3R - 251

GENERAL CORRESPONDENCE

YEAR(S):
1999-1998

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

October 20, 1999

CERTIFIED MAIL
RETURN RECEIPT NO. Z-274-520-720

Mr. John D. Roe
Dugan Production Corp.
P.O. Box 420
Farmington, New Mexico 87499-0420

RE: KNIGHT #1 WELL SITE
UNIT A, SECTION 5, TOWNSHIP 30 NORTH, RANGE 13 WEST

Dear Mr. Roe:

The New Mexico Oil Conservation Division (OCD) has reviewed Dugan Production Corporation's (Dugan) September 15, 1999 correspondence titled "NMOCD LETTER DATED 7-22-99, FULLER PETROLEUM'S KNIGHT NO. 1, UNIT A, SECTION 5, T30N, R13W, SAN JUAN CO., NM". This document, which was submitted on behalf of Fuller Petroleum (FP) contains FP's analysis of ground water contamination data at the Knight #1 well site.

Based upon the information provided in the above referenced document, the OCD requires no further action of FP at this time. However, please be advised that the OCD will require additional site action if future site investigations or data show that FP's activities have resulted in contamination which poses a threat to ground water, surface water, human health or the environment.

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

Sincerely,

William C. Olson
Hydrologist
Environmental Bureau

xc: Denny Foust, OCD Aztec District Office
Sandra D. Miller, El Paso Field Services

dugan production corp.

RECEIVED

SEP 17 1999

September 15, 1999

Mr. Bill Olson, Hydrologist
Environmental Bureau, NMOCD
2040 South Pacheco Street
Santa Fe, NM 87505

Re: NMOCD letter dated 7-22-99
Fuller Petroleum's Knight No. 1
Unit A, Section 5, T30N, R13W
San Juan Co., NM

Dear Mr. Olson,

We are writing on behalf of Fuller Petroleum (Fuller) and herein submit our proposed work plan for the subject well.

We have met with representatives of El Paso Field Services (EPFS) and have jointly reviewed the data collected to date regarding groundwater contamination at Fuller Petroleum's Knight No. 1. As a result of these efforts, EPFS has revised the maps initially submitted with their 1997 annual report (submitted to the NMOCD on 8-13-99) and has indicated they are considering some additional investigation to the east in order to confirm our contention that the contamination detected to date appears to be confined to the location and is not creating any threat to the environment or human health.

Fuller Petroleum proposes, and it is our understanding that EPFS is in agreement, to continue monitoring the four wells currently installed plus any additional wells that EPFS might install. To date, there has been no evidence to indicate that there is a contaminant source other than the dehydrator pit. MW No. 2 is located approximately 7 feet southeast and down gradient from the fiberglass tank used by Fuller to store fluids from the separator. This tank was installed at the original pit location approximately 12 years ago and does have a leak detection system, which to date has shown no evidence of fluids leaking from the tank. Since monitoring at MW No. 2 began in 12/95, there has been no report of hydrocarbon odor or free product in MW No. 2 and during our site work on 2-9-99, we did not detect any hydrocarbon odor or free product in MW No. 2. The water sampled on 2-9-99 was tested for BTEX and indicated 12.0 ppb benzene, 0.5 ppb toluene, <0.5 ppb ethyl-benzene and 8.6 ppb xylene. These concentrations do not indicate that MW No. 2 is close to a contaminant source of any significance. The results of BTEX testing to date in MW No. 2 are summarized on Attachment No. 1 (Table No. 2 from Onsite's report dated 4-7-99 which was submitted to the NMOCD 4-16-99) and indicate an overall decreasing BTEX trend which suggests that insitu remediation may be occurring.

The geoprobe test results taken by EPFS are presented on Attachment No. 2 (Figure No. 5 from El Paso's revised contour maps which were submitted to the NMOCD 8-13-99). PH-1 and PH-2 are both within 75' and down gradient of Fuller's production tank and as can be seen, neither test had BTEX levels exceeding WQCC standards.

709 E. MURRAY DR. • P. O. BOX 420 • FARMINGTON, N.M. 87499-0420 • PHONE: (505) 325-1821 • FAX# (505) 327-4613

Based upon our site assessment work on 2-9-99 and review of the site assessment work to date by EPFS, we believe the primary contaminate source was the dehydrator pit and there is no evidence that an additional contaminant source exists. Geoprobe work by EPFS indicates the contamination is very localized at the well site and we believe there is minimal exposure to offsite movement of the contamination. In addition, there is good evidence that natural insitu remediation is occurring. We propose that monitoring of the existing wells be continued and should it become evident that insitu remediation ceases, or additional contamination is occurring, Fuller will work with El Paso to further address the issue of ground water contamination at the Knight No. 1 well site.

Should you have questions or need additional information, please let me know.

Sincerely,

John D. Roe

John D. Roe
Engineering Manager

JDR/tmf

cc: Denny Foust - NMOCD, Aztec
John Scherer - Draco Energy & Fuller Petroleum
Sandra Miller - El Paso Field Services

ON SITE TECHNOLOGIES, LTD.

Fuller Petroleum
Knight #1 Assessment

March 18, 1999
PROJECT NO: 4-1562

Table 2: Groundwater Quality Summary
Monitoring Well #2

Sample #	Sample Date	Sample Event	Benzene (ppb)	Toluene (ppb)	Ethyl-Benzene (ppb)	Total Xylene (ppb)
947850	12/12/95	Phase III Drilling	175	12.5	74.3	671
960321	04/09/96	Sample 4-1st Qtr.	39.2	<1	13.4	77.9
960626	07/17/96	Sample 4-2nd Qtr.	9.55	<1	2.39	3.65
960856	10/15/96	Sample 4-3rd Qtr.	49.7	<1	<1	38.4
970003	01/13/97	Sample 4-4th Qtr.	20.3	<1	<1	37.3
970333	04/22/97	Sample 4-5th Qtr.	19.4	<1	<1	29.8
970648	07/14/97	Sample 4-6th Qtr.	47.4	<1	4.64	63.6
971129	10/22/97	Sample 4-7th Qtr.	155	<1	12.6	204
980019	01/09/98	Sample 4-8th Qtr.	58.0	<1	3.85	207
980315	04/24/98	Sample 4-9th Qtr.	19.4	<1	<1	40.7
9902051-01A	**02/09/99**	**On Site Sample**	**12.0**	**0.5**	**<0.5**	**8.6**
990031	02/09/99	Split Sample	19.0	<1	<1	48.0

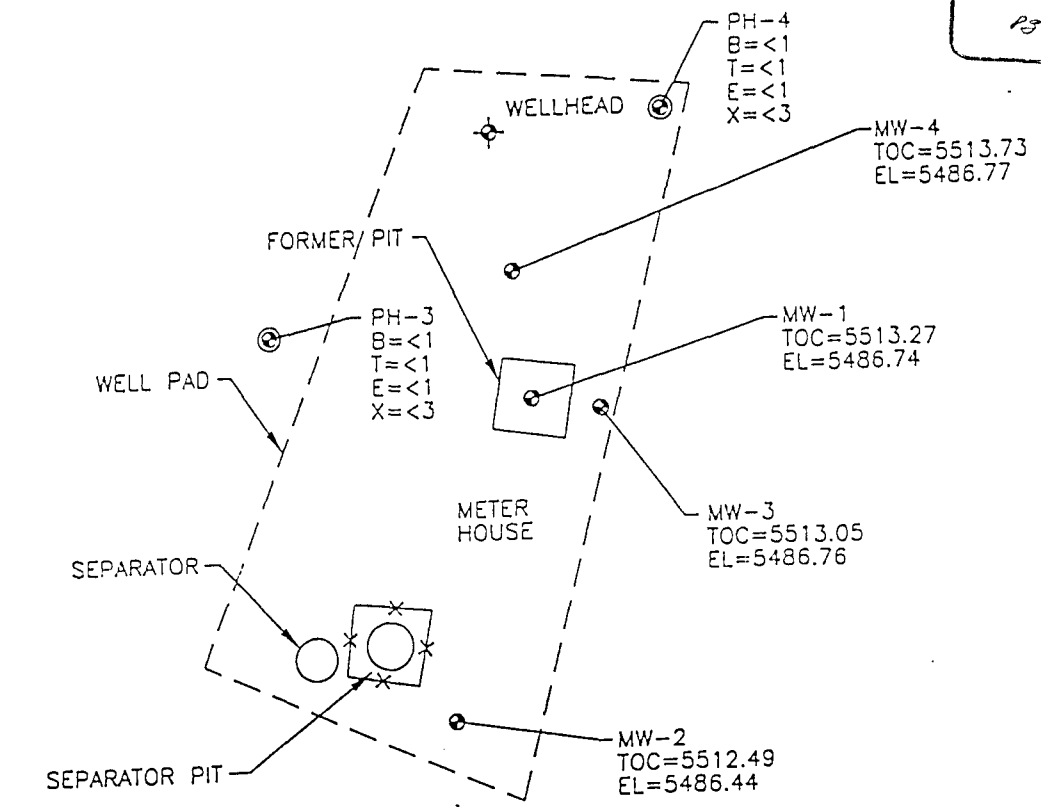
[onsite Lab] - same water sample
[EPFS Lab]

