments: ** Samples analyzed in duplicate

Check Standards	Concentration Found/True
Sample Blank	EXX
Method Blank	EXX
P.E. Std.	EXX
Internal Std.	EXX

Internal Quality Control Duplicates and Spikes

* Below MDL

Lab No. - Sample ID	Sample Conc.	Duplicate Conc.	Range	Percent RPD	Spiked Result	Sample Result	Spike Added	Percent Recovery
**A9007-6								
**A8972-1								

EXX22892

Analyst: [signature]

QA/QC Approval: [signature]

ANALYTIKEM - HOUSTON

MERCURY QUALITY CONTROL LOG

EPA SW-846:7470, 7471 AA

DATE/TIME OF ANALYSIS: 9/22/92/16:00 PAGE 1 OF 1

LAB NUMBER-SAMPLE		COMMENTS	CHECK STANDARDS	CONCENTRATION FOUND/TRUE
A8972-1T-3T			SAMPLE BLANK	—
A9007A-6T			METHOD BLANK	—
A9027-1-6			EPA 1085-1 P.E. STD.	0.0105 / 0.010
A9003-1			CVS ~~INTERNAL~~ STD.	0.0075 / 0.0075

MATRIX SPIKE	PRECISION		MS DUPLICATE	ACCURACY				
LAB NUMBER-SAMPLE	MS % REC.	MSD % REC.	% RPD	SPIKE AMOUNT	MS RESULT	% REC.	MSD RESULT	% REC.
A8972. extract blk	106	—	—	0.005	0.0053	106	—	—
A8972-1T	98	—	—		0.0049	98	—	—
A8972-2T	102	—	—		0.0051	102	—	—
A8972-3T	98	—	—		0.0049	98	—	—
A9007A. extract blk	98	—	—		0.0049	98	—	—
A9007A-6T	100	—	—		0.0050	100	—	—
S A9027-4	98	98	0		0.0049	98	0.0049	98
A9003-1	90	90	0		0.0045	90	0.0045	90
METHOD BLANK	102	—	—		0.0051	102	—	—

CONTROL LIMITS: AQUEOUS, 11-15 %RPD, 81-123 %REC

SOLIDS, SAME %RPD, SAME %REC

EXX22893

0 OUT OF 2 DUPLICATES WERE OUTSIDE OF QC LIMITS

0 OUT OF 10 SPIKE RECOVERIES WERE OUTSIDE OF QC LIMITS

ANALYST: Tammy Lanore/CL QA/QC: Ted R McKinney/TM

AnalytiKEM LABORATORIES - HOUSTON
QUALITY CONTROL LOG- MATRIX SPIKE RECOVERY AND PRECISON
SW-846: METHOD 8 A8972
MATRIX: SOIL SAMPL A8972-1

COMPOU	SPIKE ADDED	SAMPLE RESULT	MS RESULT	REC%	MSD RESULT	REC%	RPD	QC LIMITS RPD	QC LIMITS REC%
DIESEL	250	34	299	106	446	165	39	20.00	20-150

Handa Hitz 9/30/92 Brenda R. Basile 9/30/92

ANALYST DATE QA/QC APPROVAL DATE

EXX 22894

ANALYTIKEM LABORATORIES
QUALITY CONTROL LOG-FORTIFIED BLANK AND METHOD BLANK
TPH ANALYSIS
LAB NO. A8972

BLANK EXTRACTION DATE: 9/15/92

NO TPH DETECTED AT STATED METHOD DETECTION LIMIT MB5243LS

FORTIFIED METHOD BLANK FB5244LS

AMOUNT(MG/~~L~~ Kg) SPIKED	AMOUNT(MG/~~L~~ Kg) RECOVERED	PERCENT RECOVERY
250	290	116

COMMENTS:

Sanda Nilts 9/20/92
ANALYST SIGNATURE DATE

Brenda P. Banks 9/29/92
QAQC COORDINATOR DATE

EXX22895

AnalytiKEM—Houston

QUALITY CONTROL LOG

Parameter: pH corrosion on Solid

Method of Analysis: EPA SW-846, 9040

Page: 1 of 1

Matrix: ~~Liquid~~ Solid AB

Date/Time: 9-16-92/1620

Lab Numbers	Detection Limits
A8972-123	0.01 unit
A9007-6	↓

Calibration Stds./Blk	Absorbance/Conc.
Buffer 10.00	} Calib.
4.00	
Correlation Coefficient:	

Check Standards	Concentration Found/True
Sample Blank	
Method Blank	
P.E. Std.	
Internal Std. Buffer 7.0	7.04 units
ccVs Buffer 7.0	7.05 units.

Comments:

Internal Quality Control Duplicates and Spikes

* Below MDL

Lab No. - Sample ID	Sample Conc.	Duplicate Conc.	Range	Percent RPD	Spiked Result	Sample Result	Spike Added	Percent Recovery
A8972-1	8.57	8.58	0.01	0.1				
A9007-6	7.39	7.32	0.07	1.0				

EXX22896

Analyst: [signature]

QA/QC Approval: [signature]

AnalytiKEM-Houston

Billing Summary
10/02/92 14:22

EXXON
Project No.: 1009-001-150 Lab Number: A8972

	Test Code	Description	Number	Cost	Total
1.	Ag - -TCL-HOU	TCLP SILVER	3	15.62	46.86
2.	As - -TCI-HOU	TCLP ARSENIC	3	15.62	46.86
3.	BNA - - -HOU	SEMIVOLATILE ORGANICS	3	450.00	1350.00
4.	Ba - -TCL-HOU	TCLP BARIUM	3	15.62	46.86
5.	CORR -S- -HOU	CORROSIVITY ON SOLID	3	65.00	195.00
		No Charge-Unable to Analyze	3	-65.00	-195.00
6.	Cd - -TCL-HOU	TCLP CADMIUM	3	15.62	46.86
7.	Cr - -TCL-HOU	TCLP CHROMIUM	3	15.63	46.89
8.	FP -S- -HOU	IGNITABILITY ON SOLID	3	35.00	105.00
9.	H2S -S-REA-SWL	HYDROGEN SULFIDE, REACTIVE/SLD	3	35.00	105.00
10.	HCN -S-REA-SWL	HYDROCYANIC ACID, REACTIVE/SLD	3	35.00	105.00
11.	Hg - -TCL-HOU	TCLP MERCURY	3	15.63	46.89
12.	Pb - -TCL-HOU	TCLP LEAD	3	15.63	46.89
13.	Se - -TCI-HOU	TCLP SELENIUM	3	15.63	46.89
14.	TCLP -S- -HOU	TOXICITY CHAR. LEACH. PROC.	3	100.00	300.00
15.	TPH -S-GC -HOU	PETROLEUM HYDROCARBON BY GC	3	100.00	300.00
16.	VOA - - -HOU	VOLATILE ORGANIC ANALYSES	3	225.00	675.00
17.	ZHE -S- -HOU	ZERO HEADSPACE EXTRACTION/SLD	3	150.00	450.00
18.	pH -S-COR-HOU	pH CORROSION ON SOLID	3	10.00	30.00
19.		Sample Disposal Charge		$ 6.50	32.50
	Total:				3827.50

EXX22897