

DATE IN 10/25/99	SUSPENSE 11/15/99	ENGINEER DC	LOGGED BY KV	TYPE DHC
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ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION
- Engineering Bureau -

2514

ADMINISTRATIVE APPLICATION COVERSHEET

THIS COVERSHEET IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS

Application Acronyms:

[NSP-Non-Standard Proration Unit] [NSL-Non-Standard Location]
[DD-Directional Drilling] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

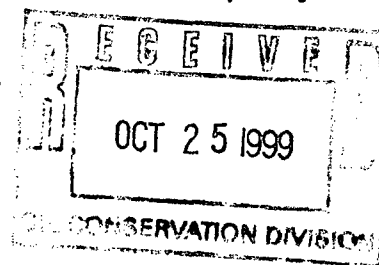
[1] TYPE OF APPLICATION - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Directional Drilling
☐ NSL ☐ NSP ☐ DD ☐ SD

Check One Only for [B] and [C]

[B] Commingling - Storage - Measurement
☒ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR



[2] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or ☐ Does Not Apply

[A] ☐ Working, Royalty or Overriding Royalty Interest Owners

[B] ☒ Offset Operators, Leaseholders or Surface Owner

[C] ☐ Application is One Which Requires Published Legal Notice

[D] ☐ Notification and/or Concurrent Approval by BLM or SLO
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ☒ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ☐ Waivers are Attached

[3] INFORMATION / DATA SUBMITTED IS COMPLETE - Statement of Understanding

I hereby certify that I, or personnel under my supervision, have read and complied with all applicable Rules and Regulations of the Oil Conservation Division. Further, I assert that the attached application for administrative approval is accurate and complete to the best of my knowledge and where applicable, verify that all interest (WI, RI, ORRI) is common. I understand that any omission of data, information or notification is cause to have the application package returned with no action taken.

Note: Statement must be completed by an individual with supervisory capacity.

226
Robin S. McCarley
Print or Type Name

Robin S. McCarley
Signature

Production Tech.
Title

10/20/99
Date



Arch Petroleum Inc.

OCT 25 1999

CONSERVATION DIVISION

October 20, 1999

Mr. Mike Stogner
State of New Mexico
Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505-6429

Re: Plains Knight Lease, Well #2
Unit N, Section 23, T24S, R37E
Lea County, New Mexico

Dear Mr. Stogner,

Arch Petroleum Inc. respectfully requests Administrative Approval for an exception to Rule 303-C to permit down-hole commingling of the Fowler (Upper Yeso), Fowler (Tubb, South), and Fowler (Abo) Zones.

Please find enclosed all pertinent data regarding this application as outlined in Rule No. 303-C.

Sincerely,

Robin S. McCarley
Production Tech.

Enclosures

Cc: State of New Mexico
Oil Conservation Division
1625 N. French Drive
Hobbs, New Mexico 88240

DISTRICT I
P.O. Box 1980, Hobbs, NM 88241-1980
DISTRICT II
811 South First St., Artesia, NM 88210-2835
DISTRICT III
1000 Rio Brazos Rd, Aztec, NM 87410-1693

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-107-A
New 3-12-96

OIL CONSERVATION DIVISION

2040 S. Pacheco
Santa Fe, New Mexico 87505-6429

APPROVAL PROCESS:

Administrative Hearing

EXISTING WELLBORE

X YES NO

APPLICATION FOR DOWNHOLE COMMINGLING

Arch Petroleum Inc. 300 North Marienfeld, Suite 600 Midland, Texas 79701
Operator Address

Plains Knight 2 N-23-24S-37E Lea
Lease Well No. Unit Ltr. - Sec - Twp - Rge County

OGRID NO. 000962 Property Code 14923 API NO. 30-025-11208 Spacing Unit Lease Types: (check 1 or more) X
Federal State (and/or) Fee

