GW – 003

GWMR

01 / 22 / 1996

ENVIRONMENTAL SITE INVESTIGATION EUNICE SOUTH GAS PLANT

LEA COUNTY, NEW MEXICO

January 1996

Prepared for

Texaco Exploration and Production Inc.

Prepared by

Geraghty & Miller, Inc. 1030 Andrews Hwy., Suite 120 Midland, Texas 79701 (915) 699-1381

ENVIRONMENTAL SITE INVESTIGATION EUNICE SOUTH GAS PLANT

LEA COUNTY, NEW MEXICO

January 22, 1996

Prepared by GERAGHTY & MILLER, INC.

Jaia orrel

Tara O'Connell Scientist

∛-A. Joseph Reed Sr. Project Advisor, Associate

all 11

Allan T. Schmidt Office Manager

EXECUTIVE SUMMARY	1
INTRODUCTION	4
SITE BACKGROUND	5
PHYSICAL SETTING	5
REGIONAL GEOLOGY	6
REGIONAL HYDROGEOLOGY	7
PREVIOUS HYDROGEOLOGIC INVESTIGATIONS	8
GERAGHTY & MILLER, INC. INVESTIGATION	10
WATER WELL INVENTORY	10
SOIL BORING/SAMPLING TECHNIQUES	10
MONITOR WELL CONSTRUCTION	12
GROUNDWATER SAMPLING AND MONITORING TECHNIQUES	13
RESULTS OF HYDROGEOLOGIC INVESTIGATIONS	14
GEOLOGIC AND HYDROGEOLOGIC CHARACTERISTICS	14
SOIL ANALYSES	15
GROUNDWATER ANALYSES	15
QUALITY ASSURANCE AND QUALITY CONTROL	18
SUMMARY AND CONCLUSIONS	19
REFERENCES	22

CONTENTS

FIGURES

- 1. Site Map
- 2. Water Table Elevations, December, 1995
- 3. Groundwater Concentration Map BTEX
- 4. Groundwater Concentration Map Total BTEX
- 5. Groundwater Concentration Map TPH
- 6. Groundwater Concentration Map TDS
- 7. Groundwater Concentration Map Chlorides

TABLES

- 1. Monitor Well Construction
- 2. Summary of Soil Analyses
- 3. Summary of Groundwater Analyses for Organic Constituents
- 4. Summary of Groundwater Analyses for Inorganic Constituents

APPENDICES

- A. Well Logs
- B. Laboratory Analyses and Chain-of-Custody Documentation
- C. Memo from Robert Browning

ENVIRONMENTAL SITE INVESTIGATION EUNICE SOUTH GAS PLANT

LEA COUNTY, NEW MEXICO

EXECUTIVE SUMMARY

Geraghty & Miller, Inc. was contacted by Texaco Exploration and Production Inc. to conduct an environmental investigation at the Eunice South Gas Plant, located in southeastern New Mexico. The purpose of this investigation is to evaluate the occurrence of phase-separated hydrocarbons, dissolved hydrocarbon and high chloride and total dissolved solids in the groundwater at the Northern Natural Gas Company Eunice Compressor Station which adjoins the north boundary of the Texaco Exploration and Production Inc. Eunice South Gas Plant in Lea County, New Mexico. A preliminary study of the Northern Natural Gas Company property, conducted by D. B. Stephens & Associates, Inc., identified phase-separated hydrocarbons in MW-3 located on the western edge of the Northern Natural Gas Company Compressor Station. There is also an indication of dissolved hydrocarbons in the groundwater under the southern portion of the Northern Natural Gas Company property. According to the D. B. Stephens & Associates, Inc. report, chlorides and total dissolved solids also increase in a generally southerly direction across Northern Natural Gas Company property. In addition, soils containing hydrocarbon constituents were identified above the water table in locations determined to be downgradient from MW-3.

The scope of work for the Geraghty & Miller, Inc. study included a background data review, the proposed installation of six monitor wells, soil and groundwater sampling and a water well inventory of wells between a one-half and one mile radius of the gas plant for background water sampling. Since Texaco Exploration and Production Inc. and Geraghty & Miller, Inc. were unable to secure access to the Northern Natural Gas Company property for the installation of proposed well TMW-4, only five monitor wells were actually drilled and installed during this investigation. Access was also unavailable for the proposed resampling of the groundwater in the existing Northern Natural Gas Company monitor wells.

During Geraghty & Miller, Inc. drilling activities, soil samples were analyzed for volatile organic compounds using field and laboratory methods. Soils were also analyzed for total petroleum hydrocarbons. Based on these findings, the soil at the water table interface in the location of monitor wells TMW-2, 3, 5 and 6 has been impacted by hydrocarbons. These wells are located immediately southeast, south and southwest of the Northern Natural Gas Company property. Similarly, the soil at the water table interface has been impacted at BH-14, SB-1 and obviously because of phase-separated hydrocarbons, at MW-3 on the west and southwest part of the Northern Natural Gas Company property.

Groundwater was encountered at a depth of approximately 52 feet below ground level in each monitor well location. Water levels were gauged, surface well elevations determined and a water table gradient map constructed. Groundwater generally flows toward the south from the Northern Natural Gas Company property toward the Texaco Exploration and Production Inc. property. Groundwater samples from newly installed monitor wells were collected and analyzed for volatile organic compounds, total petroleum hydrocarbons, polynuclear aromatic hydrocarbons, major minerals and metals. Benzene concentrations exceeded New Mexico Water Quality Control Commission standards in TMW-2, 3, 5 and 6. Concentrations of total dissolved solids and chloride exceeded New Mexico Quality Control Commission standards in groundwater samples collected from each new monitor well. Concentrations for aluminum, barium, boron, iron and manganese were also above New Mexico Quality Control Commission standards in several The cadmium concentration in one well was at the New Mexico Quality Control wells. Commission standard. Previous data, collected by D. B. Stephens & Associates, Inc. (10/94) identifies concentrations of benzene, toluene, ethylbenzene and total xylenes in excess of New Mexico Quality Control Commission standards in MW-2 and MW-3. Concentrations of barium, iron and manganese were detected above New Mexico Quality Control Commission standards in several wells.

Groundwater levels were gauged in the seven monitor wells on Northern Natural Gas Company property on December 17, 1995. An apparent water table mound exists under the

3

Northern Natural Gas Company property. Phase-separated hydrocarbons were identified in MW-3. The oil/water interface probe recorded 0.92 feet of product. A clear, disposable polyethylene bailer was lowered into the well and slowly removed. About 8 inches of product were visible over the groundwater. An Enron employee collected samples of the product at that time. No phase-separated hydrocarbons were encountered in other Northern Natural Gas Company wells or in the newly installed Texaco Exploration and Production Inc. monitor wells. Highest concentrations of hydrocarbon compounds and chloride and total dissolved solids concentrations are found in the groundwater beneath the Northern Natural Gas Company property. No source areas for contamination were identified on Texaco Exploration and Production Inc. property from soil or groundwater sampling conducted during this investigation.

INTRODUCTION

Texaco Exploration and Production Inc. (TEPI) retained Geraghty & Miller, Inc. (G&M) to conduct an environmental investigation of soils and groundwater underlying the TEPI Eunice South Gas Plant located south of Eunice, Lea County, New Mexico. The Eunice South Gas Plant is adjacent to the Northern Natural Gas Company (NNG) Compressor Station investigated by Daniel B. Stephens & Associates, Inc. (Stephens) in 1994.

The TEPI gas plant has been operating to extract primary distillates from raw natural gas since the 1940s. The NNG compressor station was constructed in 1962 to aid in the transport of dry natural gas originating at the adjoining gas plant. The purpose of this investigation is to evaluate the extent of subsurface hydrocarbon impacts identified in the Stephens report and to assess the location of possible sources.

G&M field investigation activities were conducted from November 27, 1995 to December 11, 1995. Activities included:

- The installation of five monitor wells;
- Soil sampling and analysis;
- Development and sampling of the newly installed monitor wells;
- Water level gauging in newly installed wells and existing monitor wells on NNG property;
- Water sampling from background water wells located upgradient and downgradient of the gas plant; and
- Surveying of newly installed monitor wells.

This report presents the methods and results of this investigation. Groundwater analytical tables include the results of sample analyses from this investigation and the preceding Stephens investigation on NNG property. Maps have been produced from this data and are included. Soil boring logs and laboratory analytical reports are included within the attached appendices.

4

SITE BACKGROUND

The subject area is located within Township 22S, Range 37E, Section 27 of Lea County, New Mexico. The TEPI gas plant was constructed in the 1940s to extract primary distillates (natural gas, butane and propane) from the raw natural gas obtained from local gas production wells. The NNG compressor station was built in 1962 to accommodate the transport of dry natural gas from the TEPI gas plant adjoining the NNG property on the south.

During the investigation conducted by Stephens, historical aerial photographs were reviewed to determine the number and location of former and present impoundments. The identified pits and impoundments are noted in Figure 1. Upon our review of the aerial photos, modification to the location of the pits southwest of the brine ponds was made.

PHYSICAL SETTING

The TEPI Eunice South Gas Plant is located in the southern half of Lea County where the sandy plains dip gradually to the south and southeast. Natural surface drainage is also to the south and southeast (SCS, 1971). The near surface material in the study area is composed of approximately one to two feet of Quaternary sands identified as belonging to the Simona series. These soils typically exhibit moderately rapid permeability and slow to medium run-off. Underlying Simona soils is hard, indurated caliche which varies in thickness from 10 to 20 feet. The land surface adjoining the plant area is sparsely vegetative with long-stem grasses and mesquite.

The climate in the Eunice area is semi-arid, characterized by hot, dry summers and cool, dry winters. Mean annual precipitation is approximately 13 inches (Nicholson and Clebsch, 1961). Most precipitation is associated with summer thunderstorms (Soil Conservation Service [SCS], 1974).

REGIONAL GEOLOGY

Potable groundwater in southern Lea County is supplied by three major aquifers. From oldest to youngest these include the Triassic Dockum group, comprised of the Santa Rosa sandstone and Chinle formation, the Pliocene-aged Ogallala formation and Quaternary alluvium. Most water wells are completed in the younger formations because the younger aquifers typically exhibit greater permeability and water yields. In addition, water derived from shallow, younger zones is generally of better chemical quality than water from the Triassic (Nicholson, Jr. And Oebsch, Jr., 1960).

The Triassic Dockum group consists of the Santa Rosa sandstone and the Chinle Formation. However, lithologic similarities may obscure distinction between the two formations. The Santa Rosa sandstone is the older member of the Dockum group. It is a fine to coarse grained sandstone, usually red, though containing white, gray and greenish-gray sands. It also contains minor shale units. In general, the sandstone ranges in thickness from 140 feet to over 300 feet. The Santa Rosa outcrops in the extreme western part of southern Lea County, but occurs at depth in the eastern part.

The Chinle Formation is the uppermost member of the Dockum group. It consists of red and green claystone, but also contains fine-grained sandstone and siltstone units. The Chinle is present in the eastern part of the area but thins to the west, where it is absent in the western portion of southern Lea County.

The Ogallala Formation is present under most of southern Lea County. The formation consists of a heterogeneous mixture of terrestrial sediments that were deposited upon an irregular erosional surface of Triassic rocks. Though dominantly composed of calcareous sand, the Ogallala Formation also contains clay, silts and gravel. Thin beds of well-cemented, conglomeratic sandstone have also been identified within this formation. In southern Lea County, the formation ranges in thickness from a few inches to about 300 feet.

Most of the near surface material in southern Lea County is composed of alluvium and sand dunes ranging in age from Pleistocene to recent. The alluvium was deposited in topographically low areas. It consists of alternating beds of calcareous silt, fine sand and clay. In some places, the alluvium ranges in thickness from a few inches to over 400 feet, though it is typically less than 100 feet thick.

Sand dunes mantle the Quaternary alluvium and, where alluvium is absent, the Ogallala Formation. The dunes are made up of unconsolidated fine to medium grained sand which becomes semi-consolidated with increased depth. Average dune sediments form a veneer of five to ten feet thick, though thicknesses from a few inches to about 30 feet have been identified.

REGIONAL HYDROGEOLOGY

The principal aquifer in southern Lea County is the Ogallala Formation. In the western portion of southern Lea County, the Santa Rosa sandstone is the primary aquifer, but it is not an important fresh water aquifer in the eastern part of southern Lea County where it is located much deeper in the subsurface. The Triassic Chinle Formation does not produce a significant amount of water in the study area and is not considered an important aquifer. Quaternary alluvium and sand dune deposits which overlie the Ogallala Formation throughout southern Lea County are also not considered a significant aquifer in the study area. They are usually not saturated.

Groundwater in the Ogallala aquifer occurs under water table conditions. In southern Lea County, the aquifer is considered partially saturated. Recharge to the Ogallala aquifer is provided by precipitation on outcrop areas and overlying permeable alluvium or sand dune deposits.

Regionally, groundwater movement in the Ogallala aquifer is southerly or southeasterly, although local drainage features may influence the direction of groundwater flow. In the study area, groundwater was encountered within the sands of the Ogallala formation at a depth of approximately 52 feet bgs. Figure 2 is a water table map of the investigation area.

PREVIOUS HYDROGEOLOGIC INVESTIGATIONS

Three previous hydrogeologic investigations have been conducted to evaluate impacted soil and groundwater underlying the NNG Eunice Compressor Station.

In 1991, the Metric Corporation performed the first investigation which consisted of installing two monitor wells (MW-1 and MW-2) and drilling 21 soil borings on NNG property. The 21 borings included 12 shallow borings (4 feet or less in depth) and 9 borings advanced to the water table (approximately 52 feet bgl). Two of the deep borings used to evaluate contamination throughout the vertical extent of the vadose zone were completed as monitor wells.

Soil samples were collected and analyzed for total recoverable petroleum hydrocarbons (TRPH) using EPA Method 418.1 and for the volatile organic compounds (VOCs) of benzene, toluene, ethylbenzene and xylenes (BTEX) using EPA Method 8020. Shallow soil samples contained levels of petroleum hydrocarbons in excess of regulatory guidelines set by the New Mexico Oil Conservation Division (NMOCD). In the deep borings constructed during the Metric study, hydrocarbon levels were exceeded in only one boring which was located near the former aboveground storage tank (AST) at the southwest corner of the NNG property. Soil samples were also analyzed for organics and metals using the toxic characteristic leaching procedure (TCLP). Concentrations were below regulatory standards.

Groundwater samples collected by Metric were analyzed for purgeable halocarbons and metals. Groundwater samples contained concentrations of barium, iron, lead and manganese in excess of New Mexico Water Quality Control Commission Standards. The 1991 Metric report details this investigation.

Brown and Root Environmental conducted an investigation in 1993 which included the installation of a third monitor well (MW-3). In addition, the three monitor wells were sampled for VOCs and semi-volatile organic compounds (SVOCs) using EPA Methods 8240 and 8270,

respectively. Samples were also collected for total dissolved solids (TDS) and metals analyses. TDS and barium concentrations exceeded NMWQCC standards in MW-1. Benzene, ethylbenzene, TDS and barium concentrations in MW-2 also exceeded NMWQCC standards. MW-3 had concentrations of benzene, toluene, naphthalene, TDS and barium in excess of NMWQCC standards. A 1993 report completed by Brown & Root Environmental outlines the details of this investigation.

In 1994, Stephens conducted further investigations to characterize the distribution of organic and inorganic constituents in the soil and groundwater underlying the NNG property. In addition, they attempted to identify potential on and off-site sources for the subsurface contamination previously identified. Activities included the installation of four more monitor wells and one soil boring. Soil and groundwater samples were collected, and in-situ tests of aquifer hydraulic properties were conducted.

During this investigation, it was determined that soil contamination (remaining after surficial soil removal) was greatest in the southwestern corner of the site, in soils directly above the water table.

Groundwater contamination was identified along the southern fence line adjoining the NNG and TEPI properties. Groundwater concentrations of benzene, toluene, ethylbenzene, xylene, naphthalene, TDS, chloride, barium, iron and manganese exceeded the NMWQCC standards. Phase-separated hydrocarbons were identified in MW-3, located in the southwestern portion of the NNG property.

GERAGHTY & MILLER, INC. INVESTIGATION

This investigation began on November 27, 1995. All field activities, including groundwater sampling, were completed by December 11, 1995

WATER WELL INVENTORY

Records of water wells associated with the Eunice South Gas Plant were reviewed to determine accessible wells for gauging and sampling. Field reconnaissance and interviews with Rodney Bailey (TEPI) and Robert Browning (TEPI) revealed that nearly all of these wells had been abandoned and were now inaccessible. One water well, located about one-half mile south of the plant was accessible. The pump was shut down for about 10 minutes, then the water level was taken using an oil/water interface probe. After gauging, the pump was turned back on, and the spigot opened. Water was pumped for 15 minutes prior to sampling. Groundwater collected for analyses of volatile organic compounds was collected first, followed by samples to be analyzed for polynuclear aromatic hydrocarbons, major ions, TDS and metals. Another water well (the Abell well) located northwest of the gas plant supplies potable water to the plant. Though a water level could not be obtained on the Abell well, samples were collected using the same procedure described above.

During field reconnaissance, a few windmills were noted within a one-mile radius of the site. The property containing these wells was posted and inaccessible.

SOIL BORING/SAMPLING TECHNIQUES

Five monitor wells (TMW-1, 2, 3, 5 and 6) were drilled as part of this investigation. Soil samples were collected from each boring, and selected samples were submitted for analysis. Monitor well TMW-4 was to be located on NNG property west of MW-6 but access for well drilling was denied.

Monitor well TMW-1 is located west of the NNG west fenceline, between two 20-inch gas lines. TMW-2 is located to the southwest of TMW-1, approximately 45 feet southwest of NNG monitor well MW-3. Monitor well TMW-3 is located along the TEPI side of the NNG south fenceline, west of NNG well MW-2. TMW-5 was installed east of the Eunice South Gas Plant, west/southwest of the Brine Water Retention Pond and west of a former evaporative wastewater pit closed in 1980. Monitor well TMW-6 is located south of the southwest corner of NNG property, southeast of the area identified as a former earthen field oil pit area which was closed in 1980.

Drilling was conducted by Scarborough Drilling of Lamesa, Texas under the supervision of a Geraghty & Miller field geologist. Borings were advanced using air and mud rotary techniques. Soil samples were collected with a core barrel and a 2-foot split-spoon sampling device. Prior to drilling, the area surrounding the monitor well locations was covered with clean plastic sheeting to keep soil cuttings off the ground surface. A mud box was also put in place to collect produced mud and water. Soil cuttings generated during drilling activities were stockpiled on clean plastic sheeting, covered and secured to protect them from climatic influences. Stockpiled soil was sampled for disposal at a permitted facility. Produced fluids were containerized in clean 55-gallon drums and transferred to a large, pre-cleaned frac tank for disposal.

Soil samples were scanned in the field for organic vapors using a photoionization detector (PID). The PID was calibrated daily with 100 parts per million (ppm) isobutylene-in-air in accordance with manufacturer's operating instructions. Field screening for organic vapors consisted of placing a representative portion of cuttings into a clean, new Ziploc[™] bag until the bag was nearly one-half full. For the cored intervals, a representative sample of the core was placed in a bag. The bag was then sealed. After at least 15 minutes holding time, the headspace gas above each sample was scanned for organic vapors by inserting the tip of the PID probe into the bag and recording the maximum reading. Results of the field screening for organic vapors are recorded on the monitor well logs in Appendix A. A representative portion of each sampled

interval was also placed into pre-cleaned, air-tight, sample jars fitted with Teflon[™]-lined lids and placed into a cooler with ice for possible laboratory analysis.

In addition to field screening for organic vapors, each sample was described and examined for odors and visual evidence of staining. Soil descriptions are included on the monitor well logs in Appendix A.

All tools and equipment used for soil sampling were cleaned prior to collection of each sample. Decontamination consisted of washing with a solution of LiquinoxTM and potable water and rinsing with distilled water. All drilling equipment was steam-cleaned upon completion of each borehole. Each boring was completed as a monitor well.

Soil samples were collected from each boring. Samples with the highest recorded value from field screening for organic compounds were submitted for laboratory analysis. Samples were placed into an ice-filled cooler and shipped to Inchcape Testing Services (Inchcape) in Richardson, Texas under strict chain-of-custody guidelines. Samples were analyzed for aromatic VOCs by EPA Method 8020 and for total petroleum hydrocarbons (TPH) by EPA Method 418.1.

MONITOR WELL CONSTRUCTION

The five borings were completed as monitor wells. Each monitor well was constructed with 20 feet of 4-inch diameter (I.D.) Schedule 40 PVC screen with 0.010-inch slots. The screen was flush-threaded to a sufficient length of PVC blank pipe to complete the well to approximately 2-3 feet above grade (TMW-1, 2, 3 and 5) or just below grade (TMW-6). Centralizers were set to brace the PVC casing. A silica sand filter pack was placed in the annular space from the bottom of the hole to three feet above the top of the screen. A bentonite seal, three feet thick, was placed on top of the sand pack. The annular space above the bentonite seal was filled with a 5% bentonite cement grout to approximately one foot below ground surface. A monitor well cap with an expandable seal was placed in the top of the PVC riser prior to surface completion of the wells. Only TMW-6 was completed below grade. It was finished with a flush-mounted, steel

manhole cover set in a 3' x 3' concrete pad, contoured to direct drainage away from the well. The remaining monitor wells were completed above grade. For the remaining wells completed above grade, a steel protective casing with lockable cap was set over the PVC riser and secured with a 3'x 3' concrete pad. TMW-1 and TMW-2 were keyed to the same lock and identified as off-site wells since they are located outside the plant facility. TMW-3 and TMW-5 were locked and keyed the same and identified as on-site wells. TMW-6 was not secured with a lock; however, it is in a secure portion of the plant facility, and the steel cover is bolted in place. Construction details of each well showing the total depth of each boring, depth of the screened interval and other details are presented on Table 1.

Upon completion of well installation, each well was developed by surging and bailing. Bailed water was containerized in 55-gallon drums and transferred to a holding tank. The stainless-steel bailer used to develop each well was decontaminated by steam-cleaning after development of each well was completed.

GROUNDWATER SAMPLING AND MONITORING TECHNIQUES

Prior to sampling, water levels were gauged with an interface probe, and wells were purged of in excess of three casing volumes of groundwater. Samples were collected with a new, disposable, polyethylene bailer and new polyester rope. The first groundwater samples removed were collected for organic analyses (EPA Method 8020 and EPA Method 418.1) and placed into pre-cleaned, pre-acidified 40 ml vials fitted with Teflon[™] septum caps and pre-cleaned, pre-acidified one-litre amber glass bottles. Then, samples were collected for analyses of poly-nuclear aromatic hydrocarbons (EPA Method 8310) and containerized in pre-cleaned one-litre amber glass bottles. Samples to be analyzed for major minerals and metals were collected last and placed into the appropriate plastic and glassware as specified by established methodologies. In addition, two background wells, one upgradient and one downgradient of the plant site, were also analyzed for these constituents to evaluate background water quality. The samples were packed in a cooler with ice and transported via overnight delivery to Inchcape under strict chain-of-custody.

13

Duplicate samples were collected for TMW-6 as a quality control measure for verifying analytical results. In addition, trip blanks were included with each cooler and analyzed to assure that there was no cross-contamination between samples.

Upon completion of field activities, wells were surveyed relative to the plant grid system and mean sea level by John W. West Engineering Company of Hobbs, New Mexico. In addition, two background wells were surveyed to a common reference to allow for greater control in establishing groundwater flow and quality. The two wells were: 1) the Abel water well, located approximately 0.6 miles northwest of the site; and 2) a TEPI water well located approximately 0.5 mile south of the site.

RESULTS OF HYDROGEOLOGIC INVESTIGATIONS

The water well inventory provided only two water wells to establish background water quality. Of these wells, one upgradient and one downgradient of the gas plant, only the downgradient well could be gauged for a water level. The level, when considered with water levels collected on the plant site, NNG property and the regional water table map provided in the Stephens report, supported a southerly direction of groundwater flow. Analytical results of the background wells are discussed under Groundwater Analyses.

GEOLOGIC AND HYDROGEOLOGIC CHARACTERISTICS

The geologic profile appears consistent across the site. The upper soil layer consists of a dry, light brown silty sand which extends to approximately two feet bgl. Caliche underlies the soil layer and extends from 10 - 20 feet bgl. Beneath the caliche, sand and silty sand were encountered.

Groundwater was first encountered between 52 and 53 bgl in each well. The water table elevation map (Figure 2) suggests that a mound has been created in the water table under the

NNG property. Based on the steep gradients off of the mound it would appear that the mound is recent in origin or is being maintained today by some source.

SOIL ANALYSES

Organic vapors were detected at low levels in each of the borings. In each boring, soil samples which exhibited the highest organic vapor concentration as measured with the PID were submitted for laboratory analysis.

Table 2 summarizes the results of the soil analytical analyses obtained from all site investigations. The laboratory reports for the G&M investigation are included as Appendix B. Based on data collected during this investigation, it appears that subsurface soil has been impacted at the water table interface at TMW-2, TMW-5 and TMW-6. TMW-2 is located southwest of NNG well MW-3 and northwest of the former earthen-waste pit area identified in Figure 1. TMW-6 is located south of MW-3 and southeast of the former waste pit. TMW-5 is located east of the gas plant, west/northwest of the pits identified in Figure 1. The soils have also been impacted above the water table interface at SB-1 located in the vicinity of the AST on the southeast corner of the NNG property, BH-14 north of SB-1 and south of MW-3, and at MW-3 which has phase-separated hydrocarbons on top of the water table.

GROUNDWATER ANALYSES

Groundwater samples were collected from each monitor well installed by G&M and analyzed for organic and inorganic constituents. Access to the NNG monitor wells for groundwater sampling could not be obtained. Tables 3 and 4 summarize the constituents detected in the groundwater sampled by G&M and Stephens beneath the respective TEPI and NNG properties. The NMWQCC standard is also given in each table for comparison. Analytical results indicate that groundwater collected from monitor wells TMW-2, 3, 5 and 6 under the TEPI property and MW-2, 3 and 5 under the NNG property have been significantly impacted by hydrocarbons. Groundwater samples were analyzed by EPA Method 8020 for the aromatic

GERAGHTY & MILLER, INC.

Ð

volatile organic compounds benzene, toluene, ethylbenzene and xylenes. The NMWQCC standard for benzene is 10 micrograms per liter (µg/L). This concentration was exceeded in each of the above-mentioned wells. The NMWQCC standard for toluene and ethylbenzene is 750 μ g/L. Only monitor wells MW-2 and MW-3 exhibited concentrations of these compounds above the standard. MW-3 had xylene concentrations in excess of the NMWQCC standard of 620 μ g/L. Figure 3 shows the concentration of benzene, toluene, ethylbenzene and xylenes (BTEX) on TEPI property from sampling during this investigation, and on NNG property from sampling in October 1994. Figure 4 shows the relationship of total BTEX concentrations across both sites. The highest concentration of total BTEX in groundwater was detected in samples collected from MW-2 and MW-3 on NNG property during the 1994 investigation. Total BTEX concentrations in MW-2 and MW-3 were 7,600 µg/L and 7,800 µg/L, respectively. The highest concentration of total BTEX from the current G&M investigation was detected in TMW-5 at 358 µg/L. As the map indicates, this places the area of greatest impact within the NNG property boundary. Additional investigation may reveal a hydrocarbon source for the impacted groundwater in the vicinity of MW-3 which is different from the source of hydrocarbon impacted groundwater in the vicinity of MW-2 to TMW-5. However, an apparent water table mound under the NNG property has the same general shape as the contaminant plume.

There is, at present, no NMWQCC standard for TPH. Groundwater samples were analyzed for TPH by EPA Method 418.1 (modified) for the G&M samples and by EPA Method 8015 (modified) for the Stephens samples. Concentrations were above method detection limits in monitor wells TMW-2, 3 and 5 installed by G&M and in monitor wells MW-1, 2, 3, 5 and 7 installed by Stephens. Figure 5 shows TPH concentrations from both the TEPI sampling conducted in December 1995, and the NNG sampling conducted in October 1994. The highest concentration of TPH is in MW-2 and MW-3 located on NNG property and sampled during the 1994 investigation. As the map suggests, the area of greatest impact appears to be within the NNG property boundary.

Groundwater samples were also analyzed for polynuclear aromatic hydrocarbons by EPA Method 8310 for the G&M samples and EPA Method 8100 for the Stephens samples collected on

the NNG property. One compound, benzo(k)fluoranthene, was detected in TMW-1 at a concentration of 0.190 µg/L. The only other compound identified was benzo(a)anthracene which was noted in the sample collected from TMW-2 at a concentration of 0.380 μ g/L. On the NNG property, napthalene was detected in MW-2 at 6.3 µg/L, in MW-3 at 95 µg/L and in MW-7 at 0.7 µg/L. MW-1 had a detected concentration of 1-methylnapthalene at 0.9 µg/L, MW-2 had a concentration of 1.7 µg/L, MW-3 had a concentration of 200 µg/L and MW-9 had a concentration of 0.9 µg/L. Monitor wells MW-2, 3, 4 and 7 had 2-methylnaphalene concentrations of 2.3, 88, 0.5 and 1.9 µg/L, respectively. Monitor wells MW-3, 4, 5, 6 and 7 had acenaphthene concentrations of 17, 1.1, 0.8, 0.7 and 0.6 µg/L, respectively. Fluorene was detected in MW-2 and MW-3 at 0.9 and 15 µg/L, respectively. Pyrene was detected in MW-3 at 130 µg/L. NMWQCC standards have not been set for these compounds. The detection limits for naphthalene, acenaphthalene, fluorene and pyrene were higher in the Method 8310 analysis than in the Method 8100 analysis. In addition, 1-methylnapthalene and 2-methylnapthalene was not analyzed in the G&M samples. Only the Stephens samples were analyzed for halogenated VOCs by Method 8010. None of the monitor wells contained levels above the NMWQCC standards of 25 µg/L for 1,1-dichloroethane, 10 µg/L for 1,2-dichloroethane or 10 µg/L for 1,1,2trichloroethane. Table 3 summarizes organic constituents identified in the groundwater under both TEPI and NNG properties. Analytical data for monitor wells on TEPI property were obtained during December 1995, while data for monitor wells on NNG property are from an October 1994 sampling event. Two background wells were also analyzed for organic constituents, though none were detected.

During this investigation, groundwater samples were also analyzed for inorganic constituents. Analytical results indicate that groundwater samples from each well exceed the NMWQCC standards for TDS and chloride. Iron was exceeded in MW-1, 3, TMW-1, 2, 3, 5, 6, and WW-1RF. Manganese was exceeded in MW-2, 3, 4, TMW-1, 2, 3, 5 and 6. Aluminum was exceeded in TMW-1, 3, 5 and 6, but was not analyzed by Stephens. Barium exceeded the NMWQCC standard of 1.0 mg/L in MW-1, 2, 3, 7, TMW-3 and 6. Boron was not analyzed by Stephens but exceeded the 0.75 mg/L NMWQCC standard in TMW-1, 3, 5 and WW-1RF.

Cadmium was at the NMWQCC standard of 0.01 mg/L in TMW-2. Figure 6 shows the concentration of TDS on both TEPI and NNG properties from recent and previous investigations. The map indicates that TDS concentrations are highest at MW-2 and MW-5 (5,900 mg/L and 4,700 mg/L respectively), at the south and east fence line of the NNG Compressor Station. The highest concentration on the Eunice South Gas Plant was detected in TMW-5 at 3,370 mg/L. Figure 7 shows the concentration of chlorides on both properties. The highest concentration of chlorides was recorded in MW-2 during the 1994 NNG investigation at 3,000 mg/L. The highest chloride concentration recorded during the TEPI investigation was identified in TMW-5 at 1,800 mg/L. Additional investigation will be necessary to fully define the high chloride and TDS plume presently centered in the vicinity of MW-2.

As indicated above, two background wells were also analyzed for inorganic constituents. WW-1RF is a water well located approximately 0.5 miles south of the gas plant. NMWQCC standards for boron, iron, chlorides and TDS were exceeded in well WW-1RF. TDS and chloride concentrations from the Abell water well, located approximately 0.6 mile northwest of the plant, also exceeded NMWQCC standards. Table 4 summarizes the inorganic constituents identified in the groundwater collected from TEPI monitor wells sampled in December 1995, and from NNG monitor wells sampled in October 1994.

Collected development and purge water was containerized onsite. Bill Olsen (NMOCD) gave approval to Robert Browning (TEPI) to dispose of this water in a permitted onsite disposal well on December 12, 1995. A memo from Robert Browning regarding this conversation is included as Appendix C.

QUALITY ASSURANCE AND QUALITY CONTROL

The only problems associated with the analytical results for soil and groundwater samples collected during this investigation involve cation and anion balancing associated with the groundwater samples submitted for major minerals analyses from TMW-6 and the two background water wells. Interference may have been caused by sediment contained in the bottles.

No other samples or analytical parameters were affected. No constituents were identified within the trip blanks which accompanied each cooler. All samples were run within method holding time. The results from the duplicate sample to TMW-6 verify the analytical results for TMW-6.

SUMMARY AND CONCLUSIONS

This report summarizes the environmental investigation conducted by Geraghty & Miller at the TEPI Eunice South Gas Plant during November and December of 1995 and includes a summary of data from three prior investigations of the NNG property by others. The purpose of this investigation was to evaluate subsurface conditions in response to the occurrence of phaseseparated hydrocarbons, dissolved hydrocarbons and high chlorides and total dissolved solids concentrations in the groundwater at NNG Eunice Compressor Station. Methods used during this investigation included: a background data review, sampling of background water wells located upgradient and downgradient of the gas plant, the installation of five monitor wells, soil sampling, groundwater sampling, surveying of new well installations and well gauging of new wells and existing NNG wells.

Based on data available at this time, the following conclusions may be made regarding hydrogeologic conditions in the Eunice South Gas Plant area:

- Groundwater occurs within shallow sand units approximately 52 feet below ground level. The water table elevation map suggests that a mound has been created in the water table under the NNG property. Based on the steep gradients off of the mound it would appear that the mound is of recent origin or is being actively maintained today by some source.
- Field headspace, laboratory analyses and PSH evaluation indicate that deep soils in the location of TMW-2, 3, 5 and 6, MW-3, BH-14 and SB-1 have been impacted by hydrocarbons. Affected soils occur at the water table interface.
- Groundwater samples collected from monitor wells TMW-2, 3, 5, 6 and MW-2, 3 and 5 had concentrations of benzene in excess of the NMWQCC standards

ය

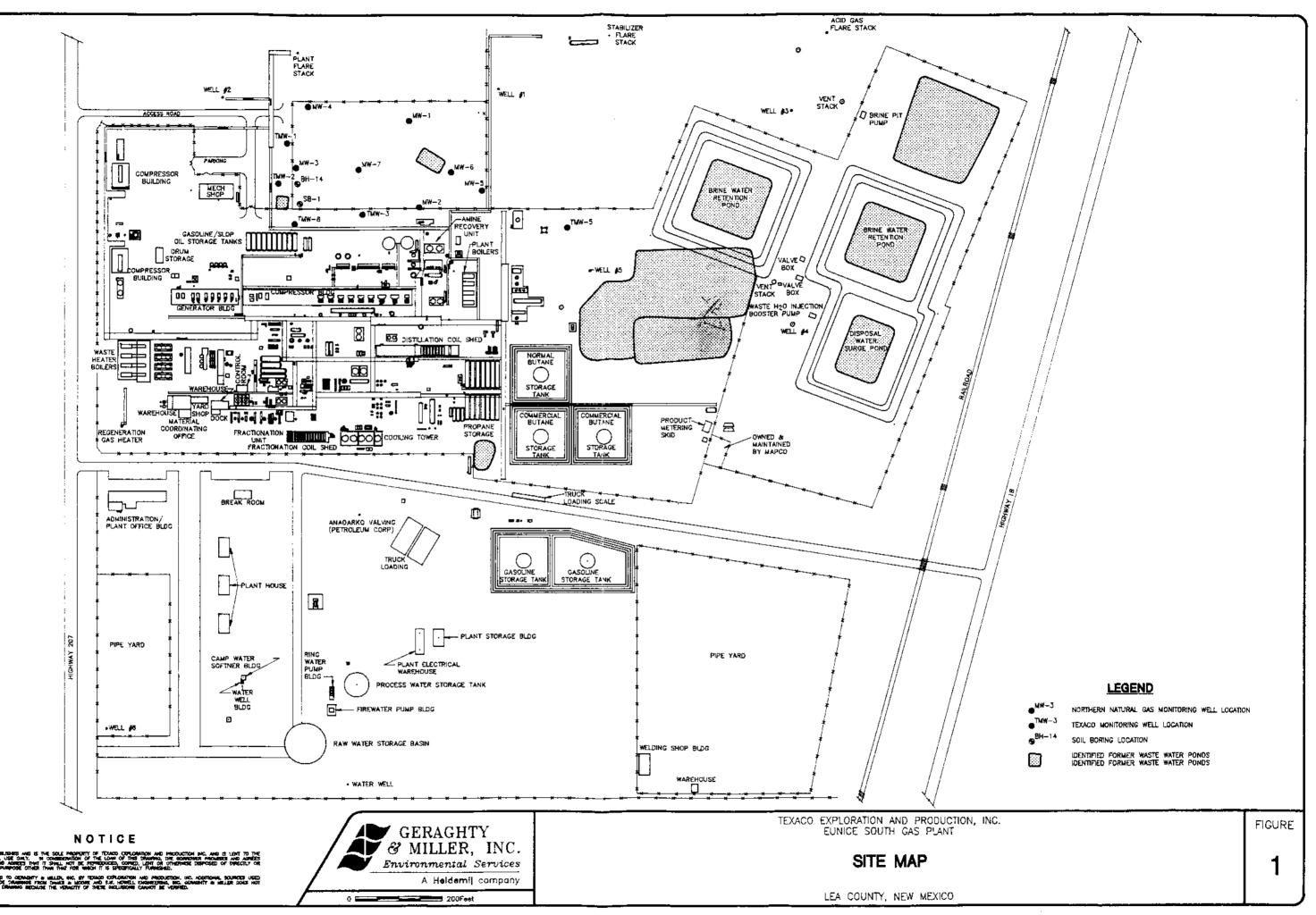
established for benzene. Toluene, ethylbenzene and xylenes concentrations were below the established NMWQCC standards in groundwater samples from TMW-1, 2, 3, 5 and 6. However, toluene was exceeded in MW-3, ethylbenzene was exceeded in MW-2 and MW-3 and xylene was exceeded in MW-3 on the NNG property.

