

3R - 207

REPORTS

DATE:

1998



Certified Mail: #Z 211 324 121

March 31, 1999

Mr. William C. Olson
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87504

RECEIVED

APR 05 1999

ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

RE: 1998 Pit Project Annual Groundwater Report

Dear Mr. Olson:

In accordance with reporting requirements, El Paso Field Services (EPFS) has enclosed annual updates for the 49 remaining groundwater impacted locations that were identified during our pit closure project of 1994 / 1995.

Of the 49 reports, EPFS hereby requests closure of 18 of these locations. The 18 sites EPFS is requesting closure on are presented in 4 separate binders entitled "Final Closure Report for Groundwater Sites with Four Consecutive Quarters Below Standards".

The Jaquez Com. C #1 and Jaquez Com. E #1 site is included in a separate report which is entitled "Jaquez Com. C #1 and Jaquez Com. E #1 Annual Report for Soil and Groundwater Remediation".

If you have any questions concerning the enclosed reports or closure requests, please call me at (505) 599-2124.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Scott T. Pope'.

Scott T. Pope P.G.
Senior Environmental Scientist

xc: Mr. Denny Foust, NMOCD, Aztec - w / enclosures; **Certified Mail # Z 211 324 122**
Mr. Bill Liesse, BLM - w / enclosures; **Certified Mail # Z 211 324 123**
Ms. Charmaine Tso, Navajo EPA - w / enclosures; **Certified Mail # Z 211 324 120**

SAN JUAN BASIN PIT CLOSURES
San Juan Basin, New Mexico

El Paso Field Services
Final Closure Report For Groundwater Sites With Four
Consecutive Quarters Below Standards

December 1998

Prepared For

El Paso Field Services
Farmington, New Mexico

Project 17520
Book 1



EPFS GROUNDWATER PITS

1998 ANNUAL GROUNDWATER REPORT

KNIGHT #1
Meter/Line ID - 72556

SITE DETAILS

Legals - Twn: 30N Rng: 13 W Sec: 5 Unit: A
NMOCD Hazard Ranking: 30 Land Type: FEE
Operator: FULLER PETROLEUM INC.

PREVIOUS ACTIVITIES

Site Assessment: Jan-95 Excavation: Jan-95 (60 cy) Soil Boring: Oct-95
Monitor Well: Oct-95 Downgradient MW's: Dec-95 Nutrients: Nov-96
Quarterly Sampling Initiated: Apr-96

1998 ACTIVITIES

Quarterly Groundwater Monitoring – Quarterly sampling was performed the first two quarters of 1998. Groundwater analytical data are presented in Table 1 and Figures 1 & 2. Groundwater elevation data is presented in Figures 3 & 4.

Site Map Revision- Please note that monitor wells MW-3 and MW-4 and associated data were reversed in the 1997 annual report. Site maps included in this groundwater report have been corrected to reflect the current labeling scheme.

Provided Operator with Site Data - EPFS has provided operator with all pertinent site data generated to date.

