UIC - I - 8-1, 2 & 3

WDWs-1, 2 & 3 PERMITS, RENEWALS, & MODS (8 of 18)

2017

Form 3160-4
(November 1983)
(formerly 9-330)

NM OIL CONS. COMMISSION
Drawer DD
Artesia, NM 88210

Form approved.
Budget Bureau No. 1004-0137
Expires August 31, 1985

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: NM-0557371

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Chalk Bluff Federal Com

9. WELL NO.: 2

10. FIELD AND POOL, OR WILDCAT: N. Illinois Camp Morrow

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec. 1, T18S-R27E

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ■ DRY ☐ Other

b. TYPE OF COMPLETION: NEW WELL ■ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

CONFIDENTIAL

2. NAME OF OPERATOR: Mewbourne Oil Company

3. ADDRESS OF OPERATOR: P. O. Box 7698, Tyler, Texas 75711

RECEIVED
OCT 16 1992
O. C. D.
ARTESIA, OFFICE

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface: 1350' FWL & 1650' FNL
At top prod. interval reported below
At total depth: Same

14. PERMIT NO. / DATE ISSUED: API #30-015-26741

12. COUNTY OR PARISH: Eddy

13. STATE: N.M.

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
5/13/91	6/12/91	8/24/91	KB 3615', DF 3613', GL 3599'	

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
10,140'	10,125'		→	X	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: 9,999'-10,024' - Morrow

25. WAS DIRECTIONAL SURVEY MADE: Yes

26. TYPE ELECTRIC AND OTHER LOGS RUN: Dual Spaced Neutron/CBL

27. WAS WELL CORED: No

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	61#	416'	17-1/2"	450 - Circulated	None
9-5/8"	36#	2,610'	12-1/4"	1025 - Circulated	None
5-1/2"	17# & 20#	10,148'	8-3/4"	1020 - Circulated	None

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-7/8"	9939'	9939'

31. PERFORATION RECORD (*Interval, size and number*): 9999'-10,024' - 4 SPF, 101 holes

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
9999-10,024'	Acidized w/5000 gals 7½% HCL.
	Acidized w/20,000 gals acid/CO_2

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
8/26/91	Flowing	Producing

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
8/29/91	24 hrs.	16/64"		0	118	0	----

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
410#	---		0	118	0	---

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*): Sold

TEST WITNESSED BY: Bill Pierce

35. LIST OF ATTACHMENTS: Logs

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED: Raylon Thompson TITLE: Engr. Oprns. Secretary DATE: 9/03/91

SJS

*(See Instructions and Spaces for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

37. SUMMARY OF POROUS ZONES: (Show all important zones of porosity and contents thereof; cored intervals; and all drill-stem, tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries):

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
Middle Morrow	9752'	9785'	Sandstone
Lower Morrow	9808'	9878'	Sandstone
Basal Morrow	9999'	10024'	Detrital Limestone

38. GEOLOGIC MARKERS

NAME	TOP	
	MEAS. DEPTH	TRUE VERT. DEPTH
Yates	370'	
Queen	1,034'	
Grayburg	1,346'	
San Andres	1,833'	
Glorietta	3,178'	
Tubb	4,130'	
Drinkard	5,076'	
Abo	5,380'	
Wolfcamp	6,644'	
Cisco	7,602'	
Canyon	8,326'	
Strawn	8,808'	
Morrow	9,496'	
Morrow Clastics	9,696'	
Chester	10,056'	

Submit in duplicate to appropriate district office
See Rule 401 & Rule 1122

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-122
Revised 4-1-91

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator: MEWBOURNE [illegible] COMPANY		Lease or Unit Name: CHALK BLUFF FED	
Type Test: X Initial [illegible]	Test Date: [illegible]-25-92		Well No. 2
Completion Date: 9-1-91	Total Depth: [illegible]	Plug Back TD: [illegible]	Unit Ltr. - Sec. - TWP - Rge.: [illegible] 1 18 27
Csg. Size: 5½	Wt.: 20#	Set At: 10146	Perforations: 10024	County: Eddy
Tbg. Size: 2 7/8	Wt.: [illegible]	Set At: 9911	Perforations: [illegible]	Pool:
Type Well - Single - Bradenhead - G.G. or G.O. Multiple: [illegible]				Formation: Morrow
Producing Thru: TBG	Reservoir Temp. °F: 174° @0999[illegible]	Mean Annual Temp. °F: 60	Baro. Press.: [illegible]	Connection:
L: *10011.3	H: 10011.[illegible]	Gg: [illegible]	% CO_2: [illegible]	Prover:	Meter Run: 3.068	Taps: FLG

FLOW DATA

NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	TUBING DATA Press. p.s.i.g.	TUBING DATA Temp. °F	CASING DATA Press. p.s.i.g.	CASING DATA Temp. °F	Duration of Flow
SI							[illegible]		Pkr		72 hr.
1.	3 X.375			[illegible]	[illegible]	[illegible]	[illegible]		"		1 hr.
2.	3 X.375			[illegible]	[illegible]	[illegible]	[illegible]		"		1 hr.
3.	3 X.375			[illegible]	[illegible]	[illegible]	[illegible]		"		1 hr.
4	3 X.375			[illegible]	[illegible]	[illegible]	[illegible]		"		1 hr.
5.											

RATE OF FLOW CALCULATIONS

NO.	COEFFICIENT (24 HOUR)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor F_t	Gravity Factor Fg.	Super Compress. Factor, Fpv.	Rate of Flow Q, Mcfd
1.	.6677	[illegible]	[illegible]	[illegible]	1.172	1.022	95
2.	.6677	[illegible]130	[illegible]	[illegible]	1.172	1.040	108
3.	.6677	[illegible]	[illegible]	[illegible]	1.172	1.065	170
4.	.6677	[illegible]	[illegible]	[illegible]	1.172	1.058	168
5.							

NO.	P_r	Temp. °R	T_r	Z
1.	.21	[illegible]	[illegible]	[illegible]
2.	.42	[illegible]	[illegible]	[illegible]
3.	.65	[illegible]517	[illegible]	[illegible]
4.	.65	[illegible]520	[illegible]	[illegible]
5.				

Gas Liquid Hydrocarbon Ratio: Dry Gas Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons: Dry Deg.
Specific Gravity Separator Gas: .728 XXXXXXXXX
Specific Gravity Flowing Fluid: XXXXX
Critical Pressure: [illegible]68 P.S.I.A. P.S.I.A.
Critical Temperature: [illegible]08 R R

P_c **1036 [illegible] 1.073

NO.	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1.	**	[illegible]	[illegible].9	[illegible]
2.	**	877[illegible]	[illegible].4	[illegible]
3.	**	7[illegible]	[illegible].0	[illegible]
4.	**	7[illegible]	[illegible].9	[illegible]
5.				

(1) $\left[\dfrac{P_c^2}{P_c^2 - P_w^2}\right]$ = 2.631

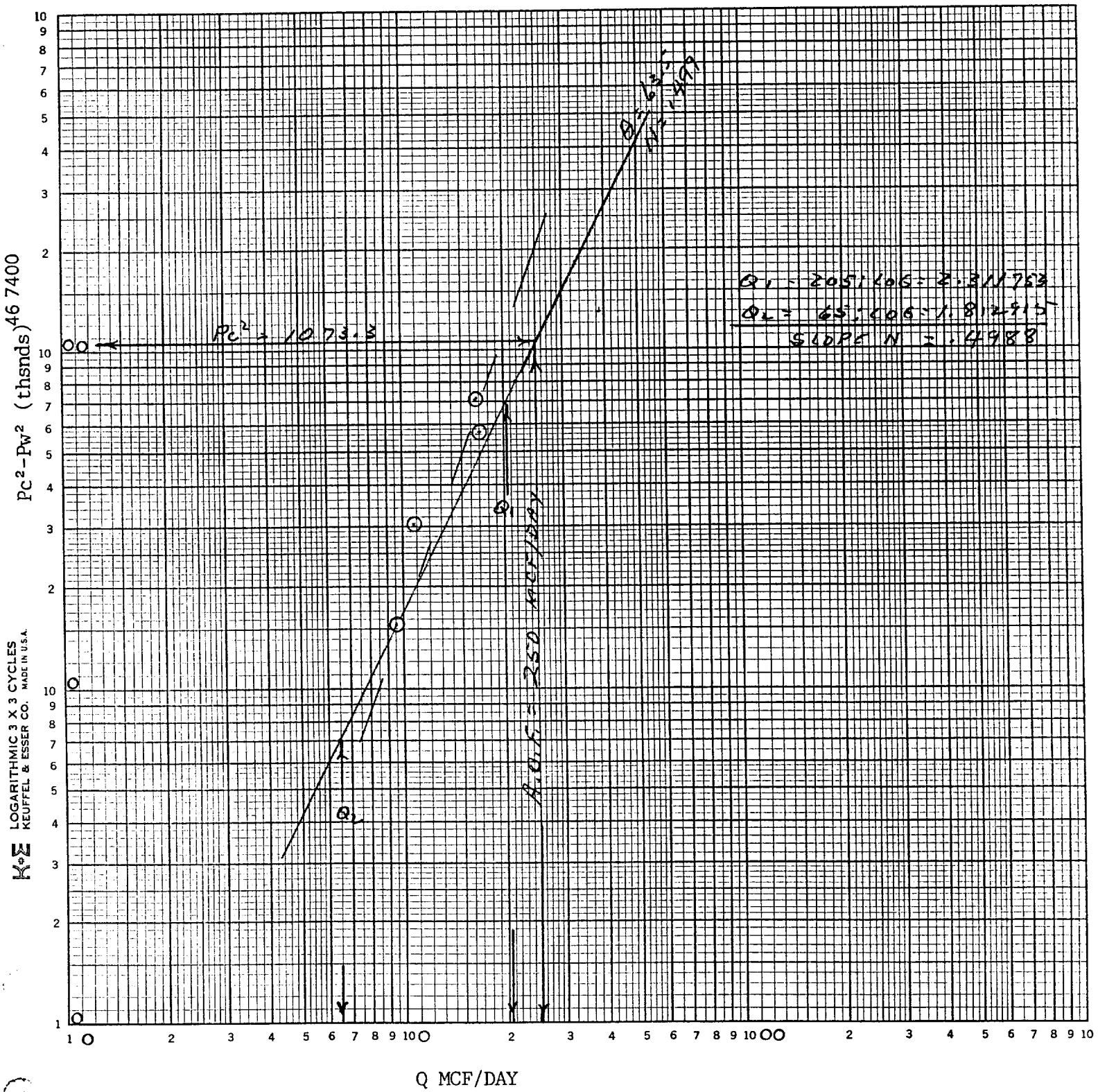
(2) $\left[\quad\right]^n$ = [illegible]250[illegible]

Absolute Open Flow [illegible] Mcfd @ 15.025 Angle of Slope θ 63.[illegible] Slope, n .499

Remarks: ** BHP Gauge [illegible] set [illegible]
[illegible] NO FLUID PRODUCED

Approved By Division: Conducted By: Calculated By: Checked By:

MEWBOURNE OIL COMPANY
Chalk Bluff Fed., Well 2
1-18-27
Eddy County, New Mexico
2-25-92



Submit 5 Copies
Appropriate District Office
DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

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

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

RECEIVED
SEP - 5 1991
O. C. D.
ARTESIA, OFFICE

Form C-104
Revised 1-1-89
See Instructions at Bottom of Page

CISF LT GT DP

REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

CONFIDENTIAL

I.

Operator	Well API No.
MEWBOURNE OIL COMPANY	30-015-26741
Address P. O. Box 7698, Tyler, Texas 75711	

Reason(s) for Filing *(Check proper box)*

New Well [X] Change in Transporter of: Other *(Please explain)* [ ]
Recompletion [ ] Oil [ ] Dry Gas [ ]
Change in Operator [ ] Casinghead Gas [ ] Condensate [ ]

If change of operator give name and address of previous operator _____

II. DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, Including Formation	Kind of Lease State, Federal or Fee	Lease No.
CHALK BLUFF FEDERAL	2	N.Illinois Camp-Morrow Gas		NM-0557371

Location

Unit Letter F : 1350 Feet From The West Line and 1650 Feet From The North Line

Section 1 Township 18 28 South Range 27 East, NMPM, Eddy County

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil [ ] or Condensate [X]	Address *(Give address to which approved copy of this form is to be sent)*
Amoco Pipeline Intercorporate Trucking	Oil Tender Dept. Box 702068,Tulsa,Ok 74170-2068
Name of Authorized Transporter of Casinghead Gas [ ] **or Dry Gas** [X]	**Address** *(Give address to which approved copy of this form is to be sent)*
Transwestern Pipeline Company	P.O.Box 1188, Houston, Texas 77251-1188

If well produces oil or liquids, give location of tanks.	Unit	Sec.	Twp.	Rge.	Is gas actually connected?	When ?
	F	1	18S	27E	Yes	8/13/91

If this production is commingled with that from any other lease or pool, give commingling order number: No

IV. COMPLETION DATA

Designate Type of Completion - (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Res'v	Diff Res'v
		X	X					

Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.
5/13/91	8/24/91	10,140'	10,125'
Elevations *(DF, RKB, RT, GR, etc.)*	**Name of Producing Formation**	**Top Oil/Gas Pay**	**Tubing Depth**
KB 3615',DF 3613',GL 3599'	Morrow	9,999'	9,939'
Perforations			**Depth Casing Shoe**
9999'-10,024'			---

TUBING, CASING AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT
17-1/2"	13-3/8"	416'	450 - Circulated
12-1/4"	9-5/8"	2,610'	1025 - Circulated
8-3/4"	5-1/2"	10,148'	1020 - Circulated

V. TEST DATA AND REQUEST FOR ALLOWABLE

OIL WELL *(Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours.)*

Date First New Oil Run To Tank	Date of Test	Producing Method *(Flow, pump, gas lift, etc.)*	Port ID-2 5-1-92 comp + BK
Length of Test	**Tubing Pressure**	**Casing Pressure**	**Choke Size**
Actual Prod. During Test	**Oil - Bbls.**	**Water - Bbls.**	**Gas- MCF**

GAS WELL

Actual Prod. Test - MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
118	24 hours	0	0
Testing Method *(pitot, back pr.)*	**Tubing Pressure (Shut-in)**	**Casing Pressure (Shut-in)**	**Choke Size**
Back Pressure	410#	---	16/64"

VI. OPERATOR CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Gaylon Thompson
Signature
Gaylon Thompson, Engr. Oprns. Secretary
Printed Name Title
9/03/91 (903) 561-2900
Date Telephone No.

OIL CONSERVATION DIVISION

Date Approved APR 2 3 1992

By ORIGINAL SIGNED BY MIKE WILLIAMS SUPERVISOR, DISTRICT II

Title _____

INSTRUCTIONS: This form is to be filed in compliance with Rule 1104

1) Request for allowable for newly drilled or deepened well must be accompanied by tabulation of deviation tests taken in accordance with Rule 111.
2) All sections of this form must be filled out for allowable on new and recompleted wells.
3) Fill out only Sections I, II, III, and VI for changes of operator, well name or number, transporter, or other such changes.
4) Separate Form C-104 must be filed for each pool in multiply completed wells.

c1SF

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED
Aug 6 9 58 AM '92
CARLSBAD, NM

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

5. Lease Designation and Serial No.
NM-0557371

6. If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE

7. If Unit or CA, Agreement Designation

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.
Chalk Bluff Fed. Com.

2. Name of Operator
Mewbourne Oil Company

9. API Well No.
2

3. Address and Telephone No.
P.O. Box 5270 Hobbs, New Mexico 88241

10. Field and Pool, or Exploratory Area
North Illinois Camp Morrow

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1350' FWL & 1650' FNL
Sec. 1-T18S-R27E

11. County or Parish, State
Eddy County, N.M.

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☒ Notice of Intent	☐ Abandonment	☐ Change of Plans
☐ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☒ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☐ Other _____	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Well is currently producing from Basal Morrow perforations at 9999' - 10,024' and has reached it's economical limit. Plans are to recomplete into lower Morrow Sands.

1. Set CIBP at 9950'. Cap with 50' cement.
2. Perforate Lower Morrow (9850'-9860'; 9864'-9878'; 9752'-9762'; 9764'-9774'; 9778'-9785')
3. Stimulate well as necessary and evaluate.
4. Restore well to production.

Will commence operations upon BLM approval.

AUG 12 1992
O. C. D.
ARTESIA, NEW MEXICO

14. I hereby certify that the foregoing is true and correct

Signed Gene L. W. Nelson Title Engineer Date August 3, 1992

(This space for Federal or State office use)

Approved by _____ Title _____ Date 8/11/92
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

RECEIVED

OCT 16 1992

O. C. D.
ARTESIA, OFFICE

dsf

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

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SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.
NM-0557371

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

1. Type of Well
☐ Oil Well ■ Gas Well ☐ Other

8. Well Name and No.
Chalk Bluff Fed Com #2

2. Name of Operator
Mewbourne Oil Company

9. API Well No.
30-015-26741

3. Address and Telephone No.
P. O. Box 7698, Tyler, Texas 75711 (903) 561-2900

10. Field and Pool, or Exploratory Area
North Illinois Camp Morrow

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1350' FWL & 1650' FNL of Sec. 1, T18S-R27E

11. County or Parish, State
Eddy, New Mexico

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
■ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	■ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☐ Other _____	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

9/10/92 - Killed well. Pulled tbg & pkr. Ran in hole w/CIBP set at 9970'. Dumped 35'cement on top. PBTD @ 9935'.

9/11/92 - RIH w/tbg & pkr set at 9731'. Tested to 8000#. Set pkr w/15 pts compression. Tested annulus to 2000#. Held OK. Tested tbg to 2500#. Held OK. Swabbed well down.

9/12/92 - Perf Lower Morrow 9850-9876' w/2 SPF, 22' net, 46 holes.

9/13/92 - Acidized perfs w/2800 gals 7½% HCL acid + additives containing 1000 SCF/Bbl nitrogen + 60 ball sealers. Flushed w/2% KCL containing 1000 SCF/bbl nitrogen. Pressure tested annulus to 1500# and pumped acid.

9/17/92 - Frac perfs w/40,000 gals Binary foam + 30,000# 20/40 Interprop. ISDP 5400#, 5 mins 4600#, 10 mins 4350#, 15 mins 4150#. AR 12 BPM. AP 8100#. MR 12 BPM. MP 8400#. Opened well and left flowing to pit.

9/19/92 - Well flowing thru test unit. Put well down sales line @ 5:00 PM 9/19/92.

AR

15 1992

14. I hereby certify that the foregoing is true and correct

Signed Clayton Thompson Title Engr.Oprns.Secretary Date 9/30/92

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

RECEIVED

NOV 18 1992

O. C. D.
ARTESIA, NEW MEXICO

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

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Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: NM-0557371

6. If Indian, Allottee or Tribe Name:

7. If Unit or CA, Agreement Designation:

1. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.: Chalk Bluff Fed. Com. #2

2. Name of Operator: Mewbourne Oil Company

9. API Well No.:

3. Address and Telephone No.: P.O. Box 5270 Hobbs, New Mexico 88241 (505) 393-5905

10. Field and Pool, or Exploratory Area: N. Illinois Camp Morrow

4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 1350'FWL & 1650'FNL
Unit F
I-28S-27E

11. County or Parish, State: Eddy Co., N.M.

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
☒ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☒ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☐ Other _____	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

9-09-92 Set CIBP @ 9970'. Dumped 35' cement on CIBP.

9-11-92 Perforated Morrow formation (9850'-9860' & 9864'-9876') with 2 SPF for a total of 46 holes.

9-12-92 Acidized Morrow perforations with 2800 gal. 7 1/2% HCL and 1000 SCF/bbl. N2.

9-16-92 Fraced Morrow perforations with 40,000 gal. binary foam carrying 30,000# 20/40 sand.

ACCEPTED FOR RECORD
NOV 2 1992
CARLSBAD, NEW MEXICO

NOV 2 9 26 AM '92
RECEIVED

14. I hereby certify that the foregoing is true and correct

Signed _____ Title District Supt. Date Oct. 27, 1992

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

Laboratory Services
1331 Tasker Drive
Hobbs, New Mexico 88240
Telephone: (505) 397-3713

FOR: Pro Well Testing & Wireline
Attention: Mr. Ray Gallagher
P. O. Box 791
Hobbs, New Mexico 88240

SAMPLE IDENTIFICATION: Chaulk Bluff Fed. #2
COMPANY: Mewbourne Oil Co.
LEASE:
PLANT:

SAMPLE DATA: DATE SAMPLED: 11/5/92 3:15PM
ANALYSIS DATE: 11-05-92
PRESSURE - PSIG 540.00
SAMPLE TEMP. °F 78.00
ATMOS. TEMP. °F 48.00

GAS (XX) LIQUID ( )
SAMPLED BY: Gallagher-Pro Well
ANALYSIS BY: Rolland Perry

REMARKS:

COMPONENT ANALYSIS

COMPONENT		MOL PERCENT	GPM
Oxygen	(O2)		
Hydrogen Sulfide	(H2S)		
Nitrogen	(N2)	0.40	
Carbon Dioxide	(CO2)	0.59	
Methane	(C1)	88.27	
Ethane	(C2)	7.05	1.881
Propane	(C3)	2.37	0.652
I-Butane	(IC4)	0.29	0.095
N-Butane	(NC4)	0.52	0.164
I-Pentane	(IC5)	0.15	0.055
N-Pentane	(NC5)	0.10	0.036
Hexane	(C6+)	0.26	0.107
Heptanes Plus	(C7)	0.00	0.000
		100.00	2.990

BTU/CU.FT. - DRY	1125	MOLECULAR WT	18.5705
AT 14.650 DRY	1121		
AT 14.650 WET	1102	26# GASOLINE -	0.253
AT 15.025 DRY	1150		
AT 15.025 WET	1130		
SPECIFIC GRAVITY -			
CALCULATED	0.641		
MEASURED	0.000		

SUGGESTED FIELD DATA SHEET (Not Required To File)

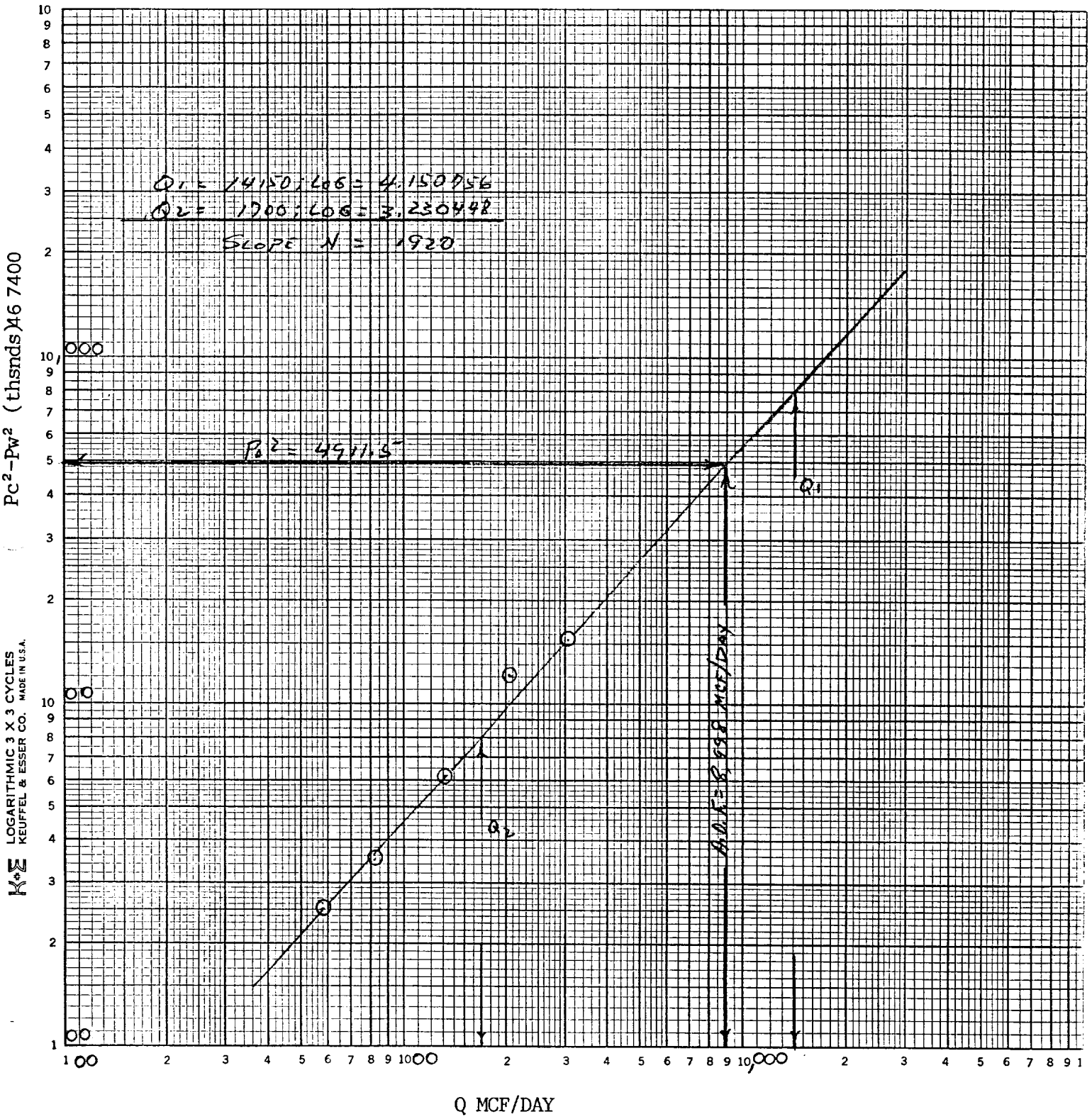
Type Test: ☒ INITIAL ☐ ANNUAL ☐ SPECIAL	Test Date: 11-5-92	Lease No. or Serial No.	
Company: MEWBOURNE OIL COMPANY	Connection	Allottee	
Field	Reservoir: MORROW	Location	Unit
Completion Date	Total Depth	Plug Back TD: 9935	Elevation
Csg. Size: 5½	Wt. d	Set At: 9935	Perforation From: 9850 To: 9876
Tbg. Size: 2 7/8	Wt.: 6.5 d: 2,441	Set At: 9731	Perforation: From To
Type Completion (Describe): single		Packer Set At: 9731	County or Parish: Eddy
Producing Thru: tbg	Reservoir Temp. F	Mean Annual Temp. F: 60	Baro. Press. – P_a: 13.2
			State: New Mexico

L	H	G_g	% CO_2	% N_2	% H_2S	Prover	Meter Run
9731	9731	.641	.59	.40			3.068 Flg.

DATE Time of Reading	ELAP. TIME Hrs.	Wellhead Working Pressure: Tbg. Psig.	Csg. Psig	Temp. F	METER OR PROVER: Pressure Psig	Diff.	Temp. F	Orifice	REMARKS (Include liquid Production data Type–A.P.I. Gravity–Amount)
	72	2203	PKR.						
1st	1	2145	"		530	3.00	78	1.500	
2nd	30min.	2120	"		530	6.00	84	1.500	
3rd	45m	2055	"		540	15.00	78	1.500	
4th	1	1900	"		540	36.00	70	1.500	
5th	30m	1805	"		545	78.00	66	1.500	
									NO FLUID – DRY GAS

Page ____ of ____ Data By ____

MEWBOURNE OIL COMPANY
Chalk Bluff Well #2
1-18-27
Eddy County, New Mexico
11-5-92



Submit in duplicate to appropriate district office
See Rule 401 & Rule 1122

Energy, Minerals and Natural Resources Department

Form C-122
Revised 4-1-91

RECEIVED
DEC 3 1992
O. C. D.

c/s F
file

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

OIL CONSERVATION DIVISION RECEIVED '92 NOV 16 AM 9 20

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator: Mewbourne					Lease or Unit Name: Chalk Bluff			
Type Test: [X] Initial [ ] Annual [ ] Special					Test Date: 11-5-92		Well No.: 2	
Completion Date		Total Depth		Plug Back TD: 9935	Elevation		Unit Ltr. - Sec. - TWP - Rge.: 1 - 18 - 27	
Csg. Size: 5½	Wt.	d	Set At: 9935	Perforations: From: 9850 To: 9876			County: Eddy	
Tbg. Size: 2 7/8	Wt.: 6.5	d: 2.441	Set At: 9731	Perforations: From: To:			Pool: N Illinois Camp Mor	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple: single				Packer Set At: 9731			Formation: Morrow	
Producing Thru: tbg.	Reservoir Temp. °F: 171° @9731	Mean Annual Temp. °F: 60		Baro. Press - P_a: 13.2			Connection: Phillips	
L: 9731	H: 9731	Gg: .641	% CO_2: .59	% N_2: .40	% H_2S:	Prover:	Meter Run: 3.068	Taps: flg.

FLOW DATA					TUBING DATA		CASING DATA		
NO.	Prover Line Size X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI					2203		PRK		72 hr.
1.	3 X 1.500	530	3.00	78	2145		"		1 hr.
2.	3 X 1.500	530	6.00	84	2120		"		30 min.
3.	3 X 1.500	540	15.00	78	2055		"		45 min.
4.	3 X 1.500	540	36.00	70	1900		"		1 hr.
5.	3 X 1.500	545	78.00	66	1805		"		30 min.

RATE OF FLOW CALCULATIONS

NO.	COEFFICIENT (24 HOUR)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg.	Super Compress. Factor, Fpv.	Rate of Flow Q, Mcfd
1.	11.13	40.37	543.2	.9831	1.249	1.055	582
2.	11.13	57.09	543.2	.9777	1.249	1.049	832
3.	11.13	91.09	553.2	.9831	1.249	1.056	1315
4.	11.13	141.12	553.2	..9905	1.249	1.056	2052
5.	11.13	208.66	558.2	.9943	1.249	1.057	3049

NO.	P_r	Temp. °R	T_r	Z
1.	.81	538	1.44	.898
2.	.81	544	1.46	.909
3.	.82	538	1.44	.897
4.	.82	530	1.42	.897
5.	.83	526	1.41	.895

Gas Liquid Hydrocarbon Ratio: Dry Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons: .641 Deg.
Specific Gravity Separator Gas: XXXXXXXXX
Specific Gravity Flowing Fluid: XXXXX
Critical Pressure: 670 P.S.I.A. P.S.I.A.
Critical Temperature: 372 R R

P_c 2216.2 P_c^2 4911.5

NO.	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1.		2159.0	4661.1	250.4
2.		2134.8	4557.3	354.3
3.		2073.3	4294.3	617.3
4.		1923.9	3701.3	1210.2
5.		1843.0	3396.6	1514.9

1) $\frac{P_c^2}{P_c^2 - P_w^2} = 3.242$

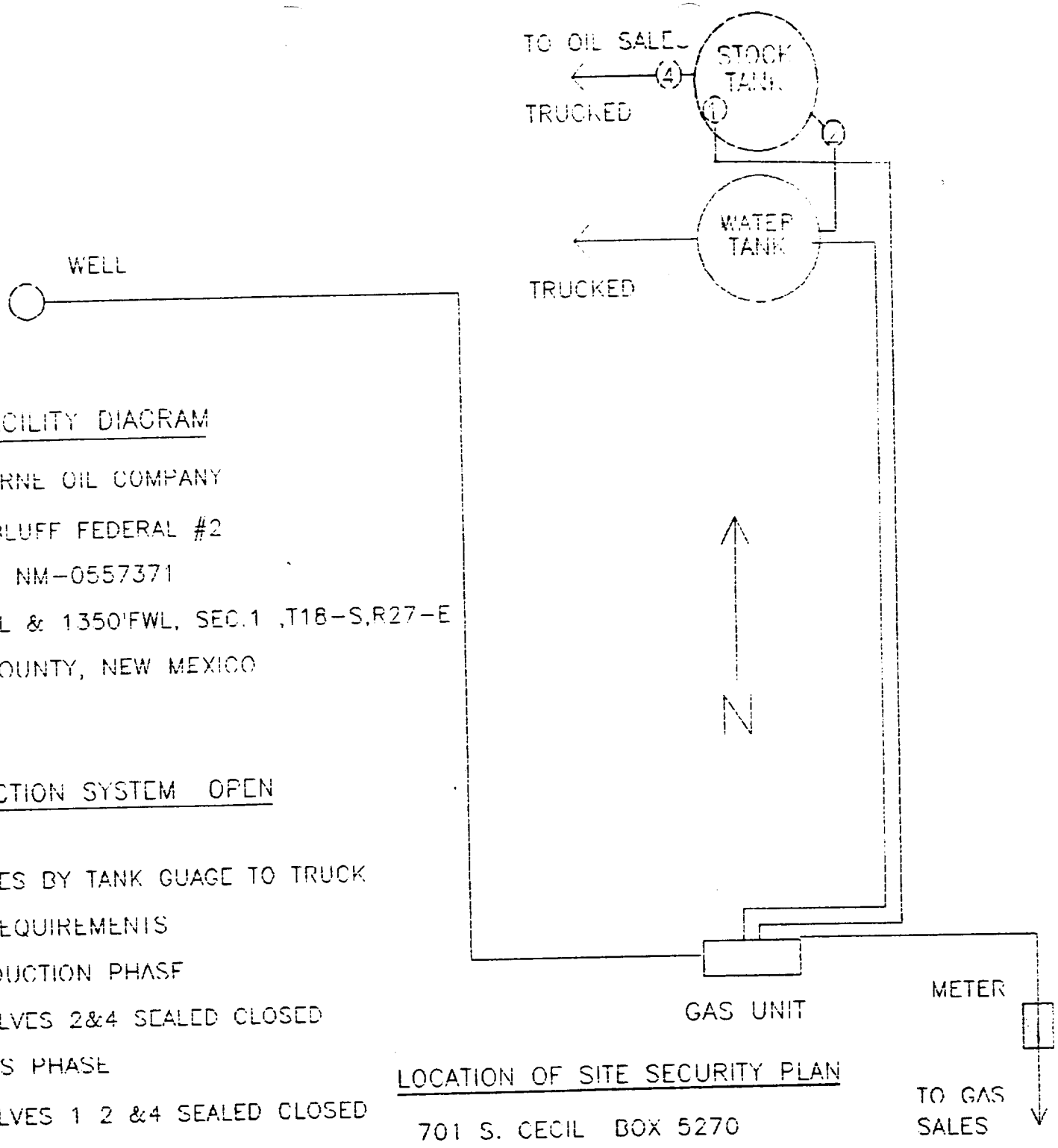
(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 2.951$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 8,998$

Absolute Open Flow: 8,998 Mcfd @ 15.025
Angle of Slope θ: 47.4
Slope, n: .920

Remarks: No Fluid Produced during Test

Approved By Division	Conducted By:	Calculated By:	Checked By:
	PRO WELL TESTERS	BM	BM



SITE FACILITY DIAGRAM

MEWBOURNE OIL COMPANY

CHALK BLUFF FEDERAL #2

LEASE # NM-0557371

1650'FNL & 1350'FWL, SEC.1 ,T18-S,R27-E

EDDY COUNTY, NEW MEXICO

PRODUCTION SYSTEM OPEN

OIL SALES BY TANK GUAGE TO TRUCK

SEAL REQUIREMENTS

PRODUCTION PHASE

VALVES 2&4 SEALED CLOSED

SALES PHASE

VALVES 1 2 &4 SEALED CLOSED

LOCATION OF SITE SECURITY PLAN

701 S. CECIL BOX 5270

HOBBS, NEW MEXICO

LEGEND

GAS SALES

OIL DUMPLINE

WATER DUMPLINE

WATER DRAIN

Continued:

The proposed operation is described in detail on the attached diagrams.

A map is enclosed showing the lease numbers and location of all leases and wells that will contribute production to the proposed commingling/common storage facility. All unitized/communitized areas, producing zones/pools are also clearly illustrated.

A schematic diagram is also attached which clearly identifies all equipment that will be utilized.

The storage and measuring facility is located at NM -1/4, Sec. 1, T 18 S, R 27 E, on lease No. 055737 1, Eddy County, New Mexico. BLM will be notified if there is any future change in the facility location.

Details of the proposed method for allocating production to contributing sources is as follows:

Gas will be measured at the individual leases and a percentage of contribution will be calculated and applied to the integrated sales volume. There is currently 6 wells producing into the system.

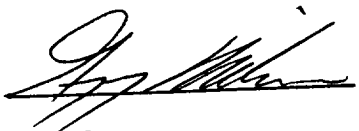
The working interest owners have been notified of the proposal.

The proposed commingling of production is in the interest of conservation and will not result in reduced royalty or improper measurement of production.

The proposed commingling is necessary for continued operation of the above referenced Federal leases.

We understand that the requested approval will not constitute the granting of any right-of-way or construction rights not granted by the lease instrument. And, we will submit within 30 days an application for right-of-way approval to the BLM's Realty Section in your office if we have not already done so.

Additional wells require additional commingling approvals.

Signature: 

Name: Gregory Milner

Title: Engineer

Date: 6/06/95

CRA BLM FORMAT

APPLICATION FOR SURFACE COMMINGLING, OFF LEASE STORAGE AND MEASUREMENT APPROVAL

This Format Should Be Attached To A Sundry Notice

To: Bureau of Land Management
P. O. Box 1778
Carlsbad, New Mexico 88221-1778

Mewbourne Oil Company (Operator's Name) is requesting approval for surface commingling and off-lease storage and measurement of hydrocarbon production from the following formation(s) and well(s) on Federal Lease No. NM-0557371 ; Lease Name: Chalk Bluff Federal

Well No.	Loc.	Sec.	Twp.	Rng.	Formation
#2	F	1	18S	27E	Morrow
#3	I	1	18S	27E	Morrow

with hydrocarbon production from the following formation(s) and well(s) on State lease No. E-7179 ; Lease Name: Chalk Bluff "6"
E-647 Illinois Camp 17
E-1313 Illinois Camp 20

Well No.	Loc.	Sec.	Twp.	Rng.	Formation
Chalk Bluff 6 St. #1	M	6	18S	28E	Morrow
Illinois Camp 17 St. #1	F	17	18S	28E	Morrow
Illinois Camp 17 St. #2	J	17	18S	28E	Morrow
Illinois Camp 20 St. #1	C	20	18S	28E	Morrow

Production from the wells involved is as follows:

Well Name and No.	BOPD	Oil Gravity	MCFPD
Chalk Bluff Fed. #2	N/A	N/A	80
Chalk Bluff Fed. #3	N/A	N/A	54
Chalk Bluff 6 St. #1	N/A	N/A	166
Illinois Camp 17 St. #1	N/A	N/A	1200
Illinois Camp 17 St. #2	N/A	N/A	744
Illinois Camp 20 St. #1	N/A	N/A	118

* Only gas will be comingled off lease

Continued ...

C/SF

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NM OIL CONS COMMISSION
Drawer DD
Artesia, NM 88210

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

1. Type of Well
☐ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator
Mewbourne Oil Company

3. Address and Telephone No.
P.O. Box 5270 Hobbs, New Mexico 88241 (505) 393-5905

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1350' FWL & 1650' FNL
Sec. 1-T18S-R27E

5. Lease Designation and Serial No.
NM-0557371

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

8. Well Name and No.
Chalk Bluff Fed. Com. #2

9. API Well No.
30-015-26741

10. Field and Pool, or Exploratory Area
N. Illinois Camp Morrow

11. County or Parish, State
Eddy Co., N.M.

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
☐ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☐ Other Application for Measurement Approval	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

See Attached Forms & Diagrams.

RECEIVED
OCT 10 1995
OIL CON. DIV.
DIST. 2

14. I hereby certify that the foregoing is true and correct

Signed _____ Title Engineer Date 6/06/95

(This space for Federal or State office use)

Approved by Orig. Signed by Adam Salamon Title Petroleum Engineer Date 10/5/95

Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

C|ST

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT-" for such proposals

SUBMIT IN TRIPLICATE

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator
Mewbourne Oil Company

3. Address and Telephone No.
P. O. Box 5270, Hobbs, NM 88241 (505)393-5905

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1650' FNL & 1350' FWL of Section 1, T18S, R27E, Eddy County, NM

FEB 1999
RECEIVED
OCD - ARTESIA

5. Lease Designation and Serial No.
NM-0557371

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

8. Well Name and No.
Chalk Bluff Fed #2

9. API Well No.
30-015-26741

10. Field and Pool, or Exploratory Area
North Illinois Camp Morrow

11. County or Parish, State
Eddy, NM

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☒ Notice of Intent	☐ Abandonment	☐ Change of Plans
☐ Subsequent Report	☒ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☐ Other _____	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinet details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markders and zones pertinent to this work.)*

Set cast iron bridge plug to abandon Morrow Sand perforations 9850-9860' and 9864-9876'. Perforate Morrow Sands 9764-74' and 9778-85' and test.

14. I hereby certify that the foregoing is true and correct

Signed _____ Title District Manager Date 01/11/99

(This space for Federal or State office use)

Approved by (ORIG. SGD.) GARY GOURLEY Title PETROLEUM ENGINEER Date JAN 29 1999

Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

30-015-26741

Ogrid- 14744
Property- 7876
Pool- 78390

1923830
2811945
2811946

9-5-91
Oral Approval
Verbal
Surf- 10122

NSL-3004
Appv. 4-25-91

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Mark E. Fesmire, P.E.
Director
Oil Conservation Division

29-Jul-05

MEWBOURNE OIL CO
PO Box 5270
Hobbs NM 88241

NOTICE OF VIOLATION - Inspection

Dear Operator:

The following inspection(s) indicate that the well, equipment, location or operational status of the well(s) failed to meet standards of the New Mexico Oil Conservation Division as described in the detail section below. To comply with standards imposed by Rules and Regulations of the Division, corrective action must be taken immediately and the situation brought into compliance. The detail section indicates preliminary findings and/or probable nature of the violation. This determination is based on an inspection of your well or facility by an inspector employed by the Oil Conservation Division on the date(s) indicated.

Please notify the proper district office of the Division, in writing, of the date corrective actions are scheduled to be made so that arrangements can be made to reinspect the well and/or facility.

INSPECTION DETAIL SECTION

CHALK BLUFF FEDERAL COM No.002 F-1-18S-27E **30-015-26741-00-00**

Inspection Date	Type Inspection	Inspector	Violation?	*Significant Non-Compliance?	Corrective Action Due By:	Inspection No.
07/29/2005	Routine/Periodic	Chris Beadle	Yes	No	8/29/2005	iCLB0521034161

Violations
Absent Well Identification Signs (Rule 103)

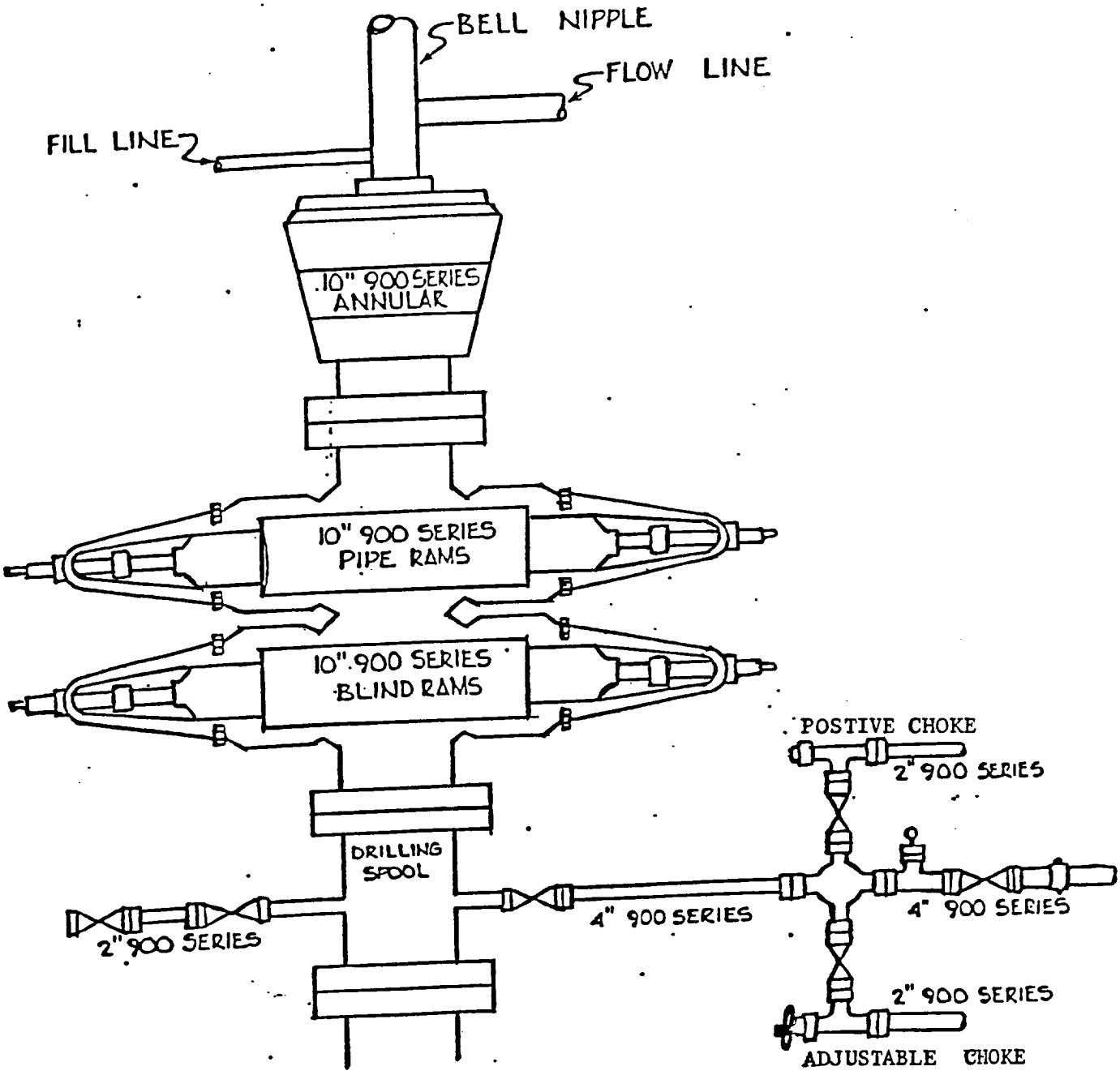
Comments on Inspection: Well sign not visible for distance required by Rule 103. Well sign is hidden inside bush grown up around the sign.

In the event that a satisfactory response is not received to this letter of direction by the "Corrective Action Due By:" date shown above, further enforcement will occur. Such enforcement may include this office applying to the Division for an order summoning you to a hearing before a Divison Examiner in Santa Fe to show cause why you should not be ordered to permanently plug and abandon this well. Such a hearing may result in imposition of CIVIL PENALTIES for your violation of OCD rules.

Sincerely,

Artesia OCD District Office

Note: Information in Detail Section comes directly from field inspector data entries - not all blanks will contain data.
*Significant Non-Compliance events are reported directly to the EPA, Region VI, Dallas, Texas.



Mewbourne Oil Company
990' FSL & 730' FWL
Sec. 6-T18S-R28E
Chalk Bluff "6" State #1

BOP Diagram

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

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

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

State of New Mexico
Energy, Minerals and Natural Resources Dep ent

Form C-102
Revised 1-1-89

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator	Lease	Well No.
MEWBOURNE OIL COMPANY	CHALK BLUFF "6" State	1

Unit Letter	Section	Township	Range	County
M	6	18 SOUTH	28 EAST NMPM	EDDY

Actual Footage Location of Well:
990 feet from the SOUTH line and 730 feet from the WEST line

Ground level Elev.	Producing Formation	Pool	Dedicated Acreage:
3635.0	Morrow	North Illinois Camp Morrow	334.98 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

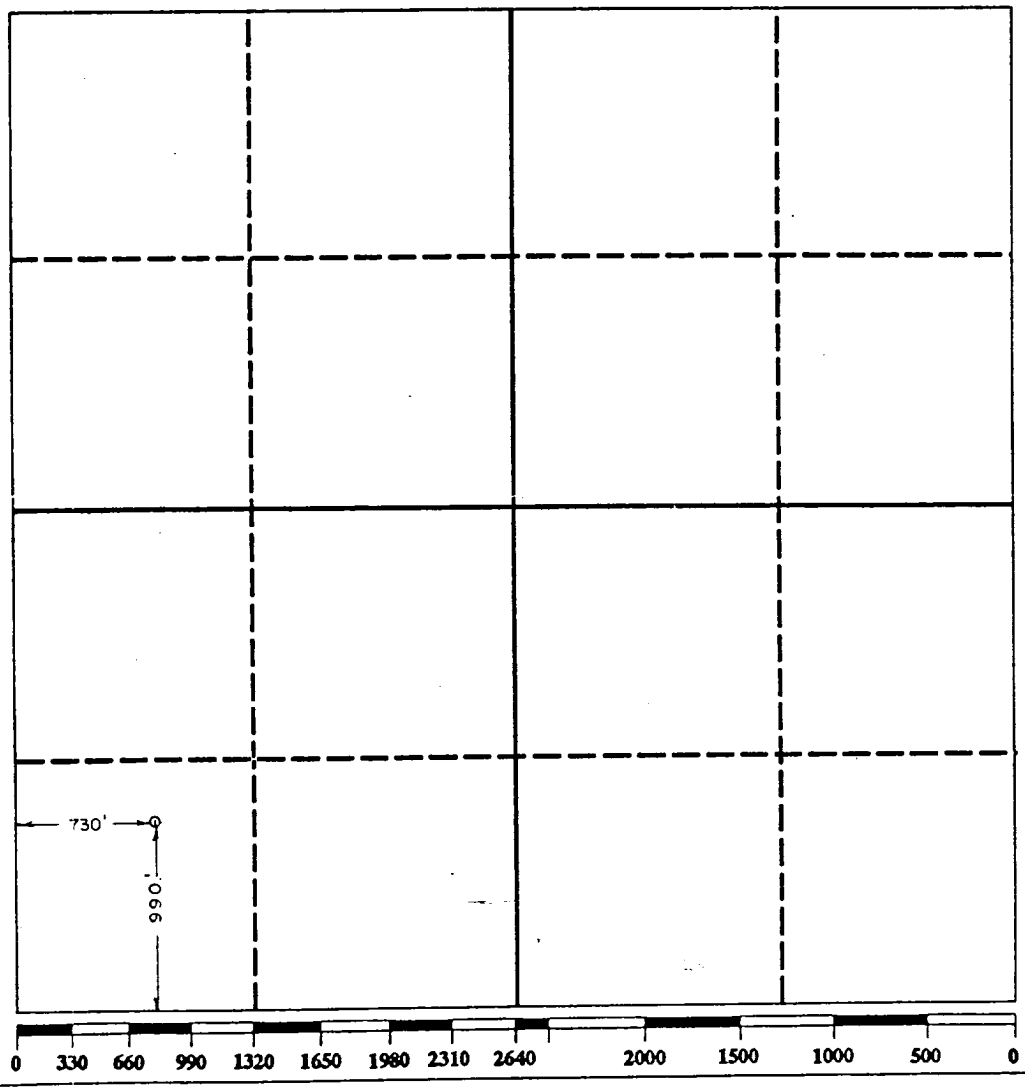
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?

☐ Yes ☐ No If answer is "yes" type of consolidation _____

If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary. _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



OPERATOR CERTIFICATION

I hereby certify that the information contained herein in true and complete to the best of my knowledge and belief.

Signature: W.H. Cravey

Printed Name: W.H. Cravey

Position: District Supt.

Company: Mewbourne Oil Co.

Date: July 9, 1991

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 supervison, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: 6/28/91

Signature & Seal of Professional Surveyor: STATE OF NEW MEXICO HERSCHEL L. JONES 3640 REGISTERED PROFESSIONAL SURVEYOR

Certificate No. 3640

Submit to Appropriate
District Office
State Lease – 6 copies
Fee Lease – 5 copies

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

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

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

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JUL 15 1991
O. C. D.
ARTESIA, OFFICE

Form C-101
Revised 1-1-89

API NO. (assigned by OCD on New Wells) 30-015-26943

5. Indicate Type of Lease STATE [X] FEE [ ]

6. State Oil & Gas Lease No. E-7179

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work:
DRILL [X] RE-ENTER [ ] DEEPEN [ ] PLUG BACK [ ]

b. Type of Well:
OIL WELL [ ] GAS WELL [X] OTHER SINGLE ZONE [ ] MULTIPLE ZONE [ ]

7. Lease Name or Unit Agreement Name: Chalk Bluff "6" State

2. Name of Operator: Mewbourne Oil Company

8. Well No. 1

3. Address of Operator: P.O. Box 5270 Hobbs, New Mexico 88241

9. Pool name or Wildcat: North Illinois Camp Morrow

4. Well Location
Unit Letter M : 730 Feet From The West Line and 990 Feet From The South Line

Section 6 Township 18S Range 28E NMPM Eddy County

10. Proposed Depth	11. Formation	12. Rotary or C.T.
10,200'	Morrow	Rotary

13. Elevations (Show whether DF, RT, GR, etc.)	14. Kind & Status Plug. Bond	15. Drilling Contractor	16. Approx. Date Work will start
3635' G.L.	Blanket on file	WEK Drilling Co.	August 10, 1991

17. PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
17-1/2"	13-3/8"	68#	± 400'	500	Surface
12-1/4"	9-5/8"	36#	± 2,600'	1000	Surface
7-7/8"	5-1/2"	17#	10,200'	600	Back 6,000'

Blow Out Preventor: Schaffer LWS or equivalent (Double Ram Hydraulic) 900 series. Hydril 900 series annular preventor. Grant rotating head, totco flow monitors on pits.

Post ID-1 2-14-92 Upon Lat + API

Mud Program:
0' - 400' Fresh water with spud mud. Paper for LCM material
400' - 2,600' Fresh water with LCM as needed.
2,600' - 8,400' Cut brine with lime.
8,400' - 10,200' Cut brine with Drispac, salt gel, lime, soda ash
Wt. 9.2-9.6 ppg WL 10 cc's or less

Gas is not dedicated.

APPROVAL VALID FOR 180 DAYS
PERMIT EXPIRES 8/11/92
UNLESS DRILLING UNDERWAY

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: IF PROPOSAL IS TO DEEPEN OR PLUG BACK, GIVE DATA ON PRESENT PRODUCTIVE ZONE AND PROPOSED NEW PRODUCTIVE ZONE. GIVE BLOWOUT PREVENTER PROGRAM, IF ANY.

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

SIGNATURE W. H. Mewbourne TITLE District Supt. DATE July 11, 1991

TYPE OR PRINT NAME TELEPHONE NO.

(This space for State Use) ORIGINAL SIGNED BY MIKE WILLIAMS SUPERVISOR, DISTRICT II

APPROVED BY TITLE DATE FEB 11 1992

CONDITIONS OF APPROVAL, IF ANY:

NSL - R - 9631

RECEIVED
APR 3 1992
O. C. D.
ARTESIA, OFFICE

Submit 3 Copies to Appropriate District Office

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

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

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-103
Revised 1-1-89

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

MAR 23 1992

O. C. D.
ARTESIA, OFFICE

WELL API NO.
30-015-26943

5. Indicate Type of Lease STATE ■ FEE ☐

6. State Oil & Gas Lease No.
E-7179

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name
CHALK BLUFF "6" STATE

1. Type of Well:
OIL WELL ☐ GAS WELL ■ OTHER

2. Name of Operator
Mewbourne Oil Company

8. Well No.
1

3. Address of Operator
P. O. Box 7698, Tyler, Texas 75711

9. Pool name or Wildcat
NORTH ILLINOIS CAMP MORROW

4. Well Location
Unit Letter M : 730 Feet From The West Line and 990 Feet From The South Line

Section 6 Township 18S Range 28E NMPM Eddy County

10. Elevation (Show whether DF, RKB, RT, GR, etc.)
3635' GR

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ■	PLUG AND ABANDONMENT ☐
PULL OR ALTER CASING ☐		CASING TEST AND CEMENT JOB ■	
OTHER: ☐		OTHER: ☐	

12. Describe Proposed or Completed Operations (*Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work*) SEE RULE 1103.