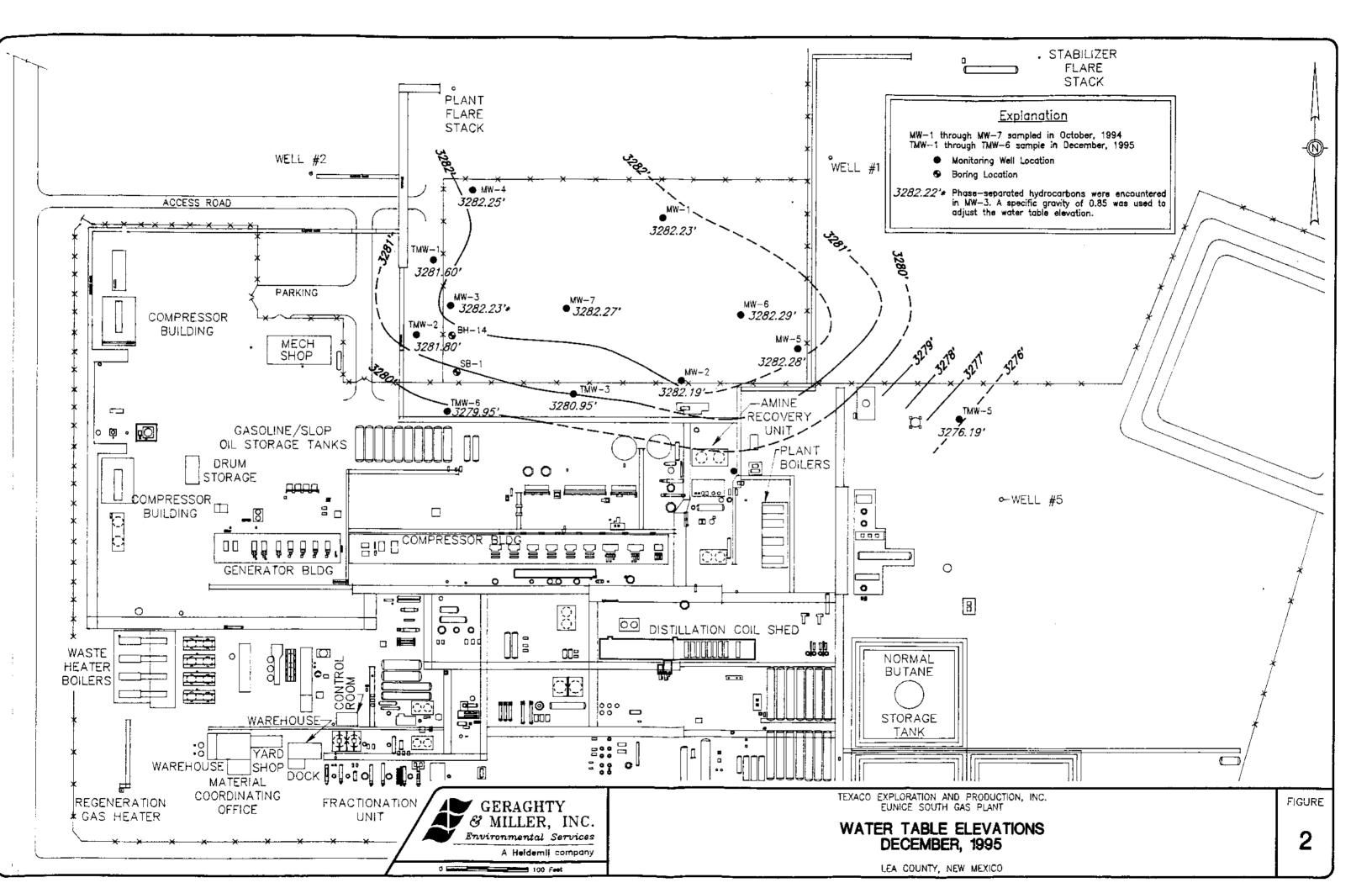
- Inorganic analyses of sampled groundwater show that NMWQCC standards for chloride and total dissolved solids concentrations were exceeded in all monitor wells currently drilled on the both NNG and TEPI properties. The two background well samples also had concentrations of chloride and TDS in excess of NMWQCC standards.
- NMWQCC standards for aluminum, barium, boron, iron and manganese were also exceeded in groundwater samples collected from some of the monitor wells on both properties.
- The cadmium concentration in the groundwater at TMW-2 was at the NMWQCC standard.
- Phase-separated hydrocarbons (PSH) are present in the southwestern portion of the NNG property as evidenced by the 0.92 feet of PSH measured in the NNG monitor well MW-3.
- No source areas for contamination were identified on TEPI property from either soil or groundwater sampling during this investigation. However, the highest concentrations of individual organic contaminants, chlorides and TDS were found in groundwater beneath the NNG property.
- Based on the southerly flow of groundwater at the site, hydrocarbon contamination of the groundwater and soils may have originated to the north of the TEPI property. Phase-separated hydrocarbons are found in MW-3 on NNG property upgradient of the TEPI plant site.
- Additional investigation potentially may reveal a hydrocarbon source for the impacted groundwater in the vicinity of MW-3 which is different from the source of hydrocarbon impacted groundwater in the vicinity of MW-2 to TMW-5.

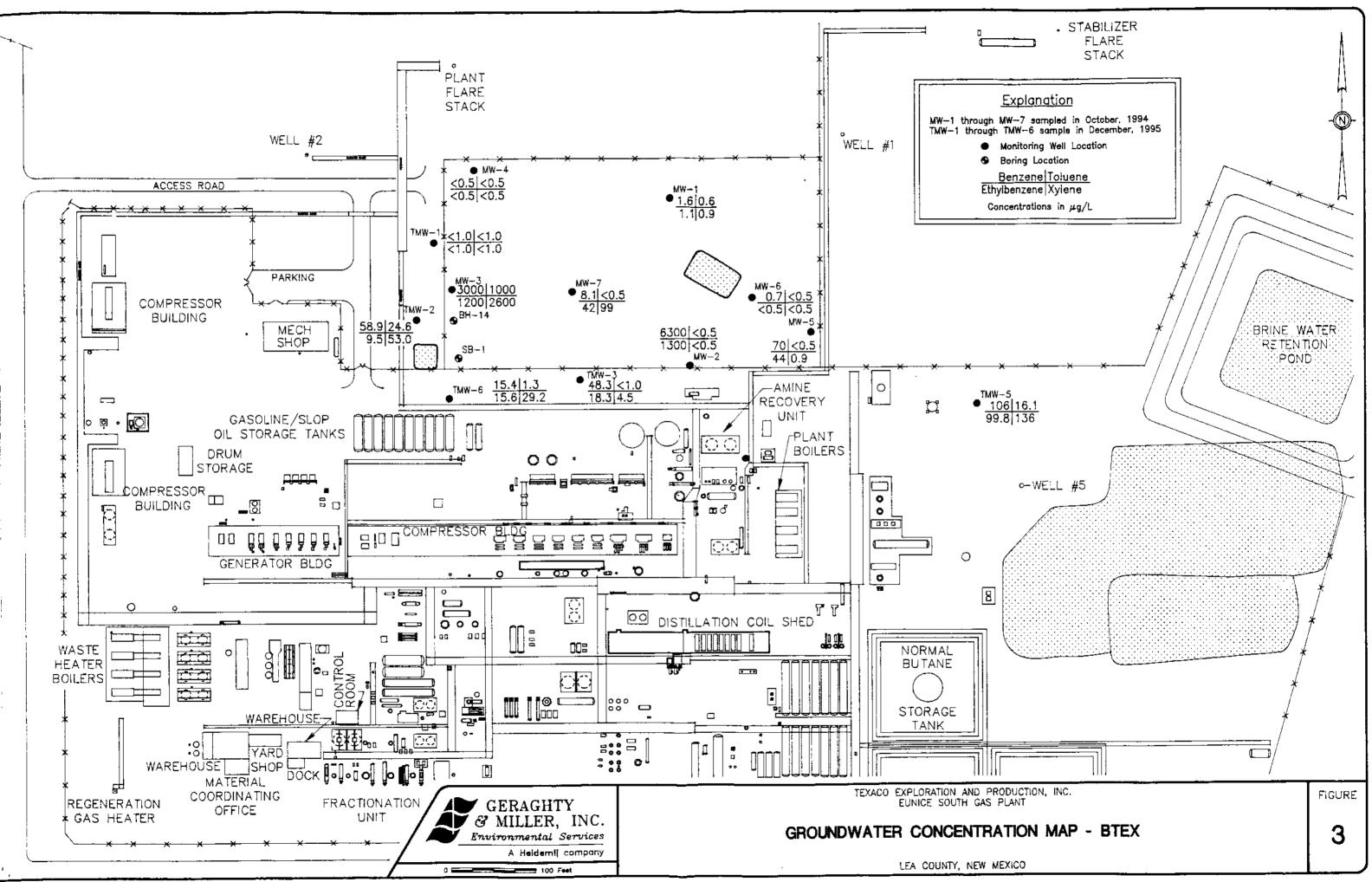
REFERENCES

- D.B. Stephens & Associates, Inc., December 1994, Environmental Investigation Report, Northern Natural Gas Compressor Station, Lea County, New Mexico.
- Nicholson, Jr. And Clebsch, Jr., 1960, Geology and Groundwater Conditions in Southern Lea County, New Mexico.

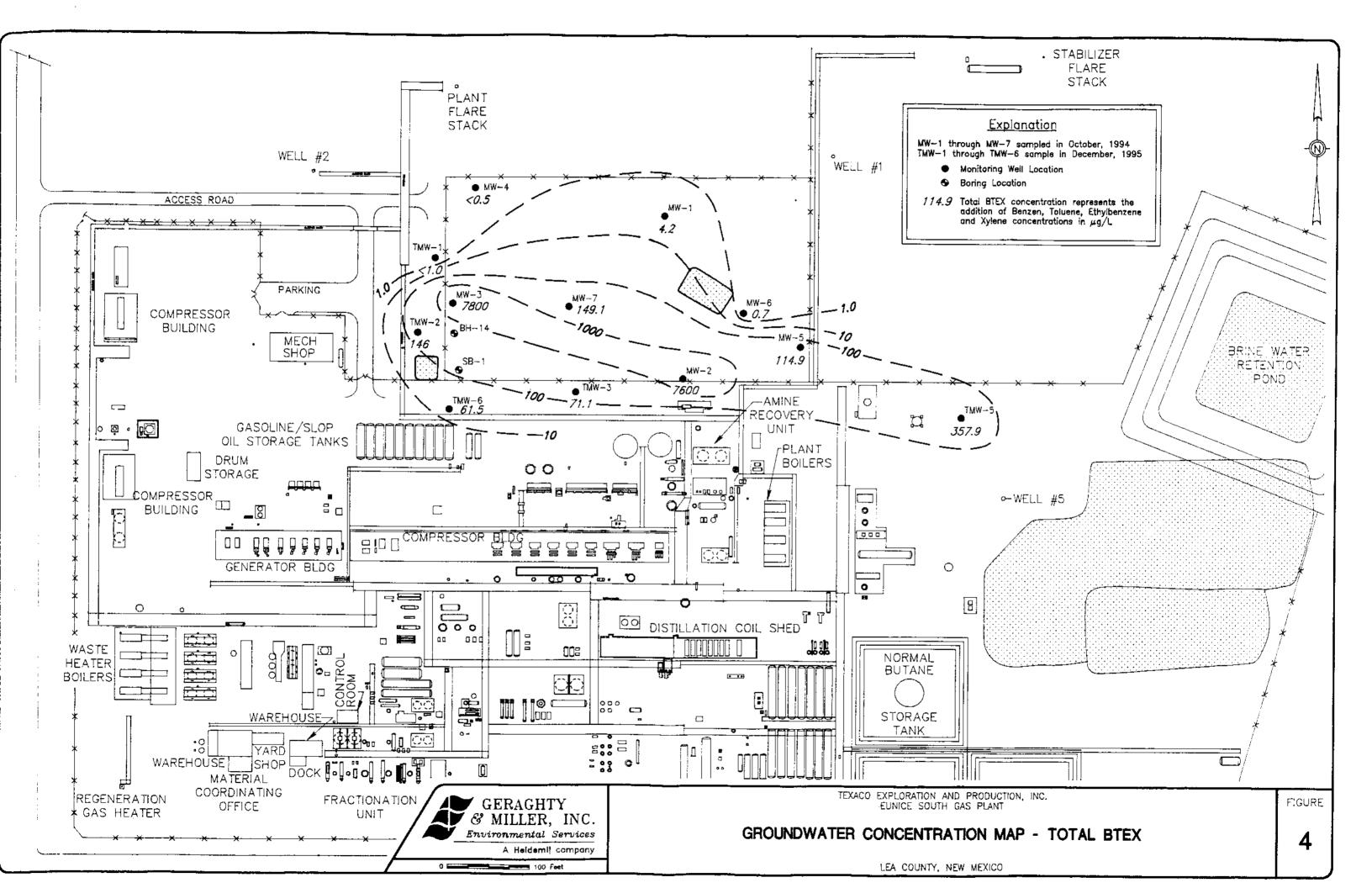
Soil Conservation Service, 1974, Lea County, New Mexico.

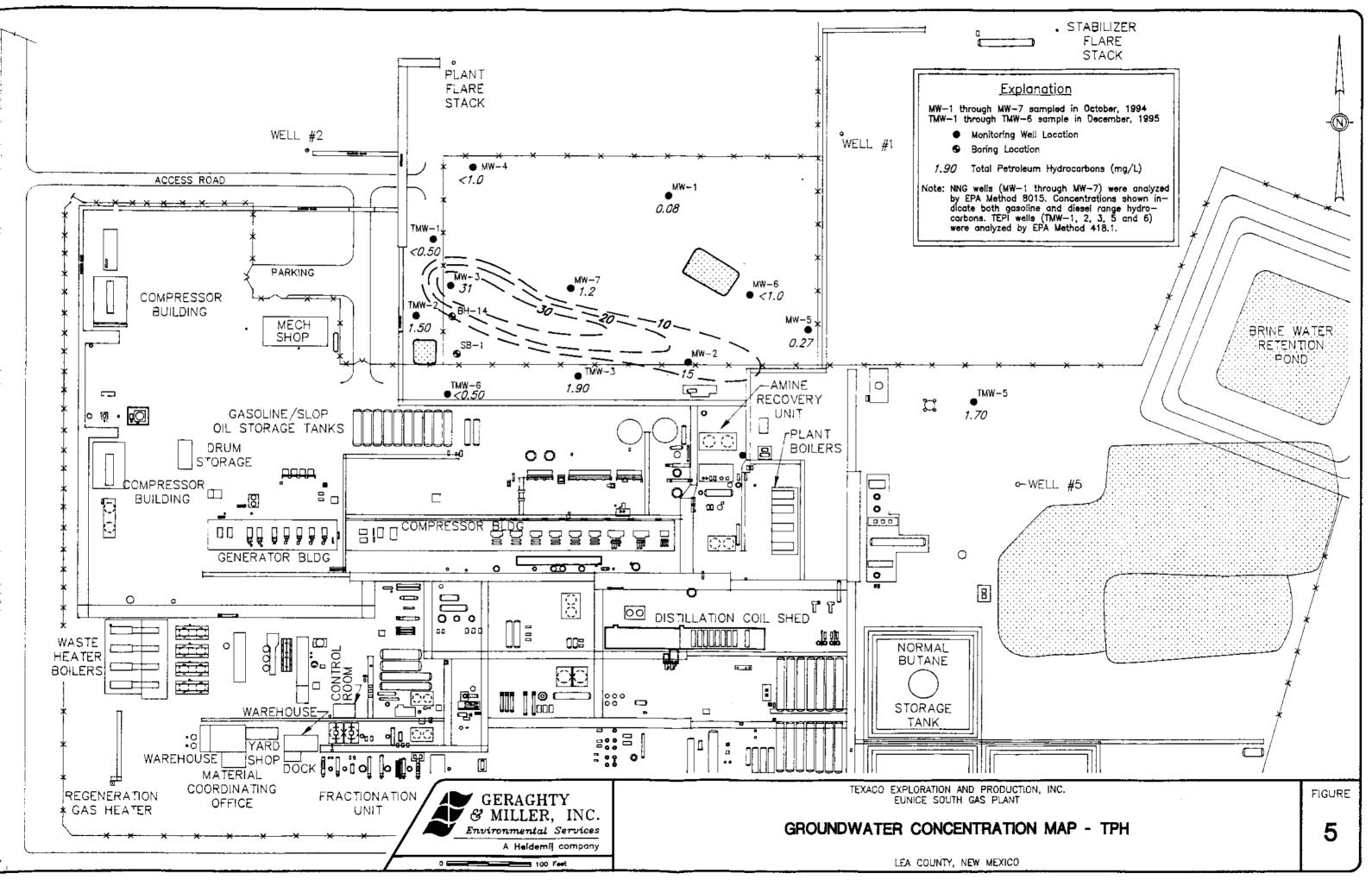




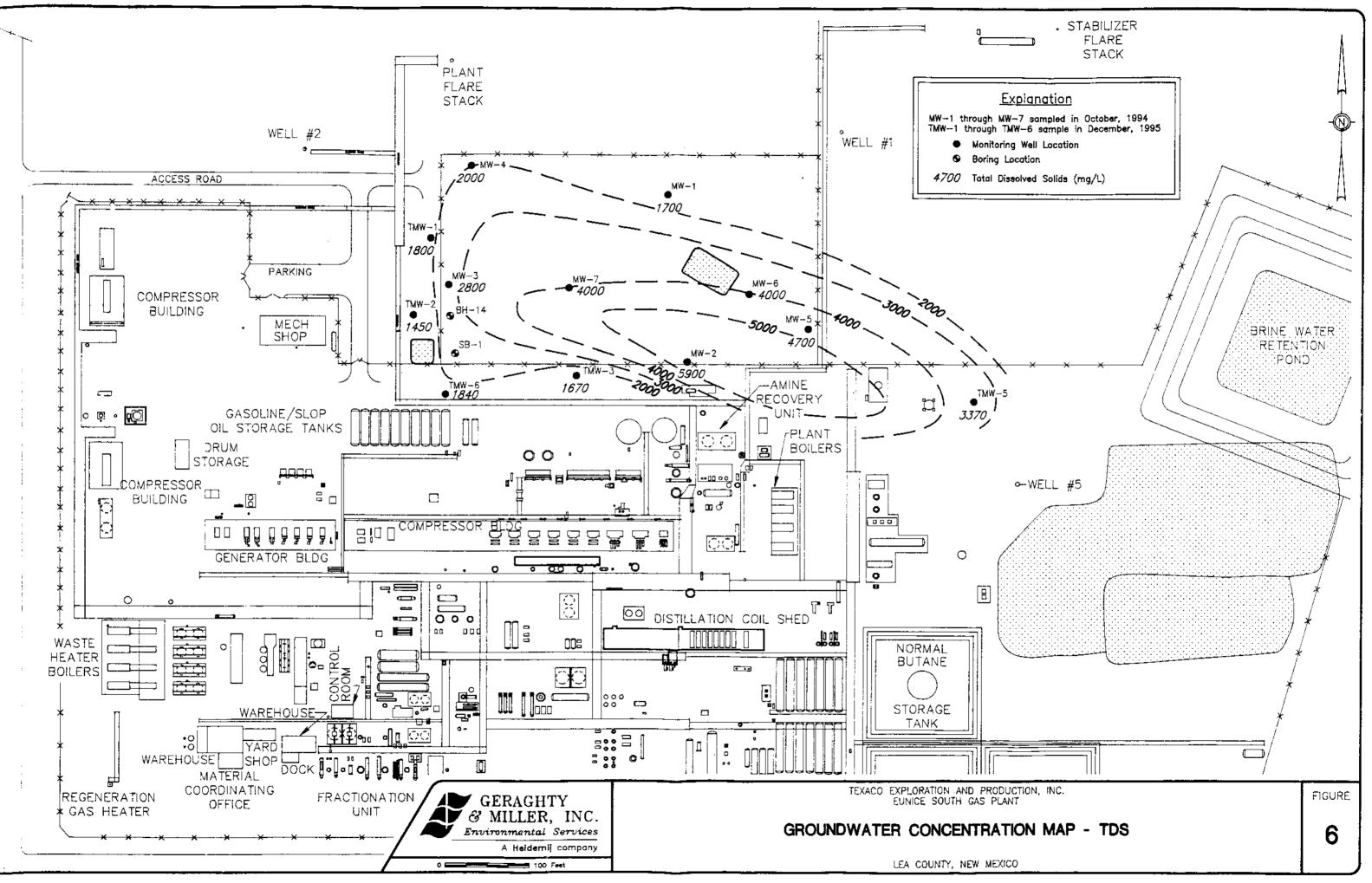


31-014-00157





.



31-014-00160

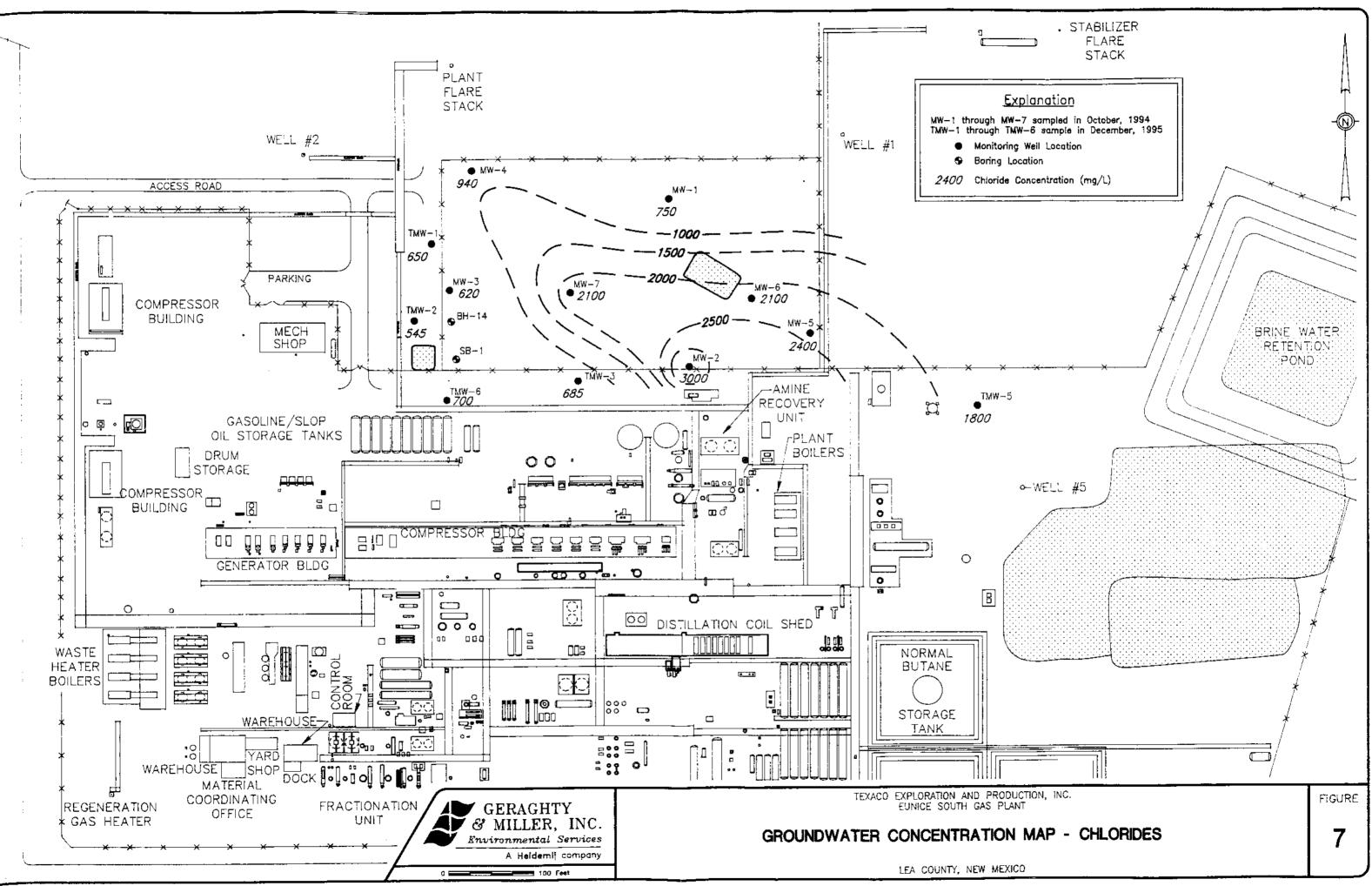


Table 1 Monitor Well Construction Texaco Eunice South Gas Plant November - December 1995

Well Name	Elevation From MP (feet)	Total Depth (feet below grade)	Screened Interval (feet below grade)	Depth to Water From MP (feet)	Water Elevation (feet)
MW-1	3337.94	60	50-60	55.71	3282.23
MW-2	3336.75	- 59	49-59	54.56	3282.19
MW-3	3337.72	65	50-60	55.49	3282.23
MW-4	3335.93	67	49-64	53.68	3282.25
MW-5	3334,17	67	48-63	51.89	3282.28
MW-6	3334.20	70	45-60	51.91	3282.29
MW-7	3334.73	67	48-63	52.46	3282.27
TMW-1	3337.92	68	48-68	56.32	3281.60
TMW-2	3338.51	67	47-67	56.71	3281.80
TMW-3	3336.90	68	48-68	55,95	3280.95
TMW-5	3335.90	67	47-67	59.71	3276,19
TMW-6	3335.57	68	48-68	55.62	3279.95

MP is measuring point.

-

Table 2Summary of Soil Analyses for Organic ConstituentsTexaco Eunice South Gas Plant and NNG Eunice Compressor Station1994 - 1995

Well ID	Volatile Organic Compounds - EPA Method 8020 (results in µg/kg)				Total Petroleum Hydrocarbons	
	Benzene Toluene		Ethylbenzene	Xylenes	Total BTEX	(results in mg/kg)
TEPI Property Nov Dec., 1995						EPA Method 418.1
TMW-1 (11'-13') (50'-52')	<2.0 <2.0	<2.0 <2.0	<2.0 <2.0	<2.0 <2.0	<2.0 <2.0	<10 <10
TMW-2 (50'-52') (53'-55')	<2.0 <100	<2.0 523.0	<2.0 4510.0	<2.0 12600.0	<2.0 17600.0	120 2700
TMW-3 (54'-56')	12.0	<2.0	7.6	8,5	28.1	<10
TMW-5 (51'-53')	<200	3340.0	14500.0	39100.0	56900.0	4000
TMW-6 (10'-15') (54'-56') (56'-58') (58'-60')	<2.0 1040.0 227.0 42.5	<2.0 4810.0 10.2 28.7	<2.0 4930.0 83.3 47.9	<2.0 11100.0 160.0 125.0	<2.0 21900.0 481.0 244.0	<10 330 <10 <10

.

Table 2Summary of Soil Analyses for Organic ConstituentsTexaco Eunice South Gas Plant and NNG Eunice Compressor Station1994 - 1995

Well	1	Volatile Orga	nic Compounds - E (results in µg/kg		8020	Total Petroleum Hydrocarbons
	Benzene	Toluene	Ethylbenzeve	Xylenes	Total BTEX	(results in mg/kg)
NNG Property Oct., 1994						EPA Method 8015
MW-4						
(9')	<50	<50	<50	<50	<50	<10
(52')	<50	<50	<50	<50	<50	<10
- MW-5						
(52')	<50	<50	<50	<50	<50	<10
MW-6						
(12')	<50	<50	<50	<50	<50	<10
(52')	<50	<50	<50	<50	<50	<10
 MW-7						
(17')	<50	<50	<50	<50	<50	<10
(52')	<50	<50	<50	<50	<50	<10
SB-1				:		
(7')	<50	<50	<50	<50	<50	<10
(1012')	<50	<50	<50	<50	<50	<10
(15-17')	<50	<50	<50	<50	<50	<10
(20-22')	<50	<50	<50	<50	<50	<10
(27')	<50	<50	<50	<50	<50	<10
(32')	<50	<50	<50	<50	<50	<10
(37')	<50	<50	<50	<50	<50	<10
(42')	<50	<50	<50	<50	<50	<10
(47')	<50	<50	<50	<50	<50	<10
(52')	<50	<50	170	840	1010	680

Table 3
Summary of Groundwater Analyses for Organic Constituents
Texaco Eunice South Gas Plant and NNG Eunice Compressor Station

Constituent	MW-1	MW-2	MW-3	MW-4	MW-6	MW-6	MW-7	TMW-1	TMW-2	TMW-3	TMW-6	TMW-6	TMW-D	WW-1RF	ABELL	NMWQCC Standard
	(10-3-94)	(10-3-94)	(10-3-94)	(10-4-94)	(10-6-94)	(10-5-94)	(10-7-94)	(12-7-95)	(12-7-95)	(12-7-95)	<u>(12-8-95)</u>	(12-8-95)	(12-8-95)	(12-11-95)	(12-11-95)	(µg/L)
								Tatal Dates	lauran tekanlar	carbons by I		418 1 MAA	lified (mg/L)			
Total Petroleum Hydrog		-								1.90	<u>1.70</u>	<0.50	<0.50	<0.50	<0.50	
•	0.08	15	31	<1.0	0.27	<1.0	1.2	<0.50	1.50	1,90	1.70	~0.00	~0.00	~0.00	-0.00	
Aromatic VOCs by EP/	A Method 80	20 (ua/L)						Aromatic V	OCs by EP	A Method 80	020 (µg/L)					
Benzene	1.6	6300	3000	<0.5	70.0	0.7	8.1	<1.0	58.9	48.3	106.0	15.4	15.5	<1.0	<1.0	10
Totuene	0.6	20		<0.5	<0.5	<0.5	<0.5	e1.0	24.6	<1.0	16.1	1.3	//12	<1.0	<1.Q	750
Ethylbenzene	1.1	1300	1200	<0.5	44,0	<0.5	42.0	<1.0	9.5	18.3	99.8	15.6	15.4	<1.0	<1.0	750
Total Xylenes	0,9	20		<0.5	0,9	<0.5	99.0	<1 0	53.0	4.5	138.0	29.2	29.3	~1.0	s1.0	620
Total BTEX	4.2	7600	7800	<0.5	114,9	0.7	149.1	<1.0	146.0	71.1	357. 9	61.5	61.4	<1.0	<1.0	-
Potynuclear Aromatic h	lydrocarbons	by FPA M	ethod 8100	(u a/L)				Polynuciea	r Aromatic	Hydrocarbon	s by EPA M	Aethod 8310	(μ α/ L)			
Benzo(k)fluoranthene	< 0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	0,190	<0.170	<0.170	<0.179	<0.170	<0.185	<0.170	<0.170	-
Bergo(s)anthracone	≪0.5	-05	<1.0	<0.5	×0.5	+0.5	<0,5	<0.130	0.380	<0.130	<0,137	¢0.130	<0.142	<0.130	<0.130	•
Napthaiene	<0.5	6.3	95	<0.5	<0.5	<0.5	0.7	<10.0	<10.0	<10.0	<10.5	<10.0	<10.9	<10.0	<10.0	•
	0.9	1.7	200	-0.5	-0.5	-0.5	0.9	NA	NA	NA.	NA	NA	NA	NA	NA	•
2-methylnapthalene	<0.5	2.3	88	0.5	<0.5	<0.5	1.9	NA	NA	NA	NA	NA	NA	NA	NA	-
Aconophitiene	<0.5		17	11	0.8	6.7	0.6	<18.0	<18.0	<18.0	<18.Q	<18.0	<19.6	<18.0	<18.0	+ 33
Fluorene	<0.5	0.9	15	<0.5	<0.5	<0.5	<0.5	<2.10	<2.10	<2.10	<2.21	<2.10	<2.29	<2.10	<2.10	•
Ругона	-0.5	-0.5	130	<0.5	40.5	<0.5	-0.5	×2.70	<2.70	<2.70	<2.84	<2.70	<2.94	<2.70	<2.70	•
Halogenated VOCs by	EDA Mathor	8010 /	١					Halcoenate	d VOCs by	EPA Metho	لوبر) 100 b	L)				
1.2-dichlorobenzene	0.5	<8	<u>لا</u> <4	<0.2	<0.2	<0.2	<0.2	NA	NA	NA	NA	NA	NA	NA	NA	•
1.4-dichioroberizene	0.9	Š	a in the second s	0.5		<0.2	<6.2	NA	NA	NA	NA	NA	NA	NA	NA	
1.1-dichloroethane	<0.2		<4	0.4	<0.2	<0.2	<0.2	NA	NA	NA	NA	NA	NA	NA	NA	25
1, 1-dichloroethane	<0.2 <0.2	~0		0.4 B.4	≪0,2	<02	-0.2	NA		NA	NA	NA	NA	NA	NA	10
cis-1.2-dichloroethene	0.3	<8	<4	<0.2	<0.2	<0.2	<0.2	NA	NA	NA	NA	NA	NA	NA	NA	
energy and the second se	0.3	~0 	×4	-0.2 0.7	-02	-0.2	-0.2	NA	NA	NA	NA	NA	NA	NA NA	NA	
1.2 dichloropropene			luddrouu geogeocoo	0.4	<0.2	<0.2	<0.2	NA	NA	NA	NA	NA	NA	NA	NA	10
1,1,2-trichloroethane	<0.2	<8	<4	0.4	<0.2	<u> </u>	<q.2< td=""><td></td><td></td><td>100</td><td></td><td></td><td></td><td></td><td>1.47.1</td><td></td></q.2<>			100					1.47.1	

* Figure represents gasoline and diesel

VOCs Volatile Organic Compounds

NA Not analyzed

Table 4
Summary of Groundwater Analyses for Inorganic Constituents
Texaco Eunice South Gas Plant and NNG Eunice Compressor Station

						MW-6	MW-7	TMW-1	TMW-2	TMW-3	TMW-6	TMW-6	TMW-D	WW-1RF	ABELL	NMWQCC Standard
Constituent	MW-1	M₩-2	MW-3	MW-4	MW-6	MVV-0 (10-5-94)	(10-7-94)	(12-7-95)	(12-7-95)	(12-7-95)	(12-8-95)	(12-8-95)	(12-8-95)	(12-11-95)	(12-11-95)	(mg/L)
	(10-3-94)	(10-3 <u>-94)</u>	(10-3-94)	(10-4-94)	(10-6-94)	(10-0-34)	(10-1-04)	(12-1-00)		1	<u></u> /	<u>, </u>				
Aajor Ions (mg/L)							I		-		105	225	250	370	175	-
Bicarbonate	NA	NA	NA	NA	NA	NA	NA	205	225	250	435 <1.0	⊃ <1.0	250 <1.0	<10		•
Carbonate (as C.CO.)	NA	NA	NA	NA	NA	- NA	NA	<1.0	«1.0	<1.0		446	409	92.2	78.1	
Calcium	133	96.2	77.2	89.9	16.1	54,6	129	213	210	255	159	440 755	700	346	(141)	250.0
zhorute.	\$7.50			-		2122	7:00				1650	68.8	68.8	57.6	51.0	-
Aa gnesium	119	98.2	42.1	68.8	29.7	59.8	162	57.3	58.0	46.3	40.0 NA	NA.	NA	NA	NA	
ICy/NOy-N, total	<0.06	<0.06	×Q.06	-0.06	0.06	-0.06	<0.06	NA I	NA	NA	000000000000000000000000000000000000000	21.4	21.7	13.6	11.3	-
Potassium	3,1	5.8	4.8	6.5	20.1	12.2	8.5	16.2	21.1	22.3	62.2	21.4 317	21.7 550	210	167	
Socium	343	2120	100	626	1840	1560	1130	525	501	709	1130	212	217	72.4	132	600.0
Suifate	<5.0	20	20	<5.0	9	<5.0	<5.0	200	210	248	195 NA	212 NA	A 17	NA	NA	
Total Alkalindy(as C,CO))	582	1110	794	510	803	576	433	NA	KA	NA		1840	1900	1200	1140	1000.0
Total Dissolved Solids	1700	5900	2600	2000	4700	4000	4000	1800	1450	1670	3370	1040	1500	1200		
Vetals (mo/L)									4.59	7.26	7.76	12.3	13.0	<0.0200	<0.0200	5.0
Ajuminum	NA	NA	NA	NA	NA	NA	NA	5.11		0.0293	0.0783		0 0382	0.0231	0.0200	0,1
Arsenic	0.039	0.029	0.027	0.015	0.027	0.017	0.012		0.0268	1.14	0.456	1.38	1.26	0.192	0.0849	1.0
Barium	1.52	1.33	5.01	0.445	0.934	0.997	9.72	0.346	0.807	0.751	1.00		<0.0130	0774	0.588	6.75
Boron	NA	NA	NA	NA.	NA	NA	NA	0.000	0.674	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Cadmium	<0.0005	0.0011	<0.0005	<0.0005	<0.0005	0.0012	<0.0005	<0.01	0.01 <0.0200	0.0251	<0.0200	0.0318	0.0296	<0.0200	<0.0200	6.05
Chromium	<0.010	<0.010	<0,010	<0.010	<0.010	<0.010	<0.010	<0.0200	<0.0200	<0.0200	<0.0200	0.0208	<0.0200	<0.0200	<0.0200	0.05
Cobait	NA	NA	NA	NA	NA	NA	NA	<0.0200	<0.0200 0.0384	0.0303	0.0372	0.0568	0 3458	=0.0100	<0.0100	1.0
Coppet	40.010	×0.010	<0.010	<0.010	40 .010	=0.010	<0.010	0.0234	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.2
Cyanide	NA	NA	NA	NA	NA	NA	NA	<0.010	8.63	17.0	10.2	19.7	21.8	1.92	<0.100	1.0
ron	2.26	0.346	16.9	<0.020	8.047	-0.020	<0.020		<0.010	<0.100	<0.050	0.021	0.015	<0.003	<0.003	0.05
Lead	<0.002	<0.002	0.003	<0.002	<0.002	<0.002	<0.002	<0.010	0.010	0.364	0 258	0.391	0.365	0.115	40.0100	0.2
Manganose	0.058	0.262	, t. 4 8	0:206	0.020	0.065	0.100	0.218	<0.0002	0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.002
Mercury	<0.0002	<0.0002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.0002	<0.0002	<0.030	G 066	c0.030	<0.030	-0.030	<0.030	1.0
Molybdenum	NA	NA	NA	NA -	HA.	NA	NA	 Second statements 		<0.0200	<0.0200	0.0208	0.0203	<0.0200	<0.0200	0.2
Nickel	NA	NA	NA	NA	NA	NA	NA	<0.0200	<0.0200 0.009	0.016	<0.0200	0.030	0.011	0.006	0.01G	0.05
Sələrinm	<0.005	-0.005	<0.005	<0.005	<0.005	×0.005	<0.005	0.014	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	0,05
Silver	<0.010	<0.010	<0,010	<0.010	<0.010	<0.010	<0.010	<0,002		<0.002	Q.3	<0.1	-0.01	Ŭ.A.	04	5.0
Uranium	NA	NA	NA,	NA	NA	NA	NA	<01	<0.1 0.107	0.145	0.244	0,185	0.112	0.0709	<0.0300	10.0
Zinc	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0,840	0.107	0,145		0.100				

.

