SPILL REPORT R **CLOSURE**

STATE APPROVED LAND FARM AND ENVIRONMENTAL SERVICES

May 28, 2002

RECEIVED

JUN 1 7 2002

Mr. William C. Olson Energy, Minerals, and Natural Resources Department New Mexico Oil Conservation Division - Environmental Bureau 2040 S. Pacheco Santa Fe, NM 87505

ENVIRONMENTAL BUREAU OIL CONSERVATION DIVISION

Subject:

E.O.T.T "Pearl Queen 6" Gathering" Final C-141 and Closure Documentation

E.O.T.T Site Reference: "Pearl Queen"

Dear Mr. Sheeley

Environmental Plus, Inc. (EPI), on behalf of E.O.T.T. Energy Pipeline (EOTT) submits for your consideration and approval the "Final C-141 and Closure Documentation for the "Pearl Queen 6" Gathering" (EOTT) Reference: "Pearl Queen." This report documents the installation and sampling of an approved down-gradient ground water monitoring well at the referenced site. Three down-gradient ground water sampling events occurred during the period September-2000 through June-2001. Water analyses indicate that ground water beneath the site has attenuated to less than NMWQCC standards as demonstrated by the compliant CoC data. EPI, on behalf of EOTT, therefore requests that the NMOCD consider the information provided within this documentation and require "no further action" at this site.

If there are any questions please call Mr. Ben Miller or myself at EPI's offices, or at 505.390.0288 or 505.390.7864 respectively. Mr. Frank Hernandez of E.O.T.T. Energy Pipeline can be contacted at 915.638.3799.

All official correspondence should be addressed to:

Mr. Frank Hernandez E.O.T.T. Energy Pipeline P.O. Box 1660 Midland, Texas 79703

Sincerely,

Pat McCasland

EPI Technical Services Manager

Frank Hernandez, E.O.T.T. w/enclosure cc:

Cutty Cunningham, Enron Transportation Services (w/enclosure)

Paul Sheeley, NMOCD-Hobbs (w/enclosure)

Sherry Miller, EPI President

Ben Miller, EPI Vice President and General Manager

File

P.O. BOX 1558 ••• 2100 AVENUE O

EUNICE, NEW MEXICO 88231

TELEPHONE 505 * 394 * 3481 ***

FAX 505 • 394 • 2601

TAL Z NVIRONM

EOTT ENERGY PIPELINE, LP

SITE INVESTIGATION, REMEDIATION,
AND FINAL C-141
CLOSURE DOCUMENTATION

PEARL QUEEN 6" GATHERING EOTT REF: "PEARL QUEEN"

UL-C NE1/4 OF THE NW1/4 OF SECTION 20 T20S R37E

~4 MILES SOUTH OF MONUMENT

LEA COUNTY, NEW MEXICO

LATITUDE: 32°33'51"N

LONGITUDE: 103°16'32"W

RECEIVED

MAY 29, 2002

JUN 17 2002

PREPARED BY:

ENVIRONMENTAL BUREAU OIL CONSERVATION DIVISION

Environmental Plus, Inc.

2100 Avenue O P.O. Box 1558

Eunice, NM 88231

Phone: (505)394-3481

FAX: (505)394-2601



Table of Contents

Table o	of Contents	1
Execut	tive Summary	2
1.0	Introduction	3
2.0	Background	
3.0	Site Description	3
3.1	Geological Description	3
3.2	Ecological Description	3
<i>3.3</i>	Area Ground Water	4
3.4	Area Water Wells	4
3.5	Area Surface Water Features	.,
4.0	NMOCD Site Ranking	4
5.0	Subsurface Soil Investigation	
6.0	Ground Water Investigation	
7.0	Remediation	
8.0	Closure Justification	
	hment I: Site and Topographic Maps	•
S T T	Site Map: with site features (GPS Demarcation) Topographic Site Map Topographic Site Map Nicholson & Clebsch Ground Water Map of Lea County (1961)	8 8
Attach	hment II: Laboratory Analytical Reports and Summaries	11
	Fabular Summary of Analytical Data (Soil and Water Samples)	
Attach	hment III: Photographs	14
Attach	hment IV: Regulatory and Summary Forms	15
Attach	hment IV: Regulatory and Summary Forms	16
Site	Information and Metrics	17
09-1	16-99; 12-10-99; 02-16-00 C-141 Submittals to NMOCD	18
Attach	hment V – Monitor Well Schematic Diagram	19

Executive Summary

Environmental Plus, Inc. (EPI) was notified by EOTT Energy Corporation (EOTT) on September 9, 2000 regarding the installation and sampling of a ground water monitoring well at EOTT's "Pearl Queen 6" Gathering" site. EOTT's Pearl Queen 6" Gathering site is located approximately 4 miles south of Monument, Lea County, New Mexico on property owned by the State of New Mexico. EPI was not involved with the site characterization, delineation or remediation of the spill site.

In reviewing EOTT's C-141 submittals and related correspondence by, and between EOTT Environmental Engineering staff and NMOCD, the following project chronology is ascertained:

- 1. 09-16-99 The initial C-141 was submitted to NMOCD by Lenna Frost, EOTT Sr. Environmental Engineer. The initial C-141 indicates the spill occurred on 9-8-99. 15-barrels of crude oil were released and approximately 8 barrels were recovered. The affected surface area is described as a 300' X 2' row along the pipeline. It is further indicated that removal of contaminated soil was in progress on that date, and that J&L Land Farm was utilized for contaminated soil disposal.
- 2. 12-10-99 A final C-141 was submitted by EOTT to NMOCD. This report indicates 7500 yd³ of contaminated soil was removed from the site and disposed of at J&L Land Farm. The excavation was backfilled with clean soil. Two bottom-hole water samples and two bottom-hole soil samples were taken on 12-6-99. Samples were submitted to Environmental Lab of Texas, Odessa TX for analysis. The water samples were analyzed for BTEX and soil samples were analyzed for TPH. Analyses reports were submitted as attachments to the Final C-141. The two bottom-hole soil analyses indicated GRO and DRO levels of <10 ppm. BTEX analyses of the north and south bottom-hole water samples indicated total BTEX levels of 0.061 and 0.057 ppm respectively, however, the two samples indicated Benzene levels of .012 and .011 ppm respectively, which are both above the NMWQCC maximum allowable limit of .01 ppm (10 ppb).
- 3. <u>02-04-00</u> NMOCD (William Olson) responded to EOTT's 12-10-99 C-141 submittal. Mr. Olson pointed out that OCD personnel had inspected the site and had noted that the ground water had been penetrated during the excavation process, and that the exposed ground water was visibly contaminated with petroleum product. He further stated that EOTT would need to determine the extent of ground water contamination at the site because of the Benzene levels in the ground water samples being above the NMWQCC allowable limit of 10 ppb.
- 4. <u>02-16-00</u> EOTT submittal of water contamination work plan and corrected C-141. EOTT proposed that the >10 ppb Benzene contaminated ground water be allowed to attenuate naturally. EOTT's environmental engineer states that a clay barrier was placed between the water table and the backfill material, thus preventing further contamination from this spill. EOTT proposed the installation of a ground water monitoring well to be installed immediately down-gradient (south) of the excavation, with a 12-month sampling regimen to determine ground water contamination.
- 05-24-00 NMOCD (William Olson) conditionally accepted EOTT's work plan for determination
 of ground water contamination at the site. Conditions were specific to monitor well design,
 construction, development, and to reporting requirements.

EPI commenced installation of a down-gradient monitor well on September 20, 2000. The well was completed on the 20th, developed on the 21st, and initially sampled on the 22nd. Ground water depth was measured at 27-feet bgs at the time of well installation. In addition to the initial sampling on 9-22-00, the well was sampled subsequently on 1-24-01 and 6-13-01. Analyses for the 9-22-00 and 1-24-01 sampling events consisted of TPH, BTEX, Cations/Anions, and PAH. The 6-13-01 analyses consisted of only TPH and BTEX.

The analyses of the 9-22-00 and 1-24-01 water samples resulted in undetectable BTEX and PAH levels, ion levels normal for ground water in this area, and minimal TPH levels of 1.0 – 4.0 ppm. Since ion levels were normal and the PAH was undetectable for two successive samples, these protocols were dropped from the final 6-13-01 sampling. The 6-13-01 sampling indicated TPH and BTEX levels below detection limits.

The contamination of the ground water beneath this site caused by the inadvertent encroachment of the water table was minimal, and that sample analyses indicate that the initial contamination has attenuated sufficiently to allow for closure of the site.

1.0 Introduction

This report addresses the site investigation and remediation of the EOTT Energy Pipeline "Pearl Queen 6" Gathering" remediation site. Environmental Plus, Inc. (EPI), Eunice, New Mexico was not involved with site investigation and/or remedial activities at the site. EPI was contracted by EOTT to locate, install and sample an approved ground water monitoring well immediately down-gradient to the excavated and backfilled area of the site. The ground water monitoring well was installed on September 20, 2000. The monitor well was developed on September 21st, and the initial sampling event took place on September 22, 2000. Subsequent water sampling took place on January 24, 2001 and June 13, 2001.

2.0 Background

The site is associated with the EOTT Energy Pipeline – Pearl Queen 6" crude oil gathering pipeline. This site is located in Unit Letter C, in the NE¼ of the NW¼ of Section 20 T20S R37E, approximately 4 miles south of Monument, Lea County New Mexico at Latitude 32°33′51"N and Longitude 103°16′32"W. The property is owned by the State of New Mexico. A topographical map of the site and a detailed site map are included in Attachment I.

The crude oil release occurred on September 8, 1999 with an estimated 15 barrels released, and 8 barrels recovered. The leak was the result of pipe corrosion. The pipe was initially clamped and eventually replaced by EOTT.

3.0 Site Description

3.1 Geological Description

The United States Geological Survey (USGS) Ground-Water Report 6, "Geology and Ground-Water Conditions in Southern Lea County, New Mexico," A. Nicholson and A. Clebsch, 1961, describes the near surface geology of southern Lea County as an intergrade of the Quaternary Alluvium (QA) sediments, i.e., fine to medium sand, with the mostly eroded Cenozoic Ogallala (CO) formation. Typically, the QA and CO formations in the area are capped by a thick interbed of caliche and generally overlain by sandy soil. The release site is located at the eastern extent of the Laguna Valley physiographic subdivision, described by Nicholson & Clebsch as an area "covered almost entirely by dune sand which is stable or semi-stable over most of the area, but which locally drifts. The surface is very irregular and has no drainage features except at the edges of several playas. The sand is generally underlain by recent alluvium but in several places the sand forms topographic highs where it is underlain by a caliche surface. The thickness of the sand cover ranges from a few inches to a probable maximum of 20-feet.

3.2 Ecological Description

The area is typical of the Upper Chihuahuan Desert Biome consisting primarily of hummocky sand hills covered with Harvard Shin Oak (Querqus harvardi) interspersed with Honey Mesquite (Prosopis glandulosa) along with typical desert grasses and weeds. Mammals represented, include

Orrd's and Merriam's Kangaroo Rat, Deer Mouse, White Throated Wood Rat, Cottontail Rabbit, Black Tailed Jackrabbit, and the Mule Deer. Reptiles, Amphibians, and Birds are numerous and typical of area. A survey of Listed, Threatened, or Endangered species was not conducted.

3.3 Area Ground Water

The unconfined ground water aquifer was measured at the time of the monitor well installation to be 27' bgs. This depth to GW is consistent with the information contained within "United States Geological Survey (USGS) Ground Water Report 6, 1961. A. Nicholson and A. Clebsch." The ground water flow gradient at this particular site is predicted to be essentially south, rather than the predominant southeasterly gradient present in southern Lea County. An enlarged portion of the Nicholson & Clebsch "Ground Water Map of Southern Lea County" with annotations indicating site location and ground water gradient is included in Attachment I.

3.4 Area Water Wells

All recorded wells are greater than 1000 horizontal feet from the site.

3.5 Area Surface Water Features

No surface water bodies exist within 1000 horizontal feet of the site.

4.0 NMOCD Site Ranking

Documentation provided by EOTT to EPI regarding remedial work done at this site prior to EPI's involvement with the project, and EPI's physical measurement of depth to water at the site, indicate that the chemical parameters of the soil and ground water were characterized consistent with the characterization and remediation/abatement goals and objectives set forth in the New Mexico Oil Conservation Division (NMOCD) approved "General Work Plan for Remediation of E.O.T.T. Pipeline Spills, Leaks and Releases in New Mexico, July 2000" and the NMOCD guidelines published in the following documents;

- ♦ Guidelines for Remediation of Leaks, Spills and Releases (August 13, 1993)
- ♦ <u>Unlined Surface Impoundment Closure Guidelines (February 1993)</u>

Acceptable thresholds for contaminants/constituents of concern (CoCs), i.e., TPH^{8015m}, Benzene, and the mass sum of Benzene, Toluene, Ethyl Benzene, and total Xylene (BTEX), was determined based on the NMOCD Ranking Criteria as follows:

- Depth to Ground water, i.e., distance from the lower most acceptable concentration to the ground water.
- ♦ Wellhead Protection Area, i.e., distance from fresh water supply wells.
- ♦ Distance to Surface Water Body, i.e., horizontal distance to all down gradient surface water bodies.

Based on the proximity of the site to protectable area water wells, surface water bodies, and depth to ground water from the lower most contamination, the NMOCD ranking score for the site is 20 points with the soil remedial goals highlighted in the Site Ranking Matrix presented on the following page.

1. Grou	ınd Water	2. Wellhead Pi	rotection Area	3. Distance to Surface Water
Depth to GW <	50 feet: 20 points	If <1000' from water s	ource, or; <200' from	<200 horizontal feet: 20 points
Depth to GW 50	to 99 feet: 10 points	private domestic wat		200-1000 horizontal feet: 10 points
Depth to GW >	100 feet: 0 points	if >1000' from water s private domestic wa		>1000 horizontal feet: 0 points
Ground Wa	ater Score=20	Wellhead Protection	on Area Score= 0	Surface Water Score= 0
	Site	Rank (1+2+3) = 20 + 0 +	0 = 20 points (for sol	0-27'bgs)
	Total Site Rank	ing Score and Acc	eptable Remedial (Soal Concentrations
Parameter	20-60 (for soil	0 27' bgs)	10	0
Benzene ¹	10 p	pm	10 ppm	10 ppm
BTEX1	50 p	pm	50 ppm	50 ppm
TPH	100 p	ppm	1000 ppm	5000 ppm
	1100 ppm field V	/OC headspace meas	urement may be subst	ituted for lab analysis

5.0 Subsurface Soil Investigation

Subsurface soil analysis was accomplished with VOC analysis of bottom-hole samples utilizing Photo-Ionization Detection technology, and with submittal of bottom-hole soil samples for laboratory analysis for TPH.

Laboratory analytical reports and summary table of all analytical results are provided in Attachment II.

6.0 Ground Water Investigation

Ground water depth was measured to be 27-feet below ground surface level during the installation of an approved ground water monitoring well at the site on 9-20-00. Ground water analyses during the period 9-22-00 to 6-13-01 indicate that the initial ground water contamination that occurred during excavation of the site was minimal and that petroleum contamination beneath the site has attenuated to below detectable levels for all CoC's. There will be no need for further ground water investigation.

7.0 Remediation

Remediation of the site consisted of excavation of the affected area, placement of a 2-ft clay barrier over the shallow water table, and backfilling with clean soil. Approximately 7,500 yd³ of contaminated soil was excavated from the site and disposed of at J&L Land Farm.

