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REPORTS

DATE: FEB 1995

Interception Trench System Installation Report

Amoco Pipeline Station
Artesia, New Mexico

Prepared For:

AMOCO OIL COMPANY
130 East Randolph Drive
Chicago, Illinois 60680

Prepared By:

MITTELHAUSER CORPORATION
1240 Iroquois Drive
Naperville, Illinois 60563

Project 2775.01-02

February 1995

Mittelhauser
CORPORATION

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FIGURES

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APPENDICES

1.0 INTRODUCTION AND BACKGROUND

The Amoco Pipeline Company (Amoco) operates a pipeline pumping station (the Artesia Pumping Station - Facility 10195) near Artesia, New Mexico. Specifically, the station is located in Eddy County, within the Empire Oil Field, approximately 8 miles southeast of the city of Artesia, as depicted in Figure 1. Amoco uses the station as a temporary storage and transfer facility along its crude oil pipeline. A site features map has been included as Figure 2.

In May of 1993, an initial subsurface investigation was performed by CURA, Inc. following the discovery of a crude oil leak from a storage tank at the station. Hydrocarbons were encountered in samples and soil cuttings produced during the CURA drilling operation. Free-phase petroleum, ranging in apparent thickness from 0.21 to 1.75 feet, was encountered in each of three monitoring wells.

Subsequent to the initial investigation, Amoco contracted Mittelhauser Corporation (Mittelhauser) to delineate the lateral extent of the free-phase product and characterize any impact to the local groundwater. Mittelhauser conducted two field investigations. The results of the investigations were provided in reports titled "Subsurface Investigation" and "Phase III Subsurface Investigation" dated October 1993 and April 1994, respectively.

Based on results of Mittelhauser's subsurface investigations, a Work Plan was developed to address the free-phase hydrocarbons at the site. Corrective measures were undertaken in October 1994, following the Interception Trench System Work Plan as approved by the Oil Conservation Division of the New Mexico State Department of Energy, Minerals and Natural Resources.

2.0 SYSTEM INSTALLATION

The system installation consisted of two phases: the interception trench construction, and the groundwater separation and treatment system installation. The separation and treatment system installation included influent and effluent trenching and associated piping, construction of a separation and treatment system enclosure, and assembly of the system. Both phases of the work are outlined in the following sections. A photolog showing important portions of the installation is contained in Appendix A.

2.1 INTERCEPTION TRENCH

In October 1994, a test pit was excavated approximately 170 feet south of monitoring wells MW-10, MW-12, and MW-13 in the channel of Scoggin Draw. The test pit was excavated in order to determine the extent of the free-product plume prior to construction of the interception trench. Bedrock and groundwater were encountered at 18 feet below surface grade (BSG) in the test pit. Groundwater filling the test pit showed no evidence of free-product after 72 hours. Based on this finding, trench construction was initiated approximately 30 feet south of the pit location.

The soil was leveled perpendicular to the flow channel at the lowest point of elevation in order to facilitate construction and provide a baseline for consistent trench depth measurement across the length of the channel. Spoils from the platform and the subsequent excavation were placed on the north and east sides of the construction area in order to divert drainage away from the work area. In addition, a diversion ditch was cut from the north side of the work area, extending around the east side and terminating approximately 50 feet south of the platform.

The trench excavation was centered on the channel of Scoggin Draw and extended in a northwest-southeast line perpendicular to the channel (refer to Figure 3). Excavation began on the west side of the trench approximately 65 feet off the

centerline. Bedrock at this location was encountered at a depth of 5 feet BSG. The trench was extended 20 feet east, and the bedrock dipped to 8 feet BSG. Bedrock on the east end of the trench dipped to a depth of approximately 14 feet BSG. Efforts to locate the necessary equipment required for rock excavation were unsuccessful. On approval from the Amoco project manager, the equipment and materials necessary to dynamite the rock were acquired. Prior to blasting, overburden was removed, and 3-inch diameter boreholes spaced on 4-foot centers were drilled to a total depth of 30 feet BSG. Each borehole was loaded with two sticks of dynamite and ammonium nitrate fuel oil (ANFO) blasting powder.

During drilling operations on the west end of the trench, no groundwater was encountered. However, at a boring located approximately 10 feet west of the trench center, groundwater was encountered at 19 feet BSG with evidence of free-product. Subsequent drilling eastward, along the trenchline, confirmed groundwater elevation at 19 feet BSG. Free-product was not encountered in any subsequent borings.

During blasting operations, the west end of the trench was dry; however, the blasting apparently opened fractures in the rock allowing the flow of groundwater and free-product into the trench. In order to pre-develop the trench, a slurry pump was lowered into the trench and approximately 1,800 gallons of groundwater were removed in 1.5 hours. The water removed from the trench was pumped into a tanker truck and transported to a wastewater treatment facility for disposal. A sheen of crude oil was visually observed to be flowing into the trench during excavation operations approximately 58 feet west of the trench center. The trench was expanded to 125 feet total length in order to expand beyond the spatial area where the crude oil was observed. It should be noted that the separation and treatment system has been operating approximately two months, and oil has not yet been recovered in the recovery tank. This is strong evidence that the trench was installed at the leading edge of the plume.

Upon completion of excavating activities, a flexible membrane liner (FML) was installed in the trench. The FML consisted of three sections, each section 30 feet wide by approximately 50 feet in length. In order to facilitate handling and eliminate wrinkling, one section of the liner was installed at a time. Each section was overlapped 8 to 10 feet at the section interfaces to reduce the possibility of groundwater seepage through the liner. Figure 4 depicts the interception trench design.

After liner placement, three recovery sumps were installed in the trench. The east sump was installed 10 feet west of the east end of the trench. The middle sump was installed 10 feet west of the centerline of the trench, directly over the point where free-product was encountered during the initial blasting operations. The west sump was installed 58 feet west of the center of the recovery trench in order to intercept crude oil encountered during excavation operations. The recovery sumps were constructed using 30-inch diameter galvanized steel culvert pipes. To allow for groundwater and free-product recovery, ¼-inch slots were cut with a cutting torch into the lower 20 feet of the pipe prior to placement.

Following placement of the sumps and the FML, the trench was backfilled with 1-inch crushed rock to a depth of 20 feet BSG. The unused upper portion of the FML was folded over the crushed rock backfill, and clean soil from the initial excavation activities was placed over the trench. Soil backfill was placed in 1-foot lifts and compacted with a vibratory roller. The soil backfill accounted for the final 5 feet of material necessary to bring the trench up to surface grade. The sumps were trimmed to allow 3 feet of stickup, and locking lids were installed.

Influent piping and power were supplied to each of the three sumps. Piping and power were placed in a trench 24 to 30 inches BSG located approximately 4 feet south of the interception trench running to the east side of the remediation building. The PVC pipe run from each recovery sump is connected to a piping manifold. The manifold allows flow from individual sumps to be regulated by a ball valve. Only the

west and center sumps are currently in use. Influent piping is 2-inch diameter Schedule 40 PVC. A pressure test on the influent piping was conducted from the remediation system to the sump heads. The system was charged to 50 pounds per square inch. After 24 hours, no drop in pressure was recorded.

2.2 GROUNDWATER SEPARATION AND TREATMENT SYSTEM

The groundwater separation and treatment system consists of two electric submersible total fluids recovery pumps, pump controllers, an oil/water separator, a 1,000-gallon product recovery tank, an air stripper system, a discharge pump, two sprinkler heads, and associated influent and effluent piping. One oil-resistant rubber hose (1.25-inch ID) is used to convey groundwater pumped from each recovery sump to the 2.0-inch PVC pipe manifold. The electric submersible pump is designed for a maximum pumping rate of 12 gallons per minute and is deployed at the base of each 30-inch diameter corrugated metal sump, approximately 25 feet below the ground surface. Both recovery pumps are single-phase, 230 volt, three-wire units with capacitor motor starters. The electric submersible pump is operated using a pump controller to monitor for overloads, underloads, and voltage fluctuations. When an overload or underload is sensed, the pump controller shuts down the recovery pump. An adjustable timer in the pump controller restarts the pump. The pump controllers are mounted on the west side of the remediation building. A ball valve was placed in line in order to control the flow from each sump. Groundwater flows from the piping manifold to a slant rib coalescing plate oil/water separator. Free-product collected is gravity-drained from the oil/water separator to a 1,000-gallon holding tank. A sight glass is mounted on the end of the product recovery tank to visually monitor free-product levels. Effluent from the oil/water separator drains by gravity to the air stripper system. A process flow diagram for the groundwater recovery system is shown in Figure 5.

The air stripper system consists of an explosion-proof, skid-mounted air stripper unit; an explosion-proof effluent discharge pump; a flow indicator/totalizer; two sprinkler

heads for effluent discharge; and associated piping. Influent from the oil/water separator gravity-drains to the air stripper, where contaminants are volatilized. The process air is discharged to the atmosphere through an exhaust stack which passes through the roof of the remediation building. Effluent treated water from the air stripper sump is pumped through a flow indicator/totalizer and out to two sprinkler heads for discharge. Effluent piping was placed 24 to 30 inches BSG. All subsurface piping is constructed of 1-inch ID Schedule 40 PVC pipe. The blower on the air stripper unit can generate a minimum flow rate of 300 cubic feet per minute (CFM) at a vacuum of 18 inches of water. The blower motor and discharge pump operate on three-phase, 230-volt power. The power drop supplied from the pole is 230-volt single-phase. A rotary phase converter was installed to supply three-phase power, where required.

The oil/water separator and air stripper system are housed in an insulated #2 Galvalum sheet metal building. The building was constructed on an 8-inch thick concrete slab reinforced with 6-inch square wire mesh. The building was constructed using flame-resistant materials. A floor plan layout of the remediation building is shown in Figure 6.

Finish grading of the site included placement of a 2-foot high containment berm around the remediation building. A diversion berm was also placed on the southwest side of the remediation building in order to divert runoff away from the structure and prevent washout of the containment berm. The interception trench area is protected from drainage on the north side by a 7-foot berm that wraps around the east side of the trench area. The diversion ditch initially cut during the trench construction phase was deepened to 2 feet and finish graded.

3.0 SAMPLING AND ANALYSES

3.1 INFLUENT TO AND EFFLUENT FROM THE AIR STRIPPER

The "Ground Water Remediation Temporary Discharge Authorization" for the Amoco Artesia Pumping Station, dated August 12, 1994, specified the following analyses on the effluent from the air stripper.

Initially	Monthly	Annually
BETX PAHs Heavy Metals Cations/Anions	BETX	BETX PAHs Heavy Metals Cations/Anions

The Discharge Authorization did not require Amoco to run these analyses on the influent to the air stripper, but Amoco chose to perform these analyses to better understand the system performance.

Heavy metals are defined as Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Selenium, Silver, and Zinc.

Cations/Anions are defined as Bicarbonates, Carbonates, Chloride, Fluoride, Sulfate, Calcium, Magnesium, Potassium, and Sodium. Total Dissolved Solids is also included in this category.

3.1.1 Initial Results

Appendix B contains the results for the influent to and the effluent from the air stripper for the following parameters:

- BETX (Method 8240)
- PAHs (Method 8270)
- Heavy Metals

Heavy metals were run using the Inductively Coupled Plasma (ICP) technique except for: Arsenic and Selenium, which were run using Graphite Furnace Atomic Adsorption (GFAA); Mercury, which was run by Cold Vapor Atomic Adsorption (CVAA); and Silver, which was run by Atomic Adsorption (AA). The later techniques were used to enhance the sensitivity of the analyses.

Appendix C provides the results for the Anions and Cations, except Carbonates, Bicarbonates, Sulfates, and TDS. These analyses will be included with the first quarterly report.

3.1.2 **Monthly Monitoring**

The system start-up occurred in November 1994. The initial start-up samples were taken November 25, 1994. Only one monthly result for BETX was available as of the date of this report. That sample was taken December 21, 1994. The results are contained in Appendix D.

3.2 WELL SAMPLES

The "Ground Water Remediation Temporary Discharge Authorization" for the Amoco Artesia Pumping Station, dated August 12, 1994, specified the following analyses from each well that did not contain free-product. The only difference from the analyses for the air stripper discharge permit is that BETX is monitored in the wells on a quarterly basis instead of on a monthly basis.

Initially	Quarterly	Annually
BETX PAHs Heavy Metals Cations/Anions	BETX	BETX PAHs Heavy Metals Cations/Anions

The wells that did not contain free-product at start-up were MW-4, MW-7, MW-11, MW-12, and MW-14.

These five wells were sampled for BETX and PAHs in November 1994. The results are contained in Appendix E. The wells were also sampled for metals and Cations/Anions in December 1994. These results are contained in Appendix F.

The first quarterly report will be issued May 1, 1995.

3.3 ANALYSIS OF RESULTS

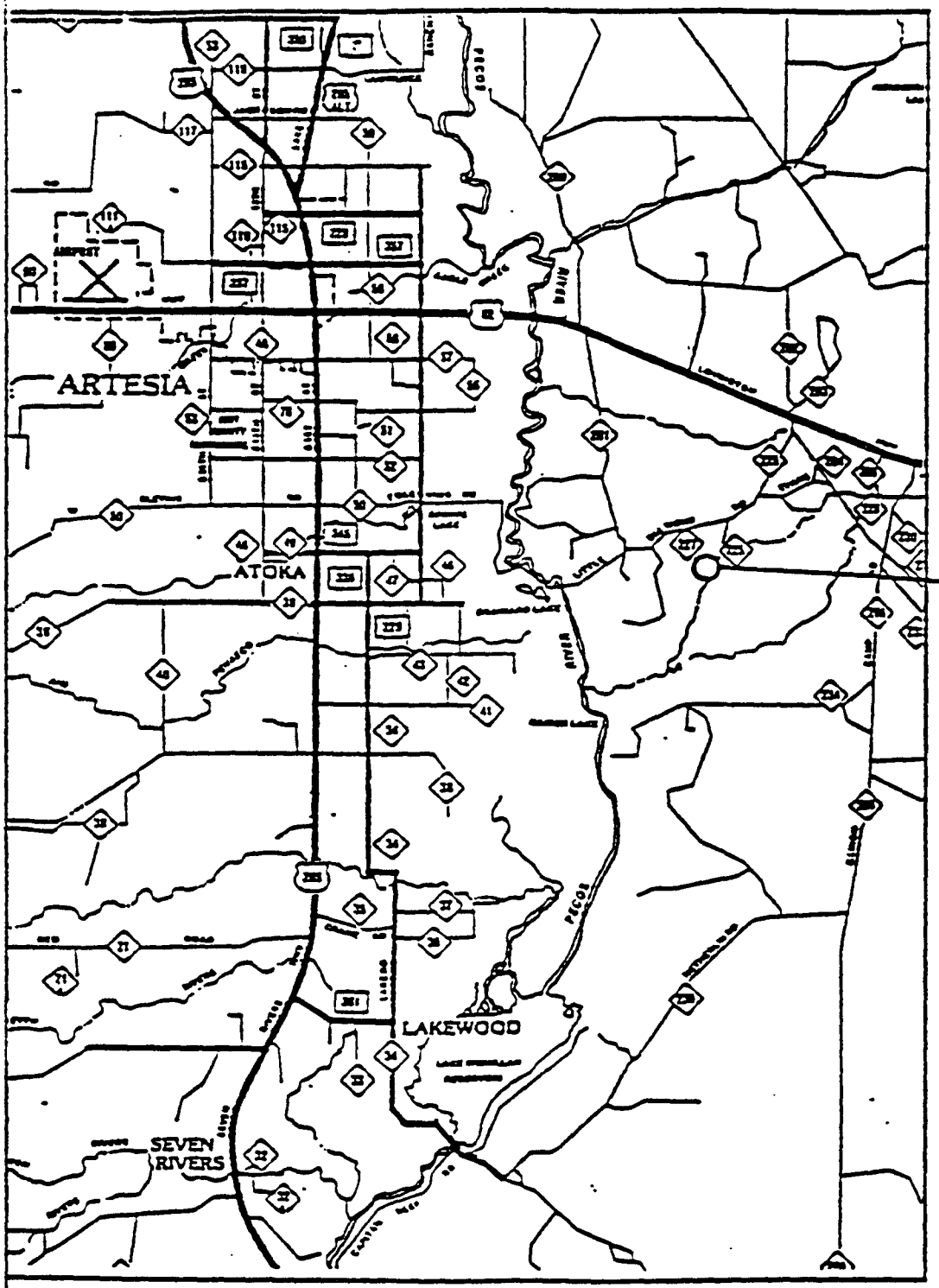
A review of the results contained in Appendices B through F shows the following major points:

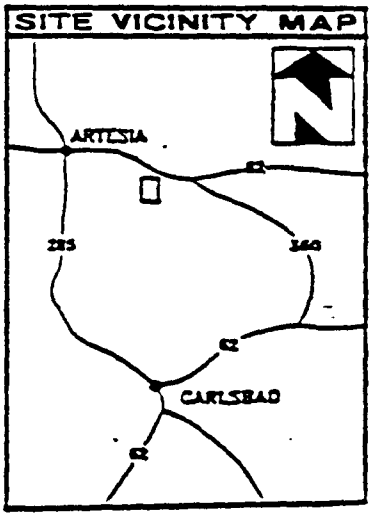
- BETX or PAH was not found in any well except MW-12. This means that the free-product plume is not in the immediate vicinity of any well except MW-12. Benzene at 75 ug/l was found in MW-12 along with trace amounts of Toluene, Xylene, and Ethylbenzene. MW-12 is upgradient of the interception trench and east of MW-10 and MW-13, which contain free-product. The occurrence of BETX in this well is therefore to be expected.

- The air stripper appears to be working well. The November 1994 sampling results showed a benzene reduction from 2,970 ug/l to 1.8 ug/l and a total BETX reduction from 5, 912 ug/l to 1.8 ug/l. The benzene reduction on the samples taken in December 1994 was from 3,070 ug/l to 6.6 ug/l, while the total BETX reduction was from 6,778 ug/l to 17.4 ug/l.

- The results for the Anions and Cations show that the water in Scoggin Draw is very hard, containing high concentrations of Chlorides, Calcium, and Magnesium.