The following facts are submitted in support of downhole commingling.	Upper Zone	Intermediate Zone	Lower Zone
1. Pool Name and Pool Code	Fowler (Upper Yeso)	Fowler (Tubb, South)	Fowler (Abo)
2. Top and Bottom of Pay Section (Perforations)	5164-5590	5847-6145	6307-6396
3. Type of production (Oil or Gas)	Oil	Oil	Oil
4. Method of Production (Flowing or Artificial Lift)	Artificial Lift	Artificial Lift	Artificial Lift
5. Bottomhole Pressure Oil Zones - Artificial Lift: Gas & Oil - Flowing: All Gas Zones: Estimated Current Measured Current Estimated Or Measured Original	a. (Current) 850#	a. 1100#	a. 1200#
	b. (Original)	b.	b.
6. Oil Gravity (°API) or Gas BTU Content	39.5	34.4	40.1
7. Producing or Shut-In?	Shut-in	Shut-in	Producing
Production Marginal? (yes or no)	Yes	Yes	Yes
* If Shut-In, give date and oil/gas/water rates of last production Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data * If Producing, give date and oil/gas/water rates of recent test (within 60 days)	Date: 01/91 Rates: 3 BO, 12 BW, 26 MCF	Date: 07/99 Rates: 3 BO, 2 BW, 31 MCF	Date: Rates:
	Date: Rates:	Date: Rates:	Date: 09/15/99 Rates: 5 BO, 50 BW, 15 MCF
8. Fixed Percentage Allocation Formula -% for each zone	Oil: 27 % Gas: 37 %	Oil: 27 % Gas: 43 %	Oil: 46 % Gas: 20 %

9. If allocation formula is based upon something other than current or past production, or is based upon some other method, submit attachments with supporting data and/or explaining method and providing rate projections or other required data.

10. Are all working, overriding, and royalty interests identical in all commingled zones? X Yes No
If not, have all working, overriding, and royalty interests been notified by certified mail? Yes No
Have all offset operators been given written notice of the proposed downhole commingling? X Yes No

11. Will cross-flow occur? Yes X No If yes, are fluids compatible, will the formations not be damaged, will any cross-flowed production be recovered, and will the allocation formula be reliable. Yes No (If No, attach explanation)

12. Are all produced fluids from all commingled zones compatible with each other? X Yes No

13. Will the value of production be decreased by commingling? Yes X No (If Yes, attach explanation)

14. If this well is on, or communitized with, state or federal lands, either the Commissioner of Public Lands or the United States Bureau of Land Management has been notified in writing of this application. Yes No

15. NMOCD Reference Cases for Rule 303(D) Exceptions: ORDER NO(S). DHC-1277

16. ATTACHMENTS:

- * C-102 for each zone to be commingled showing its spacing unit and acreage dedication.
- * Production curve for each zone for at least one year. (If not available, attach explanation.)
- * For zones with no production history, estimated production rates and supporting data.
- * Data to support allocation method or formula.
- * Notification list of all offset operators.
- * Notification list of working, overriding, and royalty interests for uncommon interest cases.
- * Any additional statements, data, or documents required to support commingling.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Robin S. McCarley TITLE Production Tech. DATE 10/20/99

TYPE OR PRINT NAME Robin S. McCarley TELEPHONE NO. (915) 685-8100

ARCH PETROLEUM INC.

**PLAINS KNIGHT LEASE, WELL #2
LEA COUNTY, NEW MEXICO**

Approval is requested for an exception to Rule 303-C to permit down-hole commingling of the Fowler (Upper Yeso), Fowler (Tubb, South), and Fowler (Abo) in the subject well.

The well is currently producing from the Fowler (Abo) with Upper Yeso and Tubb perms isolated behind a Loc-Set packer.

Based on all available information, production fluids from these three reservoirs show no evidence of incompatibility; therefore, down-hole commingling is not expected to result in reservoir damage. Ownership in the three pools is common and correlative rights will not be violated.

Should secondary recovery operations become practical in the future, the three zones could be separated at such time without damaging either reservoir.