Notes Added by John Roe

Attachment No. 1 Pg 1 of 1

PO Box 2606
Farmington, NM
PHONE: 505-325-5667 FAX: 505-327-1496

Attachment No. 2 Pg 1 of 1



LEGEND

PZ-1	APPROXIMATE PIEZOMETER LOCATION AND NUMBER
MW-1	APPROXIMATE MONITORING WELL LOCATION AND NUMBER
TOC	TOP OF CASING ELEVATION
EL	GROUNDWATER ELEVATION
B	BENZENE (ug\L)
T	TOLUENE (ug\L)
E	ETHYL BENZENE (ug\L)
X	XYLENE (ug\L)

0 40
FEET

N

PHILIP SERVICES CORP

TITLE:
KNIGHT #1
METER 72556
1/13/97

DWN:	DES.:	PROJECT NO.: 17520
TMM	CI	EPFS GW PITS
CHKD: CI	APPD:	FIGURE 5
DATE: 8/13/99	REV.: 0	

COL. 17520BJ-013

EL PASO FIELD SERVICES

Certified Mail: #Z 211 324 162

August 13, 1999

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

RE: Revised and Corrected Groundwater Contour Maps for the 1997 Annual Groundwater Report, Knight #1 Site

Dear Mr. Olson:

El Paso Field Services (EPFS) hereby resubmits the revised groundwater contour maps for the 1997 Annual Groundwater Report, Knight #1 site. It has been brought to our attention that the revised groundwater contour maps have Fuller Petroleum's production equipment labeled incorrectly. The Figures show the equipment as a Dehydrator when in fact it is a Separator. Please make note of the changes and replace with the enclosed corrected Figures.

If you have any questions concerning the enclosed revised and corrected groundwater contour maps for the 1997 Annual Groundwater Report please call me at (505) 599-2124.

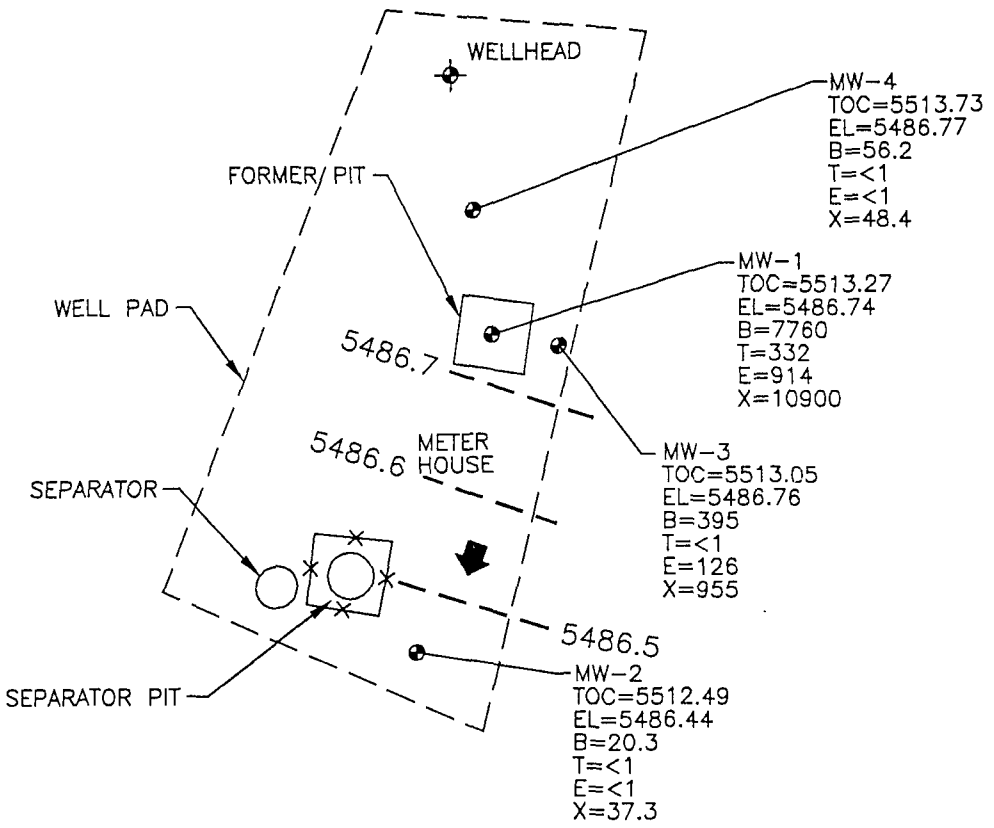
Sincerely,

Scott T. Pope

Scott T. Pope P.G.
Senior Environmental Scientist

xc: Mr. Denny Foust, NMOCD, Aztec, w / enclosures; **Certified Mail # Z 211 324 163**
Mr. John Roe, Fuller Petroleum C/O Dugan Production, Corp., w / enclosures

El Paso Field Services Company 614 Reilly Avenue Farmington, New Mexico 87401 Phone (505) 325-2841 Fax (505) 599-2235



LEGEND

MW-1	APPROXIMATE MONITORING WELL LOCATION AND NUMBER
TOC	TOP OF CASING ELEVATION
EL	GROUNDWATER ELEVATION
B	BENZENE (ug\L)
T	TOLUENE (ug\L)
E	ETHYL BENZENE (ug\L)
X	XYLENE (ug\L)
	APPROXIMATE GROUNDWATER GRADIENT
5487.50	GROUNDWATER POTENTIOMETRIC SURFACE