FIGURES





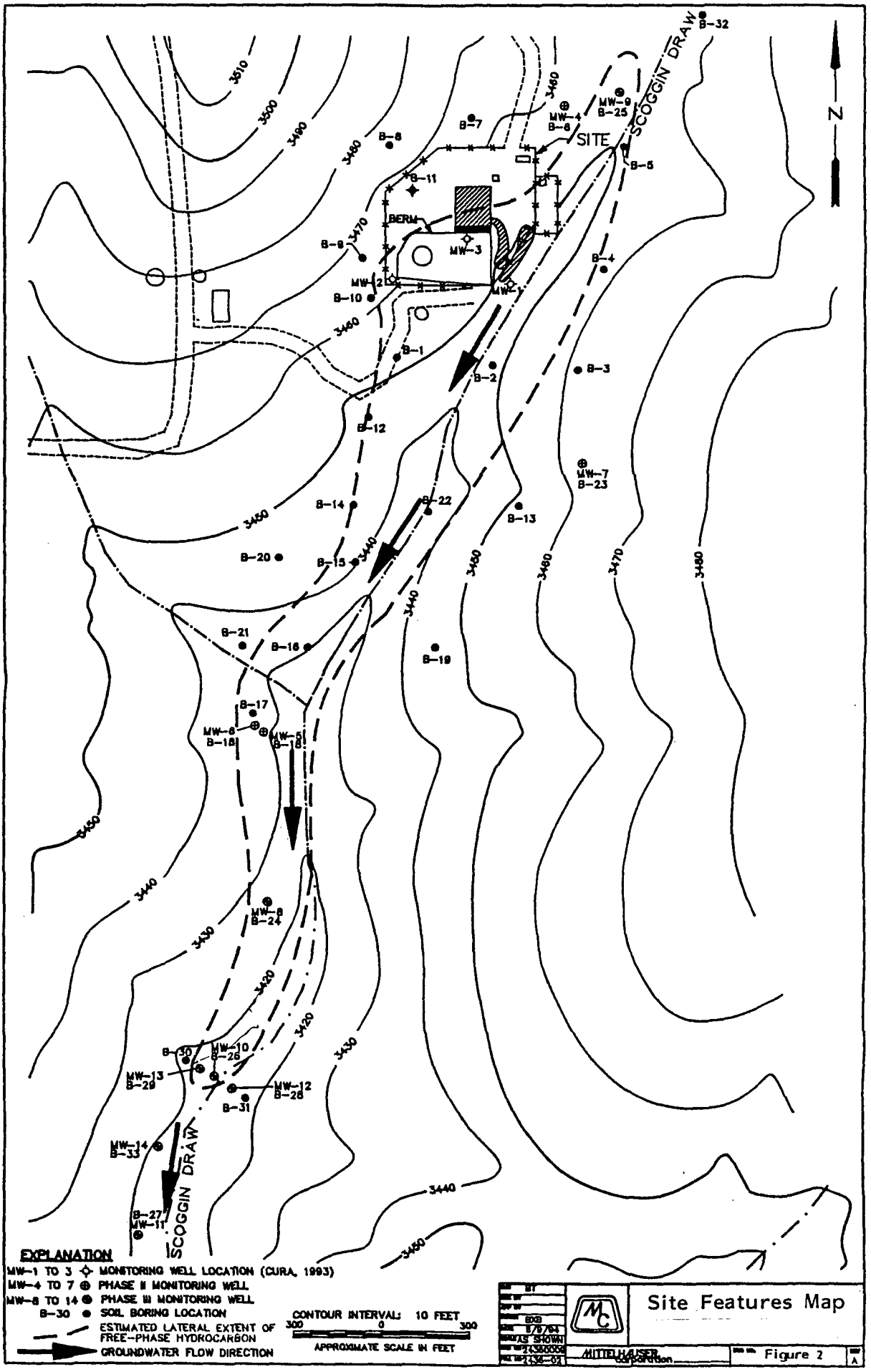
REF: CURA PRELIMINARY SUBSURFACE INVESTIGATION, JUNE 1993

	EJC
	BDB
	10/1/93
	AS SHOWN
	24380010
	2436-01

MITTELHAUSER Corporation

Site Location Map
AMOCO OIL PIPELINE CO.
ARTESIA, NEW MEXICO

FIGURE 1 — A


SCOGGIN DRAW
SITE
BERM
N
B-32
MW-9
B-25
MW-4
B-6
B-7
B-8
B-11
B-5
MW-3
MW-2
MW-1
B-10
B-9
B-4
B-1
B-2
B-3
B-12
MW-7
B-23
B-14
B-22
B-13
B-20
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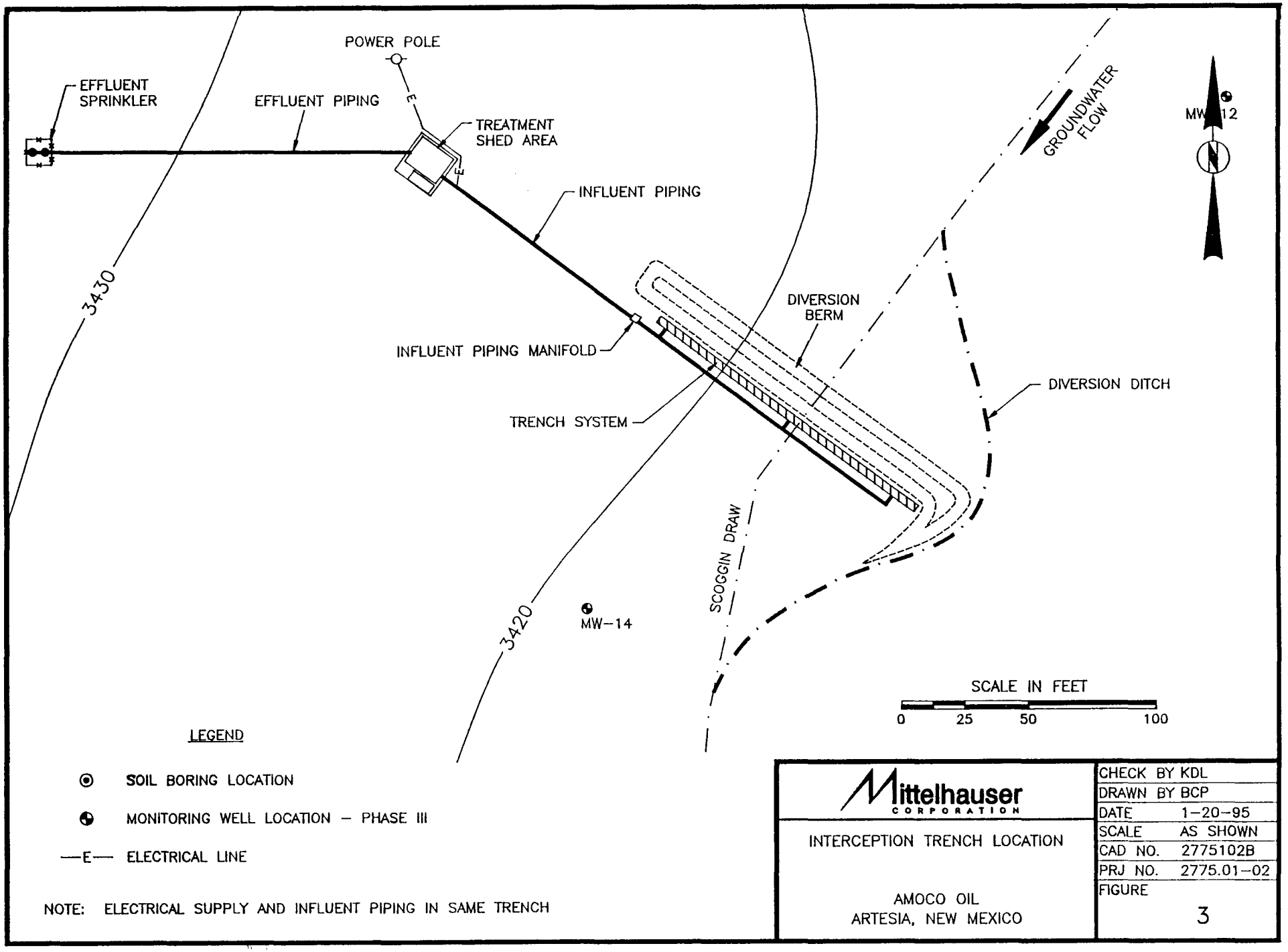
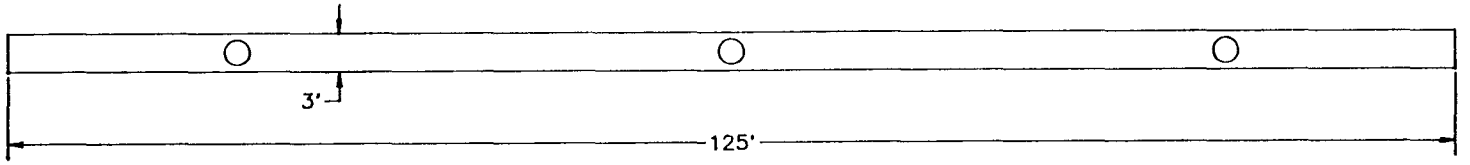
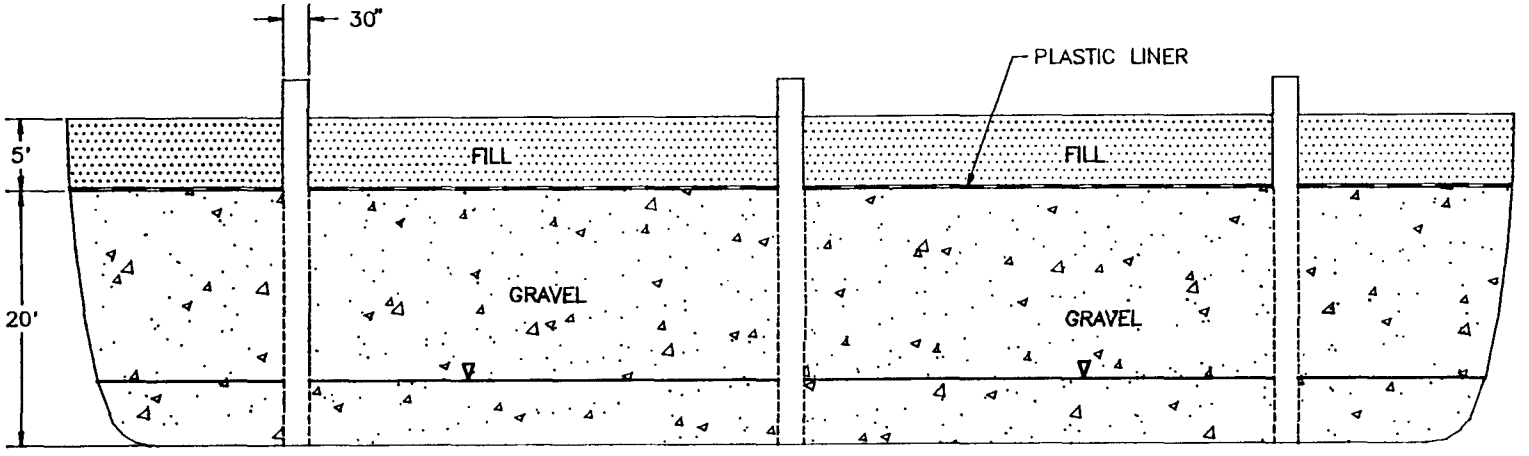
B-19
B-17
MW-6
B-18
MW-5
B-18
MW-8
B-24
B-30
MW-10
B-26
MW-13
B-29
MW-12
B-28
B-31
MW-14
B-33
B-27
MW-11
SCOGGIN DRAW
3510
3500
3490
3480
3470
3460
3450
3440
3430
3420
EXPLANATION
MW-1 TO 3 MONITORING WELL LOCATION (CURA, 1993)
MW-4 TO 7 PHASE II MONITORING WELL
MW-8 TO 14 PHASE III MONITORING WELL
B-30 SOIL BORING LOCATION
ESTIMATED LATERAL EXTENT OF FREE-PHASE HYDROCARBON
GROUNDWATER FLOW DIRECTION
CONTOUR INTERVAL: 10 FEET
300 0 300
APPROXIMATE SCALE IN FEET
Site Features Map
MITTELHAUSER Corporation
Figure 2


POWER POLE
EFFLUENT SPRINKLER
EFFLUENT PIPING
TREATMENT SHED AREA
INFLUENT PIPING
INFLUENT PIPING MANIFOLD
TRENCH SYSTEM
DIVERSION BERM
DIVERSION DITCH
GROUNDWATER FLOW
MW-12
3430
3420
MW-14
SCOGGIN DRAW
SCALE IN FEET
0
25
50
100
LEGEND
SOIL BORING LOCATION
MONITORING WELL LOCATION – PHASE III
—E— ELECTRICAL LINE
NOTE: ELECTRICAL SUPPLY AND INFLUENT PIPING IN SAME TRENCH
Mittelhauser CORPORATION
INTERCEPTION TRENCH LOCATION
AMOCO OIL
ARTESIA, NEW MEXICO
CHECK BY KDL
DRAWN BY BCP
DATE 1-20-95
SCALE AS SHOWN
CAD NO. 2775102B
PRJ NO. 2775.01-02
FIGURE
3

TOP VIEW

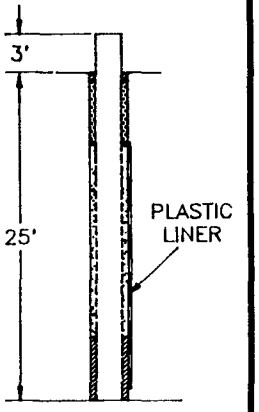


SECTION VIEW



UNDISTURBED

SIDE VIEW



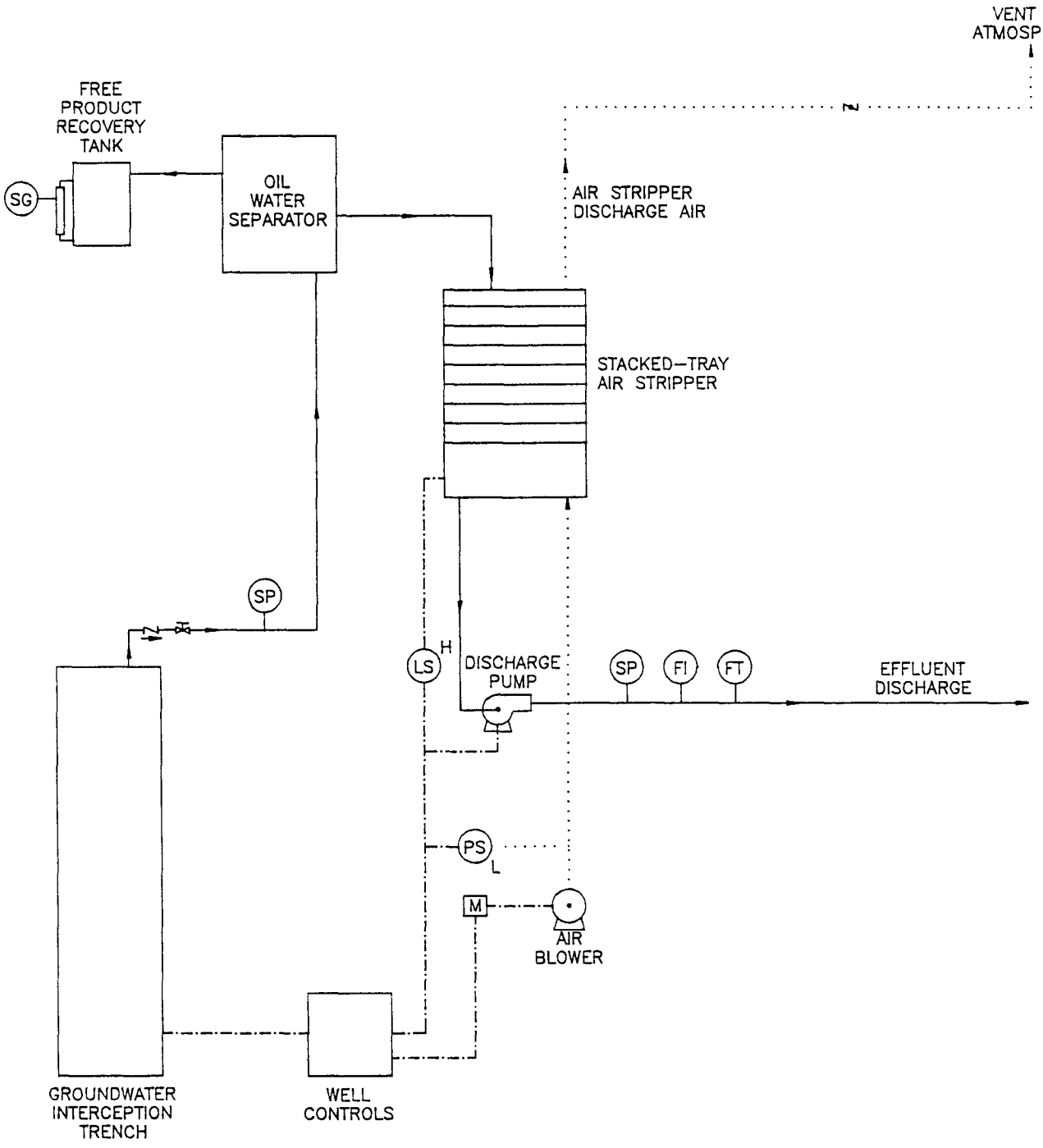
GROUNDWATER ELEVATION

Mittelhauser CORPORATION

TRENCH SYSTEM DESIGN

AMOCO OIL
ARTESIA, NEW MEXICO

CHECK BY	HMM
DRAWN BY	BCP
DATE	6-9-94
SCALE	NONE
CAD NO.	243603B
PRJ NO.	2436.00-03
FIGURE	4



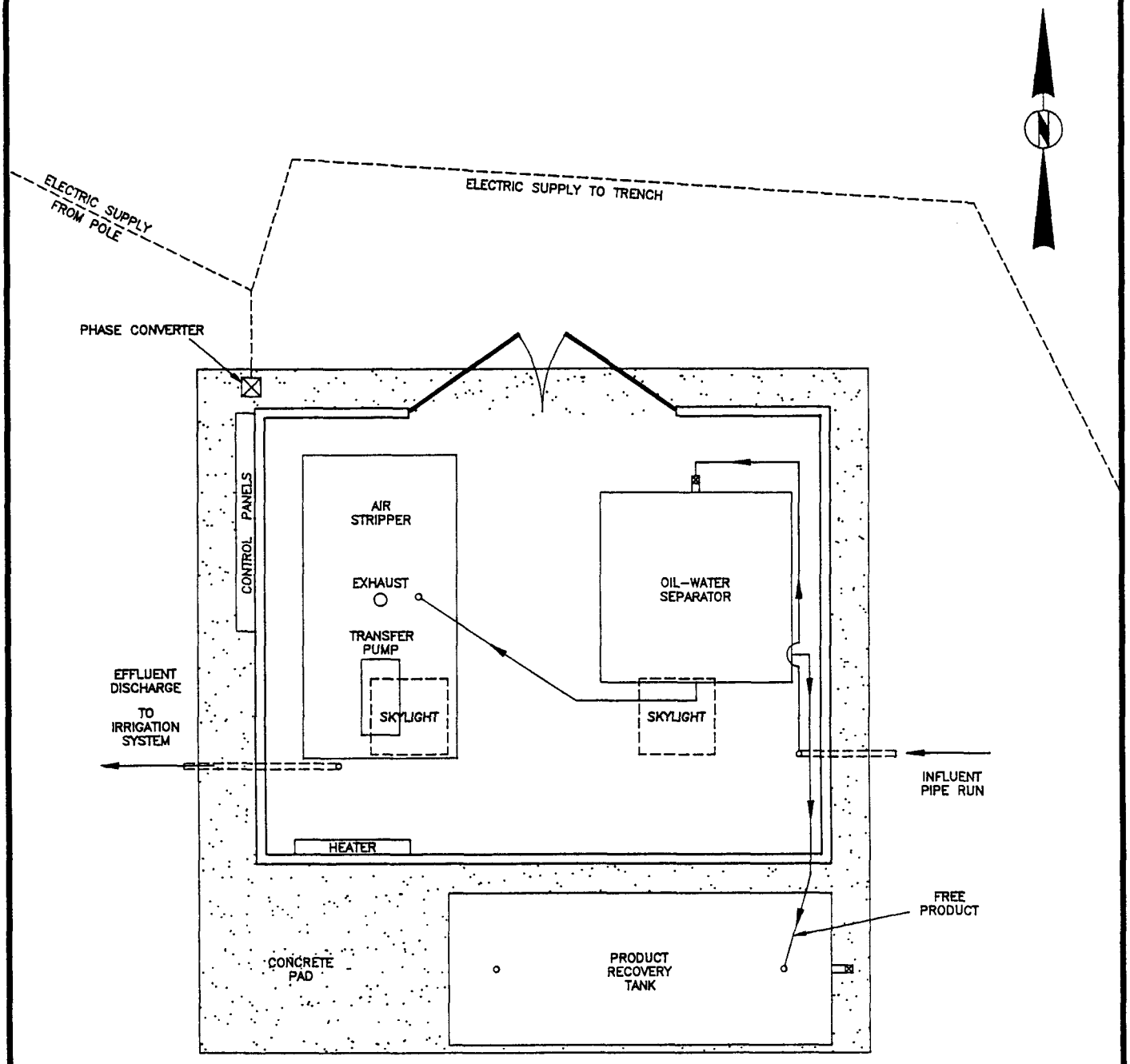
LEGEND

CK	CHECK VALVE	———	WATER LINE
DP	DAMPER	·····	AIR LINE
BV	BALL VALVE	-·-·-·-	ELECTRICAL LINE
FI	FLOW INDICATOR		
LS	LEVEL SWITCH		
PS	PRESSURE SWITCH		
DF	DENSITY FLOAT SWITCH		
SP	SAMPLE PORT		
FT	FLOW TOTALIZER		
SG	SIGHT GLASS		
M	MOTOR STARTER		

Mittelhauser CORPORATION

GROUNDWATER TREATMENT SYSTEM
PROCESS & INSTRUMENTATION
DIAGRAM
AMOCO OIL
ARTESIA, NEW MEXICO

CHECK BY	KDL
DRAWN BY	BCP
DATE	1–10–95
SCALE	AS SHOWN
CAD NO.	2775103A
PRJ NO.	2775.01–03
FIGURE	5



SCALE IN FEET

0 2 4 8

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FLOOR PLAN LAYOUT
&
PIPING DIAGRAM
AMOCO OIL
ARTESIA, NEW MEXICO

CHECK BY	KDL
DRAWN BY	BCP
DATE	1-20-95
SCALE	AS SHOWN
CAD NO.	2775103B
PRJ NO.	2775.01-03
FIGURE	6

APPENDIX A

Photo Log

PHOTO LOG
Amoco Pipeline Company
Installation Report
Artesia, New Mexico
Project 2775.01-02

PHOTOGRAPH #1 *by KDL:Oct 1994*

Direction: West

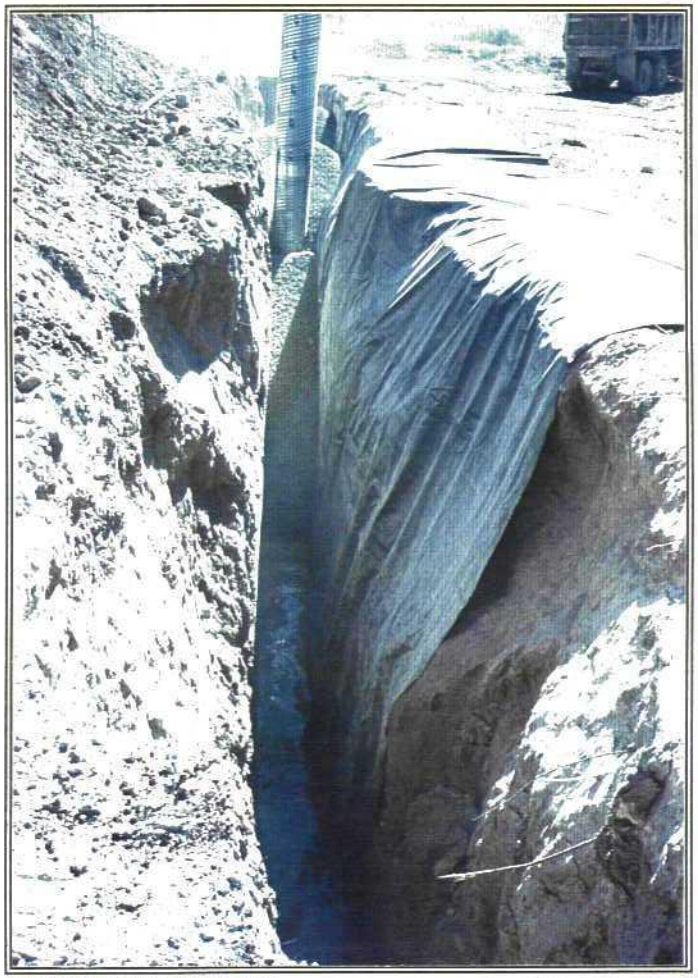
Primer cord from loaded boreholes in trench. Middle of trench prior to blasting.

PHOTOGRAPH #2 *by KDL:Oct 1994*

Direction: East

Trench construction after blasting. Liner is unrolled for sizing and placement.