NA - Not Analyzed

<u>APPENDIX A</u>

WELL LOGS

1 Searborough

4-inch Schedule 40 PVC blank

COM

CASING

COMPLETION 4--Inch Schedule 40 PVC mill-slotted screen, 0.035--Inch openings

Portland cement/5% Bentonite grout LOGGER T. O'Connell CEMENT METHOD Air rotory COMPLETION LITHOLOGY DEPTH DEPTH locking steel sleeve SYMBOI RECOVERY KENDING HOLE SAMPLE LOG 2'x2'x1' SIZE concrete pad k 6" Silty Sand-Hand Auger, light brown, some black discoloration, caliche fragments, tip breathing zone: 0.0ppm. 0.01-2.01 17.9 2.0°-3.5' Coliche-Gray to blue (bedrock), dry. 3.5'-5.0' Sand-Light brown, dry, medium grained. Caliche-Grey to blue to tan, dry. <u>e</u>., 5.0'-10.0' Coliche-Gray to tan, dry. Sand-Light brown, fine to medium grained, loose, dry. 6.4 10 10.0*- 11.0' Silty clay—Brown, dry. Caliche—Gray to buff, dry, breathing zone: 0.0ppm. 10 0.11 6.6 11.0'-13.0' Caliche-Butf, dry, some calcite and gypsum crystals. 1.5' 9.3 13.0'-15.0' Sand and Caliche-Butf, dry, fine to medium grainod(sond). -1.6 Portland cement, 15.0°-20.0° Sand-Buff to rose, dry, fine to medium grained, poorly cemented, some coliche 1.8 Bentonite fragments. arout 20 20 20.0'-25.0' Sand-Rose, dry, poorly cemented, loose, fine to medium grained. 1.6 25.0'-30.0' Sand-Rose, dry, poorly cemented, loose, fine to medium grained. 1.6 4-inch Sched. 40 PVC blonk 30 -30 30.0'-35.0' Sand-Rose, dry, poorly cemented, loose, fine to medium grained, slightly domp. 1.0 35.0'--40.0' Sand-Rose to tan, damp, loose , fine to medium grained, <20% gravel. 4.R 40 40 40.0'-45.0' Sand-Rose, tan. domp. loose, fine to medium grained, <20% gravel. Bentonite 2.6 pellets 1 10/20 45.0°-50.0° Sand-Rose, tan, damp, loose, fine to medium grained, <20% gravel, damp, moist. 1.6 Brody gravel 50 50 50.0'-52.0' Sond-Light brown, damp to wet, fine to medium grained, loose 1.0 1.3 4--inch Sched, 40 52.0'-54.0' Sand-Tan to light brown, wet, fine to medium grained, loose. 0.7' 0.8 mill-slotted PVC screen 0.035 slots Sand-Light brown to brown, wet, fine to medium grained, loose, slight discoloration 0.6 0.8 54.0'-56.0' (black). Sand-Light brown, saturated, fine to medium grained, loose, slight ador, some 1.5' 0.5 56.0'-58.0' discoloration (block). Sand-Light brown, saturated, fine to medium grained, loose, slight odor, some discoloration (black), no odor. 58.0'-60.0' 2.0 0.2 12/5/95-12/6/95 WELL NO. DATE: TEXACO EXPLORATION AND PRODUCTION. INC. CLIENT EUNICE SOUTH GAS PLANT MT0387.001 PROJECT 🗸 GERAGHTY TMW-1 & MILLER, INC. LEA COUNTY, NEW MEXICO LOCATION Environmental Services A Heldemij company

ELEVATION GROUND LEVEL

DRILLING

COMPANY

MEASURING POINT

WATER LEVEL

3335.90' A.M.S.L.

PERSONNEL

DRILLER

2.5' A.G.L. 53.16' 8.M.P.

Scarborough Drilling

ELEVATION GROUND LEVEL 3335,90' A.M.S.L. 4-inch Schedule 40 PVC blank CASING MEASURING POINT 2.5' A.G.L. 53.16' 8.M.P. WATER LEVEL 4-inch Schedule 40 PVC mill-slotted screen, 0.035-inch openings COMPLETION PERSONNEL ORILLING DRILLER L. Scorborough COMPANY Scarborough Drilling Portland cement/5% Bentonite grout CEMENT LOGGER T. O'Connell Air rotary METHOD COMPLETION LITHOLOGY DEPTH DEPTH RECOVERY SYMBOI VAPOR HOLE SAMPLE LOG SIZE 6" 10/20 Brady gravel 4-inch Sched. 40 mill-slotted PVC screen 0,035 slots Not Sample end cop Total depth 68.0'. 70 70 DATE: 12/5/95-12/6/95 WELL NO. TEXACO EXPLORATION AND PRODUCTION, INC. CLIENT EUNICE SOUTH GAS PLANT MT0387.001 PROJECT 🖌 GERAGHTY TMW-1 & MILLER, INC. LEA COUNTY, NEW MEXICO LOCATION

Environmental Services A Heldemil company

L Scarborough

ELEVATION

RILLING COMPANY

.

GROUND LEVEL

WATER LEVEL

MEASURING POINT 2.5' A.G.L.

3335,40' A.M.S.L.

PERSONNEL

DRILLER

53.06' B.M.P.

Searborough Drilling

4-inch Schedule 40 PVC blenk

COMPLETION

CASING

4-inch Schedule 40 PVC mili-slotted screen, 0.035-inch openings

Portland cement/5% Bentonite grout

METHOD) Air	rota	у	LOGGER	T. O'Connell	CEMENT	Portland ceme	ent/5% Bentoni	te grout	
Ŧ				LI	HOLOGY			COMPLE	TION	ᅴᆂᆝ
DEPTH	SYMBOL	RECOVERY	VAPOR	SA	MPLE	LOG	2'x2'x1' concrete pod	sleeve	HOLE SIZE	
20 - 		<1.0" <1.0" <1.0 <1.0 <1.0 <1.0 1.0"	0.0 5.5 3.3 1.6 275 381 655	0.0'-4.0' Sondy Silt-Ligh 4.0'-6.0' Coliche-Gray, b 6.0'-10.0' Coliche-Gray, b 10.0'-13.0' Coliche-Gray, b 13.0'-24.0' Coliche-Light of 24.0'-30.0' Sond-Rose, dr 30.0'-32.0' Sond-Rose, dr 30.0'-32.0' Sond-Buff, ros gravel. 32.0'-40.0' Sond-Buff, ros gravel, breathin 40.0'-43.0' Sond-Buff, ros gravel, breathin 40.0'-45.0' Silty Sond-Tar 5.0'-47.0' Sond-Tan to 1.50'-47.0' Sond-Tan to 1.50'-52.0' Sond-Tan, ros 1.50'-55.0' Sond-Brown, 53.0'-55.0' Sond-Brown, 53.0'-55.0' Sond-Brown,	t brown, dry, few grave lue, dry. ilue, dry. ilue, dry. slight odor, b ray, slightly black disco lry, loose, medium grain ie, dry, loose, fine to r is, dry, loose, fine to r ing zone: 0 ppm. se, dry, loose, fine to r ing zone: 0 ppm. is, lightly moist, loo py), no odor. rose, slightly moist, loo py), no odor. is to lightly moist, loo py), no odor. is to brown, moist to w ist to wet, loose, fine wet, line to medium gr	əl.	buff. <6 mm diameter <6 mm diameter <6 mm diameter <6 mm diameter 20% quartzite <20% quartzite ith some green quartzite, breathin			
DATE	F e	1 GEI M	mento	PRC	JECT EUNIC	O EXPLORATION A E SOUTH GAS PLA COUNTY, NEW MEXI	ANT	ICTION, INC MT0387	.001	E WELL NO.

ELEVAT	ION				WE	ELL I	_OG				
GROU	nd leve Jring P			.40' A.M.S.L. A.G.L.			CASING	4-inch Sche	edule 40 PVC	blank	
ORILLI				5* B.M.P.	PERSONNEL		COMPLETION	4-inch Sche screen, 0.03	edule 40 PVC 35-inch openin	mill-slotted gs	
Com p Meth		carbor ir rola	ough [ry	Orilling		carborough 'Connell	CEMENT	Portland cer	ment/5% Sente	nite grout	
T					LITHOL	.OGY	<u></u>		COMPL	ETION	╷ ┲┃
DEPTH	SYMBOL	RECOVERY	VAPOR Reading		SAMP	LE LO)G				
70	. Not Sampled - Sampled 				Total depth 67.0'.					10/20 Flandy gro Sched, 44 mill-siett PVC scre 0.035 si end cop	adi-
DAT	E:	<u> </u>	1/28	/95	CLIENT	TEXACO EX	XPLORATION /	AND PROD	UCTION, IN	IC.	WELL NO.
				ITY R, INC. 11 Services	PROJECT	EUNICE SO	OUTH GAS PL TY, NEW MEX	ANT	MT038	7 001	MW-2

MT38701F.DWG

4-inch Schedule 40 PVC blonk

WATER LEVEL 52.7' B.M.P. 'RILLING COMPANY Scarborough Drilling METHOD Air rotory

ELEVATION GROUND LEVEL

MEASURING POINT

PERSONNEL DRILI.ER L. Scarborough LOGGER T. O'Conneli

COMPLETION

CASING

CEMENT

4-inch Scheduie 40 PVC mill-slotted screen, 0.035-inch openings

Portland cement/5% Bentonite grout

٢	METHOL		rotor		LITHOLOGY	COMPLE	TION	
	DEPTH	SYMBOL.	RECOVERY	VAPOR READING		B locking steel sleeve	HOLE SIZE	DEPTH
				170.2	0.0°-2.0° Silty Sand-Light brown, dry. 2.0°-4.0° Sondy Silt-Black, dry, some clay, slightly plastic, odor. 4.0°-5.0° Caliche-Buff to gray to blue, dry, slight odor.			
	- - - 10			31,9	5.0°-10.0° Caliche-Buff to gray to blue, dry, slight odor. Sondstone(top .3°)-Gray, dry, very fine to medium grained, poorly sorted. 10.0°-13.0° Remainder: Sandstone-Buff to white, dry, fine to medium grained, poorly sorted,	1000		- - - 10
	-		2	5.4 22.5	 10.0°-13.0° Remainder: Sandstone-Buff to write, diy, fire to medium graned, poorly sorted, yellow (argonic roots), well cemented. 13.0°-15.0° Sandstone-Buff to groy, dry, cemented, poorly sorted, some caliche. 15.0°17.0° Sandstone-Buff to groy, dry, cemented, poorly sorted, some caliche. 		Portland	
	20			6.5	17.0'-20.0' Sand-Ton to rose, dry, fine to medium grained, loose.		cement/ Bentonite grout	- - - 20
	-			7.0	20.0'25.0' Sand-Tan to rose, dry, fine to very fine grained.			
	30 -			2.3	25.0°—30.0° Sand—Tan to rose, dry, fine to very fine grained.		4—inch Sched, 40 PVC blank	- - - 30
				2.3	30.0'-33.0' Sand-Ton to rose, dry, fine to very fine grained. 33.0'-35.0' Sand-Gray, slightly damp, loose, fine to very fine grained, some fragments of conglomerate.			
	40 -			2.3	35.0'-40.0' Sond-Gray, slightly damp, loose, fine to very fine grained, some fragments of conglomerate, 20% small gravel (<5mm diameter), varicolored grains. 40.0'-41.0' Sond-Ton, damp, loose, fine to medium grained.			- - - 40
			SS/ 2.0*	3.8	40.0 - 42.0' Sand-Gray, damp, loose, fine to medium grained.		Bentonite Pellats	
	50	- - -		5.4	42.0'-50.0' Sand-Light brown, damp, fine to medium grained, loose.		10/20 /Brady gravel 	- - - - 50
	50 -		1.0"	7.0 8.5	50.051.0° Sand-Light brown, damp to wet, loose, fine to medium grained. 52.0°-53.0° Sand-Light brown, damp to wet, loose, fine to medium grained, trace buff quar	tzite.	4inch Sabad 40	E
			1.0' 2.0'		se or as a. Sond-Light brown, damp to wet, loose, fine to medium grained, trace buff quar		Sched. 40 mill-slotted PVC screen 0.035° slo	<u>ո</u> Լ.
		Not Sampled	2,0		54.0 -58.0 soturated. 56.0'-58.0' Sand-Light brown, domp to wet, loose, fine to medium grained, trace buff quar some sand, gray, very fine grained silt.		0,000 800	₩
	DATE			′95 <i>-</i> -	11/30/95 CLIENT TEXACO EXPLORATION AND PROD	UCTION, INC	. v	VELL NO.
		X e	GEI M	RAGI ILLE		MT0387.	001	MW-3

4-inch Schedule 40 PVC blonk

COMPLETION

1

HOLE

SIZE 8"

10/20 Brody gravel 4--inch Sched, 40 -mill-slotted BVC

PVC screen 0.035 slots

end cap

DEPTH

WELL LOG **ELEVATION** GROUND LEVEL CASING MEASURING POINT 52.7' B.M.P. WATER LEVEL 4-inch Schedule 40 PVC mill-slotted screen, 0.035-inch openings COMPLETION PERSONNEL **'RILLING** L Scarborough DRILLER Scarborough Drilling COMPANY Portland cement/5% Bentonite grout CEMENT LOGGER T. O'Connell METHOD Air rotary LITHOLOGY DEPTH SYMBOL RECOVERY **VEOR** SAMPLE LOG Not Sompled Total depth 68.0'.

70 -				- 70 -
				-
				-
				-
				·
				- - -
				-
				-
				•- •-
				-
				- -
				e
DATE: 11/29/95-11/30/95	CLIENT	TEXACO EXPLORATION AND	PRODUCTION, INC.	WELL NO.
GERAGHTY & MILLER, INC. Environmental Services A Heidemil company	PROJECT LOCATION	EUNICE SOUTH GAS PLANT LEA COUNTY, NEW MEXICO	MT0387.0	⁰¹ TMW-3
		·····		

ELEVATION GROUND LEVEL

RILLING

WATER LEVEL

MEASURING POINT 0.5' B.G.L.

3333.00' A.M.S.L.

PERSONNEL

56.06' B.M.P.

4-inch Schedule 40 PVC blank

COMPLETION

CASING

4-Inch Schedule 40 PVC mill-slotted screen, 0.035-Inch openings

COL	MPANY THOD		irboro rotar	ugh Dr y			icarborough l'Connell	CEMENT	Portland cer	nent/5% Bento	nite grout	
						LITHOL	OGY			COMPL		E
		SYMBOL	RECOVERY	READING		SAMP	LEI	_OG		voult with bolt- down cover	HOLE SIZE	DEPTH
	-		_		0.0'-2.0' Sandy	Ciay-Light brown,	dry.				8" locking	
						-Buff to rose, dr -Buff to gray, dr -Rod, dry.					steel sloove	
1(e-Buff to gray, dr	у.					- 10
	-				10.0'-15.0' Colich	e—Buff to gray, di	<i>г</i> у.					-
	-				15.0'-17.0' Colich						Portland coment/ Bentonite grout	E.
2	0 – –		3.0'	0.0		Sand-White to but	f, dry, modern	otaly well comented, co	ore barrel		grout	- 20 -
	-		i	0.0	21.0'-23.0' Silty	Sand-Kosé, dry, w	ell cemented.					
3	- - - - - - -				23.0'-32.0' Silty	Sand-Rose to bro	wn, dry, loas a .				4-inch Sched, 40 PVC blank	- - - 30
					32.0'~40.0' Sand	Rose to brown, d	dry, loose, fine	grained.				- - - -
4	+0 		1,5'	4.8	40.0'-42.0' Sand	-Rose to buff, dr	y, laose, fine g	rained.			Bentonite pellets	- 40
	-				42.0'-51,0' Sana	I-Rose to light br	own, dry, loose	, fine to very fine gra	ined.		10/20 Brody grovel	
,	50 - -		1.5'	241	51.0°53.0° Sana blac	1Light brown, dor k, wet, odor.	np, loose, fine	grained changing to S	Silly Clay, dork brow		4-inch Sched, 40 mill-slotte PVC scree 0.035" sko	id 🗁
	-				53.0'-59.0' Silty	Sand-Dark brown	n, wet, fine to '	medium groined, odor.			-V	-
L	-		2.0					medium groined, odo				WELL NO.
	DATE:		GE	1/27 RAGI	łTY	CLIENT PROJECT	EUNIC	O EXPLORATIO E SOUTH GAS	PLANT	MT038	7 001	MW-{
	Â		g M nviro1	nmento	R, INC. Il Services	LOCATION	I LEA C	OUNTY, NEW I	MEXICO	<u></u>		

ELEVATIO											
GROUNE MEASUR			3333.4 0.5' E	00' A.M.S.L. 3.G.L.			CASING	4-Inch Sche	dule 40 PVC bl	ank	
WATER			56.06	' B.M.P.	PERSONNEL		COMPLETION	4-Inch Sche	dula 40 PVC m	III-slotted	1
DRILLING	NY So		bugh D	rilling	oriller l	Scarborough			5-Inch opening: nent/5% Benton		
METHOD) Air	r rota: 	Ŋ			0'Connell	CEMENT	Portiana Cer	COMPLI		<u> </u>
μ	ļ	<u> </u>	r1	<u></u>	LITHO	LUGY			COMPLI		DEPTH
DEPTH	2	ß	Зž			<u>ы г</u> . т	00			HOL	E
L D	SYMBOL	RECOVERY	VAPOR		SAMF	LE I	_06			SIZ	
┝───	<u>ک</u>	2.0'	41.1	60.0'-61.0'	Sand-Dark brown, wet,	loose, fine to m	nedium grained, odor.			8 10/20	
-		1.0'	22.3		Sand-Dark brown, wet,					-Brady gi 4—inch Sched, 4	F I
				63.0*-65.0'	Sand-Brown to dark br	own, wet, loose,	fine to medium grained, a	odor. Wad up " @ 6 5 (-mill-slot PVC serv	ted – son L
				65.0'67.0'	59.0° interval, sample (jar).	9 65.0'-67.0' ct	um grained, drill stem "loc ellected from dull stem (1-	-4 oz., 1-2 oz.	soil	0.035" s -end cop	- etol
-	-				Total depth 67.0'.						
70 -											- 70 -
-	-										- -
										1	-
											-
										1	-
											-
1	_										-
											-
											-
											-
	-1										-
	-		1								F
											-
-											-
1	-		1							1	-
	-										F
	-									-	
											-
	-										-
	-										-
											E
				ł							_
1	-										<u> </u>
DATE		1	1/27	/95		TEVACO	EXPLORATION /				WELL NO.
[···				CLIENT				MT0387	001	
	ÂY,	GE) үм	RAGI ILLE	HTY R, INC.	PROJECT		SOUTH GAS PL		MI (UJO/	.001	TMW-5
	F	nviror	1716110	al Services	LOCATION	N LEA CU	DUNTY, NEW MEX				

A Heldemil company

ELEVATIO GROUND MEASUR WATER I DRILLING	i level Ing po Level		2.5' A	B.M.P.	PERSONNEL		CASING COMPLETION	4-inch Schedu 4-inch Schedu screen, 0.035-	ile 40 PVC m	ill-slotted	
COMPAN METHOD		arboro rotar	ugh Di Y	illing		icarborough)'Connell	CEMENT	Portland ceme			
					LITHOL	OGY			COMPL	ETION	ᅴᆮᅵ
DEPTH	SYMBOL	RECOVERY	VAPOR			LE LO		o 2'x2'x1' concrete pad	locking steel sleeve	HOLE	
			17.8	0.5'-2.0' Sil 2.0'-3.5' Sil	ity Sand-Light brown, w ity Sand-Light brown, w ity Sand ((25% clay)C pliche-Blue to green, d	dry, caliche fragmer Gray to block, dry, :	its. some blue to green, i	caliche fragments.			
			5.2	5.0'-10.0' Ce or	oliche-Gray to blue, so dor.	ome tan fragments,	dry, some silty sand,	, tan to gray, sligt	t III		- - - 10 -
			29 .8		ond and Caliche—Buff					Portland	
20			6.5	c	andGray, dry, poorly emented, loose.			n grain e d, poorly		Bentonite grout	- 20 - 20
			3.5		iand-Ton to rose, dry, Sand-Tan to rose, dry,			emented.		4-inch Sched. 4 PVC blat	
30 -			2.3	30.0'-35.0' 5	Sand-Tan to light brow	vn, damp, fine to m	adium grained, loose.				~ ~ JU
		<u>)</u> <0.5	3.5	<u>ا</u>	Sand-Tan ta light brow oz. jars).				-4		-
40 -	-		J ,5	37.0'40.0'	Sand-Tan to rose, slig	htly damp, fine to	medium grained, loase	e.			- 40
			5.2		Sand-Tan to ros o , slig fragments.	ghtly domp, fine to	medium grained, loos	e, some sandstone		Bentoni pellets	te _
			5.2	1	Sand-Tan ta rose, slig fragments.					10/20 Brody gravel	- - - - 50
50	-	<0.	5' 3.5		Sand—Light brown, dan gray to rose.	mp, fine to medium	grained, tooso, sands	stone fragments, d	amp,	¥√. 4inch	
		<0.	5' 6.5		Sand-Brown, some silt					Sched. milt-sid PVC so	otted -
		1.0	474		Sand-Brown, wet, med					0.035	
	- 838 - 888 - 888	2.0			Sond-Brown, wet, med				E		-
	- ::::::::::::::::::::::::::::::::::::	2.0			Sand-Brown, wet, <57						WELL NO.
DATE	Á	′GE & M	nment		CLIENT PROJECT LOCATION	EUNICE S	EXPLORATION SOUTH GAS P NTY, NEW ME	LANT	MT038		TMW-6

4-Inch Schedule 40 PVC blonk

MEASURING POINT 2.5' A.G.L. WATER LEVEL 53.26' B.M.P. 'RILLING PERSONNEL COMPANY Scarbarough Drilling DRILLER METHOD Air rotary LOGGER

3335.70" A.M.S.L.

ELEVATION GROUND LEVEL

> NNEL ER L Scorborough ER T. O'Connell

CEMENT

COMPLETION

CASING

4-inch Schedule 40 PVC mill-slotted screen, 0.035-inch openings Portland cement/5% Bentanite grout

-		LITHOLOGY COMPLETION					TION	Ξ		
DEPTH	SYMBOL	RECOVERY	VAPOR		SAMPL	-	OG		HOLE SIZE	
70 -					Brown, wet. <5% blac				10/20 -Brady grav 4-inch Sched. 40 -mill-slottec PVC screer 0.035" slot -end cap	
DATE		' GE	RAG	HTY ER, INC. fal Services demil company	CLIENT PROJECT LOCATION	EUNICE	EXPLORATIO SOUTH GAS UNTY, NEW	DUCTION, IN MT0387	7 001 L	well no.

APPENDIX B

LABORATORY ANALYSES AND CHAIN-OF-CUSTODY DOCUMENTATION

Inchcape Testing Services Environmental Laboratories 1089 E. Collins Blvd. Richardson, TX 75081 Tel. 214-238-5591 Fax. 214-238-5592

ANALYTICAL REPORT

שית ת	PROPINED		13-DEC-1995	REPORT I	NUMBER	:	D95-12047
DAIL	RECEIVED	•	15 010 1990	REPOR'	T DATE	:	15-JAN-1996

SAMPLE SUBMITTED BY ADDRESS	:	Geraghty & Miller, 1030 Andrews Hwy. Midland, TX 79701	Inc. Suite 120
ATTENTION PROJECT PURCHASE ORDER NO	:	Ms. Tara O'Connel MTO387.001 Texaco	Eunice

Included in this data package are the analytical results for the sample group which you have submitted to Inchcape Testing Services for analysis. These results are representative of the samples as received by the laboratory.

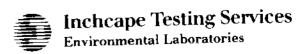
The information contained herein has undergone extensive review and is deemed accurate and complete. Sample analysis and quality control were performed in accordance with all applicable protocols. Any deviations from these protocols or observations of interest are detailed in an accompanying Case Narrative. Please refrain from reproducing this report except in its entirety.

If you have any questions regarding this report and its associated materials please call your Project Manager at (214) 238-5591.

We appreciate the opportunity to serve you and look forward to providing continued service in the future.

Martin Jeffus

Martin Jeffus General Manager



DATE RECEIVED : 13-DEC-1995

REPORT NUMBER : D95-12047-1 REPORT DATE : 15-JAN-1996

SAMPLE SUBMITTED BY ADDRESS ATTENTION	:	Geraghty & Miller, Inc. 1030 Andrews Hwy. Suite 120 Midland, TX 79701 Ms. Tara O'Connel
SAMPLE MATRIX	:	Liquid
ID MARKS	:	WW-IRF
PROJECT	:	MTO387.001 Texaco Eunice
PURCHASE ORDER NO	:	LTO #4295
DATE SAMPLED	:	11-DEC-1995
PREPARATION METHOD		
PREPARED BY	:	VHC
PREPARED ON	:	14-DEC-1995
ANALYSIS METHOD		
ANALYZED BY	:	JXA
ANALYZED ON	:	20-DEC-1995
DILUTION FACTOR		
METHOD FACTOR		
QC BATCH NO	:	AB648-1

	DETECTION LIMIT		RESULTS
Acenaph thene	18.0 µg/L	<	18.0 µg/L
Acenaphthylene	10.0 µg/L	<	10.0 μg/L
Anthracene	6.60 µg/L	<	6.60 µg/L
Benzo(a)anthracene	0.130 µg/L	<	0.130 µg/L
Benzo(b)fluoranthene	0.180 µg/L	<	0.180 μg/L
Benzo(k)fluoranthene	0.170 µg/L	<	0.170 µg/L
Benzo(g,h,i)perylene	0.760 µg/L	<	0.760 µg/L
Benzo(a)pyrene	0.230 µg/L	<	0.230 µg/L
Chrysene	1.50 μg/L	<	1.50 µg/L
Dibenzo(a,h)anthracene	0.300 µg/L	<	0.300 µg/l
Fluoranthene	2.10 μg/L	<	2.10 µg/L
Fluorene	2.10 μg/L	<	2.10 μg/L
Indeno(1,2,3-cd)pyrene	0.430 µg/l	<	0.430 µg/L
Naphthalene	10.0 µg/L	<	10.0 μg/L



REPORT NUMBER : D95-12047-1 ANALYSIS METHOD : EPA 8310 /1

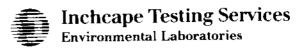
 POLYNUCLEAR AROMATIC HYDROCARBONS

 TEST REQUESTED
 DETECTION LIMIT
 RESULTS

 Phenanthrene
 6.40 µg/L
 < 6.40 µg/L</td>

 Pyrene
 2.70 µg/L
 < 2.70 µg/L</td>

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
1-Fluoronapthalene (SS)	100 µg/L	74.4 %



ADDRESS	: :	Geraghty & Miller, Inc. 1030 Andrews Hwy. Suite 120 Midland, TX 79701 Ms. Tara O'Connel
SAMPLE MATRIX		
ID MARKS	:	WW-IRF
		MTO387.001 Texaco Eunice
PURCHASE ORDER NO	:	LTO #4295
DATE SAMPLED	:	11-DEC-1995
ANALYSIS METHOD	;	EPA 8020 /1
ANALYZED BY	:	VHT
ANALYZED ON	:	14-DEC-1995
DILUTION FACTOR	:	1
METHOD FACTOR	:	1
QC BATCH NO	:	34-121395A

BTEX ANALYSIS				
TEST REQUESTED	DETECTION LIMIT		RESULTS	
Benzene	1.0 µg/L	<	1.0 μg/L	
Toluene	1.0 µg/L	<	1.0 μg/L	
Ethyl benzene	1.0 µg/L	<	1.0 µg/L	
Xylenes	1.0 μg/L	<	1.0 µg/L	
BTEX (total)		<	 1.0 μg/L	

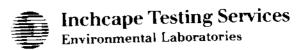
QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Bromofluorobenzene	50.0 µg/ L	99.7 %

Based upon Good Laboratory Practice, the result is rounded to the appropriate number of significant figures.



SAMPLE SUBMITTED BY ADDRESS ATTENTION	:	Geraghty & Miller, Inc. 1030 Andrews Hwy. Suite 120 Midland, TX 79701 Ms. Tara O'Connel
SAMPLE MATRIX ID MARKS		
ID MARKS	:	WW-1Kr MT0207 001 Towaco Eunice
		MTO387.001 Texaco Eunice
PURCHASE ORDER NO	:	LTO #4295
DATE SAMPLED	:	11-DEC-1995
PREPARATION METHOD	:	EPA 418.1
PREPARED BY	:	MTR
PREPARED ON	:	18-DEC-1995
ANALYSIS METHOD	:	EPA 418.1 /1
ANALYZED BY		
ANALVZED ON	:	18-DEC-1995
DILUTION FACTOR		
METHOD FACTOR	:	
QC BATCH NO	:	AB646-18

TOTAL RECOVERABLE PETROLEUM HYDROCARBON	s		
TEST REQUESTED	DETECTION LIMIT		RESULTS
Total Petroleum Hydrocarbon	0.50 mg/L	<	0.50 mg/L



ADDRESS	:	Geraghty & Miller, Inc. 1030 Andrews Hwy. Suite 120 Midland, TX 79701 Ms. Tara O'Connel
SAMPLE MATRIX ID MARKS PROJECT PURCHASE ORDER NO DATE SAMPLED	::	WW-IRF MTO387.001 Texaco Eunice LTO #4295

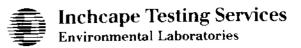
		DETECTION LIMIT		RESULTS
EST REQUESTED		DETECTION LIMIT		
ilver	/1	0.002 mg/L	<	0.002 mg/L
Dilution Factor : 1 Prepared using EPA 3015 Analyzed using EPA 7761 QC Batch No : 12436F	on 14-DEC-1995 by on 19-DEC-1995 by	CEL MPE		
Aluminum	/1	0.200 mg/L	<	0.200 mg/L
Dilution Factor : 1 Prepared using EPA 3015 Analyzed using EPA 6010 QC Batch No : 12458	5 on 20-DEC-1995 by DA on 21-DEC-1995 b	CEL y JLW		
Arsenic	/1	0.0050 mg/L		0.0231 mg/L
Dilution Factor : 1 Prepared using EPA 301 Analyzed using EPA 706 QC Batch No : 12436F	5 on 14-0EC-1995 by 0 on 15-DEC-1995 by	CEL MPE		
Barium	/1	0.0200 mg/L		0.192 mg/L
Dilution Factor : 1 Prepared using EPA 301 Analyzed using EPA 601 QC Batch No : 12458	5 on 14-DEC-1995 b OA on 21-DEC-1995	/ CEL by JLW		
Boron	/1	0.100 mg/L		0.776 mg/L
Dilution Factor : 1 Prepared using EPA 301 Analyzed using EPA 601 QC Batch No : 12458	5 on 14-DEC-1995 b OA on 21-DEC-1995	Y CEL		



TOTAL METALS				
TEST REQUESTED		DETECTION LIMIT		RESULTS
Calcium	/1	0.10 mg/L		92.2 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DE Analyzed using EPA 6010A on 21-D QC Batch No : 12458	C-1995 by EC-1995 by	CEL / JLW		
Cadmi um	/1	0.01 mg/L	<	0.01 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DE Analyzed using EPA 6010A on 21-D QC Batch No : 12458	C-1995 by EC-1995 b	CEL y JLW		
Cobalt	/1	0.0200 mg/L	<	0.0200 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DE Analyzed using EPA 6010A on 21-D QC Batch No : 12458	2C-1995 by DEC-1995 b	CEL Y JLW		
Chromium	/1	0.0200 mg/L	<	0.0200 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-D Analyzed using EPA 6010A on 21- QC Batch No : 12458	EC-1995 by DEC-1995 b	CEL Ny JLW		
Соррег	/1	0.0100 mg/L	<	0.0100 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-D Analyzed using EPA 6010A on 21- QC Batch No : 12458	EC-1995 by DEC-1995 b	/ CEL by JLW		
Iron	/1	0.100 mg/L		1.92 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-D Analyzed using EPA 6010A on 15- QC Batch No : 12436	EC-1995 by DEC-1995 b	Y CEL DY JUW		
Mercury	/2	0.0002 mg/L	<	0.0002 mg/L
Dilution Factor : 1 Prepared using EPA 7470 on 18-D Analyzed using EPA 7470 on 20-D QC Batch No : HG-2065	ec-1995 b ec-1995 b	Y CEL Y MPE		



TOTAL METALS RESULTS DETECTION LIMIT TEST REQUESTED 13.6 mg/L /1 1.0 mg∕L Potassium Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-1995 by CEL Analyzed using EPA 6010A on 21-DEC-1995 by JLW QC Batch No : 12458 /1 0.100 mg/L 57.6 mg/L Magnesium Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-1995 by CEL Analyzed using EPA 6010A on 21-DEC-1995 by JLW QC Batch No : 12458 0.115 mg/L 0.0100 mg/L /1 Manganese Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-1995 by CEL Analyzed using EPA 6010A on 21-DEC-1995 by JLW QC Batch No : 12458 0.030 mg/L < 0.030 mg/L 11 Molybdenum Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-1995 by CEL Analyzed using EPA 6010A on 21-DEC-1995 by JLW OC Batch No : 12458 210 mg/l 1.0 Sodium /1 mg/L Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-1995 by CEL Analyzed using EPA 6010A on 21-DEC-1995 by JLW GC Batch No : 12458 0.0200 mg/L < 0.0200 mg/L 11 Nickel Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-1995 by CEL Analyzed using EPA 6010A on 21-DEC-1995 by JLW QC Batch No : 12458 /1 0.003 mg/L < 0.003 mg/L Lead Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-1995 by CEL Analyzed using EPA 6010A on 21-DEC-1995 by JLW QC Batch No : 12458



TOTAL METALS TEST REQUESTED DETECTION LIMIT RESULTS 0.006 mg/L /1 0.005 mg/L Selenium Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-1995 by CEL Analyzed using EPA 7740 on 21-DEC-1995 by MPE QC Batch No : 12436F 0.4 mg/L Uranium 11 0.1 mg/l Dilution Factor : 1 Prepared using EPA 3015 on 20-DEC-1995 by CEL Analyzed using EPA 6010A on 22-DEC-1995 by JLW QC Batch No : 12458 /1 0.0709 mg/L 0.0300 mg/L Zinc Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-1995 by CEL Analyzed using EPA 6010A on 21-DEC-1995 by JLW QC Batch No : 12458



SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ADDRESS : 1030 Andrews Hwy. Suite 120 : Midland, TX 79701 ATTENTION : Ms. Tara O'Connel SAMPLE MATRIX : Liquid ID MARKS : WW-IRF PROJECT : MTO387.001 Texaco Eunice PURCHASE ORDER NO : LTO #4295 DATE SAMPLED : 11-DEC-1995

MISCELLANEOUS ANALYSES	·				RESULTS	
TEST REQUESTED		DETECTION			REBULIS	· · · · · · · · · · · · · · · · · · ·
Bicarbonate	/1	1.0	mg/l CaCO3		370	mg/L CaCO3
Analyzed using SM 2320B on 18 GC Batch No : 271100	-DEC-1995 by	P_F				
Carbonate (As CaCO3)	/1	1.0	mg/L CaCO3	<	1.0	mg/L CaCO3
Analyzed using SM 23208 on 18 QC Batch No : 271100	-DEC-1995 by	P_F				
Chloride	/1	10	mg/L		346	mg/L
Dilution Factor : 10 Analyzed using EPA 9252 on 20 QC Batch No : 610057)-DEC-1995 by	НМА				
Cyanide, Total	/1	0.010	mg/L	<	0.010	mg/L
Dilution Factor : 1 Analyzed using EPA 9010 on 2 QC Batch No : 640021A	1-DEC-1995 by	KPP				
Total Dissolved Solids	/1	10.0	mg/L		1200	mg/L
Analyzed using EPA 160.1 on QC Batch No : 614030A	15-DEC-1995 b	IY RJS			. <u></u>	
Sulfate	/1	1.00	mg/l		72.4	mg/L
Dilution Factor : 1 Analyzed using EPA 9038 on 1 QC Batch No : 597039A	5-DEC-1995 by	RJS				



ADDRESS	:	Geraghty & Miller, Inc. 1030 Andrews Hwy. Suite 120 Midland, TX 79701 Ms. Tara O'Connel
SAMPLE MATRIX	:	Liquid
ID MARKS	:	Tríp Blanks
PROJECT	:	MTO387.001 Texaco Eunice
PURCHASE ORDER NO	:	LTO #4295
DATE SAMPLED	:	11-DEC-1995
ANALYSIS METHOD	:	EPA 8020 /1
ANALYZED BY	:	VHT
ANALYZED ON	:	14-DEC-1995
DILUTION FACTOR	:	1
METHOD FACTOR		
QC BATCH NO	:	34-121395A

STEX ANALYSIS						_
TEST REQUESTED	DETECTION LI	MIT	RESULTS			
Benzene	1.0 µg	1/L	<	1.0	μg/L	
Toluene	t.0 μg	1/L	<	1.0	µg/L	
Ethyl benzene	1.0 µg	j/L	<	1.0	μg/L	
Xylenes	1.0 µg	g/L	<	1.0	μg/L	
BTEX (total)			<	1.0	μg/L	<i>‡</i>

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Bromofluorobenzene	50.0 μg/L	99.1 %

Based upon Good Laboratory Practice, the result is rounded to the appropriate number of significant figures.



.

DATE RECEIVED : 13-DEC-1995 REPORT NUMBER : D95-12047-3 REPORT DATE : 15-JAN-1996

ADDRESS	:	Geraghty & Miller, Inc. 1030 Andrews Hwy. Suite 120 Midland, TX 79701 Ms. Tara O'Connel
SAMPLE MATRIX ID MARKS		Liquid Abell Well
		MT0387.001 Texaco Eunice
PURCHASE ORDER NO DATE SAMPLED		
PREPARATION METHOD		
PREPARED BY		
PREPARED ON ANALYSIS METHOD		
ANALISIS MEINOD ANALYZED BY		
ANALYZED ON	:	20-DEC-1995
DILUTION FACTOR		
METHOD FACTOR QC BATCH NO		

TEST REQUESTED	DETECTION LIMIT		RESULTS
Acenaphthene	18.0 µg/L	<	18.0 μg/l
Acenaphthylene	10.0 µg/L	<	10.0 µg/L
Anthracene	6.60 µg/L	<	6.60 µg/L
Benzo(a)anthracene	0.130 µg/L	<	0.130 µg/L
Benzo(b)fluoranthene	0.180 µg/L	<	0.180 µg/L
Benzo(k)fluoranthene	0.170 µg/L	<	0.170 μg/L
Benzo(g,h,i)perylene	0.760 μg/L	<	0.760 µg/L
Benzo(a)pyrene	0.230 µg/L	<	0.230 #g/ L
Chrysene	1.50 µg/L	<	1.50 µg/L
Dibenzo(a,h)anthracene	0.300 µg/L	<	0.300 µg/L
Fluoranthene	2.10 μg/L	<	2.10 µg/L
Fluorene	2.10 μg/L	<	2.10 µg/L
Indeno(1,2,3-cd)pyrene	0.430 µg/L	<	0.430 μg/L
Naphthalene	 10.0 μg/L	<	10.0 #9/L



REPORT NUMBER : D95-12047-3 ANALYSIS METHOD : EPA 8310 /1

EST REQUESTED	DETECTION LIMIT	RESULTS
nenanthrene	6.40 μg/L	 6.40 µg/L

QUALITY CONTROL DATA		······································
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
1-Fluoronapthalene (SS)	100 μg/L	83.8 %



ADDRESS	:	Geraghty & Miller, Inc. 1030 Andrews Hwy. Suite 120 Midland, TX 79701 Ms. Tara O'Connel
SAMPLE MATRIX	:	Liquid
ID MARKS	:	Abell Well
PROJECT	:	MTO387.001 Texaco Eunice
PURCHASE ORDER NO	:	LTO #4295
DATE SAMPLED	:	11-DEC-1995
ANALYSIS METHOD	:	EPA 8020 /1
ANALYZED BY		
ANALYZED ON		
DILUTION FACTOR		
METHOD FACTOR		
QC BATCH NO	:	34-121395A

STEX ANALYSIS					
TEST REQUESTED	DETECTION LIMIT		S		
Benzene	1.0 µg/L	<	1.0	μg/L	-
Toluene	1.0 µg/L	<	1.0	μg/L	
Ethyl benzene	1.0 µg/L	<	1.0	μg/l	_
	1.0 µg/L	<	1.0	µg/L	
BTEX (total)	······	<	1.0	µg/l	

QUALITY CONTROL DATA	· · · · · · · · · · · · · · · · · · ·	
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Bromofluorobenzene	50.0 µg/L	99.2 %

Based upon Good Laboratory Practice, the result is rounded to the appropriate number of significant figures.