2/18/92 - Spud 7:45 AM 2/17/92. Cemented 13-3/8" casing at 400' with 100 sxs Class "C" + 10 pps Calseal + 5 pps Gilsonite + 1/2 pps Flocele + 2% $CaCl^2$ and 200 sxs Class "C" + 6% gel + ½ pps Flocele + 5# gilsonite + 2% $CaCl^2$. Tailed in with 200 sxs Class "C" + 2% $CaCl^2$. Plug down 4:15 PM 2/17/92. Pressure tested casing to 1000#. Float held okay. Did not circulate cement. WOC 3 hrs. Ran 1" and tagged at 190'. Cemented with 150 sxs Class "C" Neat. Circulated 20 sacks to pit. Total 12-1/4 hrs. WOC.

2/22/92 - Ran 9-5/8" 24# J-55 casing set at 2600' and cemented with 100 sxs Class "C" + 10# calseal + ½ pps Flocele + 5 pps Gilsonite + 2% $CaCl^2$ and 700 sxs Class "C" Lite + ½ pps Flocele + 5 pps Gilsonite. Tailed in with 300 sxs Class "C" + 2% $CaCl^2$. Had full returns while cementing. Plug down at 10:30 PM 2/22/92. Pressure tested casing to 1000# for 30 mins, float held okay. Circ 65 sxs to pit. WOC 8½ hours.

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

SIGNATURE Clayton Thompson TITLE Engr.Oprns.Secretary DATE 3/19/92

TYPE OR PRINT NAME TELEPHONE NO.

(This space for State Use)

ORIGINAL SIGNED BY
MIKE WILLIAMS
SUPERVISOR, DISTRICT II

APR 23 1992

APPROVED BY TITLE DATE

CONDITIONS OF APPROVAL, IF ANY:

Submit 3 Copies to Appropriate District Office

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

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

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-103
Revised 1-1-89

C/SF DP

MAR 23 1992
O. C. D.
ARTESIA, OFFICE

WELL API NO.
30-015-26943

5. Indicate Type of Lease STATE ■ FEE ☐

6. State Oil & Gas Lease No.
E-7179

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name
CHALK BLUFF "6" STATE

1. Type of Well:
OIL WELL ☐ GAS WELL ■ OTHER

2. Name of Operator
Mewbourne Oil Company

8. Well No.
1

3. Address of Operator
P. O. Box 7698, Tyler, Texas 75711

9. Pool name or Wildcat
NORTH ILLINOIS CAMP MORROW

4. Well Location
Unit Letter M : 730 Feet From The West Line and 990 Feet From The South Line

Section 6 Township 18S Range 28E NMPM Eddy County

10. Elevation (*Show whether DF, RKB, RT, GR, etc.*)
3635' GR

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ☐	PLUG AND ABANDONMENT ☐
PULL OR ALTER CASING ☐		CASING TEST AND CEMENT JOB ■	
OTHER: ☐		OTHER: ☐	

12. Describe Proposed or Completed Operations (*Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work*) SEE RULE 1103.

3/14/92 - Ran 7" 26# S-95 casing set at 9445'. Bottom of packer at 7096'. DVT at 7033'. CEMENTED 1ST STAGE with 325 sacks Class "H" + 2 pps KCL + .3% CFR-3 + .4% Halad 22A + 5 pps Gilsonite + 5 pps Silicalite & 300 sacks Class "H" + 2 pps KCL + .3% CFR-3 + .4% Halad 22A + 5 pps Silicalite. Plug down at 9:00 AM 3/15/92. Pressure tested casing to 2600# and set packer. Checked float collar. Held okay. Did not have returns while cementing. Dropped bomb and opened DVT at 9:30 AM. Pumped 1 bbl and had full returns. Circulated bottoms up from DVT. Did circulate cement. CEMENTED 2ND STAGE with 1170 sacks H/L + ½ pps Flocele + 5 pps Silicalite + 5 pps salt. Tailed in with 100 sacks Class "H" + 5# Silicalite + 2 pps KCL. Had full returns while cementing. Started losing returns with 140 bbls displacement gone. Lost complete returns with 240 bbls of displacement gone. Plug down at 11:45 AM 3/15/92. Closed DVT. Held okay. Did not circulate on 2nd stage. WOC 19-1/4 hours.

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

SIGNATURE Dayton Thompson TITLE Engr.Oprns.Secretary DATE 3/19/92

TYPE OR PRINT NAME TELEPHONE NO.

(This space for State Use)

ORIGINAL SIGNED BY
MIKE WILLIAMS
SUPERVISOR, DISTRICT II

APPROVED BY TITLE DATE MAR 26 1992

CONDITIONS OF APPROVAL, IF ANY:

c15F Dp

Submit 3 Copies to Appropriate District Office

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

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

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-103
Revised 1-1-89

WELL API NO.
30-015-26943

5. Indicate Type of Lease STATE ■ FEE ☐

6. State Oil & Gas Lease No.
E-7179

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name
CHALK BLUFF "6" STATE

1. Type of Well:
OIL WELL ☐ GAS WELL ■ OTHER

RECEIVED
APR 24 1992
O. C. D.
ARTESIA, OFFICE

2. Name of Operator
Mewbourne Oil Company

8. Well No.
1

3. Address of Operator
P. O. Box 7698, Tyler, Texas 75711

9. Pool name or Wildcat
NORTH ILLINOIS CAMP MORROW

4. Well Location
Unit Letter M : 730 Feet From The West Line and 990 Feet From The South Line

Section 6 Township 18S Range 28E NMPM Eddy County

10. Elevation (*Show whether DF, RKB, RT, GR, etc.*)
3635' GR

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ☐	PLUG AND ABANDONMENT ☐
PULL OR ALTER CASING ☐		CASING TEST AND CEMENT JOB ■	
OTHER: ☐		OTHER: ☐	

12. Describe Proposed or Completed Operations (*Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work*) SEE RULE 1103.

3/24/92 - Ran 4-1/2" 11.6# N-80 liner. Top of liner at 9077'. Set liner at 10,198'. Cemented with 750 gals mud flush followed by 175 sxs Class "H" + 5 pps KCL + 5 pps Silicalite + 6/10% Halad 22A + 4/10% CRF-3. Plug down to 10,151' at 7:15 AM 3/23/92 with full returns. Checked float. Held okay.

4/10/92 - Tested casing to 1000# for 30 mins, held okay. Drilled out 120' cement in 4½" liner. Drilled through at 9200'. Tagged up at 10,103'. Drilled down to landing collar at 10,151'. Circulated hole. Tested casing to 1000# for 30 mins. Held OK.

4/11/92 - Western spotted acid over perforation interval. Ran CBL from TD 10,159' to 620'. Had good bond around 4½" lienr from TD to 9600'.

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

SIGNATURE Clayton Thompson TITLE Engr. Oprns. Secretary DATE 4/22/92

TYPE OR PRINT NAME TELEPHONE NO.

(This space for State Use)

APPROVED BY ORIGINAL SIGNED BY MIKE WILLIAMS SUPERVISOR, DISTRICT II TITLE DATE MAY 25 1992

CONDITIONS OF APPROVAL, IF ANY:

Submit 3 Copies to Appropriate District Office

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-103
Revised 1-1-89

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

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

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

WELL API NO.
30-015-26943

5. Indicate Type of Lease
STATE ■ FEE ☐

6. State Oil & Gas Lease No.
E-7179

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

RECEIVED
APR 24 1992
O. C. D.

7. Lease Name or Unit Agreement Name
CHALK BLUFF "6" STATE

1. Type of Well:
OIL WELL ☐ GAS WELL ■ OTHER

2. Name of Operator
Mewbourne Oil Company

8. Well No.
1

3. Address of Operator
P. O. Box 7698, Tyler, Texas 75711

9. Pool name or Wildcat
NORTH ILLINOIS CAMP MORROW

4. Well Location
Unit Letter M : 730 Feet From The West Line and 990 Feet From The South Line

Section 6 Township 18S Range 28E NMPM Eddy County

10. Elevation (*Show whether DF, RKB, RT, GR, etc.*)
3635' GR

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	PLUG AND ABANDONMENT	☐
PULL OR ALTER CASING	☐			CASING TEST AND CEMENT JOB	☐		
OTHER:			☐	OTHER: Perforate and acidize			■

12. Describe Proposed or Completed Operations (*Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work*) SEE RULE 1103.

4/14/92 - Ran 2-3/8" tubing set at 9990'. Tested to 8000#. Held okay. Set packer with 16 points compression.

4/15/92 - Perforated Lower Morrow 10,084' - 10,092'. 8' net, 1 SPF, 9 holes.

4/16/92 - Acidized perfs with 2600 gals 7½% HCL + additives and 1367 scf/bbl N^2 & 15 frac balls. MTP 3800#. Max TP 7600#. Avg 6300#. Well started flowing to pit on 10/64" choke. FTP 3000#.

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

SIGNATURE [signature] TITLE Engr.Oprns.Secretary DATE 4/22/92

TYPE OR PRINT NAME TELEPHONE NO.

(This space for State Use)

APPROVED BY ORIGINAL SIGNED BY MIKE WILLIAMS ~~SUPERVISOR, DISTRICT II~~ TITLE DATE MAY 25 1992

CONDITIONS OF APPROVAL, IF ANY:

SEC 6 TWN 18s RGE 28e API # 30-015-26943

OPERATOR Mewbourne Oil

WELL NAME Chalk Bluff "6" St. #1

STATE OCD TOPS AS PER Darrell Moore DATE 5/27/92

Southeastern New Mexico				Northwestern New Mexico			
T. Anhy		T. Canyon		T. Ojo Alamo		T. Penn. "B"	
T. Salt		T. Strawn	8910	T. Kirtland-Fruitland		T. Penn. "C"	
B. Salt		T. Atoka	9593	T. Pictured Cliffs		T. Penn. "D"	
T. Yates		T. Miss		T. Cliff House		T. Leadville	
T. 7 Rivers		T. Devonian		T. Menefee		T. Madison	
T. Queen	1209	T. Silurian		T. Point Lookout		T. Elbert	
T. Grayburg	1560	T. Montoya		T. Mancos		T. McCracken	
T. San Andres	2062	T. Simpson		T. Gallup		T. Ignacio Otzte	
T. Glorieta	3632	T. McKee		Base Greenhorn		T. Granite	
T. Paddock		T. Ellenburger		T. Dakota		T.	
T. Blinebry		T. Gr. Wash		T. Morrison		T.	
T. Tubb		T. Delaware Sand		T. Todilto		T.	
T. Drinkard		T. Bone Springs		T. Entrada		T.	
T. Abo		T. Morrow	9842	T. Wingate		T.	
T. Wolfcamp	6910	T.		T. Chinle		T.	
T. Penn		T.		T. Permain		T.	
T. Cisco (Bough C)		T.		T. Penn "A"		T.	

OIL OR GAS SANDS OR ZONES

No. 1, from.....to..... No. 3, from.....to.....

No. 2, from.....to..... No. 4, from.....to.....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from.....to.....feet.....

No. 2, from.....to.....feet.....

No. 3, from.....to.....feet.....

REMARKS: Perfs reported (10,084 - 10,092) are wrong.

KEN REYNOLDS—PRESIDENT
ARNIE NEWKIRK—VICE-PRESIDENT

WEK DRILLING CO., INC. — OIL WELL DRILLING CONTRACTORS

P. O. Box 1498 ROSWELL, NEW MEXICO 88202-1498
505/623-5070 ROSWELL, NM
505/746-2719 ARTESIA, NM

March 31, 1992

Mewbourne Oil Company
P.O. Box 5270
Hobbs, N.M. 88202

REF: Chalk Bluff "6" St. #1

Gentlemen:

The following is a Deviation Survey on the above referenced well located in Eddy County, New Mexico.

400' - 3/4°	5168' - 2°	6351' - 2 3/4°
912' - 1°	5262' - 2 1/2°	6443' - 2 1/2°
1405' - 3/4°	5316' - 2 1/2°	6534' - 2 3/4°
1878' - 1°	5419' - 2 3/4°	6625' - 1 1/4°
2367' - 1°	5513' - 3°	7151' - 3/4°
2600' - 1 1/4°	5605' - 2 1/2°	7278' - 1 1/4°
3082' - 2 1/4°	5698' - 2 1/2°	7770' - 1 1/4°
3176' - 1 1/2°	5792' - 2 1/2°	8289' - 1°
3299' - 1 1/4°	5885' - 2 1/4°	8778' - 1°
3791' - 1 1/2°	5979' - 2 3/4°	9282' - 1 1/4°
4287' - 2 1/4°	6072' - 2 3/4°	9450' - 1 3/4°
438-' - 1 1/4°	6166' - 3 1/4°	10200' - 1 1/2°
4752' - 1 1/4°	6259' - 3°	

Sincerely,

Arnold Newkirk
Vice President

STATE OF NEW MEXICO)
)
COUNTY OF CHAVES)

The foregoing was acknowledged before me this 31st day of March 1992 by Arnold Newkirk.

MY COMMISSION EXPIRES

October 07, 1992

NOTARY PUBLIC

Submit to Appropriate District Office
State Lease – 6 copies
Fee Lease – 5 copies
DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

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

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

RECEIVED
MAY - 4 1992
O. C. D.

Form C-105
Revised 1-1-89

C/SF BLM B AM SZ LD

WELL API NO. 30-015-26943

5. Indicate Type of Lease: STATE ■ FEE ☐

6. State Oil & Gas Lease No. E-7179

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well: OIL WELL ☐ GAS WELL ■ DRY ☐ OTHER

b. Type of Completion: NEW WELL ■ WORK OVER ☐ DEEPEN ☐ PLUG BACK ☐ DIFF RESVR ☐ OTHER

7. Lease Name or Unit Agreement Name: CHALK BLUFF "6" STATE

2. Name of Operator: MEWBOURNE OIL COMPANY

8. Well No. 1

3. Address of Operator: P. O. Box 7698, Tyler, Texas 75711

9. Pool name or Wildcat: NORTH ILLINOIS CAMP MORROW

4. Well Location
Unit Letter M : 730 Feet From The WEST Line and 990 Feet From The SOUTH Line
Section 6 Township 18S Range 28E NMPM EDDY County

10. Date Spudded	11. Date T.D. Reached	12. Date Compl. (Ready to Prod.)	13. Elevations (DF& RKB, RT, GR, etc.)	14. Elev. Casinghead
2/17/92	3/21/92	4/16/92	DF 3339', GR 3324'	

15. Total Depth	16. Plug Back T.D.	17. If Multiple Compl. How Many Zones?	18. Intervals Drilled By	Rotary Tools	Cable Tools
10,200'	10,151'			X	

19. Producing Interval(s), of this completion - Top, Bottom, Name: 10,084'-10,092' - Morrow

20. Was Directional Survey Made: Yes

21. Type Electric and Other Logs Run: SDL-DSN, DIL/DLL-MSFL

22. Was Well Cored: NO

23. **CASING RECORD** (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	48# & 68#	400'	17-1/2"	500 sxs - circ	None
9-5/8"	24#	2,600'	12-1/4"	1100 sxs - circ	None
7"	26#	9,445'	7-7/8"	1895 sxs - circ 1st string	None

24. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN
4-1/2"	9077'	10,198'	175	

25. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
2-3/8"	9,990'	9,990'

26. Perforation record (interval, size, and number)

10,084'-10,092' - 8', 1 SPF, 9 holes

27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
10,084-092'	Acidized with 2600 gals 7½% HCL + additives & 1367 scf/bbl N^2 & 15 frac balls.

28. **PRODUCTION**

Date First Production	Production Method (Flowing, gas lift, pumping - Size and type pump)	Well Status (Prod. or Shut-in)
4/17/92	Flowing	Producing

Date of Test	Hours Tested	Choke Size	Prod'n For Test Period	Oil - Bbl.	Gas - MCF	Water - Bbl.	Gas - Oil Ratio
4/28/92	24 hours	12/64"		36	1,902	0	52,833:1

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	Oil - Bbl.	Gas - MCF	Water - Bbl.	Oil Gravity - API - (Corr.)
2690#	--		36	1,902	0	51.6

29. Disposition of Gas (Sold, used for fuel, vented, etc.): Sold

Test Witnessed By: Bill Pierce

30. List Attachments: Logs

31. *I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief*

Signature [signature] Printed Name Gaylon Thompson Title Engr.Oprns.Sec. Date 4/28/92

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Division not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, Items 25 through 29 shall be reported for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1105.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico				Northwestern New Mexico			
T. Anhy		T. Canyon	8,432'	T. Ojo Alamo		T. Penn. "B"	
T. Salt		T. Strawn	8,944'	T. Kirtland-Fruitland		T. Penn. "C"	
B. Salt		T. Atoka	9,562'	T. Pictured Cliffs		T. Penn. "D"	
T. Yates	478'	T. Miss		T. Cliff House		T. Leadville	
T. 7 Rivers	596'	T. Devonian		T. Menefee		T. Madison	
T. Queen	1,209'	T. Silurian		T. Point Lookout		T. Elbert	
T. Grayburg	1,560'	T. Montoya		T. Mancos		T. McCracken	
T. San Andres	2,062'	T. Simpson		T. Gallup		T. Ignacio Otzte	
T. Glorieta	3,626'	T. McKee		Base Greenhorn		T. Granite	
T. Paddock		T. Ellenburger		T. Dakota		T.	
T. Blinebry		T. Gr. Wash		T. Morrison		T.	
T. Tubb	4,736'	T. Delaware Sand		T. Todilto		T.	
T. Drinkard	5,531'	T. Bone Springs		T. Entrada		T.	
T. Abo	5,878'	T. Morrow	9,664'	T. Wingate		T.	
T. Wolfcamp	6,606'	T. Mor.Clast.	9,874'	T. Chinle		T.	
T. Penn		T. L.Morrow	10,006'	T. Permain		T.	
T. Cisco	7,742'	T.		T. Penn "A"		T.	

OIL OR GAS SANDS OR ZONES

No. 1, from 10,084' to 10,092' No. 3, from ..... to .....

No. 2, from ..... to ..... No. 4, from ..... to .....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from NONE to ..... feet .....

No. 2, from ..... to ..... feet .....

No. 3, from ..... to ..... feet .....

LITHOLOGY RECORD (Attach additional sheet if necessary)

From	To	Thickness in Feet	Lithology	From	To	Thickness in Feet	Lithology
0'	430'	430'	Red Bed & Anhydrite				
430'	2490'	2060'	Anhydrite				
2490'	2600'	110'	Anhydrite & Dolomite				
2600'	4782'	2182'	Dolomite				
4782'	7520'	2730'	Dolomite & Lime				
7520'	9450'	1930'	No Returns				
9450'	9840'	390'	Lime				
9840'	10028'	188'	Lime & Shale				
10028'	10200'	172'	Shale				

Submit 5 Copies
Appropriate District Office
DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

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

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-104
Revised 1-1-89
See Instructions
at Bottom of Page

REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

I.

Operator	Well API No.
MEWBOURNE OIL COMPANY	30-015-26943

Address: P. O. Box 7698, Tyler, Texas 75711

Reason(s) for Filing (Check proper box) (Please explain)

RECEIVED
APR 24 1992
O. C. D.
ARTESIA, OFFICE

New Well [■]
Recompletion [ ]
Change in Operator [ ]

Change in Transporter of:
Oil [ ] Dry Gas [ ]
Casinghead Gas [ ] Condensate [ ]

If change of operator give name and address of previous operator _____

II. DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, Including Formation	Kind of Lease State, Federal or Fee	Lease No.
CHALK BLUFF "6" STATE	1	N. ILLINOIS CAMP MORROW	State	E-7179

Location
Unit Letter M : 730 Feet From The West Line and 990 Feet From The South Line
Section 6 Township 18S Range 28E, NMPM, Eddy County

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil or Condensate	Address (Give address to which approved copy of this form is to be sent)
PHILLIPS PETROLEUM COMPANY - TRUCKS	4001 Pembrook, Odessa, Texas 79761
Name of Authorized Transporter of Casinghead Gas or Dry Gas	Address (Give address to which approved copy of this form is to be sent)
TRANSWESTERN PIPELINE COMPANY	P.O.Box 1188, Houston, Texas 77251

If well produces oil or liquids, give location of tanks.	Unit	Sec.	Twp.	Rge.	Is gas actually connected?	When ?
	M	6	18S	28E	Yes	4/22/92

If this production is commingled with that from any other lease or pool, give commingling order number: _____

IV. COMPLETION DATA

Designate Type of Completion - (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Res'v	Diff Res'v
		X	X					

Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.
2/17/92	4/16/92	10,200'	10,151'
Elevations (DF, RKB, RT, GR, etc.)	**Name of Producing Formation**	**Top Oil/Gas Pay**	**Tubing Depth**
DF 3339',GR 3324'	Morrow	10,084'	9,990'
Perforations			**Depth Casing Shoe**
10,084' - 10,092'			--

TUBING, CASING AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT
17-1/2"	13-3/8"	400'	500 - circ
12-1/4"	9-5/8"	2,600'	1100 - circ
7-7/8"	7"	9,445'	1895 - circ 1st stg.
7"	4½" Liner	10,198'	175

V. TEST DATA AND REQUEST FOR ALLOWABLE

OIL WELL *(Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours.)*

Date First New Oil Run To Tank	Date of Test	Producing Method (Flow, pump, gas lift, etc.)	
		Post ID-2 6-5-92	
Length of Test	**Tubing Pressure**	**Casing Pressure**	**Choke Size**
			comp + BK
Actual Prod. During Test	**Oil - Bbls.**	**Water - Bbls.**	**Gas- MCF**

GAS WELL

Actual Prod. Test - MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
2,149 Mcf	24 hours	89.9:1	~~N/A~~ 51.6
Testing Method (pitot, back pr.)	**Tubing Pressure (Shut-in)**	**Casing Pressure (Shut-in)**	**Choke Size**
Back Pressure	N/A	---	12/64"

VI. OPERATOR CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Gaylon Thompson
Signature
Gaylon Thompson, Engr.Oprns.Secretary
Printed Name Title
April 22, 1992 (903) 561-2900
Date Telephone No.

OIL CONSERVATION DIVISION

Date Approved MAY 25 1992

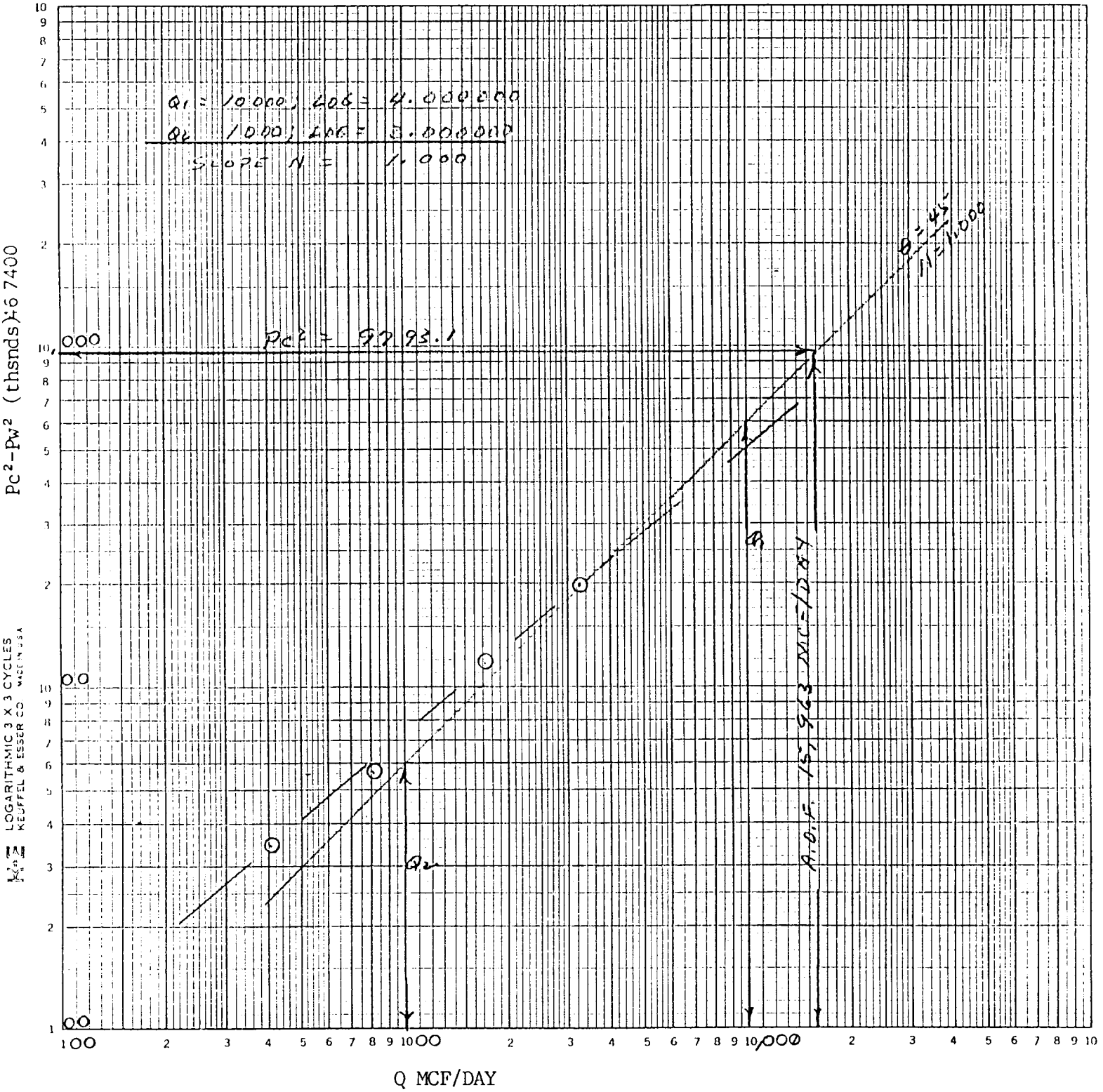
By ORIGINAL SIGNED BY MIKE WILLIAMS

Title SUPERVISOR, DISTRICT II

INSTRUCTIONS: This form is to be filed in compliance with Rule 1104

1) Request for allowable for newly drilled or deepened well must be accompanied by tabulation of deviation tests taken in accordance with Rule 111.
2) All sections of this form must be filled out for allowable on new and recompleted wells.
3) Fill out only Sections I, II, III, and VI for changes of operator, well name or number, transporter, or other such changes.
4) Separate Form C-104 must be filed for each pool in multiply completed wells.

MEWBOURNE OIL COMPANY
Chalk Bluff "6" St., Well # 1
6-18-28
Eddy County, New Mexico
4-24-92



c15r File

Submit in duplicate to appropriate district office
See Rule 401 & Rule 1122

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-122
Revised 4-1-91

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator: MEWBOURNE OIL COMPANY		Lease or Unit Name: CHALK BLUFF '6' St.	
Type Test: ☒ Initial ☐ Annual ☐ Special		Test Date: 4-24-92	Well No.: 1
Completion Date: 4-16-92	Total Depth: 10151 / Plug Back TD: 10151	Elevation:	Unit Ltr. - Sec. - TWP - Rge.: M 6 18 28
Csg. Size: 7" & 4½" / Wt: 26# 19.6# / d: / Set At: 10198	Perforations: From: 10084 To: 10092		County: Eddy
Tbg. Size: 2 7/8 &2 3/8 / Wt: 6.5 4.7 / d: 2.441 1.995 / Set At: 9976	Perforations: From: To:		Pool: N. Illinoise Camp
Type Well - Single - Bradenhead - G.G. or G.O. Multiple	Packer Set At: 9976		Formation: Morrow
Producing Thru: TBG / Reservoir Temp. °F: 175 @10088 / Mean Annual Temp. °F: 60	Baro. Press - P_a: 13.2		Connection
L: *10088 / H: 10088 / Gg: .643 / % CO_2: .44 / % N_2: .38 / % H_2S: / Prover:		Meter Run: 3.068	Taps: FLG

FLOW DATA / TUBING DATA / CASING DATA

NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Tubing Press. p.s.i.g.	Tubing Temp. °F	Casing Press. p.s.i.g.	Casing Temp. °F	Duration of Flow
SI							2960		PKR		72 hrs.
1.	3	X	.750	430	34.00	111	2815		"		1 hr.
2.	3	X	1.000	440	40.00	102	2730		"		1 hr.
3.	3	X	1.500	435	32.00	78	2590		"		1 hr.
4.	3	X	1.750	480	49.00	54	2575		"		1 hr.
5.											

RATE OF FLOW CALCULATIONS

NO.	COEFFICIENT (24 HOUR)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg.	Super Compress. Factor, Fpv.	Rate of Flow Q, Mcfd
1.	2.672	122.76	443.2	.9543	1.247	1.035	404
2.	4.789	134.64	453.2	.9619	1.247	1.035	801
3.	11.13	119.76	448.2	.9831	1.247	1.045	1708
4.	15.61	155.46	493.2	1.006	1.247	1.058	3221
5.							

NO.	P_r	Temp. °R	T_r	Z
1.	.66	571	1.53	.934
2.	.67	562	1.51	.933
3.	.66	538	1.44	.916
4.	.73	514	1.38	.893
5.				

Gas Liquid Hydrocarbon Ratio 40.1 Mcf/bbl.
A.P. I. Gravity of Liquid Hydrocarbons 51.6 @60° Deg.
Specific Gravity Separator Gas .643 XXXXXXXXX
Specific Gravity Flowing Fluid XXXXX
Critical Pressure 670 P.S.I.A. P.S.I.A.
Critical Temperature 372 R R

P_c **3129.4 P_c^2 9793.1

NO.	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1.	**	3073.7	9447.6	345.5
2.	**	3037.7	9227.6	565.5
3.	**	2933.4	8604.8	1188.3
4.	**	2795.9	7817.1	1976.0
5.				

1) $\frac{P_c^2}{P_c^2 - P_w^2} = 4.956$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 4.956$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 15.963$

Absolute Open Flow 15,963 Mcfd @ 15.025 Angle of Slope θ 45 Slope, n 1.000

Remarks: * BHP Instrument Set @ this Depth
** From Known B.H.P. Calculated back to Surface
~~*** Well Made 6.375 BBLS 51.6 @60 Condensate & 3.0 BBLS H^2O~~

Approved By Division	Conducted By:	Calculated By:	Checked By:
	Pro Well Testers	BM	BM

Submit 3 Copies to Appropriate District Office

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

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

Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

NOV 16 1993

O. C. D.

Form C-103
Revised 1-1-89

WELL API NO
30-015-26943

5. Indicate Type of Lease STATE ■ FEE

6. State Oil & Gas Lease No.
E-7179

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name
Chalk Bluff "6" State

1. Type of Well: OIL WELL ☐ GAS WELL ■ OTHER

2. Name of Operator
Mewbourne Oil Company

8. Well No.
1

3. Address of Operator
P.O. Box 5270 Hobbs, New Mexico 88241 (505) 393-5905

9. Pool name or Wildcat
North Illinois Camp Morrow

4. Well Location
Unit Letter M : 730 Feet From The West Line and 990 Feet From The South Line

Section 6 Township 18S Range 28E NMPM Eddy County

10. Elevation (Show whether DF, RKB, RT, GR, etc.)
3339' DF 3324' GR

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	PLUG AND ABANDONMENT	☐
PULL OR ALTER CASING	☐			CASING TEST AND CEMENT JOB	☐		
OTHER:	☐			OTHER: Add Perforations	■		

12. Describe Proposed or Completed Operations (*Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work*) SEE RULE 1103.

11/02/93 Rig up Schlumberger and perf'd Morrow 10,044' - 10,064' with 2 SPF. 20' and 41 holes.

11/03/93 Acidized Morrow formation with 4,000 gal. 7 1/2% FE acid & 1,000 CF/bbl. nitrogen Put well on production.

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

SIGNATURE [signature] TITLE Production Engineer DATE 11/15/93

TYPE OR PRINT NAME Brent Thurman TELEPHONE NO (505) 393-5905

(This space for State Use)

APPROVED BY ORIGINAL SIGNED BY MIKE WILLIAMS SUPERVISOR, DISTRICT II TITLE DATE NOV 23 1993

CONDITIONS OF APPROVAL, IF ANY:

30-015-26943

OGRID 14744

POOF 7877

POOL 78890

1923010-O

1923830-G

1923050-W

Oxford®

ESSELTE

MADE IN U.S.A. NO. R753 1/3

IT IS THEREFORE ORDERED THAT: R-9631 12-19-91

(1) All mineral interests, whatever they may be, from the base of the Abo formation to the base of the Morrow formation, underlying Lots 3 through 7, the SE/4 NW/4, and the E/2 SW/4 (W/2 equivalent) of Section 6, Township 18 South, Range 28 East, NMPM, Eddy County, New Mexico, thereby forming a non-standard 334.98-acre gas spacing and proration unit for any and all formations and/or pools developed on 320-acre spacing within said vertical extent, which presently includes, but is not necessarily limited to the Undesignated Empire-Pennsylvanian Gas Pool and the Undesignated North Illinois Camp-Morrow Gas Pool, are hereby pooled, said unit shall be dedicated to a well to be drilled at an unorthodox gas well location 990 feet from the South line and 730 feet from the West line (Unit M) of said Section 6.

R-9631
Comp. Poly.
NSP & NSL
12-19-91

5-22-92
Dual Spaced
Neutron
Surf - 9416
Dual Lat
2588 - 9464
9451 - 10295
Dual Induction
2588 - 9452

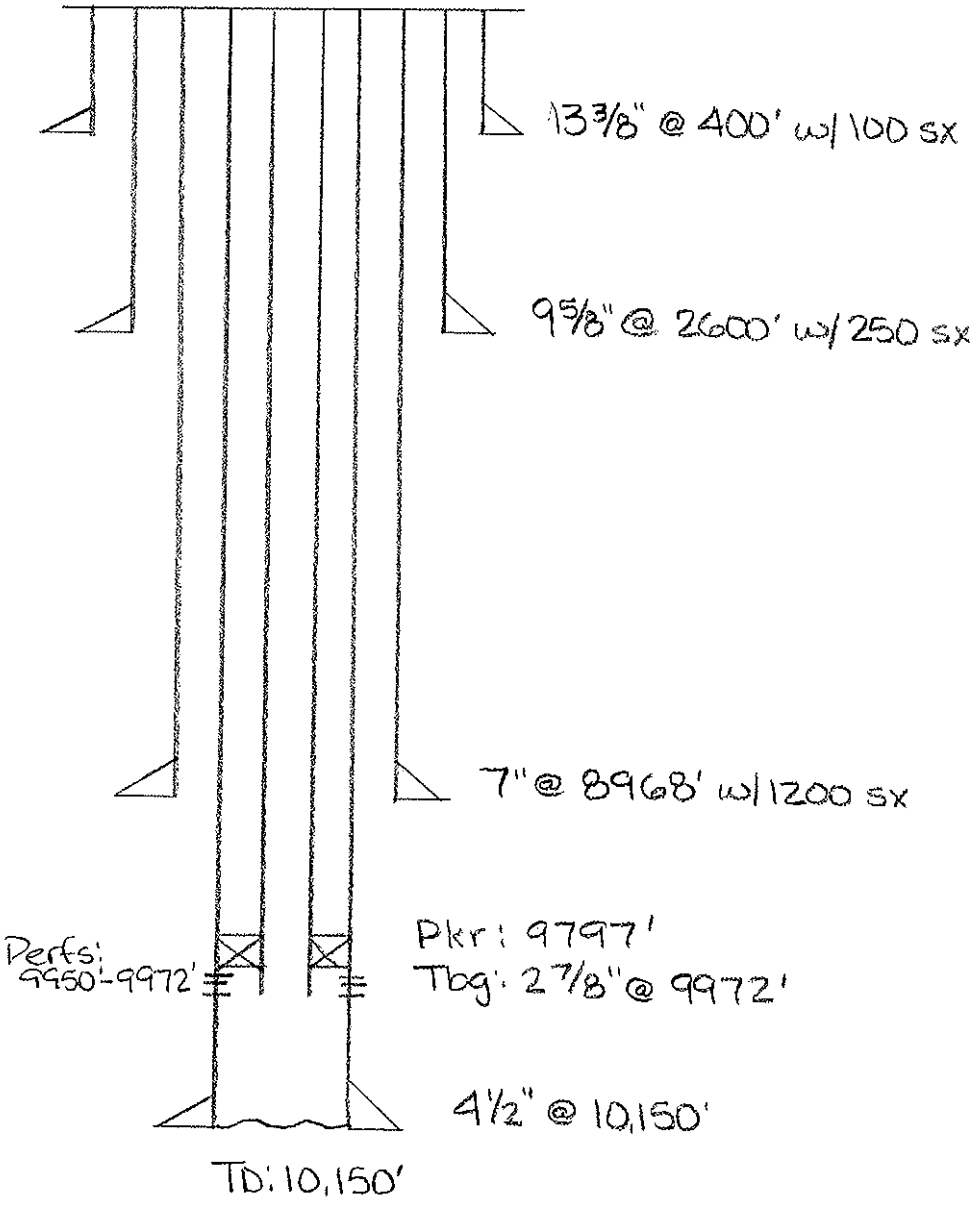
SUBSURFACE

NAVAJO REFINING COMPANY, L.L.C.
Map ID No. 99
Artificial Penetration Review

OPERATOR Newbourne Oil
LEASE Chalk Bluff Federal
WELL NUMBER 3
DRILLED 1/16/93
PLUGGED NA

STATUS Active
LOCATION Sec. 1 -T 18S-R 27E
MUD FILLED BOREHOLE NA
TOP INJECTION ZONE -3702'
API NO. 30-015- 27163

REMARKS:



MAP ID NO. 99

MEWBOURNE OIL CO.
CHALK BLUFF FEDERAL COM NO. 003

API NO. 30-015-27163

APD ATTATCHMENT

Mewbourne Oil Company Chalk Bluff Federal Comm. #3 NM-016788
1980' FSL & 990' FEL Sec. 1-T18S-R27E Eddy County, NM.

1.) Casing Design and Safety Factors (See schedule 1 for used casing design program.)

2.) Cement Program for Casing Strings.

Surface Casing:
250 sacks of Class "C" containing 2% CaCL2 + 1/4#/sack of cellophane flakes followed by 200 sacks of Class "C" containing 3% CaCL2.

Intermediate Casing:
700 sacks of Class "C" containing 6% gel + 2% CaCL2 + 1/2#/sack of cellophane flakes + 5#/sack of Gilsonite followed by 200 sacks of CLass "C" containing 3% CaCL2

Production Casing:
A cement diverter tool (D. V. Tool) will be run at a depth of approximately 7500' from surface.
1st Stage:
850 sacks of Class "H" containing 5#/sack KCL + .7% fluid loss additive + 5#/sack compressive strength extender.
2nd Stage:
900 sacks of Class "C" Lite containing 1/2#/sack cellophane flakes + 5#/sack Gilsonite + .4% fluid loss extender followed by 100 sacks of Class "H" containing .4% fluid loss additive + 5#/sack compressive strength extender.

3.) Drilling time will require approximately 35 - 40 days and drilling operations should begin approximately November 1, 1992.

4.) The possibility of encountering H2S gas in this area remote. Mewbourne Oil Company has drilled offset wells to this proposed location and none of these wells have encountered any H2S gas in the Pennsylvanian. In the event H2S is encountered, the necessary H2S safety equipment will be installed on location to provide for a safe working enviroment.

5.) Anticipated formation temperature and pressure in the Morrow zone will be approximately 155 degrees fahrenheit and 3,000# psi.

6.) This location is a non-standard location. A hearing is scheduled for October 15, 1992 in Santa Fe, New Mexico before the New Mexico Oil Conservation Division for an unorthodox location exception.

7.) The pressure rating on the BOP STACK (see exhibit "D" of the APD) is 3,000# psi. The correct pressure rating of ANSI 900 series is noted in the APD. The API standard for pressure ratings for flanged equipment is in ANSI series. ANSI 600 series is 2,000# psi working pressue test, ANSI 900 series is 3,000# psi working pressure, ANSI 1500 series is 5,000# psi work-pressure.

SCHEDULE ONE

LEASE NAME: CHALK BLUFF FEDERAL #3 **TYPE OF CSG STRING:** PRODUCTION

LEGALS: SEC 1-18S-27E **DEPTH OF CSG:** 10,300

CASING MINIMUM PERFORMANCE PROPERTIES

	CSG TYPE	K-FACTOR	COLLAPSE	BURST	TENSION
1	5 1/2" 20# N-80 LT&C	991,000	8830	9190	428000
2	5 1/2" 17# N-80 LT&C	844,000	6380	7740	348000
3	5 1/2" 20# N-80 LT&C	991,000	8830	9190	428000
4					
5					

GRADE OF CASING: 85 % OF NEW

	CSG TYPE	COLLAPSE	BURST	TENSION
1	5 1/2" 20# N-80 LT&C	7506	7812	363800
2	5 1/2" 17# N-80 LT&C	5423	6579	295800
3	5 1/2" 20# N-80 LT&C	7506	7812	363800
4	0	0	0	0
5	0	0	0	0

SETTING DEPTH (WT. OF CSG IN AIR)

	FROM	TO	CASING WT. (LB/FT)	INTERVAL LGTH (FT.)	INTERVAL WT. (LBS)	CUMMULATIVE WT. (LBS)
1	0	1,000	20	1000	20,000	181,100
2	1,000	9,300	17	8300	141,100	161,100
3	9,300	10,300	20	1000	20,000	20,000
4	0			0	0	0
5	0			0	0	0

WELLBORE CONDITIONS

MUD WEIGHT: 9.6 PPG

BOUYANCY FACTOR 0.853 (AIR = 1)

DISPLACEMENT FLUID WT: 8.5 PPG

	DEPTH	ANNULAR HYDROSTATIC PRESSURE	COLLAPSE W/AXIAL LOADING	HOLE HYDROSTATIC PRESSURE	TENSION
	0	0		0	154,478
1	1000	499	5982	442	137,418
2	9300	4643	5290	4111	17,060
3	10300	5142	7506	4553	0
4	0	0	ERR	0	0
5	0	0	ERR	0	0

FINIAL CASING DESIGN

SAFTEY FACTORS

		FROM	TO	LENGTH	COLLAPSE >1.125	BURST >1.00	TENSION >2.00
0		0	0	0	ERR	ERR	ERR
0		0	0	0	ERR	ERR	ERR
5	1/2" 20# N-80 LT&C	10,300	9,300	1000	1.460	1.716	21.325
5	1/2" 17# N-80 LT&C	9,300	1,000	8300	1.139	1.600	2.153
5	1/2" 20# N-80 LT&C	1,000	0	1000	11.983	17.673	2.355

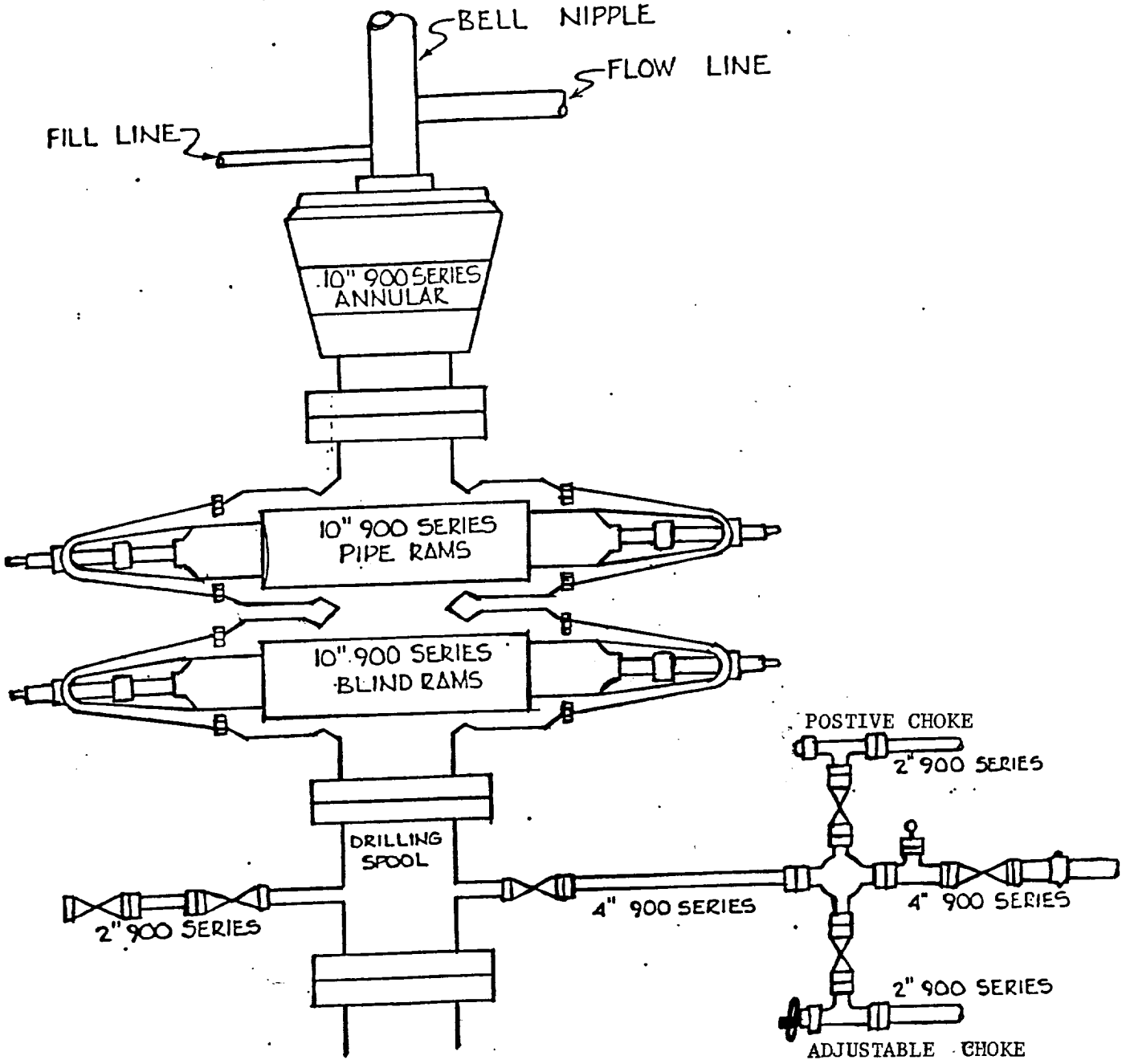
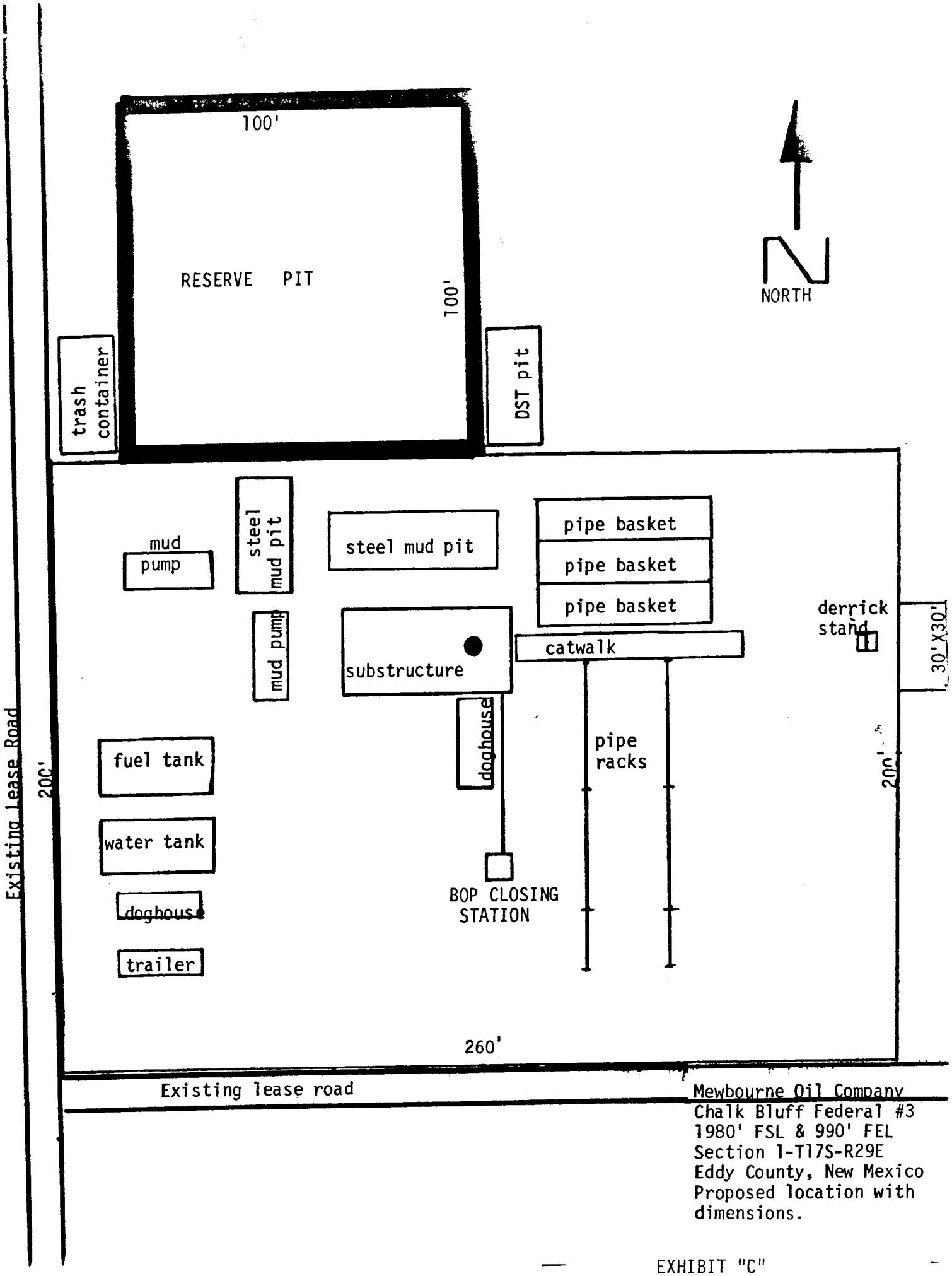


EXHIBIT "D"

Mewbourne Oil Company
Chalk Bluff Federal #3
1980' FSL & 990' FEL
Section 1-T17S-R29E
Eddy County, New Mexico



Mewbourne Oil Company
Chalk Bluff Federal #3
1980' FSL & 990' FEL
Section 1-T17S-R29E
Eddy County, New Mexico
Proposed location with dimensions.

EXHIBIT "C"

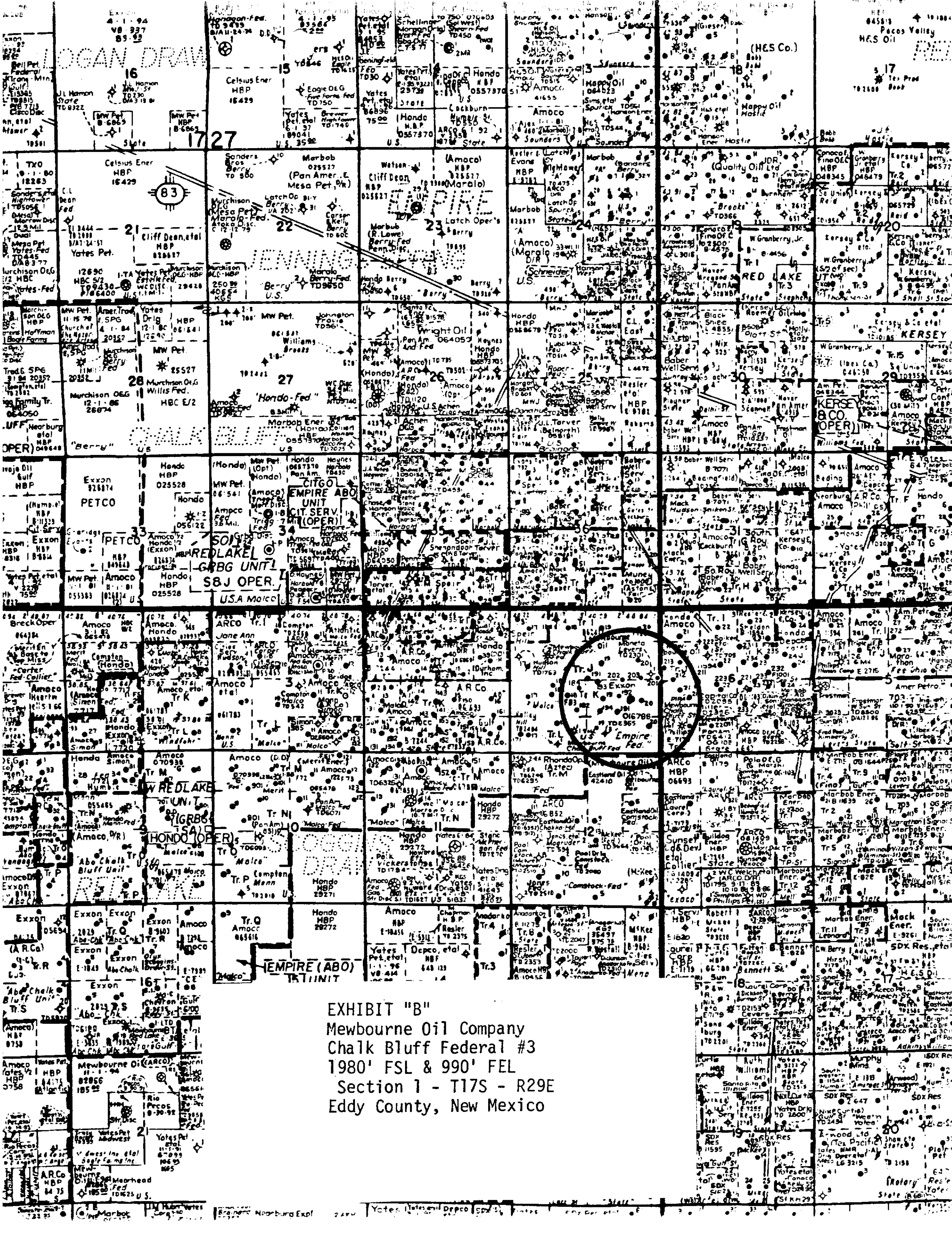
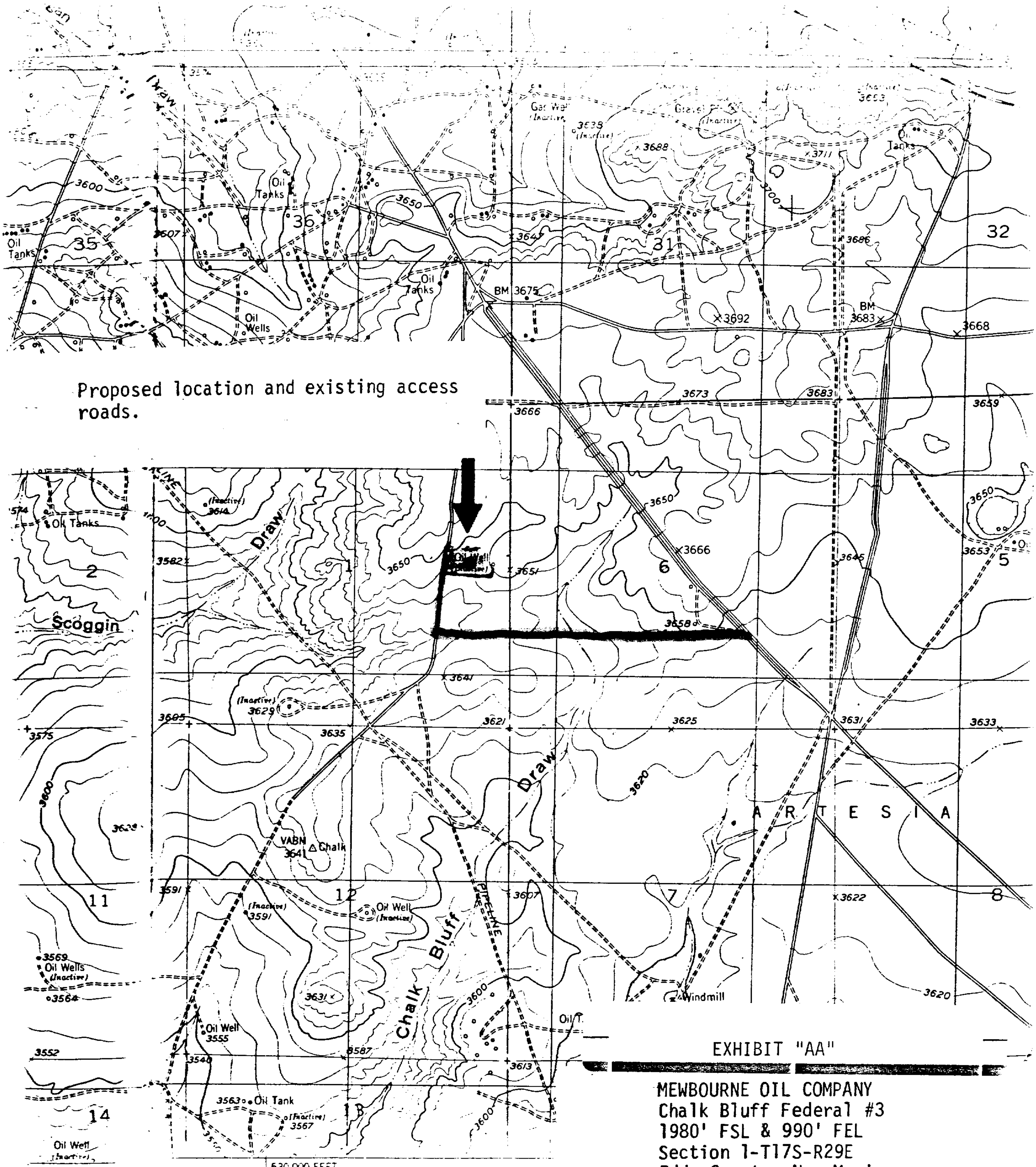


EXHIBIT "B"
Mewbourne Oil Company
Chalk Bluff Federal #3
1980' FSL & 990' FEL
Section 1 - T17S - R29E
Eddy County, New Mexico

Proposed location and existing access roads.