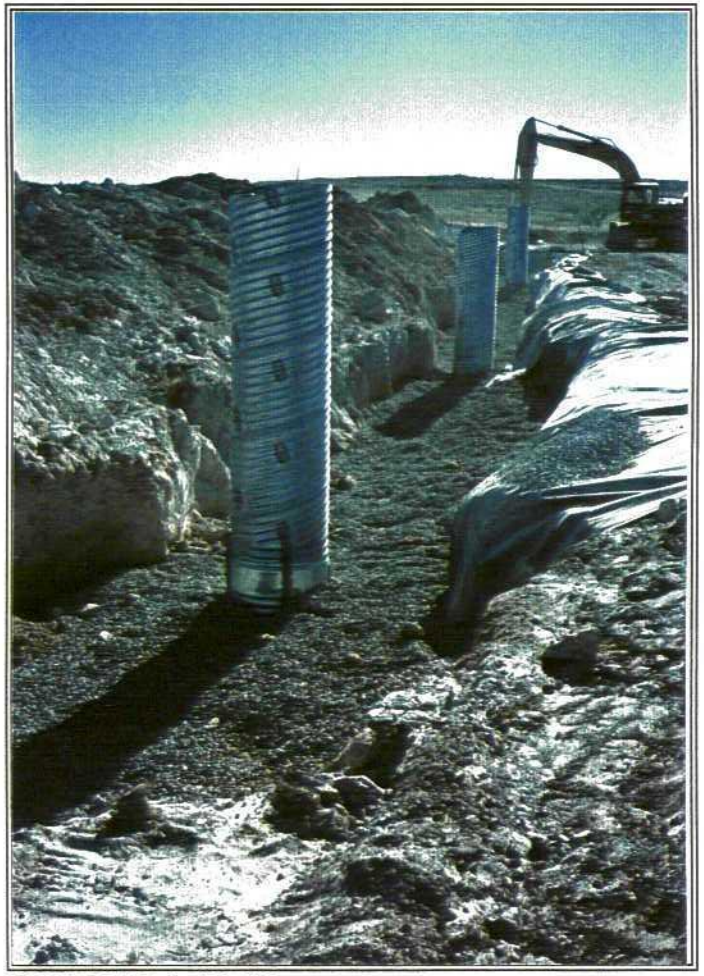
PHOTO LOG
Amoco Pipeline Company
Installation Report
Artesia, New Mexico
Project 2775.01-02



PHOTOGRAPH #3 *by KDL:Oct 1994*

Direction: East

Installation of east sump and liner. Backfill is 1 inch crushed rock.



PHOTOGRAPH #4 *by KDL:Oct 1994*

Direction: East

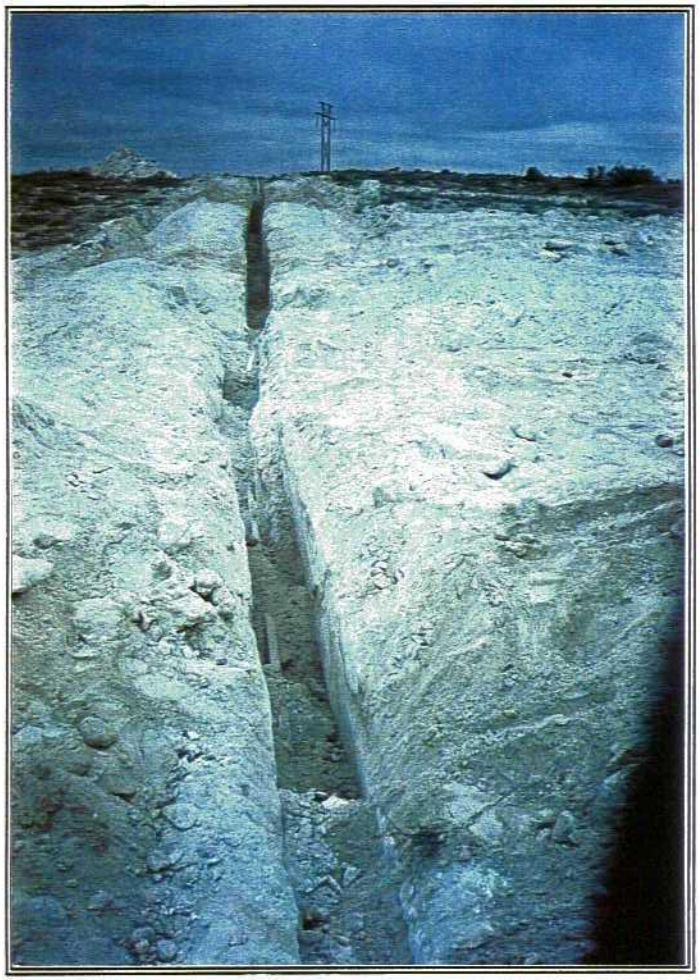
Sump installation complete. Gravel backfill to 4 ft BSG prior to placement of liner over gravel.

PHOTO LOG
Amoco Pipeline Company
Installation Report
Artesia, New Mexico
Project 2775.01-02

PHOTOGRAPH #5 *by KDL:Oct 1994*
Direction: North
Completed sump. Red box is pump capacitor starter.

PHOTOGRAPH #6 *by KDL:Oct 1994*
Direction: East
Influent piping trench along south side of interception trench.

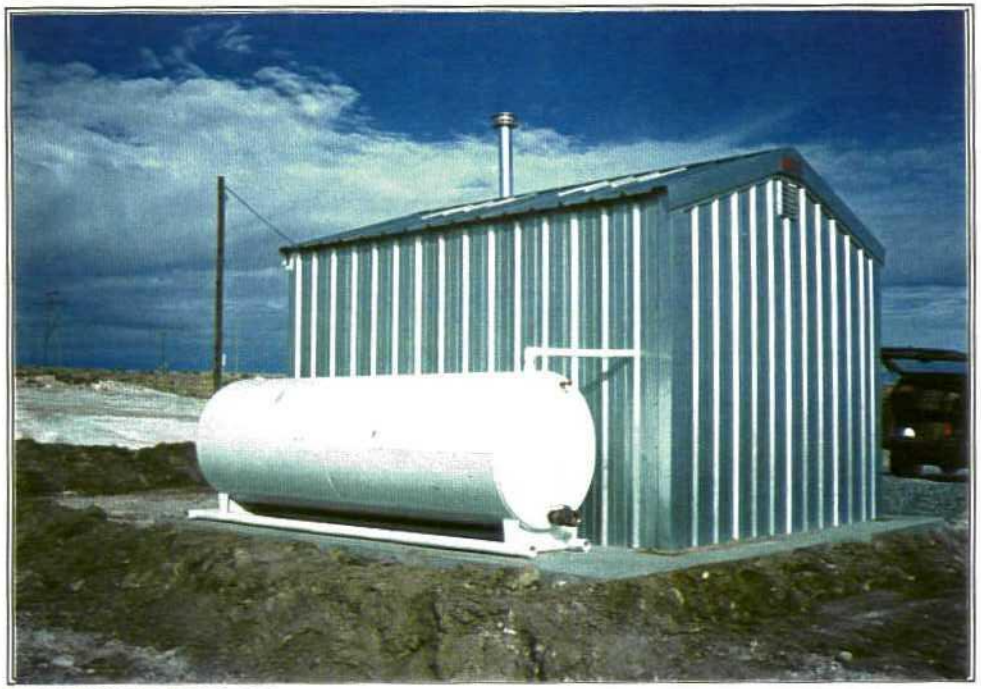
PHOTO LOG
Amoco Pipeline Company
Installation Report
Artesia, New Mexico
Project 2775.01-02



PHOTOGRAPH #7 *by KDL:Oct 1994*
Direction: Southwest
Effluent discharge trench and piping.

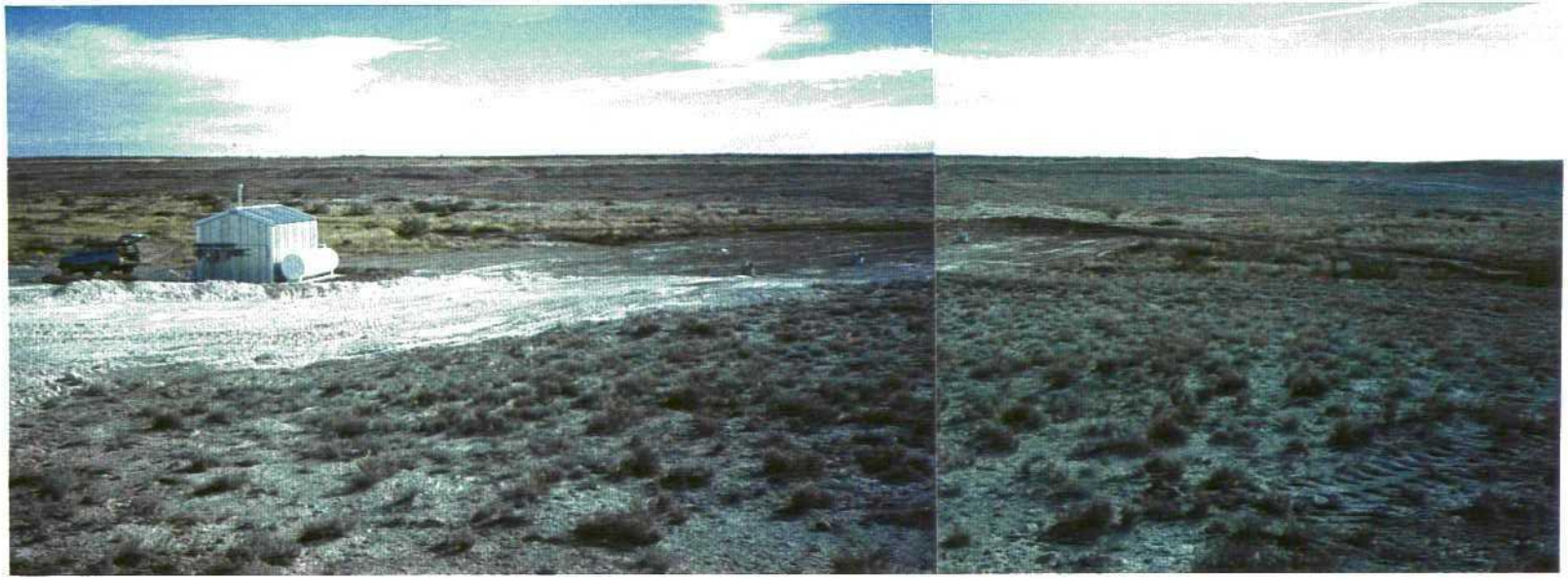
PHOTOGRAPH #8 *by KDL:Oct 1994*
Direction: North
Sprinkler discharge with barb-wire cattle guard.

PHOTO LOG
Amoco Pipeline Company
Installation Report
Artesia, New Mexico
Project 2775.01-02



PHOTOGRAPH #9 *by KDL:Oct 1994*
Direction: Northwest
Product recovery tank and containment berm.

PHOTO LOG
Amoco Pipeline Company
Installation Report
Artesia, New Mexico
Project 2775.01-02



PHOTOGRAPH #10
by KDL: Oct 1994

Direction: Northeast
Scoggin Draw - completed construction.

APPENDIX B

Influent and Effluent to the Air Stripper Results for BETX, PAHs, and Heavy Metals

System Start-Up

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 W. Bartlett Rd.
Bartlett, IL 60103
Tel: (708) 289-3100
Fax: (708) 289-5445

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

12/12/1994

NET Job Number: 94.09351

IEPA Cert No. 100221
WDNR Cert No. 999447130
A2LA Cert No. 0453-01

Enclosed is the Quality Control Data and Analytical Results for the following samples submitted to NET, Inc. Bartlett Division for analysis:

Project Description: Amoco Pipeline Station, Facility 10195

Sample Number	Sample Description	Date Taken	Date Received
285785	Influent	11/25/1994	11/29/1994
285786	Effluent	11/25/1994	11/29/1994
285787	Trip Blank	11/25/1994	11/29/1994

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. These results apply only to the samples analyzed. Reproduction of this report only in whole is permitted. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Procedures used follow NET Standard Operating Procedures which reference the methods listed on your report. Should you have questions regarding procedures or results, please do not hesitate to call. NET has been pleased to provide these analytical services for you.

This Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Approved by:

Jean-Pierre C. Rouanet
Operations Manager

OCEAN GROUP

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 W. Bartlett Rd.
Bartlett, IL 60103
Tel: (708) 289-3100
Fax: (708) 289-5445

ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

12/12/1994

Sample No. : 285785

NET Job No.: 94.09351

Sample Description: Influent
Amoco Pipeline Station, Facility 10195

Date Taken: 11/25/1994
Time Taken: 10:08
IEPA Cert. No. 100221

Date Received: 11/29/1994
Time Received: 10:06
WDNR Cert. No. 999447130

Parameter	Results		Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run		Analytical Method
Metals-Total, ICP	complete			12/06/1994		jmt		1324	6010(1) 200.7(3)
Antimony, ICP	<0.50		mg/L	12/06/1994	0.50	jmt	638	882	6010(1) 200.7(3)
Arsenic, GFAA	<0.005	S	mg/L	12/06/1994	0.0050	mjs	346	312	7060(1) 206.2(3)
Beryllium, ICP	<0.0050		mg/L	12/06/1994	0.0050	jmt	638	965	6010(1) 200.7(3)
Cadmium, ICP	<0.010		mg/L	12/06/1994	0.010	jmt	638	964	6010(1) 200.7(3)
Chromium, ICP	<0.040		mg/L	12/06/1994	0.040	jmt	638	950	6010(1) 200.7(3)
Copper, ICP	0.011		mg/L	12/06/1994	0.010	jmt	638	1223	6010(1) 200.7(3)
Lead, ICP	<0.080		mg/L	12/06/1994	0.080	jmt	638	1157	6010(1) 200.7(3)
Mercury, CVAA	<0.0002		mg/L	12/05/1994	0.0002	jmt	455	426	7471(1) 245.1(3)
Nickel, ICP	<0.050		mg/L	12/06/1994	0.050	jmt	638	1051	6010(1) 200.7(3)
Selenium, GFAA	<0.005	S	mg/L	12/06/1994	0.0050	mjs	346	71	7740(1) 270.2(3)
Silver, AA	<0.040		mg/L	12/01/1994	0.040	mic	258	297	7760(1) 272.1(3)
Thallium, ICP	<0.20		mg/L	12/06/1994	0.20	jmt	638	935	6010(1) 200.7(3)
Zinc, ICP	0.121		mg/L	12/06/1994	0.020	jmt	638	1051	6010(1) 200.7(3)
Metals Prep, Aqueous	Complete			12/05/1994		jmt	638		3010 (1)
Metals Prep, Ag Aqueous	complete			12/01/1994		jmt	258		7760 (1)
Metals Prep, GFAA Aqueous	COMPLETE	S		12/06/1994		mjs	346		3020 (1)
Metals Prep, Hg Aqueous	Complete			12/05/1994		jmt	455		7471 (1)
PREP, BN AQUEOUS	extracted			11/30/1994		tls	265		3500 (1)
BASE/NEUTRALS - 8270 AQUEOUS									
Acenaphthene	<10		ug/L	12/02/1994	10	adl	265	656	8270 (1)
Acenaphthylene	<10		ug/L	12/02/1994	10	adl	265	656	8270 (1)
Anthracene	<10		ug/L	12/02/1994	10	adl	265	656	8270 (1)
Benzo(a)anthracene	<10		ug/L	12/02/1994	10	adl	265	656	8270 (1)
Benzo(b)fluoranthene	<10		ug/L	12/02/1994	10	adl	265	656	8270 (1)
Benzo(k)fluoranthene	<10		ug/L	12/02/1994	10	adl	265	656	8270 (1)
Benzo(g,h,i)perylene	<10		ug/L	12/02/1994	10	adl	265	656	8270 (1)
Benzo(a)pyrene	<10		ug/L	12/02/1994	10	adl	265	656	8270 (1)
Chrysene	<10		ug/L	12/02/1994	10	adl	265	656	8270 (1)

VOA ANALYZED AT A 5X DILUTION.
S : Parameter analysis was sub-contracted to another NET location.

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 W. Bartlett Rd.
Bartlett, IL 60103
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Fax: (708) 289-5445

ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

12/12/1994

Sample No. : 285785

NET Job No.: 94.09351

Sample Description: Influent
Amoco Pipeline Station, Facility 10195

Date Taken: 11/25/1994
Time Taken: 10:08
IEPA Cert. No. 100221

Date Received: 11/29/1994
Time Received: 10:06
WDNR Cert. No. 999447130

Parameter	Results		Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run		Analytical Method
Dibenzo(a,h)anthracene	<10		ug/L	12/02/1994	10	adl	265	656	8270 (1)
Fluoranthene	<10		ug/L	12/02/1994	10	adl	265	656	8270 (1)
Fluorene	<10		ug/L	12/02/1994	10	adl	265	656	8270 (1)
Indeno(1,2,3-cd)pyrene	<10		ug/L	12/02/1994	10	adl	265	656	8270 (1)
Naphthalene	23		ug/L	12/02/1994	10	adl	265	656	8270 (1)
Phenanthrene	<10		ug/L	12/02/1994	10	adl	265	656	8270 (1)
Pyrene	<10		ug/L	12/02/1994	10	adl	265	656	8270 (1)
Surr: Nitrobenzene-d5	68		%	12/02/1994	35-114	adl	265	656	8270 (1)
Surr: 2-Fluorobiphenyl	75		%	12/02/1994	43-116	adl	265	656	8270 (1)
Surr: Terphenyl-d14	90		%	12/02/1994	33-141	adl	265	656	8270 (1)
VOLATILES - 8240 AQUEOUS									
Benzene	2,970	D25	ug/L	12/03/1994	1.0	llj		790	8240 (1)
Ethyl benzene	364		ug/L	12/01/1994	1.0	llj		786	8240 (1)
Toluene	808		ug/L	12/01/1994	1.0	llj		786	8240 (1)
Xylenes, total	1,770		ug/L	12/01/1994	1.0	llj		786	8240 (1)
Surr: 1,2-Dichloroethane-d4	99		%	12/01/1994	76-114	llj		786	8240 (1)
Surr: Toluene-d8	105		%	12/01/1994	88-110	llj		786	8240 (1)
Surr: 4-Bromofluorobenzene	91		%	12/01/1994	86-115	llj		786	8240 (1)

VOA ANALYZED AT A 5X DILUTION.
D25 : Parameter analysis performed at a 25x dilution.

OCEAN GROUP

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 W. Bartlett Rd.
Bartlett, IL 60103
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ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

12/12/1994

Sample No. : 285786

NET Job No.: 94.09351

Sample Description: Effluent
Amoco Pipeline Station, Facility 10195

Date Taken: 11/25/1994
Time Taken: 10:08
IEPA Cert. No. 100221

Date Received: 11/29/1994
Time Received: 10:06
WDNR Cert. No. 999447130

Parameter	Results		Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run		Analytical Method
Metals-Total, ICP	complete			12/06/1994		jmt		1324	6010(1) 200.7(3)
Antimony, ICP	<0.50		mg/L	12/06/1994	0.50	jmt	638	882	6010(1) 200.7(3)
Arsenic, GFAA	<0.005	S	mg/L	12/06/1994	0.0050	mjs	346	312	7060(1) 206.2(3)
Beryllium, ICP	<0.0050		mg/L	12/06/1994	0.0050	jmt	638	965	6010(1) 200.7(3)
Cadmium, ICP	<0.010		mg/L	12/06/1994	0.010	jmt	638	964	6010(1) 200.7(3)
Chromium, ICP	<0.040		mg/L	12/06/1994	0.040	jmt	638	950	6010(1) 200.7(3)
Copper, ICP	0.060		mg/L	12/06/1994	0.010	jmt	638	1223	6010(1) 200.7(3)
Lead, ICP	<0.080		mg/L	12/06/1994	0.080	jmt	638	1157	6010(1) 200.7(3)
Mercury, CVAA	<0.0002		mg/L	12/05/1994	0.0002	jmt	455	426	7471(1) 245.1(3)
Nickel, ICP	<0.050		mg/L	12/06/1994	0.050	jmt	638	1051	6010(1) 200.7(3)
Selenium, GFAA	<0.005	S	mg/L	12/06/1994	0.0050	mjs	346	71	7740(1) 270.2(3)
Silver, AA	<0.040		mg/L	12/01/1994	0.040	mic	258	297	7760(1) 272.1(3)
Thallium, ICP	<0.20		mg/L	12/06/1994	0.20	jmt	638	935	6010(1) 200.7(3)
Zinc, ICP	0.954		mg/L	12/06/1994	0.020	jmt	638	1051	6010(1) 200.7(3)
Metals Prep, Aqueous	Complete			12/05/1994		jmt	638		3010 (1)
Metals Prep, Ag Aqueous	complete			12/01/1994		jmt	258		7760 (1)
Metals Prep, GFAA Aqueous	COMPLETE	S		12/06/1994		mjs	346		3020 (1)
Metals Prep, Hg Aqueous	Complete			12/05/1994		jmt	455		7471 (1)
PREP, BN AQUEOUS	extracted			11/30/1994		tls	265		3500 (1)
BASE/NEUTRALS - 8270 AQUEOUS									
Acenaphthene	<10		ug/L	12/08/1994	10	adl	265	659	8270 (1)
Acenaphthylene	<10		ug/L	12/07/1994	10	adl	265	659	8270 (1)
Anthracene	<10		ug/L	12/08/1994	10	adl	265	659	8270 (1)
Benzo(a)anthracene	<10		ug/L	12/07/1994	10	adl	265	659	8270 (1)
Benzo(b)fluoranthene	<10		ug/L	12/07/1994	10	adl	265	659	8270 (1)
Benzo(k)fluoranthene	<10		ug/L	12/07/1994	10	adl	265	659	8270 (1)
Benzo(g,h,i)perylene	<10		ug/L	12/07/1994	10	adl	265	659	8270 (1)
Benzo(a)pyrene	<10		ug/L	12/07/1994	10	adl	265	659	8270 (1)
Chrysene	<10		ug/L	12/07/1994	10	adl	265	659	8270 (1)

S : Parameter analysis was sub-contracted to another NET location.