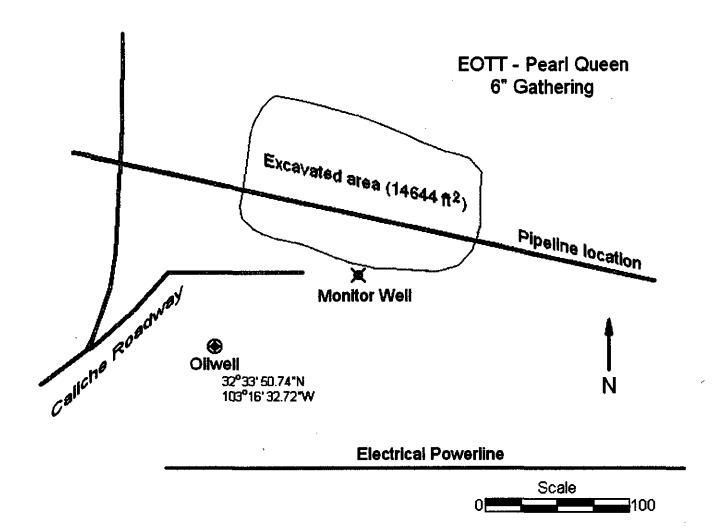
8.0 Closure Justification

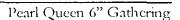
This report documents successful implementation of the Remediation Plan approved by NMOCD and is consistent with the NMOCD approved "E.O.T.T. General Work Plan for Remediation of E.O.T.T. Pipeline Spills, Leaks and Releases in New Mexico, July – 2000". Soil contaminated above the prescribed CoC remedial concentrations was excavated and disposed of at an approved land farm. As per EOTT documentation (Lennah Frost, 02-16-00), a 2-ft clay barrier was placed over the water table to prevent

additional contamination of the ground water beneath the site, and the excavation was backfilled with clean soil. The subsequent ground water investigation conducted by EPI indicates that the ground water beneath the site is well within acceptable contamination levels. Based on the data presented in this report, Environmental Plus, Inc., on behalf of E.O.T.T. Energy Pipeline, requests that the NMOCD require "no further action" at this site.

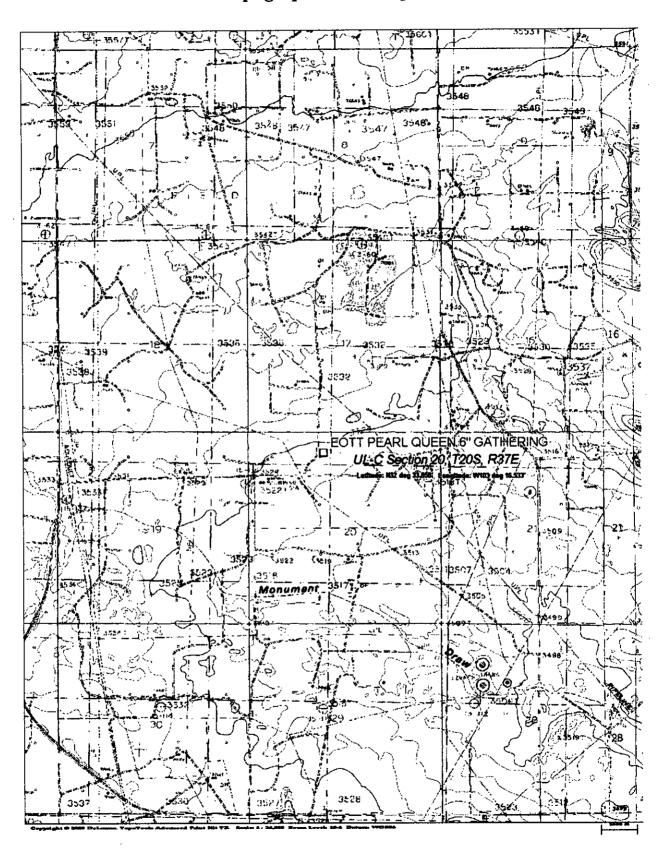
Attachment I: Site and Topographic Maps

Site Map: with site features (GPS Demarcation)

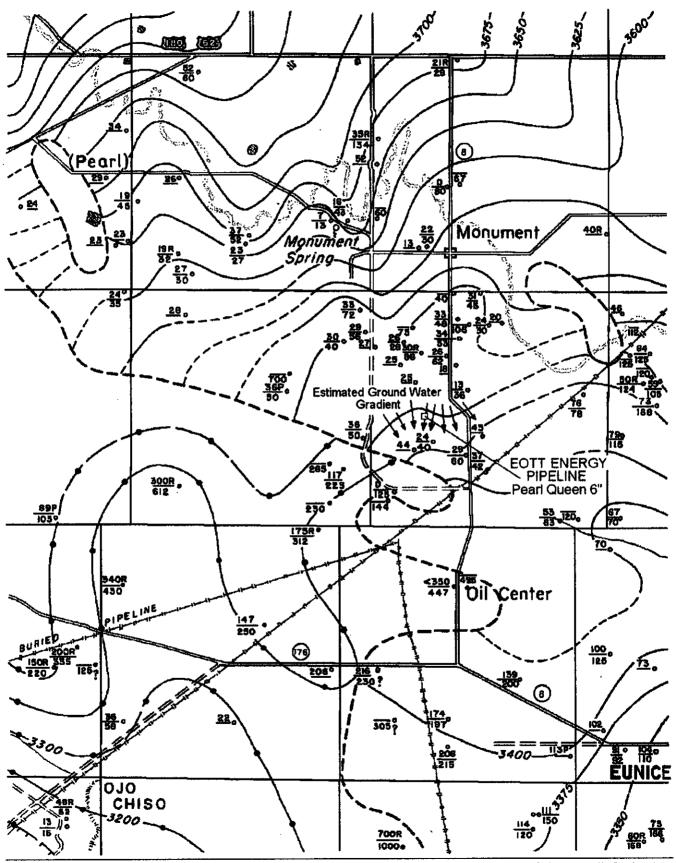




Topographic Site Map



Nicholson & Clebsch Ground Water Map of Lea County (1961)



E.O.T.T. Energy P	ipeline
-------------------	---------

Attachment II: Laboratory Analytical Reports and Summaries

Tabular Summary of Analytical Data (Soil and Water Samples)