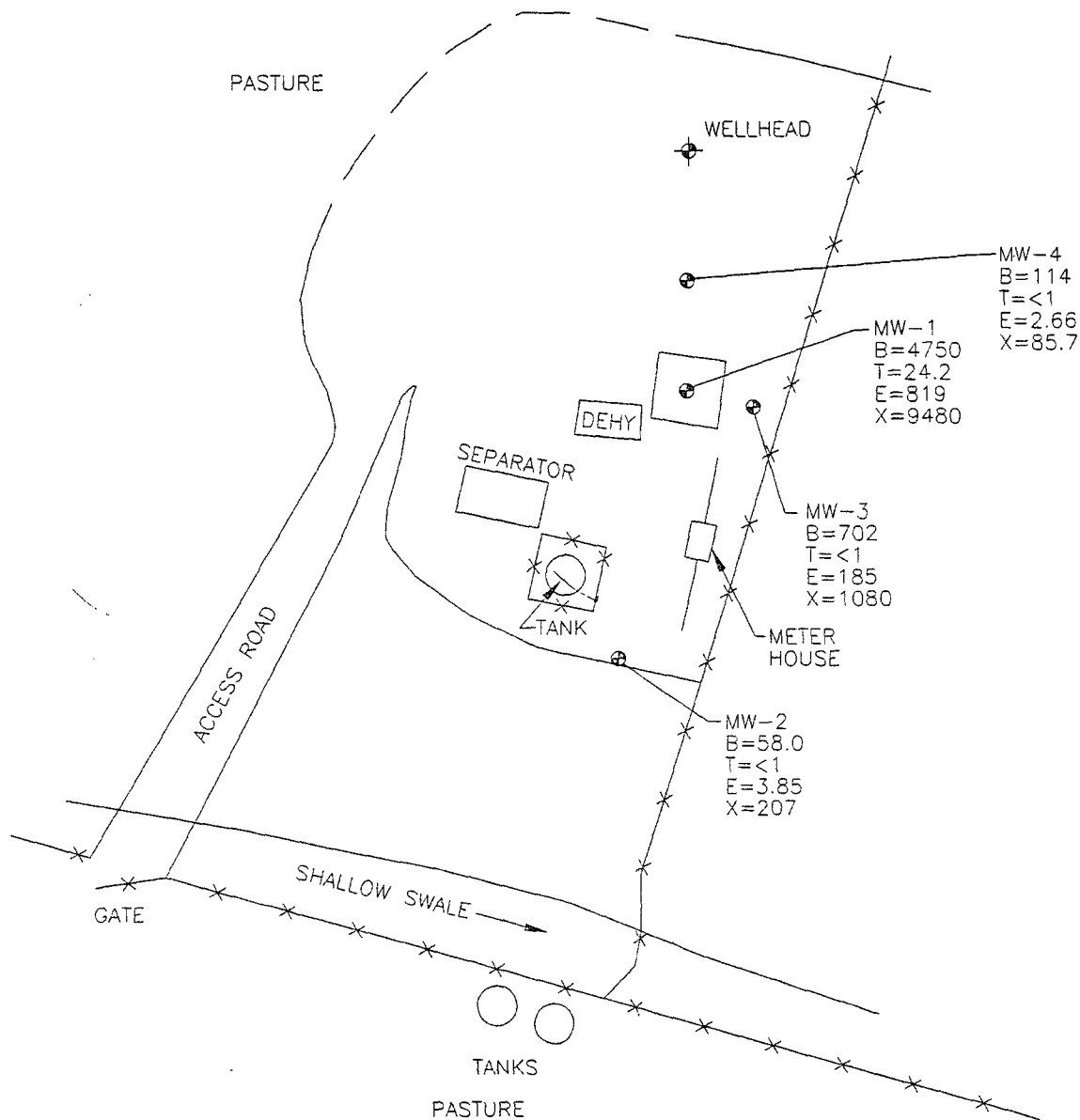
CONCLUSIONS

Based on groundwater levels collected from four groundwater monitor wells during the two monitoring events of 1998, the groundwater flow was toward the south-southwest on this site during some of 1998. Off-site work will be required to obtain downgradient samples and determine the downgradient edge of hydrocarbon constituents in the groundwater.

Pertinent data from the 1997 groundwater report includes the following: Groundwater flow was toward the east-southeast during 1997. Groundwater samples collected from MW-2, which is downgradient of a production pit, have been in excess of standards for benzene since quarterly sampling was initiated, and indicates that there may be an additional source for hydrocarbon constituents in the groundwater.

RECOMMENDATIONS

- EPFS proposes to conduct annual monitoring at the site.
- Installation of a groundwater monitoring well east or west of MW-3 would help to establish a more accurate groundwater gradient. Drilling off-site to the east of the location may be difficult due to thick tree cover and other natural barriers.
- EPFS will continue to work with the operator at this site.



LEGEND

● MW-1 APPROXIMATE MONITORING WELL LOCATION AND NUMBER

B BENZENE (ug\L)
T TOLUENE (ug\L)
E ETHYL BENZENE (ug\L)
X XYLENE (ug\L)