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
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ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

12/12/1994

Sample No. : 285786

NET Job No.: 94.09351

Sample Description: Effluent
Amoco Pipeline Station, Facility 10195

Date Taken: 11/25/1994
Time Taken: 10:08
IEPA Cert. No. 100221

Date Received: 11/29/1994
Time Received: 10:06
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run		Analytical Method
Dibenzo(a,h)anthracene	<10	ug/L	12/07/1994	10	adl	265	659	8270 (1)
Fluoranthene	<10	ug/L	12/08/1994	10	adl	265	659	8270 (1)
Fluorene	<10	ug/L	12/08/1994	10	adl	265	659	8270 (1)
Indeno(1,2,3-cd)pyrene	<10	ug/L	12/07/1994	10	adl	265	659	8270 (1)
Naphthalene	<10	ug/L	12/07/1994	10	adl	265	659	8270 (1)
Phenanthrene	<10	ug/L	12/07/1994	10	adl	265	659	8270 (1)
Pyrene	<10	ug/L	12/08/1994	10	adl	265	659	8270 (1)
Surr: Nitrobenzene-d5	59	%	12/07/1994	35-114	adl	265	659	8270 (1)
Surr: 2-Fluorobiphenyl	60	%	12/07/1994	43-116	adl	265	659	8270 (1)
Surr: Terphenyl-d14	68	%	12/07/1994	33-141	adl	265	659	8270 (1)
VOLATILES - 8240 AQUEOUS								
Benzene	1.8	ug/L	12/05/1994	1.0	rla		792	8240 (1)
Ethyl benzene	<1.0	ug/L	12/05/1994	1.0	rla		792	8240 (1)
Toluene	<1.0	ug/L	12/05/1994	1.0	rla		792	8240 (1)
Xylenes, total	<1.0	ug/L	12/05/1994	1.0	rla		792	8240 (1)
Surr: 1,2-Dichloroethane-d4	104	%	12/05/1994	76-114	rla		792	8240 (1)
Surr: Toluene-d8	108	%	12/05/1994	88-110	rla		792	8240 (1)
Surr: 4-Bromofluorobenzene	99	%	12/05/1994	86-115	rla		792	8240 (1)

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

12/12/1994

Sample No. : 285787

NET Job No.: 94.09351

Sample Description: Trip Blank
Amoco Pipeline Station, Facility 10195

Date Taken: 11/25/1994
Time Taken: 10:08
IEPA Cert. No. 100221

Date Received: 11/29/1994
Time Received: 10:06
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
VOLATILES - 8240 AQUEOUS							
Benzene	<1.0	ug/L	12/05/1994	1.0	rla	792	8240 (1)
Ethyl benzene	<1.0	ug/L	12/05/1994	1.0	rla	792	8240 (1)
Toluene	<1.0	ug/L	12/05/1994	1.0	rla	792	8240 (1)
Xylenes, total	<1.0	ug/L	12/05/1994	1.0	rla	792	8240 (1)
Surr: 1,2-Dichloroethane-d4	104	%	12/05/1994	76-114	rla	792	8240 (1)
Surr: Toluene-d8	108	%	12/05/1994	88-110	rla	792	8240 (1)
Surr: 4-Bromofluorobenzene	97	%	12/05/1994	86-115	rla	792	8240 (1)

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
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QUALITY CONTROL REPORT

CONTINUING CALIBRATION VERIFICATION

MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563
Mr. Hank Mittelhauser

12/12/1994

NET Job Number: 94.09351

Analyte	Run Batch Number	CCV True Conc.	Conc. Found	Percent Recovery
Antimony, ICP	882	2.00	2.04	102.0
Arsenic, GFAA	312	0.5000	0.480	96.0
Beryllium, ICP	965	1.00	1.01	101.0
Cadmium, ICP	964	1.00	1.02	102.0
Chromium, ICP	950	2.00	2.02	101.0
Copper, ICP	1223	1.00	1.01	101.0
Lead, ICP	1157	2.00	2.06	103.0
Mercury, CVAA	426	0.0025	0.0027	108.0
Nickel, ICP	1051	1.00	1.00	100.0
Selenium, GFAA	71	0.500	0.490	98.0
Silver, AA	297	0.500	0.974	194.8
Silver, AA	297	1.000	0.974	97.4
Thallium, ICP	935	2.00	2.09	104.5
Zinc, ICP	1051	2.00	2.08	104.0
BASE/NEUTRALS - 8270 AQUEOUS				
Acenaphthene	656	50.0	55.4	110.8
Benzo(a)pyrene	656	50.0	51.5	103.0
Fluoranthene	656	50.0	53.2	106.4
BASE/NEUTRALS - 8270 AQUEOUS				
Acenaphthene	659	50.0	55.9	111.8
Benzo(a)pyrene	659	50.0	56.4	112.8
Fluoranthene	659	50.0	58.4	116.8
VOLATILES - 8240 AQUEOUS				
Ethyl benzene	790	50.0	56.7	113.4
Toluene	790	50.0	54.4	108.8
VOLATILES - 8240 AQUEOUS				
Ethyl benzene	792	50.0	42.2	84.4
Toluene	792	50.0	39.2	78.4

CCV - Continuing Calibration Verification

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 W. Bartlett Rd.
Bartlett, IL 60103
Tel: (708) 289-3100
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QUALITY CONTROL REPORT

BLANK ANALYSIS

MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563
Mr. Hank Mittelhauser

12/12/1994

NET Job Number: 94.09351

Analyte	Prep Batch Number	Run Batch Number	Blank Analysis Results	Units	Reporting Limit	Analytical Method
Antimony, ICP	638	883	<0.50	mg/L	0.50	6010(1) 200.7(3)
Arsenic, GFAA		312	<0.005	mg/L	0.0050	7060(1) 206.2(3)
Beryllium, ICP	638	966	<0.0050	mg/L	0.0050	6010(1) 200.7(3)
Cadmium, ICP	638	965	<0.010	mg/L	0.010	6010(1) 200.7(3)
Chromium, ICP	638	951	<0.040	mg/L	0.040	6010(1) 200.7(3)
Copper, ICP	638	1224	<0.010	mg/L	0.010	6010(1) 200.7(3)
Lead, ICP	638	1158	<0.080	mg/L	0.080	6010(1) 200.7(3)
Mercury, CVAA	455	426	<0.0002	mg/L	0.0002	7471(1) 245.1(3)
Mercury, CVAA	455	426	<0.0002	mg/L	0.0002	7471(1) 245.1(3)
Nickel, ICP	638	1052	<0.050	mg/L	0.050	6010(1) 200.7(3)
Selenium, GFAA		71	<0.005	mg/L	0.005	7740(1) 270.2(3)
Silver, AA	258	297	<0.040	mg/L	0.040	7760(1) 272.1(3)
Silver, AA	258	297	<0.040	mg/L	0.040	7760(1) 272.1(3)
Thallium, ICP	638	936	<0.20	mg/L	0.20	6010(1) 200.7(3)
Zinc, ICP	638	1052	<0.020	mg/L	0.020	6010(1) 200.7(3)
BASE/NEUTRALS - 8270 AQUEOUS						8270 (1)
Surr: Nitrobenzene-d5	265	658	81	%	35-114	8270 (1)
Surr: 2-Fluorobiphenyl	265	658	77	%	43-116	8270 (1)
Surr: Terphenyl-d14	265	658	112	%	33-141	8270 (1)
BASE/NEUTRALS - 8270 AQUEOUS						8270 (1)
Surr: Nitrobenzene-d5	265	658	81	%	35-114	8270 (1)
Surr: 2-Fluorobiphenyl	265	658	77	%	43-116	8270 (1)
Surr: Terphenyl-d14	265	658	112	%	33-141	8270 (1)
VOLATILES - 8240 AQUEOUS						8240 (1)
Benzene		790	<1.0	ug/L	1.0	8240 (1)
Ethyl benzene		790	<1.0	ug/L	1.0	8240 (1)
Toluene		790	<1.0	ug/L	1.0	8240 (1)
Xylenes, total		790	<1.0	ug/L	1.0	8240 (1)
Surr: 1,2-Dichloroethane-d4		790	85	%	76-114	8240 (1)

Advisory Control Limits for Blanks:

All compounds should be less than the Reporting Limit, except for phthalate esters, toluene, methylene chloride, acetone and chloroform should be less than 5 times the Reporting Limit.

OCEAN GROUP

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
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QUALITY CONTROL REPORT

BLANK ANALYSIS

MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563
Mr. Hank Mittelhauser

12/12/1994

NET Job Number: 94.09351

Analyte	Prep Batch Number	Run Batch Number	Blank Analysis Results	Units	Reporting Limit	Analytical Method
Surr: Toluene-d8		790	104	%	88-110	8240 (1)
Surr: 4-Bromofluorobenzene		790	92	%	86-115	8240 (1)
VOLATILES - 8240 AQUEOUS						8240 (1)
Benzene		792	<1.0	ug/L	1.0	8240 (1)
Ethyl benzene		792	<1.0	ug/L	1.0	8240 (1)
Toluene		792	<1.0	ug/L	1.0	8240 (1)
Xylenes, total		792	<1.0	ug/L	1.0	8240 (1)
Surr: 1,2-Dichloroethane-d4		792	91	%	76-114	8240 (1)
Surr: Toluene-d8		792	94	%	88-110	8240 (1)
Surr: 4-Bromofluorobenzene		792	87	%	86-115	8240 (1)

Advisory Control Limits for Blanks:

All compounds should be less than the Reporting Limit, except for phthalate esters, toluene, methylene chloride, acetone and chloroform should be less than 5 times the Reporting Limit.

OCEAN GROUP

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
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QUALITY CONTROL REPORT

LABORATORY CONTROL STANDARD

MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563
Mr. Hank Mittelhauser

12/12/1994

NET Job Number: 94.09351

Analyte	Prep Batch Number	Run Batch Number	True Conc.	Conc. Found		LCS % Recovery
Antimony, ICP	638	883	1.00	0.97		97.0
Arsenic, GFAA		312	0.500	0.520	S	104.0
Beryllium, ICP	638	966	0.500	0.492		98.4
Cadmium, ICP	638	965	0.500	0.481		96.2
Chromium, ICP	638	951	1.00	0.984		98.4
Copper, ICP	638	1224	0.500	0.485		97.0
Lead, ICP	638	1158	1.00	1.10		110.0
Mercury, CVAA	455	426	0.0025	0.0027		108.0
Mercury, CVAA	455	426	0.0025	0.0027		108.0
Nickel, ICP	638	1052	0.500	0.492		98.4
Selenium, GFAA		71	0.500	0.490	S	98.0
Silver, AA	258	297	1.00	0.877		87.7
Silver, AA	258	297	1.00	0.877		87.7
Thallium, ICP	638	936	1.00	0.965		96.5
Zinc, ICP	638	1052	1.00	1.00		100.0
BASE/NEUTRALS - 8270 AQUEOUS						
Acenaphthene	265	656	100	98		98.0
Acenaphthylene	265	656	100	97		97.0
Anthracene	265	656	100	99		99.0
Benzo(a)anthracene	265	656	100	107		107.0
Benzo(b)fluoranthene	265	656	100	120		120.0
Benzo(k)fluoranthene	265	656	100	76		76.0
Benzo(g,h,i)perylene	265	656	100	120		120.0
Benzo(a)pyrene	265	656	100	100		100.0
Chrysene	265	656	100	104		104.0
Dibenzo(a,h)anthracene	265	656	100	120		120.0
Fluoranthene	265	656	100	93		93.0
Indeno(1,2,3-cd)pyrene	265	656	100	120		120.0
Naphthalene	265	656	100	87		87.0
Phenanthrene	265	656	100	103		103.0
Pyrene	265	656	100	110		110.0

Advisory Control Limits - Inorganics - LCS recovery should be 80 - 120%.

OCEAN GROUP

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 W. Bartlett Rd.
Bartlett, IL 60103
Tel: (708) 289-3100
Fax: (708) 289-5445

QUALITY CONTROL REPORT

LABORATORY CONTROL STANDARD

MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563
Mr. Hank Mittelhauser

12/12/1994

NET Job Number: 94.09351

Analyte	Prep Batch Number	Run Batch Number	True Conc.	Conc. Found	LCS % Recovery
BASE/NEUTRALS - 8270 AQUEOUS					
Acenaphthene	265	656	100	98	98.0
Acenaphthylene	265	656	100	97	97.0
Anthracene	265	656	100	99	99.0
Benzo(a)anthracene	265	656	100	107	107.0
Benzo(b)fluoranthene	265	656	100	120	120.0
Benzo(k)fluoranthene	265	656	100	76	76.0
Benzo(g,h,i)perylene	265	656	100	120	120.0
Benzo(a)pyrene	265	656	100	100	100.0
Chrysene	265	656	100	104	104.0
Dibenzo(a,h)anthracene	265	656	100	120	120.0
Fluoranthene	265	656	100	93	93.0
Indeno(1,2,3-cd)pyrene	265	656	100	120	120.0
Naphthalene	265	656	100	87	87.0
Phenanthrene	265	656	100	103	103.0
Pyrene	265	656	100	110	110.0
BASE/NEUTRALS - 8270 AQUEOUS					
Acenaphthene		659	100	87.0	87.0
Acenaphthylene		659	100	89.0	89.0
Anthracene		659	100	87.0	87.0
Benzo(a)anthracene		659	100	90.0	90.0
Benzo(a)pyrene		659	100	88.0	88.0
Benzo(b)fluoranthene		659	100	105	105.0
Benzo(k)fluoranthene		659	100	85.0	85.0
Benzo(g,h,i)perylene		659	100	92.0	92.0
Chrysene		659	100	93.0	93.0
Dibenzo(a,h)anthracene		659	100	94.0	94.0
Fluoranthene		659	100	96.0	96.0
Fluorene		659	100	100	100.0
Indeno(1,2,3-cd)pyrene		659	100.	91.0	91.0
Naphthalene		659	100	82.0	82.0

Advisory Control Limits - Inorganics - LCS recovery should be 80 - 120%.

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 W. Bartlett Rd.
Bartlett, IL 60103
Tel: (708) 289-3100
Fax: (708) 289-5445

QUALITY CONTROL REPORT

LABORATORY CONTROL STANDARD

MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563
Mr. Hank Mittelhauser

12/12/1994

NET Job Number: 94.09351

Analyte	Prep Batch Number	Run Batch Number	True Conc.	Conc. Found	LCS % Recovery
Phenanthrene		659	100	89.0	89.0
Pyrene		659	100	90.0	90.0
VOLATILES - 8240 AQUEOUS					
Ethyl benzene		790	20.0	26.0	130.0
Toluene		790	20.0	24.0	120.0
VOLATILES - 8240 AQUEOUS					
Ethyl benzene		792	20.0	21.0	105.0
Toluene		792	20.0	19.0	95.0

Advisory Control Limits - Inorganics - LCS recovery should be 80 - 120%.

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 W. Bartlett Rd.
Bartlett, IL 60103
Tel: (708) 289-3100
Fax: (708) 289-5445

QUALITY CONTROL REPORT

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563
Mr. Hank Mittelhauser

12/12/1994

NET Job Number: 94.09351

Analyte	Prep Batch Number	Run Batch Number	Matrix Spike Result	Sample Result	Spike Amount	Units	Percent Recovery	MSD Result	MSD Spike Amount	Units	Percent Recovery	MS/MSD RPD
Antimony, ICP	638	881	1.01	<0.50	1.00	mg/L	101.0	1.10	1.00	mg/L	110.0	8.5
Arsenic, GFAA		312	0.520	<0.500	0.500	mg/L	104.0	0.520	0.500	mg/L	104.0	0.0
Beryllium, ICP	638	964	0.490	<0.0050	0.500	mg/L	98.0	0.482	0.500	mg/L	96.4	1.6
Cadmium, ICP	638	963	0.490	<0.010	0.500	mg/L	98.0	0.512	0.500	mg/L	102.4	4.3
Chromium, ICP	638	949	0.959	<0.040	1.00	mg/L	95.9	0.986	1.00	mg/L	98.6	2.8
Copper, ICP	638	1222	0.466	<0.010	0.500	mg/L	93.2	0.478	0.500	mg/L	95.6	2.5
Lead, ICP	638	1156	1.04	<0.080	1.00	mg/L	104.0	0.996	1.00	mg/L	99.6	4.2
Mercury, CVAA	455	426	0.0027	<0.0002	0.0025	mg/L	108.0	0.0027	0.0025	mg/L	108.0	0.0
Nickel, ICP	638	1050	0.472	<0.050	0.500	mg/L	94.4	0.481	0.500	mg/L	96.2	1.9
Selenium, GFAA		71	0.530	<0.500	0.500	mg/L	106.0	0.530	0.500	mg/L	106.0	0.0
Silver, AA	258	297	0.848	<0.040	1.00	mg/L	84.8	0.885	1.00	mg/L	88.5	4.3
Zinc, ICP	638	1050	0.993	0.022	1.00	mg/L	97.1	1.01	1.00	mg/L	98.8	1.7
VOLATILES - 8240 AQUEOUS												
Ethyl benzene		790	25.0	<1.0	20.0	ug/L	125.0	26.0	20.0	ug/L	130.0	3.9
Toluene		790	25.0	<1.0	20.0	ug/L	125.0	25.0	20.0	ug/L	125.0	0.0

NOTE: Matrix Spike Samples may not be samples from this job.

Advisory Control Limits for MS/MSDs:

For Inorganic Parameters and GC Volatiles, the spike recovery should be 75 - 125% if the spike added value was greater than or equal to one fourth of the sample result value. If not, the control limits are not established. The RPD for the MS/MSD pair should be less than 20.

MS = Matrix Spike
MSD = Matrix Spike Duplicate
RPD = Relative Percent Difference

OCEAN GROUP

NATIONAL ENVIRONMENTAL TESTING, INC.

Attn: Moira Holland

CHAIN OF CUSTODY RECORD

H. Mihlehauser

COMPANY Amoco Pipeline Company
ADDRESS MAIL CODE P0630L2 PO Box 7513 Chicago, IL 60680-7513
PHONE 312-856-7251 FAX 312-856-3731
PROJECT NAME/LOCATION Amoco Pipeline station, Artesia NM
PROJECT NUMBER Artesia Pumping Station, Facility 10195
PROJECT MANAGER Douglas S. Earney

REPORT TO: Douglas S. Earney.
INVOICE TO: Amoco Pipe Line Co.
P.O. NO.
NET QUOTE NO.

MBF Services

SAMPLED BY Clayton M Barnhill (PRINT NAME) Clayton M Barnhill SIGNATURE
Corey McMinn (PRINT NAME) SIGNATURE

			# and Type of Containers	ANALYSES: BTEX-8020	Naphthalene-8270	Hg, Be, CYAN	Hg, Be, RA	TCLP Metals: Sb, As, Be, Cd, Cr, Cu, Pb, Ni, TCLP Zn	COMMENTS
11/25/96	10:05 Am	Influent	WW	X	X	X	X	X	12/5 Hank Mihlehauser called to add Na, K, Ca, Mg, Cl, Fl, TDS, Sulfate on a Dependable job
11/25/96	10:05 AM	Effluent	WW	X	X	X	X	X	
11/25/96	10:05 Am	Trip Blank	WW	X					

CONDITION OF SAMPLE: BOTTLES INTACT? (YES) NO
FIELD FILTERED? YES / NO N/A
COC SEALS PRESENT AND INTACT? YES / NO N/A
VOLATILES FREE OF HEADSPACE? YES / NO

TEMPERATURE UPON RECEIPT: 10.1°
Bottles supplied by NET? (YES) / NO

SAMPLE REMAINDER DISPOSAL: RETURN SAMPLE REMAINDER TO CLIENT VIA _____
I REQUEST NET TO DISPOSE OF ALL SAMPLE REMAINDERS

DATE

APPENDIX C

Influent and Effluent to the Air Stripper
Results Anions and Cations

System Start-Up

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 W. Bartlett Rd.
Bartlett, IL 60103
Tel: (708) 289-3100
Fax: (708) 289-5445

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

12/09/1994

NET Job Number: 94.09537

IEPA Cert No. 100221
WDNR Cert No. 999447130
A2LA Cert No. 0453-01

Enclosed is the Quality Control Data and Analytical Results for the following samples submitted to NET, Inc. Bartlett Division for analysis:

Project Description: Amoco Pipeline Station, Artesia, NM

Sample Number	Sample Description	Date Taken	Date Received
286605	Influent	11/25/1994	12/05/1994
286613	Effluent	11/25/1994	12/05/1994

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. These results apply only to the samples analyzed. Reproduction of this report only in whole is permitted. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Procedures used follow NET Standard Operating Procedures which reference the methods listed on your report. Should you have questions regarding procedures or results, please do not hesitate to call. NET has been pleased to provide these analytical services for you.

This Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Approved by:

Jean-Pierre C. Rouanet
Operations Manager

OCEAN GROUP

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 W. Bartlett Rd.
Bartlett, IL 60103
Tel: (708) 289-3100
Fax: (708) 289-5445

ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

12/09/1994

Sample No. : 286605

NET Job No.: 94.09537

Sample Description: Influent
Amoco Pipeline Station, Artesia, NM

Date Taken: 11/25/1994
Time Taken: 10:08
IEPA Cert. No. 100221

Date Received: 12/05/1994
Time Received: 16:00
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
Chloride	642	mg/L	12/08/1994	5	dsf	356	4500Cl(4) 325.3(3)
Fluoride	0.29	mg/L	12/08/1994	0.05	dsf	263	4500F C(4) 340.2
Calcium, AA	700	mg/L	12/06/1994	1.0	jmt	164	7140(1) 215.1(3)
Magnesium, AA	180	mg/L	12/06/1994	1.0	jmt	157	7450(1) 242.1(3)
Potassium, AA	10	mg/L	12/06/1994	1.0	jmt	153	7610(1) 258.1(3)
Sodium, AA	43	mg/L	12/06/1994	1.0	jmt	166	7770(1) 273.1(3)

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 W. Bartlett Rd.
Bartlett, IL 60103
Tel: (708) 289-3100
Fax: (708) 289-5445

ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

12/09/1994

Sample No. : 286613

NET Job No.: 94.09537

Sample Description: Effluent
Amoco Pipeline Station, Artesia, NM

Date Taken: 11/25/1994
Time Taken: 10:08
IEPA Cert. No. 100221

Date Received: 12/05/1994
Time Received: 16:00
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
Chloride	915	mg/L	12/08/1994	5	dsf	356	4500Cl(4) 325.3(3)
Fluoride	0.32	mg/L	12/08/1994	0.05	dsf	263	4500F C(4) 340.2
Calcium, AA	450	mg/L	12/06/1994	1.0	jmt	164	7140(1) 215.1(3)
Magnesium, AA	160	mg/L	12/06/1994	1.0	jmt	157	7450(1) 242.1(3)
Potassium, AA	9.7	mg/L	12/06/1994	1.0	jmt	153	7610(1) 258.1(3)
Sodium, AA	380	mg/L	12/06/1994	1.0	jmt	166	7770(1) 273.1(3)

OCEAN GROUP

NET Midwest, Bartlett Division

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in the results column indicates the analyte was not detected at or above the reported value.
mg/L	:	Concentration in units of milligrams of analyte per liter of sample. Measurement used for aqueous samples. Can also be expressed as parts per million (ppm).
ug/g	:	Concentration in units of micrograms of analyte per gram of sample. Measurement used for non-aqueous samples. Can also be expressed as parts per million (ppm) or mg/Kg.
ug/L	:	Concentration in units of micrograms of analyte per liter of sample. Measurement used for aqueous samples. Can also be expressed as parts per billion (ppb).
ug/Kg	:	Concentration in units of micrograms of analyte per kilogram of sample. Measurement used for non-aqueous samples. Can also be expressed as parts per billion (ppb).
B	:	Sample result flag indicating that the analyte was also found in the method blank analysis. The value after the B indicates the concentration found in the blank analysis.
D	:	Sample result flag indicating that the reported concentration is from an analysis performed at a dilution. The value following the D indicates the dilution factor of the analysis.
J	:	Sample result flag indicating that the reported concentration is below the routine reporting limit but greater than the Method Detection Limit. The value should be considered estimated.
TCLP	:	These initials appearing in front of an analyte name indicate that the Toxicity Characteristic Leaching Procedure (TCLP) was performed for this test.
%	:	Percent; To convert ppm to %, divide the result by 10,000. To convert % to ppm, multiply the result by 10,000.
Dry Weight (dw)	:	When indicated, the results are reported on a dry weight basis. The contribution of the moisture content in the sample is subtracted when calculating the concentration of the analyte.
ICP	:	Indicates analysis was performed using Inductively Coupled Plasma Spectroscopy.
AA	:	Indicates analysis was performed using Atomic Absorption Spectroscopy.
GFAA	:	Indicates analysis was performed using Graphite Furnace Atomic Absorption Spectroscopy.
PQL	:	Practical Quantitation Limit; the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

Method References

(1) Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", USEPA SW-846, 3rd Edition, 1986.