ADDRESS	: :	Geraghty & Miller, Inc. 1030 Andrews Hwy. Suite 120 Midland, TX 79701 Ms. Tara O'Connel
PROJECT PURCHASE ORDER NO DATE SAMPLED PREPARATION METHOD PREPARED BY		Abell Well MT0387.001 Texaco Eunice LTO #4295 11-DEC-1995 EPA 418.1 MTR 18-DEC-1995 EPA 418.1 /1 MTR 18-DEC-1995 1 1

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS		
TEST REQUESTED	DETECTION LIMIT	RESULTS
Total Petroleum Hydrocarbon	0.50 mg/L	< 0.50 mg/L



SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ADDRESS : 1030 Andrews Hwy. Suite 120 : Midland, TX 79701 ATTENTION : Ms. Tara O'Connel SAMPLE MATRIX : Liquid ID MARKS : Abell Well PROJECT : MTO387.001 Texaco Eunice PURCHASE ORDER NO : LTO #4295 DATE SAMPLED : 11-DEC-1995

0.002 mg/L EL 0.200 mg/L EL JLW	<	0.002 mg/l
PE 0.200 mg/L EL	<	0.200 mg/l
EL	<	0.200 mg/1
		-
0.0050 mg/L		0.0200 mg/
0.0200 mg/L		0.0849 mg/
0.100 mg/L		0.588 mg/
	EL PE 0.0200 mg/L EL JLW	EL PE 0.0200 mg/L EL JLW 0.100 mg/L



TOTAL METALS		
TEST REQUESTED	DETECTION LIMIT	RESULTS
Calcium /1	0.10 mg/L	78.1 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-19 Analyzed using EPA 6010A on 21-DEC-1 QC Batch No : 12458		
Cadmium /1	0.01 mg/L	< 0.01 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-19 Analyzed using EPA 6010A on 21-DEC-1 QC Batch No : 12458		
Cobalt /	0.0200 mg/L	< 0.0200 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-19 Analyzed using EPA 6010A on 21-DEC-7 QC Batch No : 12458	1995 by CEL 1995 by JLW	
Chromium /	I 0.0200 mg/L	< 0.0200 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-19 Analyzed using EPA 6010A on 21-DEC-7 QC Batch No : 12458		
Copper /	1 0.0100 mg/L	< 0.0100 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-14 Analyzed using EPA 6010A on 21-DEC- QC Batch No : 12458		
Iron /	1 0.100 mg/L	< 0.100 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-14 Analyzed using EPA 6010A on 15-DEC- QC Batch No : 12436	995 by CEL 1995 by JLW	
Mercury /	2 0.0002 mg/L	< 0.0002 mg/L
Dilution Factor : 1 Prepared using EPA 7470 on 18-DEC-1 Analyzed using EPA 7470 on 20-DEC-1 QC Batch No : HG-2065		

Inchcape Testing Services Environmental Laboratories

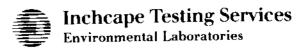
••

REPORT NUMBER : D95-12047-3

TOTAL METALS			
TEST REQUESTED	DETECTION	LIMIT	RESULTS
Potassium /	1 1.0	mg/L	11.3 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-1 Analyzed using EPA 6010A on 21-DEC- QC Batch No : 12458			
Magnesium /	1 0.100	mg/l	51.0 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-1 Analyzed using EPA 6010A on 21-DEC- QC Batch No : 12458	995 by CEL 1995 by JLW		
Manganese /	1 0.0100	mg/L <	0.0100 mg/L
Dilution Factor : 1 Prepared Using EPA 3015 on 14-DEC-1 Analyzed Using EPA 6010A on 21-DEC- QC Batch No : 12458	995 by CEL 1995 by JLW		
Molybdenum /	1 0.030	mg/L <	0.030 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-1 Analyzed using EPA 6010A on 21-DEC- QC Batch No : 12458	995 by CEL 1995 by JLW		
Sodium /	1 1.0	mg/L	167 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-1 Analyzed using EPA 6010A on 3-JAN-1 QC Batch No : 12458	995 by CEL 1996 by LSS		
Nickel	1 0.0200)mg/L <	0.0200 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-1 Analyzed using EPA 6010A on 21-DEC- QC Batch No : 12458	1995 by CEL 1995 by JLW	·	
Lead	/1 0.003	mg/L <	0.003 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC- Analyzed using EPA 6010A on 21-DEC- QC Batch No : 12458	1995 by CEL -1995 by JLW		

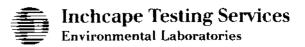


			1	
TEST REQUESTED		DETECTION LIMIT		RESULTS
Selenium	/1	0.005 mg/L		0.010 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on Analyzed using EPA 7740 on QC Batch No : 12436F				
Jranium	/1	0.1 mg/L		0.4 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on Analyzed using EPA 6010A o QC Batch No : 12458				
Zinc	/1	0.0300 mg/L	<	0.0300 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on Analyzed using EPA 6010A o QC Batch No : 12458			t	



SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ADDRESS : 1030 Andrews Hwy. Suite 120 : Midland, TX 79701 ATTENTION : Ms. Tara O'Connel SAMPLE MATRIX : Liquid ID MARKS : Abell Well PROJECT : MTO387.001 Texaco Eunice PURCHASE ORDER NO : LTO #4295 DATE SAMPLED : 11-DEC-1995

TEST REQUESTED	F	DETECTION	LIMIT		RESULTS	
Bicarbonate	/1	1.0	mg/L CaCO3		175	mg/L CaCO3
Analyzed using SM 2320B on QC Batch No : 271100	18-DEC-1995	by P_F				
Carbonate (As CaCO3)	/1	1.0	mg/L CaCO3	<	1.0	mg/L CaCO3
Analyzed using SM 2320B on QC Batch No : 271100	18-DEC-1995	by P_F				
Chloride	/1	10	mg/L		346	mg/L
Dilution Factor : 10 Analyzed using EPA 9252 on QC Batch No : 610057	20-DEC-1995	by HMA				
Cyanide, Total	/1	0.010	mg/L	<	0.010	mg/L
Dilution Factor : 1 Analyzed Using EPA 9010 or QC Batch No : 640021A	21-DEC-1995	by KPP				
Total Dissolved Solids	/1	10.0	mg/L		1140	mg/L
	- 15 050 1005	by BJS				
Analyzed using EPA 160.1 c QC Batch No ; 614030A	0N 12-0EC-1993					



.

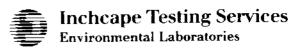
DATE RECEIVED : 13-DEC-1995 REPORT NUMBER : D95-12047-4 REPORT DATE : 15-JAN-1996

ADDRESS	:	Geraghty & Miller, Inc. 1030 Andrews Hwy. Suite 120 Midland, TX 79701 Ms. Tara O'Connel
SAMPLE MATRIX	:	Liquid
		Trip Blanks
		MT0387.001 Texaco Eunice
PURCHASE ORDER NO		
DATE SAMPLED	:	11-DEC-1995
ANALYSIS METHOD	:	EPA 8020 /1
ANALYZED BY	:	VHT
ANALYZED ON	:	14-DEC-1 995
DILUTION FACTOR	:	1
METHOD FACTOR	:	1
QC BATCH NO	:	34-121395A

BTEX ANALYSIS		•			
TEST REQUESTED	DETECTION LIMIT		RESULT	'S	
Benzene	1.0 µg/L	<	1.0	µg/ L	
Toluene	1.0 µg/L	<	1.0	µg/L	
Ethyl benzene	1.0 µg/L	<	1.0	μg/L	
Xylenes	1.0 µg/L	<	1.0	µg/L	
BTEX (total)		<	1.0	µg/L	Ŕ

QUALITY CONTROL DATA	·	
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Bromofluorobenzene	50.0 μg/L	97.9 %

Based upon Good Laboratory Practice, the result is rounded to the appropriate number of significant figures.



DATE RECEIVED : 13-DEC-1995 REPORT NUMBER : D95-12047-5 REPORT DATE : 15-JAN-1996

ADDRESS	::	Geraghty & Miller, Inc. 1030 Andrews Hwy. Suite 120 Midland, TX 79701 Ms. Tara O'Connel
SAMPLE MATRIX		
		Method Blank
		MTO387.001 Texaco Eunice
PURCHASE ORDER NO	:	LTO #4295
DATE SAMPLED	:	13-DEC-1995
ANALYSIS METHOD	:	EPA 8020 /1
ANALYZED BY	:	VHT
ANALYZED ON	:	14-DEC-1995
DILUTION FACTOR	:	1
METHOD FACTOR	:	1
QC BATCH NO		

BTEX ANALYSIS					
TEST REQUESTED	DETECTION LIMIT	-	RESULT	s	
Benzene	1.0 μg/L	<	1,0	μg/L	
Toluene	1.0 μg/L		1.0	µg/L	
Ethyl benzene	1.0 μg/L	<	1.0	μg/l	
Xylenes	1.0 μg/L	<	1.0	μg/L	
BTEX (total)	· · · · · · · · · · · · · · · ·	<	1.0	μg/L	#

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Bromofluorobenzene	50.0 μ g/L	101 %

Based upon Good Laboratory Practice, the result is rounded to the appropriate number of significant figures.



REPORT NUMBER : D95-12047

SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ATTENTION : Ms. Tara O'Connel PROJECT : MTO387.001 Texaco Eunice

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene
SATCH NO.	AB648-1	AB648-1	AB648-1	AB648-1	A8648-1
LCS LOT NO.	AB525-86	AB525-86	AB525-86	A8525-86	AB525-86
PREP METHOD	EPA 3520B	EPA 3520B	EPA 3520B	EPA 35208	EPA 35208
PREPARED BY	мк	МК	MK	MK	МК
ANALYSIS METHOD	EPA 8310	EPA 8310	EPA 8310	EPA 8310	EPA 8310
ANALYZED BY	JXA	AXL	AXL	JXA	JXA
UNITS	µg/L	μg/L	μg/L	μg/L	μg/L
METHOD BLANK	< 18.0	< 23.0	< 18.0	< 2.10	< 6.40
SPIKE LEVEL	100	100	100	100	100
MS RESULT	81.9	80.1	73.0	80.1	78.4
MS RECOVERY %	81.9	80.1	73.0	80.1	78.4
MSD RESULT	76.0	69.6	63.1	69.5	68.6
MSD RECOVERY %	76.0	69.6	63.1	69.5	68.6
MS/MSD RPD %	7.47	14.0	14.5	14.2	13.3
BS RESULT	NA	NA	NA	NA	NA
BS RECOVERY %	NA	NA	NA	NA	NA
BSD RESULT	NA	NA	NA	NA	NA
SSD RECOVERY %	NA	NA	NA	NA	NA
BS/BSD RPD %	NA	NA	NA	NA	NA
DUPLICATE RPD %	NA	NA	NA	NA	NA
LCS LEVEL	50.0	50.0	50,0	50.0	50.0
LCS RESULT	35.4	34.5	31.4	35.3	35.5
LCS RECOVERY %	70.8	69.0	62.8	70.6	71.0
SPIKE SAMPLE ID	12047-1	12047-1	12047-1	12047-1	12047-1
DUP SAMPLE ID					

NA

Not applicable



REPORT DATE : 15-JAN-1996 REPORT NUMBER : D95-12047

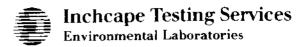
SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ATTENTION : Ms. Tara O'Connel PROJECT : MTO387.001 Texaco Eunice

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Anthracene	Chrysene	Benzo(k)fluoranthene	Benzene	Ethylbenzene
BATCH NO.	AB648-1	AB648-1	AB648-1	34-121395A	34-121395A
LCS LOT NO.	AB525-86	AB525-86	AB525-86	AB214-70B	AB214-708
PREP METHOD	EPA 35208	EPA 3520B	EPA 35208		
PREPARED BY	MK	MK	МК		
ANALYSIS METHOD	EPA 8310	EPA 8310	EPA 8310	EPA 8020	EPA 8020
ANALYZED BY	JXA	JXA	JXA	VHT	VHT
UNITS	µg/L	µg/l	μg/L	μg/L	µg/L
METHOD BLANK	< 6.60	< 1.50	< 0.17	< 1.00	< 1.00
SPIKE LEVEL	100	100	100	500	500
	48.9	70.9	69.9	522	521
MS RECOVERY %	48.9	70.9	69.9	104	104
MSD RESULT	44.1	59.8	56.6	503	510
MSD RECOVERY %	44.1	59.8	56.6	101	102
MS/MSD RPD %	10.3	17.0	21.0	3,71	2.13
BS RESULT	NA	NA	NA	NA	NA
BS RECOVERY %	NA	NA	NA	NA	NA
BSD RESULT	NA	NA	NA	NA	NA
BSD RECOVERY %	NA	NA	NA	NA	NA
85/BSD RPD %	NA	NA	NA	NA	NA
DUPLICATE RPD %	NA	NA	NA	NA	NA
LCS LEVEL	50.0	50.0	50.0	50.0	50.0
LCS RESULT	22.5	22.7	13.6	51.2	50.5
LCS RECOVERY %	45.0	45.4	27.2	102	101
SPIKE SAMPLE ID	12047-1	12047-1	12047-1	12047-2	12047-2
DUP SAMPLE 1D					

NA

Not applicable



REPORT NUMBER : D95-12047

SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ATTENTION : Ms. Tara O'Connel PROJECT : MTO387.001 Texaco Eunice

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Total Recoverable Hydrocarbons	Silver	Aluminum	Arsenic
BATCH NO.	AB646-18	124368	12458	12436F
LCS LOT NO.	AA345-88B	590802AF	591009,591130	590802AF
PREP METHOD	EPA 418.1	EPA 3015	EPA 3015	EPA 3015
PREPARED BY	MTR	CEL	CEL	CEL
ANALYSIS METHOD	EPA 418.1	EPA 7761	EPA 6010A	EPA 7060
ANALYZED 8Y	MTR	MPE	JLW	MPE
UNITS	mg/L	μg/L	µg/L	μg/ 1
METHOD BLANK	< 0.50	< 2.00	< 200	< 5.00
SPIKE LEVEL	5.00	20.0	1000	40.0
MS RESULT	NS	14.4	1060	65.8
MS RECOVERY %	NS	70.6	106	107
MSD RESULT	NS	18.2	1070	59.4
MSD RECOVERY %	NS	89.6	107	90.8
MS/MSD RPD %	NS	23.7	0.94	16.2
BS RESULT	5.05	NA	NA	NA
BS RECOVERY %	101	NA	NA	NA
BSD RESULT	4.87	NA	NA	NA
BSD RECOVERY %	97.4	NA	NA	NA
BS/BSD RPD %	3.63	NA	NA	NA
DUPLICATE RPD %	NA	NC	NC	1.31
LCS LEVEL	5.00	20.0	1000	40,0
LCS RESULT	SEE_BS	20.0	1110	41.4
LCS RECOVERY %	SEE_BS	99.9	111	104
SPIKE SAMPLE ID		12047-1	12047-3	12047-1
DUP SAMPLE ID		12047-1	12047-3	12047-1

NS SEE_BS

NA

Insufficient sample available for MS/MSD. BS/BSD used.

LCS and LCS Duplicate reported as BS and BSD.

Not applicable

NC Not calculable



REPORT NUMBER : D95-12047

SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ATTENTION : Ms. Tara O'Connel PROJECT : MTO387.001 Texaco Eunice

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Barium	8oron	Calcium	Cadmium	Cobalt
BATCH NO.	12458	12458	12458	12458	12458
LCS LOT NO.	591009,591130	591009,591130	591009,591130	591009,591130	591009,591130
PREP METHOD	EPA 3015				
PREPARED BY	CEL	CEL	CEL	CEL	CEL
ANALYSIS METHOD	EPA 6010A				
ANALYZED BY	JL₩	JLW	JLW	JLW	JLW
UNITS	µg/L	µg/L	µg/L	μg/L	μg/l
METHOD BLANK	< 20.0	< 100	< 100	< 10.0	< 15.0
SPIKE LEVEL	10000	1000	10000	1000	1000
MS RESULT	10600	1740	85900	1070	1030
MS RECOVERY %	105	115	78.0 F	107	103
MSD RESULT	10500	1750	85400	1060	1030
MSD RECOVERY %	104	116	73.0 F	106	103
MS/MSD RPD %	0.96	0.86	6.62 F	0.94	0.00
BS RESULT	NA	NA	NA NA	NA	NA
BS RECOVERY %	NA	NA	NA	NA	NA
BSD RESULT	NA	NA	NA	NA	NA
BSD RECOVERY %	NA	NA	NA	NA	NA
BS/BSD RPD %	NA	NA	NA	NA	NA
DUPLICATE RPD %	0.47	1,54	1.52	NC	NC
LCS LEVEL	10000	1000	10000	1000	1000
LCS RESULT	10500	1150	9780	1060	1030
LCS RECOVERY %	105	115	97.8	106	103
SPIKE SAMPLE ID	12047-3	12047-3	12047-3	12047-3	12047-3
DUP SAMPLE ID	12047-3	12047-3	12047-3	12047-3	12047-3

NA Not applicable F Not applicable

Not applicable due to high analyte concentration in the QC sample.

NC Not calculable



REPORT NUMBER : D95-12047

SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ATTENTION : Ms. Tara O'Connel PROJECT : MTO387.001 Texaco Eunice

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Chromium	Copper	Iron	Mercury	Potassium
BATCH NO.	12458	12458	12436	HG-2065	12458
LCS LOT NO.	591009,591130	591009,591130	590814,591009,5	AB300-22A	591009,591130
PREP METHOD	EPA 3015	EPA 3015	EPA 3015	EPA 7470	EPA 3015
PREPARED BY	CEL	CEL	CEL	CEL	CEL
ANALYSIS METHOD	EPA 6010A	EPA 6010A	EPA 6010A	EPA 7470	EPA 6010A
ANALYZED BY	JLW	JLW	JLW	CGJ	٦٢M
UNITS	µg/L	µg/L	µg/L	μg/L	μg/l
METHOD BLANK	< 20.0	< 5.00	< 100	< 0.20	< 1000
SPIKE LEVEL	1000	1000	1000	1.00	10000
MS RESULT	1040	1110	2900	1.05	25300
MS RECOVERY %	104	111	98.0	89.8	140 B
MSD RESULT	1040	1120	2880	1.05	25200
MSD RECOVERY %	104	112	96.0	89.8	139 8
MS/MSD RPD %	0.00	0.90	2.06	0.00	0.72 B
BS RESULT	NA	NA	NA	NA	NA
BS RECOVERY %	NA	NA	NA	NA	NA
BSD RESULT	NA	NA	NA	NA	NA
BSD RECOVERY %	NA	NA	NA	NA	NA
BS/BSD RPD %	NA	NA	NA	NA	NA
DUPLICATE RPD %	NC	NC	1.55	NC	2.62
LCS LEVEL	1000	1000	1000	1.00	10000
LCS RESULT	1030	1040	1100	0.929	8560
LCS RECOVERY %	103	104	110	92.9	85,6
SPIKE SAMPLE ID	12047-3	12047-3	12047-1	12188-1	12047-3
DUP SAMPLE ID	12047-3	12047-3	12047-1	12188-1	12047-3

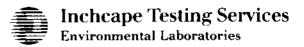
Not applicable

NA NC

Not calculable

_В

Not applicable due to matrix interference in the QC Sample.



REPORT NUMBER : D95-12047

SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ATTENTION : Ms. Tara O'Connel PROJECT : MTO387.001 Texaco Eunice

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Magnesium	Manganese	Molybdenum	Sodium	Nickel
BATCH NO.	12458	12458	12458	12458	12458
LCS LOT NO.	591009,591130	591009,591130	591009,591130	591009,591130	591009,591130
PREP METHOD	EPA 3015				
PREPARED BY	CEL	CEL	CEL	CEL	CEL
ANALYSIS METHOD	EPA 6010A				
ANALYZED BY	JLW	JLW	JLW	LSS	JLW
UNITS	μg/L	μg/L	μg/L	μg/L	µg/L
METHOD BLANK	< 100	< 10.0	< 50.0	< 1000	< 15.0
SPIKE LEVEL	1000	1000	1000	10000	1000
MS RESULT	F	1070	1140	F	1020
MS RECOVERY %	F	107	114	F	102
MSD RESULT	F	1070	1140	F	1020
MSD RECOVERY %	F	107	114	F	102
MS/MSD RPD %	F	0.00	0.00	F	0.00
BS RESULT	NA	NA	NA	NA	NA
BS RECOVERY %	NA	NA	NA	NA	NA
BSD RESULT	NA	NA	NA	NA	NA
BSD RECOVERY %	NA	NA	NA	NA	NA
85/BSD RPD %	NA	NA	NA	NA	NA
DUPLICATE RPD %	2.52	NC	NC	1.20	NC
LCS LEVEL	1000	1000	1000	10000	1000
LCS RESULT	1090	1060	1090	10500	1030
LCS RECOVERY %	109	106	109	105	103
SPIKE SAMPLE ID	12047-3	12047-3	12047-3	12047-3	12047-3
DUP SAMPLE ID	12047-3	12047-3	12047-3	12047-3	12047-3

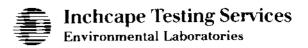
F NA

NC

Not applicable due to high analyte concentration in the OC sample.

Not applicable

Not calculable



REPORT NUMBER : D95-12047

SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ATTENTION : Ms. Tara O'Connel PROJECT : MTO387.001 Texaco Eunice

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Lead	Selenium	Uranium	Zînc	Alkalinity
BATCH NO.	12458	12436F	12458	12458	271100
LCS LOT NO.	591009,591130	590802AF	591009,591130	591009,591130	9968
PREP METHOD	EPA 3015	EPA 3015	EPA 3015	EPA 3015	
PREPARED BY	CEL	CEL	CEL	CEL	
ANALYSIS METHOD	EPA 6010A	EPA 7740	EPA 6010A	EPA 6010A	SM 2320B
ANALYZED BY	JEW	MPE	JLW	JEW	P_F
UNITS	μg/L	μg/l	µg/L	µg/L	mg/L
METHOD BLANK	< 10.0	< 5.00	< 100	< 10.0	< 1.00
SPIKE LEVEL	1000	20.0	10000	1000 [458
MS RESULT	1050	24.2	11700	1130	725
MS RECOVERY %	105	89.4	113	113	104
MSD RESULT	1050	24.3	11800	1190	730
MSD RECOVERY %	105	89.9	114	119	105
MS/MSD RPD %	0.00	0,56	0.88	5.17	1.05
85 RESULT	NA	NA	NA	NA	NA
BS RECOVERY %	NA	NA	NA	NA	NA
BSD RESULT	NA	NA	NA	NA	NA
BSD RECOVERY %	NA	NA	NA	NA	NA
BS/BSD RPO %	NA	NA	NA	NA	NA
DUPLICATE RPD %	NC	NC	NC	NC	0.00
LCS LEVEL	1000	20.0	10000	1000	125
LCS RESULT	1070	22.3	11100	1050	125
LCS RECOVERY %	107	112	111	105	100
SPIKE SAMPLE ID	12047-3	12047-1	12047-3	12047-3	11945-1
DUP SAMPLE 1D	12047-3	12047-1	12047-3	12047-3	11945-1

Not applicable

NA NC

Not calculable



REPORT NUMBER : D95-12047

SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ATTENTION : Ms. Tara O'Connel PROJECT : MTO387.001 Texaco Eunice

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Chloride	Cyanide, Total	Total Dissolved Solids	Sulfate
BATCH NO.	610057	640021A	614030A	597039A
LCS LOT NO.	9968	ERA 9963	9968	9968
PREP METHOD				
PREPARED BY				·
ANALYSIS METHOD	EPA 9252	EPA 9010	EPA 160.1	EPA 9038
ANALYZED BY	HMA	КРР	RJS	RJS
UNITS	mg/l	mg/L	mg/L	mg/L
METHOD BLANK	< 1.00	< 0.01	< 10.0	<1.0
SPIKE LEVEL	1.00	1.00		400
MS RESULT	f	1.05	NA	580
MS RECOVERY %	F	105	NA	95.0
MSD RESULT	F	1.00	NA	588
MSD RECOVERY %	F	99.7	NA	97.0
MS/MSD RPD %	F	5.18	NA	2.08
BS RESULT	NA	NA	NA	NA
BS RECOVERY %	NA	NA	NA	NA
BSD RESULT	NA	NA	NA	NA
BSD RECOVERY %	NA	NA	NA	NA
BS/BSD RPD %	NA	NA	NA	NA
DUPLICATE RPD %	3.51	NC	0.84	0.83
LCS LEVEL	128	0.147	714	105
LCS RESULT	127	0.120	705	106
LCS RECOVERY %	99.2	81.6	98.7	101
SPIKE SAMPLE ID		12047-1		11945-5
DUP SAMPLE ID	12211-4	12047-1	12047-1	12047-1

Not applicable due to high analyte concentration in the QC sample.

F NA

Not applicable

NC Not calculable

GERAGHTY & MILLER, INC. Environmental Services	Laboratory Task Order No. 4295	CHAIN-OF-CUSTODY RECORD	Page of
Project Number MT0387.001 Project Location TEKACO - EUV Laboratory MCMCaPE TESTVA Sampler(s)/Affiliation MTA O'Co MagMy 4A Date/Time SAMPLE IDENTITY Code Sampled	ce Sicis null Action Lab ID	SAMPLE BOTTLE / CONTAINER DESCRIPTION	TOTAL
WW-IRF L 12.11-95		1.2.12047	
		ORIGINAL	
Sample Code: L = Liquid; S = Sol Relinquished by: All Old Received by: Collector Mr Relinquished by:	Nell, Organization:	Date /2 / 2 / 25 Time //04/ Date /2 / / 3/95 Time //04/ Date / 2 / / 3/95 Time //12/	of Bottles/ Containers Seal Intact? Seal Intact? Yes No N/A
Special Instructions/Remarks:	Organization:	°C	SOREENED FOR_ FADEACTIVEY

GERAGHTY & MILLER, INC. Environmental Services	Laboratory Task Order No. 4295	CHAIN-OF-CUSTODY RECC	Page of
Project Number MT03870		SAMPLE BOTTLE / CONTAINER DES	CRIPTION
Project Number 10 38 7		SAMPLE BOTTLE / CONTAINER DES	
Project Location TEXACO EU	mce / O/S		
Laboratory Arch Cape lest	Mg SUCES. / 5 45		
Sampler(s)/Affiliation TATA O'G Juaghty	nice ing Suces. nnell Hiller Lab ID Lab ID	Majarinea Metalst	
Sampler(s)/Amilation MAGOVIVA	Hiller / 17/ + /.		
Date/Time	ER A	2. 12° 12	11204 TOTAL
SAMPLE IDENTITY Code Sampled	Lab ID HJ		
Abell Well L 12-11-95			- 3 9
TripBlants L	2		4 3
			(mg) 5
			· ·
		- ORIGINAL	
			SCREENED FOR
		COOLER TEMPERATURE	
		WHEN RECEIVED	
Sample Code: L = Liquid; S =	Solid; A = Air	°C	Total No. of Bottles/ Containers
The star and	anell Organization: Iliagh	Huller Date /2/12/95 Tir Date / 2/13/95 Tir	me / 4.30 Seal Intact?
Relinquished by Affactor	Mari Organization: IT	Date / 2/ 13/ 951 ir	
	Organization:		me Seal Intact?
Relinquished by:		Date / / Tir	ne Yes No N/A
Special Instructions/Remarks: + 11 Carbonato & TDS TAS	ncluding: Calcum, magni , Ba, Cd, Cr, CN, Pb, Ha, S	sum, Sodurn, potassum, c , Ag, U, Cu, FE, Mr., Zn, Ar	, B. Co. Mo. Ni
Delivery hod: 🗆 🗆 In Pe		le Septens 🗆 Lab Courier	Other SPECITY Southpart 91 1769



DATE RECEIVED: 12-DEC-1995 REPORT NUMBER: D95-11986 REPORT DATE: 29-DEC-1995 SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ADDRESS : 1030 Andrews Hwy. Suite 120 Midland, TX 79701 ATTENTION : Mr. Damian Reed DATE SAMPLED : 8-DEC-1995

CASE NARRATIVE COMMENTS:

Ion Balance

Regarding samples D95-11986-1 and D95-11986-3 did, the cation-anion calculations did not balance, due to high cations. The samples contained a layer of sediment which could have attributed to the high cation results.

No further problems were encountered with the analysis for this job.

If you have any questions, please call Ms. Jacqueline Mayhew at (214) 238-5591.

Реп Data Rev

Inchcape Testing Services Environmental Laboratories

1089 E. Collins Blvd. Richardson, TX 75081 Tel. 214-258-5591 Fax. 214-258-5592

ANALYTICAL REPORT

DATE RECEIVED :	12-DEC-1995	REPORT NUMBER	:	D95-11986
DATE RECEIVED	12 000 1990	REPORT DATE	:	29-DEC-1995

SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ADDRESS : 1030 Andrews Hwy. Suite 120 : Midland, TX 79701 ATTENTION : Mr. Damian Reed PROJECT : MTO387.001 Texaco Eunice PURCHASE ORDER NO : LTO #4295

Included in this data package are the analytical results for the sample group which you have submitted to Inchcape Testing Services for analysis. These results are representative of the samples as received by the laboratory.

The information contained herein has undergone extensive review and is deemed accurate and complete. Sample analysis and quality control were performed in accordance with all applicable protocols. Any deviations from these protocols or observations of interest are detailed in an accompanying Case Narrative. Please refrain from reproducing this report except in its entirety.

If you have any questions regarding this report and its associated materials please call your Project Manager at (214) 238-5591.

We appreciate the opportunity to serve you and look forward to providing continued service in the future.

Martin Jeffus

Martin Yeffus General Manager



DATE RECEIVED : 12-	DEC-1995 REPORT NUMBER : D95-11986-1 REPORT DATE : 29-DEC-1995
ADDRESS	: Geraghty & Miller, Inc. : 1030 Andrews Hwy. Suite 120 : Midland, TX 79701 : Mr. Damian Reed
PURCHASE ORDER NO DATE SAMPLED PREPARATION METHOD PREPARED BY PREPARED ON ANALYSIS METHOD ANALYZED BY	: TMW-D : MTO387.001 Texaco Eunice : LTO #4295 : 8-DEC-1995 : EPA 3520B : CLT : 12-DEC-1995 : EPA 8310 /1 : JXA : 19-DEC-1995 : 1 : 11

POLYNUCLEAR AROMATIC HYDROCARBONS					
TEST REQUESTED	DETECTION LIMIT		RESULTS		
Acenaphthene	19.6 µg/L	< 19.6 µg/L			
Acenaphthylene	10.9 µg/L	< 10.9 µg/L			
Anthracene	7.19 дд/Ц	< 7.19 µg/L			
Benzo(a)anthracene	0.142 µg/L	< 0.142 µg/L			
Benzo(b)fluoranthene	0.196 µg/L	< 0.196 #g/L			
Benzo(k)fluoranthene	0.185 µg/L	< 0.185 #9/L			
Benzo(g,h,i)perylene	0.828 µg/L	< 0.828 µg/L			
Benzo(a)pyrene	0.251 µg/L	< 0.251 µg/L			
Chrysene	1.64 µg/L	< 1.64 µg/l			
Dibenzo(a,h)anthracene	0.327 µg/L	< 0.327 µg/L			
Fluoranthene	2.29 µg/L	< 2.29 #g/L			
Fluorene		< 2.29 μg/L	-		
Indeno(1,2,3-cd)pyrene	0.469 #g/L	< 0,469 µg/L			
Naphthalene	10.9 µg/L	< 10.9 µg/L			



REPORT NUMBER : D95-11986-1 ANALYSIS METHOD : EPA 8310 /1

.

POLYNUCLEAR AROMATIC HYDROCARBONS			
TEST REQUESTED	DETECTION LIMIT		RESULTS
Phenanthrene	6.98 µg/L	<	6.98 µg/L
Pyrene	2.94 µg/L		2.94 µg/l

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
1-Fluoronapthalene (SS)	100 µg/L	79.4 %

PAGE 2



DATE	RECEIVED	:	12-DEC-1995
------	----------	---	-------------

REPORT NUMBER : D95-11986-1 REPORT DATE : 29-DEC-1995

ADDRESS	:	Geraghty & Miller, Inc. 1030 Andrews Hwy. Suite Midland, TX 79701 Mr. Damian Reed	120
SAMPLE MATRIX	:	Liquid	

SAMPLE MATRIX		
ID MARKS		
		MTO387.001 Texaco Eunice
PURCHASE ORDER NO	:	LTO #4295
DATE SAMPLED	:	8-DEC-1995
ANALYSIS METHOD	:	EPA 8020 /1
ANALYZED BY		
ANALYZED ON	:	13-DEC-1995
DILUTION FACTOR	:	l
METHOD FACTOR	:	1
QC BATCH NO	:	34-121395

BTEX ANALYSIS		
TEST REQUESTED	DETECTION LIMIT	RESULTS
Benzene	1.0 µg/L	15.5 μg/L
Toluene	1.0 #g/L	1.2 µg/L
Ethyl benzene	1.C #g/L	15.4 µg/L
Xylenes	1.0 µg/L	29.3 µg/L
BTEX (total)		61.4 μg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Bromofluorobenzene	50.0 µg/L	93.9 %

Based upon Good Laboratory Practice, the result is rounded to the appropriate number of significant figures.

.



DATE RECEIVED : 12-	DEC-1995	REPORT NUMBER : REPORT DATE :	D95-11986-1 29-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Mr. Damian R	Hwy. Suite 120 79701	
PURCHASE ORDER NO DATE SAMPLED PREPARATION METHOD PREPARED BY PREPARED ON ANALYSIS METHOD ANALYZED BY	: TMW-D : MTO387.001 T : LTO #4295 : 8-DEC-1995 : EPA 418.1 : MTR : 18-DEC-1995 : EPA 418.1 /1 : MTR : 18-DEC-1995 : 1 : 1		

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS				
TEST REQUESTED	DETECTION LIMIT		RESULTS	
Total Petroleum Hydrocarbon	0.50 mg/L	<	0.50 mg/L	



-

1089 E. Collins Blvd. Richardson, TX 75081 Tel. 214-238-5591 Fax. 214-238-5592

DATE RECEIVED : 12-	DEC-1995	REPORT NUMBER : REPORT DATE :	D95-11986-1 29-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Mr. Damian R	79701 Suite 120	
SAMPLE MATRIX ID MARKS PROJECT	: TMW-D : MT0387.001 7	Texaco Eunice	

PURCHASE ORDER NO : LTO #4295 DATE SAMPLED : 8-DEC-1995

0.002 mg/L	RESULTS
0.002 mg/l	0 000 //
0,002 mg/c	< 0.002 mg/L
95 by CEL 95 by MPE	
0.200 mg/L	13.0 mg/L
95 by CEL 995 by JLW	
0.0050 mg/L	0.0382 mg/L
195 by CEL 195 by MPE	
0.0200 mg/L	1.26 mg/L
1995 by CEL 1995 by JLW	
t 0.100 mg/L	< 0.100 mg/1
	95 by MPE 0.200 mg/L 95 by CEL 995 by JLW 0.0050 mg/L 95 by CEL 95 by CEL 95 by CEL 95 by CEL 95 by CEL 95 by CEL



REPORT NUMBER : D95-11986-1

TOTAL METALS	,,,,	
TEST REQUESTED	DETECTION LIMIT	RESULTS
Calcium /1	0.10 mg/L	409 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-1995 Analyzed using EPA 6010A on 21-DEC-1995 QC Batch No : 12458	by CEL i by JLW	
Cadmium /1	0.01 mg/L	< 0.01 mg/L
Dilution Factor : 1 Prepared Using EPA 3015 on 14-DEC-1995 Analyzed using EPA 6010A on 21-DEC-1995 QC Batch No : 12458	by CEL 5 by JLW	
Cobalt /1	0.0200 mg/L	< 0.0200 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-1995 Analyzed using EPA 6010A on 21-DEC+199 QC Batch No : 12458	by CEL 5 by JLW	
Chromium /1	0.0200 mg/L	0.0296 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-1995 Analyzed using EPA 6010A on 21-DEC-199 QC Batch No : 12458	by CEL 5 by JLW	
Copper /1	0.0100 mg/L	0.0488 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-1995 Analyzed using EPA 6010A on 21-DEC-199 QC Batch No : 12458	by CEL 5 by JLW	
Iron /1	0.100 mg/L	21.6 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-1995 Analyzed using EPA 6010A on 15-DEC-199 QC Batch No : 12436	S by CEL P5 by JL¥	
Mercury /1	0.0002 mg/L	< 0.0002 mg/L
Dilution Factor : 1 Prepared using EPA 7470 on 12-DEC-199 Analyzed using EPA 7470 on 14-DEC-199 QC Batch No : HG-2052	5 by CEL 5 by CGJ	

PAGE 2



REPORT NUMBER : D95-11986-1

TOTAL METALS		······································
TEST REQUESTED	DETECTION LIMIT	RESULTS
Potassium /1	1.0 mg/L	21.7 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-199 Analyzed using EPA 6010A on 21-DEC-19 QC Batch No : 12458	5 by CEL 95 by JLW	
Magnesium /1	0.100 mg/L	68.8 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-199 Analyzed using EPA 6010A on 21-DEC-19 QC Batch No : 12458	25 by CEL 195 by JLW	
Manganese /1	0.0100 mg/L	0.363 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-199 Analyzed using EPA 6010A on 21-DEC-19 QC Batch No : 12458	25 by CEL 295 by JLW	
Molybdenum /1	0.030 mg/L	< 0.030 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-19 Analyzed using EPA 6010A on 21-DEC-19 QC Batch No : 12458	95 by CEL 995 by JLW	
Sodium /1	1.0 mg/L	330 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 20-DEC-19 Analyzed using EPA 6010A on 22-DEC-1 GC Batch No : 12458	95 by CEL 995 by JLW	
Nickel /1	0.0200 mg/L	0.0203 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-19 Analyzed using EPA 6010A on 21-DEC-1 DC Batch No : 12458	95 by CEL 995 by JLW	
Lead /1	0.003 mg/L	0.015 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-19 Analyzed using EPA 6010A on 21-DEC-1 QC Batch No : 12458	95 by CEL 995 by JLW	

PAGE 3



PAGE 4

REPORT NUMBER : D95-11986-1

TOTAL METALS		<u>,</u> .,		
TEST REQUESTED		DETECTION LINIT		RESULTS
Selenium	/1	0.005 mg/L		0.011 mg/L
Dilution Factor : 1 Prepared using EPA 3 Analyzed using EPA 7 QC Batch No : 124361	3015 on 14-DEC-1995 by 7740 on 22-DEC-1995 by F	CEL MPE		
Jranium	/1	0.1 mg/L	<	0.1 mg/L
Dilution Factor : 1 Prepared using EPA : Analyzed using EPA : QC Batch No : 12458	3015 on 20-DEC-1995 by 6010A on 22-DEC-1995 by	CEL / JLW		
linc	/1	0.0300 mg/L		0.112 mg/L
Dilution Factor : 1 Prepared using EPA	3015 on 14-DEC-1995 by 6010A on 21-DEC-1995 by	CEL	1	



DATE RECEIVED : 12-1	DEC-1995	REPORT NUMBER : REPORT DATE :	D95-11986-1 29-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Mr. Damian R	Hwy. Suite 120 79701	
SAMPLE MATRIX ID MARKS PROJECT PURCHASE ORDER NO DATE SAMPLED	: TMW-D : MT0387.001 T : LTO #4295	lexaco Eunice	

MISCELLANEOUS ANALYSES						
TEST REQUESTED		DETECTION	LIMIT		RESULTS	<u> </u>
Bicarbonate	/1	1.0	mg/L CaCO3		250	mg/L CaCO3
Analyzed using SM 2320B on 18 QC Batch No : 271100	-DEC-1995 by (5_t				
Carbonate (As CaCO3)	/1	1.0	mg/L CaCO3	<	1.0	mg/L CaCO3
Analyzed using SM 2320B on 18 QC Batch No : 271100	-DEC-1995 by I	P_F				
Chloride	/1	1.0	mg/L		700	mg/L
Dilution Factor : 1 Analyzed using EPA 9252 on 15 QC Batch No : 520030	-DEC-1995 by	P_F				
Cyanide, Total	/1	0.010	mg/L	<	0.010	mg/L
Dilution Factor : 1 Analyzed using EPA 9010 on 20 QC Batch No : 640019A	-DEC-1995 by	KPP			-	
Total Dissolved Solids	/1	10.0	mg/L		1900	mg/l
Analyzed using EPA 160.1 on 1 QC Batch No : 614029A	4-DEC-1995 by	RJS				
Sulfate	/1	5.00	mg/L		217	mg/l
Dilution Factor : 5 Analyzed using EPA 9038 on 10 QC Batch No : 597041A	5-DEC-1995 by	RJS				



DATE RECEIVED : 12-	DEC-1995	REPORT NUMBER : REPORT DATE :	D95-11986-2 29-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Mr. Damian R	Hwy. Suite 120 79701	
PROJECT PURCHASE ORDER NO DATE SAMPLED ANALYSIS METHOD ANALYZED BY	: Trip Blanks : MT0387.001 T : LTO #4295 : 8-DEC-1995 : EPA 8020 /1 : VHT : 13-DEC-1995 : 1 : 1	Sexaco Eunice	

BTEX ANALYSIS					
TEST REQUESTED	DETECTION LIMIT		RESULT	<u> </u>	
Benzene	1.0 µg/L	<	1.0	μg/L	
Toluene	1.0 µg/L	<	1.0	µg/L	
Ethyl benzene	1.0 µg/L	<	1.0	µg∕L	
Xyienes	1.0 µg/L	<	1.0	μg/L	
BTEX (total)			1.0	µg/L	1

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Bromofluorobenzene	50.0 #g/l	99.4 %

Based upon Good Laboratory Practice, the result is rounded to the appropriate number of significant figures.