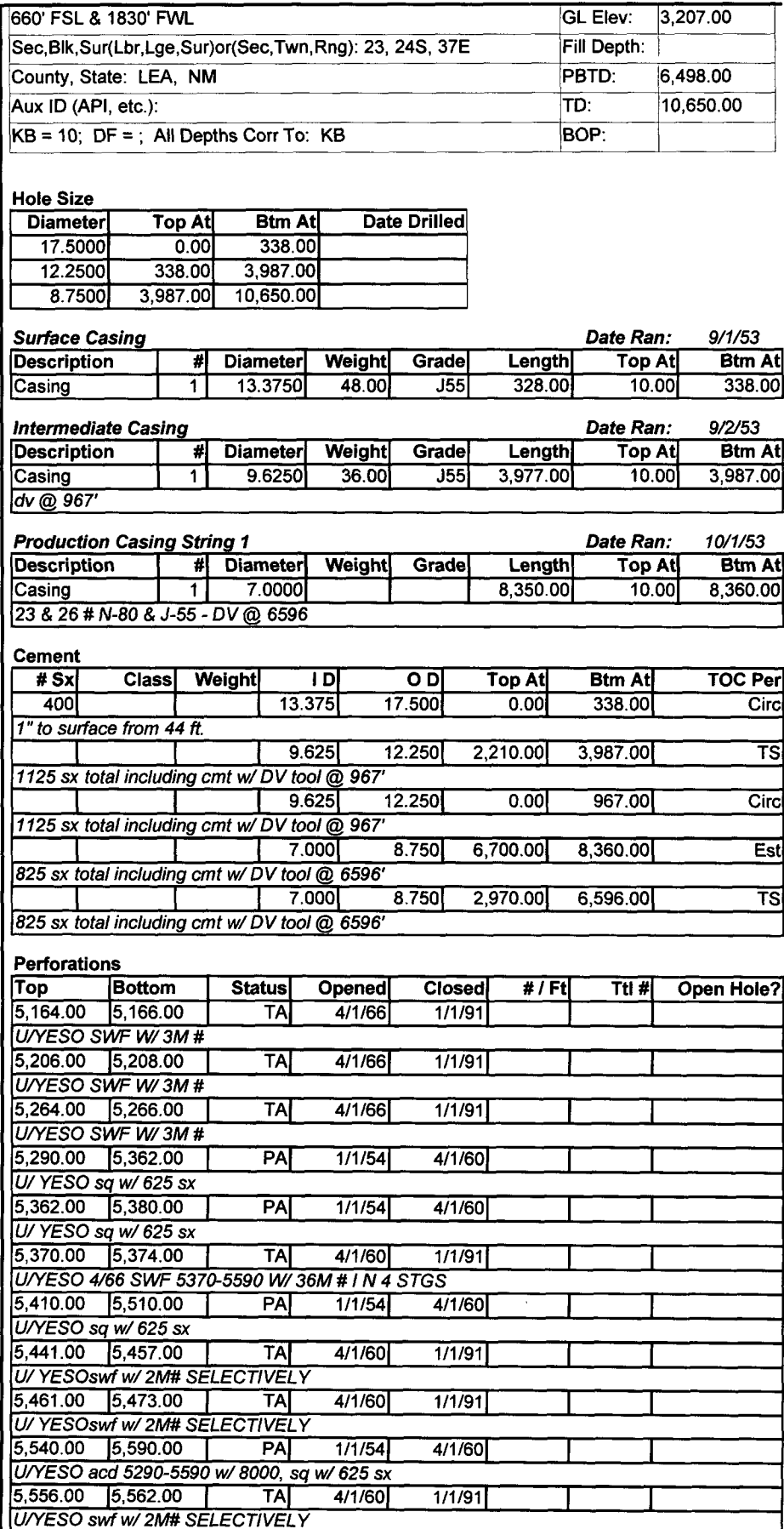
Offset operators have been notified of the intent to down-hole commingle the subject well by letter dated October 20, 1999.

A handwritten signature in black ink, reading "Robin S. McCarley". The signature is fluid and cursive, with a long, sweeping underline that extends to the right.