(2) ASTM "American Society for Testing Materials

(3) Methods 100 through 499: see "Methods for Chemical Analysis of Water and Wastes", USEPA, 600/4-79-020, Rev. 1983.

(4) See "Standard Methods for the Examination of Water and Wastewater", 17th Ed, APHA, 1989.

(5) Methods 600 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants", USEPA Federal Register Vol. 49 No. 209, October 1984.

(6) Methods 500 through 599: see "Methods for the Determination of Organic Compounds in Drinking Water," USEPA 600/4-88/039, Rev. 1988.

H. Mitchinson

NET ENVIRONMENTAL TESTING, INC.

Attn: Moira Holland

CHAIN OF CUSTODY RECORD

COMPANY Amoco Pipeline Company
ADDRESS Mail Code P06302 PO Box 7513 Chicago, IL 60680-7513
PHONE 312-856-7251 FAX 312-856-3731
PROJECT NAME/LOCATION Amoco Pipeline Station, Artesia NM
PROJECT NUMBER Artesia Pumping Station, Facility 10195
PROJECT MANAGER Douglas S Earney

REPORT TO: Douglas S. Earney
INVOICE TO: Amoco Pipe Line Co.
P.O. NO.
NET QUOTE NO.

MBF Services

SAMPLED BY
Clayton M Barnhill (PRINT NAME)
Clayton M Barnhill (SIGNATURE)
Rory McMinn (PRINT NAME)
(SIGNATURE)

DATE	TIME	SAMPLE IDENTIFICATION	MATRIX	# and Type of Containers	BTEX-8020	Naphthalene-8270	Hg-CVAA	Be-AA	TCLP Metals:	Sb, As, Be, Cd, Cr, Pb, Ni, Ag, Tl, Zn	COMMENTS
11/25/94	10:05 Am	Influent	WW		X	X	X	X	X		12/5 Hank Nutt/Hanson called to add Na, K, Ca, Mg, Cl, SI, TDS, Sulfate
11/25/94	10:05 Am	Effluent	WW		X	X	X	X	X		TDS, Sulfate detected due to limited amount of sample
11/25/94	10:05 Am	Trip Blank	WW		X						

CONDITION OF SAMPLE: BOTTLES INTACT? YES / NO
FIELD FILTERED? YES / NO N/A
COC SEALS PRESENT AND INTACT? YES / NO N/A
VOLATILES FREE OF HEADSPACE? YES / NO
TEMPERATURE UPON RECEIPT: 10.1°
Bottles supplied by NET? YES / NO

SAMPLE REMAINDER DISPOSAL: RETURN SAMPLE REMAINDER TO CLIENT VIA
I REQUEST NET TO DISPOSE OF ALL SAMPLE REMAINDERS DATE

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	RELINQUISHED BY:	DATE/TIME	RECEIVED FOR NET BY:
Clayton M Barnhill	11/25/94 10:05AM			11/25/94 12:06	Karen Waldrop

METHOD OF SHIPMENT

REMARKS:
Send A copy of the Report to H. Mitchinson #2775

PT 1 - ORIGINAL - WHITE PT 2 - NET PROJECT MANAGER - YELLOW PT 3 - CUSTOMER COPY - PINK

APPENDIX D

Influent and Effluent to the Air Stripper
Results for BETX

First Monthly Sample (December 1994)

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 W. Bartlett Rd.
Bartlett, IL 60103
Tel: (708) 289-3100
Fax: (708) 289-5445

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

01/05/1995

NET Job Number: 94.10096

IEPA Cert No. 100221
WDNR Cert No. 999447130
A2LA Cert No. 0453-01

Enclosed is the Quality Control Data and Analytical Results for the following samples submitted to NET, Inc. Bartlett Division for analysis:

Project Description: Artesia Pumping Station, Facility 10195

Sample Number	Sample Description	Date Taken	Date Received
289291	Influent	12/21/1994	12/27/1994
289292	Effluent	12/21/1994	12/27/1994
289293	Trip Blank	12/21/1994	12/27/1994

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. These results apply only to the samples analyzed. Reproduction of this report only in whole is permitted. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Procedures used follow NET Standard Operating Procedures which reference the methods listed on your report. Should you have questions regarding procedures or results, please do not hesitate to call. NET has been pleased to provide these analytical services for you.

This Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Approved by:

Jean-Pierre C. Rouanet
Operations Manager

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
950 W. Bartlett Rd.
Bartlett, IL 60103
Tel: (708) 289-3100
Fax: (708) 289-5445

ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

01/05/1995

Sample No. : 289291

NET Job No.: 94.10096

Sample Description: Influent
Artesia Pumping Station, Facility 10195

Date Taken: 12/21/1994
Time Taken: 17:24
IEPA Cert. No. 100221

Date Received: 12/27/1994
Time Received: 11:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
VOLATILES - 8240 AQUEOUS							
Benzene	3,070	ug/L	01/04/1995	1.0	llj	829	8240 (1)
Ethyl benzene	338	ug/L	01/04/1995	1.0	llj	829	8240 (1)
Toluene	1,220	ug/L	01/04/1995	1.0	llj	829	8240 (1)
Xylenes, total	2,130	ug/L	01/04/1995	1.0	llj	829	8240 (1)
Surr: 1,2-Dichloroethane-d4	102	%	01/04/1995	76-114	llj	829	8240 (1)
Surr: Toluene-d8	107	%	01/04/1995	88-110	llj	829	8240 (1)
Surr: 4-Bromofluorobenzene	103	%	01/04/1995	86-115	llj	829	8240 (1)

VOA ANALYZED AT A 25X DILUTION.

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 W. Bartlett Rd.
Bartlett, IL 60103
Tel: (708) 289-3100
Fax: (708) 289-5445

ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

01/05/1995

Sample No. : 289292

NET Job No.: 94.10096

Sample Description: Effluent
Artesia Pumping Station, Facility 10195

Date Taken: 12/21/1994
Time Taken: 17:24
IEPA Cert. No. 100221

Date Received: 12/27/1994
Time Received: 11:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
VOLATILES - 8240 AQUEOUS							
Benzene	6.6	ug/L	12/29/1994	1.0	LLJ	825	8240 (1)
Ethyl benzene	<1.0	ug/L	12/29/1994	1.0	LLJ	825	8240 (1)
Toluene	5.1	ug/L	12/29/1994	1.0	LLJ	825	8240 (1)
Xylenes, total	5.7	ug/L	12/29/1994	1.0	LLJ	825	8240 (1)
Surr: 1,2-Dichloroethane-d4	106	%	12/29/1994	76-114	LLJ	825	8240 (1)
Surr: Toluene-d8	109	%	12/29/1994	88-110	LLJ	825	8240 (1)
Surr: 4-Bromofluorobenzene	104	%	12/29/1994	86-115	LLJ	825	8240 (1)

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
950 W. Bartlett Rd.
Bartlett, IL 60103
Tel: (708) 289-3100
Fax: (708) 289-5445

ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

01/05/1995

Sample No. : 289293

NET Job No.: 94.10096

Sample Description: Trip Blank
Artesia Pumping Station, Facility 10195

Date Taken: 12/21/1994
Time Taken: 17:24
IEPA Cert. No. 100221

Date Received: 12/27/1994
Time Received: 11:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
VOLATILES - 8240 AQUEOUS							
Benzene	<1.0	ug/L	12/29/1994	1.0	llj	825	8240 (1)
Ethyl benzene	<1.0	ug/L	12/29/1994	1.0	llj	825	8240 (1)
Toluene	<1.0	ug/L	12/29/1994	1.0	llj	825	8240 (1)
Xylenes, total	<1.0	ug/L	12/29/1994	1.0	llj	825	8240 (1)
Surr: 1,2-Dichloroethane-d4	105	%	12/29/1994	76-114	llj	825	8240 (1)
Surr: Toluene-d8	109	%	12/29/1994	88-110	llj	825	8240 (1)
Surr: 4-Bromofluorobenzene	105	%	12/29/1994	86-115	llj	825	8240 (1)

NET NATIONAL ENVIRONMENTAL TESTING, INC.

CHAIN OF CUSTODY RECORD

H. MITTLEHAUSER & DOUGLAS S. EARLY

COMPANY AMOCO PIPELINE COMPANY — REPORT TO: DOUGLAS S. EARLY

ADDRESS MAIL CODE P06 5012 PO BOX 7513 CHICAGO IL 60680-7513 — INVOICE TO: AMOCO PIPELINE CO

PHONE 312-856-7451 FAX 312-856-3231 — P.O. NO.

PROJECT NAME/LOCATION AMOCO PIPELINE STATION, ARTESIA NM

PROJECT NUMBER Artesia Pumping Station, Facility 10195 — NET QUOTE NO.

PROJECT MANAGER DOUGLAS S. EARLY

ATTN: MOKA HOLLAND

MBF SERVICES

SAMPLED BY CLAYTON M BARNHILL (PRINT NAME) — SIGNATURE

(PRINT NAME) — SIGNATURE

				# and Type of Containers	BTEX 8020	HALOGENATED 8270	Hg-CVAA	SE-AA	Lab METALS 6010 (B, Be, Cd, Cr, Pb, Ni, Ag, Tl, Zn)	COMMENTS
12/24/94	5:24 PM	INFLUENT	H2O		X	X	X	X	X	delete Napthalene per Kurt Lindstrom 12/28/94 MTH
12/24/94	5:24 PM	EFFLUENT	H2O		X	X	X	X	X	
12/24/94	5:24 PM	TRIP BLANK	H2O		X					12/28/94 PCW Kurt Hold metals until further notice MTH

CONDITION OF SAMPLE: BOTTLES INTACT? YES / NO — COC SEALS PRESENT AND INTACT? YES / NO — TEMPERATURE UPON RECEIPT: 15.5°C

FIELD FILTERED? YES / NO — VOLATILES FREE OF HEADSPACE? YES / NO — Bottles supplied by NET? YES / NO

SAMPLE REMAINDER DISPOSAL: RETURN SAMPLE REMAINDER TO CLIENT VIA _____

I REQUEST NET TO DISPOSE OF ALL SAMPLE REMAINDERS _____ DATE _____

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	RELINQUISHED BY:	DATE/TIME	RECEIVED FOR NET BY:
Clayton M Barnhill	12/24/94 6:50 PM			12/27/94 11:45	Angel Sanders

METHOD OF SHIPMENT

REMARKS: SEND A COPY OF THE REPORT TO H. MITTLEHAUSER #2775

STAT

WHITE - PROJECT MANAGER - YELLOW - PINK - CUSTOMER COPY - PINK

NET BARTLETT DIV ---- MITTELHAUSER 8708 289 5445 01/05/95 17:28 005/005

APPENDIX E

Wells With No Free-Product
Results for BETX and PAHs

System Start-Up

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 W. Bartlett Rd.
Bartlett, IL 60103
Tel: (708) 289-3100
Fax: (708) 289-5445

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

12/12/1994

NET Job Number: 94.09283

IEPA Cert No. 100221
WDNR Cert No. 999447130
A2LA Cert No. 0453-01

Enclosed is the Quality Control Data and Analytical Results for the following samples submitted to NET, Inc. Bartlett Division for analysis:

Project Description: Amoco Pipeline, Artesia, NM; 2775.00-01

Sample Number	Sample Description	Date Taken	Date Received
285516	MW-11	11/17/1994	11/22/1994
285517	MW-14	11/17/1994	11/22/1994
285518	MW-12	11/17/1994	11/22/1994

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. These results apply only to the samples analyzed. Reproduction of this report only in whole is permitted. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Procedures used follow NET Standard Operating Procedures which reference the methods listed on your report. Should you have questions regarding procedures or results, please do not hesitate to call. NET has been pleased to provide these analytical services for you.

This Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Approved by:

Jean-Pierre C. Rouanet
Operations Manager

OCEAN GROUP

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 W. Bartlett Rd.
Bartlett, IL 60103
Tel: (708) 289-3100
Fax: (708) 289-5445

ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

12/12/1994

Sample No. : 285516

NET Job No.: 94.09283

Sample Description: MW-11
Amoco Pipeline, Artesia, NM; 2775.00-01

Date Taken: 11/17/1994
Time Taken: 13:40
IEPA Cert. No. 100221

Date Received: 11/22/1994
Time Received: 09:38
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run		Analytical Method
PREP, BN AQUEOUS	extracted		11/23/1994		tls	264		3500 (1)
BASE/NEUTRALS - 8270 AQUEOUS								
Acenaphthene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Acenaphthylene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Anthracene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Benzo(a)anthracene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Benzo(b)fluoranthene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Benzo(k)fluoranthene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Benzo(g,h,i)perylene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Benzo(a)pyrene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Chrysene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Dibenzo(a,h)anthracene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Fluoranthene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Fluorene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Indeno(1,2,3-cd)pyrene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Naphthalene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Phenanthrene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Pyrene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Surr: Nitrobenzene-d5	66	%	12/02/1994	35-114	adl	264	656	8270 (1)
Surr: 2-Fluorobiphenyl	64	%	12/02/1994	43-116	adl	264	656	8270 (1)
Surr: Terphenyl-d14	87	%	12/02/1994	33-141	adl	264	656	8270 (1)
VOLATILES - 8240 AQUEOUS								
Benzene	<1.0	ug/L	11/30/1994	1.0	llj		782	8240 (1)
Ethyl benzene	<1.0	ug/L	11/30/1994	1.0	llj		782	8240 (1)
Toluene	<1.0	ug/L	11/30/1994	1.0	llj		782	8240 (1)
Xylenes, total	<1.0	ug/L	11/30/1994	1.0	llj		782	8240 (1)
Surr: 1,2-Dichloroethane-d4	90	%	11/30/1994	76-114	llj		782	8240 (1)
Surr: Toluene-d8	107	%	11/30/1994	88-110	llj		782	8240 (1)

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

12/12/1994

Sample No. : 285516

NET Job No.: 94.09283

Sample Description: MW-11
Amoco Pipeline, Artesia, NM; 2775.00-01

Date Taken: 11/17/1994
Time Taken: 13:40
IEPA Cert. No. 100221

Date Received: 11/22/1994
Time Received: 09:38
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
Surr: 4-Bromofluorobenzene	91	%	11/30/1994	86-115	llj	782	8240 (1)

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ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

12/12/1994

Sample No. : 285517

NET Job No.: 94.09283

Sample Description: MW-14
Amoco Pipeline, Artesia, NM; 2775.00-01

Date Taken: 11/17/1994
Time Taken: 13:52
IEPA Cert. No. 100221

Date Received: 11/22/1994
Time Received: 09:38
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run		Analytical Method
PREP, BN AQUEOUS	extracted		11/23/1994		tls	264		3500 (1)
BASE/NEUTRALS - 8270 AQUEOUS								
Acenaphthene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Acenaphthylene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Anthracene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Benzo(a)anthracene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Benzo(b)fluoranthene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Benzo(k)fluoranthene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Benzo(g,h,i)perylene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Benzo(a)pyrene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Chrysene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Dibenzo(a,h)anthracene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Fluoranthene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Fluorene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Indeno(1,2,3-cd)pyrene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Naphthalene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Phenanthrene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Pyrene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Surr: Nitrobenzene-d5	72	%	12/02/1994	35-114	adl	264	656	8270 (1)
Surr: 2-Fluorobiphenyl	64	%	12/02/1994	43-116	adl	264	656	8270 (1)
Surr: Terphenyl-d14	75	%	12/02/1994	33-141	adl	264	656	8270 (1)
VOLATILES - 8240 AQUEOUS								
Benzene	<1.0	ug/L	11/30/1994	1.0	llj		782	8240 (1)
Ethyl benzene	<1.0	ug/L	11/30/1994	1.0	llj		782	8240 (1)
Toluene	<1.0	ug/L	11/30/1994	1.0	llj		782	8240 (1)
Xylenes, total	<1.0	ug/L	11/30/1994	1.0	llj		782	8240 (1)
Surr: 1,2-Dichloroethane-d4	99	%	11/30/1994	76-114	llj		782	8240 (1)
Surr: Toluene-d8	107	%	11/30/1994	88-110	llj		782	8240 (1)

OCEAN GROUP

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

12/12/1994

Sample No. : 285517

NET Job No.: 94.09283

Sample Description: MW-14
Amoco Pipeline, Artesia, NM; 2775.00-01

Date Taken: 11/17/1994
Time Taken: 13:52
IEPA Cert. No. 100221

Date Received: 11/22/1994
Time Received: 09:38
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
Surr: 4-Bromofluorobenzene	94	%	11/30/1994	86-115	llj	782	8240 (1)

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

12/12/1994

Sample No. : 285518

NET Job No.: 94.09283

Sample Description: MW-12
Amoco Pipeline, Artesia, NM; 2775.00-01

Date Taken: 11/17/1994
Time Taken: 14:10
IEPA Cert. No. 100221

Date Received: 11/22/1994
Time Received: 09:38
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run		Analytical Method
PREP, BN AQUEOUS	extracted		11/23/1994		tls	264		3500 (1)
BASE/NEUTRALS - 8270 AQUEOUS								
Acenaphthene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Acenaphthylene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Anthracene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Benzo(a)anthracene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Benzo(b)fluoranthene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Benzo(k)fluoranthene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Benzo(g,h,i)perylene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Benzo(a)pyrene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Chrysene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Dibenzo(a,h)anthracene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Fluoranthene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Fluorene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Indeno(1,2,3-cd)pyrene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Naphthalene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Phenanthrene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Pyrene	<10	ug/L	12/02/1994	10	adl	264	656	8270 (1)
Surr: Nitrobenzene-d5	71	%	12/02/1994	35-114	adl	264	656	8270 (1)
Surr: 2-Fluorobiphenyl	65	%	12/02/1994	43-116	adl	264	656	8270 (1)
Surr: Terphenyl-d14	79	%	12/02/1994	33-141	adl	264	656	8270 (1)
VOLATILES - 8240 AQUEOUS								
Benzene	75.0	ug/L	12/01/1994	1.0	llj		786	8240 (1)
Ethyl benzene	1.0	ug/L	12/01/1994	1.0	llj		786	8240 (1)
Toluene	1.1	ug/L	12/01/1994	1.0	llj		786	8240 (1)
Xylenes, total	1.0	ug/L	12/01/1994	1.0	llj		786	8240 (1)
Surr: 1,2-Dichloroethane-d4	98	%	12/01/1994	76-114	llj		786	8240 (1)
Surr: Toluene-d8	104	%	12/01/1994	88-110	llj		786	8240 (1)

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

12/12/1994

Sample No. : 285518

NET Job No.: 94.09283

Sample Description: MW-12
Amoco Pipeline, Artesia, NM; 2775.00-01

Date Taken: 11/17/1994
Time Taken: 14:10
IEPA Cert. No. 100221

Date Received: 11/22/1994
Time Received: 09:38
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
Surr: 4-Bromofluorobenzene	94	%	12/01/1994	86-115	llj	786	8240 (1)

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
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QUALITY CONTROL REPORT

CONTINUING CALIBRATION VERIFICATION

MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563
Mr. Hank Mittelhauser

12/12/1994

NET Job Number: 94.09283

Analyte	Run Batch Number	CCV True Conc.	Conc. Found	Percent Recovery
BASE/NEUTRALS - 8270 AQUEOUS				
Acenaphthene	656	50.0	55.4	110.8
Benzo(a)pyrene	656	50.0	51.5	103.0
Fluoranthene	656	50.0	53.2	106.4
VOLATILES - 8240 AQUEOUS				
Ethyl benzene	782	50.0	57.8	115.6
Toluene	782	50.0	52.4	104.8
VOLATILES - 8240 AQUEOUS				
Ethyl benzene	786	50.0	47.5	95.0
Toluene	786	50.0	47.5	95.0

CCV - Continuing Calibration Verification

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 W. Bartlett Rd.
Bartlett, IL 60103
Tel: (708) 289-3100
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QUALITY CONTROL REPORT

BLANK ANALYSIS

MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563
Mr. Hank Mittelhauser

12/12/1994

NET Job Number: 94.09283

Analyte	Prep Batch Number	Run Batch Number	Blank Analysis Results	Units	Reporting Limit	Analytical Method
BASE/NEUTRALS - 8270 AQUEOUS						8270 (1)
Surr: Nitrobenzene-d5	264	649	83	%	35-114	8270 (1)
Surr: 2-Fluorobiphenyl	264	649	81	%	43-116	8270 (1)
Surr: Terphenyl-d14	264	649	108	%	33-141	8270 (1)
VOLATILES - 8240 AQUEOUS						8240 (1)
Benzene		782	<1.0	ug/L	1.0	8240 (1)
Ethyl benzene		782	<1.0	ug/L	1.0	8240 (1)
Toluene		782	<1.0	ug/L	1.0	8240 (1)
Xylenes, total		782	<1.0	ug/L	1.0	8240 (1)
Surr: 1,2-Dichloroethane-d4		782	90	%	76-114	8240 (1)
Surr: Toluene-d8		782	100	%	88-110	8240 (1)
Surr: 4-Bromofluorobenzene		782	87	%	86-115	8240 (1)
VOLATILES - 8240 AQUEOUS						8240 (1)
Benzene		786	<1.0	ug/L	1.0	8240 (1)
Ethyl benzene		786	<1.0	ug/L	1.0	8240 (1)
Toluene		786	<1.0	ug/L	1.0	8240 (1)
Xylenes, total		786	<1.0	ug/L	1.0	8240 (1)
Surr: 1,2-Dichloroethane-d4		786	91	%	76-114	8240 (1)
Surr: Toluene-d8		786	103	%	88-110	8240 (1)
Surr: 4-Bromofluorobenzene		786	91	%	86-115	8240 (1)

Advisory Control Limits for Blanks:

All compounds should be less than the Reporting Limit, except for phthalate esters, toluene, methylene chloride, acetone and chloroform should be less than 5 times the Reporting Limit.