1089 E. Collins Blvd. Richardson, TX 75081 Tel. 214-238-5591 Fax. 214-238-5592

DATE RECEIVED : 12-1	DEC-1995	REPORT NUMBER REPORT DATE	: D95-11986-3 : 29-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Mr. Damian R	Hwy. Suite 120 79701)
PURCHASE ORDER NO DATE SAMPLED PREPARATION METHOD PREPARED BY PREPARED ON ANALYSIS METHOD ANALYZED BY	: TMW-6 : MTO387.001 T : LTO #4295 : 8-DEC-1995 : EPA 3520B : CLT : 12-DEC-1995 : EPA 8310 /1 : JXA : 19-DEC-1995 : 1 : 10	exaco Eunice	

	DETECTION LIMIT		RESULTS
Acenaphthene	18.0 µg/L	<	18.0 µg/L
Acenaphthylene	10.0 #g/L	<	10.0 µg/L
Anthracene	6.60 µg/L	<	6.60 µg/l
Benzo(a)anthracene	0.130 µg/L	<	0.130 µg/L
Benzo(b)fluoranthene	0.180 µg/L	<	0.180 µg/L
Benzo(k)fluoranthene	0.170 µg/L		0.170 µg/L
Benzo(g,h,i)perylene	0.760 µg/L	<	0.760 µg/L
Benzo(a)pyrene	0.230 µg/l	<	0.230 #9/L
Chrysene	1.50 µg/L	<	1.50 µg/L
Dibenzo(a,h)anthracene	0.300 µg/L	<	0.300 µg/l
Fluoranthene	2.10 µg/L	<	2.10 #g/L
Fluorene	2.10 µg/L	<	2.10 µg/L
Indeno(1,2,3-cd)pyrene	0.430 µg/L	<	0.430 µg/L
Naphthalene	10.0 µg/L		10.0 #g/L



PAGE 2

REPORT NUMBER : D95-11986-3 ANALYSIS METHOD : EPA 8310 /1

POLYNUCLEAR AROMATIC HYDROCARBONS	i		<u>_</u>
TEST REQUESTED	DETECTION LIMIT		RESULTS
Phenanthrene	6.40 µg/L	<	6.40 µg/L
Pyrene	2.70 μg/L		2.70 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
1-Fluoronapthalene (SS)	100 # g/ L	72.0 X



DATE RECEIVED : 12-1	DEC-1995	REPORT NUMBER REPORT DATE	: D95-11986-3 : 29-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Mr. Damian F	79701	,
PURCHASE ORDER NO DATE SAMPLED ANALYSIS METHOD ANALYZED BY	: TMW-6 : MTO387.001 7 : LTO #4295 : 8-DEC-1995 : EPA 8020 /1 : VHT : 13-DEC-1995 : 1 : 1	Texaco Eunice	

STEX ANALYSIS		
TEST REQUESTED	DETECTION LIMIT	RESULTS
Benzene	1.0 #g/L	15.4 µg/L
Toluene	1.0 µg/L	1.3 #g/L
Ethyl benzene	1.0 µg/L	15.6 µg/L
Xylenes	1.0 μg/L	29.2 µg/L
BTEX (total)		61.5 µg/L 1

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Bromofluorobenzene	50.0 µg/L	94.2 %

Based upon Good Laboratory Practice, the result is rounded to the appropriate number of significant figures.



DATE RECEIVED : 12-D	EC-1995 REPORT NUMBER : D95-11986-3 REPORT DATE : 29-DEC-1995
ADDRESS :	Geraghty & Miller, Inc. 1030 Andrews Hwy. Suite 120 Midland, TX 79701 Mr. Damian Reed
SAMPLE MATRIX : ID MARKS : PROJECT : PURCHASE ORDER NO : DATE SAMPLED : PREPARATION METHOD : PREPARED BY : PREPARED ON : ANALYSIS METHOD : ANALYZED BY : ANALYZED ON : DILUTION FACTOR : METHOD FACTOR : QC BATCH NO :	TMW-6 MTO387.001 Texaco Eunice LTO #4295 8-DEC-1995 EPA 418.1 MTR 18-DEC-1995 EPA 418.1 /1 MTR 18-DEC-1995 1
TOTAL RECOVERABLE PETROLEUM HYD	DROCARBONS

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS			
TEST REQUESTED	DETECTION LIMIT		RESULTS
Total Petroleum Hydrocarbon	0.50 mg/L	<	0.50 mg/L



DATE RECEIVED : 12-1)EC-1995	REPORT NUMBER : REPORT DATE :	D95-11986-3 29-DEC-1995
	Geraghty & M 1030 Andrews Midland, TX Mr. Damian R	79701	
SAMPLE MATRIX ID MARKS PROJECT PURCHASE ORDER NO DATE SAMPLED	: TMW-6 : MTO387.001 7 : LTO #4295	Texaco Eunice	

TOTAL METALS				
TEST REQUESTED		DETECTION LIMIT	RESULTS	
Silver	/1	0.002 mg/L	< 0.002	mg/L
Dilution Factor : 1 Prepared using EPA 3015 on Analyzed using EPA 7761 on QC Batch No : 12436F	14-DEC-1995 by 19-DEC-1995 by	CEL MPE		
Aluminum	/1	0.200 mg/L	12.3	mg/l
Dilution Factor : 1 Prepared using EPA 3015 or Analyzed using EPA 6010A o QC Batch No : 12458	14-DEC-1995 by n 21-DEC-1995 b	CEL Ny JLW		
Arsenic	/1	0.0050 mg/L	0.0323	mg/L
Dilution Factor : 1 Prepared using EPA 3015 or Analyzed using EPA 7060 or QC Batch No : 12436F	14-DEC-1995 by 15-DEC-1995 by	/ CEL / MPE		
Barium	/1	0.0200 mg/L	1.38	mg/L
Dilution Factor : 1 Prepared using EPA 3015 or Analyzed using EPA 6010A QC Batch No : 12458	n 14-DEC-1995 b on 21-DEC-1995	y CEL by JLW		
80100	/1	0.100 mg/L	0.688	mg/1
Dilution Factor : 1 Prepared using EPA 3015 o Analyzed using EPA 6010A QC Batch No : 12458	n 14-DEC-1995 b on 21-DEC-1995	Y CEL by JLW		



REPORT NUMBER : D95-11986-3

TOTAL METALS		
TEST REQUESTED	DETECTION LIMIT	RESULTS
Calcium /1	0.10 mg/L	446 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-199 Analyzed using EPA 601DA on 21-DEC-19 QC Batch No : 12458	95 by CEL 995 by JLW	
Cacimium /1	0.01 mg/L	< 0.01 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-19 Analyzed using EPA 6010A on 21-DEC-1 QC Batch No : 12458	95 by CEL 995 by JLW	
Cobait /1	0.0200 mg/L	0.0208 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-19 Analyzed using EPA 6010A on 21-DEC-1 QC Batch No : 12458	95 by CEL 995 by JLW	
Chromium /1	0.0200 mg/L	0.0318 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-19 Analyzed using EPA 6010A on 21-DEC-1 QC Batch No : 12458	995 by CEL 1995 by JLW	
Copper /	1 0.0100 mg/L	0.0588 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-14 Analyzed using EPA 6010A on 21-DEC- QC Batch No : 12458	995 by CEL 1995 by JLW	
Iron /	1 0.100 mg/L	19.7 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-1 Analyzed using EPA 6010A on 15-DEC- QC Batch No : 12436	995 by CEL 1995 by JLW	
Mercury /	1 0.0002 mg/L	< 0.0002 mg/t
Dilution Factor : 1 Prepared using EPA 7470 on 12-DEC-1 Analyzed using EPA 7470 on 14-DEC-1 QC Batch No : HG-2052	1995 by CEL 1995 by CGJ	

PAGE 2



REPORT NUMBER : D95-11986-3

TOTAL METALS	<u> </u>	
TEST REQUESTED	DETECTION LIMIT	RESULTS
Potassium /1	1.0 mg/L	21.4 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-199 Analyzed using EPA 6010A on 21-DEC-19 GC Batch No : 12458	5 by CEL 95 by JLW	·····
Magnesium /1	0.100 mg/L	68.8 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-199 Analyzed using EPA 6010A on 21-DEC-19 QC Batch No : 12458	5 by CEL 195 by JLW	
Manganese /1	0.0100 mg/L	0.391 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-199 Analyzed using EPA 6010A on 21-DEC-19 QC Batch No : 12458	25 by CEL 295 by JLW	
Molybdenum /1	0.030 mg/L	< 0.030 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-19 Analyzed using EPA 6010A on 21-DEC-19 QC Batch No : 12458	95 by CEL 995 by JLW	
Sodium /1	1.0 mg/L	317 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 20-DEC-19 Analyzed using EPA 6010A on 22-DEC-1 QC Batch No : 12458	95 by CEL 995 by JLW	
Nickel /1	0.0200 mg/L	0.0208 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-19 Analyzed using EPA 6010A on 21-DEC-1 QC Batch No : 12458	995 by CEL 1995 by JLW	
Lead /1	1 0.003 mg/L	0.021 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-14 Analyzed using EPA 6010A on 22-DEC- QC Batch No : 12458	995 by CEL 1995 by JLW	

PAGE 3



PAGE 4

REPORT NUMBER : D95-11986-3

TOTAL METALS		DETECTION LIMIT		RESULTS
elenium	/1	0.010 mg/L		0.030 mg/L
Dilution Factor : 2 Prepared using EPA 3015 Anatyzed using EPA 7740 QC Batch No : 12436F	on 14-DEC-1995 by on 22-DEC-1995 by	CEL MPE		
ranium	/1	0.1 mg/L	<	0.1 mg/L
Dilution Factor : 1 Prepared using EPA 3015 Analyzed using EPA 6010 QC Batch No : 12458	on 20-DEC-1995 by A on 22-DEC-1995 by	CEL / JLW		
Linc	/1	0.0300 mg/L		0.185 mg/L
Dilution Factor : 1 Prepared using EPA 3015 Analyzed using EPA 6010 QC Batch No : 12458	on 14-DEC-1995 by A on 21-DEC-1995 b	CEL Y JLV		



1089 E. Collins Blvd. Richardson, TX 75081 Tel. 214-238-5591 Fax. 214-238-5592

DATE RECEIVED : 12-1	DEC-1995	REPORT NUMBER REPORT DATE	: D95-11986-3 : 29-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Mr. Damian F	79701	
CANDLE MATRIX	· Liquid		

SAMPLE MATRIX ID MARKS	:	TMW-6	_	The state
PROJECT PURCHASE ORDER NO DATE SAMPLED	:	MTO387.001 LTO #4295 8-DEC-1995		Eunice

MISCELLANEOUS ANALYSES				Γ		
TEST REQUESTED		DETECTION	LIMIT		RESULTS	
Bicarbonate	/1	1.0	mg/L CaCO3		225	mg/i CaCO3
Analyzed using SM 2320B on 18-DEC QC Batch No : 271100	-1995 by	P_F				
Carbonate (As CaCO3)	/1	1.0	mg/L CaCO3	<	1.0	mg/L CaCO3
Analyzed using SM 2320B on 18-DEC QC Batch No : 271100	-1995 by	P_F			<u> </u>	·
Chloride	/1	1.0	mg/L		700	mg/L
Dilution Factor : 1 Analyzed using EPA 9252 on 15-DEC QC Batch No : 520030	-1995 by	- P_F				
Cyanide, Total	/1	0.010	mg/l	<	0.010	mg/L
Dilution Factor : 1 Analyzed using EPA 9010 on 20-DEC QC Batch No : 640019A	-1995 by	/ KPP				
Total Dissolved Solids	/1	10.0	mg/L		1840	mg/L
Analyzed using EPA 160.1 on 14-01 QC Batch No : 614029A	EC-1995	by RJS				<u> </u>
Sulfate	/1	5.00	mg/L		212	mg/L
Dilution Factor : 5 Analyzed using EPA 9038 on 16-DE QC Batch No : 597041A	с-1995 Б	y RJS				



DATE RECEIVED : 12-3	DEC-1995	REPORT NUMBER : REPORT DATE :	D95-11986-4 29-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Mr. Damian R	79701	
PROJECT PURCHASE ORDER NO DATE SAMPLED ANALYSIS METHOD ANALYZED BY	: Trip Blanks : MTO387.001 T : LTO #4295 : 8-DEC-1995 : EPA 8020 /1 : VHT : 13-DEC-1995 : 1 : 1	Sexaco Eunice	

BTEX ANALYSIS		— — ——			
TEST REQUESTED	DETECTION LIMIT		RESULT	\$	
Benzene	1.0 µg/L		1.0	µg/L	
Toluene	1.0 #9/L	<	1.0	μg/L	
Ethyl benzene	1.0 µg/L	<	1.0	μg/L	
Xylenes	 1.0 μg/L	<	1.0	μg/L	
BTEX (total)			1.0	 μg/L	

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Bromofiluorobenzene	50.0 µg/L	99.0 X

Based upon Good Laboratory Practice, the result is rounded to the appropriate number of significant figures.



DATE RECEIVED : 12-3	DEC-1995	REPORT NUMBER : REPORT DATE :	D95-11986-5 29-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Mr. Damian F	79701	
PURCHASE ORDER NO DATE SAMPLED PREPARATION METHOD PREPARED BY PREPARED ON ANALYSIS METHOD ANALYZED BY	: TMW-5 : MTO387.001 7 : LTO #4295 : 8-DEC-1995 : EPA 3520B : CLT : 12-DEC-1995 : EPA 8310 /1 : JXA : 19-DEC-1995 : 1 : 11	Texaco Eunice	

EST REQUESTED	DETECTION LIMIT RESULTS				
cenaphthene	18.9	шg/L	<	18.9	μg/L
Acenaphthylene	10.5	μg/L	<	10.5	μg/L
Anthracene	6.93	μg/ί	<	6.93	μg/l
Benzo(a)anthracene	0.137	<u></u> ду,г	<	0.137	μg/L
Benzo(b)fluoranthene	0.189	 µg/L		0.189	µg∕L
Benzo(k)fluoranthene	0.179	μg/1	<	0,179	µg/L
Senzo(g,h,i)perylene	0,798	μ g/ L	<	0.798	μg/L
Benzo(a)pyrene	0.242	μg/L	<	0.242	μg/L
Chrysene	1.58	μg/L	<	1.58	μg/1
Dibenzo(a,h)anthracene	0.315	#g/L	<	0.315	μg/L
Fluoranthene	2.21	µg/L	<	2.21	μg/L
	2.21	μg/l	<	2.21	μg/1
Indeno(1,2,3-cd)pyrene	0.452	μg/ί		0,452	µg∕L
Naphthalene	10.5	 µg/L		10.5	μg/L



REPORT NUMBER : D95-11986-5 PA ANALYSIS METHOD : EPA 8310 /1

POLYNUCLEAR AROMATIC HYDROCARBONS		
TEST REQUESTED	DETECTION LIMIT	RESULTS
Phenanthrene	6.72 μg/L	< 6.72 µg/L
Pyrene	2.84 µg/L	< 2.84 μg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
1-Fluoronapthalene (SS)	100 µg/L	89.3 %

PAGE 2



DATE RECEIVED : 12-	DEC-1995	REPORT NUMBER : REPORT DATE :	D95-11986-5 29-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Mr. Damian R	9 Hwy. Suite 120	
PURCHASE ORDER NO DATE SAMPLED ANALYSIS METHOD ANALYZED BY	: TMW-5 : MTO387.001 T : LTO #4295 : 8-DEC-1995 : EPA 8020 /1 : VHT : 13-DEC-1995 : 1 : 1	Sexaco Eunice	

BTEX ANALYSIS		
TEST REQUESTED	DETECTION LIMIT	RESULTS
Benzene	1.0 μg/l	106 µg/L
Toluene	1.0 µg/L	16.1 µg/L
Ethyl benzene	1.0 µg/L	99.8 µg/L
Xylenes	1.0 µg/L	136 µg/l
BTEX (total)		358 µg/L #

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Bromofluorobenzene	50.0 µg/L	98.2 %

Based upon Good Laboratory Practice, the result is rounded to the appropriate number of significant figures.



DATE RECEIVED : 12-	DEC-1995 REPORT NUMBER : D95-11986 REPORT DATE : 29-DEC-19	-5 95
ADDRESS	: Geraghty & Miller, Inc. : 1030 Andrews Hwy. Suite 120 : Midland, TX 79701 : Mr. Damian Reed	
PURCHASE ORDER NO DATE SAMPLED PREPARATION METHOD PREPARED BY PREPARED ON ANALYSIS METHOD ANALYZED BY	: TMW-5 : MTO387.001 Texaco Eunice : LTO #4295 : 8-DEC-1995 : EPA 418.1 : MTR : 18-DEC-1995 : EPA 418.1 /1 : MTR : 18-DEC-1995 : 1 : 1	

TOTAL RECOVERABLE PETROLEUM HYDROCARBON	s	
TEST REQUESTED	DETECTION LIMIT	RESULTS
Total Petroleum Kydrocarbon	0.50 mg/L	1.70 mg/L



.

.

DATE RECEIVED : 12-	DEC-1995	REPORT NUMBER : REPORT DATE :	D95-11986-5 29-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Mr. Damian R	Hwy. Suite 120 79701	
SAMPLE MATRIX ID MARKS PROJECT PURCHASE ORDER NO DATE SAMPLED	: TMW-5 : MTO387.001 I : LTO #4295	Texaco Eunice	

TOTAL METALS			
TEST REQUESTED		DETECTION LIMIT	RESULTS
Silver	/1	0.002 mg/L	< 0.002 mg/L
Dilution Factor : 1 Prepared using EPA 3015 Analyzed using EPA 7761 QC Satch No : 12436F	on 14-DEC-1995 on 19-DEC-1995	by CEL by MPE	
Aluminum	/1	0.200 mg/L	7.76 mg/L
Dilution Factor : 1 Prepared using EPA 3015 Analyzed using EPA 6010 QC Batch No : 12458	on 14-DEC-1995 V on 21-DEC-199	by CEL 5 by JLW	
Arsenic	/1	0.0250 mg/L	0.0783 mg/L
Dilution Factor : 5 Prepared using EPA 3015 Analyzed using EPA 7060 QC Batch No : 12436F	on 14-DEC-1995 on 15-DEC-1995	by CEL by MPE	
Barium	/1	0.0200 mg/L	0.456 mg/L
Dilution Factor : 1 Prepared using EPA 3015 Analyzed using EPA 6010 QC Batch No : 12458	on 14-DEC-1995 A on 21-DEC-199	i by CEL 15 by JLW	
Baron	/1	0.100 mg/L	1.08 mg/L
Dilution Factor : 1 Prepared using EPA 3015 Analyzed using EPA 6010 QC Batch No : 12458	on 14-DEC-1995 A on 21-DEC-199	5 by CEL 25 by JLW	



REPORT NUMBER : D95-11986-5

TOTAL METALS		
TEST REQUESTED	DETECTION LIMIT	RESULTS
Calcium /1	0,10 mg/L	159 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-199 Analyzed using EPA 6010A on 29-DEC-19 QC Batch No : 12458	5 by CEL 95 by LSS	
Cadmium /1	0.01 mg/L	< 0.01 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-199 Analyzed using EPA 6010A on 21-DEC-19 QC Batch No : 12458	5 by CEL 95 by JLW	
Cobalt /1	0.0200 mg/L	< 0.0200 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-199 Analyzed using EPA 6010A on 21-DEC-19 QC Batch No : 12458	95 by CEL 195 by JLW	
Chromium /1	0.0200 mg/L	< 0.0200 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-199 Analyzed using EPA 6010A on 21-DEC-19 QC Batch No : 12458	95 by CEL 995 by JLW	
Copper /1	0.0100 mg/L	0.0372 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-19 Analyzed using EPA 6010A on 21-DEC-19 QC Batch No : 12458	95 by CEL 995 by JLW	
Iran /1	0.100 mg/L	10.2 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-19 Analyzed using EPA 6010A on 15-DEC-1 QC Satch No : 12436	95 by CEL 995 by JLW	
Mercury /1	0.0002 mg/L	< 0.0002 mg/L
Dilution Factor : 1 Prepared using EPA 7470 on 12-DEC-19 Analyzed using EPA 7470 on 14-DEC-19 QC Satch No : HG-2052	195 by CEL 195 by CGJ	

PAGE 2



REPORT NUMBER : D95-11986-5

TOTAL METALS		
TEST REQUESTED	DETECTION LIMIT	RESULTS
Potassium /1	1.0 mg/L	62.2 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-199 Analyzed using EPA 6010A on 29-DEC-19 QC Batch No : 12458	5 by CEL 95 by LSS	
Magnesium /1	0.100 mg/L	40.0 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-199 Analyzed using EPA 6010A on 21-DEC-19 QC Batch No : 12458	5 by CEL 95 by JLW	
Manganese /1	0.0100 mg/L	0.256 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-199 Analyzed using EPA 6010A on 21-DEC-19 QC Batch No : 12458	95 by CEL 195 by JLW	
Molybdenum /1	0.030 mg/L	0.066 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-199 Analyzed using EPA 6010A on 21-DEC-19 QC Batch No : 12458	25 by CEL 995 by JLW	
Sodium /1	20 mg/L	1130 mg/L
Dilution Factor : 20 Prepared using EPA 3015 on 20-DEC-199 Analyzed using EPA 6010A on 29-DEC-19 QC Batch No : 12458	95 by CEL 995 by JLW	
Nickel /1	0.0200 mg/L	< 0.0200 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-19 Analyzed using EPA 6010A on 21-DEC-19 QC Batch No : 12458	95 by CEL 995 by JLW	
Lead /1	0.050 mg/L	< 0.050 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 14-DEC-19 Analyzed using EPA 6010A on 21-DEC-1 QC Batch No : 12458	95 by CEL 995 by JtW	

PAGE 3



PAGE 4

REPORT NUMBER : D95-11986-5

TOTAL METALS				<u> </u>		
TEST REQUESTED		DETECTION	LIMIT		RESULTS	
Selenium	/1	0.005	mg/L	<	0.005	mg/L
Dilution Factor : 1 Prepared using EPA 3015 on Analyzed using EPA 7740 on GC Batch No : 12436F	14-DEC-1995 by 22-DEC-1995 by	CEL MPE				
Uranium	/1	0.1	mg/L		0.3	mg/L
Dilution Factor : 1 Prepared using EPA 3015 or Analyzed using EPA 6010A o QC Batch No : 12458	20-DEC-1995 by n 22-DEC-1995 by	CEL y JLW				
Zinc	/1	0.0300) mg/L		0.244	mg/1
Dilution Factor : 1 Prepared using EPA 3015 or Analyzed using EPA 6010A of QC Batch No : 12458	n 14-DEC-1995 by on 21-DEC-1995 b	CEL Y JLW				



DATE RECEIVED : 12-1	DEC-1995	REPORT NUMBER REPORT DATE	:	D95-11986-5 29-DEC-1995
SAMPLE SUBMITTED BY ADDRESS	: Geraghty & 1 : 1030 Andrews : Midland, TX	s Hwy. Suite 120)	
ATTENTION	: Mr. Damian	Reed		

SAMPLE MATRIX ID MARKS PROJECT PURCHASE ORDER NO DATE SAMPLED	::	TMW-5 MTO387.001 LTO #4295	Texaco	Eunice
---	----	----------------------------------	--------	--------

EST REQUESTED	· · ·	DETECTION	LIMIT		RESULT	s
licarbonate	/1	1.0	mg/L CaCO3		435	mg/l CaCO3
Analyzed using SM 2320B on 18 GC Batch No : 271100	3-DEC-1995 by I	P_F				
Carbonate (As CaCO3)	/1	1.0	mg/L CaCO3	<	1.0	mg/L CaCO3
Analyzed using SM 23208 on 18 QC Batch No : 271100	3-DEC-1995 by	P_F			<u></u>	
Chloride	/1	1.0	mg/L		1800	mg/L
Dilution Factor : 1 Analyzed using EPA 9252 on 1 QC Batch No : 520030	5-DEC-1995 by	P_F				
Cyanide, Total	/1	0.010	mg/L	<	0.010) mg/L
Dilution Factor : 1 Analyzed using EPA 9010 on 2 OC Batch No : 640019A	0-DEC-1995 by	KPP				
Total Dissolved Solids	/1	10.0	mg/l		3370	mg/L
Analyzed using EPA 160.1 on QC Batch No : 614029A	14-DEC-1995 by	RJS				
	/1	10.0	mg/L	1	195	mg/L



DATE RECEIVED : 12-	DEC-1995	REPORT NUMBER REPORT DATE	: D95-11986-6 : 29-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Mr. Damian F	Hwy. Suite 120 79701)
PROJECT PURCHASE ORDER NO DATE SAMPLED ANALYSIS METHOD ANALYZED BY	: Trip Blanks : MT0387.001 T : LTO #4295 : 8-DEC-1995 : EPA 8020 /1 : VHT : 13-DEC-1995 : 1 : 1	Texaco Eunice	

BTEX ANALYSIS				·	
TEST REQUESTED	DETECTION LIMIT		RESULT	s	
Benzene	1.0 µg/i	<	1.0	μg/L	
Toluene	1.0 µg/L	<	1.0	µg∕L	
Ethyl benzene	1.0 µg/L	<	1.0	μg/ L	
Xylenes	1.0 #9/L	<	1.0	µg∕L	_
BTEX (total)			1.0	 μg/ኒ	#

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Bromofluorobenzene	50.0 µg/L	97.7 %

Based upon Good Laboratory Practice, the result is rounded to the appropriate number of significant figures.



REPORT DATE : 29-DEC-1995

REPORT NUMBER : D95-11986

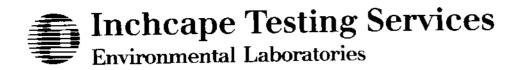
SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ATTENTION : Mr. Damian Reed PROJECT : MTO387.001 Texaco Eunice

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene
BATCH NO.	AB625-78	AB625-78	AB625-78	AB625-78	AB625-78
LCS LOT NO.	AB525-86	AB525-86	AB525-86	AB525-86	AB525-86
PREP METHOD	EPA 3520B	EPA 3520B	EPA 3520B	EPA 3520B	EPA 3520B
PREPARED BY	CLT	CLT	CLT	CLT	CLT
ANALYSIS METHOD	EPA 8310	EPA 8310	EPA 8310	EPA 8310	EPA 8310
ANALYZED BY	JXA	JXA	AXL	AXL	AXL
	μg/L	μg/L	μg/L	μg/L	μg/L
METHOD BLANK	< 18.0	< 23.0	< 18.0	< 2.10	< 6.40
SPIKE LEVEL	100	100	100	100	100
MS RESULT	79.9	65.8	58.9	64.7	61.8
MS RECOVERY %	79.9	65.8	58.9	64.7	61.8
MSD RESULT	88.7	72.0	64.4	70.2	66.8
MSD RECOVERY %	88.7	72.0	64.4	• 70.2	66.8
MS/MSD RPD %	10.4	9.00	8.92	8.15	7.78
BS RESULT	NA	NA	NA	NA	NA
BS RECOVERY %	NA	NA NA	NA	NA	NA
BSD RESULT	NA	NA	NA	NA	NA
BSD RECOVERY %		NA	NA	NA	NA
BS/8SD RPD %	NA	NA	NA	NA	NA
DUPLICATE RPD %	NA	NA	NA	NA	NA
LCS LEVEL	50.0	50.0	50.0	50.0	50.0
LCS RESULT	41.1	31.3	28.8	32.6	34.0
LCS RECOVERY %	82.2	62.6	57.6	65.2	68.0
SPIKE SAMPLE ID	11945-1	11945-1	11945-1	11945-1	11945-1
DUP SAMPLE 1D					

NA

Not applicable



REPORT DATE : 29-DEC-1995

REPORT NUMBER : D95-11986

SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ATTENTION : Mr. Damian Reed PROJECT : MTO387.001 Texaco Eunice

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Anthracene	Chrysene	Benzo(k)fluoranthene	Benzene	Ethylbenzene
BATCH NO.	AB625-78	AB625-78	AB625-78	34-121395	34-121395
LCS LOT NO.	A8525-86	AB525-86	A8525-86	AB214-70B	A9214-708
PREP METHOD	EPA 35208	EPA 3520B	EPA 3520B		
PREPARED BY	CLŤ	ÇLT	CLT	•••	
ANALYSIS METHOD	EPA 8310	EPA 8310	EPA 8310	EPA 8020	EPA 8020
ANALYZED BY	AXL	AXL	AXL	VKT	VHT
	µg/L	μg/L	µg/L	μg/L	μg/L
METHOD BLANK	< 6.60	< 1.50	< 0.17	< 1.00	< 1.00
SPIKE LEVEL	100	100	100	500	500
MS RESULT	40.3	31.1	27.4	521	524
MS RECOVERY %	40.3	31.1	27.4	104	105
MSD RESULT	42.6	35.1	32.0	538	541
MSD RECOVERY %	42.6	. 35.1	32.0	108	108
MS/MSD RPD %	5.55	12.1	15.5	3.21	3,19
BS RESULT	NA	NA	NA	NA	NA
BS RECOVERY %	NA	NA	NA	NA	NA
BSD RESULT	NA	NA	NA	NA	NA
BSD RECOVERY %	NA	NA	NA	NA	NA
BS/BSD RPD %	NA	NA	NA	NA	NA
DUPLICATE RPD %	NA	NA	NA	NA	NA
LCS LEVEL	50.0	50.0	50.0	50.0	50.0
LCS RESULT	21.8	29.1	25.8	51.0	51.8
LCS RECOVERY %	43.6	58.2	51.6	102	104
SPIKE SAMPLE ID	11945-1	11945-1	11945-1	11986-2	11986-2
DUP SAMPLE ID					

ħΑ

Not applicable



REPORT DATE : 29-DEC-1995

REPORT NUMBER : D95-11986

SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ATTENTION : Mr. Damian Reed PROJECT : MTO387.001 Texaco Eunice

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Zînc	Silver	Arsenic	Barium	Cadmium
BATCH NO.	12458	12435	12435	12435	12435
LCS LOT ND.	591009,591130	591009,590814	591009,590814	591009,590814	591009,590814
PREP METHOD	EPA 3015	EPA 1311/3015	EPA 1311/3015	EPA 1311/3015	EPA 1311/3015
PREPARED BY	CEL	CÉL	CEL	CEL	CEL
ANALYSIS METHOD	EPA 6010A				
ANALYZED BY	JLW	JLW	JLW	JLW	JL₩
	μg/L	mg/L	mg/L	mg/L	mg/L
METHOD BLANK	< 10.0	< 0.01	< 0.10	< 1.00	< 0.02
SPIKE LEVEL	1000	0.100	5.00	10.0	1.00
MS RESULT	1130	0.0980	4.78	11.4	0.965
MS RECOVERY %	113	98.0	95.6	101	96.5
MSD RESULT	1190	0.0990	4.88	11.5	0.985
MSD RECOVERY %	119	99.0	97.6	102	98.5
MS/MSD RPD %	5.17	1.02	2.07	0.98	2.05
BS RESULT	NA	NA	NA	NA	NA
BS RECOVERY %	NA	NA	NA	NA	NA
BSD RESULT	NA	NA	NA	NA	NA
BSD RECOVERY %	NA	NA	NA	NA	NA
BS/BSD RPD %	NA	NA	NA	NA	NA
DUPLICATE RPD %	NC	NC	NC	0.80	0.00
LCS LEVEL	1000	0.100	5.00	10.0	1.00
LCS RESULT	1050	0.105	4.96	10.8	1.00
LCS RECOVERY %	105	105	99.2	108	100
SPIKE SAMPLE ID	12047-3	11968-5	11968-5	11968-5	11968-5
DUP SAMPLE 1D	12047-3	11968-5	11968-5	11968-5	11968-5

N

NA NC Not applicable Not calculable



REPORT DATE : 29-DEC-1995

REPORT NUMBER : D95-11986

SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ATTENTION : Mr. Damian Reed PROJECT : MTO387.001 Texaco Eunice

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Chromium	Mercury	Lead	Selenium	Alkalinity
BATCH NO.	12435	HG-2058	12435	12435	271100
LCS LOT NO.	591009,590814	AB300-22A	591009,590814	591009,590814	9968
PREP METHOD	EPA 1311/3015	EPA 1311/7470	EPA 1311/3015	EPA 1311/3015	
PREPARED BY	CEL	A_0	CEL	CEL	
ANALYSIS METHOD	EPA 6010A	EPA 7470	EPA 6010A	EPA 6010A	SM 2320B
ANALYZED BY	JLW	Cel	JL₩	JLW	P_F
		mg/L	mg/L	mg/L	mg/L
METHOD BLANK	< 0.02	< 0.001	< 0.05	< 0.40	< 1.00
SPIKE LEVEL	1.00	0.00100	1.00	5.00	458
MS RESULT	0.985	0.00110	1.02	4.90	725
MS RECOVERY %	98.5	98.8	102	98.0	104
MSD RESULT	1.00	0.00100	1.03	4.84	730
MSD RECOVERY X	100	88.8	103	- 96.8	105
MS/MSD RPD %	1.91	10.7	0.98	1.23	1.05
BS RESULT	NA	NA	NA	NA	NA
BS RECOVERY %	NA	NA	NA	NA	NA
BSD RESULT	NA NA	NA	NA	NA	NA
BSD RECOVERY %	NA	NA	NA	NA	NA
BS/BSD RPD %	NA	NA	NA	NA	NA
DUPLICATE RPD %	NC	NC	NC	NC	0.00
LCS LEVEL	1.00	0,00100	1.00	5.00	125
LCS RESULT	1.00	0.00106	0.964	4.86	125
LCS RECOVERY %	100	106	96.4	97.2	100
SPIKE SAMPLE ID	11968-5	11941-6	11968-5	11968-5	11945-1
DUP SAMPLE ID	11968-5	11941-6	11968-5	11968-5	11945-1

NA NC Not applicable Not calculable



REPORT DATE : 29-DEC-1995 REPOR

REPORT NUMBER : D95-11986

SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ATTENTION : Mr. Damian Reed PROJECT : MTO387.001 Texaco Eunice

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Chloride	Cyanide, Reactive	Cyanide, Total	PH	Cyanide, Reactive
BATCH NO.	520030	635010A	640019A	633014	635010A/635010B
LCS LOT NO.	9968	AB 106072A	ERA 9963	9968	106072A
PREP METHOD					
PREPARED BY					
ANALYSIS METHOD	EPA 9252	EPA 9010	EPA 9010	EPA 9040/45	7.3 SW846
ANALYZED BY	P_F	КРР	КРР	P_F	КРР
UNITS	mg/L	mg/Kg	mg/L		mg/L
METHOD BLANK	< 1.00	< 0.10	< 0.01		< 0.10
SPIKE LEVEL	1050		1.00		1000
MS RESULT	1050	NA	1.01	NA	NA
MS RECOVERY %	99.5	NA	101	NA	NA
MSD RESULT	1070	NA	1.05	NA	NA
MSD RECOVERY %	101	NA	105	NA	NA
MS/MSD RPD %	1.90	NA	3.88	NA	NA
BS RESULT	NA	NA	NA	NA	NA
BS RECOVERY %	NA	NA	NA	NA	NA
BSD RESULT	NA	NA	NA	NA	NA
BSD RECOVERY %	NA	NA	NA	NA	NA
BS/BSD RPD %	NA	NA	NA	NA	NA
DUPLICATE RPD %	0.00	NA	NC	1.20	NA
LCS LEVEL	128	2.00	0.147	9.09	2.00
LCS RESULT	115	1.60	0.120	9.10	1.60
LCS RECOVERY %	89.8	80.0	81.6	100	80.0
SPIKE SAMPLE ID	11941-5		11986-5		
DUP SAMPLE ID	11941-5		11986-5	11986-9	

Not a

NA NC Not applicable Not calculable



REPORT DATE : 29-DEC-1995

REPORT NUMBER : D95-11986

SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ATTENTION : Mr. Damian Reed PROJECT : MTO387.001 Texaco Eunice

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Sulfide, Reactive	Total Dissolved Solids	Sulfate	Sulfide, Reactive
BATCH NO.	635010A/635010B	614029A	597041A	6350108
LCS LOT NO.		9968	9968	AB119082B
PREP METHOD				
PREPARED BY				
ANALYSIS METHOD	7.3 SW846	EPA 160.1	EPA 9038	EPA 9030
ANALYZED BY	КРР	RJS	RJŠ	КРР
UNITS	mg/L	mg/L	mg/L	mg/Kg
METHOD BLANK	< 10.0	< 10.0	< 1.00	< 10.0
SPIKE LEVEL			400	
MS RESULT	NA	NA	592	NA
MS RECOVERY %	NA	NA	99.3	NA
MSD RESULT	NA	NÅ	588	NA
MSD RECOVERY %	NA	NA	98.3	NA
MS/MSD RPD %	NA	NA	1.01	NA
BS RESULT	NA	NA	NA	NA
BS RECOVERY %	NA	NA	NA	NA
BSD RESULT	NA	NA	NA	NĂ
BSD RECOVERY %	NA	NA	NA	NA
BS/BSD RPD %	NA	NA	NA	NA
DUPLICATE RPD %	NA	1.06	1.52	NA
LCS LEVEL	720	714	105	720
LCS RESULT	108	731	105	108
LCS RECOVERY %	15.0	102	100	15.0
SPIKE SAMPLE ID			11986-5	•
DUP SAMPLE ID		11986-1	11986-7	