Chec-99 6-Dec-99 6-Dec-99 6-Dec-99 6-Dec-99 22-Sep-00 22-S	Chec-99 C-Dec-99 C-Dec-99									
mg/L NA NA NA NA NA mg/L NA NA NA NA NA NA mg/L NA NA 0.012 0.011 0.021 0.021 mg/L NA NA 0.012 0.011 0.021 0.021 mg/L NA NA 0.012 0.012 0.021 0.021 mg/L NA NA 0.021 0.021 0.021 0.021 mg/L NA NA 0.021 0.021 0.021 0.021 mg/L NA NA 0.021 0.027 0.021 0.021 mg/L NA NA NA NA NA 1.23.00 9.23 mg/L NA NA NA NA NA 1.23.00 1.23.00 mg/L NA NA NA NA NA 1.24.00 1.24.00 mg/L NA NA NA NA NA	mg/L NA N		4		6-59G-9	6-Dec-99	6-Dec-99	00-da5-22	24-Jan-01	13-Jun-01
mg/kg < 100	mg/kg -100 -100 NA NA NA mg/l 20 20 NA NA 1 mg/l NA 0.012 0.011 0.001 mg/l NA NA 0.011 0.002 0.001 mg/l NA NA 0.011 0.009 0.001 mg/l NA NA 0.022 0.021 0.001 mg/l NA NA 0.051 0.007 0.001 mg/l NA NA NA NA 1.4050 mg/l NA NA NA NA NA 1.2430 mg/l NA NA NA NA NA			SOIL NORTH	SOIL SOUTH	HEO NORTH	ню ѕол⊪	EPQ20GW	GW12401EPQMW	EPQMW61301GW
mg/L 20 20 NA NA 4 mg/L NA 0.012 0.001 0.001 0.001 mg/L NA 0.012 0.001 0.001 0.001 mg/L NA NA 0.012 0.001 0.001 0.001 mg/L NA NA 0.012 0.009 0.001 0.001 0.001 mg/L NA NA 0.011 0.009 0.001 0.001 0.001 mg/L NA NA NA NA 0.021 0.001 0.001 mg/L NA NA NA NA 1.2.13 9.67 mg/L NA NA NA NA 1.2.13 9.60 mg/L NA NA NA NA NA 1.2.13 9.67 mg/L NA NA NA NA NA 1.2.13 9.60 mg/L NA NA NA NA NA	mg/L 20 20 NA NA 1 mg/L NA 0.012 0.011 0.001/9 mg/L NA NA 0.012 0.001 0.001 mg/L NA NA 0.011 0.002 0.001 mg/L NA NA 0.012 0.002 0.001 mg/L NA NA 0.002 0.001 0.001 mg/L NA NA NA NA 12.13 mg/L NA NA NA NA 1.00.00 mg/L NA NA NA NA 1.24.00 mg/L NA NA NA 1.24.00 mg/L NA NA NA 1.24.00 mg/L NA<	VOC ¹	mg/Kg	<100	001>	NA	NA	NA	NA	NA
mg/L NA NA 0.012 0.001 0.001 0.001 mg/L NA NA 0.012 0.012 0.001 0.001 mg/L NA NA 0.013 0.009 0.001 0.001 mg/L NA NA 0.013 0.009 0.001 0.001 mg/L NA NA 0.022 0.021 0.009 0.001 0.001 mg/L NA NA NA NA 0.005 0.001 0.001 mg/L NA NA NA NA 1.213 0.001 mg/L NA NA NA NA 1.000 0.001 mg/L NA NA NA NA 1.000 0.001 mg/L NA NA NA 1.000 0.001 0.001 mg/L NA NA NA NA 1.213 0.001 mg/L NA NA NA 1.000 0.	mg/L NA 0.012 0.011 0.001 mg/L NA NA 0.012 0.001 0.001 mg/L NA NA 0.010 0.004 0.001 0.001 mg/L NA NA 0.001 0.007 0.001 0.001 mg/L NA NA NA NA NA 0.001 mg/L NA NA NA NA NA 1.21.3 mg/L NA NA NA NA 1.20.0 1.20.0 mg/L NA NA NA NA 1.20.0 1.20.0 mg/L NA NA NA NA 1.29.00 1.20.0 mg/L NA NA NA NA NA 1.20.0 mg/L NA NA NA NA 1.20.0 mg/L NA NA NA NA 1.20.0 mg/L NA NA NA NA 1.2	THPT.	mg/L	20	οz	NA	NA	1	4	0.375
mg/L NA NA 0.0012 0.0014	mg/L NA NA 0.012 0.001 0.001 mg/L NA NA 0.004 0.009 0.001 mg/L NA NA 0.011 0.009 0.001 mg/L NA NA NA NA 0.001 mg/L NA NA NA NA 12.13 mg/L NA NA NA NA 149.40 mg/L NA NA NA NA 149.40 mg/L NA NA NA NA 149.40 mg/L NA NA NA 149.40 </td <td>]</td> <td>mg/L</td> <td>NA</td> <td>NA</td> <td>0.012</td> <td>0.011</td> <td>(₃) rooro</td> <td>0000</td> <td>0.001</td>]	mg/L	NA	NA	0.012	0.011	(₃) rooro	0000	0.001
mg/L NA NA 0.004 0.004 0.001 0.001 mg/L NA NA 0.011 0.009 0.001 0.001 0.001 mg/L NA NA 0.011 0.0021 0.0021 0.001 0.001 mg/L NA NA NA NA 0.021 0.002 0.001 mg/L NA NA NA NA NA 0.002 0.002 mg/L NA NA NA NA 12.13 9.67 mg/L NA NA NA NA 1.00 1.20 mg/L NA NA NA NA 1.20 1.20 mg/L NA NA NA NA NA 1.20 1.20 mg/L NA NA NA NA NA 1.20 1.20 mg/L NA NA NA NA NA 1.20 1.20 mg/L NA <td>mg/L NA NA 0.004 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.002 0.001<</td> <td></td> <td>mg/L</td> <td>NA*</td> <td>NA</td> <td>0.012</td> <td>0.012</td> <td>100.0</td> <td>0.001</td> <td>1000</td>	mg/L NA NA 0.004 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.001 0.002 0.001<		mg/L	NA*	NA	0.012	0.012	100.0	0.001	1000
mg/L NA 0.011 0.009 0.001 0.001 mg/L NA 0.032 0.021 0.001 0.001 mg/L NA NA NA NA 0.021 0.001 0.001 mg/L NA NA NA NA NA 12.13 9.67 mg/L NA NA NA NA 10.001 9.67 0.001 mg/L NA NA NA NA 10.40 12.40 9.67 mg/L NA NA NA NA 149.40 129.40 129.40 mg/L NA NA NA NA 149.40 129.40 129.40 mg/L NA NA NA NA NA 124.90 129.40 mg/L NA NA NA NA NA 129.00 129.00 mg/L NA NA NA NA NA 129.00 129.00 mg/L	mg/L NA NA 0.001 0.002 0.001 mg/L NA NA 0.022 0.002 0.002 mg/L NA NA NA NA 1.0.05 mg/L NA NA NA NA 1.0.05 mg/L NA NA NA NA 1.0.05 mg/L NA NA NA 1.0.05 0.005 mg/L NA NA NA 1.0.05 0.005 mg/L NA NA NA 1.0.05 0.005 mg/L NA NA NA 1.799.00 0.005 mg/L NA NA NA 1.799.00 0.005 Su NA NA NA NA 1.799.00 Su NA NA NA NA 1.799.00 Su NA NA NA NA 1.799.00 Su NA NA NA NA 1.799.00<		mg/L	AN	٩N	0.004	0.004	000	100:0	100.0
mg/L NA 0.022 0.024 0.025 0.025 mg/L NA NA 0.025 0.025 0.025 mg/L NA NA NA 12.13 9.67 mg/L NA NA NA 95.00 92.30 mg/L NA NA NA 95.00 92.30 mg/L NA NA NA 149.40 129.40 mg/L NA NA NA 1.00 1.00 mg/L NA NA NA NA 1.00 1.00 mg/L NA NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005 0.005 mg/L NA	mg/L NA NA 0.022 0.021 0.007 mg/L NA NA NA NA 12.13 mg/L NA NA NA 199.40 mg/L NA NA NA 139.40 mg/L NA NA NA 139.00 Su NA NA NA 17.39 Polycyclic Aromatic Hydrocarbons (PAH) - EPA SW846 8270 (mg/L) 0.005 1 mg/L NA NA NA NA 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA NA NA 0.005 mg/L NA NA NA 0.005 0.005 mg/L	_	mg/L	NA	NA	0.011	0.009	0.001	0.001	0.001
mg/L NA 0.061 0.057 0.005 0.005 mg/L NA NA NA 12.13 9.67 mg/L NA NA NA 19.50 13.360 mg/L NA NA NA NA 149.40 1.29.40 mg/L NA NA NA NA 149.40 129.40 mg/L NA NA NA 149.40 129.40 129.40 mg/L NA NA NA 149.60 129.40 129.40 mg/L NA NA NA 1799 24.00 129.40 mg/L NA NA NA 17.99 129.00 129.00 mg/L NA	mg/L NA NA 0.061 0.057 0.005 mg/L NA NA NA 12.13 mg/L NA NA NA 12.13 mg/L NA NA NA 198.90 mg/L NA NA NA 149.40 mg/L NA NA NA 17.39 polycyclic Aromatic Hydrocarbons (PAH) - EPA SW846 8270 (mg/L) 1.39 1.39 mg/L NA NA NA 1.39 mg/L NA NA NA 0.005			NA	NA	0.022	0.021	0.001	0.001	0.001
mg/L NA NA NA 12.13 9.67 mg/L NA NA NA 195.00 92.30 mg/L NA NA NA NA 198.90 123.60 mg/L NA NA NA NA NA 198.90 133.60 mg/L NA NA NA NA NA 149.40 123.60 mg/L NA NA NA NA 194.90 123.60 mg/L NA NA NA 109.90 127.90 mg/L NA NA NA 1.00 1.00 mg/L NA NA NA 1.00 1.00 mg/L NA NA NA 1.00 1.00 mg/L NA NA NA 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA NA 0.005 0.005	mg/L NA NA NA 12.13 mg/L NA NA NA 12.13 mg/L NA NA NA 108.90 mg/L NA NA NA 149.40 mg/L NA NA NA 149.60 mg/L NA NA NA 149.60 mg/L NA NA NA 149.60 mg/L NA NA NA 124.00 mg/L NA NA NA 12.00 mg/L NA NA NA 1.39 mg/L NA NA NA NA 1.39 mg/L NA NA NA 0.005 mg/L NA NA NA 0.005 mg/L			NA	NA	190'0	0.057	0.005	0.005	0.005
mg/L NA NA NA 195.00 92.30 mg/L NA NA 108.90 133.60 mg/L NA NA NA 149.40 129.40 mg/L NA NA NA 149.40 129.40 mg/L NA NA NA 149.40 129.40 mg/L NA NA NA 149.00 129.40 mg/L NA NA NA 124.00 120.00 mg/L NA NA NA 2.00 1.00 mg/L NA NA NA 1.799.00 1857.00 mg/L NA NA NA NA 1.00 mg/L NA NA NA NA 1.00 1.20 mg/L NA NA NA NA 0.005 0.005 mg/L NA NA NA NA 0.005 0.005 mg/L NA NA	mg/L NA NA NA 95.00 mg/L NA NA NA 108.90 mg/L NA NA NA 149.40 mg/L NA NA NA 194.00 mg/L NA NA NA 194.00 mg/L NA NA NA 17.39 mg/L NA NA NA 0.005 mg/L NA	_		ΑN	ΑN	NA	NA	12.13	29'6	NA
mg/L NA NA NA 139.50 133.60 mg/L NA NA NA 149.40 129.40 129.40 mg/L NA NA NA NA 149.40 129.40 mg/L NA NA NA NA 124.00 127.00 mg/L NA NA NA NA 129.00 127.00 mg/L NA NA NA NA NA 1.18 mg/L NA NA NA NA 0.005 0.005 mg/L NA NA NA NA 0.005 0.005 mg/L <th< th=""><td>mg/L NA NA NA 108.90 mg/L NA NA NA 149.40 mg/L NA NA NA 149.40 mg/L NA NA NA 194.00 mg/L NA NA NA 124.00 mg/L NA NA NA 2.00 suj/L NA NA NA 2.00 mg/L NA NA NA 0.005 mg/L NA</td><td>-</td><td>mg/L</td><td>NA</td><td>NA</td><td>NA</td><td>NA</td><td>95.00</td><td>92.30</td><td>NA</td></th<>	mg/L NA NA NA 108.90 mg/L NA NA NA 149.40 mg/L NA NA NA 149.40 mg/L NA NA NA 194.00 mg/L NA NA NA 124.00 mg/L NA NA NA 2.00 suj/L NA NA NA 2.00 mg/L NA NA NA 0.005 mg/L NA	-	mg/L	NA	NA	NA	NA	95.00	92.30	NA
mg/L NA NA NA 149,40 129.40 mg/L NA NA NA 149,40 129.40 mg/L NA NA NA 149,40 129.00 600.00 mg/L NA NA NA NA 124.00 127.00 127.00 mg/L NA NA NA NA NA 1.00 1.00 mg/L NA NA NA NA NA 1.39 1.857.00 mg/L NA NA NA NA 1.39 1.18 Polycyclic Aromatic Hydrocarbons (PAH) - EPA SW846 8270 (mg/L) 1.39 7.18 7.18 Mg/L NA NA NA 1.00 7.18 7.18 mg/L NA NA NA 0.005 0.005 0.005 mg/L NA NA NA NA 0.005 0.005 0.005 mg/L NA NA NA NA 0.005 0.0	mg/L NA NA NA 149.40 mg/L NA NA NA 199.40 mg/L NA NA NA 194.00 mg/L NA NA NA 194.00 mg/L NA NA NA 2.00 stj NA NA NA 2.00 mg/L NA NA NA 0.005 mg/L NA NA <td></td> <td>mg/L</td> <td>NA</td> <td>ΝĀ</td> <td>AN</td> <td>NA</td> <td>108.90</td> <td>133.60</td> <td>NA</td>		mg/L	NA	ΝĀ	AN	NA	108.90	133.60	NA
mg/L NA NA NA 194.00 620.00 mg/L NA NA NA 194.00 127.00 mg/L NA NA NA 127.00 127.00 mg/L NA NA NA 1.00 1.00 mg/L NA NA NA 1.739.00 1.677.00 mg/L NA NA NA 1.739.00 1.687.00 mg/L NA NA NA 1.739.00 1.687.00 mg/L NA NA NA 1.739.00 1.687.00 mg/L NA NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA NA <th< th=""><td>mg/L NA NA NA 602.00 mg/L NA NA 194.00 mg/L NA NA NA 224.00 mg/L NA NA NA 224.00 sug/L NA NA NA 2.00 sug/L NA NA NA 1799.00 sug/L NA NA NA 1799.00 sug/L NA NA NA 1799.00 mg/L NA NA NA 1.799.00 mg/L NA NA NA 1.799.00 mg/L NA NA NA 0.005 mg/L NA <t< td=""><td>.</td><td>mg/L</td><td>ΝA</td><td>Ϋ́</td><td>ΑN</td><td>NA</td><td>149.40</td><td>129.40</td><td>NA</td></t<></td></th<>	mg/L NA NA NA 602.00 mg/L NA NA 194.00 mg/L NA NA NA 224.00 mg/L NA NA NA 224.00 sug/L NA NA NA 2.00 sug/L NA NA NA 1799.00 sug/L NA NA NA 1799.00 sug/L NA NA NA 1799.00 mg/L NA NA NA 1.799.00 mg/L NA NA NA 1.799.00 mg/L NA NA NA 0.005 mg/L NA <t< td=""><td>.</td><td>mg/L</td><td>ΝA</td><td>Ϋ́</td><td>ΑN</td><td>NA</td><td>149.40</td><td>129.40</td><td>NA</td></t<>	.	mg/L	ΝA	Ϋ́	ΑN	NA	149.40	129.40	NA
mg/L NA NA NA 127,00 mg/L NA NA NA 224,00 234,00 mg/L NA NA NA 1,00 1,00 mg/L NA NA NA 1,00 1,00 SJ NA NA NA 1,39 7,18 1 SJ NA NA NA 1,39 7,18 1 Mg/L NA NA NA 1,39 7,18 1 mg/L NA NA NA 0,005 0,005 0,005 mg/L NA NA 0,005 0,005 0,005 0,005 mg/L NA NA NA 0,005 0,005 0,005 mg/L NA NA NA 0,005 0,005 0,005 mg/L NA NA 0,005 0,005 0,005 0,005 mg/L NA NA NA 0,005 0,005	mg/L NA NA NA 194.00 mg/L NA NA NA 224.00 mg/L NA NA NA 2.00 sug/L NA NA NA 1799.00 SU NA NA NA 1799.00 SU NA NA NA 1799.00 mg/L NA NA NA 1799.00 mg/L NA NA NA 1799.00 mg/L NA NA NA 0.005 mg/L NA		mg/L	NA	NA	NA	NA	602.00	620.00	NA
mg/L NA NA NA 224,00 234,00 mg/L NA NA NA 1.00 1.00 SJ NA NA NA 1.00 1.00 SJ NA NA NA 1.00 1.00 SJ NA NA NA 1.39 7.18 Połycytie Aromatic Hydrocarbons (PAH) - EPA SW846 8270 (mg/L) 0.005 7.18 mg/L NA NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA NA 0.005 0.005	mg/L NA NA NA 224.00 mg/L NA NA NA 2.00 su NA NA NA 2.00 su NA NA NA 1799.00 Su NA NA NA 1799.00 Su NA NA NA 1739.00 su NA NA NA 1739.00 mg/L NA NA NA 1739.00 mg/L NA NA NA 0.005 mg/L NA <t< td=""><td></td><td>mg/L</td><td>ΝΑ</td><td>۷N</td><td>NA</td><td>NA</td><td>194.00</td><td>127.00</td><td>NA</td></t<>		mg/L	ΝΑ	۷N	NA	NA	194.00	127.00	NA
mg/L NA NA NA 1799.00 1.00 SU NA NA NA 1799.00 1.00 SU NA NA NA 1799.00 1857.00 SU NA NA NA 1799.00 1857.00 mg/L NA NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA NA 0.005	mg/L NA NA NA 2.00 sug/L NA NA NA 1799.00 sug/L NA NA NA 7.39 Połycyciic Aromatic Hydrocarbons (PAH) - EPA SWB46 8270 (mg/L) NA 7.39 mg/L NA NA NA 7.39 mg/L NA NA NA 0.005 NA N	_	mg/L	NA	Ϋ́Z	NA	NA	224.00	234.00	NA
RIGAL NA NA NA 1857.00 SU NA NA 7.39 7.18 Polycyclic Aromatic Hydrocarbons (PAH) - EPA SW846 8270 (mg/L) mg/L NA NA NA 0.005 0.005 mg/L NA NA NA 0.005 0.005 0.005 mg/L NA NA NA NA 0.005 0.005 mg/L NA NA NA 0.005 0.005 0.005 mg/L NA NA NA NA 0.005 0.005 mg/L NA NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005 0.005 <th< th=""><td>mg/L NA NA NA 1799.00 SJ NA NA 7.39 Połycyciic Aromatic Hydrocarbons (PAH) - EPA ŚWB46 8270 (mg/L) NA 7.39 mg/L NA NA NA 7.39 mg/L NA NA NA 0.005 NA NA NA<!--</td--><td>_</td><td>mg/L</td><td>NA</td><td>ΑN</td><td>NA</td><td>NA</td><td>2.00</td><td>1.00</td><td>۷V</td></td></th<>	mg/L NA NA NA 1799.00 SJ NA NA 7.39 Połycyciic Aromatic Hydrocarbons (PAH) - EPA ŚWB46 8270 (mg/L) NA 7.39 mg/L NA NA NA 7.39 mg/L NA NA NA 0.005 NA NA NA </td <td>_</td> <td>mg/L</td> <td>NA</td> <td>ΑN</td> <td>NA</td> <td>NA</td> <td>2.00</td> <td>1.00</td> <td>۷V</td>	_	mg/L	NA	ΑN	NA	NA	2.00	1.00	۷V
SÚ NA NA 7.39 7.18 Polycyclic Aromadic Hydrocarbons (PAH) - EPA SW846 8270 (mg/L) mg/L NA NA 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005	SU NA NA NA 7.39 Polycyclic Aromatic Hydrocarbons (PAH) - EPA SW846 8270 (mg/L) A. NA NA A. O.005 mg/L NA NA NA NA 0.005 mg/L NA NA NA 0.005		mg/L	NA	ΝΑ	ΑN	NA	1799.00	1857.00	ΑN
Polycytic Aromatic Hydrocarbons (PAH) - EPA SW846 82270 (mg/L) mg/L NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA 0.005 0.005 0.00	Polycyclic Aromatic Hydrocarbons (PAH) - EPA SW846 8270 (mg/L) mg/L NA NA NA 0.005 NA NA NA		3	NA	AN	NA	NA	7.39	7.18	AN
mg/L NA NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005 0.005 0.005 mg/L NA NA NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005 0.005 mg/L NA NA 0.005 0.005 0.005	mg/L NA NA NA 0.005 NA NA <th< td=""><td></td><td>ď</td><td>_</td><td>matte Hydro</td><td>carbons (PAH)</td><td>EPA</td><td>270 (mg/L)</td><td></td><td></td></th<>		ď	_	matte Hydro	carbons (PAH)	EPA	270 (mg/L)		
mg/L NA NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA NA 0.005	mg/L NA NA NA 0.005 mg/L NA NA 0.005 mg/L NA NA 0.005 mg/L NA NA NA 0.005 NA NA NA NA 0.005 NA NA NA NA 0				NA V	NA	NA	0.005	0.005	NA
mg/L NA NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 0.005	mg/L NA NA NA 0.005 mg/L NA NA 0.005 mg/L NA NA 0.005 mg/L NA NA NA 0.005 NA NA NA 0.005 NA NA NA 0.005 <th< td=""><td></td><td>mg/L</td><td>NA</td><td>NA</td><td>NA</td><td>NA</td><td>500'0</td><td>0.005</td><td>NA</td></th<>		mg/L	NA	NA	NA	NA	500'0	0.005	NA
mg/L NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA NA 0.005 0.005	mg/L NA NA NA 0.005		mg/L	NA	NA	NA	NA	0000	0.005	NA
mg/L NA NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005	mg/L NA NA NA 0.005		mg/L	NA	NA	NA	NA	0.005	0.005	NA
mg/L NA NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005 0.005 mg/L NA NA NA NA 0.005 0.005 0.005	mg/L NA NA NA 0.005		mg/L	NA	NA	NA	NA	0.005	0.005	NA
mg/L NA NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005	mg/L NA NA NA 0.005		mg/L	NA	NA	NA	NA	0.005	0.005	NA
mg/L NA NA NA 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA NA NA 0.005 0.005	mg/L NA NA NA 0.005		mg/L	NA	NA	NA	NA	0.005	0.005	NA
mg/L NA NA NA 0.005 0.005 mg/L NA NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005 0.005 mg/L NA NA NA NA 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA NA 0.005 0.005	mg/L NA NA NA 0.005		mg/L	NA	NA	NA	NA	0.005	0.005	NA
mg/L NA NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA NA 0.005 0.005	mg/L NA NA NA 0.005		mg/L	NA	NA	NA	NA	0.005	0.005	NA
mg/L NA NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA NA NA 0.005 0.005	mg/L NA NA NA 0.005		mg/L	NA	NA	NA	NA	0000	0.005	NA
mg/L NA NA NA 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA 0.005 0.005 0.005 mg/L NA NA NA 0.005 0.005	mg/L NA NA NA 0.005 mg/L NA NA NA 0.005 mg/L NA NA NA 0.005		mg/L	NA	NA	NA	NA	0.005	0.005	NA
mg/L NA NA NA NA 0.005 0.005 mg/L NA NA NA 0.005 0.005 mg/L NA NA NA 0.005 0.005	mg/L NA NA NA 0.005 mg/L NA NA NA 0.005		mg/L	NA	NA	NA	NA	0.005	0.005	NA
mg/L NA NA NA 0.005 0.005 mg/L NA NA NA NA 0.005 0.005	mg/L NA NA NA 0.005		mg/L	NA	NA	NA	NA	0.005	0.005	NA
mg/L NA NA NA 0.005 0.005 mg/L NA NA 0.005 0.005	3000		mg/L	NA	NA	NA	NA	0.005	0.005	NA
mg/L NA NA NA 0.005 0.005	mg/L NA NA NA 0.003		mg/L	NA	NA	NA	NA	0.005	0.005	NA
	NA NA 0.005		mg/L	NA	NA	NA	NA	0.005	0.005	NA