0 40
FEET

N

PHILIP SERVICES CORP

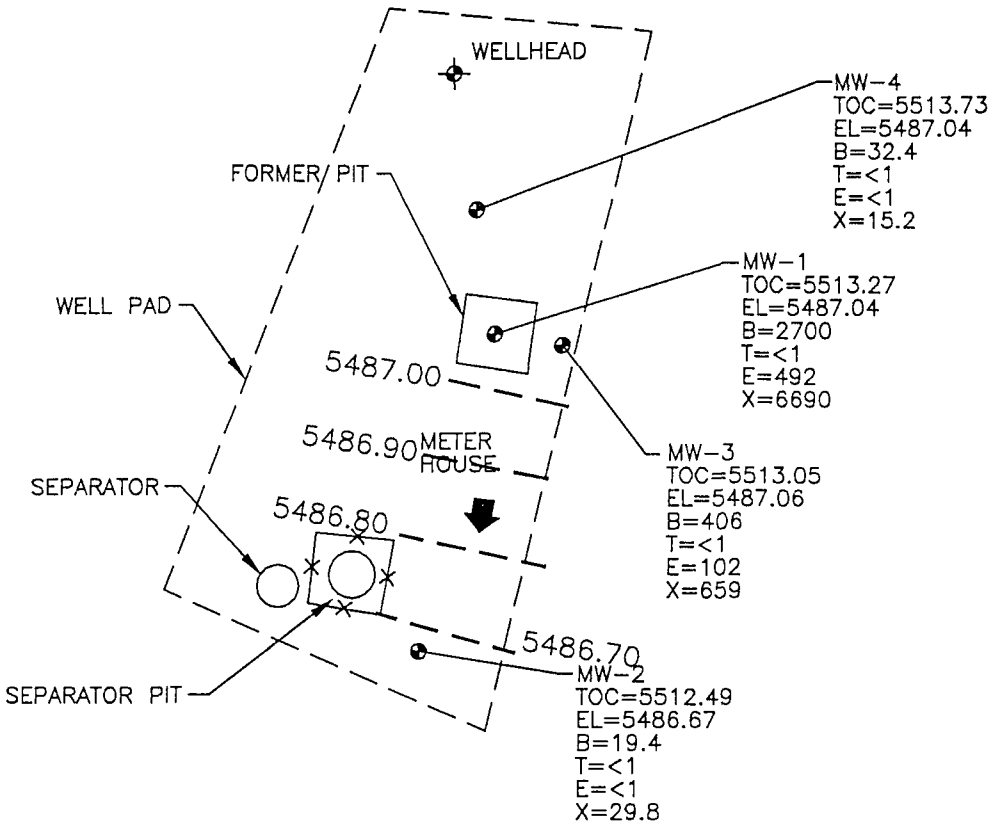
TITLE:
KNIGHT #1
METER 72556
1/13/97

DWN:	DES.:
TMM	CI
CHKD:	APPD:
CI	
DATE:	REV.:
8/13/99	1

PROJECT NO.: 17520
EPFS GW PITS

FIGURE 1

COL 17520BJ-009



LEGEND

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B	BENZENE (ug\L)
T	TOLUENE (ug\L)
E	ETHYL BENZENE (ug\L)
X	XYLENE (ug\L)
	APPROXIMATE GROUNDWATER GRADIENT
5487.50	GROUNDWATER POTENTIOMETRIC SURFACE

0 40
FEET

N

PHILIP SERVICES CORP

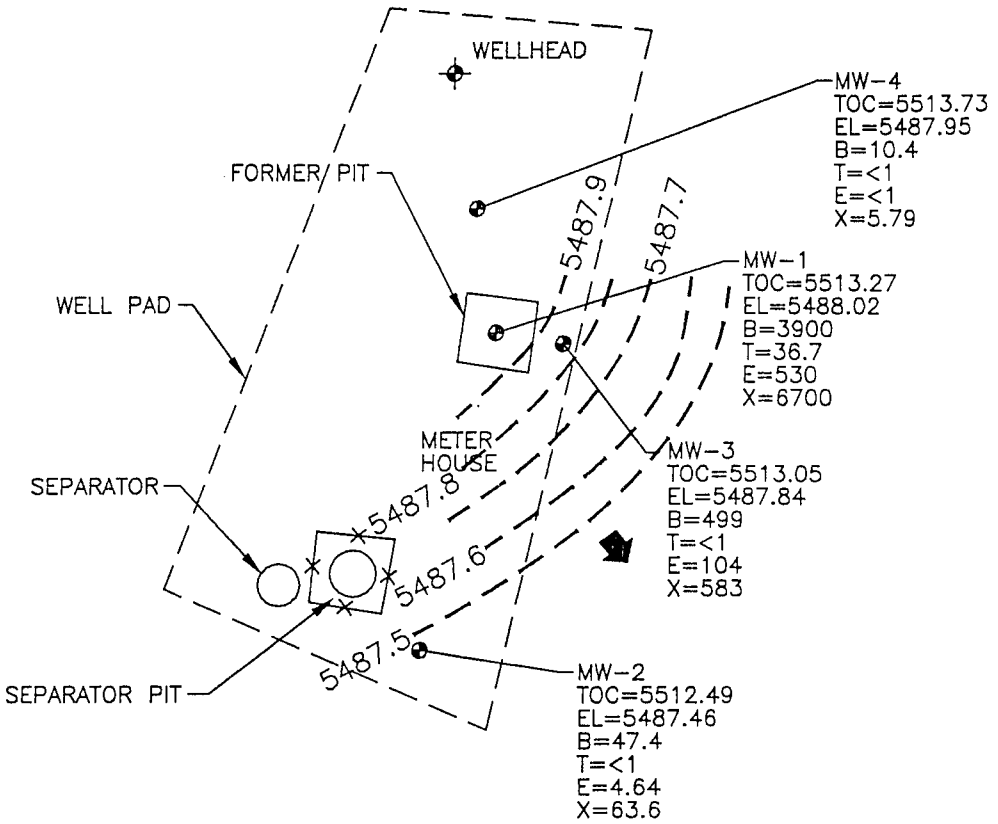
TITLE:
KNIGHT #1
METER 72556
4/22/97

DWN:	DES.:
TMM	CI
CHKD:	APPD:
CI	
DATE:	REV.:
8/13/99	1

PROJECT NO.: 17520
EPFS GW PITS

FIGURE 2

COL 17520BJ-010



LEGEND

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E	ETHYL BENZENE (ug\L)
X	XYLENE (ug\L)
	APPROXIMATE GROUNDWATER GRADIENT
5487.50	GROUNDWATER POTENTIOMETRIC SURFACE

0 40
FEET

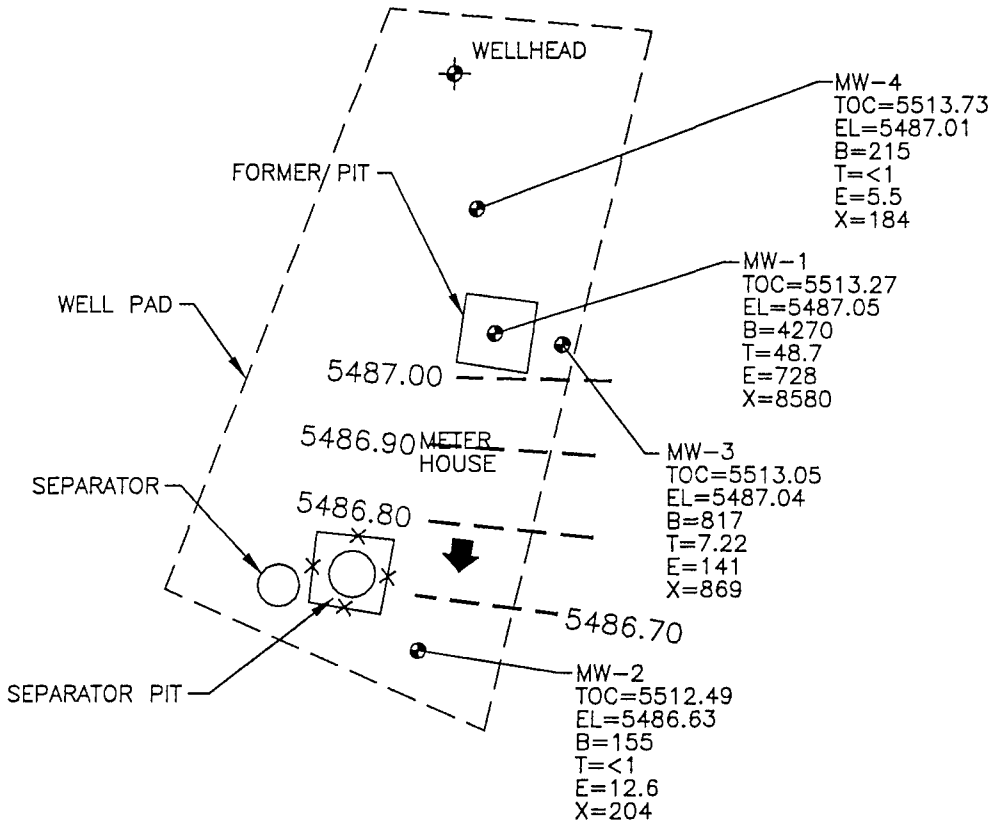
N

PHILIP SERVICES CORP.