OCEAN GROUP

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
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QUALITY CONTROL REPORT

LABORATORY CONTROL STANDARD

MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563
Mr. Hank Mittelhauser

12/12/1994

NET Job Number: 94.09283

Analyte	Prep Batch Number	Run Batch Number	True Conc.	Conc. Found	LCS % Recovery
BASE/NEUTRALS - 8270 AQUEOUS					
Acenaphthene	264	649	100	86	86.0
Acenaphthylene	264	649	100	84	84.0
Anthracene	264	649	100	92	92.0
Benzo(a)anthracene	264	649	100	91	91.0
Benzo(b)fluoranthene	264	649	100	89	89.0
Benzo(k)fluoranthene	264	649	100	104	104.0
Benzo(g,h,i)perylene	264	649	100	100	100.0
Benzo(a)pyrene	264	649	100	95	95.0
Chrysene	264	649	100	92	92.0
Dibenzo(a,h)anthracene	264	649	100	98	98.0
Fluoranthene	264	649	100	86	86.0
Indeno(1,2,3-cd)pyrene	264	649	100	99	99.0
Naphthalene	264	649	100	67	67.0
Phenanthrene	264	649	100	93	93.0
Pyrene	264	649	100	109	109.0
VOLATILES - 8240 AQUEOUS					
Ethyl benzene		782	20.0	22.2	111.0
Toluene		782	20.0	23.4	117.0
VOLATILES - 8240 AQUEOUS					
Ethyl benzene		786	20.0	23.0	115.0
Toluene		786	20.0	22.0	110.0

Advisory Control Limits - Inorganics - LCS recovery should be 80 - 120%.

OCEAN GROUP

NET Midwest, Bartlett Division

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in the results column indicates the analyte was not detected at or above the reported value.
mg/L	:	Concentration in units of milligrams of analyte per liter of sample. Measurement used for aqueous samples. Can also be expressed as parts per million (ppm).
ug/g	:	Concentration in units of micrograms of analyte per gram of sample. Measurement used for non-aqueous samples. Can also be expressed as parts per million (ppm) or mg/Kg.
ug/L	:	Concentration in units of micrograms of analyte per liter of sample. Measurement used for aqueous samples. Can also be expressed as parts per billion (ppb).
ug/Kg	:	Concentration in units of micrograms of analyte per kilogram of sample. Measurement used for non-aqueous samples. Can also be expressed as parts per billion (ppb).
B	:	Sample result flag indicating that the analyte was also found in the method blank analysis. The value after the B indicates the concentration found in the blank analysis.
D	:	Sample result flag indicating that the reported concentration is from an analysis performed at a dilution. The value following the D indicates the dilution factor of the analysis.
J	:	Sample result flag indicating that the reported concentration is below the routine reporting limit but greater than the Method Detection Limit. The value should be considered estimated.
TCLP	:	These initials appearing in front of an analyte name indicate that the Toxicity Characteristic Leaching Procedure (TCLP) was performed for this test.
%	:	Percent; To convert ppm to %, divide the result by 10,000. To convert % to ppm, multiply the result by 10,000.
Dry Weight (dw)	:	When indicated, the results are reported on a dry weight basis. The contribution of the moisture content in the sample is subtracted when calculating the concentration of the analyte.
ICP	:	Indicates analysis was performed using Inductively Coupled Plasma Spectroscopy.
AA	:	Indicates analysis was performed using Atomic Absorption Spectroscopy.
GFAA	:	Indicates analysis was performed using Graphite Furnace Atomic Absorption Spectroscopy.
PQL	:	Practical Quantitation Limit; the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

Method References

(1) Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", USEPA SW-846, 3rd Edition, 1986.

(2) ASTM "American Society for Testing Materials

(3) Methods 100 through 499: see "Methods for Chemical Analysis of Water and Wastes", USEPA, 600/4-79-020, Rev. 1983.

(4) See "Standard Methods for the Examination of Water and Wastewater", 17th Ed, APHA, 1989.

(5) Methods 600 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants", USEPA Federal Register Vol. 49 No. 209, October 1984.

(6) Methods 500 through 599: see "Methods for the Determination of Organic Compounds in Drinking Water," USEPA 600/4-88/039, Rev. 1988.

NET ENVIRONMENTAL TESTING, INC.

CHAIN OF CUSTODY RECORD

COMPANY: Mitte/Hauser Corp
ADDRESS: 1240 Iroquois Dr #206
PHONE: (708) 369-0201 FAX: (708) 369-1279
PROJECT NAME/LOCATION: Amoco Pipeline Co/Artesia NM
PROJECT NUMBER: 2775-00-01
PROJECT MANAGER: Hank Mitte/Hauser

REPORT TO: H. Mitte/Hauser
INVOICE TO: H. Mitte/Hauser
P.O. NO. 2775
NET QUOTE NO.

SAMPLED BY (PRINT NAME): Kurt Lindstrom
SIGNATURE:
(PRINT NAME)
SIGNATURE

			# and Type of Containers		ANALYSES: 8020 BETX	ANALYSES: 602C Naphthalene	COMMENTS
11/17/94	1340	MW-11	2	1	X	X	
11/17/94	1352	MW-14	2	1	X	X	
11/17/94	1410	MW-12	2	1	X	X	

CONDITION OF SAMPLE: BOTTLES INTACT? YES / NO
FIELD FILTERED? ~~YES~~ / NO
COC SEALS PRESENT AND INTACT? YES / NO
VOLATILES FREE OF HEADSPACE? YES / NO
TEMPERATURE UPON RECEIPT: 10.5°C
Bottles supplied by NET? YES / NO

SAMPLE REMAINDER DISPOSAL: RETURN SAMPLE REMAINDER TO CLIENT VIA _____
I REQUEST NET TO DISPOSE OF ALL SAMPLE REMAINDERS _____ DATE _____

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	RELINQUISHED BY:	DATE/TIME	RECEIVED FOR NET BY:
	11/17/94 1500				11-21-94 @ 0938

METHOD OF SHIPMENT: UPS

REMARKS: Questions To Hank Mitte/Hauser

PT 1 - ORIGINAL - WHITE PT 2 - NET PROJECT MANAGER - YELLOW PT 3 - CUSTOMER COPY - PINK

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 W. Bartlett Rd.
Bartlett, IL 60103
Tel: (708) 289-3100
Fax: (708) 289-5445

CASE NARRATIVE

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

12/09/1994

NET Job Number: 94.09350

Project Description: Amoco Pipeline Station; Facility #10195

Sample Number	Sample Description	Date Taken	Date Received
285782	Monitor Well #7; Grab	11/25/1994	11/29/1994
285783	Monitor Well #4; Grab	11/25/1994	11/29/1994
285784	Trip Blank		11/29/1994

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms.

The following comments should be noted for the indicated fraction;

Volatile Organic Analysis

All sample holding times were met.
All QC indicators were within control limits.

Semi-Volatile Organic Analysis

All sample holding times were met.

Sample number 285782, the following two surrogates were outside acceptance limits.

Surrogate	Surrogate Recovery	Acceptance Limits
Nitrobenzene-d5	29%	35-114
2-Fluorobiphenyl	35%	43-116

Low recovery of surrogates indicate reduced extraction efficiency or a sample maxtrix problem. Sample #285782 could not be re-extracted due to limited sample quantities. The data for sample #285782 should be evaluated with caution.

All other QC indicators were within control limits.

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Approved By:

Mary Pearson

Mary Pearson
Quality Assurance Coordinator
Project Manager

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 W. Bartlett Rd.
Bartlett, IL 60103
Tel: (708) 289-3100
Fax: (708) 289-5445

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

12/12/1994

NET Job Number: 94.09350

IEPA Cert No. 100221
WDNR Cert No. 999447130
A2LA Cert No. 0453-01

Enclosed is the Quality Control Data and Analytical Results for the following samples submitted to NET, Inc. Bartlett Division for analysis:

Project Description: Amoco Pipeline Station; Facility #10195

Sample Number	Sample Description	Date Taken	Date Received
285782	Monitor Well #7; Grab	11/25/1994	11/29/1994
285783	Monitor Well #4; Grab	11/25/1994	11/29/1994
285784	Trip Blank		11/29/1994

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. These results apply only to the samples analyzed. Reproduction of this report only in whole is permitted. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Procedures used follow NET Standard Operating Procedures which reference the methods listed on your report. Should you have questions regarding procedures or results, please do not hesitate to call. NET has been pleased to provide these analytical services for you.

This Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Approved by:

Jean-Pierre C. Rouanet
Operations Manager

OCEAN GROUP

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 W. Bartlett Rd.
Bartlett, IL 60103
Tel: (708) 289-3100
Fax: (708) 289-5445

ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

12/12/1994

Sample No. : 285782

NET Job No.: 94.09350

Sample Description: Monitor Well #7; Grab
Amoco Pipeline Station; Facility #10195

Date Taken: 11/25/1994
Time Taken: 11:25
IEPA Cert. No. 100221

Date Received: 11/29/1994
Time Received: 10:06
WDNR Cert. No. 999447130

Parameter	Results		Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run		Analytical Method
PREP, BN AQUEOUS	extracted			11/30/1994		tls	265		3500 (1)
BASE/NEUTRALS - 8270 AQUEOUS									
Acenaphthene	<10		ug/L	12/08/1994	10	adl	265	659	8270 (1)
Acenaphthylene	<10		ug/L	12/07/1994	10	adl	265	659	8270 (1)
Anthracene	<10		ug/L	12/08/1994	10	adl	265	659	8270 (1)
Benzo(a)anthracene	<10		ug/L	12/07/1994	10	adl	265	659	8270 (1)
Benzo(b)fluoranthene	<10		ug/L	12/07/1994	10	adl	265	659	8270 (1)
Benzo(k)fluoranthene	<10		ug/L	12/07/1994	10	adl	265	659	8270 (1)
Benzo(g,h,i)perylene	<10		ug/L	12/07/1994	10	adl	265	659	8270 (1)
Benzo(a)pyrene	<10		ug/L	12/07/1994	10	adl	265	659	8270 (1)
Chrysene	<10		ug/L	12/07/1994	10	adl	265	659	8270 (1)
Dibenzo(a,h)anthracene	<10		ug/L	12/07/1994	10	adl	265	659	8270 (1)
Fluoranthene	<10		ug/L	12/08/1994	10	adl	265	659	8270 (1)
Fluorene	<10		ug/L	12/08/1994	10	adl	265	659	8270 (1)
Indeno(1,2,3-cd)pyrene	<10		ug/L	12/07/1994	10	adl	265	659	8270 (1)
Naphthalene	<10		ug/L	12/07/1994	10	adl	265	659	8270 (1)
Phenanthrene	<10		ug/L	12/07/1994	10	adl	265	659	8270 (1)
Pyrene	<10		ug/L	12/08/1994	10	adl	265	659	8270 (1)
Surr: Nitrobenzene-d5	29	*	%	12/07/1994	35-114	adl	265	659	8270 (1)
Surr: 2-Fluorobiphenyl	35	*	%	12/07/1994	43-116	adl	265	659	8270 (1)
Surr: Terphenyl-d14	43		%	12/07/1994	33-141	adl	265	659	8270 (1)
VOLATILES - 8240 AQUEOUS									
Benzene	<1.0		ug/L	12/01/1994	1.0	llj		786	8240 (1)
Ethyl benzene	<1.0		ug/L	12/01/1994	1.0	llj		786	8240 (1)
Toluene	<1.0		ug/L	12/01/1994	1.0	llj		786	8240 (1)
Xylenes, total	<1.0		ug/L	12/01/1994	1.0	llj		786	8240 (1)
Surr: 1,2-Dichloroethane-d4	103		%	12/01/1994	76-114	llj		786	8240 (1)
Surr: Toluene-d8	109		%	12/01/1994	88-110	llj		786	8240 (1)

* See Case Narrative.

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
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Bartlett, IL 60103
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Fax: (708) 289-5445

ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

12/12/1994

Sample No. : 285782

NET Job No.: 94.09350

Sample Description: Monitor Well #7; Grab
Amoco Pipeline Station; Facility #10195

Date Taken: 11/25/1994
Time Taken: 11:25
IEPA Cert. No. 100221

Date Received: 11/29/1994
Time Received: 10:06
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
Surr: 4-Bromofluorobenzene	93	%	12/01/1994	86-115	llj	786	8240 (1)

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ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

12/12/1994

Sample No. : 285783

NET Job No.: 94.09350

Sample Description: Monitor Well #4; Grab
Amoco Pipeline Station; Facility #10195

Date Taken: 11/25/1994
Time Taken: 12:30
IEPA Cert. No. 100221

Date Received: 11/29/1994
Time Received: 10:06
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run		Analytical Method
PREP, BN AQUEOUS	extracted		11/30/1994		tls	265		3500 (1)
BASE/NEUTRALS - 8270 AQUEOUS								
Acenaphthene	<10	ug/L	12/08/1994	10	adl	265	659	8270 (1)
Acenaphthylene	<10	ug/L	12/07/1994	10	adl	265	659	8270 (1)
Anthracene	<10	ug/L	12/08/1994	10	adl	265	659	8270 (1)
Benzo(a)anthracene	<10	ug/L	12/07/1994	10	adl	265	659	8270 (1)
Benzo(b)fluoranthene	<10	ug/L	12/07/1994	10	adl	265	659	8270 (1)
Benzo(k)fluoranthene	<10	ug/L	12/07/1994	10	adl	265	659	8270 (1)
Benzo(g,h,i)perylene	<10	ug/L	12/07/1994	10	adl	265	659	8270 (1)
Benzo(a)pyrene	<10	ug/L	12/08/1994	10	adl	265	659	8270 (1)
Chrysene	<10	ug/L	12/07/1994	10	adl	265	659	8270 (1)
Dibenzo(a,h)anthracene	<10	ug/L	12/07/1994	10	adl	265	659	8270 (1)
Fluoranthene	<10	ug/L	12/08/1994	10	adl	265	659	8270 (1)
Fluorene	<10	ug/L	12/08/1994	10	adl	265	659	8270 (1)
Indeno(1,2,3-cd)pyrene	<10	ug/L	12/07/1994	10	adl	265	659	8270 (1)
Naphthalene	<10	ug/L	12/07/1994	10	adl	265	659	8270 (1)
Phenanthrene	<10	ug/L	12/07/1994	10	adl	265	659	8270 (1)
Pyrene	<10	ug/L	12/08/1994	10	adl	265	659	8270 (1)
Surr: Nitrobenzene-d5	75	%	12/07/1994	35-114	adl	265	659	8270 (1)
Surr: 2-Fluorobiphenyl	77	%	12/07/1994	43-116	adl	265	659	8270 (1)
Surr: Terphenyl-d14	81	%	12/07/1994	33-141	adl	265	659	8270 (1)
VOLATILES - 8240 AQUEOUS								
Benzene	<1.0	ug/L	12/05/1994	1.0	rla		792	8240 (1)
Ethyl benzene	<1.0	ug/L	12/05/1994	1.0	rla		792	8240 (1)
Toluene	<1.0	ug/L	12/05/1994	1.0	rla		792	8240 (1)
Xylenes, total	<1.0	ug/L	12/05/1994	1.0	rla		792	8240 (1)
Surr: 1,2-Dichloroethane-d4	100	%	12/05/1994	76-114	rla		792	8240 (1)
Surr: Toluene-d8	107	%	12/05/1994	88-110	rla		792	8240 (1)

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

12/12/1994

Sample No. : 285783

NET Job No.: 94.09350

Sample Description: Monitor Well #4; Grab
Amoco Pipeline Station; Facility #10195

Date Taken: 11/25/1994
Time Taken: 12:30
IEPA Cert. No. 100221

Date Received: 11/29/1994
Time Received: 10:06
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
Surr: 4-Bromofluorobenzene	96	%	12/05/1994	86-115	rla	792	8240 (1)

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
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ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

12/12/1994

Sample No. : 285784

NET Job No.: 94.09350

Sample Description: Trip Blank
Amoco Pipeline Station; Facility #10195

Date Taken:
Time Taken:
IEPA Cert. No. 100221

Date Received: 11/29/1994
Time Received: 10:06
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
VOLATILES - 8240 AQUEOUS							
Benzene	<1.0	ug/L	12/05/1994	1.0	rla	792	8240 (1)
Ethyl benzene	<1.0	ug/L	12/05/1994	1.0	rla	792	8240 (1)
Toluene	<1.0	ug/L	12/05/1994	1.0	rla	792	8240 (1)
Xylenes, total	<1.0	ug/L	12/05/1994	1.0	rla	792	8240 (1)
Surr: 1,2-Dichloroethane-d4	101	%	12/05/1994	76-114	rla	792	8240 (1)
Surr: Toluene-d8	110	%	12/05/1994	88-110	rla	792	8240 (1)
Surr: 4-Bromofluorobenzene	99	%	12/05/1994	86-115	rla	792	8240 (1)

NET Midwest, Bartlett Division

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in the results column indicates the analyte was not detected at or above the reported value.
mg/L	:	Concentration in units of milligrams of analyte per liter of sample. Measurement used for aqueous samples. Can also be expressed as parts per million (ppm).
ug/g	:	Concentration in units of micrograms of analyte per gram of sample. Measurement used for non-aqueous samples. Can also be expressed as parts per million (ppm) or mg/Kg.
ug/L	:	Concentration in units of micrograms of analyte per liter of sample. Measurement used for aqueous samples. Can also be expressed as parts per billion (ppb).
ug/Kg	:	Concentration in units of micrograms of analyte per kilogram of sample. Measurement used for non-aqueous samples. Can also be expressed as parts per billion (ppb).
B	:	Sample result flag indicating that the analyte was also found in the method blank analysis. The value after the B indicates the concentration found in the blank analysis.
D	:	Sample result flag indicating that the reported concentration is from an analysis performed at a dilution. The value following the D indicates the dilution factor of the analysis.
J	:	Sample result flag indicating that the reported concentration is below the routine reporting limit but greater than the Method Detection Limit. The value should be considered estimated.
TCLP	:	These initials appearing in front of an analyte name indicate that the Toxicity Characteristic Leaching Procedure (TCLP) was performed for this test.
%	:	Percent; To convert ppm to %, divide the result by 10,000. To convert % to ppm, multiply the result by 10,000.
Dry Weight (dw)	:	When indicated, the results are reported on a dry weight basis. The contribution of the moisture content in the sample is subtracted when calculating the concentration of the analyte.
ICP	:	Indicates analysis was performed using Inductively Coupled Plasma Spectroscopy.
AA	:	Indicates analysis was performed using Atomic Absorption Spectroscopy.
GFAA	:	Indicates analysis was performed using Graphite Furnace Atomic Absorption Spectroscopy.
PQL	:	Practical Quantitation Limit; the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

Method References

(1) Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", USEPA SW-846, 3rd Edition, 1986.

(2) ASTM "American Society for Testing Materials

(3) Methods 100 through 499: see "Methods for Chemical Analysis of Water and Wastes", USEPA, 600/4-79-020, Rev. 1983.

(4) See "Standard Methods for the Examination of Water and Wastewater", 17th Ed, APHA, 1989.

(5) Methods 600 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants", USEPA Federal Register Vol. 49 No. 209, October 1984.

(6) Methods 500 through 599: see "Methods for the Determination of Organic Compounds in Drinking Water," USEPA 600/4-88/039, Rev. 1988.

NET NATIONAL ENVIRONMENTAL TESTING, INC.

CHAIN OF CUSTODY RECORD

ATTN: Moira Hollund

COMPANY: Amoco Pipeline Company Mail Code P06302
ADDRESS: PO Box 7513 Chicago, IL. 60680-7513
PHONE: 312-856-7251 FAX: 312-856-3731
PROJECT NAME/LOCATION: Amoco Pipeline Station Artesia
PROJECT NUMBER: Facility # 10195
PROJECT MANAGER: Douglas S. Earney

REPORT TO: Douglas S. Earney
INVOICE TO: Amoco Pipeline Co.
P.O. NO.
NET QUOTE NO.