Lab Analyses and Chain-of-Custody Forms (Dec-1999, Sept-2000, Jan-2001, June-2001)



EOTT ENERGY

ATTN: MR. FRANK HERNANDEZ

P.O. BOX 1660

MIDLAND, TEXAS 79703

FAX: 505-392-2946

FAX: 815-687-2713 (Lennah Frost)

Sample Type: Water

Sample Condition: Intact/loed Project #: Pearl Queen Project Name: None Given

Project Location: South of Monument

Sampling Date: 12/06/99 Receiving Date: 12/06/99

Analysis Date: 12/06/99

ELT#	FIELD CODE	BENZENE mo/L	TOLUENE mg/L	ETHYLBENZENE mg/L	m.p-XYLENE mo/L	o-XYLENE mg/L	·····
22015 22016	Water North Water South	0.012 0.011	0.012 0.012	0.004 0.004	0.011 0.009	0.022 0.021	
%! %! BL		104 97 <0,001	101 92 <0.001	102 95 <0.001	104 98 <0.001	102 96 <0.001	

METHODS: SW 846-80218,5030



EOTT ENERGY

ATTN: MR FRANK HERNANDEZ

P.O. BOX 1660

MIDLAND, TEXAS 79703

FAX: 505-392-2946

FAX: 915-687-2713 (Lennah Frost)

Sample Type: Soil

Sample Condition: Intact/loed

Project #: Pearl Queen

Project Name: None Given

Project Location: South of Monument

Sampling Date: 12/06/99

Receiving Date: 12/06/99

Analysis Date: 12/06/99

ELT	FIELD CODE	GRO C6-C10 mg/kg	DRO >C10-C25 mg/kg	
22013	East Wall North	<10	<10	
22014	East Wall South	<10	<10	
	% INSTRUMENT ACCURACY	109	92	
		112	82	
	% EXTRACTION ACCURACY		_	
	BLANK	<10	<10	

Methods: EPA SW 846-8015M GROVDRO

Raland K. Turble

12-7-95



EOTT :

ATTN: MR. FRANK HERNANDEZ

P.O. BOX 5050 HOBBS, N.M. 88240 FAX: 505-392-2946

FAX: 505-394-2600 (Pat McCasland)

Sample Type: Water

Sample Condition: Intact/ Iced/ HCl

Project #: 7397 LF-72

Project Name: Pearl Queen Sec 20

Project Location: Unit C Sec 20 T20S R37E

Sampling Date: 09/22/00 Receiving Date: 09/22/00

Analysis Date: See Below

ELT#	FIELD CODE	pH s.u.	TDS mg/L	Chloride mg/L	Sulfate mg/L	Carbonate mg/L	Bicarbonate mg/L	
31191	EPQ20GW	7.39	1799	602	194	<2	224	
	QUALITY CONTROL	7.22	•	5140	47.6	•	•	
	TRUE VALUE % INSTRUMENT ACCURACY	7.00 103	•	5000 103	50.0 95	•	•	
	BLANK	•	< 5	<5	<1.0	<2	<2	
	ANALYSIS DATE	10/6/00	9/26/00	10/6/00	10/6/00	10/6/00	10/6/00	

METHODS: EPA 150.1, 160.1, 325.3, 375.4, 310.1

Raland K Tuttle

Date



EOTT

ATTN: MR. FRANK HERNANDEZ

P.O. BOX 5050 HOBBS, N.M. 88240 FAX: 505-392-2946

FAX: 505-394-2600 (Pat McCasland)

Sample Type: Water

Sample Condition: Intact/ Iced/ HCI

Project #: 7397 LF-72

Project Name: Pearl Queen Sec 20

Project Location: Unit C Sec 20 T20S R37E

Sampling Date: 09/22/00 Receiving Date: 09/22/00 Analysis Date: 10/01/00 Field Code: EPQ20GW

EDA 014/046 0070 (mm/l)	REPORT	ELT#		~ ~ .	ed D.E.) (
EPA SW846 8270 (mg/L)	LIMIT	31191	RPD	%EA	%DEV
Naphthalene .	0.005	ND			11.1
Acenaphthylene	0.005	ND			16.9
Acenaphthene	0.005	ND	31	38	·15. 9
Fluorene	0.005	ND			-3.0
Phenanthrene	0.005	ND			·2.4
Anthracene	0.005	ND			3.0
Fluoranthen e	0.005	ИD			8.9
Pyrene	0.005	ND	31	48	-20.4
Benzo[a]anthracene	0.005	ND			13.7
Chrysene	0.005	ND			-11.6
Benzo[b]fluoranthene	0.005	ND			-16.4
Benzo[k]fluoranthene	0.005	ND			20.6
Benzo [a]pyrene	0.005	ND			-18.9
Indeno[1,2,3-cd]pyrene	0.005	ND	•		-2.7
Dibenz[a,h]anthracene	0.005	ND			-6.4
Benzo[g,h,i]perylene	0.005	ND			5.4
		% RECOVERY			
Nitrobenzene-d5 SURR		74			
2-Fluorobiphenyl SURR		109			

109

2-Fluorobiphenyl SURR p-Terphenyl-d14 SURR

ND= not detected at report limit. Method: EPA SW 846 8270C, 3510



EOTT

ATTN: MR. FRANK HERNANDEZ

P.O. BOX 5050 HOBBS, N.M. 88240 FAX: 505-392-2946

FAX: 505-394-2600 (Pat McCasland)

Sample Type: Water

Sample Condition: Intact/ Iced/ HCl

Project #: 7397 LF-72

Project Name: Pearl Queen Sec 20

Project Location: Unit C Sec 20 T20S R37E

Sampling Date: 09/22/00

Receiving Date: 09/22/00

Analysis Date: BTEX 10/03/00

Analysis Date: TPH 9/25/00

ELT#	FIELD CODE	BENZENE mg/L	TOLUENE mg/L	ETHYLBENZENE mg/L	m,p-XYLENE mg/L	o XYLÊNE mg/L	TPH mg/L
31191	EPQ20QW	<0.001	<0.001	<0.001	<0.001	<0.001	1
%IA %E/		95 97	101 104	96 102	102 107	101 106	96
BLA	NK	<0.001	<0.001	<0.001	<0.001	<0.001	<1

METHODS: EPA SW 846-8021B ,5030, EPA 418.1

Rul dt Juil

Raland K. Tuttle

10-14-00



EOTT

ATTN: MR. FRANK HERNANDEZ

P.O. BOX 5050 HOBBS, N.M. 88240 FAX: 505-392-2946

FAX: 505-394-2600 (Pat McCasland)

101

<0.01

Sample Type: Water

Sample Condition: Intact/ Iced/ HCI

Project #: 7397 LF-72

BLANK

Project Name: Pearl Queen Sec 20 Project Location: Unit C Sec 20 T20S R37E Sampling Date: 09/22/00

Receiving Date: 09/22/00

Analysis Date: 10/04/00

ELT# FIELD CO	Na DE mg/L	Ca. mg/L	Mg mg/L	K mg/L	
31191 EPQ20G	9W 149.4	108.9	95.0	12.13	
% INSTRUMENT ACC	CURACY 109	101	97	103	

103

<0.10

110

< 0.10

METHODS: SM 7000 series

% EXTRACTION ACCURACY

Rale d' E Juil

100

<0.01

Environmental Lad of Fexas, Inc. 12600 West 200 fast, Text 763 Charles Custody record and analysis request	- Press # 505-390-07/2 ANALYSIS REQUEST 1941	11M 88246	Freject Name:	Sampler Signature So. 20. 7-20 S. A27.E. Just III Cont.	PESERVATIVE SURFIENC OF SO	TOLP Metals TOLP M	7	7						Manual P. 22.00 There Received by: REDURES F. Hernandez F. Bt.	Fix to F. Hernader + PMCasland FAX to F. Hernader + PMCasland 505.394.2006	9 (200) There Regions by Laborators.
Environmen	Trajed Manager:	TAMION VAN	Tujat: 1207	3			CHEY 1	501003//	3119148	Z				Rethereshed by	Retherethod by:	Relinquished by:



EOTT ENERGY ATTN: MR. FRANK HERNANDEZ P.O. BOX 5050

HOBBS, N.M. 88240 FAX: 505-392-2946

FAX: 505-394-2601 (Pat McCasland)

Sample Type: Water

Sample Condition: Intact/ Iced/-1.0 C Project #: 7397 LF-72

Sampling Date: 01/24/01 Receiving Date: 01/26/01 Analysis Date: 01/26/01

Project Project	Name: Pearl Queen Sec. 26 Location: Unit C Sec. 20 Ta	0 20S R37E					Analysis Date: 01/26/01
LT#	FIELD CODE	BENZENE mg/kg	TOLUENE mg/kg	ETHYLBENZENE mg/kg	m,p-XYLENE mg/kg	o-XYLENE mg/kg	
36839 36840	GW12401EPQMW-1 GW12401EPQMW-1	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001	<0.001 <0.001	
	% IA % EA BLANK	88 86 <0.001	87 85 <0.001	89 86 <0.001	89 86 <0.001	92 88 <0.001	
	Raland K. Tuttle				Z-8-0/	, -	
					The control of the co		



EOTT

ATTN: MR. FRANK HERNANDEZ

P. O. BOX 5050 HOBBS, N.M. 88240 FAX: 505-392-2946

FAX: 505-394-2600 (Pat Mc Casland)

Sample Type: Water

Sample Condition: Intact/ Iced/ -1.0 deg C

Project #: 7397 LF-72

Project Name: Pearl Queen Sec. 20

Project Location: Unit C Sec. 20 T20S R37E

Sampling Date: 01/24/01 Receiving Date: 01/26/01

Analysis Date: 01/30/01

ELT# FIELD CODE

TPH mg/L

36841 GW12401EPQMW-2 4

% INSTRUMENT ACCURACY % EXTRACTION ACCURACY BLANK

97.3 95.6

Methods: EPA 418.1



EOTT

ATTN: MR. FRANK HERNANDEZ

P.O. BOX 5050 HOBBS, N.M. 88240 FAX: 505-392-2946

FAX: 505-394-2600 (Pat McCasland)

Sample Type: Water

Sample Condition: Intact/ Iced/-1.0 deg. C

Project #: 7397 LF-72

Project Name: Pearl Queen Sec 20

Project Location: Unit C Sec 20 T20S R37E

Sampling Date: 01/24/01 Receiving Date: 01/26/01 Analysis Date: 02/06/01

Field Code: GW12401EPQMW-3

EPA SW846 8270 (mg/L)	REPORT LIMIT	ELT# 36842	RPD	%EA	%DEV	
Naphthalene	0.005	ND			5.3	
Acenaphthylene	0.005	ND			-6.6	
Acenaphthene	0.005	ND	1	106	0	
Fiuorene	0.005	ND			-8.3	
Phenanthrene	0.005	ND			2.2	
Anthracene	0.005	ND			5.1	
Fluoranthene	0.005	ND			-1.2	
Pyrene	0.005	ND	8	105	-15.6	
Benzo[a]anthracene	0.005	ND			-11.6	
Chrysene	0.005	ND			0	
Benzo[b]fluoranthene	0.005	ND			15.8	
Benzo[k]fluoranthene	0.005	ND			-16.1	
Benzo [a]pyrene	0.005	ND			-8.1	
Indeno[1,2,3-cd]pyrene	0.005	ND			3.4	
Dibenz[a,h]anthracene	0.005	ND			10.8	
Benzo[g,h,i]perylene	0.005	ND			-7	
		% RECOVERY				
Nitrobenzene-d5 SURR		61				
2-Fluorobiphenyl SURR		79				
p-Terphenyl-d14 SURR		120			•	

ND= not detected at report limit. Method: EPA SW 846 8270C, 3510

Raland K. Tuttle

Date



EOTT

ATTN: MR. FRANK HERNANDEZ

P.O. BOX 5050 HOBBS, N.M. 88240 FAX: 505-392-2946

FAX; 505-394-2600 (Pat McCasland)

Sample Type: Water

Sample Condition: Intact/ Iced/ -1.0 deg C

Project #: 7397 LF-72

Project Name: Pearl Queen Sec 20 Project Location: Unit C Sec 20 T20S R37E

Sampling Date: 01/24/01 Receiving Date: 01/26/01 Analysis Date: See Below

ELT#	FIELD CODE	pH s.u.	TDS mg/L	Chloride mg/L	Sulfate mg/L	Carbonate mg/L	Bicarbonate mg/L
36843	GW12401EPQMW-4	7.18	1857	620	127.0	<1 .	234
		·					
,	OUALITY CONTROL	7.02	*	5140	44.4	*	
	TRUE VALUE	7.00	*	5000	50.0	*	*
	% INSTRUMENT ACCURACY	100	*	103	89	*	*
	BLANK	*	· <10	<10	<1.0	<2	<2
	ANALYSIS DATE	01/26/01	01/29/01	02/08/01	01/31/01	01/29/01	01/29/01

METHODS: EPA 150.1, 160.1, 325.3, 375.4, 310.1



EOTT

ATTN: MR. FRANK HERNANDEZ

P.O. BOX 5050 HOBBS, N.M. 88240 FAX: 505-392-2946

FAX; 505-394-2600 (Pat McCasland)

Sample Type: Water

Sample Condition: Intact/ Iced/ -1.0 deg. C

Project #: 7397 LF-72

Project Name: Pearl Queen Sec 20

Project Location: Unit C Sec 20 T20S R37E

Sampling Date: 01/24/01 Receiving Date: 01/26/01 Analysis Date: 02/09/01

FIELD CODE	Nia mg/L	Ca mg/L	Mg mg/L	K mg/L	
GW12401EPQMW-4	129.4	133.6	92.30	9.669	
			•		
		FIELD CODE mg/L	FIELD CODE mg/L mg/L	FIELD CODE mg/L mg/L mg/L GW12401EPQMW-4 129.4 133.6 92.30	FIELD CODE mg/L mg/L mg/L mg/L mg/L GW12401EPQMW-4 129.4 133.6 92.30 9.669