Robin S. McCarley
Production Technician

ρ

Printed: 8/18/99



Wellbore Schematic

PLAINS KNIGHT # 002

Wellbore ID #: A700027

Printed: 8/18/99

5,578.00	5,590.00	TA	4/1/60	1/1/91			
U/YESO swf w/ 2M# SELECTIVELY							
5,847.00	6,047.00	TA	1/1/91	7/1/99			
TUBB ACD 5848-6145 W/ 5M, ACD W/ 15M 28%							
6,074.00	6,145.00	TA	1/1/91	7/1/99			
TUBB ACD W/ 3000 - DID NOT REPERF							
6,075.00	6,145.00	TA	1/1/54	1/1/54			
TUBB acd w/ 1500, acd w/ 3000							
6,180.00	6,250.00	PA	1/1/54	1/1/54			
TUBB acd w/ 1500, sq w/ 75 sx							
6,307.00	6,996.00	A	7/17/99		2	74	
ABO - 9 SELECTIONS, ACD W/ 1000 W/ BALLS							
7,700.00	7,725.00	PA	1/1/54	1/1/54			
acd w/ 3000							
7,740.00	7,765.00	PA	1/1/54	1/1/54			
acd w/ 3000							
8,190.00	8,300.00	PA	1/1/54	1/1/54			
acd w/ 3000							

Wellbore Plugs and Junk

Top	Bottom	Type	Diameter	Solid	Date
6,498.00	6,501.00	CIBP	7.000	Yes	7/17/99
8,120.00	8,140.00	Cmt	7.000	Yes	1/1/54
8,120.00	8,140.00	Cmt	7.000	Yes	1/1/54
8,140.00	8,141.00	CIBP	7.000	Yes	1/1/54
8,140.00	8,141.00	CIBP	7.000	Yes	1/1/54
8,320.00	8,360.00	Cmt	7.000	Yes	1/1/54
Shoe jt					
8,360.00	8,500.00	Cmt	8.750	Yes	1/1/54
9,450.00	9,550.00	Cmt	8.750	Yes	1/1/54
10,475.00	10,600.00	Cmt	8.750	Yes	1/1/54

Rod String 1

Date Ran: 7/22/99

Description	#	Diameter	Rod Box	Grade	Length	Top At	Btm At
Pol Rd	1	1.2500			26.00	0.00	26.00
Rod Sect 1	2	0.8750		D	12.00	26.00	38.00
Rod Sect 2	59	0.8750		D	1,475.00	38.00	1,513.00
Rod Sect 3	178	0.7500		D	4,450.00	1,513.00	5,963.00
Rod Sect 4	10	0.8750		D	250.00	5,963.00	6,213.00
Pump	1	1.5000			24.00	6,213.00	6,237.00
Gas Anchor	1	1.0000			20.00	6,237.00	6,257.00