ug\L MICROGRAMS PER LITER

NOT TO SCALE



COL. 17520BJ-0

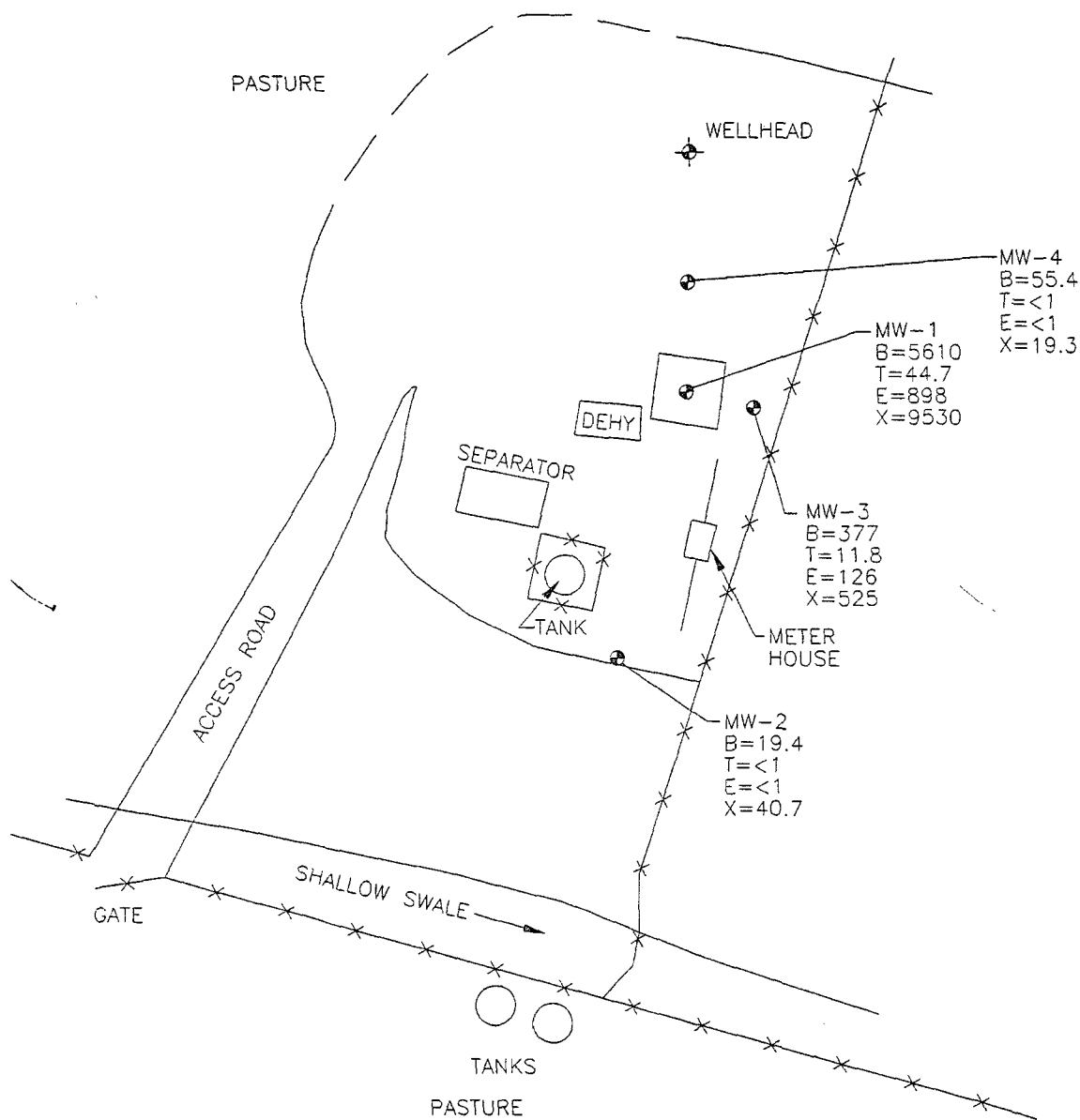


TITLE:
KNIGHT #1
METER 72556
1/9/98

DWN: TMM	DES.: CI
CHKD: CI	APPD:
DATE: 3/3/99	REV.: 0

PROJECT NO.: 17520
EPFS GW PITS

FIGURE 1



LEGEND

● MW-1 APPROXIMATE MONITORING WELL LOCATION AND NUMBER

B BENZENE (ug\L)
T TOLUENE (ug\L)
E ETHYL BENZENE (ug\L)
X XYLENE (ug\L)

ug\L MICROGRAMS PER LITER

NOT TO SCALE



COL. 17520BJ-0



TITLE:

KNIGHT #1
METER 72556
4/24/98

DWN:

TMM

DES.:

CI

PROJECT NO.:

17520

EPFS GW PITS

CHKD:

CI

APPD:

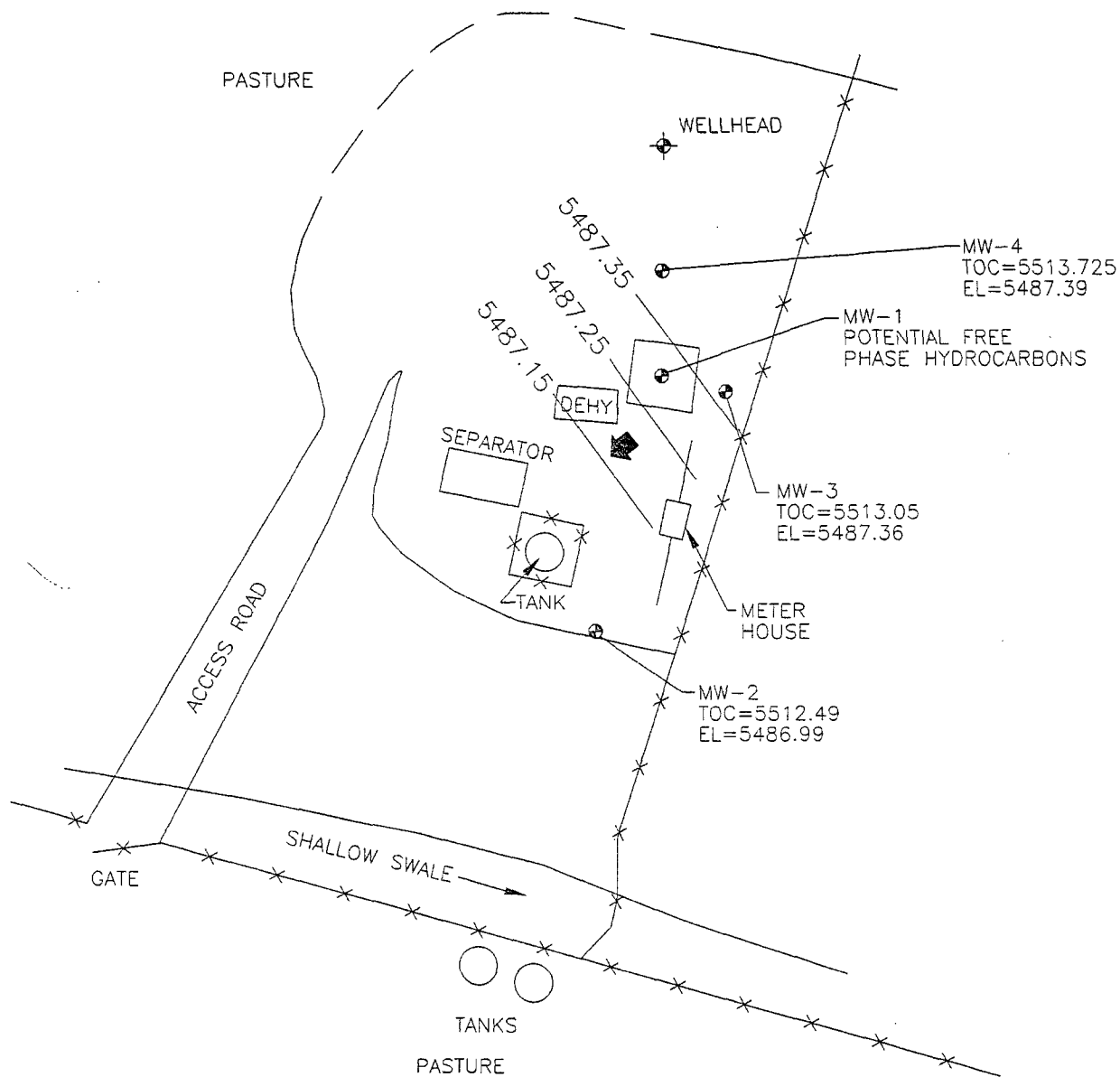
DATE:

3/19/99

REV.:

1

FIGURE 2



COL. 17520BJ-06



TITLE:

KNIGHT #1
METER 72556
1/9/98

DWN:

TMM

DES.:

CI

PROJECT NO.:

17520

EPFS GW PITS

CHKD:

CI

APPD:

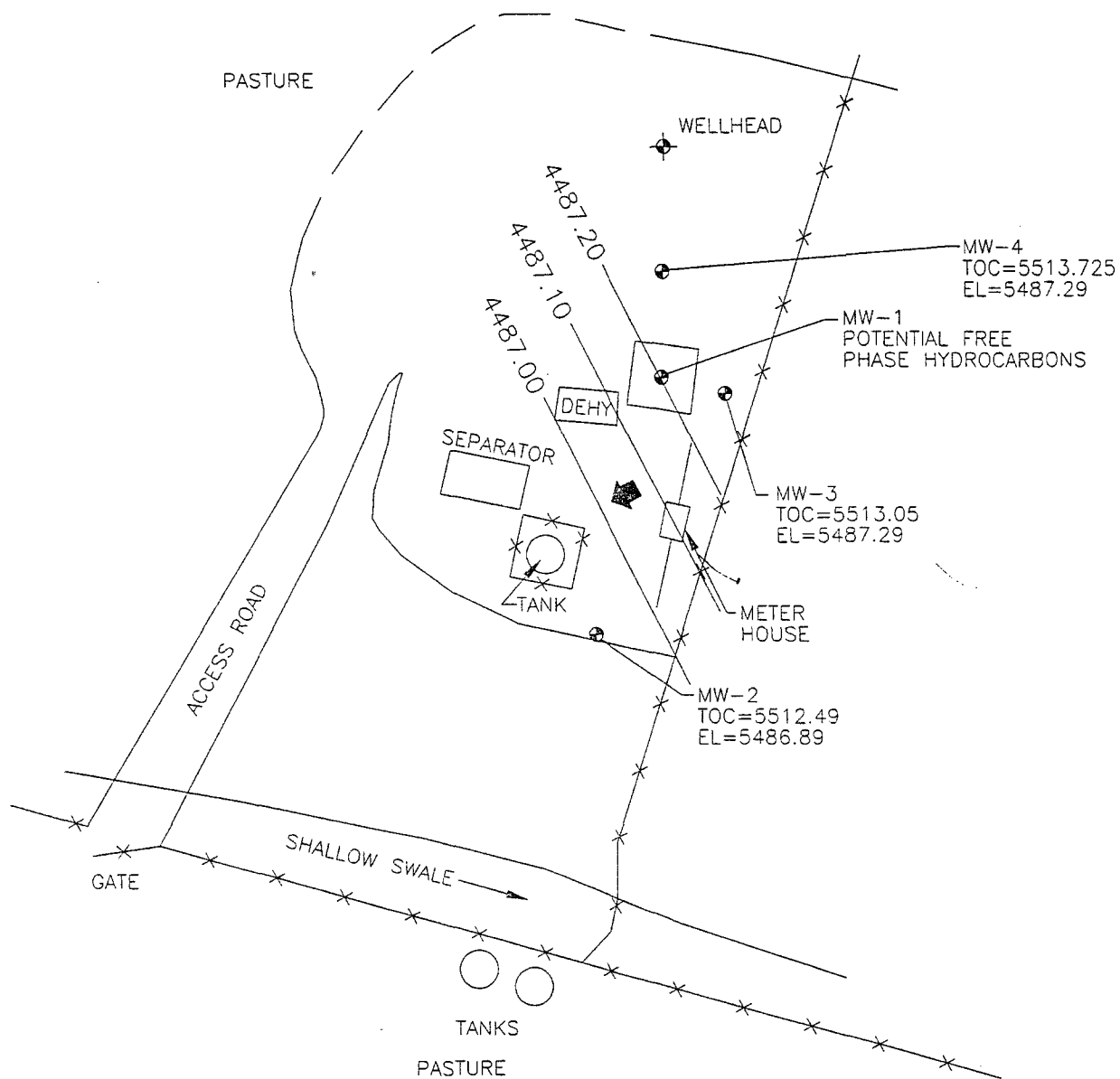
DATE:

3/3/99

REV.:

0

FIGURE 3



TITLE:

KNIGHT #1
METER 72556
4/24/98

DWN:

TMM

DES.:

CI

PROJECT NO.:

17520

EPFS GW PITS

CHKD:

CI

APPD:

DATE:

3/19/99

REV.:

1

FIGURE 4

COL. 17520BJ-00

TABLE 1

Sample #	Meter/Line #	Site Name	Sample Date	MW #	Project	Benzene (PPB)	Toluene (PPB)	Ethyl Benzene (PPB)	Total Xylenes (PPB)	Total BTEX
980018	72556	Knight #1	01/09/98	1	Sample 4 - 8th Quarter	= 4750.0	= 24.2	= 819.00	= 9480.0	= 15073
980314	72556	Knight #1	04/24/98	1	Sample 4 - 9th Quarter	= 5610.0	= 44.7	= 898.00	= 9530.0	= 16083
980019	72556	Knight #1	01/09/98	2	Sample 4 - 8th Quarter	= 58.0	< 1.0	= 3.85	= 207.0	= 269
980315	72556	Knight #1	04/24/98	2	Sample 4 - 9th Quarter	= 19.4	< 1.0	= 1.00	= 40.7	= 60
980021	72556	Knight #1	01/09/98	3	Sample 4 - 8th Quarter	= 702.0	< 1.0	= 185.00	= 1080.0	= 1967
980316	72556	Knight #1	04/24/98	3	Sample 4 - 9th Quarter	= 377.0	= 11.8	= 126.00	= 525.0	= 1039
980022	72556	Knight #1	01/09/98	4	Sample 4 - 8th Quarter	= 114.0	< 1.0	= 2.66	= 85.7	= 202
980317	72556	Knight #1	04/24/98	4	Sample 4 - 9th Quarter	= 55.4	< 1.0	= 1.00	= 19.3	= 75

**1998 GROUNDWATER
ANALYTICAL**



Well Number 17W-1
Meter Code 72556

☐ Development

☒ Purging

Site Name KWGH #1

Development Criteria

- | | |
|-------------------------------------|--|
| ☒ | 3 to 5 Casing Volumes of Water Removal |
| ☐ | Stabilization of Indicator Parameters |
| ☐ | Other |

Water Volume Calculation

Initial Depth of Well (feet) 33.94
Initial Depth to Water (feet) 25.83
Height of Water Column in Well (feet) 8.12

Diameter (inches): Well 44 Gravel Pack

Methods of Development

- | | | | |
|--------------------------|-------------|-------------------------------------|--------------------------|
| ☐ | Pump | ☐ | Bailer |
| ☐ | Centrifugal | ☒ | Bottom Valve |
| ☐ | Submersible | ☐ | Double Check Valve |
| ☐ | Peristaltic | ☐ | Stainless-steel Kemmerer |

☐ Other

Instruments

- ☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other D.O. C

Water Disposal

NIGHT #1 SEPARATOR TRUCK

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		5.4	16.1
Gravel Pack			
Drilling Fluids			
Total			

Water Removal Data

[illegible]

Comments THE WATER HAD A STRONG HYDROCARBON SMELL. THE WELL BAKED ONLY 0.00 GALLONS.

Developer's Signature Donna Bied

Date 1-9-98

Reviewer J. de Lathau

Date 1/21/98



Well Number NW-2
Meter Code 22556

Development	☐
Purging	☒

Site Name KNIGHT-#1

Development Criteria

- ☒ 3 to 5 Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 36.93
Initial Depth to Water (feet) 25.50
Height of Water Column in Well (feet) 11.43

Diameter (inches): Well 4 Gravel Pack

Methods of Development

- | | | | |
|--------------------------|-------------|-------------------------------------|--------------------------|
| ☐ | Pump | ☒ | Bailer |
| ☐ | Centrifugal | ☒ | Bottom Valve |
| ☐ | Submersible | ☐ | Double Check Valve |
| ☐ | Peristaltic | ☐ | Stainless-steel Kemmerer |
| ☐ | Other | | |

Instruments

- | | |
|-------------------------------------|---------------------|
| ☒ | pH Meter |
| ☐ | DO Monitor |
| ☒ | Conductivity Meter |
| ☒ | Temperature Meter |
| ☒ | Other <u>D.O. C</u> |

Water Disposal

KNIGHT #1 SEPARATED FROM

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		7.6	22.7
Gravel Pack			
Drilling Fluids			
Total			

Water Removal Data

[illegible]