TITLE:
KNIGHT #1
METER 72556
7/14/97

DWN:	DES.:	PROJECT NO.: 17520
TMM	CI	EPFS GW PITS
CHKD: CI	APPD:	
DATE: 8/13/99	REV.: 1	FIGURE 3

COL 17520BJ-011



LEGEND

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TOC	TOP OF CASING ELEVATION
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B	BENZENE (ug\L)
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E	ETHYL BENZENE (ug\L)
X	XYLENE (ug\L)
	APPROXIMATE GROUNDWATER GRADIENT
5487.50	GROUNDWATER POTENTIOMETRIC SURFACE

0 40
FEET
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PHILIP SERVICES CORP

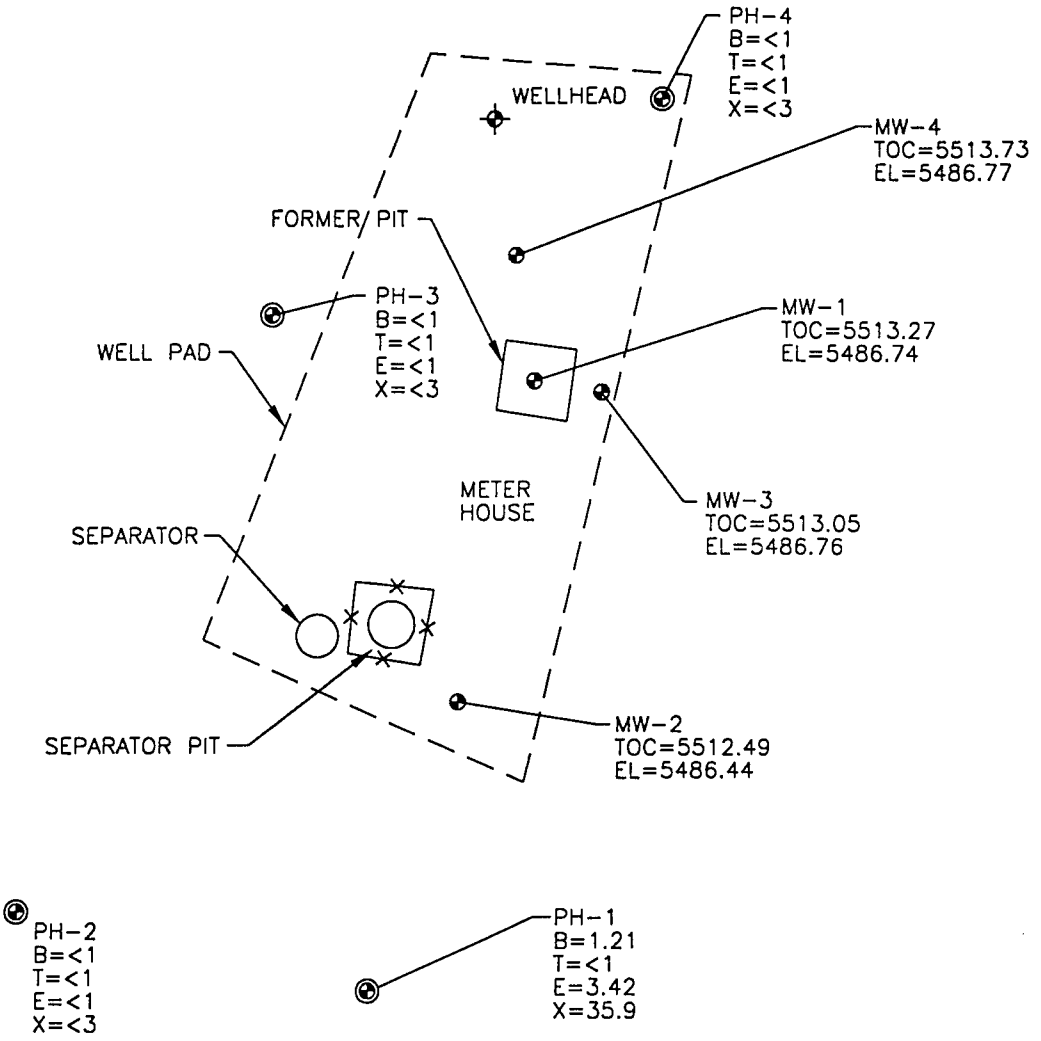
TITLE:
KNIGHT #1
METER 72556
10/22/97

DWN:	DES.:
TMM	CI
CHKD:	APPD:
CI	
DATE:	REV.:
8/13/99	1

PROJECT NO.: 17520
EPFS GW PITS

FIGURE 4

COL 17520BJ-012



LEGEND

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MW-1	APPROXIMATE MONITORING WELL LOCATION AND NUMBER
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0 40
FEET

N

PHILIP SERVICES CORP

TITLE:
KNIGHT #1
METER 72556
1/13/97

DWN:	DES.:	PROJECT NO.: 17520
TMM	CI	EPFS GW PITS
CHKD: CI	APPD:	
DATE: 8/13/99	REV.: 0	FIGURE 5

COL. 17520BJ-013

dugan production corp.

July 20, 1999

FAX & MAILED
FAX No.: 505-827-8177

Mr. Bill Olson, Hydrologist
Environmental Bureau, NMOCD
2040 South Pacheco
Santa Fe, NM 87505

Re: NMOCD letter dated 6-18-99
Fuller Petroleum's Knight No. 1
Unit A, Section 5, T30N, R13W
San Juan Co., NM

Dear Mr. Olson,

We are writing on behalf of Fuller Petroleum to request a 60 day extension to the 7-23-99 date for submitting a work plan as directed in the subject letter.

In our letter of 4-16-99, we presented information that supports our contention that the primary source of groundwater contamination at this location is the dehydrator pit currently being monitored by El Paso Field Services (EPFS). In addition, there is no information to suggest that the separator pit is contributing to the groundwater contamination, and geoprobe testing did confirm that the contamination was very localized.

We have met with representatives of EPFS to discuss this matter and to resolve some questions we had about the site assessment work performed by EPFS. As a result, EPFS is reviewing their data and has indicated they will be revising their site assessment reports previously submitted for the Knight No. 1 well. To date, both EPFS and Fuller Petroleum have expressed a willingness to work together to resolve this groundwater contamination issue. EPFS has four monitoring wells and to date the monitor well adjacent to Fuller's production pit has exhibited an overall decreasing trend in Benzene concentrations with our sample taken on 2-9-99 testing 12.0 ppb Benzene, 0.5 ppb Toluene, <0.5 ppb Ethyl-benzene and 8.6 ppb total Xylene. These concentrations do not suggest a major contamination problem.

The additional time to submit a work plan will allow time for EPFS to complete their data review and will allow Fuller and EPFS to better coordinate site cleanup efforts.

Sincerely,

John D. Roe

John D. Roe
Engineering Manager

JDR/tmf

cc: Denny Foust - NMOCD, Aztec
John Scherer - Fuller Petroleum
Sandra Miller - El Paso Field Services

709 E. MURRAY DR. • P. O. BOX 420 • FARMINGTON, N.M. 87499-0420 • PHONE: (505) 325-1821 • FAX# (505) 327-4613

dugan production corp.

July 20, 1999

FAX & MAILED
FAX No.: 505-827-8177

Mr. Bill Olson, Hydrologist
Environmental Bureau, NMOCD
2040 South Pacheco
Santa Fe, NM 87505

Re: NMOCD letter dated 6-18-99
Fuller Petroleum's Knight No. 1
Unit A, Section 5, T30N, R13W
San Juan Co., NM

Dear Mr. Olson,

We are writing on behalf of Fuller Petroleum to request a 60 day extension to the 7-23-99 date for submitting a work plan as directed in the subject letter.