MBF Services

SAMPLED BY (PRINT NAME): Clayton M Barnhill
SIGNATURE:
(PRINT NAME): Kory McMinn
SIGNATURE:

DATE	TIME	SAMPLE I.D.	# and Type of Containers	BTEX 8020	Naphthelene 827	COMMENTS
11/25/94	11:45 am	Monitor Well #7	H2O	X	X	
11/25/94	12:30 pm	Monitor Well #4	H2O	X	X	
11/25/94	12:30 pm	Trip Blank		X		

CONDITION OF SAMPLE: BOTTLES INTACT? YES / NO N/A
FIELD FILTERED? YES / NO N/A
COC SEALS PRESENT AND INTACT? YES / NO N/A
VOLATILES FREE OF HEADSPACE? YES / NO
TEMPERATURE UPON RECEIPT: 13.4°
Bottles supplied by NET? (YES) / NO

SAMPLE REMAINDER DISPOSAL: RETURN SAMPLE REMAINDER TO CLIENT VIA
I REQUEST NET TO DISPOSE OF ALL SAMPLE REMAINDERS DATE

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	RELINQUISHED BY:	DATE/TIME	RECEIVED FOR NET BY:
Clayton M Barnhill	11/25/94 2:12pm			11/28/94 10:00	Karen Valdez

METHOD OF SHIPMENT

REMARKS: Send A copy of the Report To H. Mittlehauser #2775

PT 1 ORIGINAL - WHITE PT 2 NET PROJECT MANAGER - YELLOW PT 3 CUSTOMER COPY - PINK

APPENDIX F

Wells With No Free-Product
Results for Heavy Metals and Cations/Anions

System Start-Up

Mittelhauser CORPORATION

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 W. Bartlett Rd.
Bartlett, IL 60103
Tel: (708) 289-3100
Fax: (708) 289-5445

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

01/06/1995

NET Job Number: 94.10097

IEPA Cert No. 100221
WDNR Cert No. 999447130
A2LA Cert No. 0453-01

Enclosed is the Quality Control Data and Analytical Results for the following samples submitted to NET, Inc. Bartlett Division for analysis:

Project Description: Artesia Pumping Station, Facility 10195

Sample Number	Sample Description	Date Taken	Date Received
289294	Monitor Well #11; Grab	12/22/1994	12/27/1994
289295	Monitor Well #7; Grab	12/22/1994	12/27/1994
289296	Monitor Well #4; Grab	12/22/1994	12/27/1994
289297	Monitor Well #12; Grab	12/22/1994	12/27/1994
289298	Monitor Well #14; Grab	12/22/1994	12/27/1994
289299	Trip Blank	12/22/1994	12/27/1994

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. These results apply only to the samples analyzed. Reproduction of this report only in whole is permitted. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Procedures used follow NET Standard Operating Procedures which reference the methods listed on your report. Should you have questions regarding procedures or results, please do not hesitate to call. NET has been pleased to provide these analytical services for you.

This Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Approved by:

Jean-Pierre C. Rouanet
Operations Manager

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 W. Bartlett Rd.
Bartlett, IL 60103
Tel: (708) 289-3100
Fax: (708) 289-5445

ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

01/06/1995

Sample No. : 289294

NET Job No.: 94.10097

Sample Description: Monitor Well #11; Grab
Artesia Pumping Station, Facility 10195

Date Taken: 12/22/1994
Time Taken: 13:20
IEPA Cert. No. 100221

Date Received: 12/27/1994
Time Received: 11:45
WDNR Cert. No. 999447130

Parameter	Results		Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run		Analytical Method
Alkalinity, bicarb (CaCO3)	99		mg/L	12/30/1994	5	dsf		261	2320B(4) 310.1(3)
Alkalinity, carbonate (CaCO3)	<5		mg/L	12/30/1994	5	dsf		261	2320B(4) 310.1(3)
Chloride	40		mg/L	01/05/1995	5	kaf		362	4500Cl(4) 325.3(3)
Fluoride	0.83		mg/L	01/03/1995	0.05	dsf		266	4500F C(4) 340.2
Solids, Total Dissolved	3,260		mg/L	12/29/1994	25	dsf		567	160.1(3) 2540D(4)
Sulfate	1,890		mg/L	01/04/1995	10	kaf		314	9038(1) 375.4(3)
Metals-Total, ICP	complete			01/03/1995		jmt		1349	6010(1) 200.7(3)
Antimony, ICP	<0.50		mg/L	01/03/1995	0.50	jmt	657	907	6010(1) 200.7(3)
Arsenic, GFAA	<0.005	S	mg/L	01/04/1995	0.0050	mjs	368	341	7060(1) 206.2(3)
Beryllium, ICP	<0.0050		mg/L	01/03/1995	0.0050	jmt	657	990	6010(1) 200.7(3)
Cadmium, ICP	<0.010		mg/L	01/03/1995	0.010	jmt	657	989	6010(1) 200.7(3)
Calcium, AA	510		mg/L	01/03/1995	1.0	mic	657	167	7140(1) 215.1(3)
Chromium, ICP	<0.040		mg/L	01/03/1995	0.040	jmt	657	975	6010(1) 200.7(3)
Copper, ICP	<0.010		mg/L	01/03/1995	0.010	jmt	657	1261	6010(1) 200.7(3)
Lead, GFAA	<0.005	S	mg/L	01/04/1995	0.0050	mjs	368	936	7421(1) 239.2(3)
Magnesium, AA	140		mg/L	01/03/1995	1.0	mic	657	160	7450(1) 242.1(3)
Mercury, CVAA	<0.0002		mg/L	01/03/1995	0.0002	jmt	470	437	7471(1) 245.1(3)
Nickel, ICP	<0.050		mg/L	01/03/1995	0.050	jmt	657	1076	6010(1) 200.7(3)
Potassium, AA	4.7		mg/L	01/03/1995	1.0	mic	657	156	7610(1) 258.1(3)
Selenium, GFAA	<0.005	S	mg/L	01/04/1995	0.0050	mjs	368	103	7740(1) 270.2(3)
Silver, AA	<0.040		mg/L	12/30/1994	0.040	mic	265	305	7760(1) 272.1(3)
Sodium, AA	46		mg/L	01/03/1995	1.0	mic	657	170	7770(1) 273.1(3)
Thallium, ICP	<0.20		mg/L	01/03/1995	0.20	jmt	657	960	6010(1) 200.7(3)
Zinc, ICP	0.021		mg/L	01/03/1995	0.020	jmt	657	1076	6010(1) 200.7(3)
Metals Prep, Aqueous	Complete			12/29/1994		jmt	657		3010 (1)
Metals Prep, Ag Aqueous	Complete			12/30/1994		mic	265		7760 (1)
Metals Prep, GFAA Aqueous	COMPLETE	S		01/03/1995		mjs	368		3020 (1)
Metals Prep, Hg Aqueous	Complete			01/03/1995		jmt	470		7471 (1)

S : Parameter analysis was sub-contracted to another NET location.

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
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ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

01/06/1995

Sample No. : 289294

NET Job No.: 94.10097

Sample Description: Monitor Well #11; Grab
Artesia Pumping Station, Facility 10195

Date Taken: 12/22/1994
Time Taken: 13:20
IEPA Cert. No. 100221

Date Received: 12/27/1994
Time Received: 11:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
VOLATILES - 8240 AQUEOUS							
Benzene	<1.0	ug/L	12/29/1994	1.0	llj	825	8240 (1)
Ethyl benzene	<1.0	ug/L	12/29/1994	1.0	llj	825	8240 (1)
Toluene	<1.0	ug/L	12/29/1994	1.0	llj	825	8240 (1)
Xylenes, total	<1.0	ug/L	12/29/1994	1.0	llj	825	8240 (1)
Surr: 1,2-Dichloroethane-d4	105	%	12/29/1994	76-114	llj	825	8240 (1)
Surr: Toluene-d8	107	%	12/29/1994	88-110	llj	825	8240 (1)
Surr: 4-Bromofluorobenzene	105	%	12/29/1994	86-115	llj	825	8240 (1)

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

01/06/1995

Sample No. : 289295

NET Job No.: 94.10097

Sample Description: Monitor Well #7; Grab
Artesia Pumping Station, Facility 10195

Date Taken: 12/22/1994
Time Taken: 16:45
IEPA Cert. No. 100221

Date Received: 12/27/1994
Time Received: 11:45
WDNR Cert. No. 999447130

Parameter	Results		Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run		Analytical Method
Alkalinity, bicarb (CaCO3)	752		mg/L	12/30/1994	5	dsf		261	2320B(4) 310.1(3)
Alkalinity, carbonate (CaCO3)	<5		mg/L	12/30/1994	5	dsf		261	2320B(4) 310.1(3)
Chloride	600		mg/L	01/05/1995	5	kaf		362	4500Cl(4) 325.3(3)
Fluoride	0.78		mg/L	01/03/1995	0.05	dsf		266	4500F C(4) 340.2
Solids, Total Dissolved	5,620		mg/L	12/29/1994	25	dsf		567	160.1(3) 2540C(4)
Sulfate	2,100		mg/L	01/04/1995	10	kaf		314	9038(1) 375.4(3)
Metals-Total, ICP	complete			01/03/1995		jmt		1349	6010(1) 200.7(3)
Antimony, ICP	<0.50		mg/L	01/03/1995	0.50	jmt	657	907	6010(1) 200.7(3)
Arsenic, GFAA	<0.005	S	mg/L	01/04/1995	0.0050	mjs	368	341	7060(1) 206.2(3)
Beryllium, ICP	<0.0050		mg/L	01/03/1995	0.0050	jmt	657	990	6010(1) 200.7(3)
Cadmium, ICP	<0.010		mg/L	01/03/1995	0.010	jmt	657	989	6010(1) 200.7(3)
Calcium, AA	770		mg/L	01/03/1995	1.0	mic	657	167	7140(1) 215.1(3)
Chromium, ICP	<0.040		mg/L	01/03/1995	0.040	jmt	657	975	6010(1) 200.7(3)
Copper, ICP	<0.010		mg/L	01/03/1995	0.010	jmt	657	1261	6010(1) 200.7(3)
Lead, GFAA	<0.005	S	mg/L	01/04/1995	0.0050	mjs	368	936	7421(1) 239.2(3)
Magnesium, AA	200		mg/L	01/03/1995	1.0	mic	657	160	7450(1) 242.1(3)
Mercury, CVAA	<0.0002		mg/L	01/03/1995	0.0002	jmt	470	437	7471(1) 245.1(3)
Nickel, ICP	<0.050		mg/L	01/03/1995	0.050	jmt	657	1076	6010(1) 200.7(3)
Potassium, AA	8.9		mg/L	01/03/1995	1.0	mic	657	156	7610(1) 258.1(3)
Selenium, GFAA	<0.005	S	mg/L	01/04/1995	0.0050	mjs	368	103	7740(1) 270.2(3)
Silver, AA	<0.040		mg/L	12/30/1994	0.040	mic	265	305	7760(1) 272.1(3)
Sodium, AA	540		mg/L	01/03/1995	1.0	mic	657	170	7770(1) 273.1(3)
Thallium, ICP	<0.20		mg/L	01/03/1995	0.20	jmt	657	960	6010(1) 200.7(3)
Zinc, ICP	<0.020		mg/L	01/03/1995	0.020	jmt	657	1076	6010(1) 200.7(3)
Metals Prep, Aqueous	Complete			12/29/1994		jmt	657		3010 (1)
Metals Prep, Ag Aqueous	Complete			12/30/1994		mic	265		7760 (1)
Metals Prep, GFAA Aqueous	COMPLETE	S		01/03/1995		mjs	368		3020 (1)
Metals Prep, Hg Aqueous	Complete			01/03/1995		jmt	470		7471 (1)

VOA ANALYZED AT A 10X DILUTION.
S : Parameter analysis was sub-contracted to another NET location.

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
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ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

01/06/1995

Sample No. : 289295

NET Job No.: 94.10097

Sample Description: Monitor Well #7; Grab
Artesia Pumping Station, Facility 10195

Date Taken: 12/22/1994
Time Taken: 16:45
IEPA Cert. No. 100221

Date Received: 12/27/1994
Time Received: 11:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
VOLATILES - 8240 AQUEOUS							
Benzene	1,590	ug/L	01/05/1995	1.0	llj	833	8240 (1)
Ethyl benzene	39.0	ug/L	01/05/1995	1.0	llj	833	8240 (1)
Toluene	<10	ug/L	01/05/1995	1.0	llj	833	8240 (1)
Xylenes, total	86.5	ug/L	01/05/1995	1.0	llj	833	8240 (1)
Surr: 1,2-Dichloroethane-d4	107	%	01/05/1995	76-114	llj	833	8240 (1)
Surr: Toluene-d8	108	%	01/05/1995	88-110	llj	833	8240 (1)
Surr: 4-Bromofluorobenzene	106	%	01/05/1995	86-115	llj	833	8240 (1)

VOA ANALYZED AT A 10X DILUTION.

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

01/06/1995

Sample No. : 289296

NET Job No.: 94.10097

Sample Description: Monitor Well #4; Grab
Artesia Pumping Station, Facility 10195

Date Taken: 12/22/1994
Time Taken: 15:50
IEPA Cert. No. 100221

Date Received: 12/27/1994
Time Received: 11:45
WDNR Cert. No. 999447130

Parameter	Results		Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run		Analytical Method
Alkalinity, bicarb (CaCO3)	597		mg/L	12/30/1994	5	dsf		261	2320B(4) 310.1(3)
Alkalinity, carbonate (CaCO3)	<5		mg/L	12/30/1994	5	dsf		261	2320B(4) 310.1(3)
Chloride	1,020		mg/L	01/05/1995	5	kaf		362	4500Cl(4) 325.3(3)
Fluoride	0.88		mg/L	01/03/1995	0.05	dsf		266	4500F C(4) 340.2
Solids, Total Dissolved	5,060		mg/L	12/29/1994	25	dsf		567	160.1(3) 2540D(4)
Sulfate	2,040		mg/L	01/04/1995	10	kaf		314	9038(1) 375.4(3)
Metals-Total, ICP	complete			01/03/1995		jmt		1349	6010(1) 200.7(3)
Antimony, ICP	<0.50		mg/L	01/03/1995	0.50	jmt	657	907	6010(1) 200.7(3)
Arsenic, GFAA	0.03	S	mg/L	01/04/1995	0.0050	mjs	368	341	7060(1) 206.2(3)
Beryllium, ICP	<0.0050		mg/L	01/03/1995	0.0050	jmt	657	990	6010(1) 200.7(3)
Cadmium, ICP	<0.010		mg/L	01/03/1995	0.010	jmt	657	989	6010(1) 200.7(3)
Calcium, AA	780		mg/L	01/03/1995	1.0	mic	657	167	7140(1) 215.1(3)
Chromium, ICP	<0.040		mg/L	01/03/1995	0.040	jmt	657	975	6010(1) 200.7(3)
Copper, ICP	<0.010		mg/L	01/03/1995	0.010	jmt	657	1261	6010(1) 200.7(3)
Lead, GFAA	0.005	S	mg/L	01/04/1995	0.0050	mjs	368	936	7421(1) 239.2(3)
Magnesium, AA	240		mg/L	01/03/1995	1.0	mic	657	160	7450(1) 242.1(3)
Mercury, CVAA	<0.0002		mg/L	01/03/1995	0.0002	jmt	470	437	7471(1) 245.1(3)
Nickel, ICP	<0.050		mg/L	01/03/1995	0.050	jmt	657	1076	6010(1) 200.7(3)
Potassium, AA	10		mg/L	01/03/1995	1.0	mic	657	156	7610(1) 258.1(3)
Selenium, GFAA	<0.005	S	mg/L	01/04/1995	0.0050	mjs	368	103	7740(1) 270.2(3)
Silver, AA	<0.040		mg/L	12/30/1994	0.040	mic	265	305	7760(1) 272.1(3)
Sodium, AA	510		mg/L	01/03/1995	1.0	mic	657	170	7770(1) 273.1(3)
Thallium, ICP	<0.20		mg/L	01/03/1995	0.20	jmt	657	960	6010(1) 200.7(3)
Zinc, ICP	0.025		mg/L	01/03/1995	0.020	jmt	657	1076	6010(1) 200.7(3)
Metals Prep, Aqueous	Complete			12/29/1994		jmt	657		3010 (1)
Metals Prep, Ag Aqueous	Complete			12/30/1994		mic	265		7760 (1)
Metals Prep, GFAA Aqueous	COMPLETE	S		01/03/1995		mjs	368		3020 (1)
Metals Prep, Hg Aqueous	Complete			01/03/1995		jmt	470		7471 (1)

S : Parameter analysis was sub-contracted to another NET location.

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
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ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

01/06/1995

Sample No. : 289296

NET Job No.: 94.10097

Sample Description: Monitor Well #4; Grab
Artesia Pumping Station, Facility 10195

Date Taken: 12/22/1994
Time Taken: 15:50
IEPA Cert. No. 100221

Date Received: 12/27/1994
Time Received: 11:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
VOLATILES - 8240 AQUEOUS							
Benzene	<1.0	ug/L	01/05/1995	1.0	llj	833	8240 (1)
Ethyl benzene	<1.0	ug/L	01/05/1995	1.0	llj	833	8240 (1)
Toluene	<1.0	ug/L	01/05/1995	1.0	llj	833	8240 (1)
Xylenes, total	<1.0	ug/L	01/05/1995	1.0	llj	833	8240 (1)
Surr: 1,2-Dichloroethane-d4	109	%	01/05/1995	76-114	llj	833	8240 (1)
Surr: Toluene-d8	109	%	01/05/1995	88-110	llj	833	8240 (1)
Surr: 4-Bromofluorobenzene	105	%	01/05/1995	86-115	llj	833	8240 (1)

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
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ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

01/06/1995

Sample No. : 289297

NET Job No.: 94.10097

Sample Description: Monitor Well #12; Grab
Artesia Pumping Station, Facility 10195

Date Taken: 12/22/1994
Time Taken: 16:05
IEPA Cert. No. 100221

Date Received: 12/27/1994
Time Received: 11:45
WDNR Cert. No. 999447130

Parameter	Results		Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run		Analytical Method
Alkalinity, bicarb (CaCO3)	461		mg/L	12/30/1994	5	dsf		261	23208(4) 310.1(3)
Alkalinity, carbonate (CaCO3)	<5		mg/L	12/30/1994	5	dsf		261	23208(4) 310.1(3)
Chloride	780		mg/L	01/05/1995	5	kaf		362	4500Cl(4) 325.3(3)
Fluoride	0.75		mg/L	01/03/1995	0.05	dsf		266	4500F C(4) 340.2
Solids, Total Dissolved	4,850		mg/L	12/29/1994	25	dsf		567	160.1(3) 2540D(4)
Sulfate	1,940		mg/L	01/04/1995	10	kaf		314	9038(1) 375.4(3)
Metals-Total, ICP	complete			01/03/1995		jmt		1349	6010(1) 200.7(3)
Antimony, ICP	<0.50		mg/L	01/03/1995	0.50	jmt	657	907	6010(1) 200.7(3)
Arsenic, GFAA	0.02	S	mg/L	01/04/1995	0.0050	mjs	368	341	7060(1) 206.2(3)
Beryllium, ICP	<0.0050		mg/L	01/03/1995	0.0050	jmt	657	990	6010(1) 200.7(3)
Cadmium, ICP	<0.010		mg/L	01/03/1995	0.010	jmt	657	989	6010(1) 200.7(3)
Calcium, AA	670		mg/L	01/03/1995	1.0	mic	657	167	7140(1) 215.1(3)
Chromium, ICP	<0.040		mg/L	01/03/1995	0.040	jmt	657	975	6010(1) 200.7(3)
Copper, ICP	<0.010		mg/L	01/03/1995	0.010	jmt	657	1261	6010(1) 200.7(3)
Lead, GFAA	0.006	S	mg/L	01/04/1995	0.0050	mjs	368	936	7421(1) 239.2(3)
Magnesium, AA	200		mg/L	01/03/1995	1.0	mic	657	160	7450(1) 242.1(3)
Mercury, CVAA	<0.0002		mg/L	01/03/1995	0.0002	jmt	470	437	7471(1) 245.1(3)
Nickel, ICP	<0.050		mg/L	01/03/1995	0.050	jmt	657	1076	6010(1) 200.7(3)
Potassium, AA	5.5		mg/L	01/03/1995	1.0	mic	657	156	7610(1) 258.1(3)
Selenium, GFAA	<0.005	S	mg/L	01/04/1995	0.0050	mjs	368	103	7740(1) 270.2(3)
Silver, AA	<0.040		mg/L	12/30/1994	0.040	mic	265	305	7760(1) 272.1(3)
Sodium, AA	360		mg/L	01/03/1995	1.0	mic	657	170	7770(1) 273.1(3)
Thallium, ICP	<0.20		mg/L	01/03/1995	0.20	jmt	657	960	6010(1) 200.7(3)
Zinc, ICP	<0.020		mg/L	01/03/1995	0.020	jmt	657	1076	6010(1) 200.7(3)
Metals Prep, Aqueous	Complete			12/29/1994		jmt	657		3010 (1)
Metals Prep, Ag Aqueous	Complete			12/30/1994		mic	265		7760 (1)
Metals Prep, GFAA Aqueous	COMPLETE	S		01/03/1995		mjs	368		3020 (1)
Metals Prep, Hg Aqueous	Complete			01/03/1995		jmt	470		7471 (1)

S : Parameter analysis was sub-contracted to another NET location.

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

01/06/1995

Sample No. : 289297

NET Job No.: 94.10097

Sample Description: Monitor Well #12; Grab
Artesia Pumping Station, Facility 10195

Date Taken: 12/22/1994
Time Taken: 16:05
IEPA Cert. No. 100221

Date Received: 12/27/1994
Time Received: 11:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
VOLATILES - 8240 AQUEOUS							
Benzene	5.4	ug/L	01/04/1995	1.0	llj	829	8240 (1)
Ethyl benzene	<1.0	ug/L	01/04/1995	1.0	llj	829	8240 (1)
Toluene	<1.0	ug/L	01/04/1995	1.0	llj	829	8240 (1)
Xylenes, total	<1.0	ug/L	01/04/1995	1.0	llj	829	8240 (1)
Surr: 1,2-Dichloroethane-d4	106	%	01/04/1995	76-114	llj	829	8240 (1)
Surr: Toluene-d8	109	%	01/04/1995	88-110	llj	829	8240 (1)
Surr: 4-Bromofluorobenzene	105	%	01/04/1995	86-115	llj	829	8240 (1)

NATIONAL ENVIRONMENTAL TESTING, INC.