...ped, edited ... ...ished by the Geological Survey

...rol by USGS ... ...SGS

...re and drainage ... ...

... 1946. ... ... planetable surveys 1955

EXHIBIT "AA"

MEWBOURNE OIL COMPANY
Chalk Bluff Federal #3
1980' FSL & 990' FEL
Section 1-T17S-R29E
Eddy County, New Mexico
Detail Map for road and location.

Existing Roads

Proposed Location

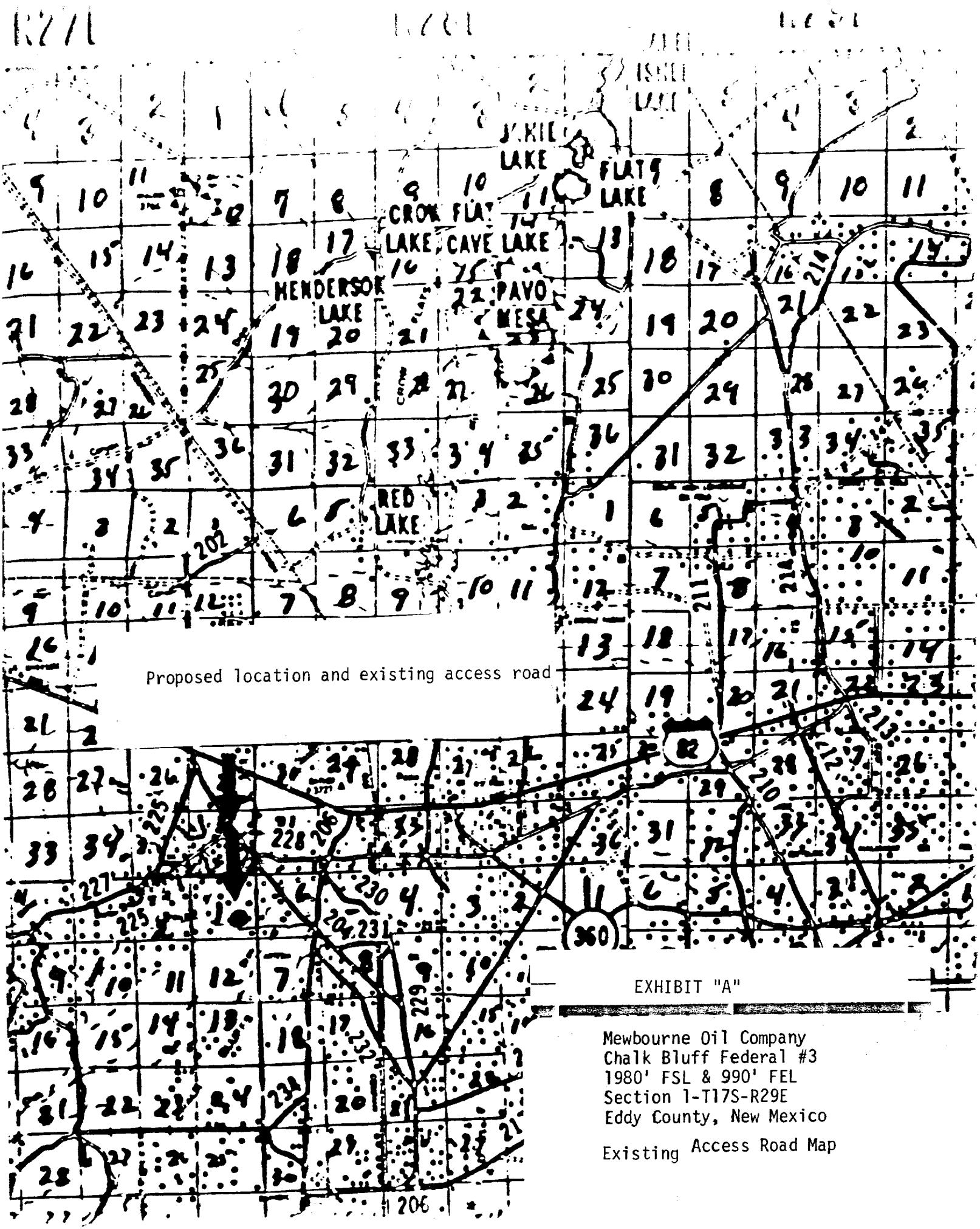


EXHIBIT "A"

Mewbourne Oil Company
Chalk Bluff Federal #3
1980' FSL & 990' FEL
Section 1-T17S-R29E
Eddy County, New Mexico

Existing Access Road Map

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

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

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

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised 1-1-89

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator	Lease	Well No.
MEWBOURNE OIL COMPANY	CHALK BLUFF FEDERAL	3

Unit Letter	Section	Township	Range	County
I	1	18 SOUTH	27 EAST NMPM	EDDY

Actual Footage Location of Well:
1980 feet from the SOUTH line and 990 feet from the EAST line

Ground level Elev.	Producing Formation	Pool	Dedicated Acreage:
3628	Morrow	North Illinois Camp Morrow	320 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

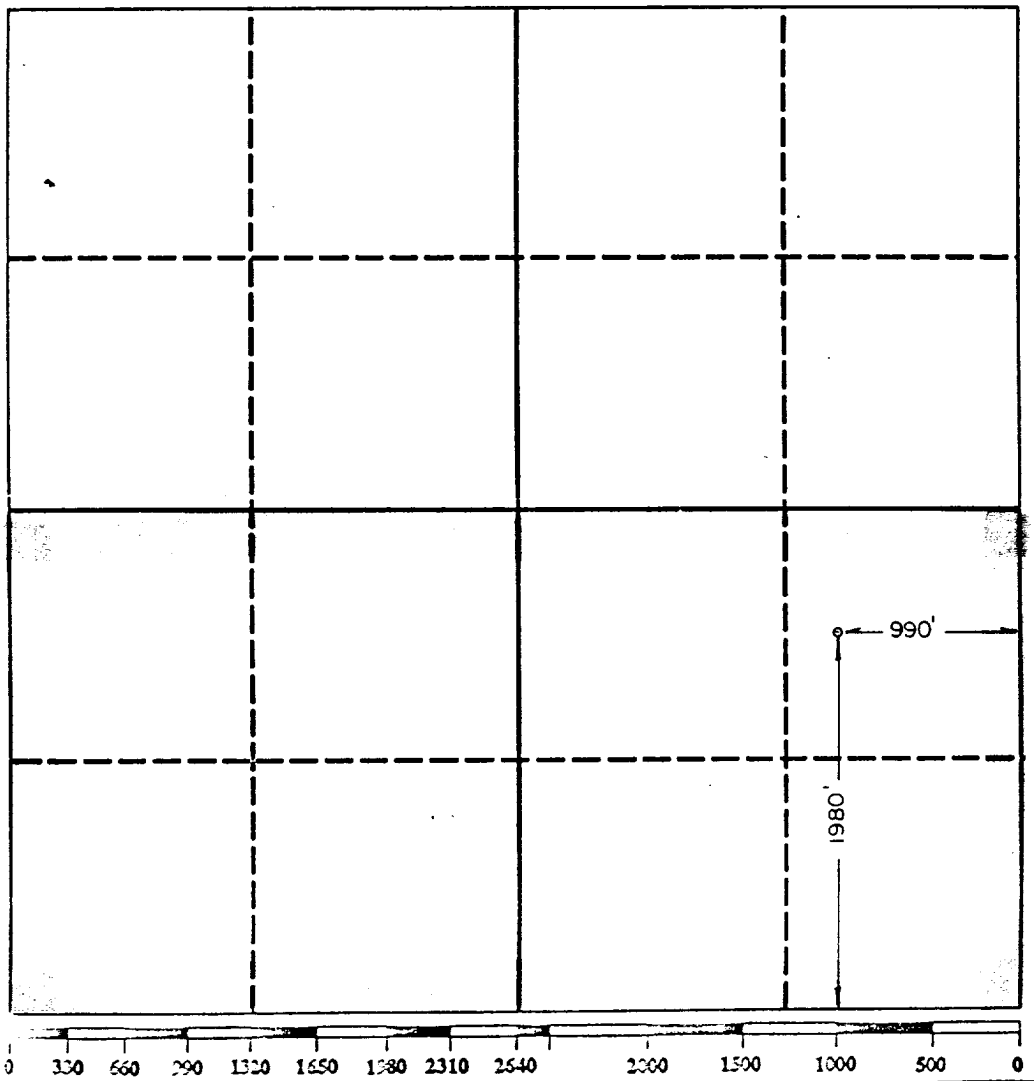
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?

[X] Yes [ ] No If answer is "yes" type of consolidation Communitization

If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary. _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



OPERATOR CERTIFICATION

I hereby certify that the information contained herein in true and complete to the best of my knowledge and belief.

Signature: Bill Pierce

Printed Name: Bill Pierce

Position: Drilling Superintendent

Company: Mewbourne Oil Company

Date: August 31, 1992

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 supervison, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: 8/26/92

Signature & Seal of Professional Surveyor: STATE OF NEW MEXICO HERSCHEL L JONES

Certificate No. NM 3640

12. CERTIFICATION:

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drilling site and necessary access route; that I am familiar with the conditions which presently exist; that the statements made in this plan are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by MEWBOURNE OIL COMPANY and its' contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved.

September 9, 1992

Kelly Ryan
District Superintendent
MEWBOURNE OIL COMPANY

C. The estimated depths at which anticipated water, oil or natural gas can be expected are:

Water: Possible surface water between 100' - 300'.
Oil: Penrose @ 1520'
Gas: Wolfcamp @ 6900'

D. Proposed Casing Program: See Form 3160-3

E. Pressure Control Equipment: See Form 3160-3 and Exhibit "D".

F. Mud Program: See Form 3160-3.

G. Auxiliary Equipment: Mud-gas seperator, PVT system, and Hydraulic choke from 6,000' to T.D.

H. Testing and Coring Program: Possibility of 4 DST's in the following zones: Wolfcamp, Cisco, Strawn, Morrow. No cores are planned at this time.

I. Logging: Gamma Ray - Spectral Density Dual Spaced Neutron Log from T.D. to surface.
Gamma Ray - Dual LaterLog - Micro Guard Log from T. D. to Intermediate casing.

J. No abnormal pressures or temperatures are anticipated. In the event abnormal pressures are encountered the proposed mud program will be modified to accomodate the increased pressures.

K. Anticipated Starting Date: As soon as possible after BLM approval.

11. OPERATOR'S REPRESENTATIVES:

The field representatives responsible for assuring compliance with the approved surface use and operations plan are as follows:

Kelly Ryan	(505) 393-5905	Box 5270
Bill Pierce	24. hour aswering	Hobbs, NM
Greg Milner	service.	88241

7. ANCILLARY FACILITIES:

A. None required.

8. WELLSITE LAYOUT:

A. Exhibit "C" shows the relative location and dimensions of the well pad, mud pits, reserve pits, trash container and location of major rig components.

B. A 400' X 400' area has been flagged surround- the staked well.

9. PLANS AND RESTORATION OF THE SURFACE:

A. After completion of drilling and/or completion operations, all equipment not needed for producing operations will be removed. Pits will be filled in after all fluids have evaporated and the location cleaned of all trash and junk to leave the wellsite in an asthetically pleasing condition as reasonably possible. All production facilities left on location will be painted to conform with BLM painting regulations within 120 days of completion.

10. OTHER INFORMATION:

A. The geologic surface formation is hard clay interspersed with sand and chert outcroppings. Vegatative covering is generally sparse except in low-lying areas where grass is prevelant. Other vegatative covering consists mostly of greasewood and bear grass.

B. The estimated tops of geologic markers are as follows:

Queen	1260'	Cisco	7740'
San Andres	2100'	Canyon	8350'
Glorieta	3720'	Strawn	8900'
Tubb	4930'	Atoka	9500'
Abo	5900'	Morrow	9600'
Wolfcamp	6900'	Miss.	10,100'

4. LOCATION AND TYPE OF WATER SUPPLY:

A. Water will be purchased from trucking companies servicing this area and will be trucked to the wellsite over existing and/or proposed roads shown on Exhibits "A" and "AA".

5. LOCATION OF CONSTRUCTION MATERIALS:

A. Caliche for construction of the location and any needed road repairs hopefully will come from the location itself. If this is not possible, caliche will be taken from a BLM pit located in the NE4/NW4 of Sec. 12-T18S-R27E which is BLM pit #18271203. This pit also extends into the SE4/SW4 of Sec. 1-T18S-R27E which is BLM pit # 18270114. An alternative pit which may be used in the event BLM pit #18271203 contains unsuitable material is a BLM pit located in the SW4/NE4 of Sec. 1-T18S-R27E which is BLM pit #18270107.

6. METHODS OF HANDLING WASTE DISPOSAL:

A. Drill cuttings will be disposed of in the drilling pits.

B. Drilling fluids will be allowed to evaporate in the drilling pits until pits are dry.

C. Water used and produced during stimulation, production testing, squeezing opeations etc. will be disposed of in the drilling pits. Oil produced during tests will be stored on site in steel test tanks until sold.

D. Current laws and regulations pertaining to the disposal of human waste will be complied with.

E. All trash, junk and other waste material will be contained in an appropriate container to prevent scattering and will be removed and deposited in an approved sanitary landfill.

F. All trash and debris will be buried or removed from the wellsite within 90 days after drilling and/or completion operations have ceased.

MULTI-POINT SURFACE USE AND OPERATING PLAN
MEWBOURNE OIL COMPANY
CHALK BLUFF FEDERAL WELL NO. 3
1980' FSL & 990' FEL OF SEC. 1-T18S-R30E
EDDY COUNTY, NEW MEXICO
NEW MEXICO LEASE NO. NM-016788

This plan is submitted with the Application for Permit to Drill (APD) the above captioned well. The purpose of the plan is to describe the location of the proposed well, the proposed construction activities, operations plan and the magnitude of necessary surface disturbance involved, so that a complete, comprehensive appraisal can be made as to the enviromental effects associated with this operation. The surface is owned by the Federal Government and is managed by the Bureau of Land Management.

1. EXISTING ROADS:
   A. From the junction of U. S. 82 and U. S. 285 Highways in Artesia, proceed east on U. S. 82 12 miles. Turn right (south) on Eddy County Road #206 (Illinois Camp Road) and proceed south for 1.75 miles. Turn right (northwest) on Eddy County Road #204 and proceed .75 miles. Turn left (west) on caliche lease road and proceed 1 mile. Turn right (north) 100 yards on caliche lease road and location will be on the right hand side of the lease road. (Exhibit "A" & "AA")

   B. Culverts: None required

   C. Cuts and Fills: A two foot cut will be required to construct the location.

   D. Turn-Outs: None required.

   E. Gates or Cattleguards: None required.

2. LOCATION OF EXISTING WELLS

   A. Existing wells in a 1 mile radius are shown on Exhibit "B".

3. LOCATION OF PROPOSED ACTIVITIES:

   A. If the well is productive, all production facilities will be constructed on the existing pad.

Form 3160-3
(November 1983)
(formerly 9-331C)

SUBMIT IN TRIPLICATE*
(Other instructions on reverse side)

Form approved.
Budget Bureau No. 1004-0136
Expires August 31, 1985

30-015-27163

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

5. LEASE DESIGNATION AND SERIAL NO.: NM-~~016788~~ 0557371

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WORK: DRILL [XX] DEEPEN [ ] PLUG BACK [ ]

7. UNIT AGREEMENT NAME:

b. TYPE OF WELL: OIL WELL [ ] GAS WELL [X] OTHER — SINGLE ZONE [X] MULTIPLE ZONE [ ]

8. FARM OR LEASE NAME: Chalk Bluff Fed. Comm.

2. NAME OF OPERATOR: Mewbourne Oil Company ✓

RECEIVED
OCT 19 1992
O. C. D.
ARTESIA, OFFICE

9. WELL NO.: 3

3. ADDRESS OF OPERATOR: Box 5270 Hobbs, New Mexico 88241

10. FIELD AND POOL, OR WILDCAT: North Illinois Camp Morrow

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.*)
At surface: 1980' FSL and 990' FEL Ut. I
At proposed prod. zone: Same

11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA: 18S 27E
1-T~~17S~~-R~~29E~~

14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE*: 12 miles southeast of Artesia, New Mexico

12. COUNTY OR PARISH: Eddy — 13. STATE: NM

15. DISTANCE FROM PROPOSED* LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any)	16. NO. OF ACRES IN LEASE	17. NO. OF ACRES ASSIGNED TO THIS WELL
990'	320	320
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT.	**19. PROPOSED DEPTH**	**20. ROTARY OR CABLE TOOLS**
2040'	10,300'	Rotary

21. ELEVATIONS (Show whether DF, RT, GR, etc.): 3628' GR

22. APPROX. DATE WORK WILL START*: Upon BLM approval

23. PROPOSED CASING AND CEMENTING PROGRAM — No Water Basin

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	QUANTITY OF CEMENT
17 1/2"	13 3/8"	61#	400' ±	450 sks. Class C circulated
12 1/4"	9 5/8"	36#	2,600' ±	800 sks. Tie back into surface.
8 3/4"	5 1/2"	17 & 20#	10,300' ±	600 sks. of Class "H" SEE STIPS.

Part ID-1
10-16-92
New Loc + API

Mud Program:

0-400' Spud mud with fresh water gel and lime. LCM as needed.
400' - 2600' Fresh water gel and lime. LCM as needed.
2,600' - 8500' Cut brine with lime for pH control. Wt. 9.2 - 9.6# ppg, WL - NC. LCM as needed.
8,500 - 10.300' Cut brine with Drispac, salt gel, lime, soda ash, and starch. Wt. 9.2 - 9.6 ppg. WL 10 CC or less. Raise weight accordingly if abnormal pressures are encountered.

BOP PROGRAM:

900 series BOP and Hydrill on 13 3/8" surface casing and on 9 5/8" intermediate casing.

Gas is not dedicated.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen or plug back, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

24.

SIGNED Kelly Ryan TITLE District Superintendent DATE 09/09/1992

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

APPROVED BY _____ TITLE _____ DATE 10-16-92

CONDITIONS OF APPROVAL, IF ANY:
APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

BUREAU OF LAND MANAGEMENT
RECEIVED
SEP 10 1992
DIST. 6
Carlsbad, N.M.

INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated, on all types of lands and leases for appropriate action by either a Federal or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office.

ITEM 1: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable State or Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on this reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal or State agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective production zone.

ITEM 22: Consult applicable Federal or State regulations, or appropriate officials, concerning approval of the proposal before operations are started.

NOTICE

The Privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR Part 3160.

PRINCIPAL PURPOSE: The information is to be used to process and evaluate your application for permit to drill, deepen, or plug back an oil or gas well.

ROUTINE USES: (1) The analysis of the applicant's proposal to discover and extract the Federal or Indian resources encountered. (2) The review of procedures and equipment and the projected impact on the land involved. (3) The evaluation of the effects of proposed operation on surface and subsurface water and other environmental impacts. (4)(5) Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions, as well as routine regulatory responsibility.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if the lessee elects to initiate drilling operation on an oil and gas lease.

The Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq) requires us to inform you that:

This information is being collected to allow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases.

This information will be used to analyze and approve applications.

Response to this request is mandatory only if the lessee elects to initiate drilling operations on an oil and gas lease.

RECEIVED

JAN 04 1993

O. C. D.
ARTESIA, OFFICE

dsf

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.: NM-0557377

6. If Indian, Allottee or Tribe Name:

7. If Unit or CA, Agreement Designation:

1. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.: Chalk Bluff Federal Comm. #3

2. Name of Operator: Mewbourne Oil Company

9. API Well No.: 3001527163

3. Address and Telephone No.: P.O. Box 5270 Hobbs, New Mexico 88241 (505) 393-5905

10. Field and Pool, or Exploratory Area: North Illinois Camp Morrow

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1980' FSL & 990' FEL
Sec. 1-T18S-R27E

11. County or Parish, State: Eddy Co., N.M.

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
■ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	■ Other Spud well & cemented 13-3/8" surf. csg.	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Spudded well @ 4:00 p.m. MST 11/24/92. Drilled 17-1/2" surface hole to 400' KB. Ran 10 joints of 13-3/8", 54.50#, New LS, ST&C casing and set @ 400' KB. Western cemented w/100 sks. Class "H" cement containing 12% Thixad + 3% CaCl2 followed by 265 sks. of Class "C" containing 6% Gel + 3% CaCl2 + 1/4 pps celloseal + 5 pps gilsonite followed by 150 sks. of Class "C" neet containing 3% CaCl2. Circulated 50 sks. of cement to the pit. Job complete @ 5:30 a.m. 11/25/92.

BUREAU OF LAND MANAGEMENT
RECEIVED
DEC 07 1992
CAST. 6 N.M.
ROSWELL, NEW MEXICO

14. I hereby certify that the foregoing is true and correct

Signed Bill Pierce Title Drilling Supt. Date 12/02/92

(This space for Federal or State office use)

Approved by David R. Glass Title _____ Date _____

Conditions of approval, if any:

1992

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations, and reports of such operations when completed, as indicated, on Federal and Indian lands pursuant to applicable Federal law and regulations, and, if approved or accepted by any State, on all lands in such State, pursuant to applicable State law and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office.

SPECIFIC INSTRUCTIONS

Item 4—If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 13—Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by local Federal and/or State offices. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones, or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to top of any left in the hole; method of closing top of well; and date well site conditioned for final inspection looking to approval of the abandonment.

NOTICE

The Privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et. seq., 351 et. seq., 25 U.S.C. et. seq.; 43 CFR 3160.

PRINCIPAL PURPOSE — The information is to be used to evaluate, when appropriate, approve applications, and report completion of secondary well operations, on a Federal or Indian lease.

ROUTINE USES:

(1) Evaluate the equipment and procedures used during the proposed or completed subsequent well operations.

(2) Request and grant approval to perform those actions covered by 43 CFR 3162.3-2(2).

(3) Analyze future applications to drill or modify operations in light of data obtained and methods used.

(4)(5) Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions.

EFFECT OF NOT PROVIDING INFORMATION — Filing of this notice and report and disclosure of the information is mandatory once an oil or gas well is drilled.

The Paperwork Reduction Act of 1980 (44 U.S.C. 3501, et. seq.) requires us to inform you that:

This information is being collected in order to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

This information will be used to report subsequent operations once work is completed and when requested, to obtain approval for subsequent operations not previously authorized.

Response to this request is mandatory for the specific types of activities specified in 43 CFR Part 3160.

BURDEN HOURS STATEMENT

Public reporting burden for this form is estimated to average 25 minutes per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management, (Alternate) Bureau Clearance Officer, (WO-771), 18 and C Streets, N.W., Washington, D.C. 20240, and the Office of Management and Budget, Paperwork Reduction Project (1004-0135), Washington, D.C. 20503.

*U.S. GPO: 1990-773-016/26019

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Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

JAN 04 1993

O. C. D.
ARTESIA, OFFICE

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator
Mewbourne Oil Company

3. Address and Telephone No.
P.O. Box 5270 Hobbs, New Mexico 88241 (505) 393-5905

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1980' FSL & ~~1980~~ 990' FEL
Sec. 1-T18S-R27E

5. Lease Designation and Serial No.
NM-0557371

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

8. Well Name and No.
Chalk Bluff Federal Comm. #3

9. API Well No.
3001527163

10. Field and Pool, or Exploratory Area
N. Illinois Camp Morrow

11. County or Parish, State
Eddy Co., New Mexico

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
■ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	■ Other Cement 9-5/8" Inter. Casing	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Drilled 12-1/4" Intermediate hole to 2600' KB. Ran 59 joints of 9-5/8", 36#, New LS, ST&C casing and set @ 2600' KB. Western cemented with 590 sacks of Class "C" lite containing 6% gel + 10 pps NaCl + 1/4 pps celloseal followed by 250 sacks of Class "C" containing 2% CaCl2. Circulated 50 sacks of cement to the pit. Job complete @ 11: 50 p.m. 11/29/92.

BUREAU OF LAND MANAGEMENT
RECEIVED
DEC 07 1992
CARLSBAD, NEW MEXICO

14. I hereby certify that the foregoing is true and correct

Signed Bill Rivers Title Drilling Supt. Date 12-02-92

(This space for Federal or State office use)

Approved by David R. Glass Title _____ Date _____

Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

GENERAL INSTRUCTIONS

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SPECIFIC INSTRUCTIONS

Item 4—If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

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NOTICE

The Privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et. seq., 351 et. seq., 25 U.S.C. et. seq.; 43 CFR 3160.

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ROUTINE USES:

(1) Evaluate the equipment and procedures used during the proposed or completed subsequent well operations.

(2) Request and grant approval to perform those actions covered by 43 CFR 3162.3-2(2).

(3) Analyze future applications to drill or modify operations in light of data obtained and methods used.

(4)(5) Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions.

EFFECT OF NOT PROVIDING INFORMATION — Filing of this notice and report and disclosure of the information is mandatory once an oil or gas well is drilled.

The Paperwork Reduction Act of 1980 (44 U.S.C. 3501, et. seq.) requires us to inform you that:

This information is being collected in order to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

This information will be used to report subsequent operations once work is completed and when requested, to obtain approval for subsequent operations not previously authorized.

Response to this request is mandatory for the specific types of activities specified in 43 CFR Part 3160.

BURDEN HOURS STATEMENT

Public reporting burden for this form is estimated to average 25 minutes per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management, (Alternate) Bureau Clearance Officer, (WO-771), 18 and C Streets, N.W., Washington, D.C. 20240, and the Office of Management and Budget, Paperwork Reduction Project (1004-0135), Washington, D.C. 20503.

*U.S. GPO: 1990-773-016/26019

95F

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

5. Lease Designation and Serial No.
NM-0557371

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

SUBMIT IN TRIPLICATE

1. Type of Well
☐ Oil Well ■ Gas Well ☐ Other

8. Well Name and No.
Chalk Bluff Fed. Comm. 3

2. Name of Operator
Mewbourne Oil Company

9. API Well No.
30-015-27163

3. Address and Telephone No.
P.O. Box 5270 Hobbs, New Mexico 88241

10. Field and Pool, or Exploratory Area
N. Illinois Camp Morrow

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1980' FSL & ~~1980'~~ 990' FEL
Sec. 1-T18S-R27E

11. County or Parish, State
Eddy

12. **CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
■ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	■ Other Cement 7" casing	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Lost complete returns @ 7683'. Dry drilled 8-3/4" hole to 8968'. Ran 226 Jts. of 7", 26# & 29#, N-80 & S-95 grade used API casing and set @ 8968'. Multiple stage cementer @ 6997' and external casing packer @ 7026'. Western cemented the first stage w/350 sks. of Class "H" containing 8 pps CSE + .75% CF-14 + 5 pps Gilsonite + .35% Thrifty Lite. Set ECP and opened DV tool. Cemented 2nd stage w/750 sks. of Class "C" containing 1 pps celloseal + 5 pps gilsonite + 3% salt followed by 100 sks. of Class "H" Neet. Plug down to 6997' @ 2:45 a.m. 12/26/92

ACCEPTED FOR RECORD
(ORIG. SGD.) DAVID R. GLASS
FEB 4 1993
CARLSBAD, NEW MEXICO

CARLSBAD AREA OFFICE

RECEIVED
JAN 25 9 40 AM '93

14. I hereby certify that the foregoing is true and correct
Signed Bill Vance Title Drilling Superintendent Date 01/20/93

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

1. Type of Well
☐ Oil Well ■ Gas Well ☐ Other

2. Name of Operator
Mewbourne Oil Company

3. Address and Telephone No.
P.O. Box 5270 Hobbs, New Mexico 88241

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1980' FSL & ~~1980'~~ 990' FEL
Sec. 1-T18S-R27E

5. Lease Designation and Serial No.
NM-0557371

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

8. Well Name and No.
Chalk Bluff Fed. Comm. #3

9. API Well No.
30-015-27163

10. Field and Pool, or Exploratory Area
N. Illinois Camp Morrow

11. County or Parish, State
Eddy

12. **CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
■ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	■ Other Run 4-1/2" Liner	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

Drilled well to a total depth of 10,150' w/6" hole, ran 45 jts. of 4-1/2", 11.6#, N-80, used API casing and hung liner from 8599' to 10,150'. Western cemented w/200 sks. of Class "H" containing 5 pps CSE + 20 pps SF-3 + .9% CF-14 + 1 gal./ 100 sacks of Klay-Treat. Plug down to 10,113' @ 5:00 a.m. 01/06/93. Released rig and moved off location. 01/08/93

ACCEPTED FOR RECORD
(ORIG. SGD.) DAVID R. GLASS
FEB 4 1993
CARLSBAD, NEW MEXICO AREA

RECEIVED
JAN 25 9 40 AM '93

14. I hereby certify that the foregoing is true and correct
Signed Bill Pierce Title Drilling Superintendent Date 01/21/93

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

SEC 1 TWN 18 ··· RGE 27 API # 30-015-27163

OPERATOR MEWBOURNE OIL CO

WELL NAME CHALK BLUFF FED Com #3

STATE OCD TOPS AS PER MARK ASHLEY DATE 1-25-93

Southeastern New Mexico				Northwestern New Mexico	
T. Anhy		T. Canyon		T. Ojo Alamo	T. Penn. "B"
T. Salt		T. Strawn	8932	T. Kirtland-Fruitland	T. Penn. "C"
B. Salt		T. Atoka	9490	T. Pictured Cliffs	T. Penn. "D"
T. Yates	450	T. Miss		T. Cliff House	T. Leadville
T. 7 Rivers	565	T. Devonian		T. Menefee	T. Madison
T. Queen	1159	T. Silurian		T. Point Lookout	T. Elbert
T. Grayburg	1497	T. Montoya		T. Mancos	T. McCracken
T. San Andres	1985	T. Simpson		T. Gallup	T. Ignacio Otzte
T. Glorieta	3535	T. McKee		Base Greenhorn	T. Granite
T. Paddock		T. Ellenburger		T. Dakota	T.
T. Blinebry		T. Gr. Wash		T. Morrison	T.
T. Tubb	4760	T. Delaware Sand		T. Todilto	T.
T. Drinkard		T. Bone Springs		T. Entrada	T.
T. Abo	5745	T. Morrow LS	9710	T. Wingate	T.
T. Wolfcamp	6475	T.		T. Chinle	T.
T. Penn	7970	T.		T. Permain	T.
T. Cisco (Bough C)		T.		T. Penn "A"	T.

OIL OR GAS SANDS OR ZONES

No. 1, from ..... to ..... No. 3, from ..... to .....

No. 2, from ..... to ..... No. 4, from ..... to .....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from ..... to ..... feet .....

No. 2, from ..... to ..... feet .....

No. 3, from ..... to ..... feet .....

REMARKS:

Submit 5 Copies
Appropriate District Office
DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

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

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-104
Revised 1-1-89
See Instructions
at Bottom of Page

RECEIVED
JAN 28 1993
O. C. D.
ARTESIA, NEW MEXICO

REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

I.

Operator	Well API No.
Mewbourne Oil Company	30-015-27163

Address: P.O. Box 5270 Hobbs, New Mexico 88241

Reason(s) for Filing (Check proper box)
- New Well [X]
- Recompletion [ ]
- Change in Operator [ ]
- Change in Transporter of: Oil [ ] Dry Gas [ ] Casinghead Gas [ ] Condensate [ ]
- Other (Please explain) [ ]

If change of operator give name and address of previous operator _____

II. DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, Including Formation	Kind of Lease (State, Federal or Fee)	Lease No.
Chalk Bluff Federal Comm.	3	North Illinois Camp Morrow	Federal	NM-0557371

Location: Unit Letter I : 1980 Feet From The South Line and 990 Feet From The East Line

Section 1 Township 18S Range 27E , NMPM, Eddy County

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil [ ] or Condensate [X]	Address (Give address to which approved copy of this form is to be sent)
Amoco Pipeline IPC	502 N. West Ave. Levelland, Tx. 79336-3914
Name of Authorized Transporter of Casinghead Gas [ ] or Dry Gas [X]	Address (Give address to which approved copy of this form is to be sent)
Transwestern Pipeline Company	P.O. Box 1188 Houston, Texas 77251

If well produces oil or liquids, give location of tanks.	Unit	Sec.	Twp.	Rge.	Is gas actually connected?	When ?
	I	1	18S	27E	Yes	01/15/93

If this production is commingled with that from any other lease or pool, give commingling order number: None

IV. COMPLETION DATA

Designate Type of Completion - (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Res'v	Diff Res'v
		X	X					

Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.
11/24/92	01/16/93	10,150'	10,102'
Elevations (DF, RKB, RT, GR, etc.)	**Name of Producing Formation**	**Top Oil/Gas Pay**	**Tubing Depth**
KB 3643' DF 3641' GL 3628'	Lower Morrow	9950'	9972'
Perforations			**Depth Casing Shoe**
9950'-9954' 9957'-9972'			10,150'

TUBING, CASING AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT
17-1/2"	13-3/8" 54.5#	400'±	100 sacks Pozmix-2
12-1/4"	9-5/8" 36#	2,600'	250 sacks 2-12-93
8-3/4"	7" 26#	8,968'	1200 sacks comp 4-15
6"	4-1/2" Liner 11.6#	8,600' to 10,150'	200 sacks

V. TEST DATA AND REQUEST FOR ALLOWABLE

2-3/8" & 2-7/8"

OIL WELL *(Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours.)*

Date First New Oil Run To Tank	Date of Test	Producing Method (Flow, pump, gas lift, etc.)	
Length of Test	**Tubing Pressure**	**Casing Pressure**	**Choke Size**
Actual Prod. During Test	**Oil - Bbls.**	**Water - Bbls.**	**Gas- MCF**

GAS WELL

Actual Prod. Test - MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
2000 MCF/D	24 Hrs.	30 : 1	N/A
Testing Method (pitot, back pr.)	**Tubing Pressure (Shut-in)**	**Casing Pressure (Shut-in)**	**Choke Size**
Back Pressure	2850	0	10/64"

VI. OPERATOR CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

R. A. Jones

Signature
Robert A Jones — Engineer
Printed Name — Title
01/19/93 — (505) 393-5905
Date — Telephone No.

OIL CONSERVATION DIVISION

Date Approved JAN 29 1993

By ORIGINAL SIGNED BY MIKE WILLIAMS

Title SUPERVISOR, DISTRICT II

INSTRUCTIONS: This form is to be filed in compliance with Rule 1104

1) Request for allowable for newly drilled or deepened well must be accompanied by tabulation of deviation tests taken in accordance with Rule 111.
2) All sections of this form must be filled out for allowable on new and recompleted wells.
3) Fill out only Sections I, II, III, and VI for changes of operator, well name or number, transporter, or other such changes.
4) Separate Form C-104 must be filed for each pool in multiply completed wells.

LTR

Job separation sheet

Form 3160-4
(October 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

FOR APPROVED
OMB NO. 1004-0137
Expires: December 31, 1991

5. LEASE DESIGNATION AND SERIAL NO.: NM-0557371

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME, WELL NO.: Chalk Bluff Fed. Comm. #3

9. API WELL NO.: 30-015-27163

10. FIELD AND POOL, OR WILDCAT: N. Illinois Camp Morrow

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: Sec. 1-T18S-R27E

12. COUNTY OR PARISH: Eddy

13. STATE: N.M.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] DRY [ ] Other

b. TYPE OF COMPLETION: NEW WELL [X] WORK OVER [ ] DEEP-EN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] Other

CONFIDENTIAL

2. NAME OF OPERATOR: Mewbourne Oil Company

3. ADDRESS AND TELEPHONE NO.: P.O. Box 5270 Hobbs, New Mexico 88241 (505) 393-5905

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface: 1980' FSL & 990' FEL
At top prod. interval reported below
At total depth: Same

14. PERMIT NO. | DATE ISSUED

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
11/24/92	01/06/93	01/16/93	KB 3643' DF 3641' GL 3628'	3628'

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
10,150'	10,102'		→	X	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: 9950'-9954', 9957'-9972' Lower Morrow Orange Sand

25. WAS DIRECTIONAL SURVEY MADE: Yes

26. TYPE ELECTRIC AND OTHER LOGS RUN: SDL-DSN Dual-Latero-MFSL-GR Sonic CBL

27. WAS WELL CORED: No

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE/GRADE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	TOP OF CEMENT, CEMENTING RECORD	AMOUNT PULLED
13-3/8"	54.5#	400'±	17-1/2"	100 sx. Class "H"	None
9-5/8"	36#	2,600'±	12-1/4"	250 sx. Class "C"	None
7"	26 & 29#	8,968'	8-3/4"	1200 sx. Class "C & H"	None

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)
4-1/2"	8600'	10,150'	200 sxs.	None

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2-7/8"	9972'	9797'
2-3/8"		

31. PERFORATION RECORD (*Interval, size and number*)

9950'-9954' 9957'-9972'

4 SPF 19' 76 holes

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
9950'-9954'	None
9957'-9972'	None

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
01/16/93	Flowing	Producing

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
01/16/93	24	10/64"		50	2000	0	40 MCF/BBL

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
2720	0		60	2000	0	

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*): Sold

TEST WITNESSED BY: B. Jones

35. LIST OF ATTACHMENTS: Logs- * Please hold in confidence

ACCEPTED FOR RECORD
FEB 4 1993

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED [signature] TITLE Engineer DATE 01/21/93

*(See Instructions and Spaces for Additional Data on Reverse Side)

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

37. SUMMARY OF POROUS ZONES: (Show all important zones of porosity and contents thereof; cored intervals; and all drill-stem, tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures, and recoveries):

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
M. Morrow	9950'	9972'	Sandstone

38. GEOLOGIC MARKERS

NAME	TOP	
	MEAS. DEPTH	TRUE VERT. DEPTH
Yates	450'	
7 Rivers	564'	
Queen	1159'	
Grayburg	1492'	
San Andres	1985'	
Glorieta	3536'	
Tubb	4760'	
Drinkard	5524'	
Abo	5744'	
Wolfcamp	6474'	
Cisco	7686'	
Canyon	8440'	
Strawn	8932'	
Atoka	9490'	
Morrow	9594'	
Morrow Clastic	9800'	
L. Morrow	9911'	

U.S. GPO:1991-575-735/45086

KEN REYNOLDS—PRESIDENT
ARNIE NEWKIRK—VICE-PRESIDENT

WEK DRILLING CO., INC. — OIL WELL DRILLING CONTRACTORS

P. O. Box 1498 ROSWELL, NEW MEXICO 88202-1498
505/623-5070 ROSWELL, NM
505/746-2719 ARTESIA, NM

January 06,1993

Mewbourne Oil Company
P.O. Box 5270
Hobbs, N.M. 88240

RE: Chalk Bluff Federal #3

The following is a Deviation Survey on the above referenced well located in Eddy County, New Mexico.

400' - 3/4°
887' - 1°
1359' - 1°
1864' - 2°
2336' - 1 1/2°
2600' - 3/4°
2792' - 1 1/4°
3086' - 1°
3580' - 1 1/3°
4079' - 1°
4358' - 1 3/4°
4846' - 2 3/4°
5033' - 2 3/4°
5096' - 3°
5158' - 3°
5222' - 3 1/4°
5283' - 3 3/4°
5346' - 3 3/4°
5409' - 4°
5464' - 4 1/4°
5555' - 4 1/4°
5587' - 4 1/4°
5650' - 4 1/4°
5719' - 4 1/2°
5813' - 4°
5875' - 4°
5967' - 3 3/4°
6094' - 3 3/4°
6217' - 3 1/4°
6720' - 3 1/2°
7213' - 3°
7685' - 2 1/2°
8155' - 2 1/4°
8654' - 2°
9003' - 2°
9509' - 1/4°
9837' - 3/4°
10150' - 1 3/4° TD

Sincerely,

Gary W. Chappell
Contracts Manager

STATE OF NEW MEXICO)
)
COUNTY OF CHAVES)

The foregoing was acknowledged before me this 06th day of January 1993 by Gary W. Chappell.

MY COMMISSION EXPIRES

October 07,1996

Linda Rogers
NOTARY PUBLIC

COMPANY :MEWBOURNE OIL LEASE :CHALK BLUFF FED.COMWELL NO. : 3
UNIT :I SECTION : 1 TOWNSHIP : 18
L : 9961 H : 9961 L/H : 1 G/GMIX : 0.849
%CO2 : 0.42 %N2 : 0.33 H2S : DATE :
d : 2.278 Fr :0.012892 GH : 8456.9 RANGE : 27

VOL 1 : 655 PSIA 1 : 2243.2 RESV.TEMP 173.6
VOL 2 : 1310 PSIA 2 : 2193.2
VOL 3 : 2283 PSIA 3 : 2113.2 SHUT-IN PR= 2273.2
VOL 4 : 3294 PSIA 4 : 2013.2

PCR : 668
TCR : 401

LINE	RATE 1		RATE 2		RATE 3		RATE 4	
	'IST	'2ND	'IST	''2ND	'IST	'2ND	'IST	'2ND
1 GM	0.655	0.655	1.310	1.310	2.283	2.283	3.294	3.294
2 TW	534	534	534	534	534	534	534	534
3 Ts	633.6	633.6	633.6	633.6	633.6	633.6	633.6	633.6
4 T	583.8	583.8	583.8	583.8	583.8	583.8	583.8	583.8
PR (est)	3.36		3.28		3.16		3.01	
5 Z(est)	0.727	0.738	0.727	0.736	0.723	0.733	0.731	0.730
6 TZ	424.5	430.8	424.6	429.5	425.2	427.7	426.5	426.0
7 GH/TZ	19.924	19.629	19.918	19.691	19.891	19.774	19.829	19.852
8 eS	2.111	2.088	2.110	2.093	2.108	2.099	2.104	2.105
9 1-e-S	0.526	0.521	0.526	0.522	0.526	0.524	0.525	0.525
10 Pt	2243.2	2243.2	2193.2	2193.2	2113.2	2113.2	2013.2	2013.2
11 Pt2 /1000	5031.9	5031.9	4810.1	4810.1	4465.6	4465.6	4053.0	4053.0
12 Fr	0.012892	0.012892	0.012892	0.012892	0.012892	0.012892	0.012892	0.0128924
13 Fc=FrTZ	5.472	5.555	5.474	5.537	5.481	5.514	5.498	5.492
14 FcQ^n	3.58	3.64	7.17	7.25	12.51	12.59	18.11	18.09
15 L/H(FcQ^n)	12.8	13.2	51.4	52.6	156.6	158.5	328.0	327.3
16 Fw	6.761363	6.896568	27.05758	27.47157	62.32401	62.97698	172.0865	171.83059
17 Pw2	5038.7	5038.8	4837.2	4837.6	4547.9	4548.6	4225.1	4224.8
18 Ps2	10636.7	10519.8	10208.7	10123.1	9588.7	9547.9	8897.4	8894.3
19 Ps	3261.4	3243.4	3195.1	3181.7	3096.6	3090.0	2981.2	2982.3
20 P	2752.3	2743.3	2694.2	2687.4	2604.9	2601.6	2497.2	2497.8
21 Pr	4.12	4.11	4.03	4.02	3.90	3.89	3.74	3.74
22 Tr	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46
23 Z	0.733	0.738	0.736	0.735	0.733	0.732	0.730	0.730

Pc = 2273.2 Pc2 = 5167.4
Pt2 = 5031.9 Pw = 2244.7
4810.1 2199.5
4465.6 2132.7
4053.0 2055.4

Pc2-Pw2= 128.6 Pw2 = 5038.8
329.8 4837.6
618.9 4548.6
942.6 4224.8

n = 0.884

Pc2/(Pc2-Pw2) = 40.184
15.666
8.350
5.482

[Pc2/Pc2-Pw2]n = 26.181
11.386
6.528
4.500

AOF= Q 17.148
14.915
14.903
14.823

Laboratory Services
1331 Tasker Drive
Hobbs, New Mexico 88240

Telephone: (505) 397-3713

FOR: Mewbourne Oil Co.
Attention: Mr. R.Jones
P. O. Box 5270
Hobbs, New Mexico 88240

SAMPLE IDENTIFICATION: Chalk Bluff #3
COMPANY: Mewebourne Oil Co.
LEASE:
PLANT:

SAMPLE DATA: DATE SAMPLED: 3/4/93 12:30PM GAS (XX) LIQUID ( )
ANALYSIS DATE: 03-05-93 SAMPLED BY: R. Jones
PRESSURE - PSIG 530.0 ANALYSIS BY: Rolland Perry
SAMPLE TEMP. °F
ATMOS. TEMP. °F

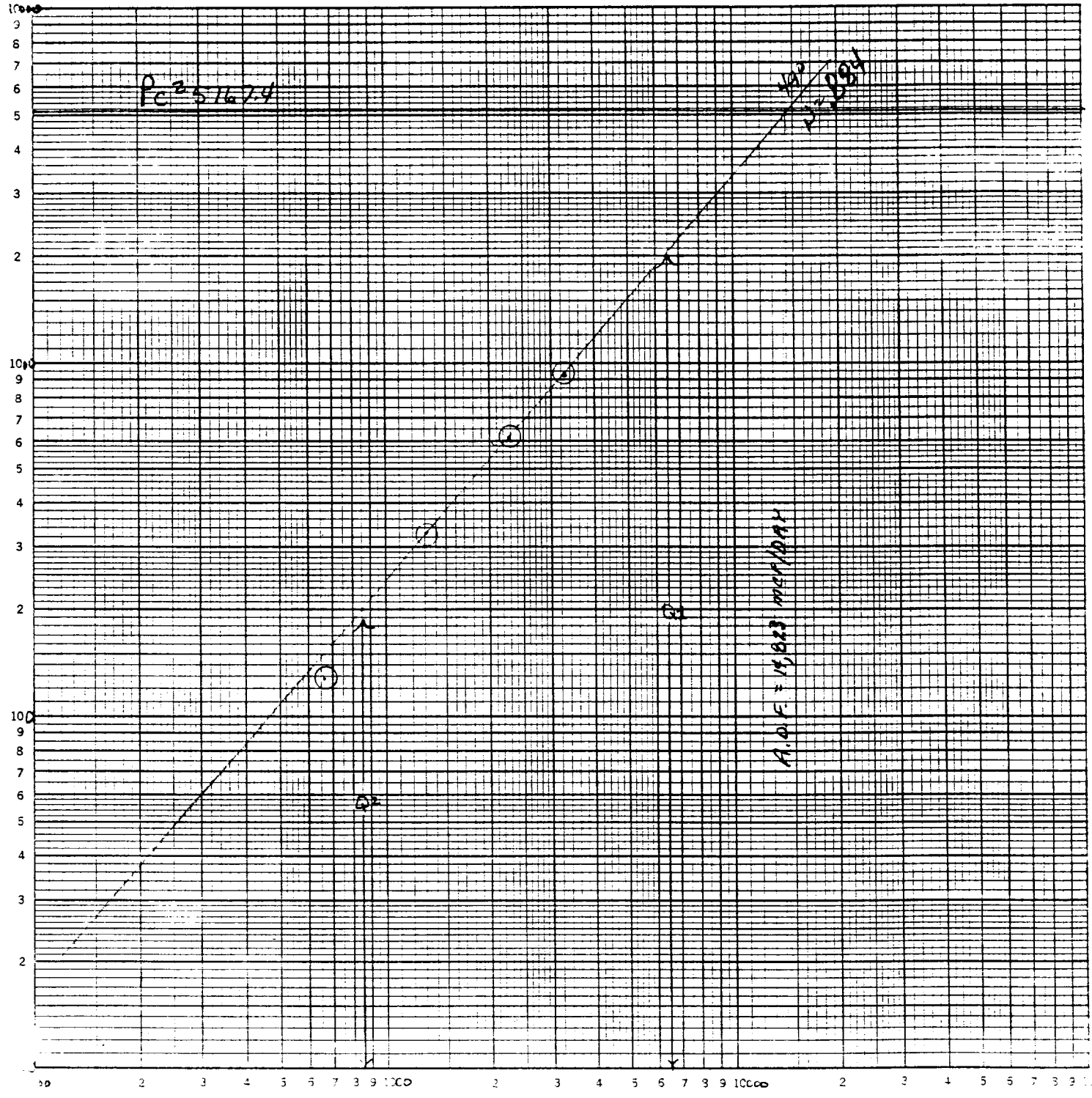
REMARKS:

COMPONENT ANALYSIS

COMPONENT		MOL PERCENT	GPM
Hydrogen Sulfide	(H2S)		
Nitrogen	(N2)	0.33	
Carbon Dioxide	(CO2)	0.42	
Methane	(C1)	83.10	
Ethane	(C2)	8.14	2.164
Propane	(C3)	3.14	0.862
I-Butane	(IC4)	0.40	0.130
N-Butane	(NC4)	0.86	0.270
I-Pentane	(IC5)	0.39	0.140
N-Pentane	(NC5)	0.41	0.147
Hexane	(C6)	2.81	1.214
Heptanes Plus	(C7+)	0.00	0.000
		100.00	4.927

BTU/CU.FT. - DRY		1269	MOLECULAR WT.	21.1701
AT 14.650	DRY	1265		
AT 14.650	WET	1239	26# GASOLINE -	1.591
AT 15.025	DRY	1298		
AT 15.025	WET	1304		
SPECIFIC GRAVITY - CALCULATED		0.731		
MEASURED				

MEWBOURNE OIL COMPANY
Chalk Bluff Federal Com. Well #3
1-18S-27E
Eddy County, New Mexico
3/4/93



0155 File

RECEIVED
APR 93

Submit in duplicate to appropriate district office
See Rule 401 & Rule 1122

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-122
Revised 4-1-91

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator: MEWVOURNE OIL COMPANY						Lease or Unit Name: CHALK BLUFF FEDERAL COM.			
Type Test: [X] Initial [ ] Annual [ ] Special						Test Date: 3/4/93		Well No.: 3	
Completion Date: 1/16/93		Total Depth: 10150		Plug Back TD: 10102		Elevation: GL 3628'		Unit Ltr. - Sec. - TWP - Rge.: I 1 18S 27E	
Csg. Size: 4½	Wt.: 10.5	d: 4.052	Set At: 8600 10150	Perforations: From: 9950	To: 9954			County: EDDY	
Tbg. Size: 2 7/8 & 2 3/8 &	Wt.: 4.7 & 6.5	d: 1.91 2.441	Set At: 9972	Perforations: From: 9957	To: 9972			Pool: MORROW NORTH ILLINOIS Comp	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple: subgke				Packer Set At: 9797				Formation: MORROW	
Producing Thru: tbg.	Reservoir Temp. °F: 133	Mean Annual Temp. °F: 60		Baro. Press - P_a: 13.2				Connection: Transwestern	
L: 9950	H: 9950	Gg: .731	% CO_2: .42	% N_2: .33	% H_2S:	Prover:		Meter Run: 3.068	Taps: flg.

	FLOW DATA				TUBING DATA		CASING DATA		
NO.	Prover Line Size X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI					2260		Pkr.		48 hr.
1.	3 X 1.500	530	5	148	2230		"		1 hr.
2.	3 X 1.500	530	19	124	2180		"		1 hr.
3.	3 X 1.500	535	52	88	2100		"		1 hr.
4.	3 X 1.500	540	102	70	2000		"		1 hr.
5.									

RATE OF FLOW CALCULATIONS

NO.	COEFFICIENT (24 HOUR)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg.	Super Compress. Factor, F pv.	Rate of Flow Q, Mcfd
1.	11.13	52.12	543.2	.9248	1.170	1.043	655
2.	11.13	101.59	543.2	.9436	1.170	1.049	1310
3.	11.13	168.84	548.2	.9741	1.170	1.066	2283
4.	11.13	237.54	553.2	.9905	1.170	1.075	3294
5.							

NO.	P_r	Temp. °R	T_r	Z
1.	.81	608	1.52	.919
2.	.81	584	1.46	.909
3.	.82	548	1.37	.880
4.	.83	530	1.32	.865
5.				

Gas Liquid Hydrocarbon Ratio: 23.63 Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons: 57.0 Deg.
Specific Gravity Separator Gas: .731 XXXXXXXXX
Specific Gravity Flowing Fluid: XXXXX G Mix .849
Critical Pressure: 668 P.S.I.A. 664 P.S.I.A.
Critical Temperature: 401 R 441 R

P_c 2273.2 P_c^2 5167.4

NO.	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1.	5031.9	2244.7	5038.8	128.6
2.	4810.1	2199.5	4837.6	329.8
3.	4465.6	2132.7	4548.6	618.9
4.	4053.9	2055.4	4224.8	942.6
5.				