In our letter of 4-16-99, we presented information that supports our contention that the primary source of groundwater contamination at this location is the dehydrator pit currently being monitored by El Paso Field Services (EPFS). In addition, there is no information to suggest that the separator pit is contributing to the groundwater contamination, and geoprobe testing did confirm that the contamination was very localized.

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Sincerely,

John D. Roe

John D. Roe
Engineering Manager

JDR/tmf

cc: Denny Foust - NMOCD, Aztec
John Scherer - Fuller Petroleum
Sandra Miller - El Paso Field Services

STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

June 18, 1999

CERTIFIED MAIL
RETURN RECEIPT NO. Z-274-520-676

Mr. John D. Roe
Dugan Production Corp.
P.O. Box 420
Farmington, New Mexico 87499-0420

RE: KNIGHT #1 WELL SITE
UNIT A, SECTION 05, TOWNSHIP 30 NORTH, RANGE 13 WEST

Dear Mr. Roe:

The New Mexico Oil Conservation Division (OCD) has reviewed Dugan Production Corporation's (Dugan) April 16, 1999 correspondence titled "NMOCD LETTER DATED 1-21-99, FULLER PETROLEUM'S KNIGHT NO. 1, UNIT A, SECTION 5, T30N, R13W, SAN JUAN COUNTY, NM". This document, which was submitted on behalf of Fuller Petroleum (FP), contains an assessment of the potential that FP's separator pit has contributed to ground water contamination at the site.

The OCD agrees with FP's conclusion that El Paso Field Services (EPFS) dehydration pit is a source of soil and ground water contamination at the site. The document also concludes that FP's former unlined separator pit has not contributed to the ground water contamination. However, the document contains no specific information on the extent of contamination in the soil at the separator pit. Without this information the OCD cannot rule out the separator pit as an additional source of contamination at the site. Therefore, the OCD requires that FP submit a work plan for investigating and remediating, if necessary, soil contamination related to FP's separator pit. The work plan shall be submitted to the OCD Santa Fe Office by July 23, 1999 with a copy provided to the OCD Aztec District Office.

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

Sincerely,

William C. Olson
Hydrologist
Environmental Bureau

xc: Denny Foust, OCD Aztec District Office
Sandra D. Miller, El Paso Field Services

Z 274 520 676

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Postmark or Date	

PS Form **3800**, April 1995

dp

dugan production corp.

APR 19 1999

April 16, 1999

FAXED & MAILED - FAX # 505-827-8177

Mr. Bill Olson
Environmental Bureau, NMOCD
2040 South Pacheco
Santa Fe, NM 87505

Re: NMOCD letter dated 1-21-99
Fuller Petroleum's Knight No. 1
Unit A, Section 5, T30N, R13W
San Juan County, NM

Dear Mr. Olson:

We are writing on behalf of Fuller Petroleum to report the results of Fuller's site work and findings regarding the ground water contamination initially reported by El Paso Field Services (EPFS), in their 3/98 annual report, at the location of Fuller's Knight No. 1. We appreciate your extending this reporting date from 4/1/99 to 4/16/99.

Our efforts to date include a detailed review of EPFS's 3/98 annual report and what we believe to be a complete file (provided by EPFS) of El Paso's site work through 4/98. In addition, we directed Onsite Technologies, LTD to independently establish ground water gradients at the Knight No. 1 well site using the four monitor wells developed by EPFS. We coordinated Onsite's work with EPFS and on February 9, 1999 did a very careful assessment of the ground water gradients and collected a fluid sample from Monitor Well No. 2 for analysis. Onsite's report is attached for your review and file. Based upon our efforts to date, we offer the following findings and conclusions:

1. The Knight No. 1 well site is very small and the four monitor wells installed by EPFS are fairly close together. MW No. 1 (center of the former dehydrator pit) is only ±67' from MW No. 2 (located approximately 10' southeast of Fuller's production pit berm). When the close spacing of the monitor wells is considered, great care must be taken in determining gradients.

2. On 2-9-99, the groundwater level in MW No. 2 was 0.29 ft. (approximately 3½ inches) lower than in MW No. 1 (Onsite Table No. 1). A gradient of ±0.005 ft/ft with a direction of south 25° east was determined. Compared to the gradient (±0.10 ft/ft) and direction (approximately east 20° south) presented in El Paso's 3/98 annual report (Figures No. 1 thru 4), there is a significant difference in the gradient and direction previously presented. Using the data from Onsite's investigation, MW No. 2 is pretty much directly down gradient and only ±67' from MW No. 1 (Onsite Figure No. 1).

709 E. MURRAY DR. • P. O. BOX 420 • FARMINGTON, N.M. 87499-0420 • PHONE: (505) 325-1821 • FAX# (505) 327-4613

3. We believe the 1/30/95 excavation of the dehydrator pit by El Paso did not completely remove the hydrocarbon contamination. A total of 60 cubic yards of material was removed to a depth of 12' and the soil sample from 12' had a PID reading of 675 ppm and a strong hydrocarbon odor was noted. Laboratory analysis of this sample indicated a TPH of 7,140 ppm and BTEX of 1,241 ppm. Water sampling in MW No. 1 has consistently indicated either a strong hydrocarbon odor or free product since completion. On 2/9/99, Onsite measured 0.25 inches of free product, and as much as 9" of free product has been reported during the quarterly testing of MW No. 1.

4. We do not believe there is sufficient data to indicate that there is a contaminant source other than the dehydrator pit. MW No. 2 is located approximately 10' southeast and down gradient from the fiberglass tank used by Fuller to store fluids from the separator. To date there has been no report of hydrocarbon odor or free product from the water sampling in MW No. 2 and on 2/9/99 Onsite did not detect any hydrocarbon odor or free product in MW No. 2. El Paso correctly reports that the benzene levels in MW No. 2 have exceeded the standard of 10 ppb since testing was initiated, however the benzene concentrations do not indicate a close proximity to a contaminant source and the other BTEX components have typically been significantly below the standards, again confirming the contaminant to not be real close. The results of BTEX testing to date in MW No. 2 are summarized in Onsite's report (Table No. 2) and indicate an overall decreasing trend which suggests that insitu remediation may be occurring.

5. If Fuller's separator fluid tank site was providing a contaminate source, we would expect the BTEX levels in MW No. 2 to be higher and more similar to the levels presented by EPFS for MW No. 3 and 4 which are located relative to the dehydrator pit as MW No. 2 is located relative to the production tank. On 2/9/99, MW No. 3 had no hydrocarbon odor or free product and MW No. 4 did have a sheen of free product.

Based upon Onsite's assessment work on 2/9/99 and our review of the site assessment work to date by EPFS, we believe there is good evidence that natural insitu remediation is occurring. The primary contaminate source was the dehydrator pit which was partially remediated with the initial excavation. There is no evidence that there is an additional contaminant source at this site. Geoprobe work by EPFS indicates the contamination is very localized at the well site and we believe there is minimal exposure to offsite movement of the contamination. We propose that monitoring of the existing wells be continued on a frequency less than quarterly and should it become evident that insitu remediation ceases, or additional contamination is occurring, Fuller will work closely and openly with El Paso to address the issue of ground water contamination at the Knight No. 1 well site.

Should you have questions or need additional information, please let me know.

Sincerely,

John D. Roe

John D. Roe
Engineering Manager

JDR/tmf

attachs.

cc: Denny Foust - NMOCD, Aztec
John Scherer - Draco Energy and Fuller Petroleum
Scott Pope - El Paso Field Services
Myke Lane - Onsite Technologies, Ltd.

ON SITE
TECHNOLOGIES, LTD.