102 98 98 **% INSTRUMENT ACCURACY** 100 **% EXTRACTION ACCURACY** 86 98 101 87 < 0.10 BLANK < 0.10 < 0.10 < 0.10

METHODS: SW846-6010

	Envi	ironmental	Environmental Lab of Texas, Inc.	Inc.	<u>.</u> -	2600	12600 West L.20 East	1.20	_ H	ode	_ g	Odess, Tess 1976) 8 x x 819.521771	<u> </u>		9		S S	, SEC	a a	₹ 	MEY	SIS RU	CHAIN-OF-CISTODY RECORD AND ANLIYSIS REQUEST	5		
			•			-	915) 36-1400 1017	Ì				,	!		ł		1			.	ı	ŀ	1	j		
	Croject Manger	4				A	75 and ft	505	\$	36-01/2	2						*	ANALYSIS REQUEST	3038	k					_	
	FRANK	IK HERMAIDE Z	230			7.	FAX #:	505.394-2946	35	4	3			ŀ	t	` } -		 	, [but		+	ļ	ŀ		
	Company No.	A MAINTER FOR		í	÷			•		!									_	7.0		<u> </u>	—,,,,, —,			
	Agr	0505	HOBES NIM 18840	20				٠	1	1	l					99				'						
						E.	Project Plane	••			•					бы с				23.			_			
	7347	9 LF-72				1	Penk	- 1	3	5	R	a 20	1			A 15				has			_			
	Project Locate	Place				3	Sempler Signature	Į.	ħ						_) P:				מי						
	Sit C	Se 20 1200 R 378	200 K 27E			1	3	13	Ŋ.		ļ			e e) ea :	•			714						
		1	SI	<u> </u>	1	MALTIN	.		32 5	PRESERVATIVE	IVE	באיםרשוכ			_					ومبا		•				
			MEV.	Usrou		-		- -		-				1.81			_			7 7				<u>.</u>		
	1	FEED CODE		16 (i) 11: 11: 11:								នា		t II	M J.)	oM la v 9J	rb 2•		H	HAIV						
	(SALVE));) (# 	MATE N	- 1	SOI	เการ	100	TINC	1101 1101	ITO	vo	MIT	HI.				24	1311	42		-+		1	\Box	
	36839	36839 GWILHOICPRIMW			X			Ž		X		R		d				\dashv		+	\Box	\dashv	ユ	╗	\Box	
_	36840	Gwild lepamm-	Amw-I		X					X		2				- 1		\dashv	\dashv		\exists	-		-		
	12821		GMW-1		X			-		X		1-24		>				{	_[┪	耳	\dashv	\exists	+	\Box	
-	27.84Z		MW-3	<u> </u>	×					X		衣					\Box	-	X	+	\dashv	\dashv		\dashv	\Box	
	36842	76842 GWILD OLLPRAME	MW.4	ļ	×	-		<u> </u>		X		hC ·					\Box	ᅱ	\Box	3		╌┼	二	-		
				<u> </u>														一	\neg		二	\dashv	二	-	3	4
				<u> </u>		-				-								┥		\dashv	\dashv	-	コ	ᆉ		
						$\left\{ -\right\}$								-		-		-		╌┼╌	4		1	- }-	T	
				_									+					-	—			- " -	士	+	I	
						-}-				+-										+		┽┤		+		
<u> </u>	Relinquished b	, i	Desc			-	1	الق	Received by:	 	1		REMURICS AD	2	1	7		I	3	Ž	4	-	F Hamander + Pat	He		
	64,11		1-24-01	\dashv	3	38		4	No.	୍ଦ ଧ	3	mann	The Cachard	كي كِي	¥ \$	তু	, נד	17 P.	<u>.</u>		\propto	. Y	Rec - 1.0°	°,		
	Reingfahal	Ĕ.	Detec		16		•	<u> </u>	Kardval by:	<u>ሄ</u>		 -	Cay to F. Hermides	5	I	Æ	, 5	ģ	, <u>,</u> ,			6.1	S.)	
	Relinquished by:	4	Dute	1 2 2	,		,	<u> </u>	1	Received by Laboratory.	97	E	<u> </u>	<u>.</u>		S	50	505-394-Koo	*	2						
ا "							}																			



4221 Freidrich Lane, Suite 196, Austin, TX 78744 & 2209 N. Padre Island Dr., Corpus Christi, TX 78408 FAX (512) 447-4766 (512) 444-5896

Report Date: 06/25/01

Report#/Lab ID#: 114266

Project ID: LF-72

Sample Name: EPQMW61301GW

Time: 14:00 Time: 10:40

Date Received: 06/15/2001 Date Sampled: 06/13/2001

Sample Matrix: water

Environmental Plus, Inc. Pat McCasland Client: Attn:

Address: 1324 M.St Po Box

Eunice,

88231

Σ

FAX: (505) 394-2601 (505) 394-3481

REPORT OF ANALYSIS

Phone:

REPURI OF ANALYSIS							OUALITY ASSURANCE DATA ¹	ASSURA	INCE DA	TAI	
Parameter	Result	Units	RQL5	Blank	Date	Method 6	Data Oual 7 Prec 2 Recov3 CCV4 11 CS4	Prec 2	Recov.3	CCV4	100
Volatile organics-8260b/BTEX			••		06/21/01	8260b	1	1	:	1	
Benzene	1>	llg/L	-	\ 	06/21/01	8260b		0.2	767	2	76
Ethylbenzene	7	ng/L	_	7	06/21/01	8260b	-	3.0	8 80		
m,p-Xylenes	7	J/Bri	-	⊽	10/12/90	8260b	•	, e	96.4	100	97.8
o-Xylene	! >	µg/L	-	7	10/17/90	8260b	I	2.8	99.96	8	98.7
= Tolucine					-10/12/90.	82606	teal) and the same of the same	0.1	83.7	96	7

4

This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results publication may be reproduced or transmitted in any form or by any means without the have been carefully reviewed and, to the best of my knowledge, the analytical results are consistent with AnalySys, Inc.'s Quality Assurance/Quality Control Program. Copyright 2000, AnalySys, Inc., Austin, TX. All rights reserved. No part of this Respectfully Submitted, express written consent of AnalySys, Inc.

المحلاما

Richard Laster

.....

J . T - - - C

of the relative percent (%) difference between duplicate measurements. 3. Recovery (Recov.) is the percent (%) of analyte 2. Precision (PREC) is the absolute value 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are dilutions. 7. Data Qualifiers are J = analyte potentially present between the PQL and the MDL. B =Analyte detected in typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits adjusted for any required recovery exceeds advisory limit. S3 =MS and/or MSD and PDS recoveries exceed advisory limits. P =Precision higher expressed as the percent (%) recovery of analyte from a known standard or matrix. 5. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers associated method blank(s). S1 =MS and/or MSD recovery exceed advisory limits. S2 =Post digestion spike (PDS) I. Quality assurance data is for the sample batch which included this sample. than advisory limit. M =Matrix interference. recovered from a spiked sample.



2209 N. Padre Island Dr., Corpus Christi, TX 78408 FAX (512) 447-4766 4221 Freidrich Lane, Suite 190, Austin, TX (512) 444-5896

Report Date: 06/27/01

Report#/Lab ID#: 114267

Project ID: LF-72

Sample Name: EPQMW61301GW

Sample Matrix: water

Environmental Plus, Inc. Address: 1324 M.St Po Box Pat McCasland Client: Attn:

(505) 394-3481

Eunice,

FAX: (505) 394-2601

88231

ΣŽ

Phone:

REPORT OF ANALYSIS

Parameter	Result	Units	RQL 5	Blank	Date	Method 6	Data Qual 7 Prec. 2 Recov. 3 CCV4 LCS4	Prec.2	Recov.3	CCV4	LCS4
Petroleum hydrocarbons	<0.375	mg/L	0.375	<0.375 06/26/01	06/26/01	418.1		3.07	3.07 72.41 110.08 108.32	110.08	108.32
			1_						, 2000		

OUALITY ASSURANCE DATA¹

Time: 10:42 Time: 14:00

Date Sampled: 06/13/2001 Date Received: 06/15/2001

> publication may be reproduced or transmitted in any form or by any means without the This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results are consistent with AnalySys, Inc.'s Quality Assurance/Quality Control Program. © have been carefully reviewed and, to the best of my knowledge, the analytical results Copyright 2000, AnalySys, Inc., Austin, TX. All rights reserved. No part of this express written consent of AnalySys, Inc. - Respectfully Submitted,

welverra - Trate

Richard Laster

of the relative percent (%) difference between duplicate measurements. 3. Recovery (Recov., is the percent (%) of analyte 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are dilutions. 7. Data Qualifiers are J = analyte potentially present between the PQL and the MDL. B = Analyte detected in typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits adjusted for any required recovery exceeds advisory limit. S3 =MS and/or MSD and PDS recoveries exceed advisory limits. P =Precision higher 2. Precision (PREC) is the absolute val expressed as the percent (%) recovery of analyte from a known standard or matrix. 5. Reporting Quantitation Limits (RQE):-typically at or above the Practical Quantitation Limit (RQL) of the analytical method -- 6-Method numbers associated method blank(s). S1.=MS and/or MSD recovery, exceed advisory limits. .. S2 =Post digestion spike (PDS) Quality assurance data is for the sample batch which included this sample. than advisory limit. M =Matrix interference. recovered from a spiked sample.

4221 Freidrich Lane, Suite 190, Austin, TX 78744 & 2209 N. Padre Island Dr., Corpus Christi, TX 7840408 (512) 444-5896 • FAX (512) 447-4766

Project ID: LF-72

Sample Name: EPQMW61301GW

Report#/Lab ID#: 114266 Sample Matrix: water

REPORT OF SURROGATE RECOVERY

Environmental Plus, Inc.

Client: Attn:

Pat McCasland

Surrogate Compound	Method	Recovery	Recovery Limit	Data Qualifiers
1,2-Dichloroethane-d4	8260b	9'68	80-120	1
Toluene-d8	8260b	93.4	88-110	1

Data Qualifiers: D= Surrogates diluted and X= Surrogates outside advisory recovery limits.



78744 & 78408 2209 N. Padre Island Dr., Corpus Christi, TX 4221 Freidrich Lane, Suite 190, Austin, TX

Report Date: 06/25/01

Report#/Lab ID#: 114268

Sample Name: Trip Blank

Project ID: LF-72

Sample Matrix: water

Time: 14:00

Date Sampled: not on C-O-C Time: 00:00

Date Received: 06/15/2001

FAX (512) 447-4766 (512) 444-5896

> Environmental Plus, Inc. Pat McCasland Client: Attn:

Address: 1324 M.St Po Box Eunice,

FAX: (505) 394-2601 (505) 394-3481 Phone:

NM 88231

REPORT OF ANALYSIS

REPORT OF ANALYSIS							QUALITY ASSURANCE DATA1	ASSUR/	NCE DA	TAI
Parameter	Result	Units	RQL 5	Blank	Date	Method 6	Data Qual7 Prec.2 Recov.3 CCV4	Prec.2	Recov?	CCV4
Volatile organics-8260b/BTEX					10/17/90	8260b	•••,	****	***	•••
Benzene	I>	T/8rl	1	!>	10/17/90	8260b	9 9	0.2	7.97	68
Ethylbenzene	7	hg/L	-	7	06/21/01	8260b	ł	3.2	95.8	98.6
m,p-Xylenes	7	J∕8rf	-	7	10/17/90	8260b	-	က	96.4	100.9
o-Xylene	7	Hg/L	_	7	06/21/01	8260b	1	2.8	9.96	
Toluene	<1.	hg/L	-	, , ,	-10/12/90	8260b		-0.1=	0.1==83.7	9

LCS4

97.8

6

7.76

98.7 -84.3

> This analytical report is respectfully submitted by AnalySys, Inc. The enclosed results publication may be reproduced or transmitted in any form or by any means without the are consistent with AnalySys, Inc.'s Quality Assurance/Quality Control Program. © have been carefully reviewed and, to the best of my knowledge, the analytical results Copyright 2000, AnalySys, Inc., Austin, TX. All rights reserved. No part of this Respectfully Submitted, express written consent of AnalySys, Inc.

Richard Laster

3. Recovery (Recov.) is the percent (%) of analyte . Quality assurance data is for the sample batch which included this sample. 2. Precision (PREC) is the absolute value 4. Calibration Verification (CCV) and Laboratory Control Sample (LCS) results are dilutions. 7. Data Qualifiers are J = analyte potentially present between the PQL and the MDL. B =Analyte detected in typically denote USEPA procedures. Less than ("<") values reflect nominal quantitation limits adjusted for any required recovery exceeds advisory limit. (3 =MS and/or MSD and PDS recoveries exceed advisory limits. P=Precision higher expressed as the percent (%) recovery of analyte from a known standard or matrix. S. Reporting Quantitation Limits (RQL), typically at or above the Practical Quantitation Limit (PQL) of the analytical method. 6. Method numbers associated method blank(s). S1 =MS and/or MSD recovery exceed advisory limits. S2 =Post digestion spike (PDS) of the relative percent (%) difference between duplicate measurements. than advisory limit. M =Matrix interfarence. recovered from a spiked sample.

AH.	N-C	E'HARN-CH-CHETGERY	J.X			f				_						U
Send R	Send Re ts To:	· To:			Bill	Bill to (if dif		ent):					J	にいいいに	7 4 - 1	ם הנים הנים
Compa	uny Nan	Company Name Eduivallaed Fall Plus INC	72.1 AUS	Time	8 F	ipany P	Same,	W	10000	3	1.	77	!l Freidri	421 Freidrich Lane, Suite 190, Austin, TX 7/ (512) 444-5896	ane, Suite 190, Au (512) 444-5896	ustin, TX 7
Address City	20 - 20 -	BK 155	.///Tip	0402/	Addi Signal J	Address 70 City (177)	X ?	9	7 7 70 0							
	ATTN: 1/2/4	13/1	State Aux Lay Supes	10000	- ATI	N: L. J.	316	1	7 7 8			٠ ا	/	Analyses Rognosted	Pagno	stod (1)
Phone	\$505.	1 2	205-304	1-2601	1. 1	100		1	Fax 915-634-349	1989	38/	10	Please a	Please attach explanatory information as requ	atory inform	nation as requ
Rush S	tatus (n	Rush Status (must be confirmed with lab max):	ed with la	b mgx.			,	1			1	14	100			
Project	Project Name/PO#:	PO#: 16-22	7	Sampler:	ler: 2		Slewis 5	4		14						
Descr	Tound	Centerpie No. Description/Identification	Date Sampled	Time	Time No. of Sampled Containers	Sofi	Water Waste	Lab I.D. #		M.					Comi	S S
1 EPa	MW6	EPQUUC 13016W	6-13-01	10:40	B		7	114266		8						
E80,	9 WW		10-81-9	24:01				114267								
	Train Black	<u> </u>				300	1	114268	*t *:		¥	1 1				\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
, in a part of the last of the													_			
	•															
		,														
				,					·							
															·	
(1)Unless aporting (MDL, AST's HSL 10	ecifically n /PQL). For st at ASI's c	(1)Unless specifically requested otherwise on this Chain-of-custody and/or attached documentation, all analyses will be conducted using ASI's method of choice and all data will be reported to ASI's normal reportables, unless specific analytical parameter lists are specified on this chain-of-custody or attached to this chain-of-custody, ASI will default to Priority Pollutal ASI's option. Specific compound lists must be supplied for all GC procedures.	his Chain-of-ca atractables, un und lists must	ustody and/or dess specific be supplied t	r attached doc analytical par or all GC pro	umentation rameter lis cedures.	ı, ail analy ts are speci	ses will be conduc	ted using of-custod	ASI's me y or attac	thod of c	hoice an is chain-	d all data of-custody	will be reporter, ASI will der	ed to ASI's stault to Pric	normal repo ority Pollutar
								·								
		Sample 1	Sample Relinquished	shed By						92	ampl	e Rec	Sample Received	By		
Name	ne	Affiliation	ion	1	Date	Time	92	Name		1	Affiliation	ion		Date	6	Time
8. Slavis	115	ENLINE UNANTALPIUS	-	74.6	-13-01	1113	30 6	24年3	H	The	H			10-51-1	10-	1400
	ig of abo	Tendering of above described samples to AnalySys, Inc. for analy	les to Anal	ySys, Inc	for analy		ing con	ical testing constitutes agreement by buyer/sampler to AnalySys. Inc.'s standard terms.	ient by	buyer/	sample	r to A	nalvSvs.	Inc.'s stan	ndard ter	ms.]
· i-	į	ı			1) _,	•	•			! !		· • • • • • • • • • • • • • • • • • • •		l from