Comments

Developer's Signature Yennie Bird

Date 1-9-98 Reviewer John Zacher

Reviewer

Data

1/21/98



Well Development and Purging Data

Well Number MW-3
Meter Code 73556

☐	Development
☒	Purging

Site Name KNIGHT #1

Development Criteria

- ☒ 3 to 5 Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☐ Other

Water Volume Calculation

Initial Depth of Well (feet) 37.20
Initial Depth to Water (feet) 25.69
Height of Water Column in Well (feet) 11.51

4
Diameter (inches): Well Gravel Pack

Methods of Development

- | | | | |
|--------------------------|--------------------|-------------------------------------|---------------------------------|
| ☐ | Pump | ☐ | Bailer |
| ☐ | Centrifugal | ☒ | Bottom Valve |
| ☐ | Submersible | ☐ | Double Check Valve |
| ☐ | Peristaltic | ☐ | Stainless-steel Kemmerer |

Instruments

- ☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other 020

Water Disposal

WILL DELIVERED TO
NIGHT #1

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		7.6	228
Gravel Pack			
Drilling Fluids			
Total			

Water Removal Data

[illegible]

Comments THE WATER HAD A LIGHT HYDROCARBON SMELL.

Developer's Signature Dennis Bird

Date 1-9-98

John Todd

Date 1/21/48

Well Development and Purging Data

Site Name KNIGHT #1 Well Number MW-4 Development ☐ Purging ☒
 Meter Code 73536

Development Criteria

- ☒ 3 to 5 Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☐ Other _____

Methods of Development

- Pump ☐ Bailer ☐
☐ Centrifugal ☒ Bottom Valve
☐ Submersible ☐ Double Check Valve
☐ Peristaltic ☐ Stainless-steel Kemmerer

Water Volume Calculation

Initial Depth of Well (feet) 36.80
 Initial Depth to Water (feet) 26.34
 Height of Water Column in Well (feet) 10.46

Diameter (inches): Well 4 Gravel Pack _____

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		<u>6.9</u>	<u>20.7</u>
Gravel Pack			
Drilling Fluids			
Total			

Instruments

- ☒ pH Meter
☐ DO Monitor
☒ Conductivity Meter
☒ Temperature Meter
☒ Other D.O. CHEMETS KIT

Water Disposal

KNIGHT #1 SEPARATOR TANK

Water Removal Data

Date	Time	Development Method		Removal Rate (gal/min)	Intake Depth (feet)	Ending Water Depth (feet)	Water Volume Removed (gal)		Product Volume Removed (gallons)		Temperature °C	pH	Conductivity µmho/cm	Dissolved Oxygen mg/L	Comments
		Pump	Bailer				Increment	Cumulative	Increment	Cumulative					
1-9-98	1400						5.0	5.0			12.5	6.97	3100		
1-9-98	1405						5.0	10.0			13.4	7.03	3260		
1-9-98	1411						5.0	15.0			14.5	7.02	3270		
1-9-98	1420						5.0	20.0			13.7	6.98	3160		
1-9-98	1426						5.0	25.0			14.6	6.99	3270		
1-9-98	1435						5.0	30.0			14.8	7.00	3240	1.5	

Comments _____

Developer's Signature Termin Bial

Date 1-9-98

Reviewer John Fisher

Date 1/21/98



EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	980018
MTR CODE SITE NAME:	72556	Knight #1
SAMPLE DATE TIME (Hrs):	1/9/98	1122
PROJECT:	Sample 4 8th Quarter	
DATE OF BTEX EXT. ANAL.:	1/12/98	1/12/98
TYPE DESCRIPTION:	MW-1	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	4750	PPB	25	D		
TOLUENE	24.2	PPB	25	D		
ETHYL BENZENE	819	PPB	25	D		
TOTAL XYLENES	9480	PPB	25	D		
TOTAL BTEX	15073	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 96.2 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

The "D" qualifier indicates that the analyte calculated is based on a secondary dilution factor.

Narrative: _____

Approved By: _____

John Lardner

Date: _____

1/21/98

980018BTEXMonitorWell, 1/16/98



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	980020
MTR CODE SITE NAME:	72556	Knight #1
SAMPLE DATE TIME (Hrs):	1/9/98	1136
PROJECT:	Sample 4 8th Quarter	
DATE OF BTEX EXT. ANAL.:	1/12/98	1/12/98
TYPE DESCRIPTION:	MW-2 Field Dup	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	56.5	PPB				
TOLUENE	< 1	PPB				
ETHYL BENZENE	3.80	PPB				
TOTAL XYLENES	202	PPB				
TOTAL BTEX	263	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 99.6 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By:

John Linder

Date:

1/21/98

980020BTEXMonitorWell, 1/16/98



EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY ANALYTICAL REPORT PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	980019
MTR CODE SITE NAME:	72556	Knight #1
SAMPLE DATE TIME (Hrs):	1/9/98	1136
PROJECT:	Sample 4 8th Quarter	
DATE OF BTEX EXT. ANAL.:	1/12/98	1/12/98
TYPE DESCRIPTION:	MW-2	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	58.0	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	3.85	PPB				
TOTAL XYLENES	207	PPB				
TOTAL BTEX	269	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 97.0 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative: _____