April 7, 1999

Fuller Petroleum
c/o Dugan Production Corporation
PO Box 420
Farmington, NM 87499-0420

Attn: Mr. John d. Roe

RE: Findings of Evaluation & Assessment
Fuller Petroleum Knight #1
Unit A, Sec. 5, T30N, R13W, NMPM
San Juan County, NM

Project No: 4-1562

This correspondence has been prepared by ON SITE TECHNOLOGIES LIMITED PARTNERSHIP to assist Fuller Petroleum by addressing the NMOCD (July, 1998) request to conduct a site investigation at the referenced gas well location.

BACKGROUND:
The NMOCD request was based on the recommendations made by El Paso Field Services (EPFS) in their 1997 Annual Groundwater Report for a former dehydrator pit at the Knight #1 location. A workplan, dated September 21, 1998, was submitted to NMOCD by Dugan Production to address the NMOCD request for site investigation. The workplan consisted of review of the EPFS assessment data, independent establishment of the site groundwater gradient, limited groundwater sampling using the EPFS monitoring wells (MWs), and summary of the findings. EPFS has assisted Fuller Petroleum by providing copies of their pit assessment, remediation and groundwater sampling completed to date.

REVIEW:
The following was noted based on the EPFS information provided to Fuller Petroleum:
- The 1995 excavation of the dehy pit encountered free product. The excavation removed approximately 60 cubic yards of contaminated soil.
- Review of the annual water data and discussions with EPFS personnel indicates possible confusion between MW#3 and MW#4 during some of the previous groundwater monitoring and sampling efforts.
- The full extent of remaining soil contamination associated with the dehy pit is not known. No drilling to delineate the extent of soil contamination south of the dehy pit (i.e. between MW1 and MW2) was completed by EPFS during the follow-up Geoprobe® assessment in 1997.

GROUNDWATER MEASUREMENT, SAMPLING & TESTING:
On February 9, 1999, Michael Lane and Larry Trujillo of ON SITE met Dennis Byrd of EPFS at the Knight #1 location. On Site performed the following:
- A level survey to establish a relative top of casing elevation for all four MWs using the bottom flange of the gas well as a temporary bench mark (i.e. relative elevation: 100.00)
- Measure depth to groundwater and checked for free product. MW1 has approximately 0.25 inches of free product. MW4 had a sheen and strong odor.

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- At Fuller's request, MW#2 was purged for sampling. Following purging, a water sample was collected and split with EPFS for lab analysis. *Current NMOCD and EPA protocol for sample collection, preservation and lab transport were followed.*

Using the water elevations measured in February, 1999, a potentiometric map of the groundwater was developed. See Table 1 for water level measurements and the attached map.

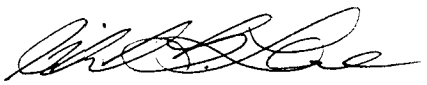
The water sample was submitted to the ON SITE Laboratory and the split to the EPFS Farmington Laboratory. The samples were analyzed for BTEX per EPA Method 8020/8021B. Copies of the ON SITE and EPFS lab results are attached. Copies of the Lab QA/QC documentation are available upon request. Table 2 summarizes the results of the water sampling from MW#2 including the earlier EPFS data.

CONCLUSIONS:
The following conclusions are based on the data review, site assessment and ground water sampling preformed by ON SITE on behalf of Fuller Petroleum.

- A gradient of 0.005 ft/ft with a direction of south 25°east was calculated based on the February, 1999 measurements. This gradient is approximately 1/100 of the gradients and 55° south of the groundwater flow direction reported by EPFS. The February potentiometric map is consistent with the regional topography (i.e. drainage from Barker Arroyo to the north-northwest) and typical of reported subsurface soils.
- Based on the February, 1999, measurements, MW#2 is downgradient from both the EPFS and Fuller pits.
- The concentrations of dissolved phase hydrocarbons (i.e. BTEX compounds) measured in February 1999 are consistent with the EPFS April 1998, sampling and indicate a steady decrease (refer to Chart 1).
- Delineation of the extent of soil contamination from the former dehy pit is incomplete, and data collected to date does not support the speculation that the Fuller production pit is contributing to ground water contamination.
- Differences between the analytical results from the EPFS and ON SITE Labs are within sampling and analytical margin of error for the constituents of concern.

CLOSURE:
Continues cooperation between Fuller Petroleum and EPFS is needed to avoid duplication of efforts and to ensure compliance by both parties with the NMOCD requirements. If additional information is needed or there are any questions, please contact us at (505) 325-5667. We thank you for your consideration and the opportunity to have been of services.

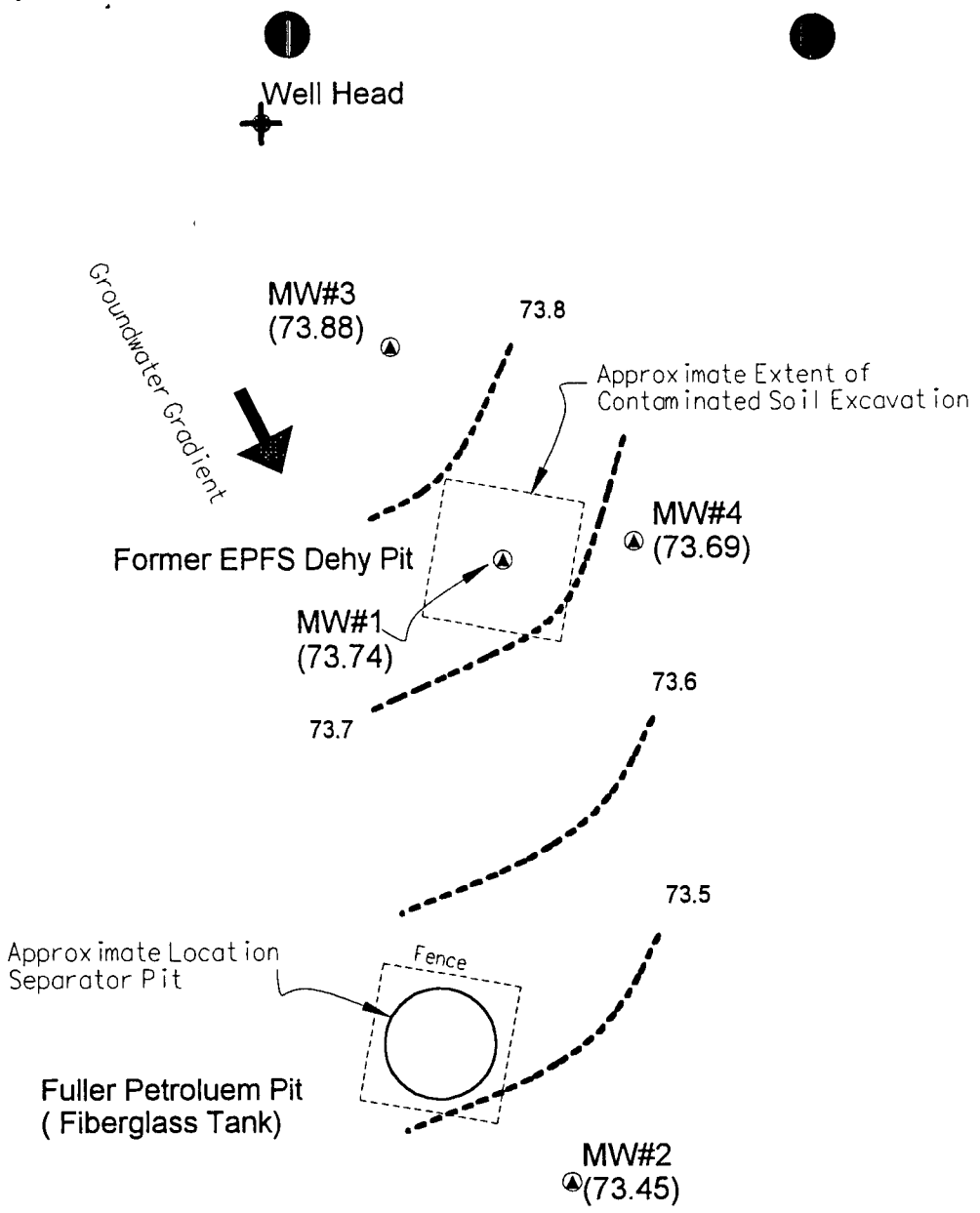
Respectfully submitted,
ON SITE TECHNOLOGIES , LTD.