1) $\frac{P_c^2}{P_c^2 - P_w^2} = 5.4821$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 4.500$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 14,823$

Absolute Open Flow: 14,823 Mcfd @ 15.025 | Angle of Slope θ: 49 | Slope, n: .884

Remarks: 13.3 BBLS CONDENSATE PRODUCED DURING TEST

Approved By Division	Conducted By:	Calculated By:	Checked By:
	PRO WELL TESTERS	KS	KS

THE WESTERN COMPANY OF NORTH AMERICA

WATER ANALYSIS

HOBBS, NEW MEXICO LAB — ANALYSIS #: HB010251

GENERAL INFORMATION

OPERATOR:	Mewbourne Oil Company	DEPTH:	0
WELL:	Chalk Bluff Fed #3	DATE SAMPLED:	
FIELD:		DATE RECEIVED:	02/24/93
FORMATION:		SUBMITTED BY:	Leonard Pounds
COUNTY:	Eddy	WORKED BY:	M Keith
STATE:	NM	PHONE #:	505-392-5556

SAMPLE DESCRIPTION: all water

PHYSICAL AND CHEMICAL DETERMINATIONS

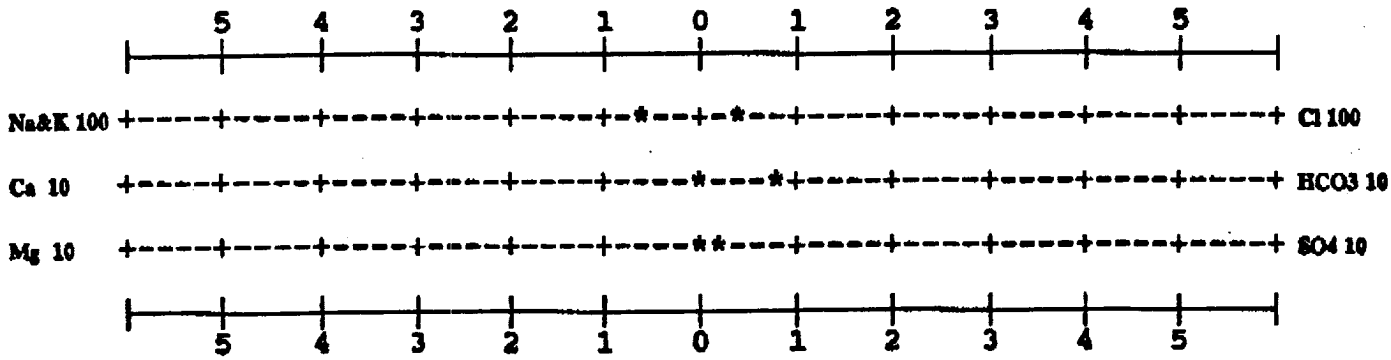
SPECIFIC GRAVITY: 1.003 @ 70 °F — PH: 6.75

RESISTIVITY (MEASURED): 3 OHMS @ 0 °F

IRON (FE++):	150 PPM	SULFATE:	100 PPM
CALCIUM:	10 PPM	TOTAL HARDNESS:	50 PPM
MAGNESIUM:	6 PPM	BICARBONATE:	487 PPM
CHLORIDE:	1595 PPM	SODIUM CHLORIDE (CALC)	2624 PPM
SODIUM+POTASS:	1243 PPM	TOT. DISSOLVED SOLIDS:	3474 PPM
KCL	:no trace	OIL	:none

REMARKS:

STIFF TYPE PLOT (IN MEQ/L)



ANALYST MK

M Keith

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OIL CONS. COMMISSION
Drawer DD
Artesia, NM 88210

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

5. Lease Designation and Serial No.
NM-0557371

6. If Indian, Allottee or Tribe Name

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

7. If Unit or CA, Agreement Designation

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.
Chalk Bluff Fed. Com. #3

2. Name of Operator
Mewbourne Oil Company

RECEIVED

9. API Well No.
30-015-27163

3. Address and Telephone No.
P.O. Box 5270 Hobbs, New Mexico 88241

APR 26 1993

10. Field and Pool, or Exploratory Area
N. Illinois Camp Morrow

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
990'
1980' FSL & ~~1980~~' FEL
Sec. 1-T18S-R27E

O. C. D.
ARTESIA, OFFICE

11. County or Parish, State
Eddy Co., N.M.

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
☒ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☐ Other _____	☒ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)*

1) Formation: Morrow
2) Amount of water produced 10 BW/mo.
3) Water analysis attached
4) Water is stored on lease in fiberglass tank
5) Produced water will be trucked by I & W Inc.
6) The disposal well is I & W Inc., Walter Solt #1, Unit Letter L, Section 5-T18S-R28E Eddy County, New Mexico

SWD #318

14. I hereby certify that the foregoing is true and correct
Signed _____ Title Production Engineer Date March 4, 1993

(This space for Federal or State office use)
Approved by (ORIG. SGD.) DAVID R. GLASS Title PETROLEUM ENGINEER Date 4/22/93
Conditions of approval, if any:
SEE ATTACHED

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

COMPANY :MEWBOURNE OIL LEASE :CHALK BLUFF FED.COMWELL NO. : 3
UNIT :I SECTION : 1 TOWNSHIP : 18
L : 9961 H : 9961 L/H : 1 G/GMIX : 0.849
%CO2 : 0.42 %N2 : 0.33 H2S : DATE :
a : 2.278 Fr :0.012892 GH : 8456.9 RANGE : 27

VOL 1 : 655 PSIA 1 : 2243.2 RESV.TEMP 173.6
VOL 2 : 1310 PSIA 2 : 2193.2
VOL 3 : 2283 PSIA 3 : 2113.2 SHUT-IN PR= 2273.2
VOL 4 : 3294 PSIA 4 : 2013.2

PCR : 668
TCR : 401

LINE	RATE 1		RATE 2		RATE 3		RATE 4	
	1ST	2ND	1ST	2ND	1ST	2ND	1ST	2ND
1 QM	0.655	0.655	1.310	1.310	2.283	2.283	3.294	3.294
2 TW	534	534	534	534	534	534	534	534
3 Ts	633.6	633.6	633.6	633.6	633.6	633.6	633.6	633.6
4 T	583.8	583.8	583.8	583.8	583.8	583.8	583.8	583.8
PR (est)	3.36		3.28		3.16		3.01	
5 Z(est)	0.727	0.738	0.727	0.736	0.728	0.733	0.731	0.730
6 TZ	424.5	430.8	424.6	429.5	425.2	427.7	426.5	426.0
7 GH/TZ	19.924	19.629	19.918	19.691	19.891	19.774	19.829	19.852
8 eS	2.111	2.088	2.110	2.093	2.108	2.099	2.104	2.105
9 1-e-S	0.526	0.521	0.526	0.522	0.526	0.524	0.525	0.525
10 Pt	2243.2	2243.2	2193.2	2193.2	2113.2	2113.2	2013.2	2013.2
11 Pt2 /1000	5031.9	5031.9	4810.1	4810.1	4465.6	4465.6	4053.0	4053.0
12 Fr	0.012892	0.012892	0.012892	0.012892	0.012892	0.012892	0.012892	0.0128924
13 Fc=FrTZ	5.472	5.555	5.474	5.537	5.481	5.514	5.498	5.492
14 FcQm	3.58	3.64	7.17	7.25	12.51	12.59	18.11	18.09
15 L/H(FcQm)	12.8	13.2	51.4	52.6	156.6	158.5	328.0	327.3
16 Fw	6.761363	6.896568	27.05758	27.47157	82.32401	82.97298	172.0865	171.83059
17 Pw2	5038.7	5038.8	4837.2	4837.6	4547.9	4548.6	4225.1	4224.8
18 Ps2	10636.7	10519.8	10208.7	10123.1	9588.7	9547.9	8887.4	8894.3
19 Ps	3261.4	3243.4	3195.1	3181.7	3096.6	3090.0	2981.2	2982.3
20 P	2752.3	2743.3	2694.2	2687.4	2604.9	2601.6	2497.2	2497.8
21 Pr	4.12	4.11	4.03	4.02	3.90	3.89	3.74	3.74
22 Tr	1.46	1.46	1.46	1.46	1.46	1.46	1.46	1.46
23 Z	0.738	0.738	0.736	0.735	0.733	0.732	0.730	0.730

Pc = 2273.2 Pc2 = 5167.4
Pt2 = 5031.9 Pw = 2244.7
4810.1 2199.5
4465.6 2132.7
4053.0 2055.4

Pc2-Pw2= 128.6 Pw2 = 5038.8
329.8 4837.6
618.9 4548.6
942.6 4224.8

n = 0.884

Pc2/(Pc2-Pw2) = 40.184
15.666
8.350
5.482

[Pc2/Pc2-Pw2]n = 26.181
11.386
6.528
4.500

AOF= Q 17.148
14.915
14.903
14.823

FORM C122-D

Laboratory Services

1331 Tasker Drive
Hobbs, New Mexico 88240

Telephone: (505) 397-3713

FOR: Mewbourne Oil Co.
Attention: Mr. R.Jones
P. O. Box 5270
Hobbs, New Mexico 88240

SAMPLE IDENTIFICATION: Chalk Bluff #3
COMPANY: Mewebourne Oil Co.
LEASE:
PLANT:

SAMPLE DATA: DATE SAMPLED: 3/4/93 12:30PM
ANALYSIS DATE: 03-05-93
PRESSURE - PSIG 530.0
SAMPLE TEMP. °F
ATMOS. TEMP. °F

GAS (XX) LIQUID ( )
SAMPLED BY: R. Jones
ANALYSIS BY: Rolland Perry

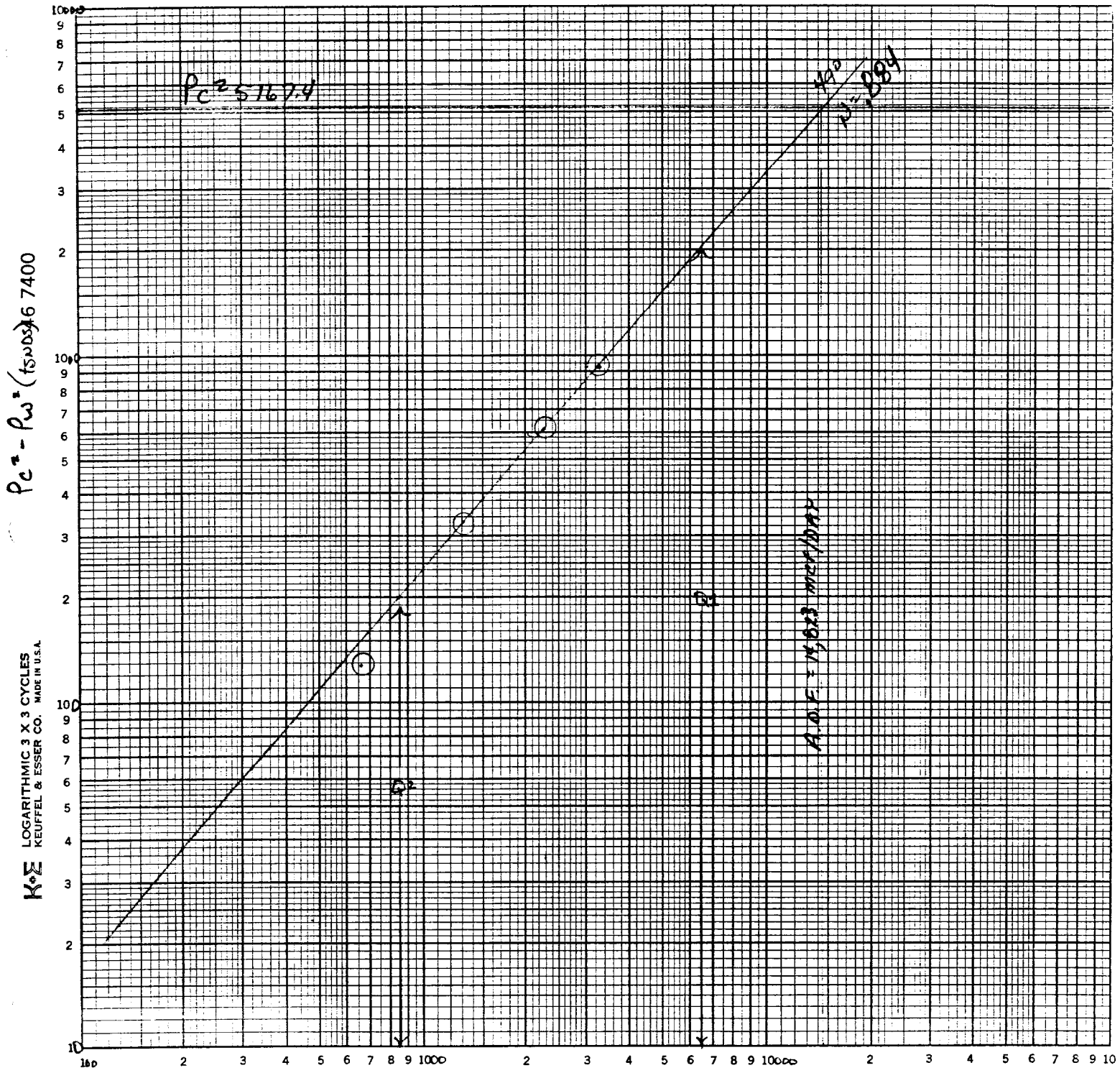
REMARKS:

COMPONENT ANALYSIS

COMPONENT		MOL PERCENT	GPM
Hydrogen Sulfide	(H2S)		
Nitrogen	(N2)	0.33	
Carbon Dioxide	(CO2)	0.42	
Methane	(C1)	83.10	
Ethane	(C2)	8.14	2.164
Propane	(C3)	3.14	0.862
I-Butane	(IC4)	0.40	0.130
N-Butane	(NC4)	0.86	0.270
I-Pentane	(IC5)	0.39	0.140
N-Pentane	(NC5)	0.41	0.147
Hexane	(C6)	2.81	1.214
Heptanes Plus	(C7+)	0.00	0.000
		100.00	4.927

BTU/CU.FT. - DRY		1269	MOLECULAR WT.	21.1701
AT 14.650	DRY	1265		
AT 14.650	WET	1239	26# GASOLINE -	1.591
AT 15.025	DRY	1298		
AT 15.025	WET	1304		
SPECIFIC GRAVITY - CALCULATED		0.731		
MEASURED				

MEWBOURNE OIL COMPANY
Chalk Bluff Federal Com. Well #3
1-18S-27E
Eddy County, New Mexico
3/4/93



Q MCF/DAY

Log Q_1 = 6500 : Log = 3.81291

Log Q_2 = 850 : Log = 2.92942

Slope N = .88349 = .884

Submit in duplicate to appropriate district office
See Rule 401 & Rule 1122

State of New Mexico
Energy, Minerals and Natural Resources Dept.

Received
APR 8 1993

Form C-122
Revised 4-1-91

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator: MEWBOURNE OIL COMPANY							Lease or Unit Name: CHALK BLUFF FEDERAL COM.		
Type Test: [X] Initial [ ] Annual [ ] Special							Test Date: 3/4/93	Well No.: 3	
Completion Date: 1/16/93		Total Depth: 10150		Plug Back TD: 10102			Elevation: GL 3628'	Unit Ltr. - Sec. - TWP - Rge.: I 1 18S 27E	
Csg. Size: 4½	Wt.: 10.5	d: 4.052	Set At: 3600 10150	Perforations: From: 9950	To: 9954			County: EDDY	
Tbg. Size: 2 7/8 2 3/8 &	Wt.: 4.7 & 6.5	d: 1.91 2.441	Set At: 9972	Perforations: From: 9957	To: 9972			Pool: MORROW NORTH ILLINOIS camp	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple: subgke				Packer Set At: 9797				Formation: MORROW	
Producing Thru: tbg.	Reservoir Temp. °F: 133	Mean Annual Temp. °F: 60		Baro. Press - P_a: 13.2				Connection: Transwestern	
L: 9950	H: 9950	Gg: .731	% CO_2: .42	% N_2: .33	% H_2S:	Prover:	Meter Run: 3.068	Taps: flg.	

	FLOW DATA				TUBING DATA		CASING DATA		
NO.	Prover Line Size X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI					2260		Pkr.		48 hr.
1.	3 X 1.500	530	5	148	2230		"		1 hr.
2.	3 X 1.500	530	19	124	2180		"		1 hr.
3.	3 X 1.500	535	52	88	2100		"		1 hr.
4.	3 X 1.500	540	102	70	2000		"		1 hr.
5.									

RATE OF FLOW CALCULATIONS

NO.	COEFFICIENT (24 HOUR)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg.	Super Compress. Factor, F pv.	Rate of Flow Q, Mcfd
1.	11.13	52.12	543.2	.9248	1.170	1.043	655
2.	11.13	101.59	543.2	.9436	1.170	1.049	1310
3.	11.13	168.84	548.2	.9741	1.170	1.066	2283
4.	11.13	237.54	553.2	.9905	1.170	1.075	3294
5.							

NO.	P_r	Temp. °R	T_r	Z
1.	.81	608	1.52	.919
2.	.81	584	1.46	.909
3.	.82	548	1.37	.880
4.	.83	530	1.32	.865
5.				

Gas Liquid Hydrocarbon Ratio: 23.63 Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons: 57.0 Deg.
Specific Gravity Separator Gas: .731 XXXXXXXXX
Specific Gravity Flowing Fluid: XXXXX G Mix .849
Critical Pressure: 668 P.S.I.A. 664 P.S.I.A.
Critical Temperature: 401 R 441 R

P_c 2273.2 P_c^2 5167.4

NO.	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1.	5031.9	2244.7	5038.8	128.6
2.	4810.1	2199.5	4837.6	329.8
3.	4465.6	2132.7	4548.6	618.9
4.	4053.9	2055.4	4224.8	942.6
5.				

1) $\frac{P_c^2}{P_c^2 - P_w^2} = 5.4821$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 4.500$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 14,823$

Absolute Open Flow: 14,823 Mcfd @ 15.025 | Angle of Slope θ: 49 | Slope, n: .884

Remarks: 13.3 BBLS CONDENSATE PRODUCED DURING TEST

Approved By Division	Conducted By:	Calculated By:	Checked By:
	PRO WELL TESTERS	KS	KS

Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

N.M. Oil ... ns Division
811 S. 1st
Artesia, NM ... 2 0-9824

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT-" for such proposals

SUBMIT IN TRIPLICATE

5. Lease Designation and Serial No.
NM 0557371

6. If Indian, Allottee or Tribe Name

7. If Unit or CA, Agreement Designation

1. Type of Well
☐ Oil Well ☒ Gas Well ☐ Other

8. Well Name and No.
Chalk Bluff Fed. ~~Comm.~~ #3

2. Name of Operator
Mewbourne Oil Company

9. API Well No.
30-015-27163

3. Address and Telephone No.
P. O. Box 5270, Hobbs, NM 88241 505-393-5905

10. Field and Pool, or Exploratory Area
N. Illinois Camp Morrow

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
1980' FSL & 990' FEL of Section 1, T18S, R27E

11. County or Parish, State
Eddy

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION	
☒ Notice of Intent	☐ Abandonment	☐ Change of Plans
☐ Subsequent Report	☒ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☐ Casing Repair	☐ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☐ Other w/o	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinet details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markders and zones pertinent to this work.)*

Add Morrow perforations 9860' to 9870'.

APR 1999
RECEIVED
OCD - ARTESIA

ACCEPTED FOR RECORD
APR 27 1999

(ORIG. SGD.) GARY GOURLEY

99 APR 16 AM 10:

14. I hereby certify that the foregoing is true and correct

Signed Kelly Edgar Title District Manager Date 04/15/99

(This space for Federal or State office use)

Approved by ... Title ... Date ...
Conditions of approval, if any:

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*See Instruction on Reverse Side

30-015-27163

Oxford®

ESSELTE

MADE IN U.S.A. NO. R753 1/3

1-21-93

Spectral Density
Dual Spaced Neutron
6365' - 8467'
400' - 10,100'
Comp. Sonic Log.
6365' - 8467'
Dual Induction Laterolog
6365' - 8501'
Dual Lat.
6365' - 8467'
8968' - 10,143'
MSFL Gamma Collar
CBL Log
1340' - 10,069'
NSL - R-9760

R-9760
SD + NSL
11-4-92

[redacted]

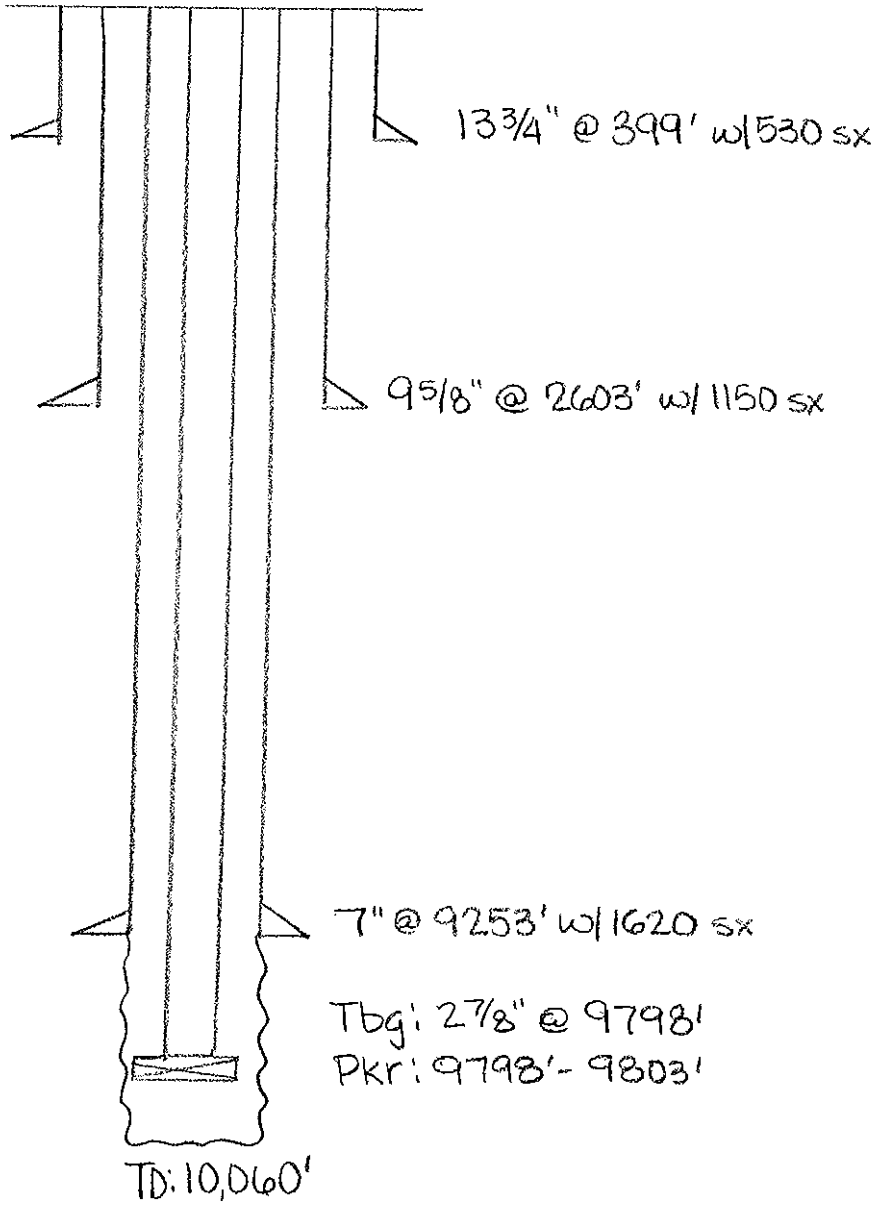
SUBSURFACE

NAVAJO REFINING COMPANY, L.L.C.
Map ID No. 100
Artificial Penetration Review

OPERATOR Mewbourne Oil
LEASE Chalk Bluff 36 State
WELL NUMBER 1
DRILLED 3/30/93
PLUGGED NA

STATUS Active
LOCATION Sec. 36 -T 17S-R 27E
MUD FILLED BOREHOLE NA
TOP INJECTION ZONE -3561'
API NO. 30-015- 27286

REMARKS:



MAP ID NO. 100

MEWBOURNE OIL CO.
CHALK BLUFF 36 STATE NO. 001

API NO. 30-015-27286

OGRID # 14744

PROP # 7871

POOL # 96960

C-101 Engard
C-102 OK
C-102A

Oxford®
ESSELTE

MADE IN U.S.A. NO. R753 113

4-15-93
Dual Spaced
Neutron Log
Surf - 9242'
9378' - 10,059
Comp. Sonic Log
1220' - 9260'
Dual Lat.
2598' - 9275'
9310' - 10,059'

DHC - 2464 9-24-99 Allo 100% oil nar 0

NSL - R-9815

Submit to Appropriate District Office
State Lease – 6 copies
Fee Lease – 5 copies

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

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

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504

RECEIVED
JAN 19 1993
O. C. D.
ARTESIA

Form C-101
Revised 1-1-89

API NO. (assigned by OCD on New Wells) 30-015-27286

5. Indicate Type of Lease STATE [X] FEE [ ]

6. State Oil & Gas Lease No. E-379-4

APPLICATION FOR PERMIT TO DRILL, DEEPEN, OR PLUG BACK

1a. Type of Work: DRILL [X] RE-ENTER [ ] DEEPEN [ ] PLUG BACK [ ]

b. Type of Well: OIL WELL [ ] GAS WELL [X] OTHER SINGLE ZONE [X] MULTIPLE ZONE [ ]

7. Lease Name or Unit Agreement Name: Chalk Bluff "36" State

2. Name of Operator: Mewbourne Oil Company

8. Well No. 1

3. Address of Operator: P.O. Box 5270 Hobbs, New Mexico 88241

9. Pool name or Wildcat: Illinois Camp Morrow North

4. Well Location
Unit Letter M : 990 Feet From The West Line and 660 Feet From The South Line
Section 36 Township 17S Range 27E NMPM Eddy County

10. Proposed Depth: 10,300'
11. Formation: Morrow
12. Rotary or C.T.: Rotary

13. Elevations *(Show whether DF, RT, GR, etc.)*: 3635' G.R.
14. Kind & Status Plug. Bond: Blanket on file
15. Drilling Contractor: WEK Drilling
16. Approx. Date Work will start: Jan. 31, 1993

17. PROPOSED CASING AND CEMENT PROGRAM

SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
17-1/2"	13-3/8"	48#	400'±	400 sks.	Circ.
12-1/4"	9-5/8"	36#	2,600'±	700 sks.	Tie back into surf.
8-3/4"	5-1/2"	17#	10,300'±	600 sks.	Bring above top of Abo

Post ID-1
1-22-93
New Loc & API

Mud Program:

0' - 400' Spud mud w/fresh water gel, LCM as needed.
400' - 2,600' Fresh water gel & lime. LCM as needed.
2,600' - 9,200' Cut brine with lime for pH control. WL-NC.
9,200' - 10,300' Cut brine w/Drispac, salt gel, lime, soda ash and starch. Wt. 9.2-9.6 ppg, WL 10 cc or less, Vis. 32-36. Raise wt. accordingly if abnormal pressures are encountered.

BOP Program:

1500 Series Double Ram Hydraulic BOP w/900 Series Hydril from Intermediate csg. to T.D. 900 Series Hydril on Surface csg. to Intermediate csg. point. PVT system, mud-gas seperator, rotating head from Wolfcamp to T.D.

Gas is not dedicated.

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: IF PROPOSAL IS TO DEEPEN OR PLUG BACK, GIVE DATA ON PRESENT PRODUCTIVE ZONE AND PROPOSED NEW PRODUCTIVE ZONE. GIVE BLOWOUT PREVENTER PROGRAM, IF ANY.

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

SIGNATURE Bill Pierce TITLE Drilling Superintendent DATE 01/18/93

TYPE OR PRINT NAME Bill Pierce TELEPHONE NO. (505) 393-5905

(This space for State Use)

APPROVED BY [signature] TITLE [illegible] DATE 1-19-93

CONDITIONS OF APPROVAL, IF ANY:

NSL # R-9313

NOTIFY N.M.O.C.D. IN SUFFICIENT TIME TO WITNESS CEMENTING THE 13 3/8 CASING

APPROVAL VALID FOR 180 DAYS
PERMIT EXPIRES 7-19-93
UNLESS DRILLING UNDERWAY

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

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

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

State of New Mexico
Energy, Minerals and Natural Resources Depart.

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

WELL LOCATION AND ACREAGE DEDICATION PLAT
All Distances must be from the outer boundaries of the section

Operator	Lease	Well No.
MEWBOURNE OIL COMPANY	CHALK BLUFF 36 STATE	1

Unit Letter	Section	Township	Range	County
M	36	17 SOUTH	27 EAST NMPM	EDDY

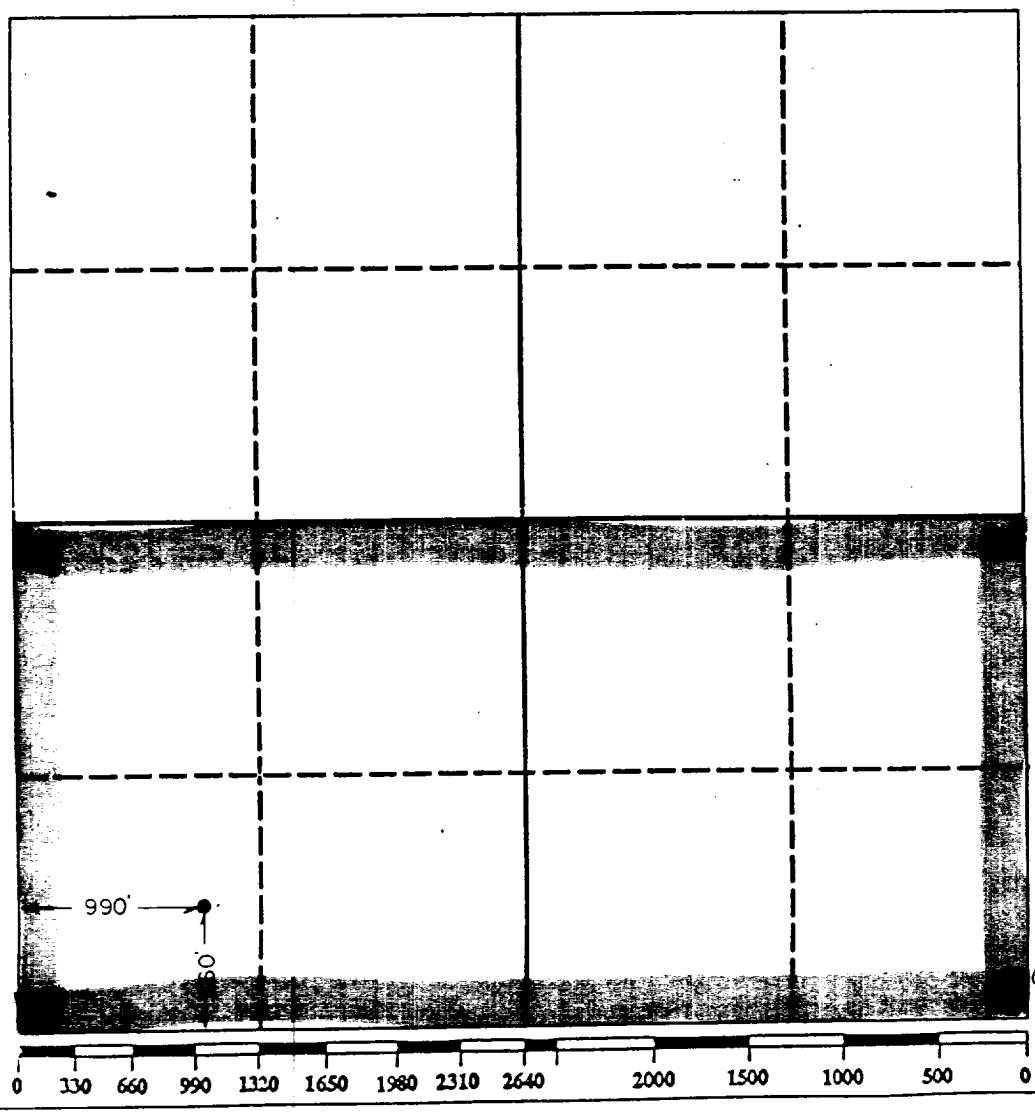
Actual Footage Location of Well:
990 feet from the WEST line and 660 feet from the SOUTH line

Ground level Elev.	Producing Formation	Pool	Dedicated Acreage:
3635	Morrow	Illinois Camp Morrow North	320 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?
[X] Yes [ ] No If answer is "yes" type of consolidation Communitization
If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary. _____
No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.

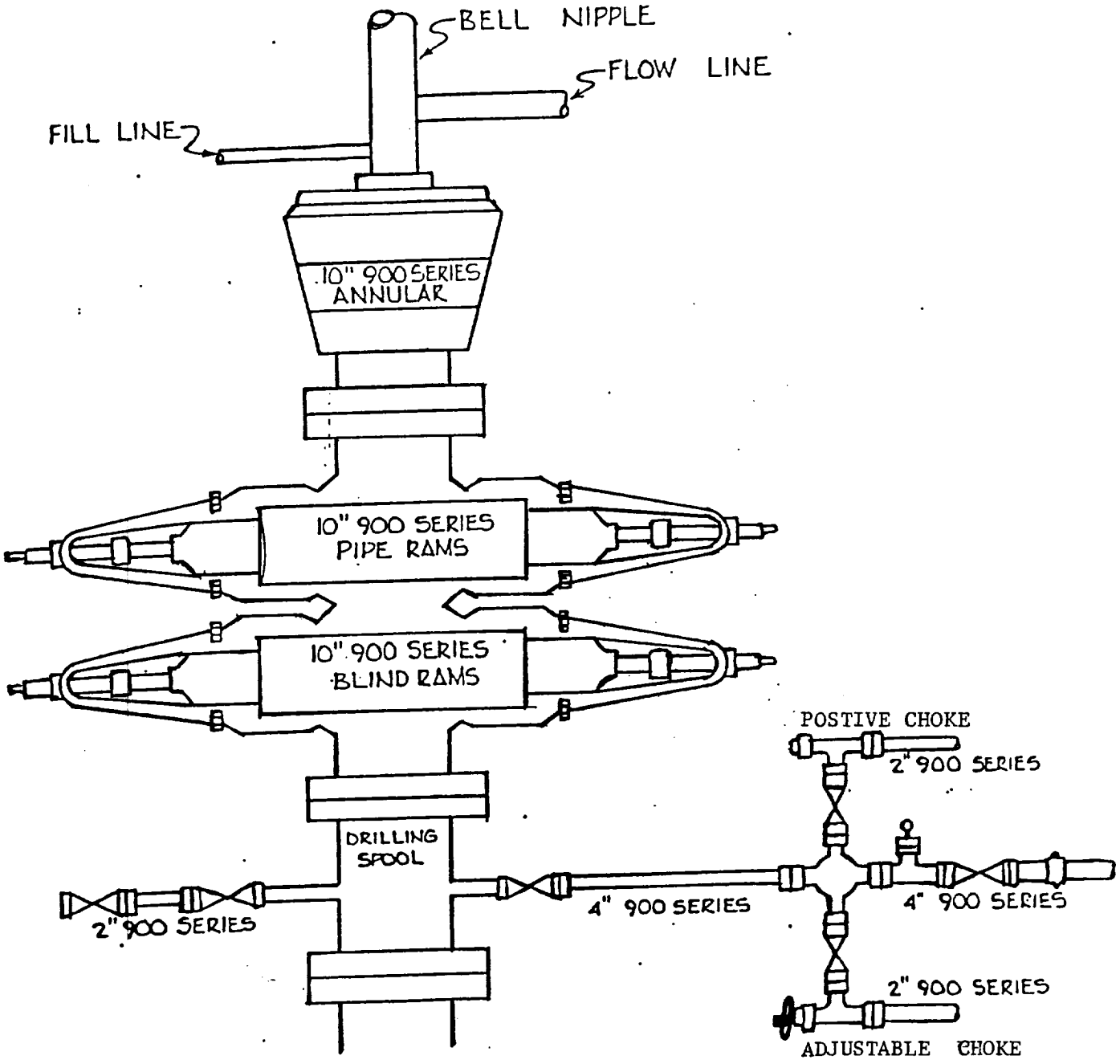


OPERATOR CERTIFICATION
I hereby certify that the information contained herein in true and complete to the best of my knowledge and belief.

Signature: Bill Pierce
Printed Name: Bill Pierce
Position: Drilling Superintendent
Company: Mewbourne Oil Company
Date: October 27, 1992

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 supervison, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: 10/19/92
Signature & Seal of Professional Surveyor
Certificate No. 3640



Mewbourne Oil Company
Chalk Bluff "36" State #1
660' FSL & 990' FWL
Section 36-T17S-R27E
Eddy County, New Mexico
Lease Number E-379-4

FIELD REPORT FOR CEMENTING OF WELLS

OIL CONSERVATION DIVISION

API 30-015-27286

Operator	Lease	Well #
Mewbourne Oil Co.	Chalk Bluff "36" St.	1

Location of Well	Unit	Section	Township	Range	County
	M	36	17	27	Eddy

Drilling Contractor	Type of Equipment
WEK Drilling	Rotary

APPROVED CASING PROGRAM

* Witness

Size of Hole	Size of Casing	Weight Per Foot	New or Used	Depth	Sacks Cement
17 1/2	* 13 3/8	48 #		400 ±	400 Circ
12 1/4	9 5/8	36 #		2600 ±	700 Surf
8 3/4	5 1/2	17 #		10,300 ±	600 Top of ABO

Casing Data:

Surface ____ joints of 13 3/8" inch 48 # Grade H-40

(Approved) (Rejected) ____

Inspected by MCS. date Jan 2-93

Cementing Program

Size of hole 17 1/2" Size of Casing 13 3/8" Sacks cement required ____

Type of Shoe used guide Float collar used insert Btm 3 jts welded yes

TD of hole 400' Set 400' Feet of 13 3/8" Inch 48 # Grade H-40

(New) used csg. @ 400' with 200 27occ sacks neat cement around shoe

+ 230 sax Halliburton Lite additives 1/4# flocele, 5# gilsonite, 27occ

Plug down @ 8:45 (AM) (PM) Date Jan 3-1992

Cement circulated Yes No. of Sacks 30 *

Cemented by Halliburton Witnessed by mike (S Tubblefield

Temp. Survey ran @ ____ (AM) (PM) Date ____ top cement @ ____

Casing test @ ____ (AM) (PM) Date ____

Method Used ____ Witnessed by ____

Checked for shut off @ ____ (AM) (PM) Date ____

Method used ____ Witnessed by ____

Remarks: * cement fell back after Plug Down.

Ready mixed cmt top to surface 2 yards.

4 centralizers

Lost circ. @ 349'

Submit 3 Copies to Appropriate District Office

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Box DD, Artesia, NM 88210

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

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

FEB 9 1993
O. C. D.

Form C-103
Revised 1-1-89

C1ST

WELL API NO.
30-015-27286

5. Indicate Type of Lease STATE ■ FEE ☐

6. State Oil & Gas Lease No.
E-379-4

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name
Chalk Bluff "36" State

1. Type of Well:
OIL WELL ☐ GAS WELL ■ OTHER

2. Name of Operator
Mewbourne Oil Company ✓

8. Well No.
1

3. Address of Operator
P. O. Box 5270 Hobbs, New Mexico 88241

9. Pool name or Wildcat
Illinois Camp Morrow North

4. Well Location
Unit Letter M : 990 Feet From The West Line and 660 Feet From The South Line

Section 36 Township 17S Range 27E NMPM Eddy County

10. Elevation *(Show whether DF, RKB, RT, GR, etc.)*
3635' GR

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ■	PLUG AND ABANDONMENT ☐
PULL OR ALTER CASING ☐		CASING TEST AND CEMENT JOB ■	
OTHER: ☐		OTHER: ☐	

12. Describe Proposed or Completed Operations *(Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work)* SEE RULE 1103.

2-2-93: MIRU WEK Drilling Co. Rig #2. Spudded 17 1/2" surface hole @ 6:00 P. M. MST.

2-3-93: Drilled 17 1/2" surface hole to 400' K. B. Ran 9 jts. of 13 3/8", 48#, J-55, STC new casing to 400'. Howco cemented w/100 sks. of Class "C" containing 10#/sk. Cal-Seal + 5#/sk. Gilsonite + 1/2#/sk. Flocele + 2% $CaCl_2$ followed by 230 sacks of Class "C" Lite containing 1/4#/sk. Flocele + 5#/sk. Gilsonite + 2% $Cacl_2$, tailed in with 100 sacks of CLass "C" Neet containing 2% $CaCl_2$. Plug down to 353' @ 8:45 AM. MST. Circulated 30 sacks of cement to the pit. Cement job witnessed by Mike Stubblefield w/NMOCD office in Artesia. Cement slurry volume for lead cement was 580 cu. ft. Slurry volume for tail cement was 268 cu. ft. Total slurry volume was 848 cu. ft. Compressive strength for tail slurry is 1350 psi in 12 hrs. @ 70° F. Estimated formation temperature is 68° F, estimated slurry temp. was 70° F. NU BOP and WOC 13 1/2 hrs. Pressure tested blind rams, pipe rams and casing to 600# each for 30 min. w/rig pump. All held O. K.

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

SIGNATURE Bill Pierce TITLE Drilling Superintendent DATE 2/4/93

TYPE OR PRINT NAME Bill Pierce TELEPHONE NO. 505 393-5905

(This space for State Use)

APPROVED BY _____ TITLE _____ DATE FEB 15 1993

CONDITIONS OF APPROVAL, IF ANY:

Submit 3 Copies to Appropriate District Office

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-103
Revised 1-1-89

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

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

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

FEB 09 1993
O. C. D.

WELL API NO. 30-015-27286

5. Indicate Type of Lease: STATE ■ FEE ☐

6. State Oil & Gas Lease No. E-379-4

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well: OIL WELL ☐ GAS WELL ■ OTHER

7. Lease Name or Unit Agreement Name: Chalk Bluff "36" State

2. Name of Operator: Mewbourne Oil Company

8. Well No. 1

3. Address of Operator: P. O. Box 5270 Hobbs, New Mexico 88241

9. Pool name or Wildcat: Illinois Camp Morrow, North

4. Well Location
Unit Letter M : 990 Feet From The West Line and 660 Feet From The South Line
Section 36 Township 17S Range 27E NMPM Eddy County

10. Elevation (Show whether DF, RKB, RT, GR, etc.) 3635' GR

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	PLUG AND ABANDONMENT	☐
PULL OR ALTER CASING	☐			CASING TEST AND CEMENT JOB	■		
OTHER:			☐	OTHER:			☐

12. Describe Proposed or Completed Operations (*Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work*) SEE RULE 1103.

2-7-93: Drilled 12 1/4" Intermediate hole to 2603' K.B. Ran 58 jts. of 9 5/8", 36#, J-55, new LS casing and set @ 2603' K. B. Howco cemented w/950 sks. of Class "C" Lite containing 1/4#/sk. flocele + 8#/sk. salt followed by 200 sks. of Class "C" Neet cement containing 2% $CaCl_2$. Plug down to 2557' @ 6:15 P.M. MST 2-7-93. Circulated 50 sacks to pit. Lead slurry weighed 13.8#/gal. and yield was 1.6 cu. ft./sk. Slurry volume was 1520 cu. ft. Tail slurry weighed 14.8#/gal and yield was 1.36 cu. ft./sk. Slurry volume was 268 cu. ft. Total slurry volume was 1,754 cu. ft. Compressive strength for tail slurry is 1350 psi in 12 hrs. @ 70° F. Estimated formation temp. is 75° F, estimated slurry temp. was 72° F. WOC 12 hrs. NU BOP and pressure tested blind and pipe rams, and casing to 1,000# for 30 min. w/rig pump. All held O. K.

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

SIGNATURE [signature] TITLE Drilling Superintendent DATE 2/8/93

TYPE OR PRINT NAME Bill Pierce TELEPHONE NO. 505 393-5905

(This space for State Use) ORIGINAL SIGNED BY MIKE WILLIAMS SUPERVISOR, DISTRICT II

APPROVED BY ______ TITLE ______ DATE FEB 15 1993

CONDITIONS OF APPROVAL, IF ANY:

Submit 3 Copies to Appropriate District Office

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

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

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-103
Revised 1-1-89

C/SP

MAR 24 1993

O. C. D.

WELL API NO.
30-015-27286

5. Indicate Type of Lease STATE ■ FEE ☐

6. State Oil & Gas Lease No.
E-379-4

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name
Chalk Bluff "36" State

1. Type of Well: OIL WELL ☐ GAS WELL ■ OTHER

2. Name of Operator
Mewbourne Oil Company

8. Well No.
1

3. Address of Operator
Box 5270 Hobbs, New Mexico 88241

9. Pool name or Wildcat
Illinois Camp Morrow, North

4. Well Location
Unit Letter M : 990 Feet From The West Line and 660 Feet From The South Line

Section 36 Township 17S Range 27E NMPM Eddy County

10. Elevation *(Show whether DF, RKB, RT, GR, etc.)*
3635' GR

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	PLUG AND ABANDONMENT	☐
PULL OR ALTER CASING	☐			CASING TEST AND CEMENT JOB	■		
OTHER:	☐			OTHER:			☐

12. Describe Proposed or Completed Operations *(Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work)* SEE RULE 1103.

2-24-93: Drilling 8 3/4" production hole. Lost complete returns @ 8250'. Spotted mud pills and spotted 150 sack cement plug. Regained partial returns.
3-5-93: Drilled to 9289'. Ran 215 joints of new 26#, N-80, 7" API casing and set @ 9253'. Casing stuck 36' off of bottom. Cemented 1st stage by Howco w/535 sacks of Class "H" containing 3% KCL + 1% Halad 322 + 5#/sk. Gilsonite + 5#/sk. SilicaLite + 10#/sk. Microbond. Opened D. V. tool @ 6654' and circulated 6 hrs. Cemented 2nd stage w/750 sacks of Class "H" Lite containing 1/4#/sk. Flocele followed by 335 sacks of Class "H" containing 8#/sk. SilicaLite + 1/4#/sk. Flocele + .6% Halad 322. Plug down to 6654' @ 5:00 PM 3-5-93. Circulated 56 sacks to the pit. 1st stage cement slurry weighed 14.8#/gal. with a yield of 1.53 cu. ft./sk. Total slurry volume was 818 cu. ft. BHT by logs was 123° F. Estimated slurry temp. was 73° F. Compressive strength of cement was 2025 psi in 12 hrs. 2nd. stage lead cement slurry yield was 1.85 cu. ft./sk. @ 12.7#/gal. Yield for slurry was 1387 cu. ft. Tail cement slurry yield was 1.75 cu. ft./sk. 13.6#/gal. Yield was 586 cu. ft. Total slurry volume was 1973 cu. ft. Estimated

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

SIGNATURE Bill Pierce TITLE Drilling Superintendent DATE 3-22-93

TYPE OR PRINT NAME Bill Pierce TELEPHONE NO. 505 393-5905

(This space for State Use)

APPROVED BY ORIGINAL SIGNED BY MIKE WILLIAMS SUPERVISOR, DISTRICT II TITLE DATE APR 5 1993

CONDITIONS OF APPROVAL, IF ANY:

formation temp. was 100° F, estimated slurry temp. was 72° F. Compressive strength for 2nd stage lead slurry in 12 hrs. was 1600 psi and tail slurry was 1900 psi. WOC 24 hrs. Drilled out D. V. Tool, float collar, and 1/2 of shoe joint. Pressure tested casing, blind rams, and pipe rams to 2,000# for 30 min. Held O. K.

Submit 3 Copies to Appropriate District Office

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

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

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-103
Revised 1-1-89

RECEIVED
MAR 24 1993
O. C. D.
ARTESIA, OFFICE

WELL API NO. 30-015-27286

5. Indicate Type of Lease STATE [■] FEE [ ]

6. State Oil & Gas Lease No. E-379-4

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name: Chalk Bluff "36" State

1. Type of Well: OIL WELL [ ] GAS WELL [■] OTHER

2. Name of Operator: Mewbourne Oil Company

8. Well No. 1

3. Address of Operator: P.O. Box 5270 Hobbs, New Mexico 88241

9. Pool name or Wildcat: Illinois Camp Morrow-North

4. Well Location
Unit Letter M : 990 Feet From The West Line and 660 Feet From The South Line

Section 36 Township 17S Range 27E NMPM County

10. Elevation (*Show whether DF, RKB, RT, GR, etc.*) 3635' GR

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	[ ]	PLUG AND ABANDON	[ ]	REMEDIAL WORK	[ ]	ALTERING CASING	[ ]
TEMPORARILY ABANDON	[ ]	CHANGE PLANS	[ ]	COMMENCE DRILLING OPNS.	[ ]	PLUG AND ABANDONMENT	[ ]
PULL OR ALTER CASING	[ ]			[redacted] CEMENT JOB	[■]		
OTHER:	[ ]			OTHER:			[ ]

12. Describe Proposed or Completed Operations (*Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work*) SEE RULE 1103.

3/19/93 T.D. 6" hole @ 10,060'. Ran logs and 37 jts. of new 11.35#, N-80, 4-1/2" flush joint liner. Hung liner @ 10,057' KB. Howco cemented w/225 sks. of Class "H" containing 5% salt + 5% Halad 22-A + 5% CFR-3. Plug down to 10,012' @ 6:15 p.m. 03/19/93. Top of liner @ 8439' KB. Rig released @ 3:00 p.m. 03/20/93

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

SIGNATURE Bill Pierce TITLE Drilling Supt. DATE 03/22/93

TYPE OR PRINT NAME Bill Pierce TELEPHONE NO. 505 393-5905

(This space for State Use)

APPROVED BY ORIGINAL SIGNED BY MIKE WILLIAMS SUPERVISOR, DISTRICT II TITLE DATE APR 5 1993

CONDITIONS OF APPROVAL, IF ANY:

SEC 36 TWN 17 S RGE 27 E API # 30-015-27286

OPERATOR MEWBOURNE OIL CO

WELL NAME CHALK BLUFF 36 ST #1

STATE OCD TOPS AS PER MM DATE 4-23-93

Southeastern New Mexico			Northwestern New Mexico	
T. Anhy	T. Canyon 8327		T. Ojo Alamo	T. Penn. "B"
T. Salt	T. Strawn 8820		T. Kirtland-Fruitland	T. Penn. "C"
B. Salt	T. Atoka 9380		T. Pictured Cliffs	T. Penn. "D"
T. Yates 328	T. Miss 10040		T. Cliff House	T. Leadville
T. 7 Rivers 464	T. Devonian		T. Menefee	T. Madison
T. Queen 1008	T. Silurian		T. Point Lookout	T. Elbert
T. Grayburg 1360	T. Montoya		T. Mancos	T. McCracken
T. San Andres 1785	T. Simpson		T. Gallup	T. Ignacio Otzte
T. Glorieta 3155	T. McKee		Base Greenhorn	T. Granite
T. Paddock	T. Ellenburger		T. Dakota	T.
T. Blinebry	T. Gr. Wash		T. Morrison	T.
T. Tubb 4025	T. Delaware Sand		T. Todilto	T.
T. Drinkard 4855	T. Bone Springs		T. Entrada	T.
T. Abo 5120	T. Morrow Ln 9494		T. Wingate	T.
T. Wolfcamp 6702	T. " CLS 9674		T. Chinle	T.
T. Penn 8210	T.		T. Permain	T.
T. Cisco (Bough C)	T.		T. Penn "A"	T.

OIL OR GAS SANDS OR ZONES

No. 1, from ..... to ..... No. 3, from ..... to .....

No. 2, from ..... to ..... No. 4, from ..... to .....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from ..... to ..... feet .....

No. 2, from ..... to ..... feet .....

No. 3, from ..... to ..... feet .....

REMARKS:

KEN REYNOLDS—PRESIDENT
ARNIE NEWKIRK—VICE-PRESIDENT

WEK DRILLING CO., INC. — OIL WELL DRILLING CONTRACTORS

P. O. Box 1498 ROSWELL, NEW MEXICO 88202-1498
505/623-5070 ROSWELL, NM
505/746-2719 ARTESIA, NM

March 19,1993

Mewbourne Oil Company
P.O. Box 5270
Hobbs, N.M. 88240

RE: Chalk Bluff "36" State #1

Gentlemen:

The following is a Deviation Survey on the above referenced well located in Eddy County, New Mexico.

424' - 3/4°	4197' 2 3/4°	5411' - 3°	6415' - 2 3/4°	
920' - 3/4°	4290' - 2 3/4°	5505' - 3°	6915' - 1 3/4°	
1391' - 1°	4384' - 2 1/2°	5599' - 2 1/2°	7322' - 1 12/°	
1891' - 1 1/4°	4477' - 2 3/4°	5693' - 3°	7824' - 1 1/4°	
2396' - 1 3/4°	4572' - 2 1/2°	5787' - 2 1/2°	8274' - 1 1/4°	
2600' 2 1/4°	4664' - 2 1/4°	5882' - 3°	8702' - 1 1/2°	
2779' - 2°	4758' - 2°	5976' - 4°	8973' - 1 1/2°	
3193' - 1 3/4°	4851' - 2 1/2°	6039' - 4°	9289' - 1 1/2°	
3688' - 2 1/2°	4943' - 3 1/4°	6070' - 4°	9388' - 1 3/4°	
3814' - 2 3/4°	5036' - 3°	6132' - 3 3/4°	9833' - 2 1/2°	
3907' - 2 3/4°	5129' - 3 1/4°	6195' - 4°	10060' - 2 1/2°	T.D.
4001' - 2 1/2°	5223' - 3°	6258' - 3 1/4°		
4096' - 2 3/4°	5317' - 2 3/4°	6320' - 3°		

Sincerely,

Gary W. Chappell
Contracts manager

STATE OF NEW MEXICO)
)
COUNTY OF CHAVES)

The foregoing was acknowledged before me this 19th day of March 1993 by Gary W. Chappell.

MY COMMISSION EXPIRES

October 07, 1996

Linda Rogers
NOTARY PUBLIC

Submit to Appropriate District Office
State Lease – 6 copies
Fee Lease – 5 copies
DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

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

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

RECEIVED
APR 15 1993
O. C. D.

Form C-105
Revised 1-1-89

WELL API NO. 30-015-27[illegible]

5. Indicate Type of Lease STATE [X] FEE [ ]

6. State Oil & Gas Lease No. E-379-4

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well: OIL WELL [ ] GAS WELL [X] DRY [ ] OTHER

b. Type of Completion: NEW WELL [X] WORK OVER [ ] DEEPEN [ ] PLUG BACK [ ] DIFF RESVR [ ] OTHER

7. Lease Name or Unit Agreement Name: Chalk Bluff "36" State

8. Well No. 1

2. Name of Operator: Mewbourne Oil Company

9. Pool name or Wildcat: N. Illinois Camp Morrow

3. Address of Operator: P.O. Box 5270 Hobbs, New Mexico 88241

4. Well Location
Unit Letter M : 990 Feet From The West Line and 660 Feet From The South Line
Section 36 Township 17S Range 27E NMPM Eddy County

10. Date Spudded	11. Date T.D. Reached	12. Date Compl. (Ready to Prod.)	13. Elevations (DF & RKB, RT, GR, etc.)	14. Elev. Casinghead
02/02/93	03/17/93	03/30/93	3650' KB 3635' GR	3635' GR

15. Total Depth	16. Plug Back T.D.	17. If Multiple Compl. How Many Zones?	18. Intervals Drilled By	Rotary Tools	Cable Tools
10,060'	10,012'	2		X	

19. Producing Interval(s), of this completion - Top, Bottom, Name: 9842'-9886'; Lower Morrow

20. Was Directional Survey Made: Yes

21. Type Electric and Other Logs Run: SDL-DSN, DLL-MSFL-GR, Sonic, CBL

22. Was Well Cored: No

23. **CASING RECORD** (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	48#/ft.	399'	17-1/2"	530 sx. Class "C"	Circulated
9-5/8"	36#/ft.	2603'	12-1/4"	1150 sx. Class "C"	Circulated
7"	26#/ft.	9253'	8-3/4"	1620 sx. Class "H"	Circulated

24. **LINER RECORD**

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN
4-1/2"	8439'	10,057'	225 sx.	

25. **TUBING RECORD**

SIZE	DEPTH SET	PACKER SET
2-7/8-2-3/8"	9803'	9702'

26. Perforation record (interval, size, and number)

9842'-9856' 14' 4 spf 49 holes
9864'-9886' 22' 4 spf 80 holes

27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED

PRODUCTION

28.

Date First Production	Production Method (Flowing, gas lift, pumping - Size and type pump)	Well Status (Prod. or Shut-in)
03/30/93	Flowing	Producing

Date of Test	Hours Tested	Choke Size	Prod'n For Test Period	Oil - Bbl.	Gas - MCF	Water - Bbl.	Gas - Oil Ratio
03/31/93	24 Hours	1/4"		10	1500	0	150 MCF/BBL

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	Oil - Bbl.	Gas - MCF	Water - Bbl.	Oil Gravity - API - (Corr.)
1500#	Packer		10	1500	0	55.0

29. Disposition of Gas (Sold, used for fuel, vented, etc.): Sold

Test Witnessed By: Erick W. Nelson

30. List Attachments: Logs

31. *I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief*

Signature Erick W. Nelson Printed Name Erick W. Nelson Title Engineer Date 04/05/93

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Division not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, Items 25 through 29 shall be reported for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1105.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico				Northwestern New Mexico			
T. Anhy		T. Canyon	8328'	T. Ojo Alamo		T. Penn. "B"	
T. Salt		T. Strawn	8822'	T. Kirtland-Fruitland		T. Penn. "C"	
B. Salt		T. Atoka	9380'	T. Pictured Cliffs		T. Penn. "D"	
T. Yates	328'	T. Miss	10040'	T. Cliff House		T. Leadville	
T. 7 Rivers	464	T. Devonian		T. Menefee		T. Madison	
T. Queen	1007'	T. Silurian		T. Point Lookout		T. Elbert	
T. Grayburg	1322'	T. Montoya		T. Mancos		T. McCracken	
T. San Andres	1784'	T. Simpson		T. Gallup		T. Ignacio Otzte	
T. Glorieta	3164'	T. McKee		Base Greenhorn		T. Granite	
T. Paddock		T. Ellenburger		T. Dakota		T.	
T. Blinebry		T. Gr. Wash		T. Morrison		T.	
T. Tubb	4028'	T. Delaware Sand		T. Todilto		T.	
T. Drinkard	4870'	T. Bone Springs		T. Entrada		T.	
T. Abo	5120'	T. Morrow Lime	9494	T. Wingate		T.	
T. Wolfcamp	6706'	T. Morrow Clastics	9674	T. Chinle		T.	
T. Penn	8208'	T.		T. Permain		T.	
T. Cisco (Bough C)		T.		T. Penn "A"		T.	