Tubing String 1

Date Ran: 7/22/99

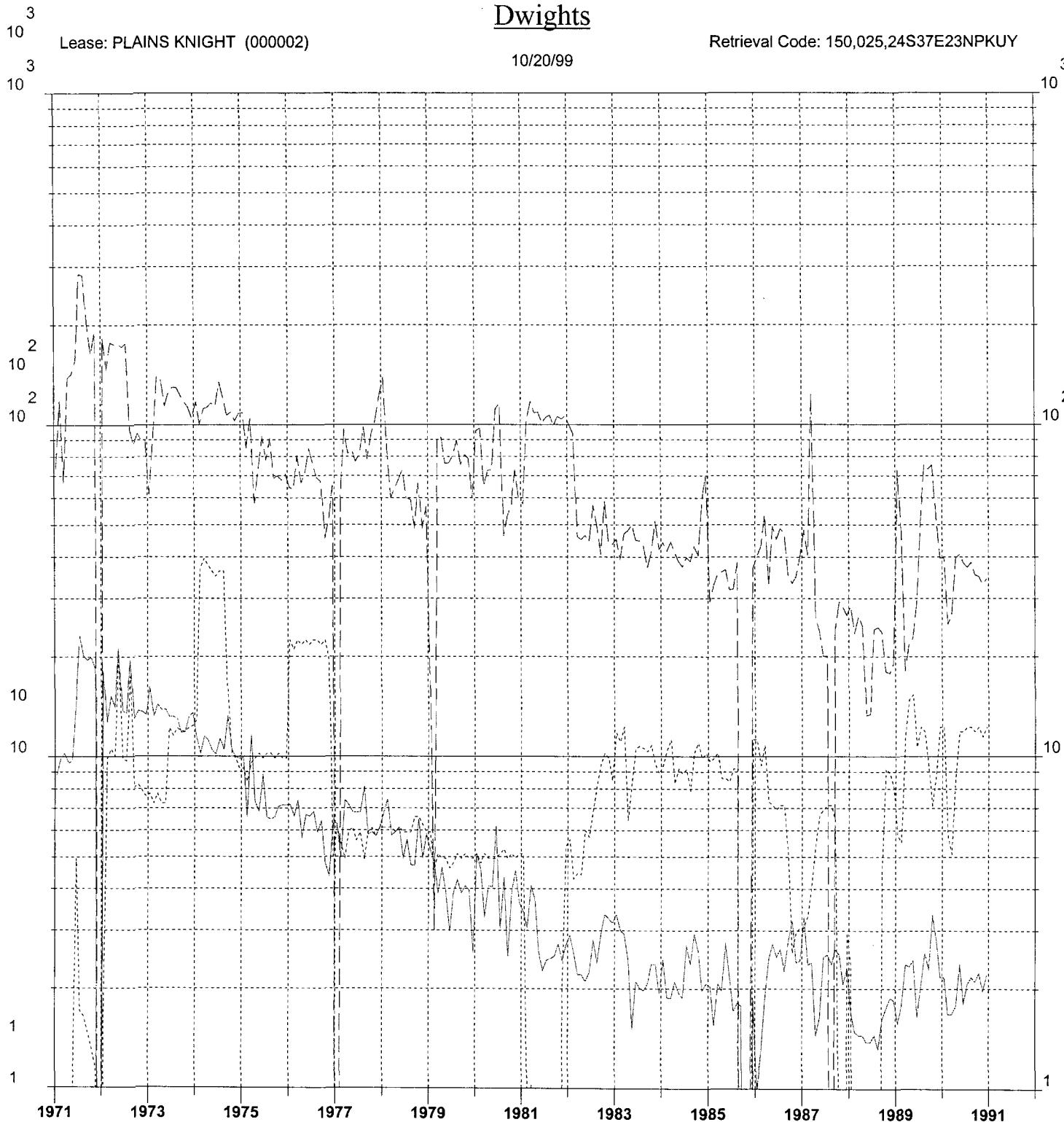
Description	#	Diameter	Weight	Grade	Length	Top At	Btm At
Tbg Sect 1	200	2.3750	4.70	J55	6,211.00	10.00	6,221.00
Stg Nipple	1	2.3750	4.70	J55	1.00	6,221.00	6,222.00
Prf Nipple	1	2.3750	4.70	J55	4.00	6,222.00	6,226.00
Mud Anchor	1	2.8750	6.40	N80	31.50	6,226.00	6,257.50

Dwights

Lease: PLAINS KNIGHT (000002)

10/20/99

Retrieval Code: 150,025,24S37E23NPKUY



Oil (bbl/day)

County: LEA, NM

F.P. Date: N/A

Gas (mcf/day)

Water (bbl/day)