Michael K. Lane, PE
Geological Engineer

Encl:

- Potentiometric Map
- Table 1: Water Level Measurements (2/9/99)
- Table 2: Groundwater Quality Summary-MW#2
- Chart 1
- ON SITE Analytical Report: Lab ID-9902051-01A
- EPFS Analytical Report: Lab ID-990031



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Water Levels Measured on 2/9/99 by On Site Technologies Ltd.
Reference: Based on EPFS Site Map, Project No: 17520 (1/20/98)

SCALE: 1" = 20'
Ground Water Surface Contour Interval: 0.1 ft.

Fuller Petroleum: Knight #1 Unit A, Sec. 5, T30N, R13W, NMPM San Juan County, NM	Potentiometric Map (Measured 2/9/99)	ON SITE TECHNOLOGIES, LTD. P.O. BOX 2606, FARMINGTON, NM 87499 (505) 325-5667
PROJECT: Pit Assessment	DRWN: 3/99	
PROJECT NO: 4-1562	DRWN BY: MKL	
FIGURE: 1	REVISED:	

File: 41527F1

ON SITE TECHNOLOGIES, LTD.

Fuller Petroleum
Knight #1 Assessment

March 18, 1999
PROJECT No: 4-1562

Table 1: Water Level Measurements
February 9, 1999 Sampling

Well Number	Top of Casing elevation (ft)	Total Depth of Well (ft - BGS)*	Well Type	Screen Interval (ft-BGS) *	Sample Date	Depth to Groundwater (ft-BTOC)*	Relative Groundwater Elevation (ft)
MW #1	100.42	30.5	4" PVC	15.5 to 30.5	02/09/99	26.68	73.74
MW #2	99.66	34.4	4" PVC	19.0 to 34.0	02/09/99	26.21	73.45
MW #3	100.88	35.0	4" PVC	19.6 to 34.6	02/09/99	27.00	73.88
MW #4	100.21	34.3	4" PVC	18.9 to 33.9	02/09/99	26.52	73.69

BGS - approximate measurements taken as Below Ground Surface
BTOC - Below Top of Casing
Total Depth and Screen Interval based on EPFS well logs and records provided to Fuller Petroleum & On Site Technologies

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ON SITE TECHNOLOGIES, LTD.

Fuller Petroleum
Knight #1 Assessment

March 18, 1999
PROJECT NO: 4-1562

Table 2: Groundwater Quality Summary
Monitoring Well #2

Sample #	Sample Date	Sample Event	Benzene (ppb)	Toluene (ppb)	Ethyl-Benzene (ppb)	Total Xylene (ppb)
947850	12/12/95	Phase III Drilling	175	12.5	74.3	671
960321	04/09/96	Sample 4-1st Qtr.	39.2	<1	13.4	77.9
960626	07/17/96	Sample 4-2nd Qtr.	9.55	<1	2.39	3.65
960856	10/15/96	Sample 4-3rd Qtr.	49.7	<1	<1	38.4
970003	01/13/97	Sample 4-4th Qtr.	20.3	<1	<1	37.3
970333	04/22/97	Sample 4-5th Qtr.	19.4	<1	<1	29.8
970648	07/14/97	Sample 4-6th Qtr.	47.4	<1	4.64	63.6
971129	10/22/97	Sample 4-7th Qtr.	155	<1	12.6	204
980019	01/09/98	Sample 4-8th Qtr.	58.0	<1	3.85	207
980315	04/24/98	Sample 4-9th Qtr.	19.4	<1	<1	40.7
9902051-01A	**02/09/99**	**On Site Sample**	**12.0**	**0.5**	**<0.5**	**8.6**
990031	02/09/99	Split Sample	19.0	<1	<1	48.0

Onsite Lab, EPES Lab - same water sample

Notes Added by John Roe

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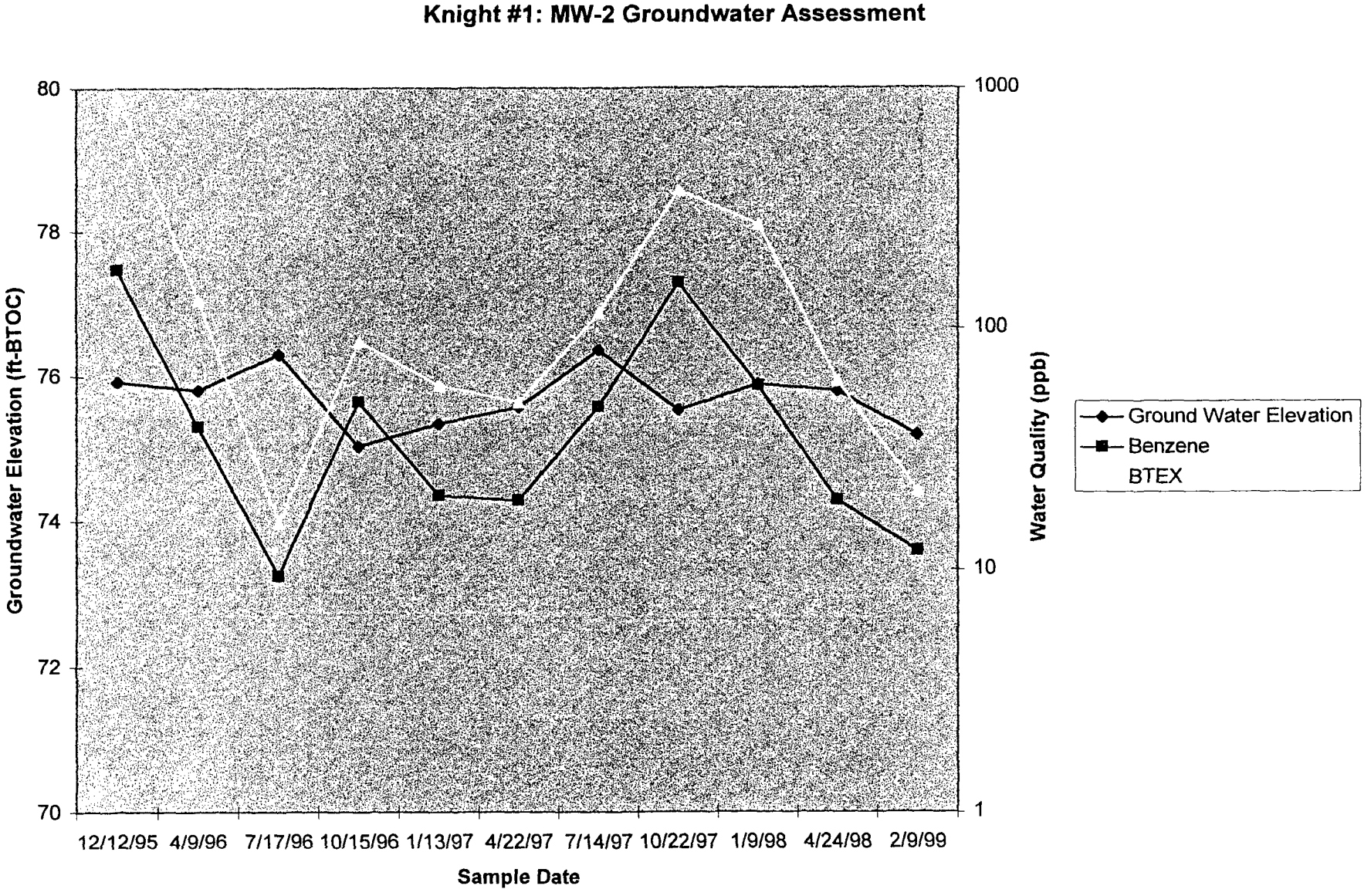
Knight #1: MW-2 Groundwater Assessment
Groundwater Elevation (ft-BTOC)
80
78
76
74
72
70
Water Quality (ppb)
1000
100
10
1
12/12/95
4/9/96
7/17/96
10/15/96
1/13/97
4/22/97
7/14/97
10/22/97
1/9/98
4/24/98
2/9/99
Sample Date
Ground Water Elevation
Benzene
BTEX

OFF: (505) 325-5667

ON SITE TECHNOLOGIES, LTD.