OIL OR GAS SANDS OR ZONES

No. 1, from 9842' to 9856' No. 3, from ..... to .....

No. 2, from 9864' to 9886' No. 4, from ..... to .....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from None to ..... feet .....

No. 2, from ..... to ..... feet .....

No. 3, from ..... to ..... feet .....

LITHOLOGY RECORD (Attach additional sheet if necessary)

From	To	Thickness in Feet	Lithology	From	To	Thickness in Feet	Lithology
0'	1600'	1600'	Redbed & Anhydrite				
1600'	6700'	5100'	Dolomite Sandston				
6700'	8200'	1500'	Limestone & Shale				
8200'	8600'	400'	No Returns				
8600'	9700'	1100'	Lime & Shale				
9700'	9900'	200'	Sand & Shale				
9900'	10060'	160'	Shale				

Laboratory Services

1331 Tasker Drive
Hobbs, New Mexico 88240

Telephone: (505) 397-3713

FOR: Mewbourne Oil Company
Attention: Mr. Jay Prudhomme
P. O. Box 5270
Hobbs, New Mexico 88241

SAMPLE IDENTIFICATION: Chalk Bluff 36 State #1
COMPANY: Mewbourne Oil Co.
LEASE:
PLANT:

SAMPLE DATA: DATE SAMPLED: 05-18-93
ANALYSIS DATE: 05-18-93
PRESSURE - PSIG
SAMPLE TEMP. °F
ATMOS. TEMP. °F

GAS (XX) LIQUID ( )
SAMPLED BY:
ANALYSIS BY: Vickie Walker

REMARKS:

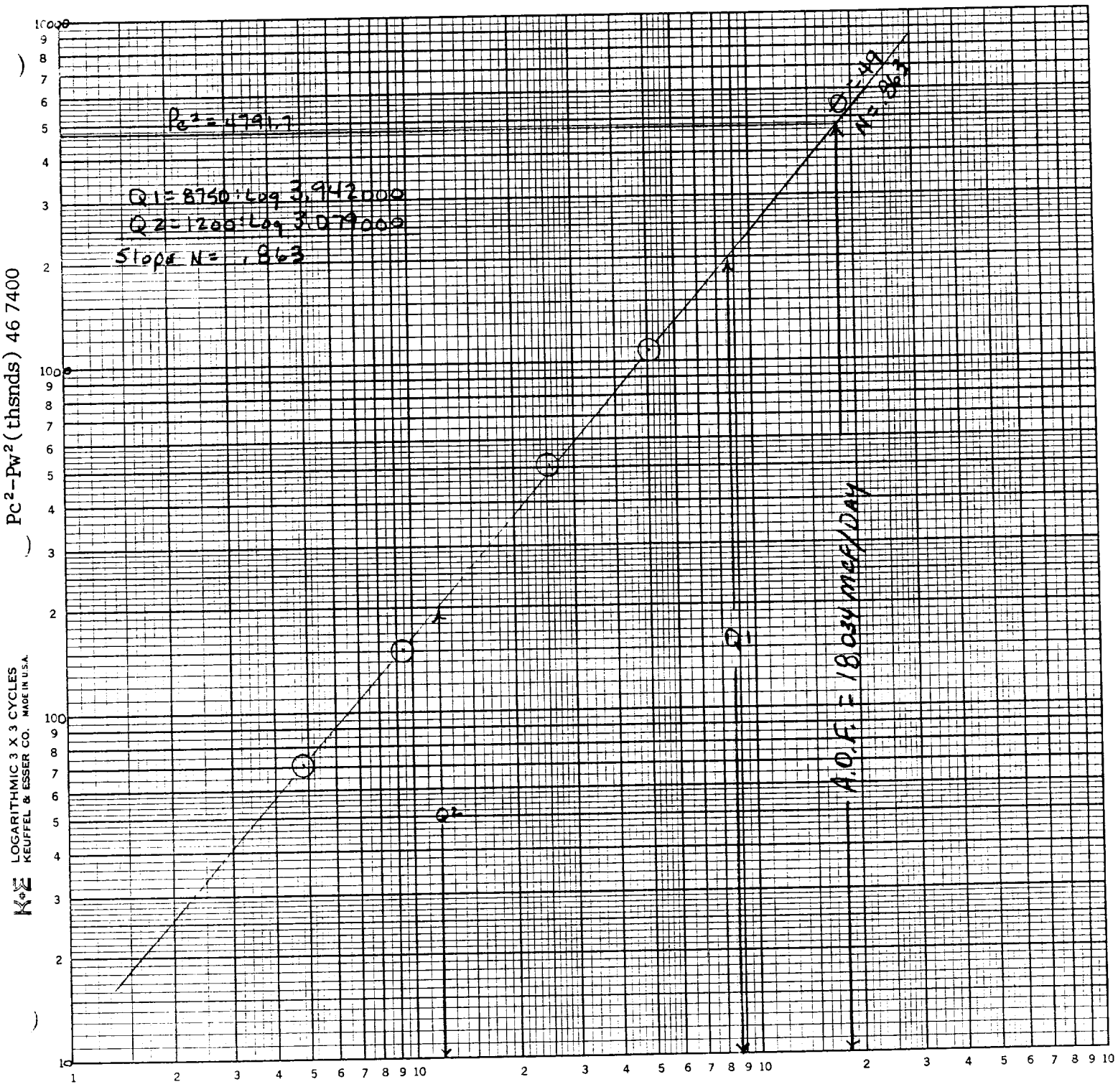
COMPONENT ANALYSIS

COMPONENT		MOL PERCENT	GPM
Hydrogen Sulfide	(H2S)		
Nitrogen	(N2)	0.41	
Carbon Dioxide	(CO2)	0.41	
Methane	(C1)	88.13	
Ethane	(C2)	7.02	1.866
Propane	(C3)	2.44	0.669
I-Butane	(IC4)	0.31	0.102
N-Butane	(NC4)	0.59	0.184
I-Pentane	(IC5)	0.19	0.070
N-Pentane	(NC5)	0.15	0.055
Hexane	(C6)	0.35	0.150
Heptanes Plus	(C7+)	0.00	0.000
		100.00	3.096

BTU/CU.FT.				
AT 14.696	DRY	1135	MOLECULAR WT.	18.6894
AT 14.650	DRY	1132		
AT 14.650	WET	1109	26# GASOLINE -	0.337
AT 15.025	DRY	1161		
AT 15.025	WET	1166		

SPECIFIC GRAVITY -
CALCULATED 0.645
MEASURED

MEWBOURNE OIL COMPANY
Chalk Bluff 36 State, Well #1
36-17S-27E
Eddy County, New Mexico
5-18-93



Submit in duplicate to
appropriate district office
See Rule 401 & Rule 1122

State of New Mexico
Energy, Minerals and Natural Resources Departm

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

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MAY 24 1992
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Form C-122
Revised 4-1-91

C15 File

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator: MEWBOURNE OIL COMPANY				Lease or Unit Name: CHALK BLUFF 36 STATE	
Type Test: [X] Initial [ ] Annual [ ] Special				Test Date: 5-18-93	Well No.: 1
Completion Date: 3-18-93	Total Depth: 10060	Plug Back TD: 10009		Elevation: 3635	Unit Ltr. - Sec. - TWP - Rge.: 36-17S-27E
Csg. Size: 4½	Wt.: 11.60	d: 4.052	Set At: 10012	Perforations: From: 9842 To: 9856	County: EDDY
Tbg. Size: 2 3/8 / 2 7/8	Wt.: 6.5 / 4.7	d: 2.441 / 1.91	Set At: 8024 / 9688	Perforations: From: 9864 To: 9886	Pool: NORTH ILLINOIS
Type Well - Single - Bradenhead - G.G. or G.O. Multiple: single			Packer Set At: 9688		Formation: MORROW
Producing Thru: tbg.	Reservoir Temp. °F	Mean Annual Temp. °F: 60°	Baro, Press - P_a: 13.2		Connection: Transwestern

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
9864	9864	.645	.41	.41			3.068	Flg.

	FLOW DATA					TUBING DATA		CASING DATA		
NO.	Prover Line Size	X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI						2140		Pkr.		
1.	3.068	X 1.000	425	15.00	105	2125		"		60 Min
2.	3.068	X 1.000	425	57.00	90	2100		"		60 Min
3.	3.068	X 1.750	425	38.00	82	1990		"		60 Min
4.	3.068	X 2.000	440	74.00	75	1800		"		60 Min
5.										

RATE OF FLOW CALCULATIONS

NO.	COEFFICIENT (24 HOUR)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg.	Super Compress. Factor, F pv.	Rate of Flow Q, Mcfd
1.	4.789	81.07	438.2	.9594	1.245	1.034	480
2.	4.789	158.04	438.2	.9680	1.245	1.038	947
3.	15.61	129.04	438.2	.9795	1.245	1.039	2552
4.	21.32	183.13	453.2	.9859	1.245	1.047	5018
5.							

NO.	P_r	Temp. °R	T_r	Z
1.	.654	565	1.519	.935
2.	.654	550	1.478	.929
3.	.654	542	1.457	.926
4.	.676	535	1.438	.913
5.				

Gas Liquid Hydrocarbon Ratio: 62.479 Mcf/bbl.
A.P.I. Gravity of Liquid Hydrocarbons: 53 Deg.
Specific Gravity Separator Gas: .645 XXXXXXXXX
Specific Gravity Flowing Fluid: XXXXX GMIX .693
Critical Pressure: 670 P.S.I.A. 669 P.S.I.A.
Critical Temperature: 372 R 388 R

P_c 2189.0 P_c^2 4791.7

NO.	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1.		2172.6	4720.2	71.5
2.		2153.7	4638.4	153.3
3.		2068.9	4280.3	511.4
4.		1924.4	3703.3	1088.4
5.				

1) $\frac{P_c^2}{P_c^2 - P_w^2} = 4.403$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 3.594$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 18.034$

Absolute Open Flow: 18,034 Mcfd @ 15.025
Angle of Slope θ: 49
Slope, n: .863

Remarks: 6 BBLS of 53 Gravity Oil During Test
Calculated with B.H.P. Instruments.

Approved By Division	Conducted By:	Calculated By:	Checked By:
	PRO WELL TESTERS	KS	KS

ubmit 5 Copies
ppropriate District Office
DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

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

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, New Mexico 87504-2088

RECEIVED
APR 15 1993
C. C. D.

Form C-104
Revised 1-1-89
See Instructions
at Bottom of Page

c1sr LT GT

REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT OIL AND NATURAL GAS

I.

Operator	Well API No.
Mewbourne Oil Company	30-015-27286

Address: P.O. Box 5270 Hobbs, New Mexico 88241

Reason(s) for Filing *(Check proper box)*
- New Well [X]
- Recompletion [ ]
- Change in Operator [ ]
- Change in Transporter of: Oil [ ] Dry Gas [ ] Casinghead Gas [ ] Condensate [ ]
- Other *(Please explain)* [ ]

If change of operator give name and address of previous operator _____

II. DESCRIPTION OF WELL AND LEASE

Lease Name	Well No.	Pool Name, Including Formation	Kind of Lease State, ~~Federal or Fee~~	Lease No.
Chalk Bluff "36" State	1	N. Illinois Camp Morrow		E-379-4

Location: Unit Letter M : 990 Feet From The West Line and 660 Feet From The South Line

Section 36 Township 17S Range 27E, NMPM, Eddy County

III. DESIGNATION OF TRANSPORTER OF OIL AND NATURAL GAS

Name of Authorized Transporter of Oil [ ] or Condensate [X]	Address *(Give address to which approved copy of this form is to be sent)*
Amoco Pipeline ICT	Oil Tender Dept. Box 702068 Tulsa, Ok 74170-206
Name of Authorized Transporter of Casinghead Gas [ ] or Dry Gas [X]	Address *(Give address to which approved copy of this form is to be sent)*
Transwestern Pipeline Company	P.O. Box 1188 Houston, Texas 77251

If well produces oil or liquids, give location of tanks.	Unit	Sec.	Twp.	Rge.	Is gas actually connected?	When ?
	M	36	17S	27E	Yes	03/30/93

If this production is commingled with that from any other lease or pool, give commingling order number: _____

IV. COMPLETION DATA

Designate Type of Completion - (X)	Oil Well	Gas Well	New Well	Workover	Deepen	Plug Back	Same Res'v	Diff Res'v
		X	X					

Date Spudded	Date Compl. Ready to Prod.	Total Depth	P.B.T.D.
02/02/93	03/30/93	10,060'	10,012'
Elevations *(DF, RKB, RT, GR, etc.)*	**Name of Producing Formation**	**Top Oil/Gas Pay**	**Tubing Depth**
3650' KB 3635' GR	Morrow	9,842'	9,803'
Perforations			**Depth Casing Shoe**
9842'-9856', 9864'-9886'			

TUBING, CASING AND CEMENTING RECORD

HOLE SIZE	CASING & TUBING SIZE	DEPTH SET	SACKS CEMENT
17-1/2"	13-3/8"	399'	530 sx. Class "C"
12-1/4"	9-5/8"	2603'	1150 sx. Class "C"
8-3/4"	7"	9253'	1620 sx. Class "C"
6"	4-1/2" Liner	10057'	225 sx. Class "H"

V. TEST DATA AND REQUEST FOR ALLOWABLE

OIL WELL *(Test must be after recovery of total volume of load oil and must be equal to or exceed top allowable for this depth or be for full 24 hours.)*

Date First New Oil Run To Tank	Date of Test	Producing Method *(Flow, pump, gas lift, etc.)*	Post ID-2 4-30-93
Length of Test	Tubing Pressure	Casing Pressure	Choke Size comp + BK
Actual Prod. During Test	Oil - Bbls.	Water - Bbls.	Gas- MCF

GAS WELL

Actual Prod. Test - MCF/D	Length of Test	Bbls. Condensate/MMCF	Gravity of Condensate
1500	24 Hours	6.6	55
Testing Method *(pitot, back pr.)*	**Tubing Pressure (Shut-in)**	**Casing Pressure (Shut-in)**	**Choke Size**
Back Pressure	2700#	Packer	1/4"

VI. OPERATOR CERTIFICATE OF COMPLIANCE

I hereby certify that the rules and regulations of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Signature: Erick W. Nelson
Printed Name: Erick W. Nelson
Title: Engineer
Date: 04/02/93
Telephone No.: (505) 393-5905

OIL CONSERVATION DIVISION

Date Approved: APR 26 1993

By: _____

Title: SUPERVISOR, DISTRICT II

INSTRUCTIONS: This form is to be filed in compliance with Rule 1104

1) Request for allowable for newly drilled or deepened well must be accompanied by tabulation of deviation tests taken in accordance with Rule 111.
2) All sections of this form must be filled out for allowable on new and recompleted wells.
3) Fill out only Sections I, II, III, and VI for changes of operator, well name or number, transporter, or other such changes.
4) Separate Form C-104 must be filed for each pool in multiply completed wells.

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

C15F

Form C-101
Revised October 18, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 6 Copies
Fee Lease - 5 Copies

[X] AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1Operator Name and Address	2OGRID Number
Mewbourne Oil Company P. O. Box 5270 Hobbs, NM 88241	14744
	3API Number 30 - 0 15-27286

4Property Code	5Property Name	6Well No.
7871	Chalk Bluff "36" State	1

7Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West Line	County
M	36	17S	27E		660	South	990	West	Eddy

8Proposed Bottom 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

wc [redacted] 9Proposed Pool 1	10Proposed Pool 2
Atoka Gas Pool	

11Work Type Code	12Well Type Code	13Cable/Rotary	14Lease Type Code	15Ground Level Elevation
P	G	R	S	3635
16Multiple	**17Proposed Depth**	**18Formation**	**19Contractor**	**20Spud Date**
No	10060	Atoka	Key Energy Services	09-15-99

21Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC
17-1/2"	13-3/8"	48#	399	530	Surface
12-1/4"	9-5/8"	36#	2603	1150	Surface
8-3/4"	7"	26#	9253	1620	Surface
6"	4-1/2" Liner	11.6#	10057	225	TOL @ 8439'

22Describe the proposed program. If this application is to DEEPEN or PLUG BACK give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

1) Temporarily abandon Morrow perforations 9842-9856' and 9864-9886' by setting a cast iron bridge plug at 9800' and dumping 20' cement plug on top.

2) Test the Atoka Formation through perforations 9442-9446' and 9452-9464'.

3) File for commingling permit if well conditions warrant.

6" 5000 psi WP dual hydraulic BOP's will be utilized on this project. Any produced fluids will be diverted through a 5000 psi WP adjustable choke to a steel tank via 2" steel lines.

23I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature: Jerry Elgin

Printed name: Jerry Elgin

Title: District Manager

OIL CONSERVATION DIVISION

Approved By: ORIGINAL SIGNED BY TIM W. GUM

Title: DISTRICT II SUPERVISOR

Approval Date: 8-17-99

Expiration Date: 8-17-00

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

RECEIVED
OCD - ARTESIA

WELL LOCATION AND ACREAGE DEDICATION PLAT

1API Number	2Pool Code	3Pool Name
30-015-27286		North Illinois Camp Atoka Gas

4Property Code	5Property Name	6Well Number
	Chalk Bluff "36" State	1

7OGRID No.	8Operator Name	9Elevation
14744	Mewbourne Oil Company	3635

10Surface Location

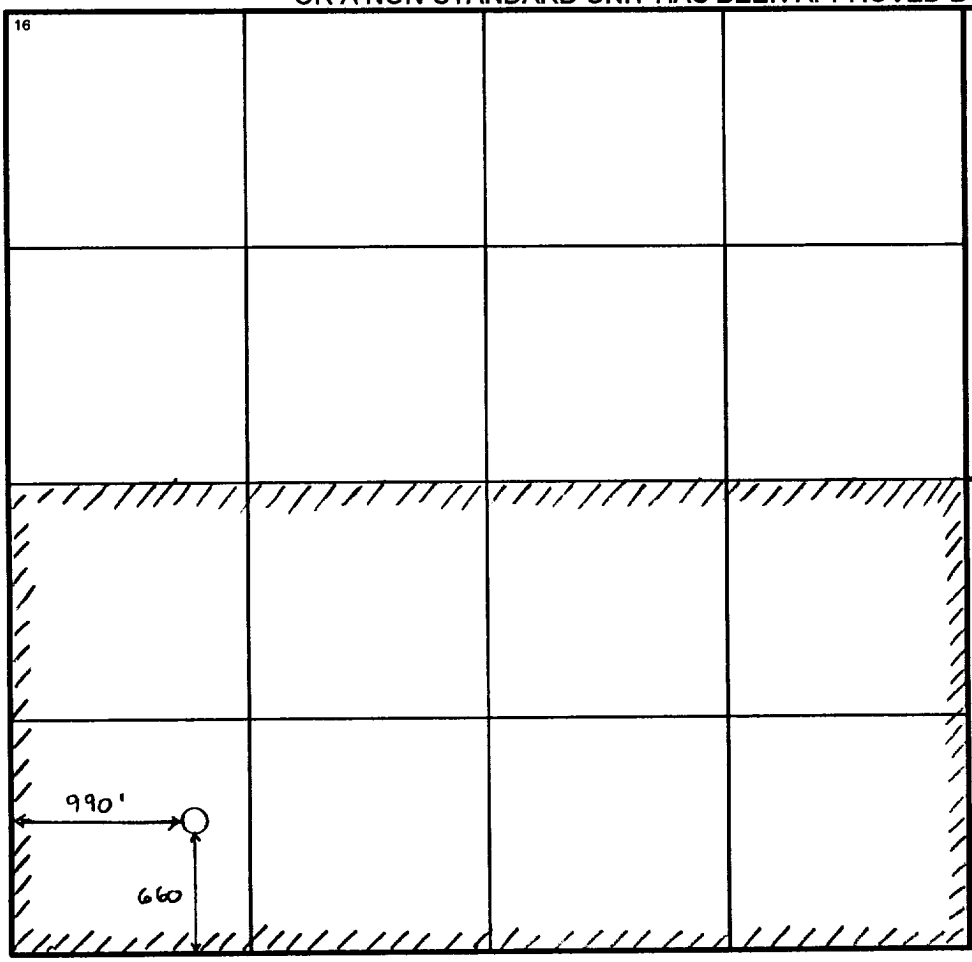
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West Line	County
M	36	17S	27E		660	South	990	West	Eddy

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

12Dedicated Acres	13Joint or Infill	14Consolidation Code	15Order No.
320.00		C	

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



17OPERATOR CERTIFICATION

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

Signature
Jerry Elgin
Printed Name
District Manager
Title
08-13-99
Date

18SURVEYOR 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.

10-19-92
Date of Survey
Signature and Seal of Professional Surveyer:

Original signed by Herschel Jones
Certificate Number

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

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

ADMINISTRATIVE ORDER DHC-2464

Mewbourne Oil Company
P.O. Box 7698
Tyler, Texas 75711

Attention: Mr. K. M. Calvert

Chalk Bluff "36" State No. 1
API No. 30-015-27286
Unit M, Section 36, Township 17 South, Range 27 East, NMPM,
Eddy County, New Mexico.
Wildcat-Atoka (Gas –N/A), and
North Illinois Camp-Morrow (Gas – 78890) Pools

Dear Mr. Calvert:

Reference is made to your recent application for an exception to Rule 303.A. of the Division Rules and Regulations to permit the above described well to commingle production from the subject pools in the wellbore.

It appearing that the subject well qualifies for approval for such amendment pursuant to the provisions of Rule 303.C., and that reservoir damage or waste will not result from such downhole commingling, and correlative rights will not be violated thereby, you are hereby authorized to commingle the production as described above and any Division Order which authorized the dual completion and required separation of the zones is hereby placed in abeyance.

The maximum amount of gas which may be produced daily from the well shall be determined by Division Rules and Regulations or by the gas allowable for each respective prorated gas pool as printed in the Division's Southeast Gas Proration Schedule.

Assignment of allowable to the well and allocation of production from the well shall be on the following basis:

Wildcat-Atoka Gas Pool	Oil-100%	Gas-73%
North Illinois Camp-Morrow Gas Pool	Oil-0%	Gas-27%

78890

REMARKS: The operator shall notify the Artesia District Office of the Division upon implementation of the commingling process.

Pursuant to Rule 303.H., the commingling authority granted herein may be rescinded by the Division Director if conservation is not being best served by such commingling.

Approved at Santa Fe, New Mexico on this 21st day of September, 1999.

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

Lori Wrotenbery by DRC

LORI WROTENBERY
Director

S E A L

LW/DRC

cc: Oil Conservation Division - Artesia
State Land Office-Oil & Gas Division

Submit 3 Copies to Appropriate District Office

State of New Mexico
Energy, Minerals and Natural Resources Department

C15F

Form C-103
Revised 1-1-89

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

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

OIL CONSERVATION DIVISION

2040 Pacheco St.
Santa Fe, NM 87505

WELL API NO.	30-015-27286
5Indicate Type of Lease	STATE ☒ FEE ☐
6State Oil & Gas Lease No.	E-379-4

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7Lease Name or Unit Agreement Name	Chalk Bluff 36 State
1Type of Well: OIL WELL ☐ GAS WELL ☒ OTHER	
2Name of Operator	Mewbourne Oil Company
8Well No.	1
3Address of Operator	PO Box 5270, Hobbs, New Mexico 88240
9Pool name or Wildcat	Wildcat Atoka

4Well Location

Unit Letter M 660 Feet From The South Line and 990 Feet From The West Line

Section 36 Township 17s Range 27e NMPM Eddy County

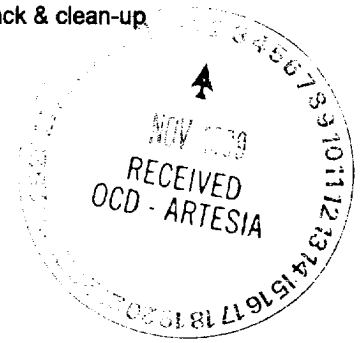
10Elevation (*Show whether DF, RKB, RT, GR, etc.*) 3625 GL

11 Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	PLUG AND ANBANDONMENT	☐
PULL OR ALTER CASING	☐			CASING TEST AND CEMENT JOB	☐		
OTHER:	☐			OTHER: Test Atoka	☒		

12Describe Proposed or Completed Operations (*Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work*) SEE RULE 1103.

9-21-99...POOH w/ Tbg.
9-22-99...Set RBP over Morrow perfs. Perforate Atoka perfs @ 9466-84. GIH w/ Pkr & tbg.
9-24-99...Acidize new Atoka perfs w/ 3000 gals 7 1/2% HCL adding N2 w/ Ball Sealers. Swab & Flow test.
10-16-99...Frac Atoka perfs w/ 30,000 gals 70 Quality Foam using 10,000 lbs 20/40 Interprop. Flow back & clean-up.
10-19-99...Turn to sales.



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

SIGNATURE N M Young TITLE Consultant DATE 11-01-99

TYPE OR PRINT NAME N M Young TELEPHONE NO. 505 393-5905

(This space for State Use)

APPROVED BY Tim W. Gum BCX TITLE District Supervisor DATE 11-5-99

CONDITIONS OF APPROVAL, IF ANY:

Submit to Appropriate
District Office
State Lease - 6 copies
Fee Lease - 5 copies
DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd, Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

2040 Pacheco St.
Santa Fe, NM 87505

Form C-105
Revised 1-1-89

WELL API NO.
30-015-27286

5. Indicate Type of Lease STATE ☒ FEE ☐

6. State Oil & Gas Lease No.
E-379-4

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well: OIL WELL ☐ GAS WELL ☒ DRY ☐ OTHER

b. Type of Completion: NEW WELL ☐ WORK OVER ☐ DEEPEN ☐ PLUG BACK ☒ DIFF RESVR ☐ OTHER

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OCD - ARTESIA

7. Lease Name or Unit Agreement Name
Chalk Bluff "36" State

2. Name of Operator
Mewbourne Oil Company

8. Well No.
1

3. Address of Operator
P. O. Box 5270, Hobbs, NM 88241

9. Pool name or Wildcat SE Logan Draw Atoka
~~Wildcat Atoka Gas Pool~~

4. Well Location
Unit Letter M 660 Feet From The South Line and 990 Feet From The West Line

Section 36 Township 17S Range 27E NMPM Eddy County

10. Date Spudded	11. Date T.D. Reached	12. Date Compl. (Ready to Prod.)	13. Elevations (DF & RKB, RT, GR, etc.)	14. Elev. Casinghead
02/03/93	03/19/93	09/24/99	3635' GR	3635'

15. Total Depth	16. Plug Back T.D.	17. If Multiple Compl. How Many Zones?	18. Intervals Drilled By	Rotary Tools	Cable Tools
10060'	9780'	NA		X	

19. Producing Interval(s), of this completion - Top, Bottom, Name
9466-9470' & 9476-9484', Atoka

20. Was Directional Survey Made
No

21. Type Electric and Other Logs Run
DIL

22. Was Well Cored
No

23. **CASING RECORD** (Report all strings set in well)

CASING SIZE	WEIGHT LB/FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13-3/8"	48#	399'	17-1/2"	530 sks Class C	None
9-5/8"	36#	2603'	12-1/4"	1150 sks Class C	None
7"	26#	9253'	8-3/4"	1620 sks Class H	None

24. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN
4-1/2"	8439'	10057'	225	

25. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
2-3/8"	9407'	9407'

26. Perforation record (interval, size, and number)
9466-9484', 0.44" entry hole diameter, 56 holes total

27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
9466-9484'	Fracture stimulated with 10000# IP 20/40

PRODUCTION

28.

Date First Production	Production Method (Flowing, gas lift, pumping - Size and type pump)	Well Status (Prod. or Shut-in)
09/24/99	Flowing	Producing

Date of Test	Hours Tested	Choke Size	Prod'n For Test Period	Oil - BbL.	Gas - MCF	Water - BbL.	Gas - Oil Ratio
10/18/99	24	24/64"		2	317	2	158500

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	Oil - BbL.	Gas - MCF	Water - BbL.	Oil Gravity - API - (Corr.)
45	Packer		2	317	2	63.8

29. Disposition of Gas (Sold, used for fuel, vented, etc.)
Sold

Test Witnessed By
Mr. Miller

30. List Attachments

31. *I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief*

Signature Jerry Elgin Printed Name Jerry Elgin Title District Manager Date 10/19/99

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-104
Revised October 18, 1994
Instructions on back
Submit to Appropriate District Office
5 Copies
☒ AMENDED REPORT

I. REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT

[1] Operator name and Address	[2] OGRID Number
Mewbourne Oil Company P. O. Box 5270 Hobbs, NM 88241	14744
	[3] Reason for Filing Code: Plug Back

[4] API Number	[5] Pool Name	[6] Pool Code
30 - 0 15-27286	~~Wildcat Atoka Gas Pool~~ Logan Draw; Atoka, SE	96979
[7] Property Code	[8] Property Name	[9] Well Number
7871	Chalk Bluff "36" State	1

II. [10] Surface Location

Ul or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South Line	Feet from the	East/West line	County
M	36	17S	27E		660	South	990	West	Eddy

[11] Bottom Hole Location

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

[12] Lse Code	[13] Producing Method Code	[14] Gas Connection Date	[15] C-129 Permit Number	[16] C-129 Effective Date	[17] C-129 Expiration Date
	Flowing	10/24/94			

III. Oil and Gas Transporters

[18] Transporter OGRID	[19] Transporter Name and Address	[20] POD	[21] O/G	[22] POD ULSTR Location and Description
138648	Amoco Pipeline Company Tulsa, OK	1923810	O	
000990	Transwestern Pipeline Company Houston, TX	2819523	G	

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OCD ARTESIA

IV. Produced Water

[23] POD	[24] POD ULSTR Location and Description
1923850	

V. Well Completion Data

[25] Spud Date	[26] Ready Date	[27] TD	[28] PBTD	[29] Perforations	[30] DHC, DC, MC
02/03/93	09/24/99	10060	9780	9466-9484'	

[31] Hole Size	[32] Casing & Tubing Size	[33] Depth Set		[34] Sacks Cement
17-1/2"	13-3/8"	399'	Post ID-2	530
12-1/4"	9-5/8"	2603'	10-29-99	1150
8-3/4"	7"	9253'	comp Atoka	1620
6-1/8"	4-1/2"	10057'		225

VI. Well Test Data

[35] Date New Oil	[36] Gas Delivery Date	[37] Test Date	[38] Test Length	[39] Tbg. Pressure	[40] Csg. Pressure
09/24/99	09/24/99	10/18/99	24 hours	45	Packer
[41] Choke Size	**[42] Oil**	**[43] Water**	**[44] Gas**	**[45] AOF**	**[46] Test Method**
24/64"	2	2	317		Sold

[47] I hereby certify that the rules of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Signature: Jerry Elgin
Printed name: Jerry Elgin
Title: District Manager
Date: 10/20/99 Phone: 505-393-5905

OIL CONSERVATION DIVISION
Approved by: ORIGINAL SIGNED BY TIM W. GUM
DISTRICT II SUPERVISOR
Title:
Approval Date: 10-27-99

[48] If this is a change of operator fill in the OGRID number and name of the previous operator

Previous Operator Signature	Printed Name	Title	Date

0 COMPANY : MEMBOURNE OIL CO. LEASE : C. B. 36 ST. WELL NO. : 1

UNIT : M SECTION 36 TOWNSHIP : 17

L : 9385 H : 9386 L/H : 1 G/GMIX : 0.696

%CO2 : 4.586 %N2 : 0.788 H2S : DATE :10 27 99

d : 1.995 Fr :0.018231 GH : 6532.0 RANGE : 27

VOL 1 : 89 PSIA 1 : 1332.2

VOL 2 : 156 PSIA 2 : 1262.2

VOL 3 : 212 PSIA 3 : 1178.2

VOL 4 : 276 PSIA 4 : 1068.2

RESV.TEMP 167.9

SHUT-IN PR= 1398.2

PCR : 652

TCR : 381

LINE	RATE 1		RATE 2		RATE 3		RATE 4	
	`1ST	`2ND	`1ST	``2ND	`1ST	`2ND	`1ST	`2ND
1 QM	0.089	0.089	0.156	0.156	0.212	0.212	0.276	0.276
2 TW	534	534	534	534	534	534	534	534
3 Ts	627.9	627.9	627.9	627.9	627.9	627.9	627.9	627.9
4 T	580.9	580.9	580.9	580.9	580.9	580.9	580.9	580.9
PR (est)	2.04		1.94		1.81		1.64	
5 Z(est)	0.809	0.793	0.815	0.799	0.824	0.807	0.835	0.819
6 TZ	469.9	460.5	473.7	464.1	478.5	468.9	485.3	476.0
7 GH/TZ	13.901	14.185	13.790	14.074	13.650	13.929	13.458	13.724
8 eS	1.684	1.702	1.677	1.695	1.668	1.686	1.656	1.673
9 1-e-S	0.406	0.413	0.404	0.410	0.401	0.407	0.396	0.402
10 Pt	1332.2	1332.2	1262.2	1262.2	1178.2	1178.2	1068.2	1068.2
11 Pt2 /1000	1774.8	1774.8	1593.1	1593.1	1388.2	1388.2	1141.1	1141.1
12 Fr	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.018231	0.0182311
13 Fc=FrTZ	8.567	8.395	8.636	8.462	8.724	8.549	8.848	8.677
14 FcQm	0.76	0.75	1.35	1.32	1.85	1.81	2.44	2.39
15 L/H(FcQm)	0.6	0.6	1.8	1.7	3.4	3.3	6.0	5.7
16 Fw	0.236154	0.230308	0.732800	0.714522	1.370485	1.336601	2.363611	2.3073869
17 Pw2	1775.0	1775.0	1593.9	1593.9	1389.5	1389.5	1143.4	1143.4
18 Ps2	2989.4	3021.4	2673.2	2701.8	2318.3	2342.6	1894.0	1912.9
19 Ps	1729.0	1738.2	1635.0	1643.7	1522.6	1530.6	1376.2	1383.1
20 P	1530.6	1535.2	1448.6	1453.0	1350.4	1354.4	1222.2	1225.6
21 Pr	2.35	2.35	2.22	2.23	2.07	2.08	1.87	1.88
22 Tr	1.52	1.52	1.52	1.52	1.52	1.52	1.52	1.52
23 Z	0.793	0.792	0.799	0.799	0.807	0.807	0.819	0.819

Pc = 1398.2 Pc2 = 1955.0

Pt2 =	1774.8	Pw = 1332.3
	1593.1	1262.5
	1388.2	1178.8
	1141.1	1069.3
Pc2-Pw2=	180.0	Pw2 = 1775.0
	361.1	1593.9
	565.5	1389.5
	811.6	1143.4

n = 0.747

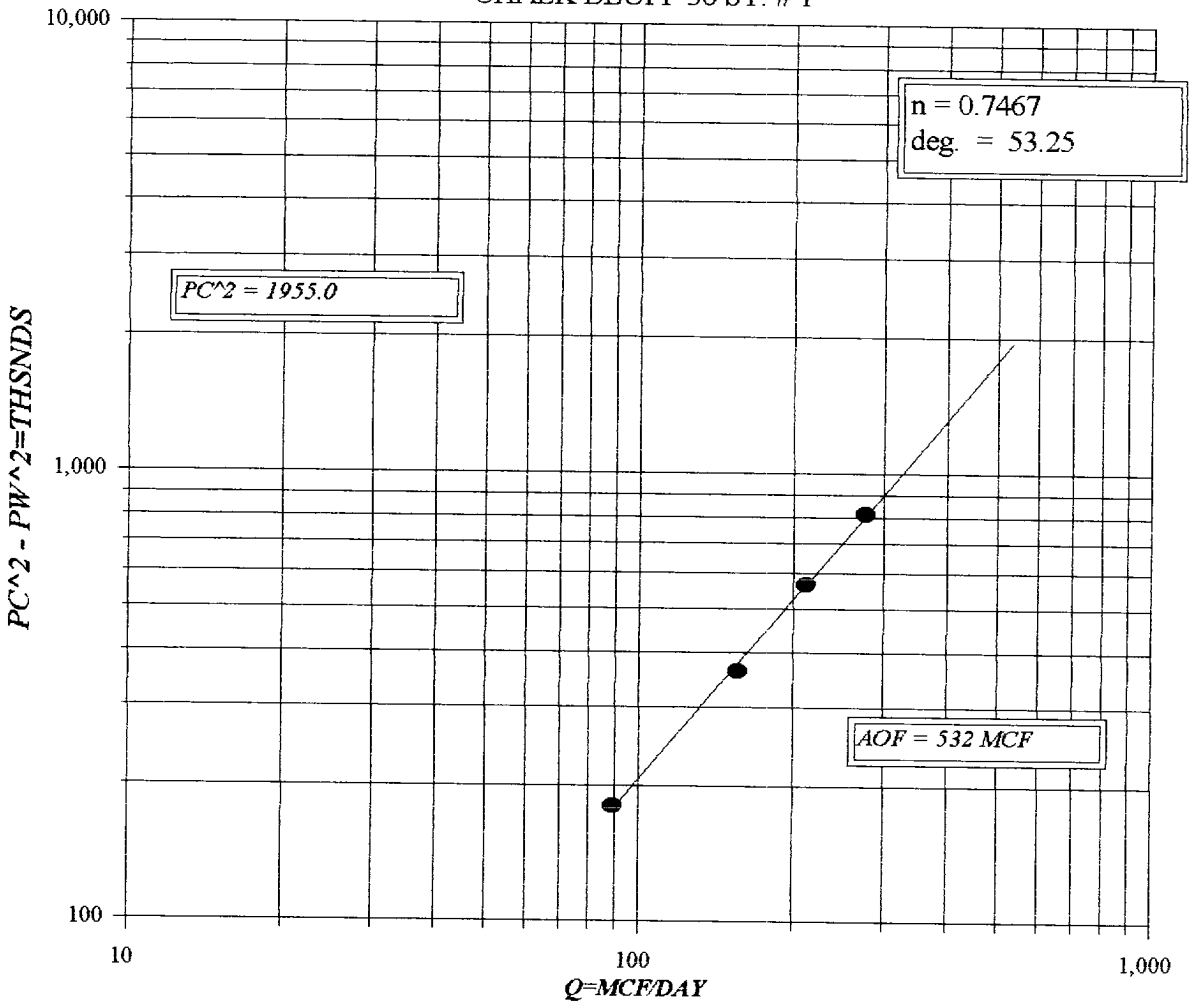
Pc2/(Pc2-Pw2) =	10.862
	5.414
	3.457
	2.409
[Pc2/Pc2-Pw2]n =	5.936
	3.529
	2.525
	1.928
AOF= Q	0.528
	0.551
	0.535
	0.532

FORM C122-D


RECEIVED
OCD - ARTESIA

MEWBOURNE OIL COMPANY

CHALK BLUFF 36 ST. # 1



Submit in duplicate to appropriate district office
See Rule 401 & Rule 1122

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-122
Revised 4-1-91

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator: Mewbourne Oil Company				Lease or Unit Name: Chalk Bluff 36 State	
Type Test: [X] Initial [ ] Annual [ ] Special				Test Date: 10/27/99	Well No.: 1
Completion Date: 10/16/99	Total Depth: 10060	Plug Back TD: 9780		Elevation: 3563' GL	Unit Ltr. - Sec. - TWP - Rge.: M 36 17s 27e
Csg. Size: 4½ / Wt.: 11.35 / d: 4.000 / Set At: 8439 - 10060		Perforations: From: 9466 To: 9484			County: Eddy
Tbg. Size: 2 3/8 / Wt.: 4.6 / d: 1.995 / Set At: 9385		Perforations: From: Open To: Ended			Pool: SE Logan Draw ~~Illinois Camp~~ Atoka
Type Well - Single - Bradenhead - G.G. or G.O. Multiple: Single		Packer Set At: 9385			Formation: Atoka
Producing Thru: Tbg	Reservoir Temp. °F	Mean Annual Temp. °F: 60	Baro, Press - P_a: 13.2		Connection: Elk Horn

L	H	Gg	% CO_2	% N_2	% H_2S	Prover	Meter Run	Taps
9385	9385	0.696	4.586	0.788			3.068	FLG

	FLOW DATA				TUBING DATA		CASING DATA		
NO.	Prover Line Size X Orifice Size	Press. p.s.i.g.	Diff. h_w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	Duration of Flow
SI					1385		PACKER		24 hrs
1.	3.068 x 0.875	28	10.00	60	1319		"		1 hr
2.	3.068 x 0.875	27	32.00	70	1249		"		1 hr
3.	3.068 x 0.875	27	60.00	77	1165		"		1 hr
4.	3.068 x 0.875	29	95.00	68	1055		"		1 hr
5.									

RATE OF FLOW CALCULATIONS

NO.	COEFFICIENT (24 HOUR)	$\sqrt{h_w P_m}$	Pressure P_m	Flow Temp. Factor Ft.	Gravity Factor Fg.	Super Compress. Factor, Fpv.	Rate of Flow Q, Mcfd
1.	3.650	20.30	41.2	1.000	1.199	1.004	89
2.	3.650	35.87	40.2	.9905	1.199	1.004	156
3.	3.650	49.11	40.2	.9840	1.199	1.004	212
4.	3.650	63.32	42.2	.9924	1.199	1.004	276
5.							

NO.	P_r	Temp. °R	T_r	Z
1.	.06	520	1.36	.993
2.	.06	530	1.39	.993
3.	.06	537	1.40	.993
4.	.06	528	1.38	.993
5.				

Gas Liquid Hydrocarbon Ratio: Dry Gas Mcf/bbl.
A.P. I. Gravity of Liquid Hydrocarbons: Dry Deg.
Specific Gravity Separator Gas: .696 XXXXXXXXX
Specific Gravity Flowing Fluid: XXXXX
Critical Pressure: * 652 P.S.I.A. P.S.I.A.
Critical Temperature: * 381 R R

P_c 1398.2 P_c^2 1955.00

NO.	P_t^2	P_w	P_w^2	$P_c^2 - P_w^2$
1.		1332.3	1775.0	180.0
2.		1262.5	1593.9	361.1
3.		1178.8	1389.5	565.5
4.		1069.3	1143.4	811.6
5.				

1) $\frac{P_c^2}{P_c^2 - P_w^2} = 2.409$ (2) $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = 1.928$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2}\right]^n = .532$

Absolute Open Flow: 532 Mcfd @ 15.025 | Angle of Slope θ: 53.25 | Slope, n: .7467

Remarks: Well produced no fluid

* Corrected to 4.586% CO2

Approved By Division	Conducted By:	Calculated By:	Checked By:
	Jarrel Services, Inc.	Bob Murray	Bob Murray

NEW MEXICO ENERGY, MINERALS
& NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
DISTRICT II ARTESIA
811 S. FIRST ST. ARTESIA, NM 88210
(505) 748-1283
FAX (505) 748-9720

Jennifer A. Salisbury
CABINET SECRETARY

January 28th, ~~1999~~ 2000 mab

Mewbourne Oil Company
P.O. Box 5270
Hobbs, NM 88241

Re: **Well Placed In Pool**

Gentlemen/Madams:

As the result of Division Order 11300, the following described gas well has been placed in the pool shown below. This change in nomenclature has been made in our files. Please change your records to reflect the proper pool name. All subsequent reports must show this nomenclature until further notice.

Logan Draw; Atoka, Southeast Gas Pool
Chalk Bluff '36' State #1
Unit M, Section 36, Township 17 South, Range 27 East, NMPM
Poolcode: 96979

Transporters are advised by copy of this letter, to change their records to reflect the pool name as established by this order, effective October 1, 1999.

Sincerely,

Bryan Arrant
District Geologist

Cc: Amoco Pipeline Company
Transwestern Pipeline Company
Santa Fe
Mae
Well File

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-101 C1S
Revised October 18, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 6 Copies
Fee Lease - 5 Copies

☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1Operator Name and Address	2OGRID Number
Mewbourne Oil Company PO Box 5270 Hobbs, N.M. 88241 505-393-5905	14744
	3API Number 30 - 015-27286

4Property Code	5Property Name	6Well No.
7871	Chalk Bluff 36 State 1	1

RECEIVED
OCD - ARTESIA

7Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West Line	County
M	36	17S	26E		660	S	990	W	Eddy

8Proposed Bottom 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

9Proposed Pool 1	10Proposed Pool 2

11Work Type Code	12Well Type Code	13Cable/Rotary	14Lease Type Code	15Ground Level Elevation
P	G	R	S	3625
16Multiple	**17Proposed Depth**	**18Formation**	**19Contractor**	**20Spud Date**
	9400	Canyon/Wolfcamp	TBA	

21Proposed Casing and Cement Program

Hole Size	Casing Size	Casing weight/foot	Setting Depth	Sacks of Cement	Estimated TOC

22Describe the proposed program. If this application is to DEEPEN or PLUG BACK give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

This well has been producing from the Morrow & Atoka formations. Mewbourne Oil Company would like to set a CIBP 100' above top perforations. Cap CIBP w/ 35' cement. Attempt a completion in the Canyon @ +/- 8550'.
If results warrant, Mewbourne Oil Company would like to test the Wolfcamp @ +/-7200'.

During operations of plugback & testing, a 7 1/16 x 3000 psi BOP w/ 2 3/8"rams & blinds will be used.

23I hereby certify that the information given above is true and complete to the best of my knowledge and belief.

Signature:

Printed name: N.M. Young

Title: District Manager

OIL CONSERVATION DIVISION

Approved By: ORIGINAL SIGNED BY TIM W. GUM
DISTRICT II SUPERVISOR

Title:

Approval Date: AUG 29 2001

Expiration Date: AUG 29 2002

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

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

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

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised 1-1-89

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

WELL LOCATION AND ACREAGE DEDICATION PLAT

All Distances must be from the outer boundaries of the section

Operator	Lease	Well No.
MEWBOURNE OIL COMPANY	CHALK BLUFF 36 STATE	1

Unit Letter	Section	Township	Range	County
M	36	17 SOUTH	27 EAST NMPM	EDDY

Actual Footage Location of Well:
990 feet from the WEST line and 660 feet from the SOUTH line

Ground level Elev.	Producing Formation	Pool	Dedicated Acreage:
3635		Illinois Camp Morrow North	320 Acres

1. Outline the acreage dedicated to the subject well by colored pencil or hachure marks on the plat below.

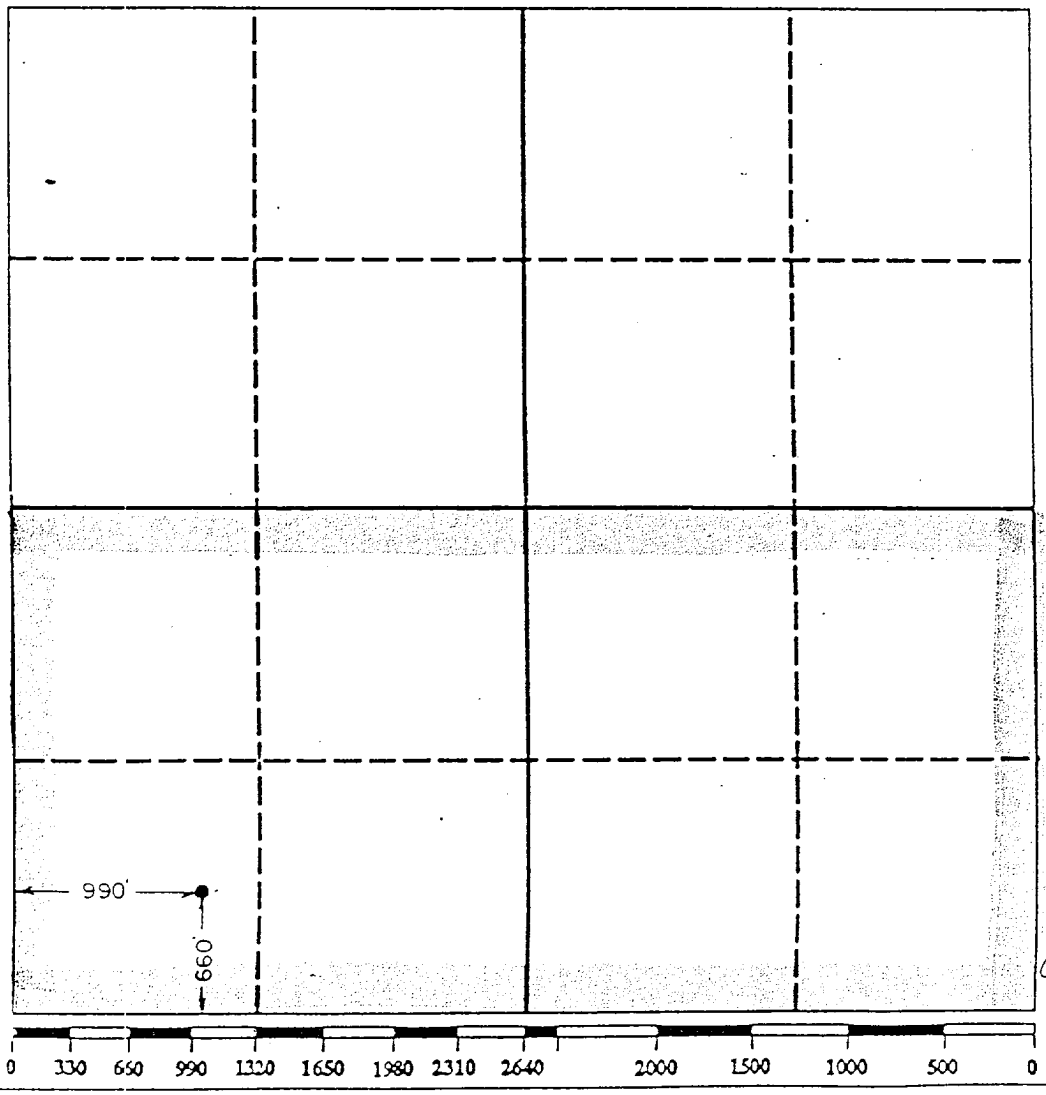
2. If more than one lease is dedicated to the well, outline each and identify the ownership thereof (both as to working interest and royalty).

3. If more than one lease of different ownership is dedicated to the well, have the interest of all owners been consolidated by communitization, unitization, force-pooling, etc.?

[X] Yes [ ] No If answer is "yes" type of consolidation Communitization

If answer is "no" list the owners and tract descriptions which have actually been consolidated. (Use reverse side of this form if necessary. _____

No allowable will be assigned to the well until all interests have been consolidated (by communitization, unitization, forced-pooling, or otherwise) or until a non-standard unit, eliminating such interest, has been approved by the Division.



OPERATOR CERTIFICATION

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

Signature: Bill Pierce

Printed Name: Bill Pierce

Position: Drilling Superintendent

Company: Mewbourne Oil Company

Date: October 27, 1992

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 supervison, and that the same is true and correct to the best of my knowledge and belief.

Date Surveyed: 10/19/92

Signature & Seal of Professional Surveyor

Certificate No. 3640

Submit 3 Copies
to Appropriate
District Office

State of New Mexico
Energy, Minerals and Natural Resources Department

C 15 T
OP

Form C-103
Revised 1-1-89

DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

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

OIL CONSERVATION DIVISION

2040 Pacheco St.
Santa Fe, NM 87505

WELL API NO.
30-015-27286

5 Indicate Type of Lease
STATE ☒ FEE ☐

6 State Oil & Gas Lease No.
E-379-4

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7 Lease Name or Unit Agreement Name
Chalk Bluff 36 State

1 Type of Well:
OIL WELL ☐ GAS WELL ☒ OTHER

2 Name of Operator
Mewbourne Oil Company

8 Well No.
1

3 Address of Operator
PO Box 5270, Hobbs, New Mexico 88241

9 Pool name or Wildcat
Logan Draw Atoka

4 Well Location
Unit Letter M : 660 Feet From The South Line and 990 Feet From The West Line
Section 36 Township 17S Range ~~R28E~~ 27 NMPM Eddy County

10 Elevation (*Show whether DF, RKB, RT, GR, etc.*)
3635' GL

11 Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ☐	PLUG AND ANBANDONMENT ☐
PULL OR ALTER CASING ☐		CASING TEST AND CEMENT JOB ☐	
OTHER: ☐		OTHER: PB Atoka. Test & plug off Canyon. Test & Produce Wolfcamp ☒	

12 Describe Proposed or Completed Operations (*Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work*) SEE RULE 1103.

6/28/01... POOH w/ tbg. RIH w/ 4 1/2" CIBP & set @ 9400'. Dump 35' cement on plug. New PBTD @ 9365'. Test to 1000 psi. OK. Perforate Canyon @ 8528-72' (12'. 2 spf. 24 holes). Acidize w/ 2100 gals 20% Ne-Fe & ball sealers. Swab test.

7/05/01...POOH. RIH & set 7" RBP @ 8300'. Load & test to 1000 psi. OK. New PBTD @ 8300'. Perforate Wolfcamp @ 7164-7277' (29'. 2 spf. 58 holes). GIH w/ tbg. Acidize perfs w/ 5000 gals 20% Ne-Fe & ball sealers. Swab test.

7/16/01...POOH w/ test equipment. Run tbg & rods & put well on production.

SEP 2001
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OCD - ARTESIA

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

SIGNATURE [signature] TITLE District Manager DATE 08-24-01

TYPE OR PRINT NAME N.M. Young TELEPHONE NO. 505-393-5905

(This space for State Use)

APPROVED BY [signature] **ORIGINAL SIGNED BY TIM W. GUM DISTRICT II SUPERVISOR** TITLE DATE **SEP 6 2001**

CONDITIONS OF APPROVAL, IF ANY:

INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Division not later than 20 days after the completion of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all specific tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, Items 25 through 29 shall be reported for each zone. The form is to be filed in quintuplicate except on state land, where six copies are required. See Rule 1105.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico				Northwestern New Mexico			
T. Anhy		T. Canyon	8327.0	T. Ojo Alamo		T. Penn. "B"	
T. Salt		T. Strawn	8820.0	T. Kirtland-Fruitland		T. Penn. "C"	
B. Salt		T. Atoka	9380.0	T. Pictured Cliffs		T. Penn. "D"	
T. Yates	328.0	T. Miss	10040.0	T. Cliff House		T. Leadville	
T. 7 Rivers	464.0	T. Devonian		T. Menefee		T. Madison	
T. Queen	1008.0	T. Silurian		T. Point Lookout		T. Elbert	
T. Grayburg	1360.0	T. Montoya		T. Mancos		T. McCracken	
T. San Andres	1785.0	T. Simpson		T. Gallup		T. Ignacio Otzte	
T. Glorieta	3155.0	T. McKee		Base Greenhorn		T. Granite	
T. Paddock		T. Ellenburger		T. Dakota		T.	
T. Blinebry		T. Gr. Wash		T. Morrison		T.	
T. Tubb	4025.0	T. Delaware Sand		T. Todilto		T.	
T. Drinkard	4855.0	T. Bone Springs		T. Entrada		T.	
T. Abo	5120.0	T. Morrow	9494.0	T. Wingate		T.	
T. Wolfcamp	6702.0	T.		T. Chinle		T.	
T. Penn	8210.0	T.		T. Permain		T.	
T. Cisco (Bough C)		T.		T. Penn. "A"		T.	

OIL OR GAS SANDS OR ZONES

No. 1, from ..... to ..... No. 3, from ..... to .....

No. 2, from ..... to ..... No. 4, from ..... to .....

IMPORTANT WATER SANDS

Include data on rate of water inflow and elevation to which water rose in hole.