NA

Not applicable

nchcape Testing Service			<u></u>			/ / / Lab use only
Report to:	1 Invoice		ANAL		1 100	/ / / Due Date:
Company: Doraddy Mul	Company:			UESTED	Amid	
Address: 1020 Chrolie M2	HWY Address:	·	·	/	1 3 1	Temp. of coolers
Ste 120, Malar		,,	-	/	//+///	when received (C°):
Contact: Joe Reed	Contact:			/	///////////////////////////////////////	
Phone: 915 6991	381_ Phone:					Custody Seal N(Y)
Fax: 915 6991	978 PO/SO #:		-	ସ _		Intact NCY
				S S	ฐมี / / /	Screened For Radioactivity
Sampler's Name	Sampler's Signature	. 00	1		931///	
Tara D'Connel	1 Sula O Con	nels		$\widetilde{\mathcal{A}}$		
Proj. No. Project Name	e ind	No./Type of Contain	ners K	PWA (20)	·\$\$ { } / / /	
	Eunice		P/0 40	15/27	Major Morea) Metals + rais	Lab Sample ID (Lab Use Only)
Matrix Date Time m a Identifyi	ing Marks of Sample(s)	VOA A/G 250 1 Li. ml				Lab Sample ID (Lab Use Only)
W 12/8 - X TMW.	<u> </u>	34	2/	111		1198(0-5
		2				6
	BLANKS		1 + +	— · I — I —		
	<u></u>					
		_ <u></u>	_]			
		_}	· 			
		_, + ·=	─── ──	<u></u>		
			ł		╶┟╴┟╸┞╺╴┼╺╴	
┠──┼╍─┼──┼──┼──┼──						
Turn around time [] Priority 1 or Standa	ard [] Priority 2 or 50% [] Priority 3 or 100%		*	BTEX (602/80	020), TPH (418.1 or 8015), VOLAT	ILES (624/B240), IGNITABILITY, TOTAL LEAD (6010)
Relinquished by: (Signature)	Date: Time: Received by (Si		Date:	Time:	Remarks T includur	g: calcium, magnesium, sodium, ide, sulfate, bicarbonate,
		<u>2000</u>	72 2 51 Date:	Time:	carbonate, TDS	
Relinguished by: (Signature)	Date: Time: Received by: (S	ignature)		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	AS, Ba, Cr, Cr,	CN, Pb, Hg, Se, Ag, U, Cu, Fe, Cq, Mo, N:
	Date: Time: Received by: (S	ignature)	Date:	Time		
Relinquished by: (Signature)					and conditions contained in th	Inchcape cannot accept verbal changes.
Malrix WW Wastewater	W - Water S - Soil SD - Solid L - Liq A/G - Amber / Or Glass 1 Liter 250 m	uid A - Air Bag I - Glass wide mouth		rcoal tube astic or other	SL Sludge O - Oil	Please Fax written changes to 214-238-5592
Container VOA - 40 ml vial		·····	<u> </u>		····•	
OFFICE USE ONLY						

Incheane Testing Services Environmental Laboratories (1989 East Collins Blvd., #100 Richardson, TX 75081 (214) 258 5591 CHAIN OF CUSTODY RECORD

Matrix Date Time m a 111 m 111 m 1986-3 W 178 X TMW-6 3 4 2 1 1986-3 W 178 X TMW-6 3 4 2 1 1986-3 W 1 TRIP BLANKS 3 4 2 1 1986-3 W 1 1 1 1 1 1 1986-3 W 1 1 1 1 1 1 1 1986-3 W 1 <t< th=""><th></th><th>Environmental Laboratorics - 40</th><th>989 East Collins Blvd</th><th>., #400 Richardson</th><th>, TX 75081 (214) 258 5593</th><th>CHAIN OF CUSTODY RECOR</th></t<>		Environmental Laboratorics - 40	989 East Collins Blvd	., #400 Richardson	, TX 75081 (214) 258 5593	CHAIN OF CUSTODY RECOR
Turn around time It Priority 1 or Standard Time: Remarks + Including: colcium, magnesium, sodiul Relinquished by: (Signature) Date: Time: Received by: (Signature) Date: Time: Remarks + Including: colcium, magnesium, sodiul Relinquished by: (Signature) Date: Time: Received by: (Signature) Date: Time: Remarks + Including: colcium, magnesium, sodiul Relinquished by: (Signature) Date: Time: Time: Corborate, TOS Relinquished by: (Signature) Date: Time: Time: Corborate, TOS	Report to:Company: Jeng of the MullerAddress: 10300 manual floorAddress: 10300 manual floorAddress: 10300 manual floorContact: Dec ReadPhone: 915 699 138Fax: 915 699 138Fax: 915 699 195Sampler's NameTara O'ConneuProject NameTara O'ConneuMuller floorAddressesGGIdentifying floorNo.Project NameMuller floorMuller floorAddressesConneuMuller floorAddresses <td< th=""><th>Invoice Company: Address: Contact: Phone: PO/SO #: Sampler's Signature</th><th>No /Type of Container VOA A/G 250 Pr 111. mJ</th><th>Analysis Requested</th><th>alst tymid</th><th>Lab use only Due Date: Temp. of coolers when received (C°): 2 3 4 5 Custody Seal N Intact N Screened For Radioactivity Lab Sample ID (Lab Use Only)</th></td<>	Invoice Company: Address: Contact: Phone: PO/SO #: Sampler's Signature	No /Type of Container VOA A/G 250 Pr 111. mJ	Analysis Requested	alst tymid	Lab use only Due Date: Temp. of coolers when received (C°): 2 3 4 5 Custody Seal N Intact N Screened For Radioactivity Lab Sample ID (Lab Use Only)
Relinquished by: (Signature) Date: Time: Received by: (Signature) Date: Time: Min, B, A, B, Co, Mo, N, Clent's delivery of samples constitutes acceptance of Inchcape/ITS-Dalias term and conditions contained in the Price Schedule.	Relinquished by: (Signature) Da Relinquished by: (Signature) Da	ate: Time: Received by (Sign Received by (Sign Ate: Time: Received by (Sign	nature) D Nature) D	pte: Time: 045 10'.40 Pate: Time:	Remarks + Including potassium, chlor courborate, TDS #AS, Ba, Cd, Cr, Mn, Zn, Al, B. C client's delivery of schooles co	CN, Pb, Hg, Se, Ag, U, Cu, Fa CN, Pb, Hg, Se, Ag, U, Cu, Fa Co, Mo, Ni nstitules acceptance of Inchcape/ITS-Dallas terms

Inchcape Testing Services Envi					/ / / / Lab use only
Company:	Invoice t	1	ANALYSIS REQUESTED	\$	Due Date:
Address: 1030 Andrews Hwy Ste 120, Moland, TX	Address:				Temp. of coolers when received (C°):
Contact: Joe Reed	Contact:			+	S ² ³ ⁴ ⁵
Phone: Q15 699 (38)	Phone:			1711	Custody Seal NY
Fax: 915 699 1978	PO/SO #:	r.	26	A REAL	Intact NY
Sampler's Name	Sampler's Signature	00		9.3 M	For Radioactivity
Tara O'Connell	tud Com	ll) V 🕲 📋	$\langle X - 1 \rangle$	
Proj. No. Project Name MT0387.001 Texaco E	5	No./Type of Containers	ALL A	1. J. A. I. I.	
MT0387.00 Texaco +	unice		ALLA .		
Matnx' Date Time m a tdentifying Marks of	Sample(s)	VOA A/G 250 P/ 1 Lt ml		77_///	Lab Sample ID (Lab Use Only)
W 12/8 V TMW-D		34 6	21111		11986-1
W 12/8 V TAW-D W TRIP BL	inks	2			
	<u></u>				
	· · · · · · · · · · · · · · · · · · ·				
		╀ <u>──</u> ──┝───╵─┼───╵┃ [═]			
Turn around time Priority 1 or Standard [] Priority	20.00/2 (20.00/2	Priority 4 ERS +	+ BTEX (602/8		ILES (624/8240), IGNITABILITY, TOTAL LEAD (6010)
Relinquished by: (Signature) Date:	Time: Received by: (Sign	en -19	ate: Time:		: Calcium, magnesium, sodium, ride, sulfate, bicarbonaty
Relinquished by: (Signature) Date:	Time: Received by: (Sign		Pate: Time:	#AS, Ba, Cd, Fe, Mn, Zn, Al,	Gr. CN. Pb. Hg. Se, Ag. U.C. B. Co. Mo. N. Institutes acceptance of Inchcape/ITS-Dallas terms
Relinquished by: (Signature) Date:	Time: Received by: (Sign	ature) C	late: Time:	Client's delivery of samples co and conditions contained in th	
 Matrix WW - Wastewater W - Water Container VOA - 40 ml viał A/G - Amber 	S - Soil SD - Solid L - Liquid r / Or Glass 1 Liter 250 ml - 4	A - Air Bag Glass wide mouth	C - Charcoal lube P/O - Plastic or other	SL Sludge O - Oil	Inchcape cannot accept verbal changes. Please Fax written changes to 214-238-5592
OFFICE USE ONLY	· ·		OF	IGINAL	

Incheane Testing Services Environmental Laboratories 1089 East Collins Blvd., #100 Richardson, TX 75081 (214) 238-5591 CHAIN OF CUSTODY RECORD

INCHCAPE TESTING SERVICES

. . .

SAMPLE PRESERVATION INFORMATION SHEET

	U/1+ 2-12-4		JOB NU	IMBER	1198	, D	
	<u>2-12-4</u> 552	2	Client Nan	ne (ne	oshtu	<u> </u>	
	5)1	BATC			<u>~; ii</u>		
Sample No.	Container Type	Apparent Volume (mLs)	Initial pH* (20± 2°C)	Finai pH	Preservative Added	Filtration	Comments
114510-1	246		69	69	8		NP
119810-1	1P		Ϋ.Ο	J.D			
			12	12	31		inetals ·
	IAG		32	212	5/1		(N
- 1			62	12	411		TIPH
- 3	246		F .	9.1	8		NP
<u></u>	I P		1.2	1.2			
-3.	TI P		12	12	7.11		mitals
		RA	TOT B			<u> </u>	- 01/
-3	ING	TL	12	22	-11	ļ	ТРИ
-3			12	$\geq 2 $	5/1		CN
1 -5	21+6		80	Sec.C	8	l	NP
	TIP		$\left\{ \left\{ \right\} \right\}$	5.1			
- 5	11+(7		42	22	4		TIPH
-5			512	>12	14/1		(· / /
-5	IP		12	22	2/1		Thatals
- F	217(7		7.6	1.0	18	<u> </u>	NP
	<u></u>	T.ATT	CH C				
_ F]	IP	IL	51.6	7.0	8		NP
- 1		-+	22	12	2	<u> </u>	liletals
- 7	1AG				-11		
-1	11		312-	212	5/1		
							F 12-1245
							Pup 1013
pH Duplicate (maximur Sample No.	n difference	= 0.2):	69	$PRESERVA''$ $1 = Pre-pres$ $2 = H_2SO_4''$ $3 = HNO_3 to$	to pH<2	5 = Na 6 = Na 7 = 2 r	0H to pH>12 12S203 (0.008%) nL ZnOAc/NaOH to pH>12
pH LCS (pH = 7.0 ± 0. እአር)			1.0	4 = HCl to p	H<2 f-Custody indica	ates sample	 Preservative Required was filtered in the field oratory before preservation
Number:	nined in acc	ordance with E	 EPA methods 1	.50.1 / SW-846	9040 using a	sample ali	quot which has been adjusted to 20 \pm

1089 East Collins Blvd. • Richardson TX 75081 • (214) 238-5591 • Fax (214) 238-5592



ANALYTICAL REPORT

DATE RECEIVED	:	6-DEC-1995	REPORT NUMBER	:	D95-11796
			REPORT DATE	:	13-DEC-1995

SAMPLE SUBMITTED BY	;	Geraghty & Miller, Inc. 1030 Andrews Hwy. Suite 120
ADDRESS	:	1030 Andrews Hwy. Suite 120
		Midland, TX 79701
		Ms. Tara O'Connel
		MT0387.001 Texaco-Eunice
PURCHASE ORDER NO	:	LTO#4295

Included in this data package are the analytical results for the sample group which you have submitted to Inchcape Testing Services for analysis. These results are representative of the samples as received by the laboratory.

The information contained herein has undergone extensive review and is deemed accurate and complete. Sample analysis and quality control were performed in accordance with all applicable protocols. Any deviations from these protocols or observations of interest are detailed in an accompanying Case Narrative. Please refrain from reproducing this report except in its entirety.

If you have any questions regarding this report and its associated materials please call your Project Manager at (214) 238-5591.

We appreciate the opportunity to serve you and look forward to providing continued service in the future.

tin Jeffus

Martin Jef¥us General Manager



DATE RECEIVED : 6-D	EC-1995	REPORT NUMBER : REPORT DATE :	D95-11796-1 13-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Ms. Tara O'C	Hwy. Suite 120 79701	
SAMPLE MATRIX ID MARKS PROJECT PURCHASE ORDER NO DATE SAMPLED ANALYSIS METHOD ANALYZED BY ANALYZED ON DILUTION FACTOR METHOD FACTOR QC BATCH NO	: TMW-2-11-95 : MT0387.001 T : LTO#4295 : 28-NOV-1995 : EPA 8020 /1 : MKS : 8-DEC-1995 : 1 : 1	(50-52') exaco-Eunice	

BTEX ANALYSIS					
TEST REQUESTED	DETECTION LIMIT		RESULT	5	
Benzene	2.0 µg/Kg	<	2.0	µg/Kg	
Toluene	. 2.0 µg/Kg	<	2.0	μg/Kg	
Ethyl benzene	2.0 μg/Kg	<	2.0	µg∕Кg	_
Xylenes	2.0 μg/Kg	<	2.0	µg/Kg	_
BTEX (total)		<	2.0	µg/Kg	1

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SP1KE LEVEL	SPIKE RECOVERED
Bromofluorobenzene (SS)	50.0 µg/Kg	98.4 %

Based upon Good Laboratory Practice, the result is rounded to the appropriate number of significant figures.

.



DATE RECEIVED : 6-1	EC-1995 REPORT NUMBER : D95-11796-1 REPORT DATE : 13-DEC-1995
ADDRESS	: Geraghty & Miller, Inc. : 1030 Andrews Hwy. Suite 120 : Midland, TX 79701 : Ms. Tara O'Connel
PROJECT PURCHASE ORDER NO DATE SAMPLED PREPARATION METHOD PREPARED BY PREPARED ON ANALYSIS METHOD ANALYZED BY	: TMW-2-11-95 (50-52') : MT0387.001 Texaco-Eunice : LTO#4295 : 28-NOV-1995 : EPA 418.1 mod. : MTR : 12-DEC-1995 : EPA 418.1 mod. /1 : MTR : 12-DEC-1995 : 1

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS		· · · · · · · · · · · · · · · · · · ·
TEST REQUESTED	DETECTION LIMIT	RESULTS
Total Petroleum Hydrocarbon	10 mg/Kg	120 mg/Kg



DATE RECEIVED : 6-D	EC-1995	REPORT NUMBER : REPORT DATE :	D95-11796-1 13-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Ms. Tara O'C	Hwy. Suite 120 79701	
SAMPLE MATRIX ID MARKS PROJECT PURCHASE ORDER NO DATE SAMPLED	: TMW-2-11-95 : MT0387.001 T : LTO#4295	(50-52') exaco-Eunice	

TEST REQUESTED		DETECTION LIMIT	RESULTS
Total Solids	/1	0.01 %	92.2 %



DATE RECEIVED : 6-D	EC-1995	REPORT NUMBER REPORT DATE	: D95-11796-2 : 13-DEC-1995
ATTENTION	: 1030 Andrews : Midland, TX : Ms. Tara O'C	79701	
PROJECT PURCHASE ORDER NO DATE SAMPLED ANALYSIS METHOD ANALYZED BY	: TMW-2-11-95 : MT0387.001 T : LTO#4295 : 28-NOV-1995 : EPA 8020 /1 : S_S : 7-DEC-1995 : 50 : 1	(53-55) exaco-Eunice	

.

BTEX ANALYSIS			<u> </u>		·
TEST REQUESTED	DETECTIO	ON LIMIT	R	ESULTS	
Benzene	100	μg/Kg	< 10	0 µ9/Kg	
Toluene	100	<u>д</u> д/Кд	52	3 д9/Кд	
Ethyl benzene	100	<u> </u>	451	0 μg/Kg	
Xylenes	100	µg/Kg	1260)0 µg/Kg	
BTEX (total)	·		1760	μ <u>9</u> /Kg	#

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Bromofluorobenzene (SS)	50.0 µg/Kg	125 %

Based upon Good Laboratory Practice, the result is rounded to the appropriate number of significant figures.



DATE RECEIVED : 6-DEC-199	5 REPORT NUMBER : D95-11796-2 REPORT DATE : 13-DEC-1995
SAMPLE SUBMITTED BY : Gera ADDRESS : 1030 : Mid ATTENTION : Ms.	and, TX 79701
SAMPLE MATRIX : Soil ID MARKS : TMW PROJECT : MTO PURCHASE ORDER NO : LTO DATE SAMPLED : 28-J PREPARATION METHOD : EPA PREPARED BY : MTR PREPARED ON : 12-J ANALYSIS METHOD : EPA ANALYZED BY : MTR ANALYZED BY : MTR ANALYZED ON : 12- DILUTION FACTOR : 10 QC BATCH NO : AB5	-2-11-95 (53-55') 387.001 Texaco-Eunice \$4295 NOV-1995 418.1 mod. DEC-1995 418.1 mod. /1 DEC-1995

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS		
TEST REQUESTED	DETECTION LIMIT	RESULTS
Total Petroleum Hydrocarbon	100 mg/Kg	2700 mg/Kg



DATE RECEIVED : 6-DE	C-1995 REPORT NUMBER : D95-11796-2 REPORT DATE : 13-DEC-1995
ADDRESS :	Geraghty & Miller, Inc. 1030 Andrews Hwy. Suite 120 Midland, TX 79701 Ms. Tara O'Connel
SAMPLE MATRIX : ID MARKS : PROJECT : PURCHASE ORDER NO : DATE SAMPLED :	TMW-2-11-95 (53-55') MT0387.001 Texaco-Eunice LTO#4295

TEST REQUESTED		DETECTION LIMIT	RESULTS
Totai Solids	/1	0.01 %	93.8 %



DATE RECEIVED : 6-D	EC-1995	REPORT NUMBER REPORT DATE	: D95-11796-3 : 13-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Ms. Tara O'C	: Hwy. Suite 120 79701	
PROJECT PURCHASE ORDER NO DATE SAMPLED ANALYSIS METHOD ANALYZED BY	: TMW-3-11-95 : MT0387.001 T : LTO#4295 : 29-NOV-1995 : EPA 8020 /1 : MKS : 7-DEC-1995 : 1 : 1	(54-56') Pexaco-Eunice	

BTEX ANALYSIS					
TEST REQUESTED	DETECTION LIMIT	1	RESULT	S	
Benzene	2.0 µg/Kg		12.0	μg/Kg	
Toluene	2.0 µg/Kg	<	2.0	μg/Kg	
Ethyl benzene	2.0 µg/Kg		7.6	µg∕Kg	-
Xylenes	2.0 µg/Kg		8.5	μg/Kg	
BTEX (total)			28.1	μg/Kg	#

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Bromofluorobenzene (SS)	50.0 µg/Kg	96.3 %

Based upon Good Laboratory Practice, the result is rounded to the appropriate number of significant figures.



DATE RECEIVED : 6-DE	C-1995 R	EPORT NUMBER : REPORT DATE :	D95-11796-3 13-DEC-1995
	Geraghty & Mil 1030 Andrews H Midland, TX 79 Ms. Tara O'Cor	WY. Suite 120 9701	
PROJECT PURCHASE ORDER NO DATE SAMPLED PREPARATION METHOD PREPARED BY PREPARED ON ANALYSIS METHOD ANALYZED BY	: TMW-3-11-95 (5 : MT0387.001 Tex : LTO#4295 : 29-NOV-1995 : EPA 418.1 mod. : MTR : 12-DEC-1995 : EPA 418.1 mod. : MTR : 12-DEC-1995 : 1	kaco-Eunice	

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS				
TEST REQUESTED	DETECTION LIMIT		RESULTS	
Total Petroleum Hydrocarbon	10 mg/Kg	<	10 mg/Kg	



DATE RECEIVED : 6-DI	EC-1995	REPORT NUMBER : REPORT DATE :	D95-11796-3 13-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Ms. Tara O'C	Hwy. Suite 120 79701	
SAMPLE MATRIX ID MARKS PROJECT PURCHASE ORDER NO DATE SAMPLED	: TMW-3-11-95 : MT0387.001 T : LTO#4295	(54-56') exaco-Eunice	

EST REQUESTED		DETECTION LIMIT	RESULTS
Total Solids	. /1	0.01 %	84.5 %



DATE RECEIVED : 6-D	EC-1995	REPORT NUMBER REPORT DATE	: D95-11796-4 : 13-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Ms. Tara O'C	79701)
PROJECT PURCHASE ORDER NO DATE SAMPLED ANALYSIS METHOD ANALYZED BY	: TMW-5-11-95 : MT0387.001 T : LTO#4295 : 27-NOV-1995 : EPA 8020 /1 : S_S : 7-DEC-1995 : 100 : 1	(51-53') Nexaco-Eunice	

BTEX ANALYSIS	· <u> </u>				+c	
TEST REQUESTED	DÉTECTI	ON LIMIT		RESUL		
Benzene	200	μg/Kg		200	μg/Kg	
Toluene		μg/Kg		3340	. μg/Kg	
Ethyl benzene	200	μ <u>9</u> /Kg	-	14500	<u> </u>	
	200	μg/Kg		39100	<u></u> ду/Кg	
Xylenes BTEX (total)				56900	μg/Kg	, t

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Bromofluorobenzene (SS)	50.0 µg/Kg	117 %

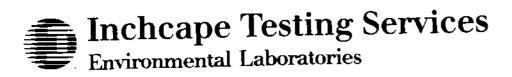
Based upon Good Laboratory Practice, the result is rounded to the appropriate number of significant figures.

•



DATE RECEIVED : 6-D	EC-1995	REPORT NUMBER : REPORT DATE :	D95-11796-4 13-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Ms. Tara O'C	79701	
PROJECT PURCHASE ORDER NO DATE SAMPLED PREPARATION METHOD PREPARED BY PREPARED ON ANALYSIS METHOD ANALYZED BY	: TMW-5-11-95 : MT0387.001 T : LTO#4295 : 27-NOV-1995 : EPA 418.1 mc : MTR : 12-DEC-1995 : EPA 418.1 mc : MTR : 12-DEC-1995 : 10	d.	

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS		
TEST REQUESTED	DETECTION LIMIT	RESULTS
Total Petroleum Hydrocarbon	100 mg/Kg	4000 mg/Kg



DATE RECEIVED : 6-DH	EC-1995	REPORT NUMBER : REPORT DATE :	D95-11796-4 13-DEC-1995
	: 1030 Andrew : Midland, TX	K 79701	
ATTENTION	: Ms. Tara O'	Connel	

SAMPLE MATRIX ID MARKS PROJECT PURCHASE ORDER NO DATE SAMPLED	::	TMW-5-11-95 (51-53') MT0387.001 Texaco-Eunice LTO#4295
---	----	--

EST REQUESTED		DETECTION LIMIT	RESULTS
Total Solids	/1	0.01 %	89.5 %



DATE RECEIVED : 6-D	EC-1995	REPORT NUMBER REPORT DATE	: D95-11796-5 : 13-DEC-1995
	: Geraghty & I : 1030 Andrews : Midland, TX : Ms. Tara O'	5 Hwy. Suite 120 79701	
PROJECT PURCHASE ORDER NO DATE SAMPLED ANALYSIS METHOD ANALYZED BY	: TMW-6-12-95 : MT0387.001 : LTO#4295 : 4-DEC-1995 : EPA 8020 /1 : S_S : 8-DEC-1995 : 100 : 1	Texaco-Eunice	

BTEX ANALYSIS	······	·			
TEST REQUESTED	DETECTION	LIMIT	RESUL	TS	
Benzene	200	µg∕Kg	1040	μg/Kg	
Toluene		μg/Kg	4810	μg/Kg	
Ethyl benzene	200	μg/Kg	4930	µg/Kg	
Xylenes	200	µg/Kg	11100	μg/Kg	
BTEX (total)			21900	μg/Kg	#

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Bromofluorobenzene (SS)	50.0 дд/Кд	88.7 %

Based upon Good Laboratory Practice, the result is rounded to the appropriate number of significant figures.



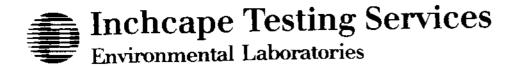
DATE RECEIVED : 6-DE	C-1995	REPORT NUMBER REPORT DATE	: D95-11796-5 : 13-DEC-1995
:	Geraghty & M 1030 Andrews Midland, TX Ms. Tara O'C	HWY. Suite 120 79701	
SAMPLE MATRIX : ID MARKS : PROJECT : PURCHASE ORDER NO : DATE SAMPLED : PREPARATION METHOD PREPARED BY PREPARED ON ANALYSIS METHOD ANALYZED BY ANALYZED BY DILUTION FACTOR QC BATCH NO	: TMW-6-12-95 : MT0387.001 T : LTO#4295 : 4-DEC-1995 : EPA 418.1 mc : MTR : 12-DEC-1995 : EPA 418.1 mc : MTR : 12-DEC-1995 : 10	exaco-Eunice d.	

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS		
TEST REQUESTED	DETECTION LIMIT	RESULTS
Total Petroleum Hydrocarbon	100 mg/Kg	330 mg/Kg



DATE RECEIVED : 6-D	EC-1995	REPORT NUMBER : REPORT DATE :	D95-11796-5 13-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Ms. Tara O'C	Hwy. Suite 120 79701	
SAMPLE MATRIX ID MARKS PROJECT PURCHASE ORDER NO DATE SAMPLED	: TMW-6-12-95 : MT0387.001 I : LTO#4295	(54-56') 'exaco-Eunice	

TEST REQUESTED		DETECTION LIMIT	RESULTS
Total Solids	/1	0.01 %	86.0 %



DATE RECEIVED : 6-D	EC-1995	REPORT NUMBER REPORT DATE	: D95-11796 : 13-DEC-19	-6 95
	: Geraghty & M : 1030 Andrews : Midland, TX : Ms. Tara O'C	Hwy. Suite 120 79701)	
SAMPLE MATRIX ID MARKS PROJECT PURCHASE ORDER NO DATE SAMPLED ANALYSIS METHOD ANALYZED BY ANALYZED ON DILUTION FACTOR METHOD FACTOR QC BATCH NO	: TMW-6-12-95 : MT0387.001 T : LTO#4295 : 4-DEC-1995 : EPA 8020 /1 : MKS : 7-DEC-1995 : 5 : 1	(56-58') Yexaco-Eunice		

BTEX ANALYSIS		
TEST REQUESTED	DETECTION LIMIT	RESULTS
Benzene	10.0 µg/Kg	227 µg/Kg
Toluene	10.0 µg/Kg	10.2 µg/Kg
Ethyl benzene	10.0 µg/Kg	83.3 µg/Kg
Xylenes	10.0 µg/Kg	160 µg/Kg
BTEX (total)		481 µg/Kg #

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Bromofluorobenzene (SS)	50.0 µg/Kg	97.1 %

Based upon Good Laboratory Practice, the result is rounded to the appropriate number of significant figures.



DATE RECEIVED : 6-1)EC-1995	REPORT NUMBER : REPORT DATE :	D95-11796-6 13-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Ms. Tara O'C	79701	
PROJECT PURCHASE ORDER NO DATE SAMPLED PREPARATION METHOD PREPARED BY PREPARED ON ANALYSIS METHOD ANALYZED BY	: TMW-6-12-95 : MT0387.001 T : LTO#4295 : 4-DEC-1995 : EPA 418.1 mc : MTR : 12-DEC-1995 : EPA 418.1 mc : MTR : 12-DEC-1995 : 1	exaco-Eunice	

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS				
TEST REQUESTED	DETECTION LIMIT		RESULTS	<u> </u>
Total Petroleum Hydrocarbon	10 mg/Kg	<	10	mg/Kg



DATE RECEIVED : 6-DE	C-1995	REPORT NUMBER REPORT DATE	: D95-11796-6 : 13-DEC-1995
	Geraghty & M 1030 Andrews Midland, TX Ms. Tara O'C	Hwy. Suite 120 79701	D
SAMPLE MATRIX ID MARKS PROJECT PURCHASE ORDER NO DATE SAMPLED	: TMW-6-12-95 : MT0387.001 I : LTO#4295	(56-58') 'exaco-Eunice	

TEST REQUESTED		DETECTION LIMIT	RESULTS
Total Solids	/1	0.01 %	84.8 %



DATE RECEIVED : 6-DI	EC-1995	REPORT NUMBER : REPORT DATE :	D95-11796-7 13-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Ms. Tara O'C	; Hwy. Suite 120 79701	
SAMPLE MATRIX ID MARKS PROJECT PURCHASE ORDER NO DATE SAMPLED ANALYSIS METHOD ANALYZED BY ANALYZED ON DILUTION FACTOR METHOD FACTOR QC BATCH NO	: TMW-6-12-95 : MT0387.001 1 : LTO#4295 : 4-DEC-1995 : EPA 8020 /1 : MKS : 7-DEC-1995 : 5 : 1	(58-60') lexaco-Eunice	

BTEX ANALYSIS		
TEST REQUESTED	DETECTION LIMIT	RESULTS
Benzene	10.0 µg/Kg	42.5 μg/Kg
Toluene	10.0 µg/Kg	28.7 µg/Kg
Ethyl benzene	10.0 µg/Kg	47.9 μg/Kg
Xylenes	10.0 µg/Kg	125 µg/Kg
BTEX (total)		 244 μg/Kg #

QUALITY CONTROL DATA	· · · · · · · · · · · · · · · · · · ·	
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Bromofluorobenzene (SS)	50.0 µg/Kg	97.0 %



DATE RECEIVED : 6-D	EC-1995	REPORT NUMBER : REPORT DATE :	D95-11796-7 13-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Ms. Tara O'C	, Hwy. Suite 120 79701	
PROJECT PURCHASE ORDER NO DATE SAMPLED PREPARATION METHOD PREPARED BY PREPARED ON ANALYSIS METHOD ANALYZED BY	: TMW-6-12-95 : MT0387.001 T : LTO#4295 : 4-DEC-1995 : EPA 418.1 mc : MTR : 12-DEC-1995 : EPA 418.1 mc : MTR : 12-DEC-1995 : 1	Sexaco-Eunice	

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS	·				
TEST REQUESTED	DETECTIO	ON LIMIT		RESUL	TS
Total Petroleum Hydrocarbon	10	mg/Kg	<	10	mg/Kg



DATE RECEIVED : 6-D	EC-1995	REPORT NUMBER REPORT DATE	: D95-11796-7 : 13-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Ms. Tara O'C	1 Hwy. Suite 120 79701	
SAMPLE MATRIX ID MARKS PROJECT PURCHASE ORDER NO DATE SAMPLED	: TMW-6-12-95 : MT0387.001 T : LTO#4295	(58-60') exaco-Eunice	

TEST REQUESTED		DETECTION LIMIT	RESULTS
Total Solids	/1	0.01 %	86.9 %



DATE RECEIVED : 6-DE	C-1995	REPORT NUMBER : REPORT DATE :	D95-11796-8 13-DEC-1995
:	: Geraghty & M : 1030 Andrews : Midland, TX : Ms. Tara O'C	Hwy. Suite 120 79701	
SAMPLE MATRIX ID MARKS PROJECT PURCHASE ORDER NO DATE SAMPLED ANALYSIS METHOD ANALYZED BY ANALYZED ON DILUTION FACTOR METHOD FACTOR QC BATCH NO	: Method Blank : MT0387.001 T : LTO#4295 : 6-DEC-1995 : EPA 8020 /1 : MKS : 7-DEC-1995 : 1 : 1	exaco-Eunice	

BTEX ANALYSIS		. , .		. <u></u>	
TEST REQUESTED	DETECTION LIMIT		RESULT	s ·	
Benzene	2.0 μg/Kg	<	2,0	μg/Kg	
Toluene	2.0 µg/Kg	<	2.0	μg/Kg	
Ethyl benzene	2.0 µg/Kg	<	2.0	μg/Kg	
Xylenes	2.0 µg/Kg	<	2.0	µg∕Kg	
BTEX (total)		<	2.0	µg/Kg	#

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Bromofluorobenzene (SS)	50.0 µg/Kg	109 %

Based upon Good Laboratory Practice, the result is rounded to the appropriate number of significant figures.

.



DATE RECEIVED : 6-D	EC-1995	REPORT NUMBER : REPORT DATE :	D95-11796-8 13-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Ms. Tara O'C	79701	
PROJECT PURCHASE ORDER NO DATE SAMPLED ANALYSIS METHOD ANALYZED BY	: Method Blank : MT0387.001 T : LTO#4295 : 6-DEC-1995 : EPA 8020 /2 : S_S : 7-DEC-1995 : 1 : 1	t Texaco-Eunice	

TEST REQUESTED	DETECTION LIMIT		RESULTS		
Benzené	Z.0 #9/Kg	<	2.0 μg/Kg		
Toluene	2.0 µg/Kg	<	2.0 µg/Kg		
Ethyl benzene	2.0 µg/Kg	<	2.0 µg/Kg		
	2.0 µg/Kg	<	2.0 µg/Kg		
Xylenes			2.0 µg/Kg		

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Bromofluorobenzene (SS)	50.0 µg/Kg	100 %



REPORT DATE : 13-DEC-1995

REPORT NUMBER : D95-11796

SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ATTENTION : Ms. Tara O'Connel PROJECT : MT0387.001 Texaco-Eunice

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Benzene	Ethylbenzene	Benzene	Ethylbenzene
BATCH NO.	27-120795	27-120795	25-120795	25-120795
LCS LOT NO.	AB214-82A	AB214-82A	AB214-82A	AB214-82A
PREP METHOD	••-			
PREPARED BY				
ANALYSIS METHOD	EPA 8020	EPA 8020	EPA 8020	EPA 8020
ANALYZED BY	MKS	MKS	s_\$	S_\$
UNITS	μ g/Kg	μg/Kg	μg/Kg	µg/Kg
METHOD BLANK	< 2.00	< 2.00	< 2.00	< 2.00
SPIKE LEVEL	50.0	50.0	50.0	50.0
MS RESULT	42.1	46.9	56.0	52.8
MS RECOVERY %	84.2	93.8	112	106
MSD RESULT	41.4	44.5	57.4	55.2
MSD RECOVERY %	82.8	89.0	115	110
MS/MSD RPD %	1.68	5.25	2.47	4.44
BS RESULT	NA	NA	NA	NA
BS RECOVERY %	NA	NA	NA	NA
BSD RESULT	NA	NA	NA	NA
BSD RECOVERY %	NA	NA	NA	NA
BS/BSD RPD %	NA	NA	NA	NA
DUPLICATE RPD %	NA	NA	NA	NA
LCS LEVEL	50.0	50.0	50.0	50.0
LCS RESULT	44.3	49.5	57.1	56.6
LCS RECOVERY %	88.6	99.0	114	113
SPIKE SAMPLE ID	11777-1	11777-1	11777-1	11777-1
DUP SAMPLE ID				

Not applicable

NA



REPORT DATE : 13-DEC-1995

REPORT NUMBER : D95-11796

SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ATTENTION : Ms. Tara O'Connel PROJECT : MT0387.001 Texaco-Eunice

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Total Recoverable Hydrocarbons				
BATCH NO.	AB569-70				
<u> </u>					
LCS LOT NO.	AA345-888				
PREP METHOD	EPA 418.1 mod.				
PREPARED BY	MTR				
ANALYSIS METHOD	EPA 418.1 mod.				
ANALYZED BY	MTR				
UNITS	mg/Kg				
METHOD BLANK	< 10.0				
SPIKE LEVEL	100				
MS RESULT	103				
MS RECOVERY %	103				
MSD RESULT	107				
MSD RECOVERY %	107				
MS/MSD RPD %	3.81				
BS RESULT	102				
BS RECOVERY %	102				
BSD RESULT	104				
BSD RECOVERY %	104				
BS/BSD RPD %	1.94				
DUPLICATE RPD %	NA				
LCS LEVEL	100				
LCS RESULT	SEE_B\$				
LCS RECOVERY %	SEE_BS				
SPIKE SAMPLE ID	11796-3				
DUP SAMPLE ID					

SEE_BS NA LCS and LCS Duplicate reported as BS and BSD.

Not applicable

Environmental Services	Laboratory Task Order No		CUSTODY RECORD	Page
Project Number MT0387_00	2)	SAMPLE BOT	TLE / CONTAINER DESCRIPTION	
Project Normal Internation Project Location Texaco-E2nt Laboratory InchCape/ND Sampler(s)/Alfiliation T.O'Cor Maraghty Date/Time	ice DC			
SAMPLE IDENTITY Code Sampled				TOTAL
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	3 2 2 5 3 5 3			
				p. of Bottles/
Sample Code: L = Liquid; S = S Relinquished by	Solid; A = Air Organization: Organization:	fty Miller	Date 12/5_195 Time	Containers Seal Intact? Yes No N/A
Relinquished by:	Organization:		Date <u>1</u> Time Date <u>1</u> Time	Seal Intact? Yes No N/A
Special Instructions/Remarks:				
Delivery Method: In Per	son 🗆 Common Carrier	SPECIEY	Lab Courier	ersprofex

Inchcape Testing Services Environmental Laboratories 1089 E. Collins Blvd. Richardson, TX 75081 Tel. 214-238-5591 Fax. 214-238-5592

ANALYTICAL REPORT

DATE RECEIVED		8-DEC-1995	REPORT NUMBER	:	D95-11892
DATE RECEIVED	•	0 210 1990	REPORT DATE	:	16-DEC-1995

SAMPLE SUBMITTED BY ADDRESS	:	1030 Andrews Hwy.	Inc. Suite 120
ATTENTION	:	Midland, TX 79701 Mr. Damian Reed MTO387.001 Texaco	

Included in this data package are the analytical results for the sample group which you have submitted to Inchcape Testing Services for analysis. These results are representative of the samples as received by the laboratory.

The information contained herein has undergone extensive review and is deemed accurate and complete. Sample analysis and quality control were performed in accordance with all applicable protocols. Any deviations from these protocols or observations of interest are detailed in an accompanying Case Narrative. Please refrain from reproducing this report except in its entirety.

If you have any questions regarding this report and its associated materials please call your Project Manager at (214) 238-5591.

We appreciate the opportunity to serve you and look forward to providing continued service in the future.

Martin Jeffus

Martin Jeffus General Manager



DATE RECEIVED : 8-D	EC-1995	REPORT NUMBER : REPORT DATE :	D95-11892-1 16-DEC+1995
	: 1030 Andrews : Midland, TX : Mr. Damian R	79701	
ID MARKS PROJECT DATE SAMPLED ANALYSIS METHOD ANALYZED BY	: TMW-1-12-95(: MTO387.001 T : 6-DEC-1995 : EPA 8020 /1 : S_S : 12-DEC-1995 : 1 : 1	11-13') exaco Eunice	

BTEX ANALYSIS	DETECTION LIMIT		RESULTS			
Benzené	Z.0 µg/Kg	<	2.0	μg/Kg		
Toluene	2.0 µg/Kg	<	2.0	µg∕Кg	_	
Ethyl benzene	2.0 µg/Kg	<	2.0	μg/Kg		
Xylenes	2.0 µg/Kg	<	2.0	<u>#</u> g/Кg		
BTEX (total)		<	2.0	µg/Kg	#	

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SP1KE LEVEL	SPIKE RECOVERED
Bromofluorobenzene (SS)	50.0 µg/Kg	96.9 %



DATE RECEIVED : 8-D	EC-1995	REPORT NUMBER : REPORT DATE :	D95-11892-1 16-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Mr. Damian F	79701	
PROJECT DATE SAMPLED PREPARATION METHOD PREPARED BY PREPARED ON ANALYSIS METHOD ANALYZED BY	: TMW-1-12-95 : MTO387.001 T : 6-DEC-1995 : EPA 418.1 mc : MTR : 12-DEC-1995 : EPA 418.1 mc : MTR : 13-DEC-1995 : 1	Texaco Eunice od.	