Field: FOWLER (UPPER YESO) UY

Oil Cum: 104.4 mbbl

Reservoir: UPPER YESO

Gas Cum: 810.9 mmcf

Operator: CHEVRON U S A INC

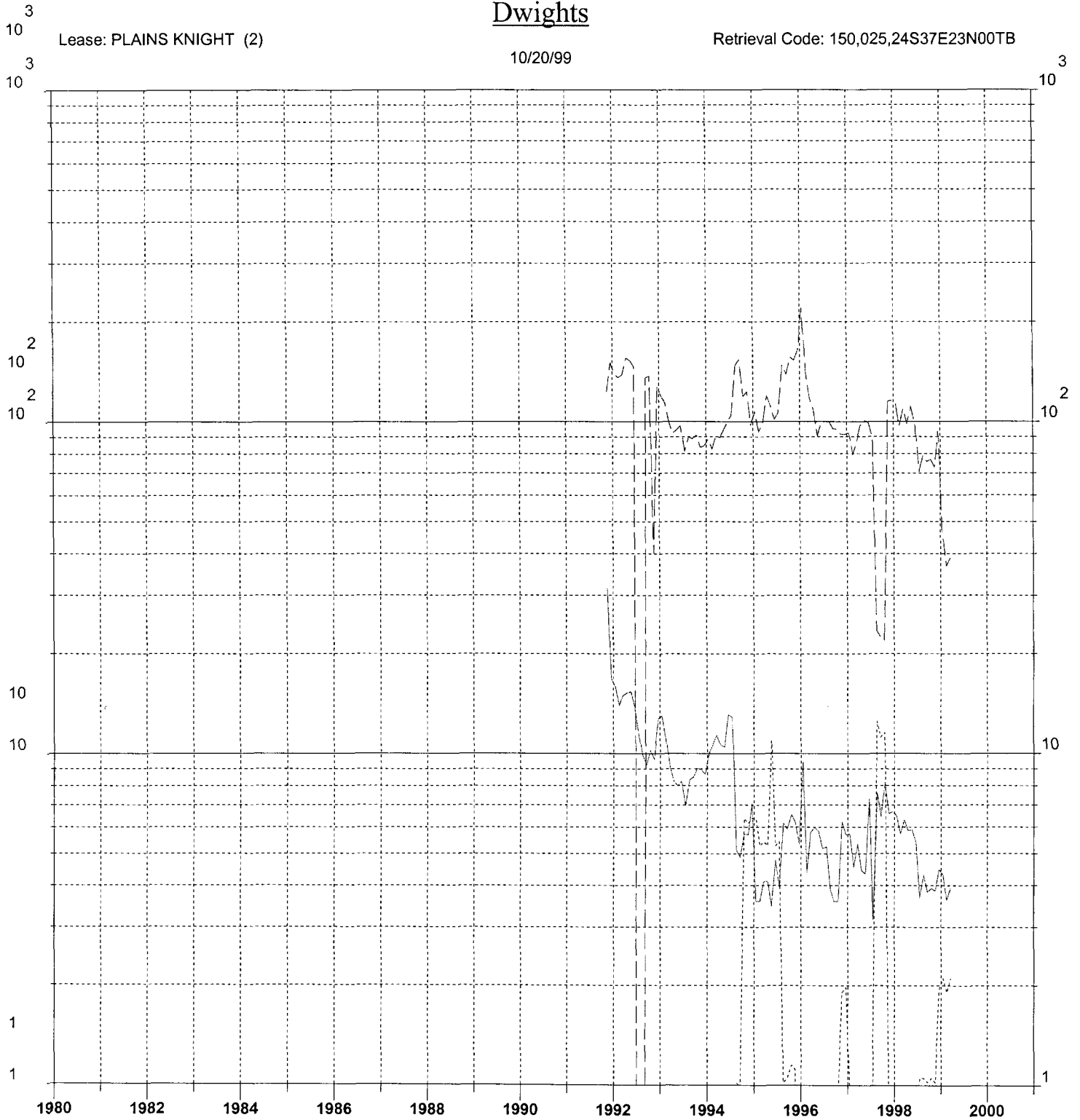
Location: 23N 24S 37E

Dwights

Lease: PLAINS KNIGHT (2)

Retrieval Code: 150,025,24S37E23N00TB

10/20/99



Oil (bbl/day)

County: LEA, NM

F.P. Date: 11/91

Gas (mcf/day)

Water (bbl/day)

Field: FOWLER SOUTH (TUBB) TB

Oil Cum: 20.69 mbbl

Reservoir: TUBB

Gas Cum: 273.5 mmcf

Operator: ARCH PETROLEUM INC

Location: 23N 24S 37E

PLAINS KNIGHT LEASE, WELL #2

Fowler (Abo)

This zone has only produced since 07/23/99.
Production for July and August are as follows:

	<u>OIL</u>	<u>GAS</u>	<u>Water</u>
Jul-99	51	44	662
Aug-66	156	221	1180

District I
PO Box 1980, Hobbs, NM 88241-1980

District II
811 South First, Artesia, NM 88210

District III
1000 Rio Brazos Rd., Aztec, NM 87410

District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

Form C-102
Revised October 18, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-11208	² Pool Code 26680	³ Pool Name Fowler; Upper Yeso
⁴ Property Code 14923	⁵ Property Name Plains Knight	⁶ Well Number 2
⁷ OGRID No. 000962	⁸ Operator Name Arch Petroleum Inc.	⁹ Elevation 3207