LAB: (505) 325-1556

ANALYTICAL REPORT

Date: *23-Feb-99*

Client:	On Site Technologies, Limited Partnership	**Client Sample Info:**	Knight #1
Work Order:	9902051	**Client Sample ID:**	MW #2
Lab ID:	9902051-01A **Matrix:** AQUEOUS	**Collection Date:**	2/9/99 2:25:00 PM
Project:	4-1562; Knight #1	**COC Record:**	5740

Parameter	Result	PQL	Qual	Units	DF	Date Analyzed
BTEX		**SW8021B**				Analyst: **HR**
Benzene	12	0.5		µg/L	1	2/15/99
Toluene	0.5	0.5		µg/L	1	2/15/99
Ethylbenzene	ND	0.5		µg/L	1	2/15/99
m,p-Xylene	7.5	1		µg/L	1	2/15/99
o-Xylene	1.1	0.5		µg/L	1	2/15/99

SAMPLE SPLIT W/ EPA ON 2/9/99.

Qualifiers:

PQL - Practical Quantitation Limit

ND - Not Detected at Practical Quantitation Limit

J - Analyte detected below Practical Quantitation Limit

B - Analyte detected in the associated Method Blank

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

E - Value above quantitation range

Surr: - Surrogate

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EL PASO FIELD SERVICES

FIELD SERVICES LABORATORY
ANALYTICAL REPORT
PIT CLOSURE PROJECT

SAMPLE IDENTIFICATION

	Field ID	Lab ID
SAMPLE NUMBER:	N/A	990031
MTR CODE | SITE NAME:	72556	Knight #1
SAMPLE DATE | TIME (Hrs):	2/9/99	1425
PROJECT:	OnSite Tech. Sample Split	
ATE OF BTEX EXT. | ANAL.:	NA	2/15/99
TYPE | DESCRIPTION:	MW-2	Water

Field Remarks: ______

RESULTS

PARAMETER	RESULT	UNITS	QUALIFIERS			
			DF	Q		
BENZENE	19.0	PPB	1			
TOLUENE	<1	PPB	1			
ETHYL BENZENE	<1	PPB	1			
TOTAL XYLENES	48.0	PPB	1			
TOTAL BTEX	67	PPB				

–BTEX is by EPA Method 8020–

The Surrogate Recovery was at 83.6 for this sample All QA/QC was acceptable.
DF = Dilution Factor Used

Narrative: SAMPLE SPLIT w/ On Site on 2/9/99

Approved By: John Lattler Date: 2-17-99

990031BTEXMonitorWel,2/17/99

dugan production corp.

March 24, 1999

Mr. Bill Olson
Environmental Bureau, NMOCD
2040 South Pacheco
Santa Fe, NM 87505

Re: Fuller Petroleum's Knight No. 1
Unit A, Section 5, T30N, R13W
San Juan County, NM

Dear Mr. Olson,

I'm writing to confirm our phone conversation during which you authorized an extension to 4-16-99 for Fuller Petroleum to provide a report of their investigations at the Knight No. 1 well site. We have completed the work outlined in our 9-21-98 work plan.

Thank you for your extension.

Sincerely,

John Roe

John D. Roe
Engineering Manager

JDR/tmf

xc: John Scherer, Fuller Petroleum
Denny Foust, NMOCD - Aztec

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dugan production corp.

September 21, 1998

Mr. Bill Olson
Environmental Bureau, NMOCD
2040 South Pacheco
Santa Fe, NM 87505

Re: NMOCD letter dated 7-9-98
Fuller Petroleum's Knight No. 1
Unit A, Section 5, T30N, R13W
San Juan County, NM

Dear Mr. Olson:

We are writing on behalf of Fuller Petroleum in response to the subject letter which directed Fuller to submit a site investigation work plan addressing a groundwater contamination issue raised by El Paso Field Services (EPFS).

We have reviewed El Paso's annual report for the Knight No. 1 well site and do not believe the data collected by EPFS supports their conclusions. There are inconsistencies in the data, particularly for the last two quarters and we believe the gradients presented may be in error.

To address the NMOCD's concerns, we respectfully submit the following work plan:

A. Obtain and review all site investigation data collected to date by EPFS, particularly excavation work.
B. Obtain permission from EPFS to use their existing monitoring wells at the Knight No. 1 well site.
C. Using an environmental consultant selected by Fuller, independently establish ground water gradients at the Knight No. 1 well site plus collect and analyze ground water samples (which will provide a sampling that is ±1 year subsequent to EPFS' last test). We have discussed this issue with Blagg Engineering, Envirotech, On Site Technologies and Philip Environmental. One of these companies will be selected to perform our proposed site work.
D. Report findings to NMOCD along with a revised work plan to be based upon our findings.

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Fuller will make the necessary arrangements, pay all costs incurred with the above work plan and will attempt to coordinate our work with that of EPFS. We are willing to commence this work upon receiving NMOCD approval and will attempt to complete as quickly as is reasonably practical.

Should you have any questions or need additional information, please let me know.

Sincerely,

John D Roe

John D. Roe
Engineering Manager

JDR/tmf

cc: Mr. Denny Foust-NMOCD, Aztec
Mr. John Scherer, Draco Energy & Fuller Petroleum

dugan production corp.

August 25, 1998

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

Re: NMOCD letter 7-9-98
Fuller Petroleum's Knight #1
Unit A, Section 5, T-30N, R-13W

Dear Mr. Olson:

I am writing to follow up our phone conversation during which I requested and you approved an extension from 8-28-98 to 9-25-98 for Fuller Petroleum to submit a site investigation work plan to the OCD as directed in the captioned letter.

Dugan Production Corp. is reviewing this matter on behalf of Fuller Petroleum and the additional time will better allow us to evaluate the information reported by El Paso Field Services. Thank you for extending the work plan due date.

Sincerely,

John D. Roe

John D. Roe
Engineering Manager

JDR/tmf

cc: Mr. John Scherer, Fuller Petroleum
Mr. Denny Foust, NMOCD - Aztec

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STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION
2040 S. PACHECO
SANTA FE, NEW MEXICO 87505
(505) 827-7131

July 9, 1998

CERTIFIED MAIL
RETURN RECEIPT NO. Z-235-437-309

Ms. Sheila Hughes
Fuller Petroleum
P.O. Box 11327
Midland, Texas 79702

RE: KNIGHT #1 WELL SITE
UNIT A, SECTION 05, TOWNSHIP 30 NORTH, RANGE 13 WEST

Dear Ms. Hughes:

Information in El Paso Field Services (EPFS) recent annual ground water monitoring report shows the presence of shallow ground at the Fuller Petroleum's (FP) Knight #1 well site located in Unit A Sec. 05, T30N, R13W, NMPM, San Juan County, New Mexico. Disposal activities at EPFS's former pit on this location have resulted in contamination of shallow ground water. However, EPFS ground water monitoring at the site has also shown that ground water contamination is present downgradient of FP's production operations.

The OCD requires that FP submit a site investigation work plan to the OCD by August 28, 1998. The work plan will be submitted to the OCD Santa Fe Office with a copy provided to the OCD Aztec District Office. The work plan will include investigation of potential sources of contamination related to FP's operations (ie. current or preexisting unlined production pits, tank battery leaks, etc).

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

Sincerely,

William C. Olson
Hydrologist
Environmental Bureau

xc: Denny Foust, OCD Aztec District Office
Sandra D. Miller, El Paso Field Services

Z 235 437 309

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PS Form **3800**, April 1995