TOTAL RECOVERABLE PETROLEUM HYDROCARBON	S				
TEST REQUESTED	DETECTION LIMIT		RESULTS		TS
Total Petroleum Hydrocarbon	10	mg/Kg	<	10	mg/Kg



DATE RECEIVED : 8-DE	C-1995 REPORT REPO	NUMBER : DRT DATE :	D95-11892-1 16-DEC-1995
:	Geraghty & Miller, 1030 Andrews Hwy. 5 Midland, TX 79701 Mr. Damian Reed	Inc. Suite 120	
SAMPLE MATRIX : ID MARKS : PROJECT : DATE SAMPLED :	TMW-1-12-95(11-13' MTO387.001 Texaco) Eunice	

TEST REQUESTED		DETECTION LIMIT	RESULTS
Total Solids	/1	0.01 %	93.0 %



DATE	RECEIVED	:	8-DEC-1995
------	----------	---	------------

REPORT NUMBER	:	D95-11892-2
REPORT DATE	:	16-DEC-1995

ADDRESS	: :	Geraghty & Miller, Inc. 1030 Andrews Hwy. Suite 120 Midland, TX 79701 Mr. Damian Reed
SAMPLE MATRIX ID MARKS PROJECT DATE SAMPLED ANALYSIS METHOD ANALYZED BY ANALYZED ON DILUTION FACTOR METHOD FACTOR QC BATCH NO		TMW-1-12-95(50-52') MTO387.001 Texaco Eunice 6-DEC-1995 EPA 8020 /1 S_S 11-DEC-1995 1 1

BTEX ANALYSIS					
TEST REQUESTED	DETECTION LIMIT		RESULT	'S	
Benzene	2.0 μg/Kg	<	2.0	µg∕Kg	
Toluene	2.0 µg/Kg	<	2.0	μg/Kg	
Ethyl benzene	2.0 µg/Kg	<	2.0	μg/Kg	_
Xylenes	2,0 µg/Kg	<	2.0	μg/Kg	
BTEX (total)		<	2,0	μg/Kg	#

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Bromofluorobenzene (SS)	50.0 µg/Kg	98.6 %



DATE RECEIVED : 8-DH	EC-1995	REPORT NUMBER : REPORT DATE :	D95-11892-2 16-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Mr. Damian R	79701	
PROJECT DATE SAMPLED PREPARATION METHOD PREPARED BY PREPARED ON ANALYSIS METHOD ANALYZED BY	: TMW-1-12-95(: MTO387.001 T : 6-DEC-1995 : EPA 418.1 mc : MTR : 12-DEC-1995 : EPA 418.1 mc : MTR : 13-DEC-1995 : 1	exaco Eunice od.	

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS			
TEST REQUESTED	DETECTION LIMIT		RESULTS
Total Petroleum Hydrocarbon	10 mg/Kg	<	10 mg/Kg



DATE RECEIVED : 8-DEC-1995 SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ADDRESS : 1030 Andrews Hwy. Suite 120 : Midland, TX 79701 ATTENTION : Mr. Damian Reed SAMPLE MATRIX : Soil ID MARKS : TMW-1-12-95(50-52') PROJECT : MTO387.001 Texaco Eunice DATE SAMPLED : 6-DEC-1995

.

TEST REQUESTED		DETECTION LIMIT	RESULTS
Total Solids	/1	0.01 %	93.1 %



DATE RECEIVED : 8-D	EC-1995	REPORT NUMBER : REPORT DATE :	D95-11892-3 16-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Mr. Damian R	79701	
PROJECT DATE SAMPLED ANALYSIS METHOD ANALYZED BY	: TMW-6-12-95(: MTO387.001 T : 4-DEC-1995 : EPA 8020 /1 : S S : 11-DEC-1995 : 1 : 1	10-15') Yexaco Eunice	

TEST REQUESTED	DETECTION LIMIT		RESULTS
	2.0 µg/Kg	<	2.0 µg/Kg
foluene	2.0 µg/Kg	<	2.0 µg/Kg
Ethyl benzene	2.0 μg/Kg	<	2.0 µg/Kg
	2.0 µg/Kg		2.0 #g/Kg
Xylenes			2.0 µg/Kg

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Bromofluorobenzene (SS)	50.0 µg/Kg	99.3 %



DATE RECEIVED : 8-D	EC-1995	REPORT NUMBER : REPORT DATE :	D95-11892-3 16-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Mr. Damian R	79701	
PROJECT DATE SAMPLED PREPARATION METHOD PREPARED BY PREPARED ON ANALYSIS METHOD ANALYZED BY	: TMW-6-12-95 : MTO387.001 1 : 4-DEC-1995 : EPA 418.1 mc : MTR : 12-DEC-1995 : EPA 418.1 mc : MTR : 13-DEC-1995 : 1	od.	

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS				
TEST REQUESTED	DETECTION LIMIT		RESUL	T\$
	10 mg/Kg	<	10	mg/Kg
Total Petroleum Hydrocarbon				



.

DATE RECEIVED : 8-DE	C-1995 REPORT NUM REPORT D	BER : D95-11892-3 ATE : 16-DEC-1995
ADDRESS :	Geraghty & Miller, Inc. 1030 Andrews Hwy. Suite Midland, TX 79701 Mr. Damian Reed	120
SAMPLE MATRIX : ID MARKS : PROJECT : DATE SAMPLED :	TMW-6-12-95(10-15) MTO387.001 Texaco Eunic	:e

 MISCELLANEOUS ANALYSES

 TEST REQUESTED
 DETECTION LIMIT
 RESULTS

 Total Solids
 /1
 0.01 %
 90.3 %

 Analyzed using ASTM D2216 mod. on 15-DEC-1995 by RRP QC Batch No : 643067B
 90.3 %
 1



DATE RECEIVED : 8-D	EC-1995	REPORT NUMBER REPORT DATE	: D95-11892-4 : 16-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Mr. Damian R	Hwy. Suite 120 79701	
PROJECT DATE SAMPLED ANALYSIS METHOD ANALYZED BY	: Method Blank : MT0387.001 T : 8-DEC-1995 : EPA 8020 /1 : S_S : 11-DEC-1995 : 1 : 1	exaco Eunice	

TEST REQUESTED	DETECTION LIMIT		RESULTS
Benzene	2.0 µg/Kg		2.0 µg/Kg
Toluene	2.0 µg/Kg	<	2.0 µg/Kg
Ethyl benzene	2.0 µg/Kg	<	2.0 µg/Kg
Xylenes	2.0 µg/Kg	<	2.0 µg/Kg
BTEX (total)	· · · · · · · · · · · · · · · · · · ·	<	2.0 µg/Kg

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Bromofiuorobenzene (55)	50.0 дg/Kg	97.4 %



REPORT DATE : 16-DEC-1995

REPORT NUMBER : D95-11892

SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ATTENTION : Mr. Damian Reed PROJECT : MTO387.001 Texaco Eunice

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Benzene	Ethylbenzene	Total Recoverable Hydrocarbons
BATCH NO.	25-121195	25-121195	AB569-70
LCS LOT NO.	A8214-82A	AB214-82A	AA345-888
PREP METHOD			EPA 418.1 mod.
PREPARED BY			MTR
ANALYSIS METHOD	EPA 8020	EPA 8020	EPA 418.1 mod.
ANALYZED BY	s_s	s_\$	MTR
UNITS	μg/Kg	μg/Kg	mg/Kg
METHOD BLANK	< 2.00	< 2.00	< 10.0
SPIKE LEVEL	50.0	50.0	100
MS RESULT	55.9	54.1	103
MS RECOVERY %	112	108	103
MSD RESULT	55.3	53.3	107
MSD RECOVERY %	111	107	107
MS/MSD RPD %	1.08	1.49	3.81
BS RESULT	NA	NA	102
BS RECOVERY %	NA	NA	102
BSD RESULT	NA	NA	104
BSD RECOVERY %	NA	NA	104
BS/BSD RPD %	NA	NA	1.94
DUPLICATE RPD %	NA	NA	NA
LCS LEVEL	50.0	50.0	100
LCS RESULT	50_0	49.7	SEE_BS
LCS RECOVERY %	100	99.4	SEE_BS
SPIKE SAMPLE ID	11892-2	11892-2	11796-3
DUP SAMPLE ID			

NA

Not applicable LCS and LCS Duplicate reported as BS and BSD.

SEE_BS

1 - Trating Sarvices Favi	ronmental Laboratorics - 1089 East Col ¹¹¹ Blvd	., #100 Richardson, TX 75081 (214) 238-5591	CHAIN OF CUSTORY RECC
Report to: Company: Geragnty 4 Miller Address: 1030 Andrews Hun Ste 120 Midland, TX Contact: Doe Reed Phone: 915 699 1381 Fax: 915 699 1978 Sampler's Name	Company:		Lab L nily Due Date: Temp. of coolers when received (C ^o): 3 2 3 4 5 Custody Seal N / Intact N Screened For Radioactivity
Proj. No. Project Name	No /Type of Containers		
Malnx Date Time m a	Sample(s) VOA A/G 250 P/		Lab Sample ID (Lab Use Onl
Q12/6 VTMW-1-12	$\frac{2-95(11-13)}{2-95(50-52')} = \frac{2}{3}$		
S 124 V TMW-G-1	2-95(10-15) 3		MB -4
	2 or 50% (Priority 3 or 100% Priority 4 ERS *	* BTEX (602/20/20) 5PH (418 Dar 8015), VOLAT	ILES (624/8240), IGNITABILITY, TOTAL LEAD (601
Turn around time [] Priority For Standard, () Priority Relinquished by: (Signature) Date: Relinquished by: (Signature) Date:	Time: Received by: (Signature) 2030 Ollun Time: Received by: (Signature)	Jale. Time.	Distitutes acceptance of inchcape/ITS-Dallas term re Price Schedule.
Marrix WW - Wastewater W - Water	S - Soil SD - Solid L - Liquid A - Air Bag	C - Charcoal lube SL - Sludge O - Oil P/O - Plastic or other	Inchcape cannot accept verbal chang Please Fax written changes to

ł

Inchcape Testing Services Environmental Laboratories 1089 E. Collins Blvd. Richardson, TX 75081 Tel. 214-238-5591 Fax. 214-238-5592

ANALYTICAL REPORT

		0 000.1005	REPORT NUMBER	:	D95-11945
DATE RECEIVED	:	9-DEC-1995	REPORT DATE	:	29-DEC-1995

SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ADDRESS : 1030 Andrews Hwy. Suite 120 : Midland, TX 79701 ATTENTION : Ms. Tara O'Connel PROJECT : MTO387.001 Texaco-Eunice PURCHASE ORDER NO : LTO #4295

Included in this data package are the analytical results for the sample group which you have submitted to Inchcape Testing Services for analysis. These results are representative of the samples as received by the laboratory.

The information contained herein has undergone extensive review and is deemed accurate and complete. Sample analysis and quality control were performed in accordance with all applicable protocols. Any deviations from these protocols or observations of interest are detailed in an accompanying Case Narrative. Please refrain from reproducing this report except in its entirety.

If you have any questions regarding this report and its associated materials please call your Project Manager at (214) 238-5591.

We appreciate the opportunity to serve you and look forward to providing continued service in the future.

Martin **y**effus General Manager



DATE RECEIVED : 9-DEC	2-1995	REPORT NUMBER : REPORT DATE :	D95 29-
:	Geraghty & M: 1030 Andrews Midland, TX ' Ms. Tara O'Ca	79701	
SAMPLE MATRIX : ID MARKS : PROJECT : PURCHASE ORDER NO : DATE SAMPLED : PREPARATION METHOD : PREPARED BY : PREPARED ON : ANALYSIS METHOD : ANALYZED BY : ANALYZED ON : DILUTION FACTOR : QC BATCH NO :	TWM-3-11-95 MTO387.001 T LTO #4295 7-DEC-1995 EPA 3520B VHC 12-DEC-1995 EPA 8310 /1 JXA 19-DEC-1995 1 10	exaco-Eunice	

	DETECTION LIMIT		RESULTS
Acenaphthene	18.0 µg/L	<	18.0 #g/L
Acenaphthylene	 10.0 μg/L	<	10.0 µg/L
Anthracene	6.60 µg/L		6.60 #g/L
Benzo(a)anthracene	0.130 µg/L		0.130 µg/L
Benzo(b)fluoranthene	0.180 µg/L	<	0.180 #g/L
Benzo(k)fluoranthene	0.170 µg/L	<	0.170 #g/L
Senzo(g,h,i)perylene	0.760 µg/L		0.760 #g/L
Benzo(a)pyrene	0.230 µg/L	<	0.230 µg/L
Chrysene	1.50 µg/L		1.50 µg/L
Dibenzo(a,h)anthracene	0.300 µg/L	<	0.300 µg/L
Fluoranthene	2.10 µg/L	<	2.10 µg/L
Fluorene	2.10 µg/L		2.10 #g/L
·····	0.430 µg/L	<	0.430 µg/l
Indeno(1,2,3-cd)pyrene Naphthalene	10.0 µg/L		10.0 #9/L

REPORT NUMBER : D95-11945-1 -DEC-1995



PAGE 2

REPORT NUMBER : D95-11945-1 ANALYSIS METHOD : EPA 8310 /1

REQUESTED	DETECTION LIMIT		RESULTS	
	6.40 дд/L	<	6.40 µg/L	
anthrene	2.70 µg/L		2.70 µg/	

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
1-fluoronapthalene (SS)	100 µg/L	58.6 %



DATE RECEIVED : 9-DE	C-1995	REPORT NUMBER REPORT DATE	: D95-11945-1 : 29-DEC-1995
	Geraghty & M 1030 Andrews Midland, TX Ms. Tara O'C	79701)
PROJECT PURCHASE ORDER NO DATE SAMPLED ANALYSIS METHOD ANALYZED BY	: TWM-3-11-95 : MTO387.001 T : LTO #4295 : 7-DEC-1995 : EPA 8020 /1 : VHT : 12-DEC-1995 : 1 : 1	exaco-Eunice	

TEX ANALYSIS	DETECTION LIMIT	RESULTS
TEST REQUESTED		
Benzene	1.0 µg/L	48.3 µg/L
foluene	1.0 μg/L	< 1.0 µg/L
·	 1.0 μg/L	18.3 µg/L
Ethyl benzene	1.0 μg/L	4.5 μg/L
Xylenes		71.1 μg/L 3

	······	
QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Bromofluorobenzene	50.0 µg/L	94.4 %



DATE RECEIVED : 9-DH	EC-1995	REPORT NUMBER REPORT DATE	: D95-11945-1 : 29-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Ms. Tara O'C	Hwy. Suite 120 79701	,
PROJECT PURCHASE ORDER NO DATE SAMPLED PREPARATION METHOD PREPARED BY PREPARED ON ANALYSIS METHOD ANALYZED BY	: TWM-3-11-95 : MTO387.001 T : LTO #4295 : 7-DEC-1995 : EPA 418.1 : MTR : 14-DEC-1995 : EPA 418.1 /1 : MTR : 14-DEC-1995 : 1 : 1		

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS		
TEST REQUESTED	DETECTION LIMIT	RESULTS
Total Petroleum Hydrocarbon	0.50 mg/L	1.90 mg/L



DATE SAMPLED : 7-DEC-1995

1089 E. Collins Blvd. Richardson, TX 75081 Tei. 214-238-5591 Fax. 214-238-5592

DATE RECEIVED : 9-D	EC-1995	REPORT NUMBER REPORT DATE	: D95-11945-1 : 29-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Ms. Tara O'C	79701	
SAMPLE MATRIX ID MARKS PROJECT PURCHASE ORDER NO	: TWM-3-11-95 : MTO387.001 7	exaco-Eunice	

TOTAL METALS RESULTS DETECTION LIMIT TEST REQUESTED 0.002 mg/l < 0.002 mg/L 11 Silver Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-1995 by CEL Analyzed using EPA 7761 on 14-DEC-1995 by MPE QC Batch No : 12413F 7.26 mg/L 0.200 mg/L /1 Aluminum Dilution Factor : 1 Prepared using EPA 3015 on 27-DEC-1995 by A_0 Analyzed using EPA 6010A on 28-DEC-1995 by LSS QC Batch No : 12583 0.0293 mg/L 0.0050 mg/L /1 Arsenic Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-1995 by CEL Analyzed using EPA 7060 on 12-DEC-1995 by AH QC Batch No : 12413F 1.14 mg/L 0.0200 mg/L /1 Barium Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-1995 by CEL Analyzed using EPA 6010A on 12-DEC-1995 by JLW QC Batch No : 12413 0.751 mg/L /1 0.100 mg/L Boron Dilution Factor : 1 Prepared using EPA 3015 on 27-DEC-1995 by A_0 Analyzed using EPA 6010A on 28-DEC-1995 by JLW QC Batch No : 12583

Inchcape Testing Services
Environmental Laboratories

1089 Richar Tel. 21 Fax. 214-_

REPORT NUMBER : D95-11945-1

TOTAL METALS		
TEST REQUESTED	DETECTION LIMIT	RESULTS
Caicium /1	0.10 mg/L	255 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-199 Analyzed using EPA 6010A on 12-DEC-19 QC Batch No : 12413	15 by CEL 195 by JLW	
Cadmium /1	0.01 mg/L	< 0.01 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-195 Analyzed using EPA 6010A on 12-DEC-19 QC Batch No : 12413	95 by CEL 195 by JL¥	
Cobalt /1	0.0200 mg/L	< 0.0200 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 27-DEC-199 Analyzed using EPA 6010A on 28-DEC-19 QC Batch No : 12583	25 by A_0 295 by LSS	
Chromium /1	0.0200 mg/L	0.0251 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-19 Analyzed using EPA 6010A on 12-DEC-19 QC Batch No : 12413	95 by CEL 995 by JLW	
Copper /1	0.0100 mg/L	0.0303 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-19 Analyzed using EPA 6010A on 12-DEC-1 QC Batch No : 12413	95 by CEL 995 by JLW	
Iron /1	0.100 mg/L	17.0 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-19 Analyzed using EPA 6010A on 12-DEC-1 QC Batch No : 12413	95 by CEL 995 by JLW	
Nercury /1	0.0002 mg/L	0.0002 mg/t
Dilution Factor : 1 Prepared using EPA 7470 on 12-DEC-19 Analyzed using EPA 7470 on 14-DEC-19 QC Batch No : HG-2052	95 by CEL 95 by CGJ	

PAGE 2

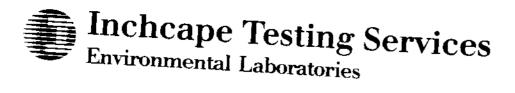
Inchcape Testing Services Environmental Laboratories 1089 E. Collins Blvd. Richardson, TX 75081 Tel. 214-238-5591 Fax. 214-238-5592

REPORT NUMBER : D95-11945-1

TOTAL METALS		
TEST REQUESTED	DETECTION LIMIT	RESULTS
Potassium /1	1.0 mg/L	22.3 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-199 Analyzed using EPA 6010A on 12-DEC-19 QC Batch No : 12413	5 by CEL 95 by JLW	
Magnesium /1	0.100 mg/L	46.3 mg/l
Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-199 Analyzed using EPA 6010A on 12-DEC-19 QC Batch No : 12413	25 by CEL 1995 by JLW	
Manganese /1	0.0100 mg/L	0.364 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-19 Analyzed using EPA 6010A on 12-DEC-19 GC Batch No : 12413	95 by CEL 995 by JLW	
Molybdenum /1	0.030 mg/L	< 0.030 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 27-DEC-19 Analyzed using EPA 6010A on 28-DEC-1 QC Batch No : 12583	95 by A_0 995 by LSS	
Sodium /1	10 mg/L	709 mg/L
Dilution Factor : 10 Prepared using EPA 3015 on 11-DEC-19 Analyzed using EPA 6010A on 12-DEC-1 GC 8atch No : 12413	95 by CEL 995 by LSS	
Nickel /1	0.0200 mg/L	< 0.0200 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 27-DEC-19 Analyzed using EPA 6010A on 28-DEC-1 QC Satch No : 12583	295 by A_0 1995 by LSS	
Lead /	0.100 mg/L	< 0.100 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 27-DEC-19 Analyzed using EPA 6010A on 28-DEC- QC Batch No : 12583	995 by A_O 1995 by JLW	

PAGE 3

٦



REPORT NUMBER : D95-11945-1

TEST REQUESTED				
Selenium		DETECTION LIMIT		RESULTS
Dilution Factor : 2	/1	0.010 mg/L		0.016 mg/L
Prepared using EPA 3015 on 11-DI Analyzed using EPA 7740 on 12-DI GC Batch No : 12413F	EC-1995 by CEL EC-1995 by AK			
anium	/1			
Dilution Factor : 1		0.1 mg/L	<	0.1 mg/L
Prenared using the second				
Prepared using EPA 3015 on 27-DE Analyzed using EPA 6010A on 28-D GC Batch No : 12583	C-1995 by A_D EC-1995 by JLk			
Analyzed using EPA 3015 on 27-DE Analyzed using EPA 6010A on 28-D QC Batch No : 12583	C-1995 by A D EC-1995 by JLk	0.0300 mg/L		



DATE RECEIVED : 9-D	EC-1995	REPORT NUMBER : REPORT DATE :	D95-11945-1 29-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Ms. Tara O'C	, Hwy. Suite 120 79701	
SAMPLE MATRIX ID MARKS PROJECT	: TWM-3-11-95 : MTO387.001 1	Yexaco-Eunice	

PURCHASE ORDER NO : LTO #4295 DATE SAMPLED : 7-DEC-1995

TEST REQUESTED		DETECTION	LIMIT		RESULT	S
Bicarbonate	/1	1.0	mg/L CaCO3		250	mg/L CaCO3
Analyzed using SM 23208 o QC Batch No : 271100	n 18-DEC-1995 by I	·_F				
Carbonate (As CaCO3)	/1	1.0	mg∕L CaCO3	<	1.0	mg/L CaCO3
Analyzed using SM 2320B o QC Batch No : 271100	n 18-DEC-1995 by	²_ [₣]				
Chloride	/1	1.0	mg/L		685	mg/L
Dilution Factor : 1						
Analyzed using EPA 9252 o QC Batch No : 520030	n 15-DEC-1995 by	P_F				
Analyzed using EPA 9252 o QC Batch No : 520030	0n 15-DEC-1995 by /1	P_F 0.010	mg/L	<	0.010	mg/L
Analyzed using EPA 9252 o QC Batch No : 520030	/1	0.010	mg/L	<	0.010	mg/L
Analyzed using EPA 9252 o QC Batch No : 520030 Cyanide, Total Dilution Factor : 1 Analyzed using EPA 9010 o	/1	0.010	mg/L mg/L	<	0.010	mg/L mg/L
Analyzed using EPA 9252 o QC Batch No : 520030 Cyanide, Total Dilution Factor : 1 Analyzed using EPA 9010 o QC Batch No : 640016A	/1 on 18-DEC-1995 by /1	0.010 KPP 10.0		<		



DATE RECEIVED : 9-D	EC-1995	REPORT NUMBER : REPORT DATE :	D95-11945-2 29-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Ms. Tara O'C	79701	
PROJECT PURCHASE ORDER NO DATE SAMPLED ANALYSIS METHOD ANALYZED BY	: Trip Blank : MT0387.001 7 : LTO #4295 : 7-DEC-1995 : EPA 8020 /1 : VHT : 12-DEC-1995 : 1 : 1	Texaco-Eunice	

BTEX ANALYSIS			RESULTS	•	
TEST REQUESTED	DETECTION LIMIT		REGULIS	3	_
Benzene	1.0 µg/L	<	1.0	µg/L	
Toluene	1.0 µg/L	<	1.0	µg/L	
Ethyl benzene	1.0 µg/L	<	1.0	µg∕L	
Xylenes	1.0 µg/L	<	1.0	μg/l	
BTEX (total)			1.0	<u></u> д/L	

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Sromofluorobenzene	50.0 µg/L	98.6 %

Based upon Good Laboratory Practice, the result is rounded to the appropriate number of significant figures.

.



DATE RECEIVED : 9-D	EC-1995	REPORT NUMBER : REPORT DATE :	D95-11945-3 29-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Ms. Tara O'C	79701	
PROJECT PURCHASE ORDER NO DATE SAMPLED PREPARATION METHOD PREPARED BY PREPARED ON ANALYSIS METHOD ANALYZED BY	: TMW-2-11-95 : MTO387.001 T : LTO #4295 : 7-DEC-1995 : EPA 3520B : VHC : 12-DEC-1995 : EPA 8310 /1 : JXA : 19-DEC-1995 : 1 : 10	exaco-Eunice	

	DETECTION LIMIT		RESULTS	
Acenaphthene	18.0 µg/L	<	18.0 µg/L	
Acenaphthylene	10.0 µg/L	<	10.0 µg/L	
Anthracene	6.60 µg/L	<	6.60 µg/L	
genzo(a)anthracene	0.130 µg/L		0.380 µg/L	
Benzo(b)fluoranthene	0.180 µg/L	<	0.180 µg/L	
Benzo(k)fluoranthene	0.170 µg/L	<	0.170 #g/L	
Benzo(g,h,i)perylene	0.760 µg/L	<	0.760 µg/L	
Benzo(a)pyrene	0.230 µg/L	<	0.230 µg/l	
Chrysene	1.50 µg/L	<	1.50 µg/L	
Dibenzo(a,h)anthracene	0.300 µg/L	<	0.300 #g/L	
Fluoranthene	2.10 µg/L		2.10 #9/L	
Fluorene	2.10 µg/L	<	2.10 µg/L	
Indeno(1,2,3-cd)pyrene	0.430 #g/L	<	0.430 µg/L	
Naphthalene	10.0 µg/L		10.0 µg/L	



PAGE 2

REPORT NUMBER : D95-11945-3 ANALYSIS METHOD : EPA 8310 /1

POLYNUCLEAR AROMATIC HYDROCARBONS			
TEST REQUESTED	DETECTION LIMIT		RESULTS
Phenanthrene	6.40 µg/L	<	6.40 µg/L
Pyrene	2.70 µg/L		 2.70 μg/L

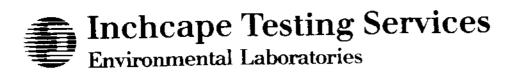
QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
1-Fluoronapthalene (SS)	100 µg/L	85.4 %



DATE RECEIVED : 9-D	EC-1995	REPORT NUMBER REPORT DATE	: D95-11945-3 : 29-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Ms. Tara O'C	79701)
PROJECT PURCHASE ORDER NO DATE SAMPLED ANALYSIS METHOD ANALYZED BY	: TMW-2-11-95 : MTO387.001 7 : LTO #4295 : 7-DEC-1995 : EPA 8020 /1 : VHT : 12-DEC-1995 : 1 : 1	Texaco-Eunice	

BTEX ANALYSIS		
TEST REQUESTED	DETECTION LIMIT	RESULTS
Benzene	1.0 µg/L	58.9 µg/L
Toluene	3.0 μg/L	24.6 #g/L
Ethyl benzene	1.0 #9/L	9.5 µg/L
Xylenes	1.0 µg/L	53.0 µg/L
BTEX (total)		146 µg/L #

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Bromofluorobenzene	50.0 µg/L	91.6 %



DATE RECEIVED : 9-D	EC-1995	REPORT NUMBER : REPORT DATE :	D95-11945-3 29-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Ms. Tara O'C	79701	
PROJECT PURCHASE ORDER NO DATE SAMPLED PREPARATION METHOD PREPARED BY PREPARED ON ANALYSIS METHOD ANALYZED BY	: TMW-2-11-95 : MTO387.001 T : LTO #4295 : 7-DEC-1995 : EPA 418.1 : MTR : 14-DEC-1995 : EPA 418.1 / : MTR : 14-DEC-1995 : 1 : 1		

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS		
TEST REQUESTED	DETECTION LIMIT	RESULTS
Total Petroleum Hydrocarbon	0.50 mg/l	1.50 mg/L



DATE RECEIVED : 9-DEC	2-1995	REF	PORT NUMI REPORT DI	BER : ATE :	D95-11945-3 29-DEC-1995
SAMPLE SUBMITTED BY : ADDRESS : ATTENTION :	1030 A Midlar	narews Hwy nd, TX 797()1	120	
SAMPLE MATRIX : ID MARKS : PROJECT : PURCHASE ORDER NO : DATE SAMPLED :	TMW-2 MTO38 LTO #4	-11-95 7.001 Texad 4295	co-Eunic	e	
TOTAL METALS					
TEST REQUESTED		DETECTION	LIMIT		RESULTS
Silver	/1	0.002	mg/L	<	0.002 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on Analyzed using EPA 7761 on QC Batch No : 12413F	11-DEC-1999 14-DEC-1999	5 by CEL 5 by MPE			
Aluminum	/1	0.200	mg/L		4.59 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on	27-DEC-199	5 by A_0			

0.807 mg/L	H	5 on 11-DEC-1995 by C D on 12-DEC-1995 by A	Dilution Factor : 1 Prepared using EPA 301 Analyzed using EPA 706 QC Batch No : 12413F
0.807 mg/l			
	0.0200 mg/L	/1	ละเปฏ
	EL JLW	5 on 11-DEC-1995 by (OA on 12-DEC-1995 by	Dilution Factor : 1 Prepared using EPA 30 Analyzed using EPA 60 QC Batch No : 12413
0.670 mg/1	0.100 mg/L	/1	
_		5 on 27-DEC-1995 by a	Dilution Factor : 1 Prepared using EPA 30 Analyzed using EPA 60 QC Batch No : 12583



REPORT NUMBER : D95-11945-3

TOTAL METALS		
TEST REQUESTED	DETECTION LIMIT	RESULTS
Calcium /1	0.10 mg/L	210 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-1995 Analyzed using EPA 6010A on 12-DEC-199 QC Batch No : 12413	i by CEL 5 by JLW	
Çadmium /1	0.01 mg/L	< 0.01 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-199 Analyzed using EPA 6010A on 12-DEC-199 QC Batch No : 12413	5 by CEL 95 by JLW	
Cobait /1	0.0200 mg/L	< 0.0200 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 27-DEC-199 Analyzed using EPA 6010A on 28-DEC-199 QC Batch No : 12583	5 by A_0 95 by LSS	
Chromium /1	0.0200 mg/L	< 0.0200 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-199 Analyzed using EPA 6010A on 12-DEC-19 QC Batch No : 12413	5 by CEL 95 by JLW	
Copper /1	0.0100 mg/L	0.0384 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-199 Analyzed using EPA 6010A on 12-DEC-19 QC Batch No : 12413	25 by CEL 195 by JLW	
Iron /1	0.100 mg/L	8.63 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-199 Analyzed using EPA 6010A on 12-DEC-19 QC Batch No : 12413	95 by CEL 995 by JLW	
Mercury /1	0.0002 mg/L	< 0.0002 mg/L
Dilution Factor : 1 Prepared using EPA 7470 on 12-DEC-199 Analyzed using EPA 7470 on 14-DEC-199 QC Batch No : HG-2052	95 by CEL 95 by CGJ	

PAGE 2

٦



REPORT NUMBER : D95-11945-3

TOTAL METALS		
TEST REQUESTED	DETECTION LIMIT	RESULTS
Potassium /1	1.0 mg/L	21.1 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-199 Analyzed using EPA 6010A on 12-DEC-19 QC Batch No : 12413	5 by CEL 95 by JLW	
Magnesium /1	0,100 mg/L	58.0 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-199 Analyzed using EPA 6010A on 12-DEC-19 QC Batch No : 12413	25 by CEL 1995 by JLW	
Manganese /1	0.0100 mg/L	0.241 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-199 Analyzed using EPA 6010A on 12-DEC-19 QC Batch No : 12413	95 by CEL 995 by JLW	
Notybdenum /1	0.030 mg/L	< 0.030 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 27-DEC-19 Analyzed using EPA 6010A on 28-DEC-1 QC Batch No : 12583	95 by AWH 995 by LSS	
Sodium /1	10 mg/L	501 mg/L
Dilution Factor : 10 Prepared using EPA 3015 on 11-DEC-19 Analyzed using EPA 6010A on 12-DEC-1 DC Batch No : 12413	995 by CEL 995 by LSS	
Nickel /1	0.0200 mg/L	< 0.0200 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 27-DEC-19 Analyzed using EPA 6010A on 28-DEC-1 QC Batch No : 12583	795 by A_O 1995 by LSS	
Lead /	1 0.010 mg/L	< 0.010 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 27-DEC-19 Analyzed using EPA 6010A on 28-DEC- QC Satch No : 12583	995 by A_O 1995 by JLW	



PAGE 4

REPORT NUMBER : D95-11945-3

TOTAL METALS			<u> </u>	
TEST REQUESTED		DETECTION LIMIT		RESULTS
Selenium	/1	0.005 mg/L		0.009 mg/l
Dilution Factor : 1 Prepared using EPA 30 Analyzed using EPA 77 QC Batch No : 12413F	15 on 11-DEC-1995 by (40 on 12-DEC-1995 by /	CEL AH		
Uranium	/1	0.1 mg/L	<	0.1 mg/L
Dilution Factor : 1 Prepared using EPA 30 Analyzed using EPA 60 QC Batch No : 12583	115 on 27-DEC-1995 by . 110A on 28-DEC-1995 by	A_O JLW		
Zinc	/1	0.0300 mg/L		0.107 mg/L
Dilution Factor : 1 Prepared using EPA 30 Analyzed using EPA 60 QC Batch No : 12413	015 on 11-DEC-1995 by 010A on 12-DEC-1995 by	CEL LSS		



DATE RECEIVED : 9-D	EC-1995	REPORT NUMBER : REPORT DATE :	D95-11945-3 29-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Ms. Tara O'C	79701	
SAMPLE MATRIX ID MARKS PROJECT PURCHASE ORDER NO DATE SAMPLED	: TMW-2-11-95 : MTO387.001 7 : LTO #4295	Texaco-Eunice	

TEST REQUESTED	······	DE	TECTION	LIMIT		RESULTS	
Bicarbonate	/1		1.0	mg/l CaCO3		225	mg∕l CaCO3
Analyzed using SM 2320B on QC Batch No : 271100	18-DEC-1995	by P_F					
Carbonate (Às CaCO3)	/1		1.0	mg/L CaCO3	<	1.0	mg∕i CaCO3
Analyzed using SM 2320B on QC Batch No : 271100	18-DEC-1995	by P_F					
Chloride	/1		1.0	mg/L		545	mg/l
Dilution Factor : 1 Analyzed using EPA 9252 or QC Batch No : 520030	15-DEC-1995	by P_F					
Cyanide, Total	/1		0.010	mg/L	<	0.010	mg/L
Dilution Factor : 1 Analyzed using EPA 9010 or	18-DEC-1995	by КРР				<u></u>	
QC Batch No : 640016A						1450	mg∕L
QC Batch No : 640016A Total Dissolved Solids	/1		10.0	mg/L			
		5 by RJS	10.0	mg/L	<u> </u>		



DATE RECEIVED : 9-DE	C-1995	REPORT NUMBER : REPORT DATE :	D95-11945-4 29-DEC-1995
:	Geraghty & M 1030 Andrews Midland, TX Ms. Tara O'C	79701	
SAMPLE MATRIX : ID MARKS : PROJECT : PURCHASE ORDER NO : DATE SAMPLED : ANALYSIS METHOD : ANALYZED BY : ANALYZED ON : DILUTION FACTOR : METHOD FACTOR : QC BATCH NO :	Trip Blank MTO387.001 T LTO #4295 7-DEC-1995 EPA 8020 /1 VHT 12-DEC-1995 1 1	exaco-Eunice	

				RESULT	e	
TEST REQUESTED	DETECTION	,IMIT		RESULT		
Benzene	1.0	ւց/Լ	<	1.0	µg/L	
Toluene	1.0 ,	1 g/ L	<	1.0	µg/L	
Ethyl benzene	1.0	1g/L	<	1.0	μg/L	
Xylenes	1.0	1g/L	<	1.0	μg/ L	
BTEX (total)			<	1.0	μg/L	- 7

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Bromofluorobenzene	50.0 µg/L	99.3 %

Based upon Good Laboratory Practice, the result is rounded to the appropriate number of significant figures.

Inchcape Testing Services
Environmental Laboratories

٠

1089 E. Collins Blvd. Richardson, TX 75081 Tel. 214-238-5591 Fax. 214-238-5592

DATE RECEIVED : 9-D	EC-1995	REPORT NUMBER : REPORT DATE :	D95-11945-5 29-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Ms. Tara O'C	79701	
PROJECT PURCHASE ORDER NO DATE SAMPLED PREPARATION METHOD PREPARED BY PREPARED ON ANALYSIS METHOD ANALYZED BY	: TMW-1-12-95 : MTO387.001 T : LTO #4295 : 7-DEC-1995 : EPA 3520B : VHC : 12-DEC-1995 : EPA 8310 /1 : JXA : 19-DEC-1995 : 1 : 10	exaco-Eunice	

EST REQUESTED	DETECTION LIMIT		RESULTS
Acenaphthene	18.0 µg/L	<	18.0 µg/L
Acenaphthylene	10.0 µg/L	<	10.0 µg/L
Anthracene	6.60 µg/L		6.60 µg/l
Benzo(a)anthracene	0.130 µg/L	<	0.130 µg/L
Benzo(b)fluoranthene	0.180 µg/L	<	0.180 µg/L
Benzo(k)fluoranthene	0.170 µg/L		0.190 µg/L
Benzo(g,h,i)perylene	0.760 µg/L		0.760 µg/L
Benzo(a)pyrene	0.230 µg/L	<	0.230 µg/L
Chrysene	1.50 µg/L	<	1.50 #g/ L
Dibenzo(a,h)anthracene	0.300 µg/L	<	0.300 µg/L
Fluoranthene	2.10 μg/L	<	2.10 µg/L
Fluorene	2.10 μg/L	<	2.10 #g/L
Indeno(1,2,3-cd)pyrene	0.430 µg/L	<	0.430 µg/L
Naphthalene	10.0 µg/L	<	10.0 µg/L



REPORT NUMBER : D95-11945-5 ANALYSIS METHOD : EPA 8310 /1

 POLYNUCLEAR AROMATIC HYDROCARBONS

 TEST REQUESTED
 DETECTION LIMIT
 RESULTS

 Phenanthrene
 6.40 μg/L
 < 6.40 μg/L</td>
 9/L
 < 2.70 μg/L</td>
 2.70 μg/L
 <

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
1-Fluoronapthalene (SS)	100 µg/L	63.4 %

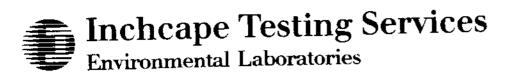


DATE RECEIVED : 9-DH	3C-1995	REPORT NUMBER REPORT DATE	: D95-11945-5 : 29-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Ms. Tara O'C	79701)
PROJECT PURCHASE ORDER NO DATE SAMPLED ANALYSIS METHOD ANALYZED BY	: TMW-1-12-95 : MTO387.001 T : LTO #4295 : 7-DEC-1995 : EPA 8020 /1 : VHT : 12-DEC-1995 : 1 : 1	lexaco-Eunice	·

TEX ANALYSIS	DETECTION LIMIT		RESULT	S	
TEST REQUESTED					_
	1.0 µg/L	<	1.0	μg/L	
	1.0 µg/L	<	1.0	µg/L	
	 1.0 μg/L	<	1.0	µg/l	
Ethyl benzene	1.0 µg/L		1.0	µg/L	
tylenes			1.0	μg/L	

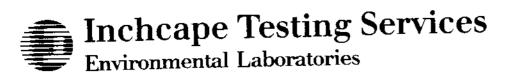
QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
	50.0 #g/L	98.7 %
Bromofluorobenzene		

Based upon Good Laboratory Practice, the result is rounded to the appropriate number of significant figures.