Approved By: _____

John Linder

Date: _____

1/21/98

980019BTEXMonitorWell, 1/16/98



EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY

ANALYTICAL REPORT

PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	980021
MTR CODE SITE NAME:	72556	Knight #1
SAMPLE DATE TIME (Hrs):	1/9/98	1326
PROJECT:	Sample 4 8th Quarter	
DATE OF BTEX EXT. ANAL.:	1/12/98	1/12/98
TYPE DESCRIPTION:	MW-3	Water

Field Remarks: _____

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	702	PPB	5	D		
TOLUENE	< 1	PPB	5	D		
ETHYL BENZENE	185	PPB	5	D		
TOTAL XYLENES	1080	PPB	5	D		
TOTAL BTEX	1967	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 98.2 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

The "D" qualifier indicates that the analyte calculated is based on a secondary dilution factor.

Narrative: _____

Approved By: _____

John Faldut

Date: _____

1/21/98

980021BTEXMonitorWell, 1/16/98



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	980022
MTR CODE SITE NAME:	72556	Knight #1
SAMPLE DATE TIME (Hrs):	1/9/98	1448
PROJECT:	Sample 4 8th Quarter	
DATE OF BTEX EXT. ANAL.:	1/12/98	1/12/98
TYPE DESCRIPTION:	MW-4	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	114	PPB				
TOLUENE	< 1	PPB				
ETHYL BENZENE	2.66	PPB				
TOTAL XYLENES	85.7	PPB				
TOTAL BTEX	202	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 91.0 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

Narrative:

Approved By:

John Zabel

Date:

1/21/98

980022BTEXMonitorWell, 1/16/98

CHAIN OF CUSTODY RECORD

[illegible]



Well Development and Purging Data

☐	Development
☒	Purging

Well Number MW-1

Meter Code 77556

Site Name KWIGHT #1

Development Criteria

- | | |
|-------------------------------------|--|
| ☒ | 3 to 5 Casing Volumes of Water Removal |
| ☐ | Stabilization of Indicator Parameters |
| ☐ | Other |

Water Volume Calculation

Initial Depth of Well (feet) 33.94

Initial Depth to Water (feet) 26.07

Well No.	Height of Water Column in Well (feet)
1	293

Diameter (inches): Well 4 Gravel Pack

Methods of Development

- | | | | |
|--------------------------|-------------|-------------------------------------|--------------------------|
| ☐ | Pump | ☒ | Bailer |
| ☐ | Centrifugal | ☐ | Bottom Valve |
| ☐ | Submersible | ☐ | Double Check Valve |
| ☐ | Peristaltic | ☐ | Stainless-steel Kemmerer |

Instruments

- | | |
|-------------------------------------|----------------------|
| ☒ | pH Meter |
| ☐ | DO Monitor |
| ☒ | Conductivity Meter |
| ☒ | Temperature Meter |
| ☒ | Other <u>D.O. CR</u> |

Water Disposal

KNIGHT #1 SEPARATE TRUNK

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		5.3	15.7
Gravel Pack			
Drilling Fluids			
Total			

Other ☐

Water Removal Data

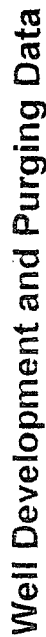
[illegible]

Comments THE WELL HAD C. 14' OF FREE FLOATING HYDROCARBON. THE WELL BAILED ONLY 20 GALLON

Developer's Signature *Dennis Bird*

Date: 4-24-98 Reviewer: John Swartz

Date 5/1/98



Well Development and Purging Data

Well Number MW-3

Meter Code 72556

☐	Development
☒	Purging

Site Name KNIGHT #1

Development Criteria

- ☒ 3 to 5 Casing Volumes of Water Removal
☐ Stabilization of Indicator Parameters
☐ Other

Methods of Development

- | | | | |
|--------------------------|-------------|-------------------------------------|--------------------------|
| ☐ | Pump | ☐ | Bailer |
| ☐ | Centrifugal | ☒ | Bottom Valve |
| ☐ | Submersible | ☐ | Double Check Valve |
| ☐ | Peristaltic | ☐ | Stainless-steel Kemmerer |

Water Volume Calculation

Initial Depth of Well (feet) 36.93
Initial Depth to Water (feet) 25.60
Height of Water Column in Well (feet) 11.33

Diameter (inches): Well 4 Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		7.5	22.5
Gravel Pack			
Drilling Fluids			
Total			

Instruments

- | | |
|-------------------------------------|----------------------------|
| ☒ | pH Meter |
| ☐ | DO Monitor |
| ☒ | Conductivity Meter |
| ☒ | Temperature Meter |
| ☒ | Other <u>DO Controller</u> |

Water Disposal

KWIGHT #1 SEPARATOR TANK

Water Removal Data

[illegible]