No. 1, from ..... to ..... feet .....

No. 2, from ..... to ..... feet .....

No. 3, from ..... to ..... feet .....

LITHOLOGY RECORD (Attach additional sheet if necessary)

From	To	Thickness in Feet	Lithology	From	To	Thickness in Feet	Lithology

Submit to Appropriate District Office
State Lease - 6 copies
Fee Lease - 5 copies
DISTRICT I
P.O. Box 1980, Hobbs, NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd, Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

2040 Pacheco St.
Santa Fe, NM 87505

Form C-105
Revised 1-1-89

C/SF BLM SE

WELL API NO. 30-015-27286

5. Indicate Type of Lease: STATE [X] FEE [ ]

6. State Oil & Gas Lease No. E-379-4

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1a. Type of Well: OIL WELL [X] GAS WELL [ ] DRY [ ] OTHER

b. Type of Completion: NEW WELL [ ] WORK OVER [ ] DEEPEN [ ] PLUG BACK [X] DIFF RESVR [ ] OTHER

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7. Lease Name or Unit Agreement Name: Chalk Bluff 36 State

2. Name of Operator: Mewbourne Oil Company

8. Well No. 1

3. Address of Operator: PO Box 5270, Hobbs, New Mexico 88241

9. Pool name or Wildcat: Logan Draw Wolfcamp

4. Well Location
Unit Letter M : 660 Feet From The South Line and 990 Feet From The West Line
Section 36 Township 17S Range ~~28E~~ 27 NMPM Eddy County

10. Date Spudded	11. Date T.D. Reached	12. Date Compl. (Ready to Prod.)	13. Elevations (DF & RKB, RT, GR, etc.)	14. Elev. Casinghead
02/03/93	03/19/93	07/17/01	3635' GL	3635'

15. Total Depth	16. Plug Back T.D.	17. If Multiple Compl. How Many Zones?	18. Intervals Drilled By	Rotary Tools	Cable Tools
10060	8300			all	

19. Producing Interval(s), of this completion - Top, Bottom, Name: 7164-7277

20. Was Directional Survey Made: No

21. Type Electric and Other Logs Run: CBL, DN & DLL

22. Was Well Cored: No

23. **CASING RECORD** (Report all strings set in well)

CASING SIZE	WEIGHT LB/FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13 3/8"	48#	399'	17 1/2"	530 sks	N/A
9 5/8"	36#	2603'	12 1/4"	1150 sks	N/A
7"	26#	9253	8 3/4"	1620 sks	N/A

24. LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN
4 1/2"	8439'	10057'	225	

25. TUBING RECORD

SIZE	DEPTH SET	PACKER SET
2 7/8"	7352	TAC @ 7190'

26. Perforation record (interval, size, and number)
7164-7277'. 58 .38" diameter holes

27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
7164-7277	5000 gals 20% Ne-Fe & ball sealers

28. **PRODUCTION**

Date First Production	Production Method (Flowing, gas lift, pumping - Size and type pump)	Well Status (Prod. or Shut-in)
07/17/01	Pumping. 2" x 1 1/2" x 24'	Producing

Date of Test	Hours Tested	Choke Size	Prod'n For Test Period	Oil - BbL.	Gas - MCF	Water - BbL.	Gas - Oil Ratio
07/22/01	24	N/A		88	88	78	1000

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	Oil - BbL.	Gas - MCF	Water - BbL.	Oil Gravity - API - (Corr.)
N/A	35		88	88	78	38

29. Disposition of Gas (Sold, used for fuel, vented, etc.): Sold

Test Witnessed By: J. Capps

30. List Attachments: C-103 & C104.

31. *I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief*

Signature [signature] Printed Name N.M. Young Title District Manager Date 08/24/01

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-104
Revised October 18, 1994
Instructions on back
Submit to Appropriate District Office
5 Copies
☐ AMENDED REPORT

I. REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT

[1] Operator name and Address	[2] OGRID Number
Mewbourne Oil Company PO Box 5270 Hobbs, New Mexico 88241	14744
	[3] Reason for Filing Code: Plug Back/Recompletion

[4] API Number	[5] Pool Name	[6] Pool Code
30 - 0 15-27286	Logan Draw Wolfcamp.	96960
[7] Property Code	[8] Property Name	[9] Well Number
7871	Chalk Bluff 36 State	1

II. [10] Surface Location

Ul or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South Line	Feet from the	East/West line	County
	36	17S	27E		660	South	990	West	Eddy

[11] Bottom Hole Location

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

[12] Lse Code	[13] Producing Method Code	[14] Gas Connection Date	[15] C-129 Permit Number	[16] C-129 Effective Date	[17] C-129 Expiration Date
	Pumping	07/17/01			

III. Oil and Gas Transporters

[18] Transporter OGRID	[19] Transporter Name and Address	[20] POD	[21] O/G	[22] POD ULSTR Location and Description
138648	Amoco Pipeline Company Tulsa, Ok.	1923810	O	
990	~~Elkhorn Operating Company~~ ARCO Artesia, NM	2829736	G	

SEP 2001
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IV. Produced Water

[23] POD	[24] POD ULSTR Location and Description
1923850	

V. Well Completion Data

[25] Spud Date	[26] Ready Date	[27] TD	[28] PBTD	[29] Perforations	[30] DHC, DC, MC
02/03/93	07/17/01	10060	8300	7164-7277	

[31] Hole Size	[32] Casing & Tubing Size	[33] Depth Set	[34] Sacks Cement
17 1/2"	13 3/8"	399'	530
12 1/4"	9 5/8"	2603'	1150
8 3/4"	7"	9253'	1620
6 1/8"	4 1/2"	10057'	225

VI. Well Test Data

[35] Date New Oil	[36] Gas Delivery Date	[37] Test Date	[38] Test Length	[39] Tbg. Pressure	[40] Csg. Pressure
07/17/01	07/17/01	07/22/01	24	N/A	35
[41] Choke Size	**[42] Oil**	**[43] Water**	**[44] Gas**	**[45] AOF**	**[46] Test Method**
N/A	88	78	88		Pumping

[47] I hereby certify that the rules of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Signature: N.M. Young

Printed name: N.M. Young

Title: District Manager

Date: 08/24/01 Phone: 505-393-5905

OIL CONSERVATION DIVISION

Approved by: ORIGINAL SIGNED BY TIM W. GUM
DISTRICT II SUPERVISOR

Title:

Approval Date: SEP 6 2001

[48] If this is a change of operator fill in the OGRID number and name of the previous operator

Previous Operator Signature	Printed Name	Title	Date

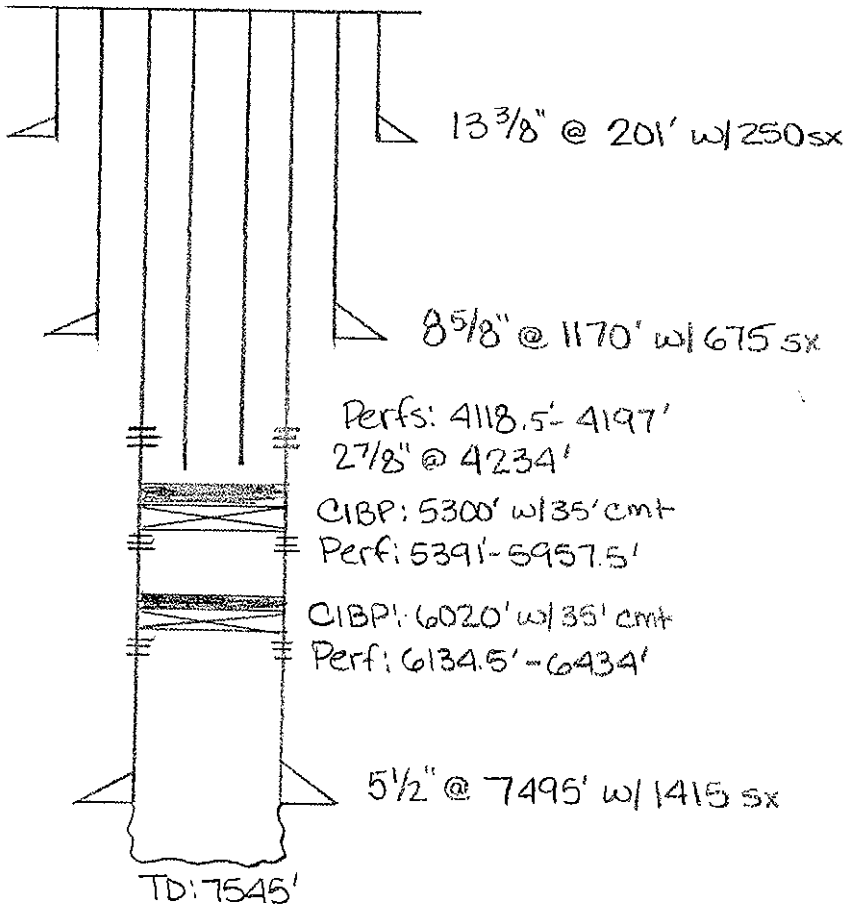
SUBSURFACE

NAVAJO REFINING COMPANY, L.L.C.
Map ID No. 117
Artificial Penetration Review

OPERATOR Mack Energy Corp.
LEASE State H
WELL NUMBER 2
DRILLED 1/11/08
PLUGGED NA

STATUS Active
LOCATION Sec. 2 -T 18S-R 27E
MUD FILLED BOREHOLE NA
TOP INJECTION ZONE ≈ -3615'
API NO. 30-015- 35814

REMARKS:



MAP ID NO. 117

MACK ENERGY CORPORATION
STATE H NO. 2

API NO. 30-015-35814

District II
1301 W. Grand Ave., Artesia, NM 88210
Phone:(505) 748-1283 Fax:(505) 748-9720

Form C-101
Permit 60506

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address	2. OGRID Number
MACK ENERGY CORP PO BOX 960 ARTESIA , NM 88211	13837
	3. API Number 30-015-35814

4. Property Code	5. Property Name	6. Well No.
303847	STATE H	002

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
H	2	18S	27E	H	2063	N	441	E	EDDY

8. Pool Information

CHALK BLUFF; WOLFCAMP GAS	96963

Additional Well Information

9. Work Type	10. Well Type	11. Cable/Rotary	12. Lease Type	13. Ground Level Elevation
New Well	OIL		State	3590
14. Multiple	**15. Proposed Depth**	**16. Formation**	**17. Contractor**	**18. Spud Date**
N		Wolfcamp		9/20/2007

Depth to Ground water	Distance from nearest fresh water well	Distance to nearest surface water
50		

Pit: Liner: Synthetic ☐ mils thick Clay ☐ Pit Volume: bbls Drilling Method:
Closed Loop System ☒
Fresh Water ☐ Brine ☐ Diesel/Oil-based ☐ Gas/Air ☐

19. Proposed Casing and Cement Program

Type	Hole Size	Casing Type	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	12.25	8.625	24	360	400	0
Prod	7.875	5.5	17	7313	1300	0

Casing/Cement Program: Additional Comments

Mack Energy proposes to drill a 12 1/4 hole to 360', run 8 5/8 casing and cement. Drill a 7 7/8 hole to 7313', run 5 1/2 casing and cement. Note: On production string a fluid caliper will be run and will figure cement with 25% excess, attempt to circ.

Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
DoubleRam	2000	2000	

I hereby certify that the information given above is true and complete to the best of my knowledge and belief. **I further certify that the drilling pit will be constructed according to NMOCD guidelines ☐, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.**	OIL CONSERVATION DIVISION
	Approved By: Bryan Arrant
Printed Name: Electronically filed by Jerry Sherrell	Title: Geologist
Title: Production Clerk	Approved Date: 9/19/2007 — Expiration Date: 9/19/2008
Email Address: jerrys@mackenergycorp.com	
Date: 9/11/2007 — Phone: 505-748-1288	Conditions of Approval Attached

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(505) 393-6161 Fax:(505) 393-0720
District II
1301 W. Grand Ave., Artesia, NM 88210
Phone:(505) 748-1283 Fax:(505) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form C-102
Permit 60506

WELL LOCATION AND ACREAGE DEDICATION PLAT

1. API Number	2. Pool Code	3. Pool Name
30-015-35814	96963	CHALK BLUFF; WOLFCAMP GAS

4. Property Code	5. Property Name	6. Well No.
303847	STATE H	002

7. OGRID No.	8. Operator Name	9. Elevation
13837	MACK ENERGY CORP	3590

10. Surface Location

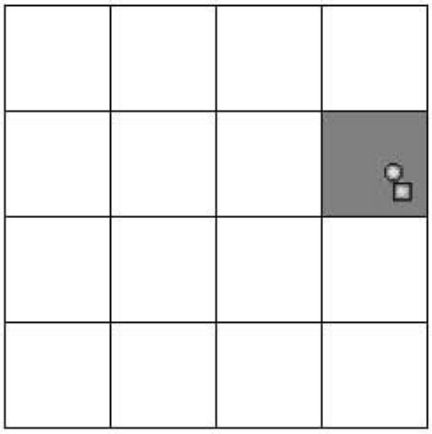
UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
H	2	18S	27E		2063	N	441	E	EDDY

11. Bottom Hole Location If Different From Surface

UL - Lot	Section	Township	Range	Lot Idn	Feet From	N/S Line	Feet From	E/W Line	County
H	2	18S	27E	H	2300	N	340	E	EDDY

12. Dedicated Acres	13. Joint or Infill	14. Consolidation Code	15. Order No.
40.00			

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



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location(s) or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

E-Signed By: Jerry Sherrell
Title: Production Clerk
Date: 9/11/2007

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.

Surveyed By: Ronald Eidson
Date of Survey: 8/28/2007
Certificate Number: 3239

Permit Comments

Operator: MACK ENERGY CORP , 13837
Well: STATE H #002
API: 30-015-35814

Created By	Comment	Comment Date
JWSHERRELL	H2S concentrations of wells in this area from surface to TD are low enough that a contingency plan is not required.	9/11/2007

Permit Conditions of Approval

Operator: MACK ENERGY CORP , 13837
Well: STATE H #002
API: 30-015-35814

OCD Reviewer	Condition
BArrant	Pit construction and closure must satisfy all requirements of your approved plan, O.C.D. Rule 19.15.2.50, and the Pit and Below-Grade Tank Guidelines
BArrant	As noted, operator to drill surface hole w/fresh water mud.
BArrant	Cement to cover all oil, gas and water bearing zones.

MACK Energy Corporation

30-015-35814

Mack Energy Corp.

Eddy County, NM (NAD 27 NME)
State H #2
State H #2
Wellbore #1

Plan: Plan #1

Standard Planning Report

11 September, 2007

Scientific Drilling
Directional Drilling Operations

Database:	EDM 2003.16 Single User Db	**Local Co-ordinate Reference:**	Well State H #2
Company:	Mack Energy Corp.	**TVD Reference:**	WELL @ 3606.00ft (KB Elev)
Project:	Eddy County, NM (NAD 27 NME)	**MD Reference:**	WELL @ 3606.00ft (KB Elev)
Site:	State H #2	**North Reference:**	Grid
Well:	State H #2	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Project Eddy County, NM (NAD 27 NME)

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site State H #2

Site Position:		**Northing:**	646,629.20ft	**Latitude:**	32° 46' 39.510 N
From:	Map	**Easting:**	528,184.50ft	**Longitude:**	104° 14' 29.874 W
Position Uncertainty:	0.00 ft	**Slot Radius:**	ft	**Grid Convergence:**	0.05 °

Well State H #2

Well Position	**+N/-S**	0 00 ft	**Northing:**	646,629 20 ft	**Latitude:**	32° 46' 39.510 N
	+E/-W	0 00 ft	**Easting:**	528,184 50 ft	**Longitude:**	104° 14' 29.874 W
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	3,606.00 ft	**Ground Level:**	0 00 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	9/11/2007	8.37	60.68	49,269

Design Plan #1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	156.92

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0 00	0 00	0 00	0 00	0.00	0.00	0.00	0.00	0.00	
460 00	0.00	0.00	460.00	0.00	0.00	0.00	0.00	0.00	0 00	
768.78	6.18	156.92	768.18	-15.29	6.52	2 00	2 00	0 00	156 92	
2,854.52	6 18	156 92	2,841.82	-221 71	94.48	0.00	0.00	0.00	0 00	
3,163.30	0.00	0.00	3,150 00	-237 00	101 00	2.00	-2 00	0 00	180.00	
7,313 30	0.00	0 00	7,300.00	-237.00	101.00	0.00	0 00	0.00	0.00	PBHL-State H #1

Database:	EDM 2003.16 Single User Db	**Local Co-ordinate Reference:**	Well State H #2
Company:	Mack Energy Corp	**TVD Reference:**	WELL @ 3606.00ft (KB Elev)
Project:	Eddy County, NM (NAD 27 NME)	**MD Reference:**	WELL @ 3606.00ft (KB Elev)
Site:	State H #2	**North Reference:**	Grid
Well:	State H #2	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
460.00	0.00	0.00	460.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP 460' Start 2.0°/100'									
500.00	0.80	156.92	500.00	-0.26	0.11	0.28	2.00	2.00	0.00
600.00	2.80	156.92	599.94	-3.15	1.34	3.42	2.00	2.00	0.00
700.00	4.80	156.92	699.72	-9.24	3.94	10.05	2.00	2.00	0.00
768.78	6.18	156.92	768.18	-15.29	6.52	16.62	2.00	2.00	0.00
EOC hold 6.18°									
800.00	6.18	156.92	799.22	-18.38	7.83	19.98	0.00	0.00	0.00
900.00	6.18	156.92	898.64	-28.28	12.05	30.74	0.00	0.00	0.00
1,000.00	6.18	156.92	998.06	-38.18	16.27	41.50	0.00	0.00	0.00
1,100.00	6.18	156.92	1,097.48	-48.07	20.49	52.26	0.00	0.00	0.00
1,200.00	6.18	156.92	1,196.90	-57.97	24.70	63.01	0.00	0.00	0.00
1,300.00	6.18	156.92	1,296.32	-67.87	28.92	73.77	0.00	0.00	0.00
1,400.00	6.18	156.92	1,395.74	-77.76	33.14	84.53	0.00	0.00	0.00
1,500.00	6.18	156.92	1,495.16	-87.66	37.36	95.29	0.00	0.00	0.00
1,600.00	6.18	156.92	1,594.58	-97.55	41.57	106.04	0.00	0.00	0.00
1,700.00	6.18	156.92	1,694.00	-107.45	45.79	116.80	0.00	0.00	0.00
1,800.00	6.18	156.92	1,793.42	-117.35	50.01	127.56	0.00	0.00	0.00
1,900.00	6.18	156.92	1,892.84	-127.24	54.23	138.32	0.00	0.00	0.00
2,000.00	6.18	156.92	1,992.26	-137.14	58.44	149.07	0.00	0.00	0.00
2,100.00	6.18	156.92	2,091.68	-147.04	62.66	159.83	0.00	0.00	0.00
2,200.00	6.18	156.92	2,191.10	-156.93	66.88	170.59	0.00	0.00	0.00
2,300.00	6.18	156.92	2,290.52	-166.83	71.10	181.35	0.00	0.00	0.00
2,400.00	6.18	156.92	2,389.94	-176.73	75.31	192.10	0.00	0.00	0.00
2,500.00	6.18	156.92	2,489.36	-186.62	79.53	202.86	0.00	0.00	0.00
2,600.00	6.18	156.92	2,588.78	-196.52	83.75	213.62	0.00	0.00	0.00
2,700.00	6.18	156.92	2,688.20	-206.41	87.97	224.38	0.00	0.00	0.00
2,800.00	6.18	156.92	2,787.62	-216.31	92.18	235.13	0.00	0.00	0.00
2,854.52	6.18	156.92	2,841.82	-221.71	94.48	241.00	0.00	0.00	0.00
Start Drop 2.0°/100'									
2,900.00	5.27	156.92	2,887.07	-225.88	96.26	245.53	2.00	-2.00	0.00
3,000.00	3.27	156.92	2,986.79	-232.72	99.18	252.97	2.00	-2.00	0.00
3,100.00	1.27	156.92	3,086.71	-236.36	100.73	256.92	2.00	-2.00	0.00
3,163.30	0.00	0.00	3,150.00	-237.00	101.00	257.62	2.00	-2.00	0.00
EOC hold 0.0°									
3,200.00	0.00	0.00	3,186.70	-237.00	101.00	257.62	0.00	0.00	0.00
3,300.00	0.00	0.00	3,286.70	-237.00	101.00	257.62	0.00	0.00	0.00
3,400.00	0.00	0.00	3,386.70	-237.00	101.00	257.62	0.00	0.00	0.00
3,500.00	0.00	0.00	3,486.70	-237.00	101.00	257.62	0.00	0.00	0.00
3,600.00	0.00	0.00	3,586.70	-237.00	101.00	257.62	0.00	0.00	0.00
3,700.00	0.00	0.00	3,686.70	-237.00	101.00	257.62	0.00	0.00	0.00
3,800.00	0.00	0.00	3,786.70	-237.00	101.00	257.62	0.00	0.00	0.00
3,900.00	0.00	0.00	3,886.70	-237.00	101.00	257.62	0.00	0.00	0.00
4,000.00	0.00	0.00	3,986.70	-237.00	101.00	257.62	0.00	0.00	0.00
4,100.00	0.00	0.00	4,086.70	-237.00	101.00	257.62	0.00	0.00	0.00
4,200.00	0.00	0.00	4,186.70	-237.00	101.00	257.62	0.00	0.00	0.00
4,300.00	0.00	0.00	4,286.70	-237.00	101.00	257.62	0.00	0.00	0.00
4,400.00	0.00	0.00	4,386.70	-237.00	101.00	257.62	0.00	0.00	0.00

Database:	EDM 2003.16 Single User Db	**Local Co-ordinate Reference:**	Well State H #2
Company:	Mack Energy Corp.	**TVD Reference:**	WELL @ 3606.00ft (KB Elev)
Project:	Eddy County, NM (NAD 27 NME)	**MD Reference:**	WELL @ 3606.00ft (KB Elev)
Site:	State H #2	**North Reference:**	Grid
Well:	State H #2	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,500.00	0.00	0.00	4,486.70	-237.00	101.00	257.62	0.00	0.00	0.00
4,600.00	0.00	0.00	4,586.70	-237.00	101.00	257.62	0.00	0.00	0.00
4,700.00	0.00	0.00	4,686.70	-237.00	101.00	257.62	0.00	0.00	0.00
4,800.00	0.00	0.00	4,786.70	-237.00	101.00	257.62	0.00	0.00	0.00
4,900.00	0.00	0.00	4,886.70	-237.00	101.00	257.62	0.00	0.00	0.00
5,000.00	0.00	0.00	4,986.70	-237.00	101.00	257.62	0.00	0.00	0.00
5,100.00	0.00	0.00	5,086.70	-237.00	101.00	257.62	0.00	0.00	0.00
5,200.00	0.00	0.00	5,186.70	-237.00	101.00	257.62	0.00	0.00	0.00
5,300.00	0.00	0.00	5,286.70	-237.00	101.00	257.62	0.00	0.00	0.00
5,400.00	0.00	0.00	5,386.70	-237.00	101.00	257.62	0.00	0.00	0.00
5,500.00	0.00	0.00	5,486.70	-237.00	101.00	257.62	0.00	0.00	0.00
5,600.00	0.00	0.00	5,586.70	-237.00	101.00	257.62	0.00	0.00	0.00
5,700.00	0.00	0.00	5,686.70	-237.00	101.00	257.62	0.00	0.00	0.00
5,800.00	0.00	0.00	5,786.70	-237.00	101.00	257.62	0.00	0.00	0.00
5,900.00	0.00	0.00	5,886.70	-237.00	101.00	257.62	0.00	0.00	0.00
6,000.00	0.00	0.00	5,986.70	-237.00	101.00	257.62	0.00	0.00	0.00
6,100.00	0.00	0.00	6,086.70	-237.00	101.00	257.62	0.00	0.00	0.00
6,200.00	0.00	0.00	6,186.70	-237.00	101.00	257.62	0.00	0.00	0.00
6,300.00	0.00	0.00	6,286.70	-237.00	101.00	257.62	0.00	0.00	0.00
6,400.00	0.00	0.00	6,386.70	-237.00	101.00	257.62	0.00	0.00	0.00
6,500.00	0.00	0.00	6,486.70	-237.00	101.00	257.62	0.00	0.00	0.00
6,600.00	0.00	0.00	6,586.70	-237.00	101.00	257.62	0.00	0.00	0.00
6,700.00	0.00	0.00	6,686.70	-237.00	101.00	257.62	0.00	0.00	0.00
6,800.00	0.00	0.00	6,786.70	-237.00	101.00	257.62	0.00	0.00	0.00
6,900.00	0.00	0.00	6,886.70	-237.00	101.00	257.62	0.00	0.00	0.00
7,000.00	0.00	0.00	6,986.70	-237.00	101.00	257.62	0.00	0.00	0.00
7,100.00	0.00	0.00	7,086.70	-237.00	101.00	257.62	0.00	0.00	0.00
7,200.00	0.00	0.00	7,186.70	-237.00	101.00	257.62	0.00	0.00	0.00
7,300.00	0.00	0.00	7,286.70	-237.00	101.00	257.62	0.00	0.00	0.00
7,313.30	0.00	0.00	7,300.00	-237.00	101.00	257.62	0.00	0.00	0.00
East HL-State H #1 - PBHL-State H #1 - South HL-State H #1									

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
PBHL-State H #1 - plan hits target - Circle (radius 10.00)	0.00	0.00	7,300.00	-237.00	101.00	646,392.20	528,285.50	32° 46' 37.164 N	104° 14' 28.693 W
South HL-State H #1 - plan misses by 14.14ft at 7313.30ft MD (7300.00 TVD, -237.00 N, 101.00 E) - Rectangle (sides W0.00 H200.00 D0.00)	0.00	0.00	7,300.00	-247.00	111.00	646,382.20	528,295.50	32° 46' 37.065 N	104° 14' 28.576 W
East HL-State H #1 - plan misses by 14.14ft at 7313.30ft MD (7300.00 TVD, -237.00 N, 101.00 E) - Rectangle (sides W800.00 H0.00 D0.00)	0.00	0.00	7,300.00	-247.00	111.00	646,382.20	528,295.50	32° 46' 37.065 N	104° 14' 28.576 W

Database:	EDM 2003.16 Single User Db	**Local Co-ordinate Reference:**	Well State H #2
Company:	Mack Energy Corp	**TVD Reference:**	WELL @ 3606.00ft (KB Elev)
Project:	Eddy County, NM (NAD 27 NME)	**MD Reference:**	WELL @ 3606.00ft (KB Elev)
Site:	State H #2	**North Reference:**	Grid
Well:	State H #2	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1		

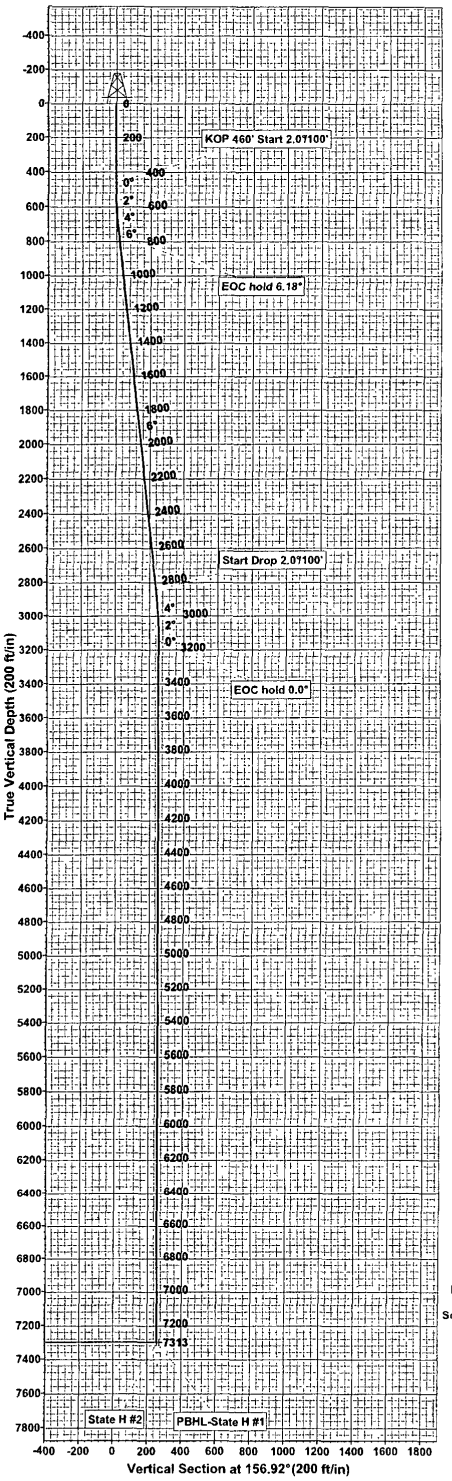
Plan Annotations

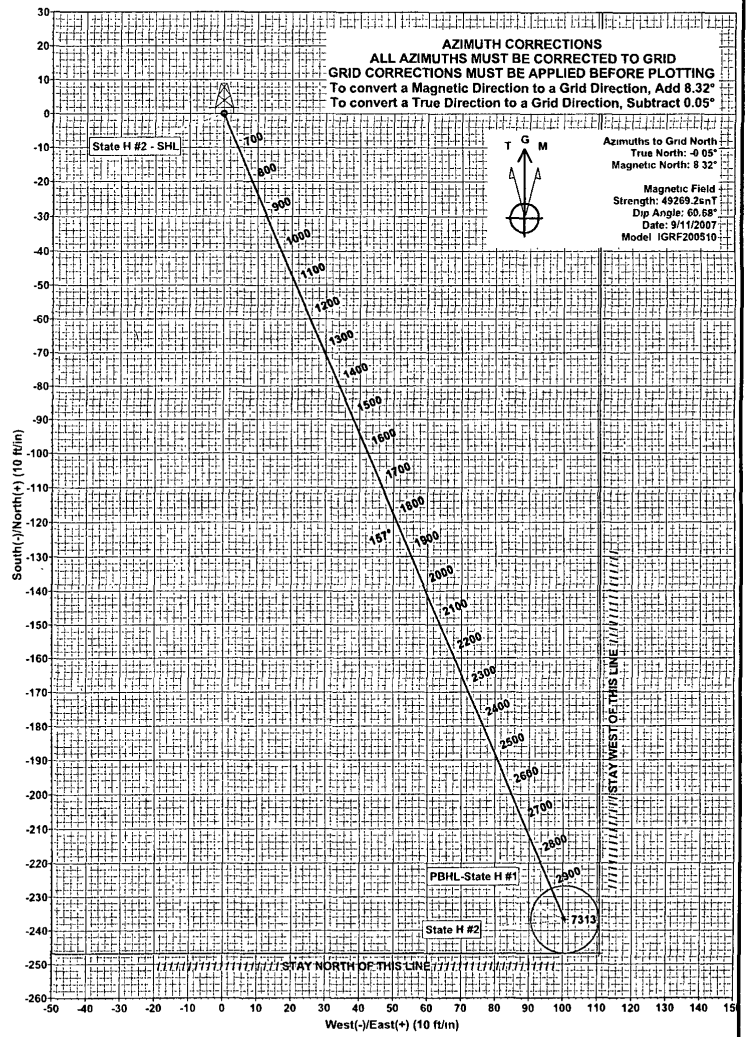
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
460.00	460.00	0.00	0.00	KOP 460' Start 2.0°/100'
768.78	768.18	-15.29	6.52	EOC hold 6.18°
2,854.52	2,841.82	-221.71	94.48	Start Drop 2.0°/100'
3,163.30	3,150.00	-237.00	101.00	EOC hold 0.0°

MACK Energy Corporation

Scientific Drilling for Mack Energy Corp.
Site: Eddy County, NM (NAD 27 NME)
Well: State H #2
Wellbore: Wellbore #1
Design: Plan #1

Scientific Drilling
Directional Drilling Operations





SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	460.00	0.00	0.00	460.00	0.00	0.00	0.00	0.00	0.00	
3	768.78	6.18	156.92	768.18	-15.29	6.52	2.00	156.92	16.62	
4	2854.52	6.18	156.92	2841.82	-221.71	94.48	0.00	0.00	241.00	
5	3163.30	0.00	0.00	3150.00	-237.00	101.00	2.00	180.00	257.62	
6	7313.30	0.00	0.00	7300.00	-237.00	101.00	0.00	0.00	257.62	PBHL-State H #1

WELL DETAILS: State H #2

Ground Level: 0.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	646629.20	528184.50	32°46' 39.510 N	104°14' 29.874 W	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
East HL-State H #1	7300.00	-247.00	111.00	646382.20	528295.50	32°46' 37.065 N	104°14' 28.576 W	Rectangle (Sides: L800.00 W0.00
PBHL-State H #1	7300.00	-237.00	101.00	646392.20	528285.50	32°46' 37.164 N	104°14' 28.693 W	Circle (Radius: 10.00)
South HL-State H #1	7300.00	-247.00	111.00	646382.20	528295.50	32°46' 37.065 N	104°14' 28.576 W	Rectangle (Sides: L0.00 W200.00

PROJECT DETAILS: Eddy County, NM (NAD 27 NME)

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

Plan: Plan #1 (State H #2/Wellbore #1)

Created By: Julio Pina Date: 11-Sep-07
Checked: _____ Date: _____
Reviewed: _____ Date: _____
Approved: _____ Date: _____

Subtitit 3 Copies To Appropriate District Office
District I
1625 N French Dr , Hobbs, NM 88240
District II
1301 W Grand Ave , Artesia, NM 88210
District III
1000 Rio Brazos Rd , Aztec, NM 87410
District IV
1220 S St Francis Dr , Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-103
May 27, 2004

WELL API NO.
30-015-35814

5. Indicate Type of Lease
STATE ☒ FEE ☐

6. State Oil & Gas Lease No.
B-9391

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS)

7. Lease Name or Unit Agreement Name
State H

1. Type of Well: Oil Well ☐ Gas Well ☒ Other

8. Well Number 2

2. Name of Operator
Mack Energy Corporation

9. OGRID Number
013837

3 Address of Operator
P. O. Box 960 Artesia, NM 88211-0960

10. Pool name or Wildcat
Chalk Bluff Wolfcamp

4 Well Location
Unit Letter H 2063 feet from the North line and 441 feet from the East line
Section 2 Township 18S Range 27E NMPM County Eddy

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)*
3590' GR

Pit or Below-grade Tank Application ☐ or Closure ☐

Pit type_____ Depth Groundwater_____ Distance from nearest fresh water well_____ Distance from nearest surface water_____

Pit Liner Thickness: _____ mil Below-Grade Tank: Volume _____ bbls; Construction Material

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS.	☐	P AND A	☐
PULL OR ALTER CASING	☐	MULTIPLE COMPL	☐	CASING/CEMENT JOB	☐		
OTHER: Change casing			☒	OTHER:			☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Mack Energy would like to change the casing string approved on this APD.

Drill a 17 1/2" hole to 200', run 13 3/8" 48# H-40 casing and cement.
Drill a 12 1/4" hole to 1150', run 8 5/8" 24# J-55 casing and cement.
Drill a 7 7/8" hole to approximately 7300', run 5 1/2" 17# L-80 casing and cement.

OCT 22 2007
OCD-ARTESIA

I hereby certify that the information above is true and complete to the best of my knowledge and belief. **I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☐, a general permit ☐ or an (attached) alternative OCD-approved plan ☐**

SIGNATURE Jerry W. Sherrell TITLE Production Clerk DATE 10/19/07

Type or print name Jerry W. Sherrell E-mail address: jerrys@mackenergycorp.com Telephone No (505)748-1288

For State Use Only

APPROVED BY: BRYAN G. ARRANT DISTRICT II GEOLOGIST TITLE _____ DATE OCT 22 2007

Conditions of Approval (if any):

MACK Energy Corporation

Mack Energy Corp.

Eddy County, NM (NAD 27 NME)
State H #2
State H #2
Wellbore #1

Plan: Plan #2

Standard Planning Report

19 October, 2007

Scientific Drilling
Directional Drilling Operations

Database:	EDM 2003 16 Single User Db	**Local Co-ordinate Reference:**	Well State H #2
Company:	Mack Energy Corp	**TVD Reference:**	WELL @ 3606 00ft (KB Elev)
Project:	Eddy County, NM (NAD 27 NME)	**MD Reference:**	WELL @ 3606 00ft (KB Elev)
Site:	State H #2	**North Reference:**	Grid
Well:	State H #2	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2		

Project	Eddy County, NM (NAD 27 NME)		
Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	State H #2				
Site Position:		**Northing:**	646,629 20 ft	**Latitude:**	32° 46' 39 510 N
From:	Map	**Easting:**	528,184 50 ft	**Longitude:**	104° 14' 29 874 W
Position Uncertainty:	0 00 ft	**Slot Radius:**	ft	**Grid Convergence:**	0 05 °

Well	State H #2				
Well Position	**+N/-S**	0 00 ft	**Northing:**	646,629 20 ft	**Latitude:**	32° 46' 39 510 N
	+E/-W	0 00 ft	**Easting:**	528,184 50 ft	**Longitude:**	104° 14' 29 874 W
Position Uncertainty		0 00 ft	**Wellhead Elevation:**	3,606 00 ft	**Ground Level:**	0 00 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	10/19/2007	8 36	60 68	49,259

Design Plan #2

Audit Notes:

Version:	**Phase:**	PLAN	**Tie On Depth:**	0 00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0 00	0 00	156 92

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0 00	0 00	0 00	0 00	0 00	0.00	0 00	0 00	0 00	0 00	
1,250 00	0 00	0.00	1,250 00	0.00	0 00	0 00	0 00	0.00	0.00	
1,785 00	10 70	156.92	1,781.89	-45.82	19 53	2 00	2 00	0 00	156 92	
2,636 01	10 70	156.92	2,618 11	-191 18	81 47	0 00	0 00	0.00	0 00	
3,171 01	0 00	0 00	3,150 00	-237 00	101 00	2 00	-2 00	0.00	180 00	
7,321 01	0 00	0 00	7,300 00	-237.00	101 00	0 00	0 00	0 00	0 00	PBHL-State H #1

Database:	EDM 2003 16 Single User Db	**Local Co-ordinate Reference:**	Well State H #2
Company:	Mack Energy Corp	**TVD Reference:**	WELL @ 3606.00ft (KB Elev)
Project:	Eddy County, NM (NAD 27 NME)	**MD Reference:**	WELL @ 3606 00ft (KB Elev)
Site:	State H #2	**North Reference:**	Grid
Well:	State H #2	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0 00	0 00	0 00	0 00	0 00	0 00	0 00	0.00	0 00	0 00
1,150 00	0 00	0 00	1,150 00	0 00	0 00	0.00	0 00	0 00	0.00
8 5/8" Casing									
1,250 00	0 00	0.00	1,250 00	0 00	0.00	0 00	0 00	0 00	0 00
KOP 1250' Start 2.0°/100'									
1,300 00	1 00	156 92	1,299 99	-0 40	0 17	0 44	2.00	2 00	0 00
1,400 00	3 00	156 92	1,399 93	-3 61	1 54	3.93	2 00	2 00	0 00
1,500 00	5.00	156.92	1,499 68	-10 03	4.27	10 90	2 00	2 00	0 00
1,600 00	7 00	156 92	1,599 13	-19 64	8 37	21 35	2.00	2 00	0 00
1,700 00	9 00	156.92	1,698 15	-32 45	13.83	35 27	2 00	2.00	0 00
1,785 00	10 70	156 92	1,781 90	-45 82	19 53	49 81	2 00	2 00	0 00
EOC hold 10.70°									
1,800 00	10 70	156 92	1,796.63	-48 38	20 62	52 59	0 00	0 00	0.00
1,900 00	10 70	156 92	1,894 89	-65 46	27 90	71 16	0 00	0 00	0 00
2,000 00	10 70	156 92	1,993 15	-82 54	35 18	89 73	0 00	0 00	0 00
2,100 00	10 70	156 92	2,091 41	-99 63	42 46	108.29	0 00	0 00	0 00
2,200 00	10.70	156.92	2,189 68	-116 71	49.74	126 86	0 00	0 00	0 00
2,300.00	10.70	156.92	2,287 94	-133 79	57.01	145 43	0 00	0.00	0 00
2,400 00	10 70	156.92	2,386 20	-150 87	64.29	163 99	0 00	0 00	0 00
2,500 00	10.70	156 92	2,484 46	-167 95	71.57	182 56	0.00	0 00	0 00
2,599 99	10 70	156 92	2,582 72	-185 03	78 85	201 13	0 00	0 00	0 00
2,636 01	10 70	156 92	2,618 11	-191 18	81 47	207 81	0 00	0 00	0.00
Start Drop 2.0°/100'									
2,699 99	9.42	156.92	2,681 11	-201 46	85 85	218 99	2 00	-2 00	0 00
2,799 99	7 42	156 92	2,780 03	-214 93	91 59	233 63	2 00	-2 00	0 00
2,899 99	5.42	156.92	2,879 39	-225 22	95.98	244 81	2 00	-2 00	0 00
2,999 99	3 42	156 92	2,979 09	-232 31	99 00	252 52	2 00	-2 00	0 00
3,099 99	1 42	156 92	3,079 00	-236 19	100 65	256 74	2 00	-2 00	0.00
3,171.01	0.00	0.00	3,150 00	-237 00	101 00	257.62	2 00	-2 00	0 00
EOC hold 0.0°									
7,321 01	0 00	0 00	7,300.00	-237 00	101 00	257 62	0 00	0 00	0.00
East HL-State H #1 - PBHL-State H #1 - South HL-State H #1									

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
PBHL-State H #1 - plan hits target - Circle (radius 10 00)	0 00	0 00	7,300 00	-237 00	101.00	646,392 20	528,285 50	32° 46' 37 164 N	104° 14' 28.693 W
South HL-State H #1 - plan misses by 14 14ft at 7321.01ft MD (7300.00 TVD, -237 00 N, 101.00 E) - Rectangle (sides W0 00 H200.00 D0.00)	0 00	0 00	7,300 00	-247 00	111 00	646,382 20	528,295 50	32° 46' 37 065 N	104° 14' 28 576 W
East HL-State H #1 - plan misses by 14 14ft at 7321 01ft MD (7300 00 TVD, -237.00 N, 101.00 E) - Rectangle (sides W800 00 H0 00 D0 00)	0 00	0 00	7,300 00	-247 00	111 00	646,382.20	528,295 50	32° 46' 37 065 N	104° 14' 28.576 W

Database:	EDM 2003.16 Single User Db	**Local Co-ordinate Reference:**	Well State H #2
Company:	Mack Energy Corp	**TVD Reference:**	WELL @ 3606 00ft (KB Elev)
Project:	Eddy County, NM (NAD 27 NME)	**MD Reference:**	WELL @ 3606 00ft (KB Elev)
Site:	State H #2	**North Reference:**	Grid
Well:	State H #2	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (ft)	Hole Diameter (ft)
1,150 00	1,150 00	8 5/8" Casing	8 62500	12.25000

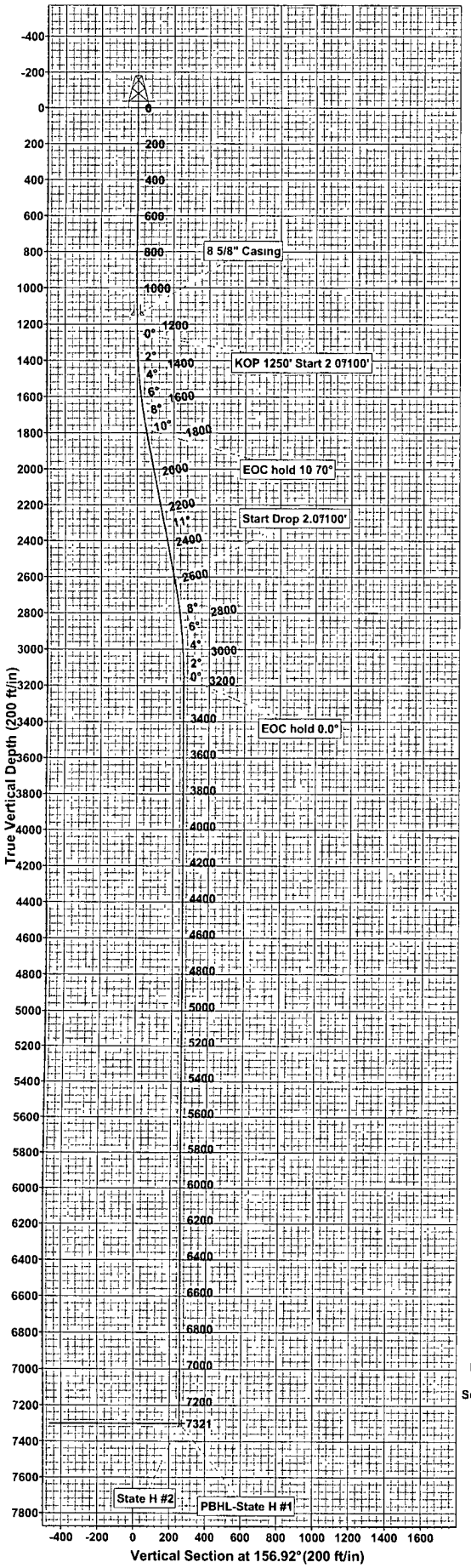
Plan Annotations

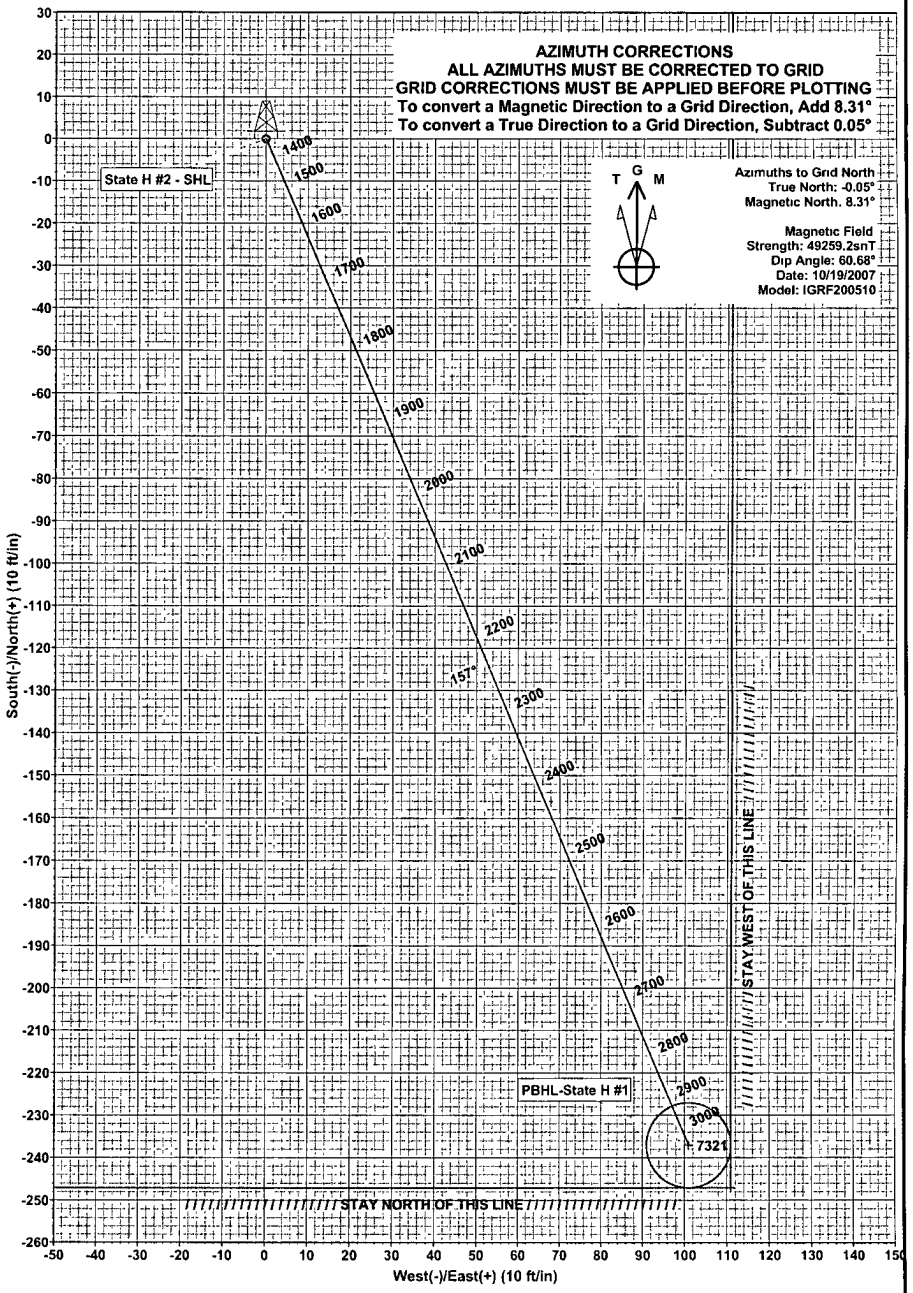
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
1,250 00	1,250 00	0 00	0 00	KOP 1250' Start 2 0°/100'
1,785 00	1,781 90	-45 82	19.53	EOC hold 10.70°
2,636 01	2,618 11	-191 18	81 47	Start Drop 2 0°/100'
3,171 01	3,150 00	-237 00	101 00	EOC hold 0 0°

MACK Energy Corporation

Scientific Drilling for Mack Energy Corp.
Site: Eddy County, NM (NAD 27 NME)
Well: State H #2
Wellbore: Wellbore #1
Design: Plan #2

Scientific Drilling
Directional Drilling Operations





SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0 00	0.00	0.00	0.00	0.00	0.00	
2	1250.00	0.00	0.00	1250.00	0 00	0.00	0.00	0 00	0 00	
3	1785 00	10.70	156.92	1781.89	-45.82	19.53	2 00	156.92	49 81	
4	2636 01	10 70	156.92	2618.11	-191.18	81.47	0 00	0.00	207.81	
5	3171 01	0 00	0 00	3150.00	-237.00	101.00	2.00	180.00	257.62	
6	7321.01	0 00	0 00	7300.00	-237.00	101.00	0.00	0.00	257.62	PBHL-State H #1

WELL DETAILS: State H #2

Ground Level: 0.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	646629 20	528184.50	32°46' 39 510 N	104°14' 29.874 W	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
East HL-State H #1	7300.00	-247.00	111.00	646382 20	528295 50	32°46' 37 065 N	104°14' 28.576 W	Rectangle (Si des: L800 00 W0.00)
PBHL-State H #1	7300.00	-237.00	101 00	646392.20	528285 50	32°46' 37.164 N	104°14' 28.693 W	Circle (Radius: 10.00)
South HL-State H #1	7300.00	-247.00	111.00	646382.20	528295.50	32°46' 37.065 N	104°14' 28 576 W	Rectangle (S ides· L0 00 W200 00)

PROJECT DETAILS: Eddy County, NM (NAD 27 NME)

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

Plan· Plan #2 (State H #2/Wellbore #1)

Created By: Julio Pina Date· 19-Oct-07
Checked· _____ Date· _____
Reviewed· _____ Date· _____
Approved· _____ Date. _____

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(505) 393-6161 Fax:(505) 393-0720
District II
1301 W. Grand Ave., Artesia, NM 88210
Phone:(505) 748-1283 Fax:(505) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources

Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form C-103
Permit 65781

WELL API NUMBER
30-015-35814

5. Indicate Type of Lease
S

6. State Oil & Gas Lease No.

SUNDRY NOTICES AND REPORTS ON WELLS

(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFRENT RESERVIOR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name
STATE H

1. Type of Well:O

8. Well Number
002

2. Name of Operator
MACK ENERGY CORP

9. OGRID Number
13837

3. Address of Operator
PO BOX 960 , , 11352 LOVINGTON HWY ARTESIA , NM 88211

10. Pool name or Wildcat

4. Well Location
Unit Letter H : 2063 feet from the N line and 441 feet from the E line
Section 2 Township 18S Range 27E NMPM Eddy County

11. Elevation (Show whether DR, KB, BT, GR, etc.)
3590 GR

Pit or Below-grade Tank Application ☐ or Closure ☐
Pit Type _____ Depth to Groundwater_____ Distance from nearest fresh water well_____ Distance from nearest surface water_____
Pit Liner Thickness:_____ mil Below-Grade Tank: Volume_____ bbls; Construction Material_____

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTER CASING ☐
TEMPORARILY ABANDON ☐	CHANGE OF PLANS ☐	COMMENCE DRILLING OPNS. ☐	PLUG AND ABANDON ☐
PULL OR ALTER CASING ☐	MULTIPLE COMPL ☐	CASING/CEMENT JOB ☐	
Other:		Other: **Drilling/Cement**	☒

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work.) SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

10/31/2007 Spud 17 1/2 hole @ 10:00pm.
11/1/2007 TD @ 201. Ran 5jts 13 3/8 H-40 48# @ 201', Cmt w/250sx C+2%CC, circ 104sx, plug down 12:20pm. WOC 18hrs test to 1800# 30min, OK.
11/4/2007 TD 12 1/4 hole @ 1165'.
11/5/2007 Ran 27jts 8 5/8 J-55 32# @ 1170'. Cmt w/475sx C, 200sx C+2%CC, circ 218sx, plug down 3:00am. WOC 12hrs test to 600# 30min, OK.
11/20/2007 TD @ 7545'.
11/22/2007 Ran 177jts 5 1/2 J-55 17# @ 7495', Cmt w/530sx C, circ 217sx. 2nd stage 365sx C, 520sx C, plug down 6:55pm, circ 200sx. WOC 12hrs test to 600# 20min, OK.
10/31/2007 Spudded well.

Casing and Cement Program

Date	String	Fluid Type	Hole Size	Csg Size	Weight lb/ft	Grade	Est TOC	Dpth Set	Sacks	Yield	Class	1" Dpth	Pres Held	Pres Drop	Open Hole
11/01/07	Surf	FreshWater	17.5	13.375	48	H-40	0	201	250		C		1800	0	Y
11/05/07	Int1	FreshWater	12.25	8.625	32	J-55	0	1170	675		C		600	0	Y
11/22/07	Prod	CutBrine	7.875	5.5	17	J-55	0	7495	1415		C		600	0	Y

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☐, a general permit ☐ or an (attached) alternative OCD-approved plan ☐.