l	انا	X 78744		ξ	required	1		•					ĵ.					reporting Ilutants or		ne	00
1	7	4221 Freidrich Lane, Suite 190, Austin, TX 78744 (512) 444-5896) Potao	Flease attach explanatory information as required			Comments										Unless specifically requested otherwise on this Chain-of-custody and/or attached documentation, all analyses will be conducted using ASI's method of choice and all data will be reported to ASI's normal reporting mits (MDL/PQL). For GC/MS volatiles and extractables, unless specific analytical parameter lists are specified on this chain-of-custody or attached to this chain-of-custody, ASI will default to Priority Pollutants or SI's HSL list at ASI's option. Specific compound lists must be supplied for all GC procedures.		Time	14.
ממנאי		ane, Suite 190, <i>I</i> (512) 444-5896		Angless Democrated	anatory inf			\ <u>`</u>						, .				ported to A		Date	10-5
		ch Lane, (512		polyce	ttach exp						4							will be re y, ASI wil	By		7-9
-	J	!! Freidri			Please	100												of-custod	ceived		
		ξ ,] E	ं हो	100	14					1							f choice ar this chain	Sample Received	Affiliation	
		Ì		1970	4.39	1			$\langle \chi \rangle$		The state of the s	:						method of	Sam	Affilli	45I
		horan) did	2-63			JE.	15		and the second second							sing ASI's			Y
		(,		State 7X Lip 7970=	Fax 9/5-684.349	, ,		D.#.	3		1 .				7 - 11 - 12 - 12 - 12 - 12 - 12 - 12 - 1			onducted u chain-of-ca		ده	k
	••	5077	099	1	1 1			Lab I.D. # (Lab only)			,							will be or don this o		Name	4
	(if differem):	1,	X :	dach E	638-3799		22	Water Waste				·				_		Il analyses re specific	-		W
	(if dif	any Na	8	J (35		Slouds	Soil Wat	7	/-	,		1					entation, a eter lists a ures.		Time	11.30
	Bill to (Company Name	Address	CITY ALIGIBALE ATTN: 6 14	Phone.		R											ed documical param			1/0
		1	,)	Sampler:	No. of Containe	8	4	,						_	d/or attach ific analyt ed for ail (By	Date	6-13-01
		Twe	8	5052	1-260	b max	Sam	Time	10:40	h:01-								ustody and nless spec be suppli			
		21 200		State <u>A/A</u> (Lip <u>5023</u>	32.5	with la		Date Time No. of Sampled Sampled	6-13-01	th:01-10-81-9	i !							Chain-of-catables, u	Sample Relinquished		ENUITONIA CATALPHIS INC
OD		Me V		tate 1/1	ax 50	irmed	-22											e on this (s and extr	ple Re	Affiliation	Men/E
UST		מט מח	55,	מ לי ניט'י	3481	se cont	77	No. Ilcation	ス り	160								d otherwis IS volatile Specific	Sam	A	10/101
CHAIN-OF-CUSTODY	Es Fo:	Company Name Environmental Aus INC	Address #0 8x 165 8	ATTIN: 2 1.CC 1.LC 1.LC	Phone & 505 - 394-3481 Fax 505 - 394-2601	Rush Status (must be confirmed with lab max)?	Project Name/PO#: (F-22	Cinest Sample No.	EPQUW613016W	F80 13613016W)Unless specifically requested otherwise on this Chain-of-custody and/or attached documentati mits (MDL/PQL). For GC/MS volatiles and extractables, unless specific analytical parameter SI's HSL list at ASI's option. Specific compound lists must be supplied for all GC procedures.		\sqcup	3
	Send Reports fo:	any Na	SS	CITY Suppose	5.505	Status (t Nam	Tipulon	MU	(7)(4)								specificall (L/PQL). list at AS		Name	Blev.15
CH	Send	Comp	Addre		Phone	Rush !	Projec	Desc	£ 26	607	9)Unless ; mits (MD SI's HSL		Na	Sle

Attachment III: Photographs



Attachment IV: Regulatory and Summary Forms

	Site Information and Metrics					
	Site IIII					
SITE: Pearl Queen 6" Gathering		Assigned Site Reference #: Pe	earl Queen 6"			
Company: EOTT						
Company Street Address:5805 E. Highw		nd, Texas 79701				
Company Mailing Address: P.O. Box 16						
Company City, State, Zip: Midland, Tex						
Company Representative: Wayne Brune						
Company Representative Telephone: 91						
Company Telephone: 915.684.3451 F	ax: 915.687.2	713				
Fluid volume released (bbls) = 15 (8 rec	overed)					
>25 bbls : Notify NI	MOCD verba	lly within 24 hrs and submit forr	n C-141 within 15 days.			
		uthorized releases >500 mcf Na				
			eleases of 50-500 mcf Natural Gas)			
Leak, Spill, or Pit (LSP) Name: Pearl Q						
Source of contamination: Pipe Corrosio						
Land Owner, i.e., BLM, ST, Fee, Other:		State Land Office				
LSP Dimensions: affected area = ~97' h						
LSP Area = ~14,644 ft ²						
Location of Reference Point (RP): Oil s	vell					
Location distance and direction from RI		ft	, , , , , , , , , , , , , , , , , , , ,			
Latitude: 32° 33' 51N						
Longitude: 103° 16' 33W	<u>:</u>					
Elevation above mean sea level: ~ 3445	amsl		······································			
Feet from South Section Line						
Feet from West Section Line						
	4 (III-C)					
Location- Unit or 1/4/4 = NE1/4 of NW1/4 (UL-C) Location- Section = 20						
Location- Township = T20S						
Location- Range = R37E						
Surface water body within 1000 'radius						
Surface water body within 1000 'radius						
Domestic water wells within 1000' radiu		ne				
Domestic water wells within 1000' radiu						
Agricultural water wells within 1000' rac		one				
Agricultural water wells within 1000' rac						
Public water supply wells within 1000'r		None				
Public water supply wells within 1000' r						
Depth from land surface to ground water						
Depth of contamination (DC): Contam		moved down to water table, 2-ft	clay barrier installed.			
Depth to ground water (DG – DC = D			·			
1. Ground Water		ellhead Protection Area	3. Distance to Surface Water Body			
If Depth to GW <50 feet: 20 points		from water source, or;<200'	<200 horizontal feet: 20 points			
If Depth to GW 50 to 99 feet: 10		te domestic water source: 20	200 100 havina val facts 40 asists			
points	points		200-100 horizontal feet: 10 points			
	If >1000°	from water source, or; >200'				
0 > 10001 1 115 1011						
If Depth to GW > 100 feet: 0 points from private domestic water source: 0 > 1000 horizontal feet: 0 points						
	L		0.0 117.0			
Ground water Score = 20 Wellhead Protection Area Score = 0 Surface Water Score = 0						
Site Rank $(1+2+3) = 20+0+0 = 20$ points						
Total Site Ranking Score and Accept	able Concer					
Parameter >19		10-19	0-9			
Benzene ¹ 10 ppm		10 ppm	10 ppm			
BTEX ¹ 50 ppm		50 ppm	50 ppm			
TPH 100 ppm		1000 ppm	5000 ppm			
1100 ppm field VOC headspace measur	ement may be	substituted for lab analysis				

09-16-99; 12-10-99; 02-16-00 C-141 Submittals to NMOCD

811 South First :
Artesia, NIA 88210
- Metrice III - (505) 334-6178
- 1000 Rio Brazos Road
- Artec, NIM 87410

2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

Submit 2 capter to Appropriate District Office in accordance with Bale 116 on lack side of form

Missies 1V - 1985) 827-7131		back side of form
	and Corrective Action ERATOR	Initial Report
EDIT Energy Pipeline	Lennah	Front
POBOY 1660 Med land Tx 74702	7.1	h843467
Pear Queen Gathering	Facility Type	vo:=/-/
		1
State of NM Mineral Owner		Lesse Na.
LOCATION	OF RELEASE	
Unit Letter Section Rownship Range Feet from the North/South Lin	r Feet from the East/West Line	Lea
NATURE (OF RELEASE	
crude oi	Volume of Reference 15 bb	15 Whene Recovered 8 bb 15
Fixeline leak	9/8/49 12 pm	Date and Hour of Degrovery SLIM L
Was Immediate Notice CoveR2 Ves No Not Required	WYES TO Whomis you	via
1 ennah Frost	9/8/99 - 2:3	30
Was a Whoestonuse Reached? Yes No	If YES, Values impacting the	Wheercourse.
If a Winesonane was impacted, Describe Fully. (Attach Additional Sheets If Necess	ary)	
Dyscribe Cause of Problem and Remedial Action Salem. (Actach Additional Sheets I	t Necesiatis) , VO 12 .	
Corrosion Leak. Pipe was clam	ped-will be t	efaired 1517.
Dil pooled @ Leak Source. Due to approx. 300' X2'. All Contamina Laudfarn	heavy Rain, o	il randown Row
approx. 300' X2'. all contamina	ted Soil is be	ing exhausted
i hereby certafy that the sufformation given above is true and complete to the best of sig	knowledge and underwand that purpuse	t to NMOCD rules and regulations all operators
are required to report and/or file certain release antifications and perform enerective act a C-141 seport by the NMOCD marked as "Final Report" does not relieve the operator contamination that pose a threat to ground water, nuclear water, human health or the er	one for releases which may endanger public of liability should their operations have fa	ic health or the environment. The acceptance of iled to adequately investigate and acceptance
operator of responsibility for compliance with any other federal, state, or local laws at	ict or regulations.	
somal 408	_	RYATION DIVISION
much Lieinnar rost	Approved by Distract Supervisor:	Expussion Date:
Due 9816/9 gains Engineer 15/6812467	Approval Dete: Conditions of Appenval:	Attached Attached
Chant to Sonte		Service Servic
33458789 OU 11-32-40 - 11	ey imported one	1. H20 07-15-99 50
$\mathcal{O}(\mathcal{O})$	•	- 4-18-77 54

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Road, Azzec, NM 87410
District IV

* Attach Additional Sheets If Necessary

State of New Mexico Energy Minerals and Natural Resource Oil Conservation Division 2040 South Pacheco Santa Fe, NM 87505

Form C-141 Revised March 17, 1999

Submit 2 Copies to appropriate
District Office in accordance
with Rule 116 on back
side of form

2040 South Pa	checo, Santa	Fe, NM 87505									side of form
	Release Notification and Corrective Action										
			·		OPER	ATOR		☐ Ini	itial Repor	rt 🔼	Final Report
Name of Co						Contact Lennah Frost					
	EOTT Energy Pipeline Limited Partnership										
	Address P.O. Box 1660, Midland, TX 79702						e No.				
Facility Nar		mu, 1A />	102			915/684-3 Facility T					
Peari Quee		ering				6" gather					
				1.50	10				Lease N	ř-	
Surface Own State of New					i Owner	been paid	•		Lease r	10,	
State of Ne	W MICHICO			Royalu	ies maye	occii paid			<u> </u>		
	.——					OF RELE					
Unit Letter	Section	Township	Range	Feet from the	North/	South Line	Feet from the	East/We	est Line		ounty
G	20	20-S	37-E						l		Lea
			<u></u>		1		·	<u> </u>			
				NATU	JRE O	F RELEA	ASE				•
Type of Rele	ase					Volume of	Release			Recovered	1
Crude oil						15 bbls			8 bbls		
Source of Re	case					Date and H	lour of Occurrence	æ	Date and	Hour of I	Discovery
Pipeline leak	<u> </u>					9/8/99 - 12 pm 9/8/99- same					
Was Immedia	ate Notice (iven?	[-		•	If YES, To Whom? Sylvia – Hobbs District Office					
		<u>_</u>	Yes 📋	No Not Re	equired			Tice		· · ·	
By Whom?	_			-		Date and H					
	Lennah Frost Was a Watercourse Reached?					9/8/99 - 2:	olume Impacting	the Water	OUESE		
THE WALL	ouise Reac		Yes 🗌	No		1110, 10	rumo miposamo		.		
If a Waterow	ree une Im	pacted, Descri	iba Fully (<u></u>			·	_	
II a Walercoo	nac was mi	pariet, Desti	ice runy.								
Derceibe Cou	on of Duchi	em and Reme	dial Ardia	Taken 8							
		em and Keme e was repain		1 lakcı.			·				
		·	_								
	400 . 1	100	A 41 - 70 1						·····		
Annovimen	a Allected : elv 7500 cm	and Cleanup A	contamination of the second section of the section of the second section of the second section of the second section of the section of the second section of the section	cen." ated soil was exc	eveted a	nd disposed	of at J&I. Land	farm. Cle	an soil wa	s need for	r hackfill
Analysis of v	vater and s	oil from bott	om hole:	and soil from the	side wa	lls were take	n on 12/6/99 1/1	1/99. Ans	dysis attac	hed	
1									-		
I hamber carti	fu that the i	-fa-mation of	wan abou	is true and comp	lete to th	a hest of my	browledge and w	mderstand	that revenue	nt to NM	OCD = les
and regulation	ns all opera	inormanon gi tors are recini	red to repo	rt and/or file cert	ain relea:	se notification	as and perform o	orrective a	ctions for n	eleases wi	hich may
and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator											
of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface											
water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.											
COLLABORATION V	OII CONSERVATION DIVISION										
	HARNI	ahi	Ka	TT .						11010	
Signature.	WWW		1900	ZI		١					
Printed Name	: Lennah I	rost.				Approved I District Sur					
						District pr	PARTINA.				
Title: Sr. En	vironmentai	Engineer				Approval I	Date:		Expiration	Date:	<u> </u>
Theta: 12/10/00 Phone: 015/694 2457						Condition	of Assessment			Attach	ed 🗍

District II
1025 N. French Dr., Hobbs, NM 12240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
2040 South Pacheco. Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resour

Oil Conservation Division 2040 South Pacheco Santa Fe, NM 87505 Form C-141 Revised March 17, 1999

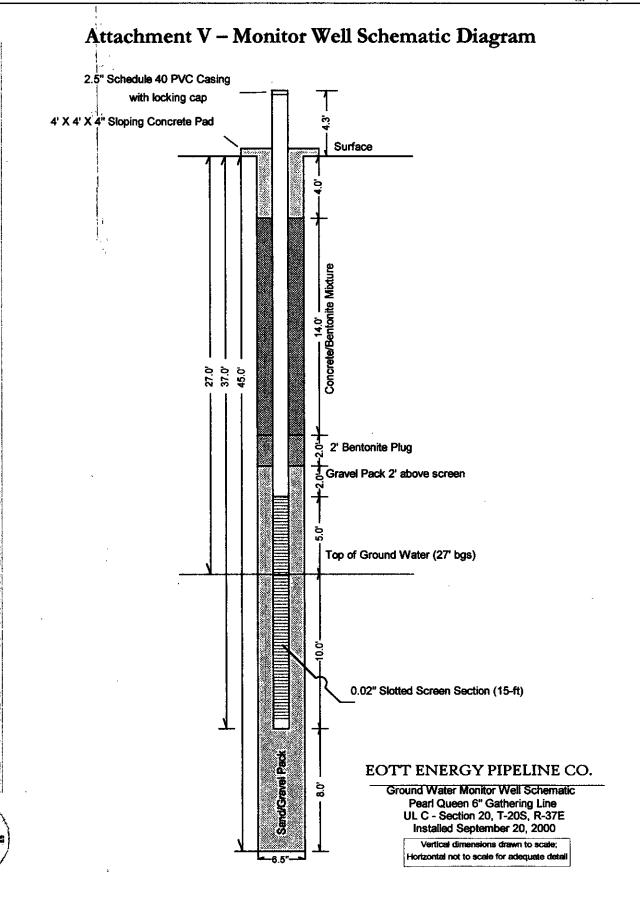
Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