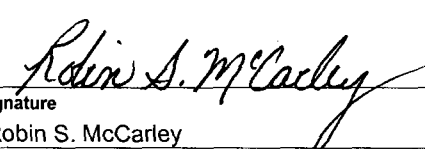
¹⁰Surface Location

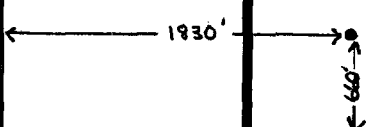
UL or lot no. N	Section 23	Township 24S	Range 37E	Lot Idn	Feet from the 660	North/South line South	Feet from the 1830	East/West Line West	County Lea
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¹¹Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West Line	County
¹² Dedicated Acres 40.00	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.						

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

¹⁶					¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief  Signature Robin S. McCarley Printed Name Production Tech. Title 10-20-99 Date
					¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. Date of Survey Signature and Seal of Professional Surveyer: Certificate Number



District I
PO Box 1980, Hobbs, NM 88241-1980

District II
811 South First, Artesia, NM 88210

District III
1000 Rio Brazos Rd., Aztec, NM 87410

District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

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Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-11208	² Pool Code 26635	³ Pool Name Fowler; Tubb South
⁴ Property Code 14923	⁵ Property Name Plains Knight	⁶ Well Number 2
⁷ OGRID No. 000962	⁸ Operator Name Arch Petroleum Inc.	⁹ Elevation 3207

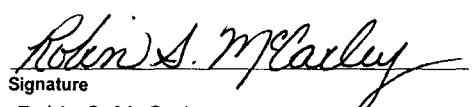
¹⁰Surface Location

UL or lot no. N	Section 23	Township 24S	Range 37E	Lot Idn	Feet from the 660	North/South line South	Feet from the 1830	East/West Line West	County Lea
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¹¹Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West Line	County
¹² Dedicated Acres 40.00	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.						

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¹⁶				¹⁷ OPERATOR CERTIFICATION <i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief</i>  Signature Robin S. McCarley Printed Name Production Tech. Title 10-20-99 Date
				¹⁸ SURVEYOR CERTIFICATION <i>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</i> Date of Survey Signature and Seal of Professional Surveyer: Certificate Number

← 1830' →

↑ 660' ↓

District I
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811 South First, Artesia, NM 88210

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1000 Rio Brazos Rd., Aztec, NM 87410

District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, NM 87505

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☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-11208	² Pool Code 96455	³ Pool Name Fowler (Abo)
⁴ Property Code 14923	⁵ Property Name Plains Knight	⁶ Well Number 2
⁷ OGRID No. 000962	⁸ Operator Name Arch Petroleum Inc.	⁹ Elevation 3207