SIGNATURE Electronically Signed TITLE Production Clerk DATE 12/11/2007
Type or print name Jerry Sherrell E-mail address jerrys@mackenergycorp.com Telephone No. 505-748-1288

For State Use Only:
APPROVED BY: Bryan Arrant TITLE Geologist DATE 12/12/2007 7:46:02 AM

Submit 3 Copies To Appropriate District Office
District I
1625,N French Dr , Hobbs, NM 88240
District 11
1301 W. Grand Ave , Artesia, NM 88210
District III
1000 Rio Brazos Rd , Aztec, NM 87410
District IV
1220 S St Francis Dr , Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-103
May 27, 2004

WELL API NO. 30-015-35814

5. Indicate Type of Lease STATE ☒ FEE ☐

6. State Oil & Gas Lease No. B-9391

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS)

7. Lease Name or Unit Agreement Name: State H

1. Type of Well: Oil Well ☒ Gas Well ☐ Other

FEB 26 2008
OCD-ARTESIA

8. Well Number 2

2. Name of Operator: Mack Energy Corporation

9. OGRID Number 013837

3. Address of Operator: P. O. Box 960 Artesia, NM 88211-0960

10. Pool name or Wildcat: Red Lake; Glorieta-Yeso, NE

4. Well Location
Unit Letter H 2063 feet from the North line and 441 feet from the East line
Section 2 Township 18S Range 27E NMPM County Eddy

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)* 3590' GR

Pit or Below-grade Tank Application ☐ or Closure ☐

Pit type_____ Depth Groundwater_____ Distance from nearest fresh water well_____ Distance from nearest surface water_____

Pit Liner Thickness: _____ mil Below-Grade Tank: Volume _____ bbls; Construction Material

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:				SUBSEQUENT REPORT OF:			
PERFORM REMEDIAL WORK	☐	PLUG AND ABANDON	☐	REMEDIAL WORK	☐	ALTERING CASING	☐
TEMPORARILY ABANDON	☐	CHANGE PLANS	☐	COMMENCE DRILLING OPNS	☐	P AND A	☐
PULL OR ALTER CASING	☐	MULTIPLE COMPL	☐	CASING/CEMENT JOB	☐		
OTHER:	☐			OTHER: Completion	☒		

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

12/15/2007 Perforated from 6134.5-6434' 57 holes.
12/17/2007 Acidized w/4500 gals 15%.
12/18/2007 RIH w/203 joints 2 7/8 tubing SN @ 6439'. RIH w/2 1/2"x2"x20' pump.
12/26/2007 Set CIBP @ 6020' w/35' cement cap. Perforated from 5789.5-5957.5' 52 holes.
12/27/2007 Acidized w/4500 gals 15%.
12/28/2007 Perforated from 5391-5700.5' 83 holes. Acidized w/5000 gals 15%.
12/29/2007 RIH w/188 joints 2 7/8 tubing SN @ 5965'. RIH w/2 1/2"x2"x20' pump.
1/7/2008 Set CIBP @ 5300' w/35' cement cap. Perforated from 4118.5-4197' 40 holes.
1/8/2008 Acidized w/2000 gals 15%.
1/9/2008 Frac w/8130# liteprop, 68,890# 16/30 sand, 14,046# siberprop, 91,292 gals 30/40# gel.
1/11/2008 RIH w/134 joints 2 7/8" tubing SN @ 4243'. RIH 2 1/2 x 2 x 20' Pump.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. **I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☐, a general permit ☐ or an (attached) alternative OCD-approved plan ☐**

SIGNATURE Jerry W. Sherrell TITLE Production Clerk DATE 2/25/08

Type or print name Jerry W. Sherrell E-mail address: jerrys@mackenergycorp.com Telephone No. (575)748-1288

For State Use Only

FOR RECORDS ONLY

APPROVED BY: _____ TITLE _____ DATE 2-28-08

Conditions of Approval (if any):

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

FEB 26 2008
OCD-ARTESIA

Form C-104
Revised Feb. 26, 2007

Submit to Appropriate District Office
5 Copies

☐ AMENDED REPORT

I. REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT

1 Operator name and Address	2 OGRID Number
Mack Energy Corporation P.O. Box 960 Artesia, NM 88211-0960	013837
	3 Reason for Filing Code/ Effective Date NW

4 API Number	5 Pool Name	6 Pool Code
30-015-35814	Red Lake; Glorieta-Yeso, NE	~~51120~~ 96836

7 Property Code	8 Property Name	9 Well Number
303847	State H	2

H. 10 Surface Location

UL or lot no	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	2	18S	27E		2063	North	441	East	Eddy

11 Bottom Hole Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	2	18S	27E		2300	North	340	East	Eddy

12 Lse Code	13 Producing Method Code	14 Gas Connection Date	C-129 Permit Number	16 C-129 Effective Date	17 C-129 Expiration Date
S	P	1/11/08			

III. Oil and Gas Transporters

18 Transporter OGRID	19 Transporter Name and Address	20 O/G/W
015694	Navajo Refining PO Box 159 Artesia, NM 88211-0159	O
036785	DCP Midstream LP 4001 Penbrook Odessa, TX 79762	G

IV. Well Completion Data

21 Spud Date	22 Ready Date	23 TD	24 PBTD	25 Perforations	26 DHC, MC
10/31/2007	11/23/2007	7545'	5265'	4118.5-4197'	

27 Hole Size	28 Casing & Tubing Size	29 Depth Set	30 Sacks Cement
17 1/2	13 3/8	201	250
12 1/4	8 5/8	1170	675
7 7/8	5 1/2	7495	1415
	2 7/8	4243	

V. Well Test Data

31 Date New Oil	32 Gas Delivery Date	33 Test Date	34 Test Length	35 Tbg. Pressure	36 Csg. Pressure
1/14/2008	1/14/2008	1/30/08	24 hours		
37 Choke Size	**38 Oil**	**39 Water**	**40 Gas**		**41 Test Method**
	8	30	30		P

42 I hereby certify that the rules of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief

Signature: Jerry W. Sherrell

Printed name: Jerry W. Sherrell

Title: Production Clerk

E-mail Address: jerrys@mackenergycorp.com

Date: 2/25/08

Phone: (575)748-1288

OIL CONSERVATION DIVISION

Approved by: Kimberly M. Wilson

Title: Compliance Officer

Approval Date: 3-5-08

Submit to Appropriate
District Office
State Lease - 6 copies
Fee Lease - 5 copies
DISTRICT I
P O Box 1980, Hobbs, NM 88240

DISTRICT II
811 South First, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd , Aztec, NM 87410

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION
2040 South Pacheco
Santa Fe, New Mexico 87505

Form C-105
Revised 1-1-89

WELL API NO: 30-015-35814

5 Indicate Type of Lease: STATE [X] FEE [ ]

6 State Oil & Gas Lease No: B-9391

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

1 Type of Well: OIL WELL [X] GAS WELL [ ] DRY [ ] OTHER

b Type of Completion: NEW WELL [X] WORK OVER [ ] Deepen [ ] PLUG BACK [ ] DIFF RESVR [ ] OTHER

7 Lease Name or Unit Agreement Name: State H

2 Name of Operator: Mack Energy Corporation

FEB 26 2008
OCD-ARTESIA

8 Well No: 2

3 Address of Operator: P.O. Box 960, Artesia, NM 88211-0960

9 Pool name or Wildcat: Red Lake; Glorieta-Yeso, NE

4. Well Location

Unit Letter H : 2063 Feet From The North Line and 441 Feet From The East Line

Section 2 Township 18S Range 27E NMPM Eddy County

10 Date Spudded	11 Date TD Reached	12 Date Compl (Ready to Prod.)	13 Elevations (DF & RKB, RT, GR, etc)	14 Elev Casinghead
10/31/2007	11/21/2007	1/11/08	3590' GR	

15 Total Depth	16. Plug Back TD	17 If Multiple Compl How Many Zones?	18 Intervals Drilled By	Rotary Tools	Cable Tools
7545'	5265'			Yes	

19 Producing Interval(s), of this completion - Top, Bottom, Name: 4118.5-4197'

20 Was Directional Survey Made: Yes

21 Type Electric and Other Logs Run: Gamma Ray, Neutron, Density, Lateralog, Spectral Gamma Ray

22 Was Well Cored: No

23

CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
13 3/8	48	201	17 1/2	250 sx	None
8 5/8	32	1170	12 1/4	675 sx	None
5 1/2	17	7495	7 7/8	1415 sx	None

24 LINER RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN

25 TUBING RECORD

SIZE	DEPTH SET	PACKER SET
2 7/8	4243'	

26 Perforation record (interval, size, and number)

6134.5-6434', .42, 57 CIBP @ 6020 w/35' cmt cap
5391-5957.5', .42, 92 CIBP @ 5300' w/35' cmt cap
4118.5-4197', .42, 40

27 ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
	See C-103 for detail

28 PRODUCTION

Date First Production	Production Method (Flowing, gas lift, pumping - Size and type pump)	Well Status (Prod. or Shut-in)
1/14/2008	2 1/2x2x20' Pump	Producing

Date of Test	Hours Tested	Choke Size	Prod'n For Test Period	Oil - Bbl	Gas - MCF	Water- Bbl	Gas - Oil Ratio
1/30/08	24 hours			8	30	30	3750

Flow Tubing Press	Casing Pressure	Calculated 24-Hour Rate	Oil - Bbl	Gas - MCF	Water- Bbl.	Oil Gravity - API - (Corr.)
			8	30	30	

29 Disposition of Gas (Sold, used for fuel, vented, etc): Sold

Test Witnessed By: Robert C. Chase

30 List Attachments: Deviation Survey and Logs

31. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief

Signature Jerry W. Sherrell Printed Name Jerry W. Sherrell Title Production Clerk Date 2/25/08

PO Box 1370
Artesia, NM 88211-1370
(505) 748-1288

FEB 26 2008
OCD-ARTESIA

November 30, 2007

Mack Energy Corporation
PO Box 960
Artesia, NM 88211-0960

RE: State H #2
2310' FNL & 990' FEL
Sec. 2, T18S, R27E
Eddy County, New Mexico

Dear Sir,

The attached is the Deviation Survey for the above captioned re-entered well.

Very truly yours,

Leroy Curry
Drilling Superintendent

State of New Mexico }
County of Eddy }

The foregoing was acknowledged before me this 30th day of November, 2007.

Notary Public

OFFICIAL SEAL
REGINIA L. GARNER
NOTARY PUBLIC - STATE OF NEW MEXICO
My commission expires Aug. 30, 2008

Date	Depth	Dev	Dir
11/01/2007	133.00	0.50	0.00
11/02/2007	431.00	0.75	0.00
11/03/2007	700.00	0.50	0.00
11/04/2007	975.00	1.00	0.00
11/04/2007	1134.00	0.50	0.00
11/06/2007	1301.00	1.66	164.90
11/06/2007	1396.00	3.41	161.90
11/07/2007	1492.00	5.19	159.10
11/07/2007	1587.00	7.21	156.40
11/07/2007	1683.00	8.51	155.20
11/07/2007	1778.00	9.94	158.10
11/07/2007	1873.00	9.56	157.60
11/08/2007	1968.00	10.53	159.60
11/08/2007	2064.00	9.83	160.00
11/08/2007	2159.00	9.69	160.50
11/08/2007	2350.00	10.78	156.20
11/08/2007	2445.00	10.67	156.40
11/08/2007	2540.00	10.54	155.40
11/08/2007	2604.00	10.43	156.30
11/09/2007	2699.00	8.58	156.50
11/09/2007	2794.00	7.39	158.60
11/09/2007	2984.00	4.30	162.00
11/09/2007	3080.00	2.86	157.10
11/09/2007	3175.00	1.50	150.00
11/09/2007	3270.00	0.67	256.70
11/09/2007	3365.00	0.82	280.50
11/10/2007	3460.00	0.48	176.00
11/10/2007	3556.00	0.51	181.00
11/10/2007	3651.00	0.65	173.10
11/10/2007	3746.00	0.67	157.20
11/10/2007	3841.00	0.59	154.20
11/10/2007	3936.00	0.24	309.30
11/11/2007	4031.00	0.30	302.30
11/11/2007	4126.00	0.45	322.60
11/11/2007	4222.00	1.06	337.40
11/11/2007	4602.00	1.01	348.10
11/12/2007	4666.00	1.10	18.68
11/12/2007	4729.00	0.53	71.05
11/12/2007	4824.00	0.27	38.14
11/12/2007	4920.00	0.71	12.94
11/12/2007	5015.00	1.19	5.48
11/12/2007	5110.00	0.82	20.33
11/12/2007	5206.00	0.28	132.80
11/13/2007	5301.00	0.54	23.07
11/13/2007	5396.00	0.34	49.15
11/13/2007	5491.00	1.12	153.70
11/13/2007	5586.00	2.14	189.30
11/13/2007	5660.00	1.31	189.40
11/13/2007	5681.00	1.09	194.70
11/13/2007	5745.00	0.67	318.40
11/13/2007	5839.00	0.24	221.30
11/14/2007	5935.00	1.41	161.10
11/15/2007	5998.00	1.01	182.35
11/16/2007	6188.00	0.34	306.90
11/16/2007	6474.00	0.11	334.80
11/16/2007	6570.00	0.15	314.50
11/17/2007	6664.00	0.27	304.50
11/17/2007	6759.00	0.45	295.50
11/17/2007	6854.00	0.46	296.60
11/17/2007	6949.00	0.59	290.10
11/17/2007	7044.00	1.09	134.40
11/18/2007	7140.00	0.38	89.52
11/18/2007	7235.00	0.57	122.40
11/18/2007	7382.00	0.81	125.40

Scientific Drilling

MACK ENERGY

Field: Chalk Bluff
Site: Eddy County, NM
Well: State H #2
Wellpath: DH - Job #32D11071006
Survey: 11/05/07-11/14/07

This survey is correct to the best of my knowledge
and is supported by actual field data.

.....Company Representative

Notorized this date 19th of December, 2007.

Deborah Sue Bynum
Notary Signature
County of Midland
State of Texas

NOTARY PUBLIC STATE OF TEXAS
DEBORAH SUE BYNUM
Notary Public, State of Texas
My Commission Expires
5/9/08

Scientific Drilling

Scientific Drilling International
Survey Report

Company:	MACK ENERGY	**Date:** 12/16/2007	**Time:** 18:34.47	**Page:**	1
Field:	Chalk Bluff	**Co-ordinate(NE) Reference:**	Site: Eddy County, NM, Grid North		
Site:	Eddy County, NM	**Vertical (TVD) Reference:**	SITE 0.0		
Well:	State H #2	**Section (VS) Reference:**	Well (0.00N,0.00E,156.92Azi)		
Wellpath:	VH - Job #32K11071013	**Survey Calculation Method:**	Minimum Curvature	**Db:**	Sybase

Survey:	11/06/07 KSRG 0'-1143'	**Start Date:**	11/06/2007
Company:	Scientific Drilling Internatio	**Engineer:**	Madrid w/P&M
Tool:	Keeper;Keeper Gyro	**Tied-to:**	From Surface

Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
0 00	0.00	359.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.62	77.45	100.00	0.10	0.12	0.53	0.62	0.54	77.45
200.00	0.42	110.33	199.99	0 45	0.11	1.40	0.35	1.40	85.60
300.00	0.37	96.72	299.99	0.86	-0.06	2.06	0.11	2.07	91.59
400.00	0.38	143.78	399.99	1.35	-0.36	2.58	0.30	2.61	98.00
500.00	0.26	212.14	499.99	1.80	-0.82	2.66	0.37	2.78	107.20
600.00	0.28	250.72	599.99	1.91	-1.10	2.30	0.18	2.55	115 41
700.00	0.44	271.18	699.99	1.74	-1.17	1.69	0.20	2.05	124.64
800.00	0.40	74.03	799.98	1.62	-1.06	1.64	0.83	1.96	122.94
900.00	1.01	96.02	899.98	2.09	-1.06	2.85	0.66	3.04	110.38
1000.00	0.95	87.15	999.96	2.81	-1.11	4.56	0.16	4.69	103.70
1100.00	0.56	76.15	1099.95	3.17	-0.95	5.86	0.41	5.94	99.24
1143.00	0.26	86.43	1142.95	3.24	-0.90	6.16	0.72	6.23	98.28

Scientific Drilling

Scientific Drilling International
Survey Report

Company:	MACK ENERGY	**Date:** 12/16/2007	**Time:** 19:33:59	**Page:**	1
Field:	Chalk Bluff	**Co-ordinate(NE) Reference:**	Site: Eddy County, NM, Grid North		
Site:	Eddy County, NM	**Vertical (TVD) Reference:**	SITE 0.0		
Well:	State H #2	**Section (VS) Reference:**	Well (0.00N,0.00E,156.92Azi)		
Wellpath:	DH - Job #32D11071006	**Survey Calculation Method:**	Minimum Curvature	**Db:**	Sybase

Survey:	11/05/07-11/14/07 MWD 1206'-7367'	**Start Date:**	11/05/2007
Company:	Scientific Drilling Internatio	**Engineer:**	Hernandez/Biggs/Elger
Tool:	MWD;MWD	**Tied-to:**	From: Definitive Path

Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
1143.00	0.26	86.43	1142.95	3.24	-0.90	6.16	0.00	6.23	98.28
1206.00	0.17	46.81	1205.95	3.26	-0.82	6.37	0.27	6.43	97.37
1301.00	1.66	164.91	1300.94	4.57	-2.06	6.83	1.84	7.14	106.75
1396.00	3.41	161.92	1395.84	8.75	-6.07	8.07	1.85	10.10	126.96
1492.00	5.19	159.14	1491.57	15.93	-12.84	10 50	1.87	16.59	140.73
1587.00	7.21	156.46	1586.01	26.19	-22.32	14.41	2.15	26.57	147.15
1682.00	8.51	155.25	1680.11	39.18	-34.17	19.74	1.38	39.46	149.99
1778.00	9 94	158.14	1774.87	54.56	-48.32	25 80	1.57	54.77	151.90
1873.00	9 56	157.67	1868.50	70.65	-63.22	31.85	0.41	70.79	153.26
1968.00	10.53	159.64	1962.04	87.21	-78.66	37.86	1.08	87.30	154.30
2064.00	9 83	160.07	2056.53	104.15	-94.59	43.71	0.73	104.20	155.20
2159.00	9.69	160.58	2150.15	120.23	-109.75	49.13	0.17	120.25	155.88
2255.00	10 79	160.25	2244.62	137.26	-125.83	54.86	1.15	137.27	156.45
2350.00	10.78	156.23	2337.95	155.02	-142.33	61.44	0.79	155.02	156.65
2445.00	10.67	156.45	2431.29	172.70	-158.52	68.54	0.12	172.70	156.62
2540.00	10.54	155.44	2524.66	190.18	-174.49	75.66	0.24	190.18	156.56
2604.00	10.43	156.37	2587.60	201.82	-185.12	80.42	0.32	201.83	156.52
2699.00	8.58	156.51	2681.29	217.51	-199.50	86.69	1.95	217.52	156.51
2794.00	7.39	158.65	2775.36	230.71	-211.69	91.74	1.29	230.71	156.57
2889.00	5.58	158.12	2869.75	241 43	-221.66	95.68	1.91	241.43	156.65
2984.00	4.30	167.04	2964.40	249.55	-229.42	98.20	1.57	249.55	156.83
3080.00	2.86	157 16	3060.21	255.49	-235.14	99.94	1.63	255.49	156.97
3175.00	1.50	150.04	3155.14	259.10	-238.40	101.48	1.46	259.10	156.94
3270.00	0.67	256.00	3250 13	260.24	-239.61	101.56	1.90	260.24	157.03
3365.00	0.82	280 00	3345.12	259.79	-239.63	100.35	0.36	259.79	157.28
3460.00	0.48	176.03	3440.12	259.79	-239.90	99.71	1.10	259 80	157.43
3556.00	0.51	181.08	3536.11	260 56	-240.73	99.73	0.06	260.57	157.50
3651.00	0.65	173.19	3631.11	261.46	-241.69	99.79	0.17	261.48	157.57
3746.00	0.67	157.21	3726.10	262.54	-242.74	100.07	0.19	262.55	157.60
3841.00	0.59	154.21	3821.10	263.58	-243.69	100.50	0.09	263.60	157 59
3936.00	0.24	309.36	3916.09	263.89	-244.00	100.55	0.86	263 91	157.60
4031.00	0.30	302.31	4011 09	263.51	-243.74	100.19	0.07	263.53	157.66
4126.00	0.45	322.60	4106.09	262.95	-243.32	99.75	0.21	262.97	157.71
4222.00	1.06	337.45	4202.08	261.69	-242.20	99.18	0.66	261.72	157.73
4317.00	0.86	37.93	4297.07	260.47	-240.82	99.29	1.03	260.49	157.59
4412.00	0.59	7.90	4392.06	259.70	-239.78	99.79	0.48	259.71	157.40
4507.00	1.14	0.19	4487.05	258.42	-238.35	99.86	0.59	258.42	157.27
4602.00	1 01	346 16	4582.04	256.72	-236.59	99.66	0.31	256.72	157.16
4667.00	1.10	18.68	4647.03	255.69	-235.44	99.73	0.92	255.69	157.04
4729.00	0.53	71.05	4709.02	255.27	-234.78	100.19	1.42	255.27	156.89
4824.00	0.28	38.14	4804.02	255.19	-234 46	100.75	0.35	255.19	156.75
4920.00	0.71	12.94	4900.01	254.59	-233.69	101.03	0.49	254.60	156.62
5015.00	1.19	5.48	4995.00	253.25	-232.14	101.25	0.52	253.26	156.43
5110.00	0.82	20.33	5089.99	251.89	-230.52	101.58	0.47	251.91	156.22
5206.00	0.28	132.80	5185.98	251.60	-230.03	101.99	1.00	251.63	156.09
5301.00	0.54	23.07	5280.98	251.51	-229.78	102.34	0.72	251.54	155.99
5396.00	0.34	49.15	5375.98	251.11	-229.18	102.73	0.29	251.15	155.86
5491.00	1.12	153 76	5470.97	251.95	-229.83	103.35	1.32	252.00	155.79
5586.00	2.14	189.33	5565.94	254.38	-232.42	103.47	1.46	254.41	156.00

Scientific Drilling

Scientific Drilling International
Survey Report

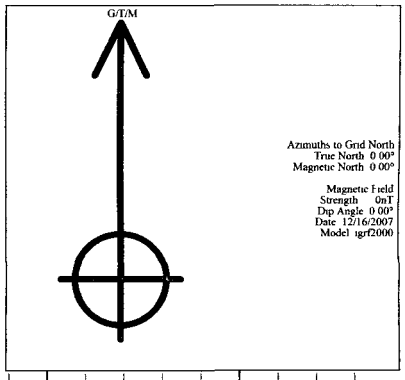
Company:	MACK ENERGY	**Date:**	12/16/2007	**Time:** 19:33:59	**Page:** 2
Field:	Chalk Bluff	**Co-ordinate(NE) Reference:**	Site: Eddy County, NM, Grid North		
Site:	Eddy County, NM	**Vertical (TVD) Reference:**	SITE 0.0		
Well:	State H #2	**Section (VS) Reference:**	Well (0 00N,0.00E,156.92Azi)		
Wellpath:	DH - Job #32D11071006	**Survey Calculation Method:**	Minimum Curvature	**Db:**	Sybase

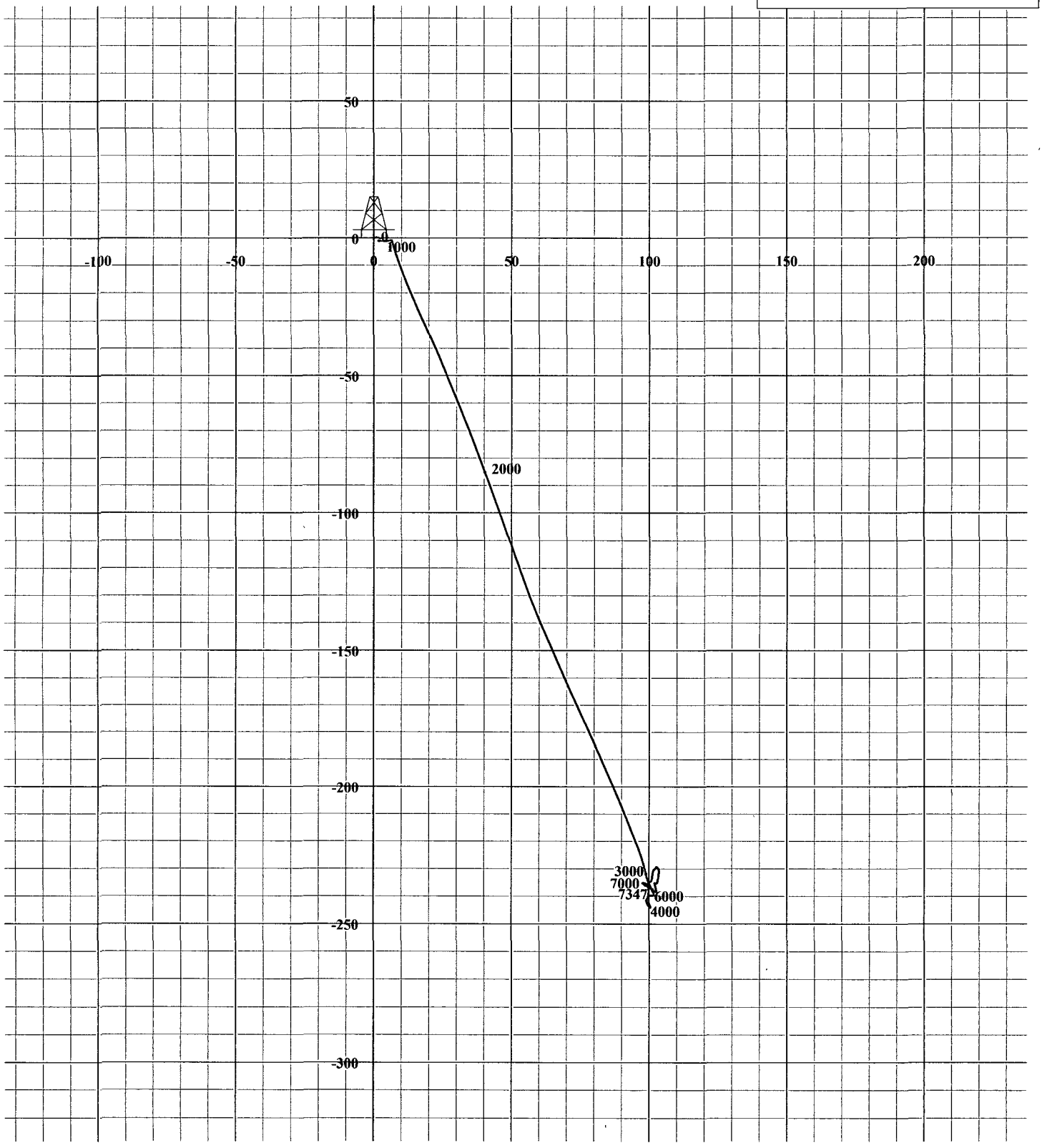
Survey

MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	ClsD ft	ClsA deg
5681.00	1.09	194.79	5660.90	256.59	-235.04	102.96	1.12	256.60	156.34
5745.00	0.67	318.43	5724.89	256.71	-235.35	102.55	2.44	256.72	156.45
5839.00	0.24	221.30	5818.89	256.28	-235.08	102.06	0.79	256.28	156.53
5935.00	1.41	161.10	5914.88	257.54	-236.35	102.31	1.36	257.55	156.59
5998.00	1.01	182.35	5977.87	258 82	-237.64	102.54	0.94	258.82	156.66
6093.00	0.20	294.46	6072.86	259.45	-238.41	102.35	1.16	259.45	156.77
6189.00	0.34	306.99	6168.86	259.08	-238.17	101.97	0.16	259.08	156.82
6284.00	0.45	287.60	6263.86	258.59	-237 89	101.39	0.18	258.59	156.92
6379.00	1.01	331.75	6358.85	257.51	-237.04	100.64	0.79	257.51	157.00
6474.00	0.11	334 85	6453.84	256.59	-236.22	100.20	0.95	256.59	157.01
6570 00	0.15	314.50	6549.84	256.38	-236.04	100.07	0.06	256.38	157.02
6665.00	0.27	304.58	6644.84	256.08	-235.83	99.80	0.13	256.08	157.06
6760.00	0.45	295.56	6739.84	255.61	-235.54	99.28	0.20	255.61	157.14
6855.00	0.46	296.68	6834.84	255 04	-235.21	98.60	0.01	255.04	157.26
6950.00	0 51	281.73	6929.83	254.50	-234.95	97.85	0.14	254.51	157.39
7046.00	1.09	134.41	7025.83	255.10	-235.50	98.08	1.61	255.11	157.39
7140.00	0.38	89.52	7119.82	256.05	-236.13	99.03	0.92	256.05	157.25
7235.00	0.57	122.42	7214.82	256.56	-236.38	99.75	0.34	256.56	157.12
7330.00	0.81	125.40	7309.81	257.52	-237.02	100.69	0.26	257.52	156.98
7367.00	0.87	128 12	7346.81	257.99	-237.35	101.13	0.19	257.99	156.92

Scientific Drilling

Field: Chalk Bluff
Site: Eddy County, NM
Well: State H #2
Wellpath: DH - Job #32D11071006
Survey: 11/05/07-11/14/07





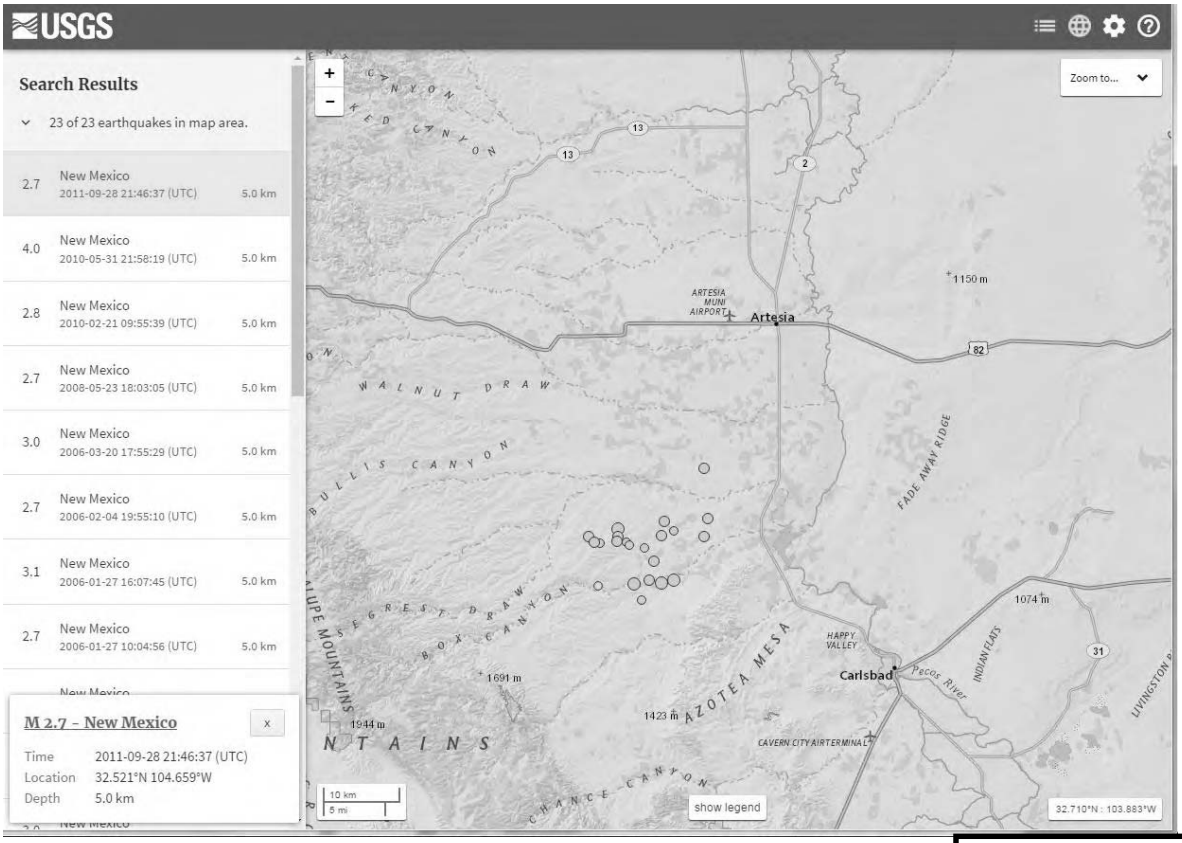
Wilson, Kimberly M, EMNRD

From: Jerry Sherrell [jerrys@mackenergycorp.com]
Sent: Wednesday, March 05, 2008 3:37 PM
To: Wilson, Kimberly M, EMNRD
Subject: FW: Financial Assurance/Rule 40- Mack
Importance: High

From: Altomare, Mikal, EMNRD [mailto:Mikal.Altomare@state.nm.us]
Sent: Tuesday, March 04, 2008 11:03 AM
To: Mull, Donna, EMNRD
Cc: Rebecca Groh; Jerry Sherrell; Phillips, Dorothy, EMNRD
Subject: Financial Assurance/Rule 40- Mack
Importance: High

Donna –
I have received a pdf version of what appears to be a properly and fully executed single well bond for the state h no. 001, 03-015-00745, which Mack has assured me that they are over-nighting to our office. Everything appears to be in order, and I expect that, upon receipt of the original in our office, it will be reviewed and accepted and Mack will no longer be listed as being out of compliance with financial assurance requirements. That being said, and given that Mack has posted all other necessary financial assurances for all other properties, if there are no other violations or issues with approval of pending Mack applications, consider them to be in compliance for purposes of pending permit applications with your office.
Please contact me if you have any questions.
Thanks,
Mikal

Mikal M. Altomare
Assistant General Counsel
Oil Conservation Division
Energy, Minerals & Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505
Tel 505.476.3480 ~ Fax 505.476.3462
mikal.altomare@state.nm.us



Blue highlight indicates most recent seismic event.

Source: USGS, 2017. *Earthquake Catalog.* https://earthquake.usgs.gov/earthquakes/search

WSP | PARSONS BRINCKERHOFF

Appendix C

SEISMIC ACTIVITY NEAR ARTESIA

DATED: 1/16/2017	APPROVED BY:	JOB NO. 50904D
DRAWN BY: GEM	CHECKED BY:	SCALE: N/A

Appendix C
Seismic Activity
1999 - 2011

time	latitude	longitude	depth	mag	magType	nst	gap	rms	net	id	updated	place	type	magNst	status	locationSource	magSource
2011-09-28T21:46:37.550Z	32.521	-104.659	5	2.7	mblg	8	102.1	0.83	us	usp000j8pv	2014-11-07T01:45:57.965Z	New Mexico	earthquake		reviewed	us	us
2010-05-31T21:58:19.170Z	32.524	-104.607	5	4	ml	16	83.8	1.09	us	usp000hdec	2014-11-07T01:41:34.416Z	New Mexico	earthquake		reviewed	us	us
2010-02-21T09:55:39.770Z	32.571	-104.613	5	2.8	mblg	21	51.7	1.07	us	usp000h7hr	2014-11-07T01:40:44.022Z	New Mexico	earthquake		reviewed	us	us
2008-05-23T18:03:05.860Z	32.504	-104.596	5	2.7	mblg	11	90.5	0.98	us	usp000g7k8	2014-11-07T01:36:04.867Z	New Mexico	earthquake		reviewed	us	us
2006-03-20T17:55:29.120Z	32.6	-104.563	5	3	ml	7	98	0.75	us	usp000ecjj	2014-11-07T01:28:33.765Z	New Mexico	earthquake		reviewed	us	us
2006-02-04T19:55:10.680Z	32.575	-104.617	5	2.7	ml	9	148.1	1.13	us	usp000e9fv	2014-11-07T01:28:16.284Z	New Mexico	earthquake		reviewed	us	us
2006-01-27T16:07:45.840Z	32.551	-104.577	5	3.1	mblg	9	148.3	0.91	us	usp000e8yn	2014-11-07T01:28:10.026Z	New Mexico	earthquake		reviewed	us	us
2006-01-27T10:04:56.450Z	32.589	-104.549	5	2.7	mblg	8	127.9	1.44	us	usp000e8ya	2014-11-07T01:28:10.009Z	New Mexico	earthquake		reviewed	us	us
2005-12-22T14:30:11.670Z	32.583	-104.566	5	3.6	mblg	15	52	0.98	us	usp000e6mh	2014-11-07T01:27:55.770Z	New Mexico	earthquake		reviewed	us	us
2005-12-19T20:27:40.370Z	32.528	-104.549	5	4.1	mwr	45	54.4	0.85	us	usp000e6f9	2015-03-24T01:48:26.590Z	New Mexico	earthquake		reviewed	us	slm
2004-10-28T02:59:04.820Z	32.604	-104.499	5	3	mblg	11	140.2	0.52	us	usp000d77p	2014-11-07T01:23:49.973Z	New Mexico	earthquake		reviewed	us	us
2004-08-26T18:45:18.620Z	32.582	-104.505	5	3.4	ml	11	131.8	0.67	us	usp000d2x7	2014-11-07T01:23:16.071Z	New Mexico	earthquake		reviewed	us	us
2004-06-22T08:55:28.230Z	32.528	-104.584	5	3.7	mblg	12	82.5	0.65	us	usp000cygp	2014-11-07T01:22:40.419Z	New Mexico	earthquake		reviewed	us	us
2004-05-23T09:22:05.280Z	32.525	-104.566	5	4	mb	19	68.2	0.74	us	usp000cvz7	2015-03-24T01:59:38.918Z	New Mexico	earthquake	2	reviewed	us	us
2003-06-21T02:03:09.560Z	32.665	-104.505	5	3.6	mblg	15	130.9	0.94	us	usp000c0e4	2014-11-07T01:18:58.170Z	New Mexico	earthquake		reviewed	us	us
2002-09-17T23:34:19.350Z	32.576	-104.631	10	3.1	md	17			us	usp000bchy	2014-11-07T01:16:32.406Z	New Mexico	earthquake		reviewed	snm	snm
2002-09-17T15:45:14.470Z	32.581	-104.63	10	3.4	md	23			us	usp000bcgs	2014-11-07T01:16:32.321Z	New Mexico	earthquake		reviewed	snm	snm
2000-02-02T07:14:20.260Z	32.582	-104.629	5	2.7	mblg			0.88	us	usp0009myc	2014-11-07T01:09:25.504Z	New Mexico	earthquake		reviewed	us	us
1999-08-09T06:51:22.970Z	32.568	-104.591	5	2.9	md			0.64	us	usp0009ctq	2014-11-07T01:08:15.290Z	New Mexico	earthquake		reviewed	us	snm
1999-05-30T19:04:25.600Z	32.575	-104.664	10	3.9	md				us	usp000991w	2014-11-07T01:07:44.921Z	New Mexico	earthquake		reviewed	snm	snm
1999-03-17T12:29:23.110Z	32.582	-104.672	1	3.5	md				us	usp00094ny	2014-11-07T01:07:14.229Z	New Mexico	earthquake		reviewed	snm	snm
1999-03-14T22:43:17.970Z	32.591	-104.63	1	4	md				us	usp00094hc	2014-11-07T01:07:13.801Z	New Mexico	earthquake		reviewed	snm	snm
1999-03-01T08:00:23.500Z	32.573	-104.656	1	2.7	md				us	usp00093nw	2014-11-07T01:07:07.639Z	New Mexico	earthquake		reviewed	snm	snm

NEIC: Earthquake Search Results

U. S. GEOLOGICAL SURVEY

EARTHQUAKE DATA BASE

FILE CREATED: Mon Jun 4 16:13:25 2012
Circle Search Earthquakes= 225
Circle Center Point Latitude: 32.772N Longitude: 104.233W
Radius: 321.860 km
Catalog Used: PDE
Data Selection: Historical & Preliminary Data

CAT	YEAR	MO	DA	ORIG TIME	LAT	LONG	DEP	MAGNITUDE	IEM NFO TF	DTSVNWG	DIST km
PDE	1973	09	22	233835.80	34.47	-106.95	5	3.1 MLGS	...	.....	314
PDE	1974	11	28	033520.50	32.31	-104.14	5	3.7 MLGS	...	.....	51
PDE	1975	08	01	072757.30	31.42	-104.01	5	3.0 LgTUL	.F.	.....	150
PDE	1976	01	19	040330.50	31.90	-103.08	1	3.5 MDGS	.F.	.....	145
PDE	1976	01	22	072157	31.90	-103.07	1	2.8 MDGS	...	.....	145
PDE	1976	01	25	044827.90	31.90	-103.08	2	3.9 MDGS	5F.	.....	145
PDE	1977	01	04	183137.60	32.36	-106.92	5	3.2 MLGS	5F.	.....	256
PDE	1977	04	26	090307.30	31.90	-103.08	4	3.3 MLGS	.F.	.....	144
PDE	1977	11	28	014050.50	32.95	-100.84	5	3.5 MLGS	...	.....	318
PDE	1978	03	02	100452.70	31.56	-102.51	11	3.5 MLGS	.F.	.....	210
PDE	1979	07	05	010501	32.95	-100.89	4	2.7 UKTUL	.H.	.....	312
PDE	1980	03	22	004912.50	34.60	-105.92	5	3.4 MLGS	4F.	.....	255
PDE	1981	05	09	123550.80	33.99	-107.03	5	3.1 MLGS	5F.	.....	293
PDE	1982	01	04	165608.05	31.18	-102.49	5	3.9 LgTUL	3F.	.....	240
PDE	1982	03	16	110302.67	35.36	-103.27	5	3.1 LgTUL	3F.	.....	300
PDE	1982	04	26	083147.79	33.02	-100.84	5	2.8 LgGS	...	.....	318
PDE	1982	05	18	060008.50	34.17	-106.95	9	2.8 MLGS	.F.	.....	296
PDE	1982	05	18	060838.40	34.20	-106.90	6	2.8 MLGS	.F.	.....	293
PDE	1982	05	24	063251.70	34.17	-106.95	6	2.9 MLGS	.F.	.....	295
PDE	1982	09	20	035517.20	33.95	-107.06	11	3.5 LgTUL	4F.	.....	293
PDE	1982	10	07	124125.99	34.31	-106.82	4	2.4 MLGS	.F.	.....	294
PDE	1982	11	28	023648.51	33.00	-100.84	5	3.3 LgTUL	4F.	.....	318
PDE	1983	03	02	232219.40	34.30	-106.89	8	4.3 LgTUL	6D.	.....	299
PDE	1983	04	30	073420.18	33.32	-106.44	7	3.5 MLGS	...	.....	214
PDE	1983	09	15	232536.05	35.14	-104.39	5	3.2 LgTUL	5F.	.....	263
PDE	1983	09	29	074408.43	35.24	-104.30	5	2.7 MDGS	...	.....	274
PDE	1984	05	21	133113.54	35.07	-102.23	5	3.1 LgTUL	...	.....	314
PDE	1984	08	26	021954	34.31	-106.80	5	2.9 MLGS	.F.	.....	292
PDE	1984	12	04	203636.02	32.26	-103.56	5	2.9 MLGS	...	.....	84
PDE	1985	06	05	103600.60	32.56	-106.92	6	2.9 MLGLD	4F.	.....	252
PDE	1985	06	27	182000.03	33.62	-106.47	0	3.4 LgGS	...	....E..	229
PDE	1985	08	16	145652.96	34.13	-106.83	7	4.1 MLGS	6D.	.....	284

PDE	1985	09	06	052246.20	32.54	-106.94	5	2.6	MDGLD	.F. 255
PDE	1985	12	15	071452.23	35.28	-104.64	5	3.6	LgTUL	.F. 280
PDE	1986	04	17	210430.30	32.59	-106.91	5	2.7	MDGLD	.F. 251
PDE	1986	04	28	130016	34.01	-106.82	5	2.6	MDGLD	.F. 276
PDE	1986	08	27	180656.38	35.16	-105.09	5	3.2	MLGS	.F. 276
PDE	1987	05	14	155958.46	33.54	-106.52	0	2.9	MLGS	... .E.. 229
PDE	1988	12	25	075233.93	35.12	-105.96	0	2.8	MDSNM	.F. 304
PDE	1989	01	29	050715.33	35.22	-104.09	7	3.4	MDSNM	 271
PDE	1989	11	29	065438.50	34.46	-106.89	13	4.7	MDSNM	5F. 309
PDE	1990	01	29	131610.68	34.46	-106.88	12	4.8	LgTUL	6D. 308
PDE	1990	01	31	010819.29	34.44	-106.86	10	4.0	LgTUL	5F. 306
PDE	1990	02	21	120219.34	34.01	-106.54	5	3.6	MLGS	.F. 255
PDE	1990	02	27	132322	33.95	-106.59	5	3.9	MDSNM	4F. 255
PDE	1990	05	05	162622.89	34.45	-106.88	6	3.6	MDSNM	.F. 307
PDE	1990	07	21	192822.79	34.46	-106.86	11	3.0	MDSNM	 306
PDE	1990	07	21	203031.34	34.46	-106.86	7	3.1	MDSNM	 306
PDE	1990	07	21	234804.92	34.45	-106.85	7	3.2	MDSNM	 306
PDE	1990	07	22	212705.13	34.84	-106.01	10	3.7	MDSNM	 281
PDE	1990	07	31	073240.18	34.46	-106.86	7	3.3	MDSNM	.F. 307
PDE	1990	11	08	104653.77	34.45	-106.86	6	4.3	MDSNM	4F. 306
PDE	1990	11	08	110346.51	34.45	-106.86	8	3.1	MDSNM	.F. 306
PDE	1990	11	10	121816.85	34.45	-106.85	7	3.1	MDSNM	 305
PDE	1990	11	15	072524.38	34.46	-106.86	6	3.6	MDSNM	4F. 306
PDE	1990	12	05	033644.30	34.45	-106.86	8	2.6	MDSNM	 306
PDE	1991	03	05	201711.40	34.44	-106.87	9	2.9	MDSNM	3F. 306
PDE	1991	03	06	143659.07	34.44	-106.88	7	2.5	MDSNM	 307
PDE	1991	06	05	184414.90	34.45	-106.85	4	3.0	MDSNM	.F. 305
PDE	1991	06	20	1605	33.62	-106.47	0	3.5	MLGS	... .E.. 229
PDE	1991	12	09	124716.50	34.85	-106.55	14	3.1	LgTUL	3F. 314
PDE	1992	01	02	114535.61	32.33	-103.10	5	5.0	LgTUL	5F. 116
PDE	1992	02	23	161752.51	30.65	-105.51	5	3.4	LgTUL	 264
PDE	1992	08	24	012535.20	34.01	-106.86	5	2.6	MDSNM	.F. 280
PDE	1992	08	26	032452.67	32.17	-102.71	5	3.0	LgGS	 157
PDE	1993	03	24	023203.50	35.39	-104.19	5	3.0	LgGS	2F. 290
PDE	1993	06	10	1510	33.62	-106.47	0	3.2	MLGS	... .E.. 229
PDE	1993	06	23	032312.28	31.35	-102.51	5	2.8	MDSNM	 226
PDE	1993	12	22	192511.39	33.33	-105.68	10	3.2	MDSNM	 148
PDE	1994	01	01	025131.29	34.44	-106.98	10	2.5	MDSNM	 314
PDE	1995	03	19	183643.97	35.00	-104.21	5	3.3	LgGS	 246
PDE	1995	04	14	003256.17	30.28	-103.35	17	5.7	MwGS	6CM 287
PDE	1995	04	14	011148.40	30.30	-103.35	10	2.7	LgGS	 286
PDE	1995	04	14	021426	30.30	-103.35	10	2.8	LgGS	 286
PDE	1995	04	14	021938.50	30.30	-103.35	10	3.3	LgGS	.F. 286
PDE	1995	04	14	034842	30.30	-103.35	10	2.6	LgGS	.F. 286
PDE	1995	04	14	041116	30.30	-103.35	10	2.4	LgGS	.F. 286
PDE	1995	04	14	055339	30.30	-103.35	10	2.7	LgGS	 286
PDE	1995	04	14	073936.50	30.30	-103.35	10	2.4	LgGS	.F. 286
PDE	1995	04	14	082712.50	30.30	-103.35	10	2.8	LgGS	.F. 286
PDE	1995	04	14	100258	30.30	-103.35	10	2.9	LgGS	.F. 286
PDE	1995	04	14	105720.40	30.30	-103.35	10	2.3	LgGS	.F. 286
PDE	1995	04	15	031805	30.30	-103.35	10	2.4	LgGS	.F. 286
PDE	1995	04	15	143329.51	30.27	-103.32	10	4.0	LgGS	6D. 290
PDE	1995	04	16	004043.30	30.30	-103.35	10	2.3	LgGS	 286
PDE	1995	04	16	102625.50	30.30	-103.35	10	2.5	LgGS	 286
PDE	1995	04	16	161609.60	30.30	-103.35	10	2.4	LgGS	 286
PDE	1995	04	17	085000.50	30.30	-103.35	10	2.5	LgGS	 286
PDE	1995	04	21	044144	30.30	-103.35	10	2.9	LgGS	3F. 286
PDE	1995	06	01	010615.70	30.30	-103.35	10	3.5	LgGS	4F. 286
PDE	1995	07	06	024151	30.30	-103.35	10	2.7	LgGS	.F. 286
PDE	1995	07	06	024704	30.30	-103.35	10	2.6	LgGS	.F. 286

PDE	1995	08	28	151339.05	34.21	-106.94	3	2.8	LgGS	5F. 297
PDE	1995	11	12	174559.40	30.30	-103.35	10	3.6	LgGS	.F. 286
PDE	1996	03	15	131757.22	33.59	-105.69	10	2.9	LgGS	.F. 163
PDE	1996	03	24	201612.70	34.26	-105.68	10	3.5	LgGS	.F. 212
PDE	1996	03	24	201923.10	34.27	-105.69	10	3.7	LgGS	.F. 214
PDE	1996	07	22	100614.98	34.20	-105.71	10	3.5	LgGS	.F. 209
PDE	1997	05	20	094105.82	34.19	-105.74	10	3.2	LgGS	.F. 210
PDE	1997	12	31	132830.05	34.53	-106.15	5	3.5	MLGS	.F. 264
PDE	1997	12	31	133206.60	34.55	-106.15	5	3.5	MLGS	 265
PDE	1997	12	31	133358.90	34.55	-106.15	5	3.4	MLGS	 265
PDE	1998	01	04	080531.87	34.55	-106.19	5	4.0	MLGS	.F. 268
PDE	1998	04	15	103342.42	30.19	-103.30	10	3.6	LgGS	.F. 299
PDE	1998	07	14	053848.75	35.34	-103.47	5	3.0	MDSNM	.F. 293
PDE	1999	03	01	080023.50	32.57	-104.66	1	2.9	LgGS	 45
PDE	1999	03	14	224317.97	32.59	-104.63	1	4.0	MDSNM	.F. 42
PDE	1999	03	17	122923.11	32.58	-104.67	1	3.5	MDSNM	 46
PDE	1999	05	30	190425.60	32.58	-104.66	10	3.9	MDSNM	 45
PDE	1999	08	09	065122.97	32.57	-104.59	5	2.9	MDSNM	 40
PDE	2000	02	02	071420.26	32.58	-104.63	5	2.7	LgGS	 42
PDE	2000	02	26	030100.83	30.24	-103.61	5	2.8	LgGS	.F. 286
PDE	2001	06	02	015553.72	32.33	-103.14	5	3.3	LgGS	 113
PDE	2001	11	22	000708.02	31.79	-102.63	5	3.1	LgGS	 186
PDE	2002	09	17	154514.47	32.58	-104.63	10	3.5	LgGS	 42
PDE	2002	09	17	233419.35	32.58	-104.63	10	3.3	LgGS	 43
PDE	2003	06	21	020309.56	32.67	-104.50	5	3.6	LgGS	 28
PDE	2004	05	23	092205.28	32.53	-104.57	5	4.0	mbGS	3F. 41
PDE	2004	05	24	213628.56	34.47	-106.90	5	3.5	MLGS	.F. 310
PDE	2004	06	22	085528.23	32.53	-104.58	5	3.7	LgGS	.F. 42
PDE	2004	08	26	184518.62	32.58	-104.50	5	3.4	MLGS	 33
PDE	2004	10	28	025904.82	32.60	-104.50	5	3.0	LgGS	 31
PDE	2004	11	14	212749.90	33.25	-106.20	5	3.5	LgGS	 191
PDE	2005	10	30	025734.81	34.07	-106.98	5	2.4	MLGS	.F. 292
PDE	2005	12	19	202740.37	32.53	-104.55	5	4.1	MwSLM	3FM 40
PDE	2005	12	22	143011.67	32.58	-104.57	5	3.6	LgGS	.F. 37
PDE	2006	01	27	100456.45	32.59	-104.55	5	2.7	LgGS	 35
PDE	2006	01	27	160745.84	32.55	-104.58	5	3.1	LgGS	 40
PDE	2006	02	04	195510.68	32.58	-104.62	5	2.7	MLGS	 42
PDE	2006	03	04	171458.25	30.29	-103.67	5	2.7	LgGS	 280
PDE	2006	03	20	175529.12	32.60	-104.56	5	3.0	MLGS	 36
PDE	2006	04	08	180835.23	31.95	-101.42	5	2.9	MLGS	 279
PDE	2006	08	12	104909.67	32.90	-100.89	5	2.8	LgGS	.F. 312
PDE	2007	05	23	051655.15	34.07	-106.94	5	3.4	MLGS	3F. 289
PDE	2008	01	29	102453.24	32.90	-100.84	5	3.3	LgGS	.F. 317
PDE	2008	02	18	1415	32.27	-101.42	0	2.1	LgGS	.C. ....E.. 269
PDE	2008	04	16	090604.36	33.66	-106.06	5	2.7	MLGS	 196
PDE	2008	05	23	180305.86	32.50	-104.60	5	2.7	LgGS	 45
PDE	2008	07	18	173109.40	32.89	-100.84	5	2.7	LgGS	 317
PDE	2008	12	28	205659.99	30.44	-103.36	5	2.6	MLGS	 271
PDE	2009	01	30	014121.66	32.50	-104.61	5	2.7	LgGS	 46
PDE	2009	06	05	171732.94	31.35	-105.98	0	2.4	MLEPT	.F. 227
PDE	2009	06	05	181023.63	31.35	-105.98	0	2.6	MLEPT	.F. 227
PDE	2009	08	20	015723.10	34.03	-106.87	5	2.7	MLGS	3F. 282
PDE	2009	08	30	003100.29	34.22	-106.89	5	2.5	MLGS	.F. 293
PDE	2009	08	30	063947.47	34.16	-106.86	5	2.6	MLGS	.F. 289
PDE	2009	08	30	070943.72	34.19	-106.88	5	2.1	MLGS	.F. 291
PDE	2009	11	17	185306.84	32.43	-104.64	5	3.0	LgGS	 54
PDE	2010	01	27	045933.05	32.90	-100.83	5	3.1	LgGS	.F. 318
PDE	2010	02	21	095539.77	32.57	-104.61	5	2.8	LgGS	 41
PDE	2010	03	28	000355.08	32.44	-104.50	4	4.1	MwRMT	3FM 44
PDE	2010	04	11	195632.67	32.41	-101.06	5	2.9	LgGS	 300

PDE	2010	04	12	002005.97	32.94	-100.88	5	2.8	LgGS	... .	314
PDE	2010	05	09	071807.37	34.04	-106.83	5	2.1	MLGS	.F.	279
PDE	2010	05	27	204721.87	31.11	-105.58	5	3.7	MLGS	... .	223
PDE	2010	05	31	215819.17	32.52	-104.61	5	4.0	MLGS	... .	44
PDE	2010	08	08	011238.07	32.90	-100.85	5	3.4	MwRMT	2FM	316
PDE	2010	08	25	020514.32	32.95	-100.86	5	2.8	LgGS	... .	315
PDE	2010	08	29	124836.61	32.91	-100.92	5	2.6	LgGS	... .	310
PDE-W	2010	10	09	074227.63	32.93	-100.89	5	3.1	LgGS	... .	313
PDE-W	2010	10	26	065629.79	32.92	-100.85	5	3.1	LgGS	... .	316
PDE-W	2010	11	01	091058.42	33.00	-100.82	5	2.8	LgGS	... .	320
PDE-W	2011	01	11	043415.77	34.39	-106.99	5	2.7	MLGS	... .	312
PDE-W	2011	02	17	182534.41	30.11	-103.30	5	3.3	LgGS	... .	307
PDE-W	2011	03	01	033012.76	32.88	-100.84	5	3.1	LgGS	2F.	317
PDE-W	2011	03	01	063159.89	32.84	-100.80	5	2.5	LgGS	... .	321
PDE-W	2011	03	12	152200.86	32.88	-100.90	5	3.0	LgGS	... .	312
PDE-W	2011	03	14	001948.80	32.96	-100.81	5	3.0	LgGS	... .	320
PDE-W	2011	03	28	091211.95	32.91	-100.82	5	3.0	LgGS	... .	320
PDE-W	2011	04	06	233835.45	34.40	-107.02	5	3.2	MLGS	... .	315
PDE-W	2011	04	25	165631.88	32.82	-100.84	5	2.5	LgGS	... .	317
PDE-W	2011	04	28	010341.97	30.74	-105.71	6	4.4	mbGS	.F.	264
PDE-W	2011	04	28	035625.61	30.74	-105.78	10	4.0	mbGS	... .	268
PDE-W	2011	04	28	045834.59	30.68	-105.75	9	3.6	MwRMT	.FM	272
PDE-W	2011	04	28	074903.45	30.82	-105.80	5	3.1	LgGS	... .	262
PDE-W	2011	04	28	075418.94	30.58	-105.85	5	2.7	LgGS	... .	286
PDE-W	2011	04	30	010716.82	30.76	-105.75	10	4.6	MDUNM	... .	265
PDE-W	2011	05	02	114328.24	30.73	-105.72	10	4.2	MwRMT	2FM	266
PDE-W	2011	05	02	115836.35	30.74	-105.70	10	3.3	MLGS	... .	264
PDE-W	2011	05	02	134032.64	30.69	-105.75	10	3.3	MLGS	... .	271
PDE-W	2011	05	02	135536.79	30.73	-105.67	5	4.4	mbGS	2F.	264
PDE-W	2011	05	03	025830.18	30.67	-105.73	10	3.8	MwRMT	.FM	273
PDE-W	2011	05	03	114203.84	30.49	-105.68	10	2.8	MLGS	... .	287
PDE-W	2011	05	04	162627.03	30.71	-105.79	10	3.7	MwRMT	..M	271
PDE-W	2011	05	05	052010.02	30.79	-105.76	10	3.6	MLGS	... .	262
PDE-W	2011	05	06	002426.09	30.75	-105.73	10	2.8	MLGS	... .	264
PDE-W	2011	05	06	004559.26	30.81	-105.71	10	2.8	MLGS	... .	258
PDE-W	2011	05	07	045100.88	30.64	-105.73	10	4.1	MDUNM	2F.	275
PDE-W	2011	05	08	132449.65	30.75	-105.81	10	3.1	MLGS	... .	269
PDE-W	2011	05	08	134616.49	30.72	-105.76	10	3.2	MLGS	... .	269
PDE-W	2011	05	08	135758.52	30.71	-105.75	10	2.9	MLGS	... .	269
PDE-W	2011	05	08	190732.13	30.81	-105.31	10	3.0	MLGS	... .	239
PDE-W	2011	05	08	225459.93	30.74	-105.74	10	3.3	MLGS	... .	266
PDE-W	2011	05	09	064019.15	30.76	-105.69	10	3.9	MDUNM	.F.	261
PDE-W	2011	05	10	184118.44	30.72	-105.72	10	3.4	MLGS	... .	267
PDE-W	2011	05	13	124916.26	30.76	-105.45	10	2.6	MLGS	... .	250
PDE-W	2011	05	14	220751.11	30.82	-105.74	10	3.9	MDUNM	.F.	259
PDE-W	2011	05	17	200820	30.75	-105.74	10	4.2	MDUNM	... .	265
PDE-W	2011	05	19	103523.51	30.80	-105.69	10	3.4	MwRMT	..M	258
PDE-W	2011	05	19	115649.90	30.72	-105.59	10	2.9	MLGS	... .	260
PDE-W	2011	05	20	231419.06	30.20	-105.55	10	2.7	MLGS	... .	310
PDE-W	2011	05	25	100301.09	30.70	-105.63	10	2.8	MLGS	... .	264
PDE-W	2011	05	27	014128.20	30.80	-105.76	10	3.6	MLGS	... .	261
PDE-W	2011	05	27	014908.92	30.98	-105.78	10	3.0	MLGS	... .	246
PDE-W	2011	07	14	102913.60	32.93	-100.81	5	2.5	LgGS	... .	321
PDE-W	2011	09	11	183635.11	32.74	-100.84	5	2.5	LgGS	3F.	318
PDE-W	2011	09	11	203158.11	32.89	-100.85	5	2.8	LgGS	2F.	316
PDE-W	2011	09	12	003149.11	32.80	-100.88	5	2.7	LgGS	2F.	314
PDE-W	2011	09	12	022931.34	32.73	-100.85	5	2.5	LgGS	.H.	317
PDE-W	2011	09	12	091946.71	32.85	-100.85	5	2.6	LgGS	... .	316
PDE-W	2011	09	12	092612.90	32.76	-100.84	5	2.7	LgGS	2F.	317
PDE-W	2011	09	12	141834.05	32.82	-100.87	7	3.4	LgGS	3F.	314

PDE-W	2011	09	28	214637.55	32.52	-104.66	5	2.7	LgGS	... .	48
PDE-W	2011	11	24	064959.99	32.95	-100.81	5	2.8	LgGS	... .	320
PDE-W	2011	11	24	231549.01	32.94	-100.85	5	3.1	LgGS	... .	317
PDE-W	2011	12	09	184733.24	32.94	-100.86	5	3.5	LgGS	3F.	315
PDE-W	2011	12	17	144658.46	32.81	-100.85	5	3.2	LgGS	3F.	316
PDE-W	2011	12	29	061907.64	32.81	-100.91	5	2.5	LgGS	... .	311
PDE-W	2011	12	29	114808.28	32.88	-100.83	5	2.5	LgGS	.F.	318
PDE-W	2012	01	15	092901.68	31.23	-103.61	5	2.7	LgGS	2F.	181
PDE-W	2012	01	24	182102.61	30.32	-103.38	5	3.6	LgGS	4F.	283
PDE-W	2012	02	06	040024.75	32.09	-104.91	5	2.7	LgGS	... .	98
PDE-W	2012	03	06	031149.71	31.81	-106.31	5	2.5	MLGS	3F.	223
PDE-W	2012	03	18	105722.43	32.28	-103.89	5	3.1	LgGS	... .	63
PDE-Q	2012	04	05	091115.95	31.57	-106.09	5	2.9	MLGS	.F.	219

USGS National Earthquake Information Center

APPENDIX D

INJECTION FLUID ANALYTICAL DATA

29-Mar-2013

Aaron Strange
Navajo Refining Company
PO Box 159
Artesia, NM 88211

Tel: (575) 748-6733
Fax: (575) 746-5421

Re: Injection Well Quarterly Work Order: **1303855**

Dear Aaron,

ALS Environmental received 2 samples on 22-Mar-2013 09:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 40.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

Electronically approved by: Jumoke M. Lawal

Sonia West
Project Manager

Certificate No: T104704231-12-10

ALS Environmental

Date: 29-Mar-13

Client: Navajo Refining Company
Project: Injection Well Quarterly
Work Order: **1303855**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1303855-01	WW Effluent	Liquid		3/21/2013 14:55	3/22/2013 09:30	☐
1303855-02	Trip Blank - 021813-56	Water		3/21/2013	3/22/2013 09:30	☑

Client:	Navajo Refining Company
Project:	Injection Well Quarterly
Work Order:	1303855

Case Narrative

The result for pH is flagged with H indicating that the holding time was exceeded. Per 40CFR136, the holding time for pH is "immediate."