Comments

Developer's Signature *Dennis Bred*

Date 6-24-98 Reviewer _____

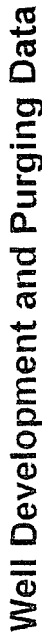
John Fowler

Date 5/1/98



Date 5/1/98

KNIGHT #1 SEPARATOR TRUNK



☐	Development
☒	Purging

Well Number MW-4

Meter Code 77556

Site Name KNIGHT #1

Development Criteria

- | | |
|-------------------------------------|--|
| ☒ | 3 to 5 Casing Volumes of Water Removal |
| ☐ | Stabilization of Indicator Parameters |
| ☐ | Other |

Methods of Development

- | | |
|--------------------------------------|---|
| ☐ Pump | ☒ Baller |
| ☐ Centrifugal | ☒ Bottom Valve |
| ☐ Submersible | ☐ Double Check Valve |
| ☐ Peristaltic | ☐ Stainless-steel Kemmerer |
| ☐ Other | |

Water Volume Calculation

Initial Depth of Well (feet) 36.80
Initial Depth to Water (feet) 26.44
Height of Water Column in Well (feet) 10.36

4 Diameter (inches): Well Gravel Pack

Item	Water Volume in Well		Gallons to be Removed
	Cubic Feet	Gallons	
Well Casing		6.8	20.5
Gravel Pack			
Drilling Fluids			
Total			

Instruments

- | | |
|-------------------------------------|--------------------|
| ☒ | pH Meter |
| ☐ | DO Monitor |
| ☒ | Conductivity Meter |
| ☒ | Temperature Meter |
| ☒ | Other <u>200</u> |

Water Disposal

KWIGHT * SEPARATOR TRUCK

Water Removal Data

[illegible]

Comments

Developer's Signature
Dennis Bird

Date: 4-24-98 Reviewer:

John Tule

Date _____

5/1/48



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	980314
MTR CODE SITE NAME:	72556	Knight #1
SAMPLE DATE TIME (Hrs):	4/24/98	1129
PROJECT:	Sample 4 9th Quarter	
DATE OF BTEX EXT. ANAL.	4/29/98	4/29/98
TYPE DESCRIPTION:	MW-1	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	5610	PPB	50	D		
TOLUENE	44.7	PPB				
ETHYL BENZENE	898	PPB				
TOTAL XYLENES	9530	PPB	50	D		
TOTAL BTEX	16083	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 99.1 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

The "D" qualifier indicates that the analyte calculated is based on a secondary dilution factor.

Narrative:

Approved By:

John F. Lander

Date:

5/6/98

980314BTEXMW,5/4/98



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	980315
MTR CODE SITE NAME:	72556	Knight #1
SAMPLE DATE TIME (Hrs):	4/24/98	1141
PROJECT:	Sample 4 9th Quarter	
DATE OF BTEX EXT. ANAL.:	4/29/98	4/29/98
TYPE DESCRIPTION:	MW-2	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	19.4	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	40.7	PPB				
TOTAL BTEX	60	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 97.5 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By:

John Lantieri

Date:

5/1/98

980315BTEXMW,4/30/98



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	980316
MTR CODE SITE NAME:	72556	Knight #1
SAMPLE DATE TIME (Hrs):	4/24/98	1336
PROJECT:	Sample 4 9th Quarter	
DATE OF BTEX EXT. ANAL:	4/29/98	4/29/98
TYPE DESCRIPTION:	MW-3	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	377	PPB	5	D		
TOLUENE	11.8	PPB	5	D		
ETHYL BENZENE	126	PPB	5	D		
TOTAL XYLENES	525	PPB	5	D		
TOTAL BTEX	1039	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 100.4 % for this sample All QA/QC was acceptable.

DF = Dilution Factor Used

The "D" qualifier indicates that the analyte calculated is based on a secondary dilution factor.

Narrative:

Approved By:

John Larch

Date:

5/1/98

980316BTEXMW,4/30/98



FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	980317
MTR CODE SITE NAME:	72556	Knight #1
SAMPLE DATE TIME (Hrs):	4/24/98	1441
PROJECT:	Sample 4 9th Quarter	
DATE OF BTEX EXT. ANAL.:	4/29/98	4/29/98
TYPE DESCRIPTION:	MW-4	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	55.4	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	19.3	PPB				
TOTAL BTEX	75	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 97.4 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By:

John L. Linder

Date:

5/1/98

980317BTEXMW,4/30/98



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FIELD SERVICES LABORATORY ANALYTICAL REPORT PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	980318
MTR CODE SITE NAME:	72556	Knight #1
SAMPLE DATE TIME (Hrs):	4/24/98	1441
PROJECT:	Sample 4 9th Quarter	
DATE OF BTEX EXT. ANAL.:	4/29/98	4/29/98
TYPE DESCRIPTION:	MW-4 Field Dup	Water

Field Remarks:

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	67.4	PPB				
TOLUENE	<1	PPB				
ETHYL BENZENE	<1	PPB				
TOTAL XYLENES	22.8	PPB				
TOTAL BTEX	90	PPB				

--BTEX is by EPA Method 8020 --

The Surrogate Recovery was at 97.8 % for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative:

Approved By:

John Scarde

Date:

5/1/98

980318BTEXMW,4/30/98



Natural Gas Company

SAMPLE 4 97HGR

A 2653

CHAIN OF CUSTODY RECORD

[illegible]