						OPE	RATOR		I	nitial Rep	port		Final R	leport
Name of Co			D				Contact	D						
Address	rgy Pipeli	ne Limited	Partner	ship		··	Lennah 1 Telephon			······································				
P.O. Box 1	660. Midl:	and, TX 79	702				915/684~							
	Facility Name					Facility T							—.	
	Pearl Queen 6" gathering					6" gathei			·					
	Surface Owner State of New Mexico Mineral Owner					al Owner	r			Leas	e No.			
				L	OCA'	ΓΙΟΝ	OF RELI	EASE						
Unit Letter	Section	Township	Range	Feet fr			South Line	Feet from the	East/V	Vest Line	Cour	ıty		
G	20	20-3	37-E						}		Jes	٠		
		<u> </u>	/6	OPPE		DAT	TIDE OF	RELEASE	<u>1</u>		<u>. </u>			
Type of Reie	ase		-	UKKI	CIE	MAI	Volume of			Volum	e Reco	Veter	i	
Crude Oil							15 barrels			8 bbls				
Source of Re								lour of Occurren	ce	Date au	nd Hou	r of I	Discovery	,
Pipeline rele Was Immedia		Siven?	,		٠		9/8/99 – 12 pm 9/8/99 – same							
Was militar	iiii Nodoc (,,, <u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	Yes 🔲	No 🔲	Not R	equired	If YES, To Whom? Sylvia – Hobbs District Office							
By Whom? Lennah Fros				•			Date and Hour 9/8/99 – 2:30 pm							
Was a Water		hed?	······					olume Impacting	the Wate	rcourse.			····	
			Yes 🗌	No										
	se of Proble	an and Remo	dial Action	n Taken.				- pip	peli	re C	ori		sion	
will be excav	r was enco ated to ren	untered on 9/ nove source o	15/99. Fi f ground	ree phase water co	ntemins	tion.		ool after a coupl				_		
and regulation endanger pub of liability she water, human	I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.													
Signature: Herrich Front					OIL CONSERVATION DIVISION									
Printed Name	: Lennah l	Trost 7					Approved by District Supervisor:							
Title: Sr. Env	ironmenta	Engineer	•				Approval E	late:		Expiration	n Date:			
		i										ttache	м П	
Date: 2/1670		4- T/ 31-		: 915/684	-3467	i	Conditions	of Approval:					<u> </u>	

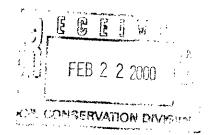
Filed Partitons Divots II 1100000

sp



EOTT ENERGY Pipeline Limited Partnership

P.O. BOX 1660 5805 E. BUSINESS 20 MIDLAND, TEXAS 79702 (915) 682-3761



February 16, 2000

State of New Mexico
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505
Attn: William Olson

RE: PEARL QUEEN 6" GATHERING LINE

LEA CO., NM

Dear Mr. Olson:

As per your letter dated February 4, 2000, below are responses to each of your action items:

Item #1: Attached is a copy of the written notice of groundwater contamination sent to you

on September 16, 1999. Verbal notification was given on 9/15/99. Also attached

is a corrected C-141 giving written notification of groundwater contamination.

Item #2: Concerning the water samples that were taken from the bottom of the excavation.

The benzene levels in both water samples (north - 0.012 mg/L, south - 0.011 mg/L) are just slightly above the WQCC standard of 0.01mg/L. Toluene, ethylbenzene, and total xylenes are all below WQCC standards. EOTT believes that it has removed the source of any groundwater contamination at this site. We propose natural attentuation for the remaining slight contamination on the groundwater. In the event of another release at or near this site, the excavation was capped with a clay liner to prevent future groundwater contamination. EOTT proposes to install at least one monitor well down gradient, directly adjacent to the edge of the excavation to monitor groundwater until four consecutive quarter of

clean water have been achieved.

Item #3: A soil vapor headspace measurement (PID) was used to determine BTEX levels

on soils from the bottom of the excavation. All readings were below 100 ppm. When we install the monitor wells we will also sample on 5' intervals and will take soil samples for analysis of TPH and BTEX. This should verify that the site has

been properly remediated to NMOCD guidelines.

I hope all meets with OCD approval but if you have any questions, please don't hesitate to call.

Sincerely,

Lennah Frost

Sr. Environmental Engineer

cc: Chris Williams - Hobbs

EOTT ESERGY Pipeline Limited Cartnership

P.O. 8OX 1660 5805 E. BUSINESS 20 MIDLAND, TEXAS 79702 (915) 682-3761

September 16, 1999

State of New Mexico
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505
Attn: William Oison

RE: U

UL G, Sec. 20, T-20-S, R-37-E

LEA CO., NM

Dear Mr. Olson:

As per our conversation, please be advised that on Wednesday, September 15, 1999, a contractor of EOTT Energy encountered groundwater while excavating a leaksite the above captioned location.

At this time there appears to be no free phase but probably dissolved phase separated hydrocarbons. The site is being excavated to clean up the source of the contamination.

I hope all meets with OCD approval but if you have any questions, please don't hesitate to call me at 914/684-3467.

Sincerely,

Lennah Frost

Sr. Environmental Engineer

cc: Environmental File

District Iv

Ale 25 N. French Dr., Hobbs, NM 88240

District II

811 South First, Artesia, NM 88210

District III

1000 Rio Brazos Road, Aztec, NM 87410

District IV

2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resource

Oil Conservation Division 2040 South Pacheco Santa Fe, NM 87505 Form C-141 Revised March 17, 1999

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

			140104	.50 1 10 611104	OPER	ATOR	1000110 110	□ Init	tial Rep	ort Final Report	
Name of Co	mpany				OI LIK	Contact			ци кор	Jan Report	
EOTT Ener	rgy Pipeli	ne Limited	Partners	hip		Lennah Frost					
Address						Telephon					
P.O. Box 16		ınd, TX 797	702			915/684-3					
Facility Nan						Facility T	• •				
Pearl Quee	Pearl Queen 6" gathering						rng line				
Surface Own				Minera	l Owner				Lease	No.	
State of Nev	w Mexico								<u> </u>		
				LOCAT	TION (OF RELI	EASE				
Unit Letter	Section	Township	Range	Feet from the	North/S	South Line	Feet from the	East/Wes	t Line	County	
G	20	20-S	37-E							Lea	
	<u>L</u>				A	 		I			
			<u></u>	ORRECTEI	D NAT						
Type of Relea	ise				/	Volume of		ŀ		e Recovered	
Crude Oil Source of Rel	2002					15 barrels	lour of Occurrence	YO	8 bbls	nd Hour of Discovery	
Pipeline relea						9/8/99 –12		~	9/8/99 ·		
Was Immedia						If YES, To					
		X	Yes 🗌	No 🔲 Not Re	equired						
By Whom? Lennah Fros	•					Date and I 9/8/99 - 2:			,		
Was a Water		hed?					olume Impacting t	the Waterco	ourse	·····	
			Yes 🗌	No		1. 120, 11					
If a Watercou	rse was Im	pacted, Descri	ibe Fully.	1		<u> </u>					
Describe Cau				n Taken.*			17/10	20.	. 1	ANA MENTANA	
المستجدين المنتقع		I II. STORO OF THE				. 7	M	seen		orroxion	
Describe Area	Affacted a	and Classian /	Votion Tol	ron #							
					arbons 1	formed on p	ool after a coupl	e of days.	All of	the contaminated soil	
				water contamina							
I hereby certi	fy that the i	nformation gi	ven above	is true and comp	lete to th	e best of my	knowledge and u	nderstand t	hat purs	uant to NMOCD rules	
										releases which may	
										es not relieve the operator	
										ound water, surface	
				l laws and/or regu		OI 8 C-141	report does not re	neve the op	erator o	f responsibility for	
(20		7	1 -	VIIIV	<u> </u>	OIL CONS	FRVAT	ION F	IVISION	
Signature:	Hen	nah	Ty.	ent			<u> </u>		<u> L</u>	-1111011	
Printed Name	: Lennah	Frost				Approved by District Supervisor:					
								T.			
Title: Sr. Env	/ironments	l Engineer				Approval l	Date:	<u> </u>	expiratio		
Date: 2/1670)		Phone	: 915/684-3467		Conditions	of Approval:			Attached	

^{*} Attach Additional Sheets If Necessary



STATE OF NEW MEXICO

ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION

2040 S. PACHECO SANTA FE, NEW MEXICO 87505 (505) 827-7131

February 4, 2000

CERTIFIED MAIL
RETURN RECEIPT NO: Z-559-572-896

Ms. Lennah Frost
EOTT Energy Pipeline Limited Partnership
P.O. Box 1660
Midland, Texas 79702

RE: PEARL QUEEN 6" GATHERING LINE

Dear Ms. Frost:

The New Mexico Oil Conservation Division (OCD) has reviewed EOTT Energy Pipeline Limited Partnership's (EOTT) December 10, 1999 "UL G – SEC 20, T-20-S, R-37-E, PEARL QUEEN 6" GATHERING LINE". This document contains the results of EOTT's investigation and remediation of soil contamination related to a crude oil pipeline spill at the Pearl Queen 6" Gathering Line site located in Unit G, Section 20, Township 20 South, Range 37 East, Lea County, New Mexico.

The soil remediation actions taken to date are satisfactory. However, the OCD has the following comments and requirements regarding the above referenced document:

- 1. The OCD observed oil on the ground water during inspections of the site. Neither the cover letter nor the accompanying C-141 spill reports contain any information on the discovery of oil on ground water when excavating contaminated soils at the site. OCD Rule 116 requires verbal and written notification of these types of incidents. While EOTT provided verbal notification of the discovery, the subsequent written notification omits this information. The OCD requires that EOTT submit an amended C-141 form which includes information on the discovery of oil on ground water. The OCD also requires that all future C-141 reports include information on such discoveries as required by OCD Rule 116.
- Your correspondence states that a ground water sample from the excavation showed that the water quality meets New Mexico Water Quality Control Commission (WQCC) standards. However, the attached analyses show that ground water quality in the excavation is in excess of WQCC standards. Due to the presence of oil in the excavation and the fact that water quality is contaminated in excess of WQCC standards, the OCD requires that EOTT submit a work plan to determine the extent of ground water contamination at the site.

3. Your correspondence states that the soil remediation successfully remediated soils to the OCD's benzene, toluene, ethylbenzene, xylene (BTEX) and total petroleum hydrocarbon (TPH) guidance levels. The information provided only contains the results of the TPH analyses. Please submit the results of the soil BTEX analyses.

The OCD requires that EOTT submit the above information to the OCD Santa Fe Office by March 10, 2000 with a copy provided to the OCD Hobbs District Office.

If you have any questions or comments, please contact me at (505) 827-7154.

Sincerely,

William C. Olson

Hydrologist

Environmental Bureau

xc: Chris Williams, OCD Hobbs District Office

EOTT ENERGY Pipeline Limited Partnership

P.O. BOX 1660 5805 E. BUSINESS 20 MIDLAND, TEXAS 79702 (915) 682-3761

December 10, 1999

State of New Mexico
Oil Conservation Division - Hobbs District Office
1625 N. French Dr.
Hobbs, NM 88240
Attn: Donna Williams

RECEIVED

DEC 1 6 1999

ENVIRONMENTAL BUREAU OIL CONSERVATION DIVISION

RE:

UL G - Sec. 20, T-20-S, R-37-E

Pearl Queen 6" gathering line

Dear Ms. Williams:

Attached please find the final C-141 for the above captioned spill. Approximately 7500 cubic yards of crude oil contaminated soil was removed and disposed of at J&L Landfarm. Using the NMOCD Guidelines for Leaks, Spills and Releases, EOTT has successfully reached TPH, BTEX and Benzene levels of <100 ppm, <50 ppm and < 10 ppm, respectively (analysis attached).

At the time EOTT took the last soil sample, a water sample was also taken from the bottom of the site. This sample meets WCQQ guidelines for BTEX (analysis attached).

Based on the attached laboratory analysis EOTT proposes closure on soil and groundwater at the site. I hope all meets with OCD approval but if you have any questions, please don't hesitate to call.

Sincerely,

Lennah Frost

Sr. Environmental Engineer

cc: Leon Anderson - State Land Office - Hobbs

Mike Matush - State Land Office - Santa Fe

District I • 1625 N. French Dr., Hobbs, NM 88240 District II 811 South First, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 <u>District IV</u> 2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico Energy Minerals and Natural Resource

Oil Conservation Division 2040 South Pacheco Santa Fe, NM 87505

Form C-141 Revised March 17, 1999

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

			Kelea	se Noun	cation a	ına Cor	rective Act	non	1/	
					OPER	RATOR		☐ Initial R	eport Final Report	
Name of Co						Contact				
EOTT Ene	rgy Pipelii	ne Limited !	Partners	hip		Lennah 1			<u> </u>	
Address						Telephon				
P.O. Box 16		nd, TX 79	702			915/684-				
•	Facility Name					Facility T	~ _			
Pearl Queen 6" gathering						6" gathe	nng line			
Surface Owner Mineral Owner								Lea	ise No.	
State of New Mexico Royalties have						been paid				
LOCATION OF RELEASE										
Unit Letter	Section	Township	Range	Feet from the		South Line	Feet from the	East/West Line	County	
G	20	20-S	37-E						Lea	
<u> </u>			<u>.</u>					<u>L</u> .,		
				NA'	TIIDE ()	F RELE	A SF			
Type of Rele	ise				TOILE	Volume of		Volu	me Recovered	
Crude oil	400					15 bbls	11010400	8 bb		
			<u> </u>							
Source of Re						1	Hour of Occurrence		and Hour of Discovery	
Pipeline leak Was Immedia	te Notice C	Liven?		***************************************		9/8/99 - 1		9/8/3	9- same	
Was minoan	1400000		Yes 🔲	No 🔲 No	t Required	If YES, To Whom? Sylvia – Hobbs District Office				
By Whom?						Date and I	lour			
Lennah Fros						9/8/99 - 2				
Was a Water	course Reac			1		If YES, V	olume Impacting t	the Watercourse.		
		L	Yes 🗌	l No						
If a Watercou	rse was Im	pacted, Descr	ibe Fully.			<u> </u>				
Describe Cau				n Taken.*						
Pipeline cor	rosion. Pip	e was repain	ed.							
Describe Are	a Affected	and Cleanup	Action Tal	ken.*						
					excavated a	nd disposed	of at J&L Land	farm. Clean soi	il was used for backfill.	
Analysis of v	vater and s	oil from bott	om hole	and soil from	the side wa	lls were tak	en on 12/6/99 1/1	1/99. Analysis	attached	
I hereby certi	fy that the i	nformation g	iven above	e is true and co	omplete to th	e best of my	knowledge and u	inderstand that or	ursuant to NMOCD rules	
and regulation	ns all opera	tors are requir	red to repo	ort and/or file	certain relea	se notificatio	ns and perform co	orrective actions	for releases which may	
									does not relieve the operator	
of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface										
water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.										
OIL CONSERVATION DIVISION										
	HAAN!	a le i	110	1			<u> </u>	224 1777201	1 2 1 1 1 1 1 1	
Signature Much frost										
Printed Name	e Lennah I	Frost				Approved				
1 1111001 1 70111		. 2000				District St	ipervisor:			
Title: Sr. En	vironmenta	Engineer				Approval	Date:	Expira	ation Date:	
Date: 12/10/	99		Ph	one: 915/684-	3467	Condition	s of Approval:		Attached	
	·	heets If Nec			- 107	1	- se - sppro tear.		<u> </u>	



Don't Treat Your Soil Like Dirt!