DATE RECEIVED : 9-DEC	2-1995	REPORT NUMBER REPORT DATE	::	D95-11945-5 29-DEC-1995
:	Geraghty & M 1030 Andrews Midland, TX Ms. Tara O'C	79701	5	
SAMPLE MATRIX : ID MARKS : PROJECT : PURCHASE ORDER NO : DATE SAMPLED : PREPARATION METHOD : PREPARED BY : PREPARED ON : ANALYSIS METHOD : ANALYZED BY : ANALYZED BY : DILUTION FACTOR : QC BATCH NO :	TMW-1-12-95 MTO387.001 T LTO #4295 7-DEC-1995 EPA 418.1 MTR 14-DEC-1995 EPA 418.1 /1 MTR 14-DEC-1995 1 1			
TOTAL RECOVERABLE PETROLEUM HYD			_	

TOTAL RECOVERABLE PETROLEUM HYDROCARSON	s		
TEST REQUESTED	DETECTION LIMIT		RESULTS
	0.50 mg/L	<	0.50 mg/L
Total Petroleum Nydrocarbon		_!	······································



DATE RECEIVED : 9-DE	C-1995	REPORT NUMBER : REPORT DATE :	D95-11945-5 29-DEC-1995
-	Geraghty & M 1030 Andrews Midland, TX Ms. Tara O'C	79701	
SAMPLE MATRIX ID MARKS PROJECT PURCHASE ORDER NO DATE SAMPLED	: TMW-1-12-95 : MTO387.001 T : LTO #4295	exaco-Eunice	

TOTAL METALS			RESULTS
TEST REQUESTED		DETECTION LIMIT	
Silver	/1	0.002 mg/L	< 0.002 mg/L
Dilution Factor : 1 Prepared using EPA 3015 or Analyzed using EPA 7761 or QC Batch No : 12413F	11-DEC-1995 by 14-DEC-1995 by	CEL MPE	
Aluminum	/1	0.200 mg/L	5.11 mg/L
Dilution Factor : 1 Prepared using EPA 3015 or Analyzed using EPA 6010A of QC Batch No : 12583	27-DEC-1995 by on 28-DEC-1995 b	A_0 y LSS	
Arsenic	/1	0.0050 mg/L	0.0223 mg/L
Dilution Factor : 1 Prepared using EPA 3015 o Analyzed using EPA 7060 o QC Batch No : 12413F	n 11-DEC-1995 by n 12-DEC-1995 by	CEL AH	
Barium	/1	0.0200 mg/L	0.346 mg/L
Dilution Factor : 1 Prepared using EPA 3015 c Analyzed using EPA 6010A QC Batch No : 12413	n 11-DEC-1995 b on 12-DEC-1995	y CEL ay JLW	
Boron	/1	0.100 mg/L	0.809 mg/L
Dilution Factor : 1 Prepared using EPA 3015 o Analyzed using EPA 6010A QC Batch No : 12583	on 27-DEC-1995 b on 28-DEC-1995	y A O by JLW	



REPORT NUMBER : D95-11945-5

TOTAL METALS		
TEST REQUESTED	DETECTION LIMIT	RESULTS
Calcium /1	0.10 mg/L	213 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-199 Analyzed using EPA 6010A on 12-DEC-199 QC Batch No : 12413	5 by CEL 95 by JLW	
Cadmium /1	0.01 mg/L	< 0.01 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-199 Analyzed using EPA 6010A on 12-DEC-19 QC 8atch No : 12413	5 by CEL 95 by JLW	
Cobalt /1	0.0200 mg/L	< 0.0200 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 27-DEC-199 Analyzed using EPA 6010A on 28-DEC-19 QC Batch No : 12583	95 by A 0 995 by LSS	
Chromium /1	0.0200 mg/L	< 0.0200 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-199 Analyzed using EPA 6010A on 12-DEC-19 QC Batch No : 12413	95 by CEL 995 by JLW	
Copper /1	0.0100 mg/L	0.0234 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-19 Analyzed using EPA 6010A on 12-DEC-1 QC Batch No : 12413	95 by CEL 995 by JLW	
Iron /1	0.100 mg/L	5.35 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-19 Analyzed using EPA 6010A on 12-DEC-1 QC Batch No : 12413	95 by CEL 995 by JLW	
Mercury /1	0.0002 mg/L	< 0.0002 mg/L
Dilution Factor : 1 Prepared using EPA 7470 on 12-DEC-19 Analyzed using EPA 7470 on 14-DEC-19 QC Batch No : %G-2052	195 by CEL 195 by CGJ	



REPORT NUMBER : D95-11945-5

TOTAL METALS		
TEST REQUESTED	DETECTION LIMIT	RESULTS
Potassium /1	1.0 mg/L	16.2 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-199 Analyzed using EPA 6010A on 12-DEC-19 QC Batch No : 12413	95 by CEL 195 by JLW	
Magnesium /1	0.100 mg/L	57.3 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-199 Analyzed using EPA 6010A on 12-DEC-19 QC Batch No : 12413	95 by CEL 995 by JLW	
Manganese /1	0.0100 mg/L	0.218 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-19 Analyzed using EPA 6010A on 12-DEC-1 QC Batch No : 12413	95 by CEL 995 by JLW	
Molybdenum /1	0.030 mg/L	< 0.030 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 27-DEC-19 Analyzed using EPA 6010A on 28-DEC-1 QC Batch No : 12583	95 by A_C 995 by LSS	
Sodium /1	10 mg/L	525 mg/L
Dilution Factor : 10 Prepared using EPA 3015 on 11-DEC-19 Analyzed using EPA 6010A on 12-DEC-4 GC Batch No : 12413	995 by CEL 1995 by LSS	
Nickei /	1 0.0200 mg/L	< 0.0200 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 11-DEC-14 Analyzed using EPA 6010A on 28-DEC- QC Batch No : 12583	995 by A_O 1995 by LSS	
Lead /	1 0.010 mg/L	< 0.010 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on 27-DEC-1 Analyzed using EPA 6010A on 28-DEC- QC Batch No : 12583	995 by A_C 1995 by JLW	



REPORT NUMBER : D95-11945-5

TOTAL METALS	······			
IEST REQUESTED		DETECTION LIMIT		RESULTS
ielenium	/1	0.005 mg/L		0.014 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on Analyzed using EPA 7740 on QC Batch No : 12413F	11-DEC-1995 by 12-DEC-1995 by	CEL AH		
Jranium	/1	0.1 mg/L	<	0.1 mg/L
Dilution Factor : 1 Prepared using EPA 3015 on Analyzed using EPA 6010A o QC Batch No : 12583	27-DEC-1995 by n 28-DEC-1995 by	A D / JLW		
Zinc	/1	0.0300 mg/L		0.0840 mg/L
Dilution Factor : 1 Prepared using EPA 3015 or Analyzed using EPA 6010A o QC Batch No : 12413	n 11-DEC-1995 by nn 12-DEC-1995 by	CEL Y LSS		



DATE SAMPLED : 7-DEC-1995

1089 E. Collins Blvd. Richardson, TX 75081 Tel. 214-238-5591 Fax. 214-238-5592

DATE RECEIVED : 9-D	EC-1995	REPORT NUMBER REPORT DATE	: D95-11945-5 : 29-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Ms. Tara O'C	79701	•
SAMPLE MATRIX ID MARKS PROJECT PURCHASE ORDER NO	: TMW-1-12-95 : MTO387.001	Texaco-Eunice	

MISCELLANEOUS ANALYSES RESULTS DETECTION LIMIT TEST REQUESTED mg/L CaCO3 205 mg/L CaCO3 1.0 /1 Bicarbonate Analyzed using SM 2320B on 18-DEC-1995 by P_F QC Batch No : 271100 mg/L CaCO3 1.0 < mg/L CaCO3 /1 1.0 Carbonate (As CaCO3) Analyzed using SM 23208 on 18-DEC-1995 by P_F QC Batch No : 271100 mg/L 650 1.0 mg/L 11 Chloride Dilution Factor : 1 Analyzed using EPA 9252 on 15-DEC-1995 by P_F GC Batch No : 520030 0.010 mg/L < 11 0.010 mg/L Cyanide, Total Dilution Factor : 1 Analyzed using EPA 9010 on 18-DEC-1995 by KPP QC Batch No : 640016A 1800 mg/L 10.0 mg/L Total Dissolved Solids 11 Analyzed using EPA 160.1 on 13-DEC-1995 by RJS QC Batch No : 614027A mg/L 200 10.0 mg/L 11 Sulfate Dilution Factor : 10 Analyzed using EPA 9038 on 15-DEC-1995 by RJS QC Batch No : 597039A



DATE RECEIVED : 9-D	EC-1995	REPORT NUMBER REPORT DATE	: D95-11945-6 : 29-DEC-1995
ATTENTION	: 1030 Andrews : Midland, TX : Ms. Tara O'C	79701	
PROJECT PURCHASE ORDER NO DATE SAMPLED ANALYSIS METHOD ANALYZED BY ANALYZED ON DILUTION FACTOR METHOD FACTOR	: Trip Blank : MTO387.001 T : LTO #4295 : 7-DEC-1995 : EPA 8020 /1 : VHT : 12-DEC-1995 : 1	'exaco-Eunice	

	DETECTION LIMIT		RESULTS		
	1.0 µg/L	<	1.0 #g/L		
Toluene	1.0 µg/L	<	1.0 µg/L		
Ethyl benzene	1.0 µg/L	<	1.0 <u>#g/L</u>		
Xylenes	1.0 µg/L	<	1.0 μg/L		
BTEX (total)			1.0 μg/l	#	

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Bromofluorobenzene	50.0 µg/L	98.9 %

Based upon Good Laboratory Practice, the result is rounded to the appropriate number of significant figures.



DATE RECEIVED : 9-D	EC-1995	REPORT NUMBER REPORT DATE	: D95-11945-7 : 29-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Ms. Tara O'C	79701	
PROJECT PURCHASE ORDER NO DATE SAMPLED PREPARATION METHOD PREPARED BY PREPARED ON ANALYSIS METHOD ANALYZED BY	: Method Blank : MTO387.001 T : LTO #4295 : 9-DEC-1995 : EPA 3520B : VHC : 12-DEC-1995 : EPA 8310 /1 : JXA : 19-DEC-1995 : 1 : 10	exaco-Eunice	

POLYNUCLEAR AROMATIC HYDROCARBONS			RESULTS
TEST REQUESTED	DETECTION LIMIT		
Acenaphthene	18.0 µg/L	<	18.0 µg/L
Acenaphthylene	10.0 µg/L	<	10.0 μg/L
Anthracene	6.60 µg/L	<	6.60 µg/L
Benzo(a)anthracene	0.130 µg/L	<	0.130 µg/L
Benzo(b)fluoranthene	0.180 µg/L	<	0.180 µg/L
Benzo(k)fluoranthene	0.170 µg/L	<	0.170 µg/L
Benzo(g,h,i)perylene	0.760 µg/L	<	0.760 µg/L
Senzo(a)pyrene	0.230 µg/L	<	0.230 µg/L
Chrysene	1.50 µg/L	<	1.50 µg/L
Dibenzo(a,h)anthracene	0.300 µg/L	<	0.300 µg/L
fluoranthene	2.10 µg/L	<	2.10 µg/L
Fluorene	2.10 μg/L		2.10 #g/L
Indeno(1,2,3-cd)pyrene	0.430 µg/L		0.430 µg/L
Naphthalene	10.0 µg/L		10.0 µg/L



PAGE 2

REPORT NUMBER : D95-11945-7 ANALYSIS METHOD : EPA 8310 /1

POLYNUCLEAR AROMATIC HYDROCARBON	s		
TEST REQUESTED	DETECTION LIMIT		RESULTS
henanthrene	6.40 µg/L	<	6.40 µg/L
Pyrene	2.70 µg/L	<	2.70 µg/L

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
1-Fluoronapthalene (SS)	100 #g/L	63.6 %

Inchcape Testing Services
Environmental Laboratories

1089 F. Collins Blvd. Richardson, TX 75081 Tel. 214-238-5591 Fax. 214-238-5592

DATE RECEIVED : 9-D	EC-1995	REPORT NUMBER : REPORT DATE :	D95-11945-7 29-DEC-1995
	: Geraghty & M : 1030 Andrews : Midland, TX : Ms. Tara O'C	79701	
PROJECT PURCHASE ORDER NO DATE SAMPLED ANALYSIS METHOD ANALYZED BY	: Method Blank : MTO387.001 T : LTO #4295 : 9-DEC-1995 : EPA 8020 /1 : VHT : 12-DEC-1995 : 1 : 1	exaco-Eunice	

BTEX ANALYSIS		<u> </u>			
TEST REQUESTED	DETECTION LIMIT		RESULT	\$	
Benzene	1.0 µg/L	<	1.0	μg/L	
Toluene	1.0 µg/L	<	1.0	µg/L	
Ethyl benzene	1.0 #g/L	<	1.0	μg/l	
Xylenes	1.0 µg/L	<	1.0	μg/L	
BTEX (total)			1.0	µg/L	#

QUALITY CONTROL DATA		
SURROGATE COMPOUND	SPIKE LEVEL	SPIKE RECOVERED
Bromofluorobenzene	50.0 μg/L	98.3 %

Based upon Good Laboratory Practice, the result is rounded to the appropriate number of significant figures.



REPORT DATE : 29-DEC-1995

REPORT NUMBER : D95-11945

SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ATTENTION : Ms. Tara O'Connel PROJECT : MTO387.001 Texaco-Eunice

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene
BATCH NO.	AB625-78	A8625-78	AB625-78	AB625-78	AB625-78
LCS LOT NO.	AB525-86	AB525-86	AB525-86	AB525-86	A8525-86
PREP METHOD	EPA 35208	EPA 3520B	EPA 35208	EPA 35208	EPA 35208
PREPARED BY	CLT	CLT	CLT	CLT	CLT
ANALYSIS METHOD	EPA 8310	EPA 8310	EPA 8310	EPA 8310	EPA 8310
ANALYZED BY	JXA	JXA	AXL	AXL	JXA
	μg/L	<u></u> ду/L	µg/L	μg/L	μg/L
METHOD BLANK	< 18.0	< 23.0	< 18.0	< 2.10	< 6.40
SPIKE LEVEL	100	100	100	100	100
MS RESULT	79.9	65.8	58.9	64.7	61.8
MS RECOVERY %	79.9	65.8	58.9	64.7	61.8
MSD RESULT	88.7	72.0	64.4	70.2	66.8
MSD RECOVERY %	88.7	72.0	64.4	70.2	66.8
NS/MSD RPD %	10.4	9.00	8.92	8.15	7.78
BS RESULT	NA	NA	NA	NA	NA
85 RECOVERY %		NA	NA	NA	NA
BSD RESULT	NA	NA	NA	NA	NA
BSD RECOVERY X	NA	NA	NA	NA	NA
BS/BSD RPD %	NA	NA	NA	NA	NA
DUPLICATE RPD %	NA	NA	NA	NA	NA
LCS LEVEL	50.0	50.0	50.0	50.0	50.0
LCS RESULT	41.1	31.3	28.8	32.6	34.0
LCS RECOVERY %	82.2	62.6	57.6	65.2	68.0
SPIKE SAMPLE ID	11945-1	11945-1	11945-1	11945-1	11945-1
DUP SAMPLE ID					

Not applicable



REPORT DATE : 29-DEC-1995

REPORT NUMBER : D95-11945

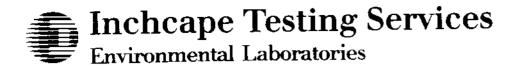
SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ATTENTION : Ms. Tara O'Connel PROJECT : MTO387.001 Texaco-Eunice

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Anthracene	Chrysene	Benzo(k)fluoranthene	Benzene	Ethylbenzene
BATCH NO.		A8625-78	AB625-78	34-121295	34-121295
LCS LOT NO.	AB525-86	AB525-86	A8525-86	AB214-70B	AB214-708
PREP METHOD	EPA 3520B	EPA 3520B	EPA 35208		
PREPARED BY	CLT	CLT	CLT		
ANALYSIS METHOD	EPA 8310	EPA 8310	EPA 8310	EPA 8020	EPA 8020
ANALYZED BY	AXL	JXA	JXA	VHT	VHT
	<u> </u>	μg/L	μg/L	μg/L	µg/l
METHOD BLANK	< 6.60	< 1.50	< 0.17	< 1.00	< 1.00
SPIKE LEVEL	100	100	100	500	500
MS RESULT	40,3	31.1	27.4	498	500
MS RECOVERY %	40.3	31.1	27.4	99.6	100
MSD RESULT	42.6	35.1	32.0	497	492
MSD RECOVERY %	42.6	35.1	32.0	99.4	98.4
MS/MSD RPD %	5.55	12.1	15.5	0.20	1.6
BS RESULT	NA	NA	NA	NA	NA
BS RECOVERY X	NA	NA	NA	NA	NA
BSD RESULT	NA	NA	NA	NA	NA
BSD RECOVERY %	NA	NA	NA	NA	NA
BS/BSD RPD %	NA	NA	NA	NA	NA
DUPLICATE RPD %	NA	NA	NA	NA	NA
LCS LEVEL	50.0	50.0	50.0	50.0	50.0
LCS RESULT	21.8	29.1	25.8	51.9	52.4
LCS RECOVERY %	43.6	58.2	51.6	104	105
SPIKE SAMPLE ID	11945-1	11945-1	11945-1	11945-2	11945-2
DUP SAMPLE ID					

Not applicable

NA



REPORT DATE : 29-DEC-1995

REPORT NUMBER : D95-11945

SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ATTENTION : Ms. Tara O'Connel PROJECT : MTO387.001 Texaco-Eunice

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Total Recoverable Hydrocarbons	Silver	Aluminum	Arsenic	
BATCH NO.	AB646-17	12413F	12583	12413F	
LCS LOT NO.	AA345-88B	590802AF	591009,591130,5	590802AF	
PREP METHOD	EPA 418.1	EPA 3015	EPA 3015	EPA 3015	
PREPARED BY	MTR	CEL	A_0	CEL	
ANALYSIS METHOD	EPA 418.1	EPA 7761	EPA 6010A	EPA 7060	
ANALYZED BY	MTR	MPE	LSS	AH	
UNITS	mg/L	μg/L	μg/L	μg/L	
METHOD BLANK	< 0.50	< 2.00	< 200.0	< 5.00	
SPIKE LEVEL	5.00	20.0	1000	40.0	
MS RESULT	NS	16.7	1080	43.6	
MS RECOVERY %	NS	83.5	108	109	
MSD RESULT	NS	14.1	1140	43.1	
NSD RECOVERY %	NS	70.5	114	108	
MS/MSD RPD %	NS	16.9	5.41	1.15	
BS RESULT	4.91	NA	NA	NA	
BS RECOVERY %	98.2	NA	NA	NA	
BSD RESULT	5.07	NA	NA	NA	
BSD RECOVERY %	101	NA	NA	NA	
BS/BSD RPD %			NA	NA	
DUPLICATE RPD %			NC	NC	
LCS LEVEL	5.00	20.0	1000	40.0	
	SEE_BS	15.8	1030	42.6	
LCS RECOVERY %	SEE_BS	79.0	103	107	
SPIKE SAMPLE ID		11874-13	12420-18	11874-13	
DUP SAMPLE ID		11874-13	12420-18	11874 - 13	

NS

Insufficient sample available for MS/MSD. BS/BSD used.

LCS and LCS Duplicate reported as BS and BSD.

SEE_BS Not applicable

NA Not calculable NC



REPORT DATE : 29-DEC-1995

REPORT NUMBER : D95-11945

SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ATTENTION : Ms. Tara O'Connel PROJECT : MTO387.001 Texaco-Eunice

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Barium	Boron	Calcium	Çadmulum	Cobalt
BATCH NO.	12413	12583	12413	12413	12583
LCS LOT NO.	590814,591009,5	591009,591130,5	590814,591009,5	590814,591009,5	591009,591130,5
PREP METHOD	EPA 3015				
PREPARED BY	CEL	A_0	CEL	CEL	A_0
ANALYSIS METHOD	EPA 6010A				
ANALYZED BY	JLW	JLW	JLW	JLW	LSS
	μg/L	μg/L	µg/L	μg/L	<u>дд/L</u>
METHOD BLANK	< 20.0	<100	< 100	< 10.0	< 20.0
SPIKE LEVEL	10000	1000	10000	1000	1000
MS RESULT	10400	1330	10300	1090	1020
MS RECOVERY %	104	104	101	109	102
MSD RESULT	9920	1360	9830	1030	1030
MSD RECOVERY %	99.2	108	96.6	103	103
MS/MSD RPD %	4,72	3.21	4.75	5.66	0.98
BS RESULT	NA	NA	NA	NA	NA
BS RECOVERY %	NA	NA	NA	NA	NA
BSD RESULT	NA NA	NA	NA	NA	NA
BSD RECOVERY %	NA	NA	NA	NA	NA
BS/BSD RPD %	NA	NA	NA	NA	NA
DUPLICATE RPD %	NC	2.51	5.78	NC	NC
LCS LEVEL	10000	1000	10000	1000	1000
LCS RESULT	10400	1010	10000	1080	1020
LCS RECOVERY %	104	101	100	108	102
SPIKE SAMPLE ID	11874-13	12420-18	11874-13	11874-13	12420-18
DUP SAMPLE ID	11874-13	12420-18	11874-13	11874-13	12420-18

NA NC

Not applicable Not calculable



REPORT DATE : 29-DEC-1995

REPORT NUMBER : D95-11945

SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ATTENTION : Ms. Tara O'Connel PROJECT : MTO387.001 Texaco-Eunice

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Chromium	Copper	Iron	Mercury	Potassium
BATCH NO.	12413	12413	12413	HG-2052	12413
LCS LOT NO.	590814,591009,5	590814,591009,5	590814,591009,5	AB300-22A	590814,591009,5
PREP METHOD	EPA 3015	EPA 3015	EPA 3015	EPA 7470	EPA 3015
PREPARED BY	CEL	CEL	CEL	CEL	CEL
ANALYSIS METHOD	EPA 6010A	EPA 6010A	EPA 6010A	EPA 7470	EPA 6010A
······································	JLW	LSS	JLW	CGJ	JLW
ANALYZED BY	μg/L	μg/L	μg/L	дg/L	µg/L
	< 10.0	<10.0	< 100	< 0.20	< 1000
METHOD BLANK	1000	10000	1000	1.00	10000
SPIKE LEVEL	1010	9260	1160	0.951	9460
MS RESULT	1010	92.6	110	95.1	94.6
MS RECOVERY %		9200	1120	0.968	8940
MSD RESULT	991	92.0	106	96.8	89.4
MSD RECOVERY %	_ _	0.61	3.69	1.77	5.65
MS/MSD RPD %	1.90		NA	 NA	
BS RESULT	NA	NA			NA
BS RECOVERY %	NA	NA	NA		NA
BSD RESULT	NA	NA	NA	NA	NA
BSD RECOVERY %	NA	NA	NA	NA	
BS/BSD RPD %	NA	NA	NA	NA	NA
DUPLICATE RPD %	NC	NC	9.02	NC	NC
LCS LEVEL	1000	10000	1000	1.00	10000
LCS RESULT	993	9180	1060	0.963	9530
LCS RECOVERY %	99.3	91.8	106	96.3	95.3
SPIKE SAMPLE ID	11874-13	11874-13	11874-13	11833-2	11874-13
DUP SAMPLE ID	11874-13	11874-13	11874-13	11833-2	11874-13

Not applicable Not calculable

NA NC



REPORT DATE : 29-DEC-1995

REPORT NUMBER : D95-11945

SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ATTENTION : Ms. Tara O'Connel PROJECT : MTO387.001 Texaco-Eunice

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Magnesíum	Manganese	Molybdenum	Sodium	Nickel
BATCH NO.	12413	12413	12583	12413	12583
LCS LOT NO.	590814,591009,5	590814,591009,5	591009,591130,5	590814,591009,5	591009,591130,5
	EPA 3015				
PREP METHOD PREPARED BY	CEL	CEL	A_0	CEL	A_0
	EPA 6010A				
ANALYSIS METHOD		JLW	LSS	JLW	LSS
ANALYZED BY	μg/L	μg/L	μg/L	<u>д</u> 9/L	μg/l
	< 100	< 10.0	< 30.0	< 1000	< 20.0
METHOD BLANK	1000	1000	1000	10000	1000
SPIKE LEVEL	1070	1060	1080	10600	1010
MS RESULT		106	108	106	101
MS RECOVERY %	107	100	1010	10500	1020
MSD RESULT	1080	········	1010	105	102
MSD RECOVERY %	108	102		0.95	0.99
MS/MSD RPD %	0.93	3,85	6.70		NA
BS RESULT	NA	NA	NA	NA	
BS RECOVERY %	NA	NA	NA	NA	NA
BSD RESULT	NA	NA	NA	NA	NA
BSD RECOVERY %	NA	NA	NA	NA	NA
BS/8SD RPD %	NA	NA	NA	NA	NA
DUPLICATE RPD %	NC	NC	NC	NC	NC
LCS LEVEL	1000	1000	1000	10000	1000
LCS RESULT	1050	1040	1050	10600	1010
LCS RECOVERY X	105	104	105	106	101
SPIKE SAMPLE ID	11874-13	11874-13	12420-18	11874-13	12420-18
DUP SAMPLE ID	11874-13	11874-13	12420-18	11874-13	12420-18

No

Not applicable Not calculable

NA NC



REPORT DATE : 29-DEC-1995

REPORT NUMBER : D95-11945

SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ATTENTION : Ms. Tara O'Connel PROJECT : MTO387.001 Texaco-Eunice

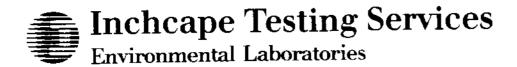
LABORATORY QUALITY CONTROL REPORT

ANALYTE	Lead	Selenium	Uranium	Zinc	Alkalinity
BATCH NO.	12583	12413F	12583	12413	271100
LCS LOT NO.	591009,591130,5	590802AF	591009,591130,5	590814,591009,5	9968
PREP METHOD	EPA 3015	EPA 3015	EPA 3015	EPA 3015	·
PREPARED BY	A_0	CEL	A_0	CEL	
ANALYSIS METHOD	EPA 6010A	EPA 7740	EPA 6010A	EPA 6010A	SM 2320B
ANALYZED BY	JLW	AH	JLW	JLW	P_F
UNITS	μg/L	μg/L	μg/L	μg/L	mg/L
METHOD BLANK	<10.0	< 5.00	<100	< 30.0	< 1.00
SPIKE LEVEL	1000	20.0	10000	1000	458
MS RESULT	1010	22.4	10200	1050	725
MS RECOVERY %	101	86.5	102	105	104
MSD RESULT	997	24.2	10100	999	730
MSD RECOVERY %	99.7	95.5	101	99.9	105
MS/MSD RPD %	1.69	9.90	1.33	4.98	1.05
BS RESULT	NA NA		NA	NA	NA
BS RECOVERY %	NA	NA	NA	NA	NA
BSD RESULT	NA	NA NA	NA	NA	NA
BSD RECOVERY %	NA	NA	NA	NA	NA
BS/BSD RPD %	NA	NA	NA	NA	NA
DUPLICATE RPD %	NC		NC NC	NC	0.00
LCS LEVEL	1000	20.0	10000	1000	125
LCS RESULT	1010	23.8	10400	1050	125
LCS RECOVERY X	101	119	104	105	100
SPIKE SAMPLE ID	12420-18	11874-13	12420-18	11874-13	11945-1
DUP SAMPLE ID	12420-18	11874-13	12420-18	11874-13	11945-1

Not applicable Not calculable

NA

NĊ



REPORT DATE : 29-DEC-1995

REPORT NUMBER : D95-11945

SAMPLE SUBMITTED BY : Geraghty & Miller, Inc. ATTENTION : Ms. Tara O'Connel PROJECT : MTO387.001 Texaco-Eunice

LABORATORY QUALITY CONTROL REPORT

ANALYTE	Chloride	Cyanide, Total	Total Dissolved Solids	Sulfate	
BATCH NO.	520030	640016A	614027A	597039A	
LCS LOT NO.	9968	ERA 9963	9968	9968	
PREP METHOD					
PREPARED BY	•••	•			
ANALYSIS METHOD	EPA 9252	EPA 9010	EPA 160.1	EPA 9038	
ANALYZED BY	P_F	KPP	RJS	RJS	
UNITS	mg/L	mg/L	mg/L	mg/L	
METHOD BLANK	< 1.00	< 0.01	< 10.0	<1.0	
SPIKE LEVEL	1050	1.00	•••	400	
MS RESULT	1050	1.01	NA	580	
MS RECOVERY %	99.5	101	NA	95.0	
MSD RESULT	1070	1.05	NA	588	
MSD RECOVERY X	101	105	NA	97.0	
MS/MSD RPD %	1.90	3.88	NA	2.08	
BS RESULT	NA	NA	NA	NA	
BS RECOVERY %	NA	NA	NA	NA	
BSD RESULT	NA	NA	NA	NA	
BSD RECOVERY %	NA	NA	NA	NA	
BS/BSD RPD %	NA	NA	NA	NA	
DUPLICATE RPD %	0.00	NC	0.69	0.83	
LCS LEVEL	128	0.147	714	105	
LCS RESULT	115	0.122	726	106	
LCS RECOVERY X	89.8	83.0	102	101	
SPIKE SAMPLE ID	11941-5	11927-1		11945-5	
DUP SAMPLE ID	11941-5	11927-1	11945-3	12047-1	

Not applicable Not calculable

NA NC

Strauthy MILLER, INC. Environmental Services	Laboratory Task Ord	er No. 4295		-CUSTODY RE		Page of
Project Number MT0387.001 Project Location Texaco-Eur Laboratory FACh Cape Pestin Sampler(s)/Affiliation JungAty Date/Time	g Miller Miller	on at it have	SAMPLE B	OTTLE / CONTAINER		TOTAL
SAMPLE IDENTITY Code Sampled TWM-3-11-95 L 12-7-95 Htip blonks L					11995	
Sample Code: L = Liquid; S = S Relinquished by Auart Received by: Him Have	banell Organi Organi	ization:	HACTIVITY HACTIVITY	Date 12 1 7 19 Date 12 1 9 19 Date 12 1 9 19		Seal Intact?
Relinquished by: Received by: Special Instructions/Remarks: 7 (1) $4 \times - Ca, Mg, K, M$ Delivery _nod: \Box In Pers	Organ Mattud Na, C1, SOy,	<i>B¦anbonate</i> , con Carrier	specify		Time	Yes No N/A

GERAGHTY MILLER, INC. Environmental Services	Laboratory Task Orde	er No		USTODY RECORD	Page	_of
roject Number MTD 387.001				LE / CONTAINER DESCRIPTION		
roject Location Texaco-EVI	nice /	Contraction of the second	(N			
aboratory Inch Cope-MA	s /		A QRA	CO CUMULA CO CUMULA T	. /	
aboratory y checkpe	Lab ID AD	2 2 2	D Wellin L	O M		
Sampler(s)/Affiliation YuoO'C	Moler / W.		S A	t, m		
Date/Time		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	\mathbb{N} \mathbb{N}	·/ * / /	/ / т	FOTAL
SAMPLE IDENTITY Code Sampled			1 2	1 1945	-3	9
1MW-2-11-95 L 12-7-95	3				4 2	ζ
trip blanks 1						
	<u> </u>					
		· · · · · · ·				
	<u></u>	· · · · · · · · · · · · · · · · · · ·				
· · · ·	<u></u>	· · · · · · · · · · · · · · · · · · ·				
		· ·	· · · · · · · · · · · · · · · · · · ·			
			· ·			
		······································				
	· 🕴 🕴 🔰	DLER TEMPERATUR			_ <u>_</u> _ _	
		<u> </u>		T-tal N	lo. of Bottles/	
Sample Code: L = Liquid; S = S	olid; A = Air				Containers	
			4 Miller	Date 12 / 7 / 95 Time / 83 Date 12 / 9 / 91 Time	0, Se	eal Intact?
Relinquished by Augul Ce Received by:	Dreel Organiz Organiz	ration: JHJ - I	NATAJ	Date 2 / 9 / 9) Time 11		s No N/A
	Organiz			Date / Time		eal Intact? s No N/A
Relinquished by:	Organiz	zation:		Date /. /. Time		
Special Instructions/Remarks: # M. #X - Calcium, Magalsin	tals- See Att	tassium, chlou	ide, sulfate,	bicarbonate, TPS	· · · · · · · · · · · · · · · · · · ·	<u> </u>
Delivery				□ Lab Courier □ Oth		FY

GERAGHTY & MILLER, INC. Environmental Services	Laboratory Task O	rder No	. .			JSTODY			Page	of
roject Number MT0387.00	21			SAME	PLE BOTTL	E / CONTAI	<u>NER DESC</u> /	<u>ription</u> 7	/	/
roject Location Texaco - E			/ /	&. /	THE SEAL THE	/ /	/ /	' /	· /	· /
LAND CARE - NDR	-	/ /		tes"	Ja El	(0) ** (0) **	8 /			
Sampler(s)/Affiliation	Jane Lene		$\left(\left \right\rangle \right)$	k Za	$\sum \gamma$	\tilde{O}/\tilde{F}				
ampients)/Annuality + Xuaquty + M	iller / 1ª	B/At y		10	17 00	5/00				
-Daler time	LabiD / 149		(Z*)	Æ,	A	/*/	/ /			TOTAL
		-(-)	- ,	1	2			1945	5-5	9
TMW-1-12-95 L 12-7-95								ł	(e	2
tripblants L				• •				m	<u>>/</u>	
	 ,,,				·		·			
		_l+								·
	=									
		· ·			· · · · · · · · · · · · · · · · · · ·	} ↓				
				······································	·					
			··		<u> </u>		. <u> </u>			
		·				<u>}</u>				
								ENEDE		
				COOLE	l R-TEMPEF	ATURE	(私日の) 	DACTIVI	FY	
				WH	<u>EN RECEP</u>	VED C			of Bottles/	11
Sample Code: $L = Liquid; S = S$	Solid; A = Air				/:				Containers	
Relinquished by Jara OC	Tanel Orga	inization:	Laghy Stris	I Mil	lei	Date 121 Date 121	7_19 <u>5</u> Tin 9_ <i>L</i> 95Tin	ne 1830 ne 1130	o	Seal Intact?
Received by: _ fim Hane						Date/_		ne		Seal Intact? Yes No N/A
Received by:	0	anization:				Date	_ <u></u> Tir	ne	······································	
Special Instructions/Remarks: X X XX- Ca, Mg, K, Na, 50	Je Abolhed _ 24, c/ Bican	bonate, a	arbou	te	·····					
Delivery nod:		non Carrier	<u> </u>	SPECIFY		Lab Co	ourier	□ Other		SPECIEY Shattoont 91.1

INCHCAPE TESTING SERVICES Dallas

SAMPLE PRESERVATION INFORMATION SHEET

rved By		KRN		JOB NU	MBER	11940	5	
ate		12-9-	95	Client Nam		4 m		
me								
- <u></u>			Apparent	Initial pH*	Final pH	Preservative	Filtration	Comments
Sample No.		Container Type	Volume (mLs)	(20± 2°C)		Added		
11940	5-1	18		< >-	<u> </u>	31		netals
	1	<u> </u>	<u> </u>	1.3	7.3	8		<u>NP</u>
	-1	206		<u> </u>	<u> </u>		<u> </u>	
·	1	IAG		< >	42-			CNI
	-1	1		712	712	$\frac{5.1}{5.1}$		metals
	-3	IP		<u> < ></u>	<u> < 3</u>	$\frac{3}{2}$		NP
	-3	1	<u> </u>	<u> 1.4</u>	11.4	<u> </u>	<u> </u>	1
	-3	186	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	TRA
,	-3	1		42	< <u>}_</u>	<u> </u>	╪╼══╼	CN /
BitchB	-3	1they	10	217	<u> > 2</u>	5;1	<u> </u>	NP
		246		7.4	<u> </u>	4		VL-TORS
	-5	12		< >-	< <u>}_</u>	3.1		NP
	-5	1		1.5	<u> </u>		- <u>-</u>	i i
	-5	JARE		<u> </u>	<u> </u>			
	5	196		< 7	<u> < >-</u>	<u> </u>		<u>eni</u>
	Ŋ			>12	<u></u>	5,		
						_ <u>_</u>		
							·	
· · · · · · · · · · · · · · · · · · ·						· · · · · · · · · · · · · · · · · · ·		
								Ar w
								+
pH Duplicate (Sample No				7,3	$1 = \text{Pre-pre}$ $2 = \text{H}_2\text{SO}_4$ $3 = \text{HNO}_3$	to pH<2 to pH<2	5 = N 6 = N 7 = 2	aOH to pH>12 ia ₂ S ₂ 0 ₃ (0.008%) mL ZnOAc/NaOH to pH>12 io Preservative Required
pH LCS (pH = Number:_	7.0 ± 0).2):		۲(.)	L = Sample	of-Custody indi	cates sample om) in the la	e was filtered in the field boratory before preservation

initial pH is determined in accordance with EPA methods 150.1 / SW-846 9040 using a sample aliquot which has been adjusted to 20 ± 2°C

1089 East Collins Blvd. • Richardson TX 75081 • (214) 238-5591 • Fax (214) 238-5592

<u>APPENDIX C</u>

.

.

MEMO FROM ROBERT BROWNING

DATE: December 12, 1995

TO: Memo To File

FROM: Robert W. Browning

SUBJECT: <u>WASTE DISPOSAL</u> South Eunice Gas Plant

I visited with Mr. Bill Olson, Hydrologist, New Mexico Oil Conservation Division (NMOCD), Santa Fe, New Mexico, on 12/12/95 at 2:30 pm concerning the disposal of waters generated in association with the drilling and development of the five groundwater monitoring wells located at the Eunice Gas Plant No. 1 (South), Lea County, New Mexico. The purpose of the telephone call was to inquire as to the necessary analysis required by the NMOCD prior to the disposal of the waters.

I informed Mr. Olson that the waters had been collected and stored in a rental tank located at the plant. I further informed Mr. Olson that it was Texaco's intent to dispose of the water in the Eurice Gas Plant No. 1 Saltwater Disposal Well (SWD) No. 5. Mr. Olson stated that the development water should be treated as RCRA exempt "plant oil and gas waste" in as much as any constituents found in the water would have been generated as a result of exploration and production operations. Mr. Olson further stated that the Plant's SWD well was permitted to take plant waste water. Therefore, the development water could be handled in the same manner as with other plant waste waters with no analysis required. I inquired more specifically as to whether TPH, BTEX or RCRA metals would be necessary. Once again, the answer was that no analysis would be required for the disposal of the water into our own SWD system.

I informed Mr. Olson that we would take this course of action with the water as soon as possible. He requested that we make note in the written report to the NMOCD as to the method of disposal and further stated that if we felt necessary we could include a statement to the effect that we had received his verbal approval to dispose of the water in this manner. I thanked Mr. Olson for his time and assistance and concluded the telephone call at approximately 2:40 pm.

Kalat W LS raumay

Robert W. Browning