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ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

01/06/1995

Sample No. : 289298

NET Job No.: 94.10097

Sample Description: Monitor Well #14; Grab
Artesia Pumping Station, Facility 10195

Date Taken: 12/22/1994
Time Taken: 15:05
IEPA Cert. No. 100221

Date Received: 12/27/1994
Time Received: 11:45
WDNR Cert. No. 999447130

Parameter	Results		Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run		Analytical Method
Alkalinity, bicarb (CaCO3)	128		mg/L	12/30/1994	5	dsf		261	2320B(4) 310.1(3)
Alkalinity, carbonate (CaCO3)	<5		mg/L	12/30/1994	5	dsf		261	2320B(4) 310.1(3)
Chloride	40		mg/L	01/05/1995	5	kaf		362	4500Cl(4) 325.3(3)
Fluoride	0.86		mg/L	01/03/1995	0.05	dsf		266	4500F C(4) 340.2
Solids, Total Dissolved	3,120		mg/L	12/29/1994	25	dsf		567	160.1(3) 2540D(4)
Sulfate	1,990		mg/L	01/04/1995	10	kaf		314	9038(1) 375.4(3)
Metals-Total, ICP	complete			01/03/1995		jmt		1349	6010(1) 200.7(3)
Antimony, ICP	<0.50		mg/L	01/03/1995	0.50	jmt	657	907	6010(1) 200.7(3)
Arsenic, GFAA	<0.005	S	mg/L	01/04/1995	0.0050	mjs	368	341	7060(1) 206.2(3)
Beryllium, ICP	<0.0050		mg/L	01/03/1995	0.0050	jmt	657	990	6010(1) 200.7(3)
Cadmium, ICP	<0.010		mg/L	01/03/1995	0.010	jmt	657	989	6010(1) 200.7(3)
Calcium, AA	500		mg/L	01/03/1995	1.0	mic	657	167	7140(1) 215.1(3)
Chromium, ICP	<0.040		mg/L	01/03/1995	0.040	jmt	657	975	6010(1) 200.7(3)
Copper, ICP	<0.010		mg/L	01/03/1995	0.010	jmt	657	1261	6010(1) 200.7(3)
Lead, GFAA	<0.005	S	mg/L	01/04/1995	0.0050	mjs	368	936	7421(1) 239.2(3)
Magnesium, AA	140		mg/L	01/03/1995	1.0	mic	657	160	7450(1) 242.1(3)
Mercury, CVAA	<0.0002		mg/L	01/03/1995	0.0002	jmt	470	437	7471(1) 245.1(3)
Nickel, ICP	<0.050		mg/L	01/03/1995	0.050	jmt	657	1076	6010(1) 200.7(3)
Potassium, AA	4.6		mg/L	01/03/1995	1.0	mic	657	156	7610(1) 258.1(3)
Selenium, GFAA	<0.005	S	mg/L	01/04/1995	0.0050	mjs	368	103	7740(1) 270.2(3)
Silver, AA	<0.040		mg/L	12/30/1994	0.040	mic	265	305	7760(1) 272.1(3)
Sodium, AA	72		mg/L	01/03/1995	1.0	mic	657	170	7770(1) 273.1(3)
Thallium, ICP	<0.20		mg/L	01/03/1995	0.20	jmt	657	960	6010(1) 200.7(3)
Zinc, ICP	<0.020		mg/L	01/03/1995	0.020	jmt	657	1076	6010(1) 200.7(3)
Metals Prep, Aqueous	Complete			12/29/1994		jmt	657		3010 (1)
Metals Prep, Ag Aqueous	Complete			12/30/1994		mic	265		7760 (1)
Metals Prep, GFAA Aqueous	COMPLETE	S		01/03/1995		mjs	368		3020 (1)
Metals Prep, Hg Aqueous	Complete			01/03/1995		jmt	470		7471 (1)

S : Parameter analysis was sub-contracted to another NET location.

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 W. Bartlett Rd.
Bartlett, IL 60103
Tel: (708) 289-3100
Fax: (708) 289-5445

ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

01/06/1995

Sample No. : 289298

NET Job No.: 94.10097

Sample Description: Monitor Well #14; Grab
Artesia Pumping Station, Facility 10195

Date Taken: 12/22/1994
Time Taken: 15:05
IEPA Cert. No. 100221

Date Received: 12/27/1994
Time Received: 11:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
VOLATILES - 8240 AQUEOUS							
Benzene	<1.0	ug/L	12/29/1994	1.0	llj	825	8240 (1)
Ethyl benzene	<1.0	ug/L	12/29/1994	1.0	llj	825	8240 (1)
Toluene	<1.0	ug/L	12/29/1994	1.0	llj	825	8240 (1)
Xylenes, total	<1.0	ug/L	12/29/1994	1.0	llj	825	8240 (1)
Surr: 1,2-Dichloroethane-d4	108	%	12/29/1994	76-114	llj	825	8240 (1)
Surr: Toluene-d8	106	%	12/29/1994	88-110	llj	825	8240 (1)
Surr: 4-Bromofluorobenzene	103	%	12/29/1994	86-115	llj	825	8240 (1)

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 W. Bartlett Rd.
Bartlett, IL 60103
Tel: (708) 289-3100
Fax: (708) 289-5445

ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

01/06/1995

Sample No. : 289299

NET Job No.: 94.10097

Sample Description: Trip Blank
Artesia Pumping Station, Facility 10195

Date Taken: 12/22/1994
Time Taken: 18:40
IEPA Cert. No. 100221

Date Received: 12/27/1994
Time Received: 11:45
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
VOLATILES - 8240 AQUEOUS							
Benzene	<1.0	ug/L	01/05/1995	1.0	llj	833	8240 (1)
Ethyl benzene	<1.0	ug/L	01/05/1995	1.0	llj	833	8240 (1)
Toluene	<1.0	ug/L	01/05/1995	1.0	llj	833	8240 (1)
Xylenes, total	<1.0	ug/L	01/05/1995	1.0	llj	833	8240 (1)
Surr: 1,2-Dichloroethane-d4	106	%	01/05/1995	76-114	llj	833	8240 (1)
Surr: Toluene-d8	109	%	01/05/1995	88-110	llj	833	8240 (1)
Surr: 4-Bromofluorobenzene	104	%	01/05/1995	86-115	llj	833	8240 (1)

NET Midwest, Bartlett Division

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in the results column indicates the analyte was not detected at or above the reported value.
mg/L	:	Concentration in units of milligrams of analyte per liter of sample. Measurement used for aqueous samples. Can also be expressed as parts per million (ppm).
ug/g	:	Concentration in units of micrograms of analyte per gram of sample. Measurement used for non-aqueous samples. Can also be expressed as parts per million (ppm) or mg/Kg.
ug/L	:	Concentration in units of micrograms of analyte per liter of sample. Measurement used for aqueous samples. Can also be expressed as parts per billion (ppb).
ug/Kg	:	Concentration in units of micrograms of analyte per kilogram of sample. Measurement used for non-aqueous samples. Can also be expressed as parts per billion (ppb).
B	:	Sample result flag indicating that the analyte was also found in the method blank analysis. The value after the B indicates the concentration found in the blank analysis.
D	:	Sample result flag indicating that the reported concentration is from an analysis performed at a dilution. The value following the D indicates the dilution factor of the analysis.
J	:	Sample result flag indicating that the reported concentration is below the routine reporting limit but greater than the Method Detection Limit. The value should be considered estimated.
TCLP	:	These initials appearing in front of an analyte name indicate that the Toxicity Characteristic Leaching Procedure (TCLP) was performed for this test.
%	:	Percent; To convert ppm to %, divide the result by 10,000. To convert % to ppm, multiply the result by 10,000.
Dry Weight (dw)	:	When indicated, the results are reported on a dry weight basis. The contribution of the moisture content in the sample is subtracted when calculating the concentration of the analyte.
ICP	:	Indicates analysis was performed using Inductively Coupled Plasma Spectroscopy.
AA	:	Indicates analysis was performed using Atomic Absorption Spectroscopy.
GFAA	:	Indicates analysis was performed using Graphite Furnace Atomic Absorption Spectroscopy.
PQL	:	Practical Quantitation Limit; the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

Method References

(1) Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", USEPA SW-846, 3rd Edition, 1986.

(2) ASTM "American Society for Testing Materials

(3) Methods 100 through 499: see "Methods for Chemical Analysis of Water and Wastes", USEPA, 600/4-79-020, Rev. 1983.

(4) See "Standard Methods for the Examination of Water and Wastewater", 17th Ed, APHA, 1989.

(5) Methods 600 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants", USEPA Federal Register Vol. 49 No. 209, October 1984.

(6) Methods 500 through 599: see "Methods for the Determination of Organic Compounds in Drinking Water," USEPA 600/4-88/039, Rev. 1988.

NET NATIONAL ENVIRONMENTAL TESTING, INC.

CHAIN OF CUSTODY RECORD

ATTN: MOLLY HOLLAND

MBF SERVICES

COMPANY Amoco Pipe Line Co. REPORT TO: H. MITTLEHAUSER & DOUGLAS EARNEY

ADDRESS MAIL CODE P0630L2 Box 7513 Chicago, IL 60680-7513 INVOICE TO: Amoco Pipeline Co.

PHONE 312-856-7251 FAX 312-856-3231

PROJECT NAME/LOCATION Amoco Pipeline Station, Artesia NM P.O. NO.

PROJECT NUMBER Artesia Pumping Station, Facility 60195

PROJECT MANAGER Douglas S. Earney NET QUOTE NO.

SAMPLED BY (PRINT NAME) CLAYTON M BARNHILL SIGNATURE

(PRINT NAME) SIGNATURE

DATE	TIME	SAMPLE I.D.	LAB #	MATRIX	# and Type of Containers	BTEX 8020	NAPHTHALENE 8270	COMMENTS
12/4/94	1:20 pm	MONITOR WELL 11 2 VIALS		H_2O	X	X	X	Delete Naphthalene per Kurt Lindstrom 12/28/94. MTH
12/4/94	4:45 pm	MONITOR WELL 7 2 VIALS		H_2O	X	X	X	
12/4/94	7:50 pm	MONITOR WELL 4 2 VIALS		H_2O	X	X	X	
12/10/94	4:05 pm	MONITOR WELL 12 2 VIALS		H_2O	X	X	X	
12/10/94	3:05 pm	MONITOR WELL 14 2 VIALS		H_2O	X	X	X	
12/11/94	6:40 AM	TRIP BLANK		HL	X			

CONDITION OF SAMPLE: BOTTLES INTACT? YES / NO COC SEALS PRESENT AND INTACT? YES / NO TEMPERATURE UPON RECEIPT: 16.8°C

FIELD FILTERED? YES / NO VOLATILES FREE OF HEADSPACE? YES / NO Bottles supplied by NET? YES / NO

SAMPLE REMAINDER DISPOSAL: RETURN SAMPLE REMAINDER TO CLIENT VIA

I REQUEST NET TO DISPOSE OF ALL SAMPLE REMAINDERS DATE

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	RELINQUISHED BY:	DATE/TIME	RECEIVED FOR NET BY:
	6:33 PM 12/12/94			12/27/94 11:45	Carole Sanders

METHOD OF SHIPMENT

REMARKS: SEND A COPY OF REPORT TO H. MITTLEHAUSER #2775

PT 1 - ORIGINAL - WHITE PT 2 - NET PROJECT MANAGER - YELLOW PT 3 - CUSTOMER COPY - PINK

NET NATIONAL ENVIRONMENTAL TESTING, INC.

CHAIN OF CUSTODY RECORD

COMPANY Amoco Pipeline Co. REPORT TO: H. Mittle Hauser & Douglas Eakney

ADDRESS MAIL CODE P06 30 L2 PO Box 7513 Chicago, IL 60680-7513 INVOICE TO: Amoco Pipeline Co.

PHONE 312-856-7251 FAX 312-856-3731 P.O. NO. —

PROJECT NAME/LOCATION Amoco Pipeline Station, Artesia, NM

PROJECT NUMBER Artesia Pumping Station, Facility 10195 NET QUOTE NO. —

PROJECT MANAGER Douglas S. Eakney

ATTN: MORA HOLLAND

MBF SERVICES

SAMPLED BY (PRINT NAME) CLAYTON M BARNHILL SIGNATURE Clayton M Barnhill

(PRINT NAME) SIGNATURE

DATE	TIME	SAMPLE I.D.	# and Type of Containers	MATRIX	ANALYSES: 1 CAP METALS (6010)	MERCURY (7470)	SELENIUM (7740)	NA, CA, MG, K, ICP	BICARBONATE	CARBONATE	FLOURIDE	SULFATE	TDS	BTEX (8020)	COMMENTS
12/22/94	1:22 PM	MONITOR WELL # 11		H_2O	X	X	X			X					
		1 POLY PROPYLENE 500 mL ?													
12/22/94	1:40 PM	MONITOR WELL # 11 2 POLY PROPYLENE 500 mL		H_2O	X			X	X	X	X	X	X		NO PRESERVATIVES
12/21/94	4:45 PM	MONITOR WELL #7 2 500 mL		H_2O	X			X	X	X	X	X	X		NO PRESERVATIVES
12/21/94	4:45 PM	MONITOR WELL #7 1 500 mL		H_2O	X			X	X	X					
12/21/94	3:50 PM	MONITOR WELL #4 1 500 mL		H_2O	X			X	X	X					
12/21/94	3:50 PM	MONITOR WELL #4 2 500 mL		H_2O	X			X	X	X	X	X	X		NO PRESERVATIVES
12/21/94	4:05 PM	MONITOR WELL # 12 1 (500 mL)		H_2O	X			X	X	X					
12/21/94	4:05 PM	MONITOR WELL #12 2 (500 mL)		H_2O	X			X	X	X	X	X	X		NO PRESERVATIVES
12/21/94	3:05 PM	MONITOR WELL #14 1 (500 mL)		H_2O	X			X	X	X					
12/21/94	3:05 PM	MONITOR WELL #14 2 (500 mL)		H_2O	X			X	X	X	X	X	X		NO PRESERVATIVES

CONDITION OF SAMPLE: BOTTLES INTACT? YES / NO FIELD FILTERED? YES / NO

COC SEALS PRESENT AND INTACT? YES / NO VOLATILES FREE OF HEADSPACE? YES / NO

TEMPERATURE UPON RECEIPT: 14.1 °C Bottles supplied by NET? YES / NO

SAMPLE REMAINDER DISPOSAL: RETURN SAMPLE REMAINDER TO CLIENT VIA —

I REQUEST NET TO DISPOSE OF ALL SAMPLE REMAINDERS — DATE —

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	RELINQUISHED BY:	DATE/TIME	RECEIVED FOR NET BY:
Clayton M Barnhill	12/22/94 6 PM			12/27/94	Orlyn Lindus

METHOD OF SHIPMENT

REMARKS: SEND A COPY OF THE REPORT TO H. MITTLE HAUSER # 2775

PT 1 - ORIGINAL - WHITE PT 2 - NET PROJECT MANAGER - YELLOW PT 3 - CUSTOMER COPY - PINK

NET NATIONAL ENVIRONMENTAL ® TESTING, INC.

Bartlett Division
850 W. Bartlett Rd.
Bartlett, IL 60103
Tel: (708) 289-3100
Fax: (708) 289-5445

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

12/09/1994

NET Job Number: 94.09537

IEPA Cert No. 100221
WDNR Cert No. 999447130
A2LA Cert No. 0453-01

Enclosed is the Quality Control Data and Analytical Results for the following samples submitted to NET, Inc. Bartlett Division for analysis:

Project Description: Amoco Pipeline Station, Artesia, NM

Sample Number	Sample Description	Date Taken	Date Received
286605	Influent	11/25/1994	12/05/1994
286613	Effluent	11/25/1994	12/05/1994

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. These results apply only to the samples analyzed. Reproduction of this report only in whole is permitted. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Procedures used follow NET Standard Operating Procedures which reference the methods listed on your report. Should you have questions regarding procedures or results, please do not hesitate to call. NET has been pleased to provide these analytical services for you.

This Quality Control report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Approved by:

Jean-Pierre C. Rouanet
Operations Manager

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 W. Bartlett Rd.
Bartlett, IL 60103
Tel: (708) 289-3100
Fax: (708) 289-5445

ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

12/09/1994

Sample No. : 286605

NET Job No.: 94.09537

Sample Description: Influent
Amoco Pipeline Station, Artesia, NM

Date Taken: 11/25/1994
Time Taken: 10:08
IEPA Cert. No. 100221

Date Received: 12/05/1994
Time Received: 16:00
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
Chloride	642	mg/L	12/08/1994	5	dsf	356	4500Cl(4) 325.3(3)
Fluoride	0.29	mg/L	12/08/1994	0.05	dsf	263	4500F C(4) 340.2
Calcium, AA	700	mg/L	12/06/1994	1.0	jmt	164	7140(1) 215.1(3)
Magnesium, AA	180	mg/L	12/06/1994	1.0	jmt	157	7450(1) 242.1(3)
Potassium, AA	10	mg/L	12/06/1994	1.0	jmt	153	7610(1) 258.1(3)
Sodium, AA	43	mg/L	12/06/1994	1.0	jmt	166	7770(1) 273.1(3)

NATIONAL ENVIRONMENTAL TESTING, INC.

Bartlett Division
850 W. Bartlett Rd.
Bartlett, IL 60103
Tel: (708) 289-3100
Fax: (708) 289-5445

ANALYTICAL REPORT

Mr. Hank Mittelhauser
MITTELHAUSER CORPORATION
1240 Iroquois Drive
Suite 206
Naperville, IL 60563

12/09/1994

Sample No. : 286613

NET Job No.: 94.09537

Sample Description: Effluent
Amoco Pipeline Station, Artesia, NM

Date Taken: 11/25/1994
Time Taken: 10:08
IEPA Cert. No. 100221

Date Received: 12/05/1994
Time Received: 16:00
WDNR Cert. No. 999447130

Parameter	Results	Units	Date of Analysis	Method PQL	Analyst	Batch No. Prep/Run	Analytical Method
Chloride	915	mg/L	12/08/1994	5	dsf	356	4500Cl(4) 325.3(3)
Fluoride	0.32	mg/L	12/08/1994	0.05	dsf	263	4500F C(4) 340.2
Calcium, AA	450	mg/L	12/06/1994	1.0	jmt	164	7140(1) 215.1(3)
Magnesium, AA	160	mg/L	12/06/1994	1.0	jmt	157	7450(1) 242.1(3)
Potassium, AA	9.7	mg/L	12/06/1994	1.0	jmt	153	7610(1) 258.1(3)
Sodium, AA	380	mg/L	12/06/1994	1.0	jmt	166	7770(1) 273.1(3)

NET Midwest, Bartlett Division

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in the results column indicates the analyte was not detected at or above the reported value.
mg/L	:	Concentration in units of milligrams of analyte per liter of sample. Measurement used for aqueous samples. Can also be expressed as parts per million (ppm).
ug/g	:	Concentration in units of micrograms of analyte per gram of sample. Measurement used for non-aqueous samples. Can also be expressed as parts per million (ppm) or mg/Kg.
ug/L	:	Concentration in units of micrograms of analyte per liter of sample. Measurement used for aqueous samples. Can also be expressed as parts per billion (ppb).
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B	:	Sample result flag indicating that the analyte was also found in the method blank analysis. The value after the B indicates the concentration found in the blank analysis.
D	:	Sample result flag indicating that the reported concentration is from an analysis performed at a dilution. The value following the D indicates the dilution factor of the analysis.
J	:	Sample result flag indicating that the reported concentration is below the routine reporting limit but greater than the Method Detection Limit. The value should be considered estimated.
TCLP	:	These initials appearing in front of an analyte name indicate that the Toxicity Characteristic Leaching Procedure (TCLP) was performed for this test.
%	:	Percent; To convert ppm to %, divide the result by 10,000. To convert % to ppm, multiply the result by 10,000.
Dry Weight (dw)	:	When indicated, the results are reported on a dry weight basis. The contribution of the moisture content in the sample is subtracted when calculating the concentration of the analyte.
ICP	:	Indicates analysis was performed using Inductively Coupled Plasma Spectroscopy.
AA	:	Indicates analysis was performed using Atomic Absorption Spectroscopy.
GFAA	:	Indicates analysis was performed using Graphite Furnace Atomic Absorption Spectroscopy.
PQL	:	Practical Quantitation Limit; the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions.

Method References

(1) Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", USEPA SW-846, 3rd Edition, 1986.

(2) ASTM "American Society for Testing Materials

(3) Methods 100 through 499: see "Methods for Chemical Analysis of Water and Wastes", USEPA, 600/4-79-020, Rev. 1983.

(4) See "Standard Methods for the Examination of Water and Wastewater", 17th Ed, APHA, 1989.

(5) Methods 600 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants", USEPA Federal Register Vol. 49 No. 209, October 1984.

(6) Methods 500 through 599: see "Methods for the Determination of Organic Compounds in Drinking Water," USEPA 600/4-88/039, Rev. 1988.

NATIONAL ENVIRONMENTAL TESTING, INC.

CHAIN OF CUSTODY RECORD

H. Mittelhauser #2

COMPANY Amoco Pipeline Company
ADDRESS MAIL CODE P0630L2 POBox 513 Chicago, IL 60680-7513
PHONE 312-856-7251 FAX 312-856-3731
PROJECT NAME/LOCATION Amoco Pipeline Station, Artesia NM
PROJECT NUMBER Artesia Pumping Station, Facility 10195
PROJECT MANAGER Douglas S Earney

REPORT TO: Douglas S. Earney
INVOICE TO: Amoco Pipeline Co.
P.O. NO.
NET QUOTE NO.

ATTN: Moira Holland

MBF Services

SAMPLED BY (PRINT NAME) Layton M Barnhill
SIGNATURE
(PRINT NAME) Kory McMinn
SIGNATURE

NET BARTLETT DIV ←→ MITTELHAUSER

DATE	TIME	SAMPLE IDENTIFICATION	# and Type of Containers	BTEX-8020	Naphthalene-8270	TPH-CVAA	TPH-AA	8 Metals: As, Be, Cd, Cu, Pb, Ni, Ag, Zn	TDS	Sulfate	COMMENTS
11/25/94	10:05 AM	Influent		X	X	X	X	X			12/5 Hank Mittelhauser called to add Na, K, Ca, Mg, Cl, Fl, TDS, Sulfate
11/25/94	10:05 AM	Effluent		X	X	X	X	X			TDS, Sulfate deleted due to limited amount of sample.
11/25/94	10:05 AM	Trip Blank		X							

CONDITION OF SAMPLE: BOTTLES INTACT? YES / NO
FIELD FILTERED? YES / NO N/A
COC SEALS PRESENT AND INTACT? YES / NO N/A
VOLATILES FREE OF HEADSPACE? YES / NO
TEMPERATURE UPON RECEIPT: 10.1°
Bottles supplied by NET? YES / NO

SAMPLE REMAINDER DISPOSAL: RETURN SAMPLE REMAINDER TO CLIENT VIA
I REQUEST NET TO DISPOSE OF ALL SAMPLE REMAINDERS DATE

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	RELINQUISHED BY:	DATE/TIME	RECEIVED FOR NET BY:
Layton M Barnhill	11/25/94 11:08am			11/25/94 12:00	

METHOD OF SHIPMENT

REMARKS: Send a copy of the report to H. Mittelhauser #2775

CUSTOMER COPY - PINK