EOTT ENERGY

ATTN: MR. FRANK HERNANDEZ

P.O. BOX 1660

MIDLAND, TEXAS 79703

FAX: 505-392-2946

FAX: 915-687-2713 (Lennah Frost)

Sample Type: Water

Sample Condition: Intact/loed

Project F: Pearl Queen
Project Name: None Given

Project Location: South of Monument

Sampling Date: 12/06/99 Receiving Date: 12/06/99 Analysis Date: 12/06/99

ELTN	FIELD CODE	BENZENE mg/L	TOLUENE mg/L	ETHYLBENZENE mg/L	mp-XYLENE mg/L	o-XYLENE mg/L	
22015	Water North	0.012	0.012	0.004	0.011	0.022	
22016	Water South	0.011	0.012	0.004	0.009	0.021	
9	6 IA	104	101	102	104	102	
,	6 EA	97	92	95	98	96	
Ε	BLANK	<0.001	<0.001	<0.001	<0.001	<0.001	

METHODS: SW 846-8021B,5030

Baland K Tuela

/2 -

12600 West I-20 East • Odessa, Texas 79765 • (915) 563-1800 • Fax (915) 563-1713

DEC 27 199 19 59

esse promotion



Don't Treat Your Soil Like Dirt!

EOTT ENERGY

ATTN: MR. FRANK HERNANDEZ

P.O. BOX 1660

MIDLAND, TEXAS 79703

FAX: 505-392-2946

FAX: 915-687-2713 (Lennah Frost)

Sample Type: Soil

Sample Condition: Intact/loed

Project #: Pearl Queen

Project Name: None Given

Project Location: South of Monument

Sampling Date: 12/06/99 Receiving Date: 12/06/99

Analysis Date: 12/06/99

ELT#	FIELD CODE	GRO C6-C10 mg/kg	DRO >C10-C25 mg/kg	
22013	East Wall North	<10	<10	
22014	East Wall South	<10	<10	
	ev injectol injenet according	109	92	
	% INSTRUMENT ACCURACY			
	% EXTRACTION ACCURACY	112	82	
	BLANK	<10	<10	

Methods: EPA SW 846-8015M GRO/DRO

DET 87 199 15:29

Literatur H - (305) 744-1213 811 Senata Pinet i Artesta, N34 88210 District III - (505) 334-6178 1000 Rio Brazos Road Artec, NM 87410

Oil Conservation Division 2040 South Pacheco Street Santa Fe, New Mexico 87505 (505) 827-7131

Appropriate District Office in accordance with Rule 116 on back side of form

Release Notification	and Correct	ive Action	17	
OP	ERATOR		Initial Rep	ort Pinal Report
EOTT Energy Pipeline	Crinica	Lennah	Frost	
POBOX 1660 Midland Tx 74702	Telepho	915	16843467	
Fear Queen Buthering	Facility	Турс		
Teat I queen extracting				
State of NM Mineral Owner	<u> </u>		Lease No.	
LOCATION	OF RELEAS	E		
Unit Letter Section Lownship Range Feet from the North/South Lat 20 205 37E	e Feet from the	East/West Lane	County	
NATURE	OF RELEASE	<u> </u>		
Type of Resease Crude 01	Volume	of Release	15 Volume R	80015
Pipe Line Leak	97/2 /2	d Hour of Occurren	t t	our of Discovery
Was Immediate Notice Govern? Viet No Not Required	W YES,	To Wheel?	via	
Lennah Frost	978	199 - 2:	30	
Was a Whitestonese Reached?	R. 15-2	Volume Impacting	the Whitercourse.	,
If a Winesponsor was Impacted, Describe Fully (Attach Additional Sheets If Neces	48(Y)	<u>. </u>		
	, .			
Corrosion Leak. Pipe was Clam	If Necessary) Old - U	uill be	repaire	l ASAP.
Coffe des (part C) (opens to local)	p		ď	
Describe Area Affected and Cleanup Action Taken (Attach Additional Sheets If N				1 To 1
Oil pooled @ Leak source. Due to	heavy	Rain, o	oil rang	down Kow
Dil pooled @ Leak Source. Due to approx. 300' X2'. All Contamina of disposed of at J&L Landfarn	sted 30	il 15 D	eing 14	lavaled
addsposed of at Jal Landtarn	1.	 	V	
i iteraby certify that the information given above is true and complete to the best of it are required to report and/or file certain release notifications and perform corrective ac a C-141 seport by the NMOCD marked as "Final Report" does not relieve the operation	ly knowledge and ut tions for releases wh	ich may chdanger p ich may chdanger p	whicheshibor the envis	end regulations all operators ronment. The acceptance of
contamination that pose a threat to ground water, surface water, burnan health or the operator of responsibility for compliance with any other federal, state, or local laws a	environment. In ade			
Jamak 408		Off. CON	SERVATION DIVISIO	Ŋ
moderne Lenna Mitrost	Approved by District Supervis	or:		
TRIE BR. ENU. Engreer	Approval Dece:		Expursion Date:	
Duc 916/99 6 Phone 915/684346	Conditions of A	Approval:	Atta	thed
Dent to Sant	= fe -			
an 11-33-30 -1	hey impo	acted of	ld. H20 m	-15-99 C
) <u>.</u>		_	1-10 11

STATE OF NEW MEXICO OIL CONSERVATION DIVISION

MEMORANDUM OF MEETING OR CONVERSATION

Telephone	Personal	Time /3 20	2	Date	9/19/00
	Originating Party			<u>Otl</u>	her <u>Parties</u>
Pet Mc	Esland - Envi	romantel Plas	Bill	Olson	- Envir. Brean
Subject					
				- <i>j</i> 1	
DOTT -	- Peurl Qu	reen Monit	en We	11	
Discussion				_ .	
	9/15/00 fax				
Monitor 1	well located	too for	Aron	n sov	va Gres
					
					
			. <u></u>		
					
Conclusions or	Agreements				^ /
They will	place monitor	well on ri	It o	ntside	at excepted
aren o		of south	side		
			. — <u>.</u>		<u></u>
<u>Distribution</u>		Sig	ned Bel	VS	_

P O Box 1558 1324 North Mæn Eunice New Mexico 88231 Telephone 505,394,3481 FAX 505 394 2601

Mobile Telephone # Ben Miller 505 390 0288 Pat McCasland 505.390.7864 Roger Boone 505.390 2725

ENVIRONMENTAL PLUS, INC.

Micro-Blaze

ax

To: //// 15/11 () 1502	From: Pat McCasland
Fax: 505 - 827-817	7 > Pages: 4
Phone:	Date: 9.15.00
Re:	CC:
□ Urgent □ For Review	☐ Please Comment ☐ Please Reply ☐ Please Recycle
Comments:	
Lill,	
Heno in the	rapase MIN placement at the
EOTT Parl Que	en 6" site. With your consensus
we will proced	le to install

Lot Milall

NOXIN



ENVIRONMENTAL PLUS, INC.



Micro Blaze Ond

September 15, 2000

Mr. William C. Olson New Mexico Oil Conservation Division Environmental Bureau 2040 South Pacheco Street Santa Fe, New Mexico 87505

Subject: E.O.T.T. Pearl Queen 6" Gathering Line Monitor Well Placement

Dear Mr. Olson,

Environmental Plus, Inc. has been engaged by E.O.T.T. Energy Pipeline to install a monitor well at the above referenced location in Lea County approximately 9 miles south of Monument, New Mexico. In your letter dated May 24, 2000, E.O.T.T. is directed to install a monitor well "outside of and directly downgradient of the excavated area to demonstrate that contaminated ground water has not migrated from the spill site."

Attached for reference is a portion of the Ground Water Map of Lea County from the USGS Report #6, Nicholson & Clebsch 1961 indicating the ground water gradient and a detailed site map of the E.O.T.T. Pearl Queen 6" Gathering Line Remediation Site showing the proposed placement of the monitor well. It is proposed to install the well approximately 150° southwest and directly downgradient of the excavation. Please convey your concurrence or alternative location as soon as possible.

If you have any questions please call me at the office or at 505.390.7864.

Sincerely,

Pat McCasland

EPI Technical Manager

Cc:

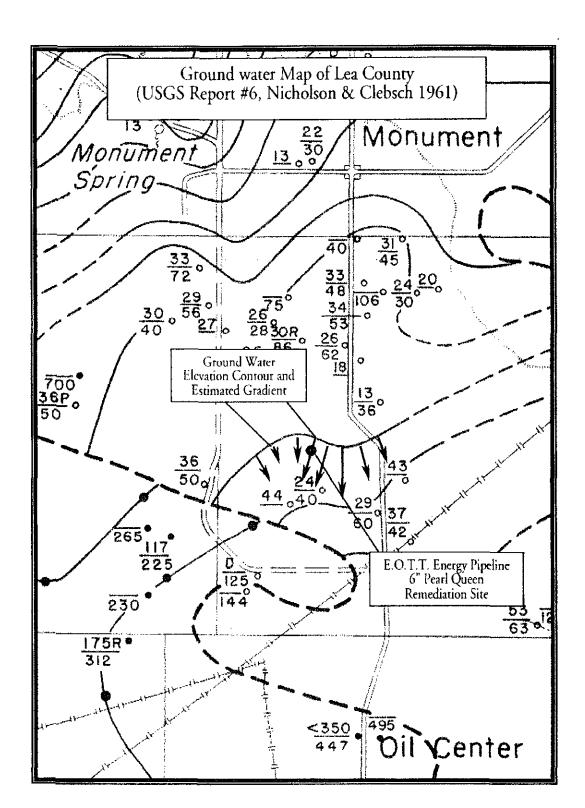
Glenn Waldrop, EOTT Frank Hernandez, EOTT Sherry Miller, EPI



• 440.

ENVIRONMENTAL PLUS, INC. STATE APPROVED LAMB FORM AND PHYCRONMENTAL SERVICES





NVIRONMENTAL PL

THOMMENTAL 萨上班多。 Inc.



LANGER OR MER SERVICES

Micro-Alexa Ond "

Oil Well: Burgundy funite-Monument Unit 46 Prepared Montor Well Lucation 8(Expressed from Posteriae ENERGY PIPELINE (ILC Soc 20 1208 Ref) MONITOR WELL PEARL QUEEN THAN LACT THE CONTROL Trimble ह्या स्थाप्त स्थल स्थल हत 3002/7/165 PROPOSED 850 354 F1/1048 LOCATION SUACE LINE BEST

ENVEN ON WENTAL



NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON

Governor

Jennifer A. Salisbury

Cabinet Secretary

May 24, 2000

Lori Wrotenbery
Director
Oil Conservation Division

CERTIFIED MAIL
RETURN RECEIPT NO: 5051-3204

Mr. Glen Waldrop
EOTT Energy Pipeline Limited Partnership
P.O. Box 1660
Midland, Texas 79702

RE: PEARL QUEEN 6" GATHERING LINE

Dear Mr. Waldrop:

The New Mexico Oil Conservation Division (OCD) has reviewed EOTT Energy Pipeline Limited Partnership's (EOTT) February 16, 2000 "PEARL QUEEN 6" GATHERING LINE, LEA COUNTY, NEW MEXICO". This document contains additional information regarding EOTT's investigation and remediation of soil contamination related to a crude oil pipeline spill at the Pearl Queen 6" Gathering Line site located in Unit G, Section 20, Township 20 South, Range 37 East, Lea County, New Mexico. The document also contains a proposal to install a monitor well to determine any impacts on ground water.

The above referenced proposal is approved with the following conditions:

- 1. EOTT shall install the monitor well outside of and directly downgradient of the excavated area to demonstrate that contaminated ground water has not migrated from the spill site.
- 2. EOTT shall complete the monitor well as follows:
 - a. At least 15 feet of well screen shall be placed across the water table interface with 5 feet of the well screen above the water table and 10 feet of the well screen below the water table.
 - b. An appropriately sized gravel pack shall be set in the annulus around the well screen from the bottom of the hole to 2-3 feet above the top of the well screen.
 - c. A 2-3 foot bentonite plug shall be placed above the gravel pack.
 - d. The remainder of the hole shall be grouted to the surface with cement containing 3-5% bentonite.

- e. A concrete pad and locking well cover shall be placed around the well at the surface.
- f. The well shall be developed after construction using EPA approved procedures.
- 3. No less than 24 hours after the well is developed, ground water from the monitor well shall be purged, sampled and analyzed for concentrations of benzene, toluene, ethylbenzene, xylene and polycyclic aromatic hydrocarbons (PAH) using EPA approved methods and quality assurance/quality control (QA/QC) procedures.
- 4. All wastes generated shall be disposed of at an OCD approved facility.
- 5. EOTT shall submit a comprehensive report on all investigation and remediation actions which have occurred at the site. The report shall be submitted to the OCD Santa Fe Office by July 31, 2000 with a copy provided to the OCD Hobbs District Office and shall include:
 - a. A description of all investigation, remediation and monitoring activities which have occurred including conclusions and recommendations.
 - b. A geologic/lithologic log and well completion diagram for each monitor well.
 - c. Maps showing the location of the spills, excavated areas, monitor wells and any other pertinent site features as well as the direction and magnitude of the hydraulic gradient.
 - c. Summary tables of all soil ground water quality sampling results and copies of all laboratory analytical data sheets and associated QA/QC.
 - d. The disposition of all wastes generated.

Please be advised that OCD approval does not limit EOTT to the proposed work plan should the investigation actions fail to adequately define the extent of contamination related to EOTT's activities, or if contamination exists which is outside the scope of the work plan. In addition, OCD approval does not relieve EOTT of responsibility for compliance with any other federal, state or local laws and regulations. If you have any questions, please contact me at (505) 827-7154.

Sincerely,

William C. Olson

Hydrologist

Environmental Bureau

xc: Chris Williams, OCD Hobbs District Office

EOTT/PEARL QUEEN: ULC-SEC 20-Ts20S-R37E taken by Donna Williams 09-15-1999





EOTT/PEARL QUEEN: ULC-SEC 20-Ts20S-R37E taken by Donna Williams 09-15-1999





EOTT/PEARL QUEEN: ULC-SEC 20-Ts20S-R37E taken by Donna Williams 09-15-1999



EOTT/PEARL QUEEN: SEC 20-T20S-R37E (NEXT TO BURGUNDY'S WELL NO 6.) taken by DONNA WILLIAMS ON 10-25-99



EOTT/PEARL QUEEN: SEC 20-T20S-R37E (NEXT TO BURGUNDY'S WELL NO 6.) taken by DONNA WILLIAMS ON 10-25-99





EOTT/PEARL QUEEN: SEC 20-T20S-R37E (NEXT TO BURGUNDY'S WELL NO 6.) taken by DONNA WILLIAMS ON 10-25-99





EOTT/PEARL QUEEN: SEC 20-T20S-R37E (NEXT TO BURGUNDY'S WELL NO 6.) taken by DONNA WILLIAMS ON 10-25-99