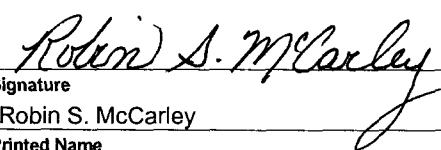
¹⁰Surface Location

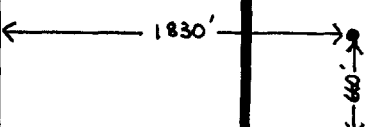
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UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West Line	County
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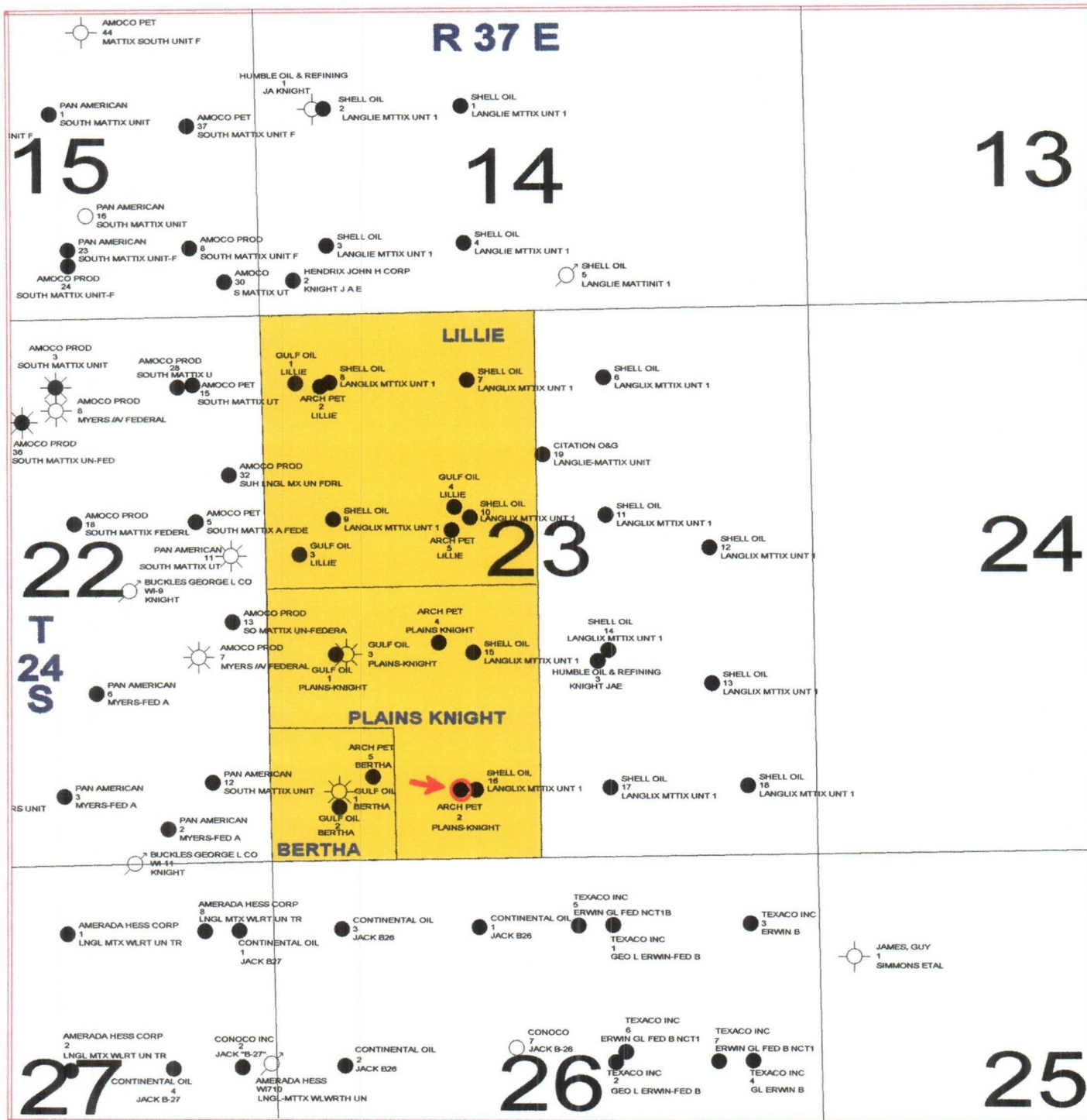


EXHIBIT "A"

LEGEND

-  Arch Operated Leasehold
 Plains Knight #2

ARCH PETROLEUM

FOWLER PROSPECT
Lea County, New Mexico

LNDMN: G. LANG		10/21/1999
TECH: T. RODRIQUEZ	Scale 1:17272.58	LANDDLLR.GPF

EXHIBIT 1

OFFSET OPERATORS

**DHC – PLAINS KNIGHT LEASE, WELL #2
Unit N, Section 23, T24S, R37E
Lea County, New Mexico**

Arch Petroleum Inc.
300 N. Marienfeld, Suite 600
Midland, Texas 79701

Conoco, Inc.
Attn: Reesa Wilkes
10 Desta Drive, Suite 100W
Midland, Texas 79705

Altura Energy, LTD.
Box 4294
Houston, Texas 77210-4294

Texas E & P Inc.
4601 DTC Boulevard
Denver, CO 80237-2549

Exxon Company, U.S.A.
Box 2180
Houston, TX 77252