The analysis for specific gravity was performed at Texas Oil Tech located in Houston, Texas.

Batch 68699, Total Metals, Sample 1303846-05D: MS/MSD is for an unrelated sample.

Batch 68756, Semivolatile Organics 8270, Sample SLCSDW2-130327: Insufficient sample was received for MS/MSD.

Batch R144692, Volatile Organics 8260, Sample 1303880-02A: MS/MSD is for an unrelated sample.

ALS Environmental

Date: *29-Mar-13*

Client: Navajo Refining Company
Project: Injection Well Quarterly
Work Order: 1303855
Sample ID: WW Effluent
Lab ID: 1303855-01
Collection Date: 3/21/2013 02:55 PM
Matrix: LIQUID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
MERCURY-SW7470A			**SW7470**				Analyst: **OFO**
Mercury	ND		0.000200	mg/L	1	3/27/2013	3/27/2013 01:13 PM
METALS			**SW6020**				Analyst: **ALR**
Aluminum	**1.34**		**0.0200**	**mg/L**	1	3/26/2013	3/27/2013 06:39 PM
Arsenic	**0.0404**	*	**0.0100**	**mg/L**	1	3/26/2013	3/27/2013 06:39 PM
Barium	**0.0860**		**0.0100**	**mg/L**	1	3/26/2013	3/27/2013 06:39 PM
Beryllium	ND		0.00400	mg/L	1	3/26/2013	3/27/2013 06:39 PM
Boron	**0.722**		**0.100**	**mg/L**	1	3/26/2013	3/27/2013 06:39 PM
Cadmium	ND		0.00400	mg/L	1	3/26/2013	3/27/2013 06:39 PM
Calcium	**110**		**1.00**	**mg/L**	1	3/26/2013	3/27/2013 06:39 PM
Chromium	ND		0.0100	mg/L	1	3/26/2013	3/27/2013 06:39 PM
Cobalt	ND		0.0100	mg/L	1	3/26/2013	3/27/2013 06:39 PM
Copper	ND		0.0100	mg/L	1	3/26/2013	3/27/2013 06:39 PM
Iron	**0.793**		**0.400**	**mg/L**	1	3/26/2013	3/27/2013 06:39 PM
Lead	ND		0.0100	mg/L	1	3/26/2013	3/27/2013 06:39 PM
Magnesium	**37.2**		**0.400**	**mg/L**	1	3/26/2013	3/27/2013 06:39 PM
Manganese	**0.0832**		**0.0100**	**mg/L**	1	3/26/2013	3/27/2013 06:39 PM
Molybdenum	**0.182**		**0.0100**	**mg/L**	1	3/26/2013	3/27/2013 06:39 PM
Nickel	**0.0153**		**0.0100**	**mg/L**	1	3/26/2013	3/27/2013 06:39 PM
Potassium	**107**		**0.400**	**mg/L**	1	3/26/2013	3/27/2013 06:39 PM
Selenium	**0.924**	*	**0.0100**	**mg/L**	1	3/26/2013	3/27/2013 06:39 PM
Silver	ND		0.0100	mg/L	1	3/26/2013	3/27/2013 06:39 PM
Sodium	**1,400**		**4.00**	**mg/L**	10	3/26/2013	3/27/2013 07:09 PM
Vanadium	**0.0221**		**0.0100**	**mg/L**	1	3/26/2013	3/27/2013 06:39 PM
Zinc	**0.0737**		**0.0100**	**mg/L**	1	3/26/2013	3/27/2013 06:39 PM
SEMIVOLATILES - SW8270D			**SW8270**				Analyst: **JLJ**
1,2,4-Trichlorobenzene	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
2,4,5-Trichlorophenol	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
2,4,6-Trichlorophenol	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
2,4-Dinitrotoluene	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
2-Methylnaphthalene	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
2-Methylphenol	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
2-Nitroaniline	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
2-Nitrophenol	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
3&4-Methylphenol	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
3-Nitroaniline	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
4-Nitroaniline	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
4-Nitrophenol	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
Acenaphthene	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *29-Mar-13*

Client: Navajo Refining Company
Project: Injection Well Quarterly
Work Order: 1303855
Sample ID: WW Effluent
Lab ID: 1303855-01
Collection Date: 3/21/2013 02:55 PM
Matrix: LIQUID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
Acenaphthylene	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
Aniline	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
Anthracene	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
Benz(a)anthracene	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
Benzidine	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
Hexachlorobenzene	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
Hexachloroethane	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
Indeno(1,2,3-cd)pyrene	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
Isophorone	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
Naphthalene	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
Nitrobenzene	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
N-Nitrosodimethylamine	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
N-Nitrosodi-n-propylamine	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
N-Nitrosodiphenylamine	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
Pentachlorophenol	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
Phenanthrene	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
Phenol	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
Pyrene	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
Pyridine	ND		0.0050	mg/L	1	3/27/2013	3/27/2013 07:55 PM
Surr: 2,4,6-Tribromophenol	*114*		*42-124*	*%REC*	1	3/27/2013	3/27/2013 07:55 PM
Surr: 2-Fluorobiphenyl	*73.5*		*48-120*	*%REC*	1	3/27/2013	3/27/2013 07:55 PM
Surr: 2-Fluorophenol	*69.2*		*20-120*	*%REC*	1	3/27/2013	3/27/2013 07:55 PM
Surr: 4-Terphenyl-d14	*87.7*		*51-135*	*%REC*	1	3/27/2013	3/27/2013 07:55 PM
Surr: Nitrobenzene-d5	*67.3*		*41-120*	*%REC*	1	3/27/2013	3/27/2013 07:55 PM
Surr: Phenol-d6	*75.7*		*20-120*	*%REC*	1	3/27/2013	3/27/2013 07:55 PM
VOLATILES - SW8260C			**SW8260**				Analyst: **PC**
1,1,1-Trichloroethane	ND		0.0050	mg/L	1		3/27/2013 02:05 PM
1,1,2,2-Tetrachloroethane	ND		0.0050	mg/L	1		3/27/2013 02:05 PM
1,1,2-Trichloroethane	ND		0.0050	mg/L	1		3/27/2013 02:05 PM
1,1-Dichloroethane	ND		0.0050	mg/L	1		3/27/2013 02:05 PM
1,1-Dichloroethene	ND		0.0050	mg/L	1		3/27/2013 02:05 PM
1,2-Dichloroethane	ND		0.0050	mg/L	1		3/27/2013 02:05 PM
2-Butanone	ND		0.010	mg/L	1		3/27/2013 02:05 PM
2-Chloroethyl vinyl ether	ND		0.010	mg/L	1		3/27/2013 02:05 PM
2-Hexanone	ND		0.010	mg/L	1		3/27/2013 02:05 PM
4-Methyl-2-pentanone	ND		0.010	mg/L	1		3/27/2013 02:05 PM
Acetone	**0.016**		**0.010**	**mg/L**	1		3/27/2013 02:05 PM
Benzene	ND		0.0050	mg/L	1		3/27/2013 02:05 PM
Bromodichloromethane	ND		0.0050	mg/L	1		3/27/2013 02:05 PM
Bromoform	ND		0.0050	mg/L	1		3/27/2013 02:05 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *29-Mar-13*

Client: Navajo Refining Company
Project: Injection Well Quarterly
Work Order: 1303855
Sample ID: WW Effluent
Lab ID: 1303855-01
Collection Date: 3/21/2013 02:55 PM
Matrix: LIQUID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
Bromomethane	ND		0.0050	mg/L	1		3/27/2013 02:05 PM
Carbon disulfide	ND		0.010	mg/L	1		3/27/2013 02:05 PM
Carbon tetrachloride	ND		0.0050	mg/L	1		3/27/2013 02:05 PM
Chlorobenzene	ND		0.0050	mg/L	1		3/27/2013 02:05 PM
Chloroethane	ND		0.0050	mg/L	1		3/27/2013 02:05 PM
Chloroform	ND		0.0050	mg/L	1		3/27/2013 02:05 PM
Chloromethane	ND		0.0050	mg/L	1		3/27/2013 02:05 PM
cis-1,3-Dichloropropene	ND		0.0050	mg/L	1		3/27/2013 02:05 PM
Dibromochloromethane	ND		0.0050	mg/L	1		3/27/2013 02:05 PM
Ethylbenzene	ND		0.0050	mg/L	1		3/27/2013 02:05 PM
m,p-Xylene	ND		0.010	mg/L	1		3/27/2013 02:05 PM
Methylene chloride	ND		0.010	mg/L	1		3/27/2013 02:05 PM
Styrene	ND		0.0050	mg/L	1		3/27/2013 02:05 PM
Tetrachloroethene	ND		0.0050	mg/L	1		3/27/2013 02:05 PM
Toluene	ND		0.0050	mg/L	1		3/27/2013 02:05 PM
trans-1,3-Dichloropropene	ND		0.0050	mg/L	1		3/27/2013 02:05 PM
Trichloroethene	ND		0.0050	mg/L	1		3/27/2013 02:05 PM
Vinyl acetate	ND		0.010	mg/L	1		3/27/2013 02:05 PM
Vinyl chloride	ND		0.0020	mg/L	1		3/27/2013 02:05 PM
Xylenes, Total	ND		0.015	mg/L	1		3/27/2013 02:05 PM
Surr: 1,2-Dichloroethane-d4	*104*		*70-125*	*%REC*	1		3/27/2013 02:05 PM
Surr: 4-Bromofluorobenzene	*98.1*		*72-125*	*%REC*	1		3/27/2013 02:05 PM
Surr: Dibromofluoromethane	*108*		*71-125*	*%REC*	1		3/27/2013 02:05 PM
Surr: Toluene-d8	*101*		*75-125*	*%REC*	1		3/27/2013 02:05 PM
REACTIVE CYANIDE			**SW-846**				Analyst: **HN**
Reactive Cyanide	*See Attached*		40.0	mg/Kg	1		3/28/2013 09:45 AM
REACTIVE SULFIDE			**SW-846**				Analyst: **HN**
Reactive Sulfide	*See Attached*		40.0	mg/Kg	1		3/28/2013 09:45 AM
MISCELLANEOUS ANALYSIS			**NA**				Analyst: **SUB**
Miscellaneous Analysis	**See Attached**				1		3/28/2013
ANIONS - EPA 300.0 (1993)			**E300**				Analyst: **JKP**
Bromide	**2.60**		**0.500**	**mg/L**	5		3/28/2013 05:02 PM
Chloride	**647**		**50.0**	**mg/L**	100		3/28/2013 05:23 PM
Fluoride	**22.8**		**0.500**	**mg/L**	5		3/28/2013 05:02 PM
Sulfate	**2,630**		**50.0**	**mg/L**	100		3/28/2013 05:23 PM
Surr: Selenate (surr)	*97.3*		*85-115*	*%REC*	100		3/28/2013 05:23 PM
Surr: Selenate (surr)	*111*		*85-115*	*%REC*	5		3/28/2013 05:02 PM
ALKALINITY-SM2320B			**SM2320B**				Analyst: **KL**

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: *29-Mar-13*

Client: Navajo Refining Company
Project: Injection Well Quarterly
Work Order: 1303855
Sample ID: WW Effluent
Lab ID: 1303855-01
Collection Date: 3/21/2013 02:55 PM
Matrix: LIQUID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Prep	Date Analyzed
Alkalinity, Bicarbonate (As CaCO3	**366**		**6.00**	**mg/L**	1		3/26/2013 11:18 AM
Alkalinity, Carbonate (As CaCO3)	ND		6.00	mg/L	1		3/26/2013 11:18 AM
Alkalinity, Hydroxide (As CaCO3)	ND		6.00	mg/L	1		3/26/2013 11:18 AM
Alkalinity, Total (As CaCO3)	**366**		**6.00**	**mg/L**	1		3/26/2013 11:18 AM
SPECIFIC CONDUCTIVITY			**M2510 B**				Analyst: **KL**
Specific Conductivity	**8,110**		**1.00**	**µmhos/cm**	1		3/26/2013 02:07 PM
IGNITIBILITY			**SW1010**				Analyst: **KL**
Ignitability	*> 212*		50.0	°F	1		3/27/2013 12:00 PM
PH - SW9040C			**SW9040**				Analyst: **KL**
pH	**7.98**	H	**0.100**	**pH units**	1		3/26/2013 11:18 AM
TOTAL DISSOLVED SOLIDS			**M2540C**				Analyst: **KAH**
Total Dissolved Solids (Residue, Filterable)	**5,500**		**10.0**	**mg/L**	1		3/26/2013 06:05 PM

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Batch ID: **68699** Instrument ID **ICP7500** Method: **SW6020**

MBLK Sample ID: **MBLKW2-032613-68699** Units: **mg/L** Analysis Date: **3/26/2013 09:30 PM**

Client ID: Run ID: **ICP7500_130326A** SeqNo: **3153091** Prep Date: **3/26/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	ND	0.010								
Arsenic	ND	0.0050								
Barium	ND	0.0050								
Beryllium	ND	0.0020								
Boron	ND	0.050								
Cadmium	ND	0.0020								
Calcium	ND	0.50								
Chromium	ND	0.0050								
Cobalt	ND	0.0050								
Copper	ND	0.0050								
Iron	ND	0.20								
Lead	ND	0.0050								
Magnesium	ND	0.20								
Manganese	ND	0.0050								
Molybdenum	ND	0.0050								
Nickel	ND	0.0050								
Potassium	ND	0.20								
Silver	ND	0.0050								
Sodium	ND	0.20								
Vanadium	ND	0.0050								
Zinc	ND	0.0050								

MBLK Sample ID: **MBLKW2-032613-68699** Units: **mg/L** Analysis Date: **3/27/2013 04:53 PM**

Client ID: Run ID: **ICP7500_130327A** SeqNo: **3154491** Prep Date: **3/26/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	ND	0.0050								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1303855
Project: Injection Well Quarterly

QC BATCH REPORT

Batch ID: **68699** Instrument ID **ICP7500** Method: **SW6020**

LCS Sample ID: **MLCSW2-032613-68699** Units: **mg/L** Analysis Date: **3/26/2013 09:35 PM**
Client ID: Run ID: **ICP7500_130326A** SeqNo: **3153092** Prep Date: **3/26/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1068	0.010	0.1	0	107	80-120	0			
Arsenic	0.046	0.0050	0.05	0	92	80-120	0			
Barium	0.05079	0.0050	0.05	0	102	80-120	0			
Beryllium	0.05012	0.0020	0.05	0	100	80-120	0			
Boron	0.501	0.050	0.5	0	100	80-120	0			
Cadmium	0.05025	0.0020	0.05	0	100	80-120	0			
Calcium	4.655	0.50	5	0	93.1	80-120	0			
Chromium	0.04537	0.0050	0.05	0	90.7	80-120	0			
Cobalt	0.04537	0.0050	0.05	0	90.7	80-120	0			
Copper	0.04618	0.0050	0.05	0	92.4	80-120	0			
Iron	4.768	0.20	5	0	95.4	80-120	0			
Lead	0.04924	0.0050	0.05	0	98.5	80-120	0			
Magnesium	5.105	0.20	5	0	102	80-120	0			
Manganese	0.04744	0.0050	0.05	0	94.9	80-120	0			
Molybdenum	0.04742	0.0050	0.05	0	94.8	80-120	0			
Nickel	0.04539	0.0050	0.05	0	90.8	80-120	0			
Potassium	5.074	0.20	5	0	101	80-120	0			
Silver	0.05002	0.0050	0.05	0	100	80-120	0			
Sodium	5.057	0.20	5	0	101	80-120	0			
Vanadium	0.04575	0.0050	0.05	0	91.5	80-120	0			
Zinc	0.04974	0.0050	0.05	0	99.5	80-120	0			

LCS Sample ID: **MLCSW2-032613-68699** Units: **mg/L** Analysis Date: **3/27/2013 04:58 PM**
Client ID: Run ID: **ICP7500_130327A** SeqNo: **3154492** Prep Date: **3/26/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Selenium	0.04697	0.0050	0.05	0	93.9	80-120	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1303855
Project: Injection Well Quarterly

QC BATCH REPORT

Batch ID: **68699** Instrument ID **ICP7500** Method: **SW6020**

MS Sample ID: **1303846-05DMS** Units: **mg/L** Analysis Date: **3/27/2013 06:04 PM**

Client ID: Run ID: **ICP7500_130327A** SeqNo: **3154505** Prep Date: **3/26/2013** DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1684	0.020	0.1	0.0651	103	80-120	0			
Arsenic	0.04742	0.010	0.05	0.002868	89.1	80-120	0			
Barium	0.06544	0.010	0.05	0.021	88.9	80-120	0			
Beryllium	0.0481	0.0040	0.05	0.0003478	95.5	80-120	0			
Boron	1.671	0.10	0.5	1.231	88.1	80-120	0			
Cadmium	0.06756	0.0040	0.05	0.0228	89.5	80-120	0			
Calcium	88.26	1.0	5	79.32	179	80-120	0			SO
Chromium	0.04292	0.010	0.05	0.0008358	84.2	80-120	0			
Cobalt	0.04426	0.010	0.05	0.001916	84.7	80-120	0			
Copper	0.04364	0.010	0.05	0.000758	85.8	80-120	0			
Iron	4.544	0.40	5	0.05926	89.7	80-120	0			
Lead	0.04498	0.010	0.05	0.002284	85.4	80-120	0			
Magnesium	98.7	0.40	5	90.9	156	80-120	0			SO
Manganese	0.7488	0.010	0.05	0.6738	150	80-120	0			SO
Molybdenum	15.33	0.010	0.05	14.64	1380	80-120	0			SEO
Nickel	0.04574	0.010	0.05	0.004562	82.4	80-120	0			
Potassium	7.952	0.40	5	3.454	90	80-120	0			
Selenium	0.0572	0.010	0.05	0.002686	109	80-120	0			
Silver	0.04278	0.010	0.05	0.000395	84.8	80-120	0			
Sodium	ND	0.40	5	0	0	80-120	0			SX
Vanadium	0.07002	0.010	0.05	0.0257	88.6	80-120	0			
Zinc	0.04656	0.010	0.05	0.002674	87.8	80-120	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1303855
Project: Injection Well Quarterly

QC BATCH REPORT

Batch ID: **68699** Instrument ID **ICP7500** Method: **SW6020**

MSD Sample ID: **1303846-05DMSD** Units: **mg/L** Analysis Date: **3/27/2013 06:09 PM**

Client ID: Run ID: **ICP7500_130327A** SeqNo: **3154506** Prep Date: **3/26/2013** DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.167	0.020	0.1	0.0651	102	80-120	0.1684	0.811	15	
Arsenic	0.0497	0.010	0.05	0.002868	93.7	80-120	0.04742	4.7	15	
Barium	0.0648	0.010	0.05	0.021	87.6	80-120	0.06544	0.983	15	
Beryllium	0.04798	0.0040	0.05	0.0003478	95.3	80-120	0.0481	0.25	15	
Boron	1.673	0.10	0.5	1.231	88.6	80-120	1.671	0.132	15	
Cadmium	0.06806	0.0040	0.05	0.0228	90.5	80-120	0.06756	0.737	15	
Calcium	85.4	1.0	5	79.32	122	80-120	88.26	3.29	15	SO
Chromium	0.04178	0.010	0.05	0.0008358	81.9	80-120	0.04292	2.69	15	
Cobalt	0.0429	0.010	0.05	0.001916	82	80-120	0.04426	3.12	15	
Copper	0.04132	0.010	0.05	0.000758	81.1	80-120	0.04364	5.46	15	
Iron	4.424	0.40	5	0.05926	87.3	80-120	4.544	2.68	15	
Lead	0.04468	0.010	0.05	0.002284	84.8	80-120	0.04498	0.669	15	
Magnesium	96.64	0.40	5	90.9	115	80-120	98.7	2.11	15	O
Manganese	0.7256	0.010	0.05	0.6738	104	80-120	0.7488	3.15	15	O
Molybdenum	15.06	0.010	0.05	14.64	840	80-120	15.33	1.78	15	SEO
Nickel	0.04486	0.010	0.05	0.004562	80.6	80-120	0.04574	1.94	15	
Potassium	7.822	0.40	5	3.454	87.4	80-120	7.952	1.65	15	
Selenium	0.05088	0.010	0.05	0.002686	96.4	80-120	0.0572	11.7	15	
Silver	0.04192	0.010	0.05	0.000395	83	80-120	0.04278	2.03	15	
Sodium	ND	0.40	5	0	0	80-120	0	0	15	SX
Vanadium	0.06808	0.010	0.05	0.0257	84.8	80-120	0.07002	2.81	15	
Zinc	0.0462	0.010	0.05	0.002674	87.1	80-120	0.04656	0.776	15	

DUP Sample ID: **1303846-05DDUP** Units: **mg/L** Analysis Date: **3/27/2013 05:08 PM**

Client ID: Run ID: **ICP7500_130327A** SeqNo: **3154494** Prep Date: **3/26/2013** DF: **100**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Molybdenum	13.95	0.50	0	0	0	0-0	13.56	2.84	25	
Sodium	1874	20	0	0	0	0-0	1846	1.51	25	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1303855
Project: Injection Well Quarterly

QC BATCH REPORT

Batch ID: **68699** Instrument ID **ICP7500** Method: **SW6020**

DUP Sample ID: **1303846-05DDUP** Units: **mg/L** Analysis Date: **3/27/2013 05:54 PM**

Client ID: Run ID: **ICP7500_130327A** SeqNo: **3154503** Prep Date: **3/26/2013** DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.06508	0.020	0	0	0	0-0	0.0651	0.0307	25	
Arsenic	ND	0.010	0	0	0	0-0	0.002868	0	25	
Barium	0.01995	0.010	0	0	0	0-0	0.021	5.15	25	
Beryllium	ND	0.0040	0	0	0	0-0	0.0003478	0	25	
Boron	1.222	0.10	0	0	0	0-0	1.231	0.701	25	
Cadmium	0.02212	0.0040	0	0	0	0-0	0.0228	3.03	25	
Calcium	79.3	1.0	0	0	0	0-0	79.32	0.0252	25	
Chromium	ND	0.010	0	0	0	0-0	0.0008358	0	25	
Cobalt	ND	0.010	0	0	0	0-0	0.001916	0	25	
Copper	ND	0.010	0	0	0	0-0	0.000758	0	25	
Iron	ND	0.40	0	0	0	0-0	0.05926	0	25	
Lead	ND	0.010	0	0	0	0-0	0.002284	0	25	
Magnesium	90.02	0.40	0	0	0	0-0	90.9	0.973	25	
Manganese	0.6718	0.010	0	0	0	0-0	0.6738	0.297	25	
Nickel	ND	0.010	0	0	0	0-0	0.004562	0	25	
Potassium	3.424	0.40	0	0	0	0-0	3.454	0.872	25	
Selenium	ND	0.010	0	0	0	0-0	0.002686	0	25	
Silver	ND	0.010	0	0	0	0-0	0.000395	0	25	
Vanadium	0.02582	0.010	0	0	0	0-0	0.0257	0.466	25	
Zinc	ND	0.010	0	0	0	0-0	0.002674	0	25	

The following samples were analyzed in this batch: 1303855-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1303855
Project: Injection Well Quarterly

QC BATCH REPORT

Batch ID: **68749** Instrument ID **Mercury** Method: **SW7470**

MBLK Sample ID: **GBLKW1-032713-68749** Units: **mg/L** Analysis Date: **3/27/2013 12:15 PM**
Client ID: Run ID: **MERCURY_130326A** SeqNo: **3153512** Prep Date: **3/27/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.00020								

LCS Sample ID: **GLCSW1-032713-68749** Units: **mg/L** Analysis Date: **3/27/2013 12:20 PM**
Client ID: Run ID: **MERCURY_130326A** SeqNo: **3153513** Prep Date: **3/27/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00536	0.00020	0.005	0	107	85-115	0			

MS Sample ID: **1303777-01DMS** Units: **mg/L** Analysis Date: **3/27/2013 12:25 PM**
Client ID: Run ID: **MERCURY_130326A** SeqNo: **3153516** Prep Date: **3/27/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00519	0.00020	0.005	-0.000005	104	85-115	0			

MSD Sample ID: **1303777-01DMSD** Units: **mg/L** Analysis Date: **3/27/2013 12:27 PM**
Client ID: Run ID: **MERCURY_130326A** SeqNo: **3153517** Prep Date: **3/27/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.00517	0.00020	0.005	-0.000005	104	85-115	0.00519	0.386	20	

DUP Sample ID: **1303777-01DDUP** Units: **mg/L** Analysis Date: **3/27/2013 12:23 PM**
Client ID: Run ID: **MERCURY_130326A** SeqNo: **3153515** Prep Date: **3/27/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.00020	0	0	0	0-0	-0.000005	0	20	

The following samples were analyzed in this batch: 1303855-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1303855
Project: Injection Well Quarterly

QC BATCH REPORT

Batch ID: **68756** Instrument ID **SV-3** Method: **SW8270**

MBLK Sample ID: **SBLKW2-130327-68756** Units: **µg/L** Analysis Date: **3/27/2013 07:00 PM**

Client ID: Run ID: **SV-3_130327A** SeqNo: **3155049** Prep Date: **3/27/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	ND	5.0								
2,4,5-Trichlorophenol	ND	5.0								
2,4,6-Trichlorophenol	ND	5.0								
2,4-Dinitrotoluene	ND	5.0								
2-Methylnaphthalene	ND	5.0								
2-Methylphenol	ND	5.0								
2-Nitroaniline	ND	5.0								
2-Nitrophenol	ND	5.0								
3&4-Methylphenol	ND	5.0								
3-Nitroaniline	ND	5.0								
4-Nitroaniline	ND	5.0								
4-Nitrophenol	ND	5.0								
Acenaphthene	ND	5.0								
Acenaphthylene	ND	5.0								
Aniline	ND	5.0								
Anthracene	ND	5.0								
Benz(a)anthracene	ND	5.0								
Benzidine	ND	5.0								
Hexachlorobenzene	ND	5.0								
Hexachloroethane	ND	5.0								
Indeno(1,2,3-cd)pyrene	ND	5.0								
Isophorone	ND	5.0								
Naphthalene	ND	5.0								
Nitrobenzene	ND	5.0								
N-Nitrosodimethylamine	ND	5.0								
N-Nitrosodi-n-propylamine	ND	5.0								
N-Nitrosodiphenylamine	ND	5.0								
Pentachlorophenol	ND	5.0								
Phenanthrene	ND	5.0								
Phenol	ND	5.0								
Pyrene	ND	5.0								
Pyridine	ND	5.0								
Surr: 2,4,6-Tribromophenol	94.74	5.0	*100*	0	*94.7*	*42-124*	0			
Surr: 2-Fluorobiphenyl	107	5.0	*100*	0	*107*	*48-120*	0			
Surr: 2-Fluorophenol	79.61	5.0	*100*	0	*79.6*	*20-120*	0			
Surr: 4-Terphenyl-d14	94.22	5.0	*100*	0	*94.2*	*51-135*	0			
Surr: Nitrobenzene-d5	91.09	5.0	*100*	0	*91.1*	*41-120*	0			
Surr: Phenol-d6	70.94	5.0	*100*	0	*70.9*	*20-120*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1303855
Project: Injection Well Quarterly

QC BATCH REPORT

Batch ID: **68756** Instrument ID **SV-3** Method: **SW8270**

LCS Sample ID: **SLCSW2-130327-68756** Units: **µg/L** Analysis Date: **3/27/2013 05:34 PM**

Client ID: Run ID: **SV-3_130327A** SeqNo: **3155047** Prep Date: **3/27/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	49.68	5.0	50	0	99.4	50-120	0			
2,4,5-Trichlorophenol	88.8	5.0	100	0	88.8	50-120	0			
2,4,6-Trichlorophenol	87.66	5.0	100	0	87.7	50-120	0			
2,4-Dinitrotoluene	40.23	5.0	50	0	80.5	50-120	0			
2-Methylnaphthalene	39.69	5.0	50	0	79.4	55-120	0			
2-Methylphenol	71.05	5.0	100	0	71.1	50-120	0			
2-Nitroaniline	48.2	5.0	50	0	96.4	55-125	0			
2-Nitrophenol	88.78	5.0	100	0	88.8	55-120	0			
3&4-Methylphenol	101.7	5.0	150	0	67.8	45-120	0			
3-Nitroaniline	19.35	5.0	50	0	38.7	25-120	0			
4-Nitroaniline	34.79	5.0	50	0	69.6	50-120	0			
4-Nitrophenol	64.27	5.0	100	0	64.3	45-120	0			
Acenaphthene	45.43	5.0	50	0	90.9	55-120	0			
Acenaphthylene	45.76	5.0	50	0	91.5	55-120	0			
Aniline	18.75	5.0	50	0	37.5	30-120	0			
Anthracene	46.49	5.0	50	0	93	55-120	0			
Benz(a)anthracene	49.81	5.0	50	0	99.6	55-120	0			
Benzidine	20.46	5.0	50	0	40.9	10-120	0			
Hexachlorobenzene	46.03	5.0	50	0	92.1	55-120	0			
Hexachloroethane	41.25	5.0	50	0	82.5	55-120	0			
Indeno(1,2,3-cd)pyrene	47.39	5.0	50	0	94.8	55-120	0			
Isophorone	43.91	5.0	50	0	87.8	55-120	0			
Naphthalene	44.86	5.0	50	0	89.7	55-120	0			
Nitrobenzene	44.14	5.0	50	0	88.3	55-120	0			
N-Nitrosodimethylamine	36.13	5.0	50	0	72.3	45-120	0			
N-Nitrosodi-n-propylamine	34.59	5.0	50	0	69.2	50-120	0			
N-Nitrosodiphenylamine	48.17	5.0	50	0	96.3	55-120	0			
Pentachlorophenol	86.13	5.0	100	0	86.1	55-120	0			
Phenanthrene	45.79	5.0	50	0	91.6	55-120	0			
Phenol	73.5	5.0	100	0	73.5	50-120	0			
Pyrene	50.95	5.0	50	0	102	55-120	0			
Pyridine	30.36	5.0	50	0	60.7	35-120	0			
Surr: 2,4,6-Tribromophenol	81.62	5.0	*100*	0	*81.6*	*42-124*	0			
Surr: 2-Fluorobiphenyl	95.81	5.0	*100*	0	*95.8*	*48-120*	0			
Surr: 2-Fluorophenol	86.76	5.0	*100*	0	*86.8*	*20-120*	0			
Surr: 4-Terphenyl-d14	94.07	5.0	*100*	0	*94.1*	*51-135*	0			
Surr: Nitrobenzene-d5	95.81	5.0	*100*	0	*95.8*	*41-120*	0			
Surr: Phenol-d6	77.52	5.0	*100*	0	*77.5*	*20-120*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1303855
Project: Injection Well Quarterly

QC BATCH REPORT

Batch ID: **68756** Instrument ID **SV-3** Method: **SW8270**

LCSD Sample ID: **SLCSDW2-130327-68756** Units: **µg/L** Analysis Date: **3/27/2013 05:55 PM**

Client ID: Run ID: **SV-3_130327A** SeqNo: **3155048** Prep Date: **3/27/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,2,4-Trichlorobenzene	46.64	5.0	50	0	93.3	50-120	49.68	6.3	20	
2,4,5-Trichlorophenol	85.18	5.0	100	0	85.2	50-120	88.8	4.16	20	
2,4,6-Trichlorophenol	84.54	5.0	100	0	84.5	50-120	87.66	3.63	20	
2,4-Dinitrotoluene	39.66	5.0	50	0	79.3	50-120	40.23	1.44	20	
2-Methylnaphthalene	37.18	5.0	50	0	74.4	55-120	39.69	6.52	20	
2-Methylphenol	65.48	5.0	100	0	65.5	50-120	71.05	8.17	20	
2-Nitroaniline	44.48	5.0	50	0	89	55-125	48.2	8.04	20	
2-Nitrophenol	84.41	5.0	100	0	84.4	55-120	88.78	5.05	20	
3&4-Methylphenol	92.04	5.0	150	0	61.4	45-120	101.7	9.99	20	
3-Nitroaniline	19.94	5.0	50	0	39.9	25-120	19.35	3.03	20	
4-Nitroaniline	34.39	5.0	50	0	68.8	50-120	34.79	1.15	20	
4-Nitrophenol	63.61	5.0	100	0	63.6	45-120	64.27	1.04	20	
Acenaphthene	43.04	5.0	50	0	86.1	55-120	45.43	5.41	20	
Acenaphthylene	43.25	5.0	50	0	86.5	55-120	45.76	5.66	20	
Aniline	17.91	5.0	50	0	35.8	30-120	18.75	4.58	20	
Anthracene	44.23	5.0	50	0	88.5	55-120	46.49	4.99	20	
Benz(a)anthracene	45.91	5.0	50	0	91.8	55-120	49.81	8.15	20	
Benzidine	20.73	5.0	50	0	41.5	10-120	20.46	1.31	20	
Hexachlorobenzene	44.09	5.0	50	0	88.2	55-120	46.03	4.3	20	
Hexachloroethane	38.38	5.0	50	0	76.8	55-120	41.25	7.2	20	
Indeno(1,2,3-cd)pyrene	42.28	5.0	50	0	84.6	55-120	47.39	11.4	20	
Isophorone	40.17	5.0	50	0	80.3	55-120	43.91	8.9	20	
Naphthalene	42.22	5.0	50	0	84.4	55-120	44.86	6.07	20	
Nitrobenzene	41.46	5.0	50	0	82.9	55-120	44.14	6.27	20	
N-Nitrosodimethylamine	36.24	5.0	50	0	72.5	45-120	36.13	0.308	20	
N-Nitrosodi-n-propylamine	30.03	5.0	50	0	60.1	50-120	34.59	14.1	20	
N-Nitrosodiphenylamine	47.01	5.0	50	0	94	55-120	48.17	2.44	20	
Pentachlorophenol	82.01	5.0	100	0	82	55-120	86.13	4.9	20	
Phenanthrene	43.58	5.0	50	0	87.2	55-120	45.79	4.96	20	
Phenol	69.04	5.0	100	0	69	50-120	73.5	6.26	20	
Pyrene	47.14	5.0	50	0	94.3	55-120	50.95	7.76	20	
Pyridine	30.05	5.0	50	0	60.1	35-120	30.36	1.02	20	
Surr: 2,4,6-Tribromophenol	76.73	5.0	*100*	0	*76.7*	*42-124*	81.62	*6.18*	*20*	
Surr: 2-Fluorobiphenyl	89.6	5.0	*100*	0	*89.6*	*48-120*	95.81	*6.7*	*20*	
Surr: 2-Fluorophenol	82.43	5.0	*100*	0	*82.4*	*20-120*	86.76	*5.11*	*20*	
Surr: 4-Terphenyl-d14	87.05	5.0	*100*	0	*87.1*	*51-135*	94.07	*7.74*	*20*	
Surr: Nitrobenzene-d5	87.58	5.0	*100*	0	*87.6*	*41-120*	95.81	*8.97*	*20*	
Surr: Phenol-d6	71.04	5.0	*100*	0	*71*	*20-120*	77.52	*8.73*	*20*	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1303855
Project: Injection Well Quarterly

QC BATCH REPORT

Batch ID: **68756** Instrument ID **SV-3** Method: **SW8270**

The following samples were analyzed in this batch:	1303855-01F

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1303855
Project: Injection Well Quarterly

QC BATCH REPORT

Batch ID: **R144692** Instrument ID **VOA1** Method: **SW8260**

MBLK Sample ID: **VBLKW-130327-R144692** Units: **µg/L** Analysis Date: **3/27/2013 12:01 PM**

Client ID: Run ID: **VOA1_130327A** SeqNo: **3153674** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	ND	5.0								
1,1,2,2-Tetrachloroethane	ND	5.0								
1,1,2-Trichloroethane	ND	5.0								
1,1-Dichloroethane	ND	5.0								
1,1-Dichloroethene	ND	5.0								
1,2-Dichloroethane	ND	5.0								
2-Butanone	ND	10								
2-Chloroethyl vinyl ether	ND	10								
2-Hexanone	ND	10								
4-Methyl-2-pentanone	ND	10								
Acetone	ND	10								
Benzene	ND	5.0								
Bromodichloromethane	ND	5.0								
Bromoform	ND	5.0								
Bromomethane	ND	5.0								
Carbon disulfide	ND	10								
Carbon tetrachloride	ND	5.0								
Chlorobenzene	ND	5.0								
Chloroethane	ND	5.0								
Chloroform	ND	5.0								
Chloromethane	ND	5.0								
cis-1,3-Dichloropropene	ND	5.0								
Dibromochloromethane	ND	5.0								
Ethylbenzene	ND	5.0								
m,p-Xylene	ND	10								
Methylene chloride	ND	10								
Styrene	ND	5.0								
Tetrachloroethene	ND	5.0								
Toluene	ND	5.0								
trans-1,3-Dichloropropene	ND	5.0								
Trichloroethene	ND	5.0								
Vinyl acetate	ND	10								
Vinyl chloride	ND	2.0								
Xylenes, Total	ND	15								
Surr: 1,2-Dichloroethane-d4	48.56	5.0	*50*	0	*97.1*	*70-125*	0			
Surr: 4-Bromofluorobenzene	49.7	5.0	*50*	0	*99.4*	*72-125*	0			
Surr: Dibromofluoromethane	50.63	5.0	*50*	0	*101*	*71-125*	0			
Surr: Toluene-d8	50.65	5.0	*50*	0	*101*	*75-125*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1303855
Project: Injection Well Quarterly

QC BATCH REPORT

Batch ID: **R144692** Instrument ID **VOA1** Method: **SW8260**

LCS Sample ID: **VLCSW-130327-R144692** Units: **µg/L** Analysis Date: **3/27/2013 10:47 AM**

Client ID: Run ID: **VOA1_130327A** SeqNo: **3153673** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	53.72	5.0	50	0	107	80-120	0			
1,1,2,2-Tetrachloroethane	51.85	5.0	50	0	104	72-120	0			
1,1,2-Trichloroethane	53.1	5.0	50	0	106	80-120	0			
1,1-Dichloroethane	50.79	5.0	50	0	102	76-120	0			
1,1-Dichloroethene	53.7	5.0	50	0	107	73-124	0			
1,2-Dichloroethane	56.13	5.0	50	0	112	78-120	0			
2-Butanone	102	10	100	0	102	58-132	0			
2-Chloroethyl vinyl ether	110.8	10	100	0	111	74-120	0			
2-Hexanone	95.73	10	100	0	95.7	61-130	0			
4-Methyl-2-pentanone	100.9	10	100	0	101	65-127	0			
Acetone	100.7	10	100	0	101	59-137	0			
Benzene	55.45	5.0	50	0	111	73-121	0			
Bromodichloromethane	57.11	5.0	50	0	114	80-120	0			
Bromoform	54.58	5.0	50	0	109	79-120	0			
Bromomethane	63.78	5.0	50	0	128	60-145	0			
Carbon disulfide	107.4	10	100	0	107	68-141	0			
Carbon tetrachloride	52.32	5.0	50	0	105	75-124	0			
Chlorobenzene	48.25	5.0	50	0	96.5	80-120	0			
Chloroethane	63.88	5.0	50	0	128	70-130	0			
Chloroform	56.86	5.0	50	0	114	80-120	0			
Chloromethane	56.47	5.0	50	0	113	67-123	0			
cis-1,3-Dichloropropene	56.88	5.0	50	0	114	80-120	0			
Dibromochloromethane	52.37	5.0	50	0	105	80-120	0			
Ethylbenzene	50.83	5.0	50	0	102	80-120	0			
m,p-Xylene	107.3	10	100	0	107	78-121	0			
Methylene chloride	58.65	10	50	0	117	65-133	0			
Styrene	54.45	5.0	50	0	109	80-120	0			
Tetrachloroethene	48.75	5.0	50	0	97.5	79-120	0			
Toluene	51.05	5.0	50	0	102	80-120	0			
trans-1,3-Dichloropropene	57.12	5.0	50	0	114	80-120	0			
Trichloroethene	53.05	5.0	50	0	106	80-120	0			
Vinyl acetate	112.6	10	100	0	113	67-139	0			
Vinyl chloride	61.31	2.0	50	0	123	70-127	0			
Xylenes, Total	160.3	15	150	0	107	80-120	0			
Surr: 1,2-Dichloroethane-d4	52.17	5.0	*50*	0	*104*	*70-125*	0			
Surr: 4-Bromofluorobenzene	49	5.0	*50*	0	*98*	*72-125*	0			
Surr: Dibromofluoromethane	53.46	5.0	*50*	0	*107*	*71-125*	0			
Surr: Toluene-d8	49.09	5.0	*50*	0	*98.2*	*75-125*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1303855
Project: Injection Well Quarterly

QC BATCH REPORT

Batch ID: **R144692** Instrument ID **VOA1** Method: **SW8260**

MS Sample ID: **1303880-02AMS** Units: **µg/L** Analysis Date: **3/27/2013 04:07 PM**

Client ID: Run ID: **VOA1_130327A** SeqNo: **3154160** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	53.16	5.0	50	0	106	80-120	0			
1,1,2,2-Tetrachloroethane	50.78	5.0	50	0	102	72-120	0			
1,1,2-Trichloroethane	53.3	5.0	50	0	107	80-120	0			
1,1-Dichloroethane	55.4	5.0	50	0	111	76-120	0			
1,1-Dichloroethene	49.99	5.0	50	0	100	73-124	0			
1,2-Dichloroethane	51.09	5.0	50	0	102	78-120	0			
2-Butanone	118.8	10	100	0	119	58-132	0			
2-Chloroethyl vinyl ether	ND	10	100	0	0	74-120	0			S
2-Hexanone	112.2	10	100	0	112	61-130	0			
4-Methyl-2-pentanone	122.2	10	100	0	122	65-127	0			
Acetone	105	10	100	0	105	59-137	0			
Benzene	48.55	5.0	50	0	97.1	73-121	0			
Bromodichloromethane	52.48	5.0	50	0	105	80-120	0			
Bromoform	53.38	5.0	50	0	107	79-120	0			
Bromomethane	40.05	5.0	50	0	80.1	60-145	0			
Carbon disulfide	99.1	10	100	0	99.1	68-141	0			
Carbon tetrachloride	46.5	5.0	50	0	93	75-124	0			
Chlorobenzene	48.96	5.0	50	0	97.9	80-120	0			
Chloroethane	57.33	5.0	50	0	115	70-130	0			
Chloroform	53.98	5.0	50	0	108	80-120	0			
Chloromethane	41.3	5.0	50	0	82.6	67-123	0			
cis-1,3-Dichloropropene	48.53	5.0	50	0	97.1	80-120	0			
Dibromochloromethane	54.02	5.0	50	0	108	80-120	0			
Ethylbenzene	46.34	5.0	50	0	92.7	80-120	0			
m,p-Xylene	97.8	10	100	0	97.8	78-121	0			
Methylene chloride	59.97	10	50	0	120	65-133	0			
Styrene	52.33	5.0	50	0	105	80-120	0			
Tetrachloroethene	42.49	5.0	50	0	85	79-120	0			
Toluene	50.72	5.0	50	0	101	80-120	0			
trans-1,3-Dichloropropene	52.03	5.0	50	0	104	80-120	0			
Trichloroethene	45.51	5.0	50	0	91	80-120	0			
Vinyl acetate	118.1	10	100	0	118	67-139	0			
Vinyl chloride	50.68	2.0	50	0	101	70-127	0			
Xylenes, Total	147.4	15	150	0	98.3	80-120	0			
Surr: 1,2-Dichloroethane-d4	51.5	5.0	*50*	0	*103*	*70-125*	0			
Surr: 4-Bromofluorobenzene	52.78	5.0	*50*	0	*106*	*72-125*	0			
Surr: Dibromofluoromethane	54.24	5.0	*50*	0	*108*	*71-125*	0			
Surr: Toluene-d8	50.68	5.0	*50*	0	*101*	*75-125*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1303855
Project: Injection Well Quarterly

QC BATCH REPORT

Batch ID: **R144692** Instrument ID **VOA1** Method: **SW8260**

MSD Sample ID: **1303880-02AMSD** Units: **µg/L** Analysis Date: **3/27/2013 04:32 PM**

Client ID: Run ID: **VOA1_130327A** SeqNo: **3154161** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	52.35	5.0	50	0	105	80-120	53.16	1.53	20	
1,1,2,2-Tetrachloroethane	47.84	5.0	50	0	95.7	72-120	50.78	5.97	20	
1,1,2-Trichloroethane	55.66	5.0	50	0	111	80-120	53.3	4.33	20	
1,1-Dichloroethane	53.79	5.0	50	0	108	76-120	55.4	2.97	20	
1,1-Dichloroethene	49.14	5.0	50	0	98.3	73-124	49.99	1.72	20	
1,2-Dichloroethane	52.85	5.0	50	0	106	78-120	51.09	3.38	20	
2-Butanone	106.7	10	100	0	107	58-132	118.8	10.7	20	
2-Chloroethyl vinyl ether	ND	10	100	0	0	74-120	0	0	20	S
2-Hexanone	116.6	10	100	0	117	61-130	112.2	3.85	20	
4-Methyl-2-pentanone	119.3	10	100	0	119	65-127	122.2	2.36	20	
Acetone	94.96	10	100	0	95	59-137	105	10.1	20	
Benzene	48.8	5.0	50	0	97.6	73-121	48.55	0.498	20	
Bromodichloromethane	51.3	5.0	50	0	103	80-120	52.48	2.29	20	
Bromoform	54.41	5.0	50	0	109	79-120	53.38	1.92	20	
Bromomethane	43.99	5.0	50	0	88	60-145	40.05	9.37	20	
Carbon disulfide	99.03	10	100	0	99	68-141	99.1	0.0691	20	
Carbon tetrachloride	49.81	5.0	50	0	99.6	75-124	46.5	6.88	20	
Chlorobenzene	46.31	5.0	50	0	92.6	80-120	48.96	5.56	20	
Chloroethane	54.21	5.0	50	0	108	76-121	57.33	5.6	20	
Chloroform	53.92	5.0	50	0	108	80-120	53.98	0.111	20	
Chloromethane	41.96	5.0	50	0	83.9	67-123	41.3	1.59	20	
cis-1,3-Dichloropropene	52.97	5.0	50	0	106	80-120	48.53	8.74	20	
Dibromochloromethane	54.57	5.0	50	0	109	80-120	54.02	1.01	20	
Ethylbenzene	50.09	5.0	50	0	100	80-120	46.34	7.76	20	
m,p-Xylene	102.8	10	100	0	103	78-121	97.8	4.98	20	
Methylene chloride	55.34	10	50	0	111	65-133	59.97	8.03	20	
Styrene	52.71	5.0	50	0	105	80-120	52.33	0.717	20	
Tetrachloroethene	45.86	5.0	50	0	91.7	79-120	42.49	7.61	20	
Toluene	52.2	5.0	50	0	104	80-120	50.72	2.88	20	
trans-1,3-Dichloropropene	52.07	5.0	50	0	104	80-120	52.03	0.0724	20	
Trichloroethene	46.98	5.0	50	0	94	80-120	45.51	3.18	20	
Vinyl acetate	107.9	10	100	0	108	67-139	118.1	9.06	20	
Vinyl chloride	51.41	2.0	50	0	103	70-127	50.68	1.42	20	
Xylenes, Total	152.2	15	150	0	101	78-121	147.4	3.18	20	
Surr: 1,2-Dichloroethane-d4	52.3	5.0	*50*	0	*105*	*70-125*	51.5	*1.54*	*20*	
Surr: 4-Bromofluorobenzene	55.23	5.0	*50*	0	*110*	*72-125*	52.78	*4.54*	*20*	
Surr: Dibromofluoromethane	52.95	5.0	*50*	0	*106*	*71-125*	54.24	*2.41*	*20*	
Surr: Toluene-d8	51	5.0	*50*	0	*102*	*75-125*	50.68	*0.633*	*20*	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1303855
Project: Injection Well Quarterly

QC BATCH REPORT

Batch ID: **R144692** Instrument ID **VOA1** Method: **SW8260**

The following samples were analyzed in this batch:	1303855-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1303855
Project: Injection Well Quarterly

QC BATCH REPORT

Batch ID: **R144618** Instrument ID **ManTech01** Method: **M2510 B** **(Dissolve)**

MBLK Sample ID: **WBLKW1-130326-R144618** Units: **µmhos/cm** Analysis Date: **3/26/2013 02:02 PM**
Client ID: Run ID: **MANTECH01_130326B** SeqNo: **3152044** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Specific Conductivity	ND	1.0								

LCS Sample ID: **LCS-COND-R144618** Units: **µmhos/cm** Analysis Date: **3/26/2013 02:03 PM**
Client ID: Run ID: **MANTECH01_130326B** SeqNo: **3152045** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Specific Conductivity	1440	1.0	1413	0	102	80-120	0			

DUP Sample ID: **1303819-01HDUP** Units: **µmhos/cm** Analysis Date: **3/26/2013 02:06 PM**
Client ID: Run ID: **MANTECH01_130326B** SeqNo: **3152047** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Specific Conductivity	225.8	1.0	0	0	0		225.8	0	20	

The following samples were analyzed in this batch: 1303855-01C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1303855
Project: Injection Well Quarterly

QC BATCH REPORT

Batch ID: **R144619** Instrument ID **ManTech01** Method: **SM2320B** **(Dissolve)**

MBLK Sample ID: **WBLKW1-130326-R144619** Units: **mg/L** Analysis Date: **3/26/2013 10:41 AM**
Client ID: Run ID: **MANTECH01_130326C** SeqNo: **3151868** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	ND	6.0								
Alkalinity, Carbonate (As CaCO3)	ND	6.0								
Alkalinity, Hydroxide (As CaCO3)	ND	6.0								
Alkalinity, Total (As CaCO3)	ND	6.0								

LCS Sample ID: **WLCSW1-130326-R144619** Units: **mg/L** Analysis Date: **3/26/2013 10:47 AM**
Client ID: Run ID: **MANTECH01_130326C** SeqNo: **3151869** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Total (As CaCO3)	1091	6.0	1000	0	109	80-120	0			

DUP Sample ID: **1303819-01HDUP** Units: **mg/L** Analysis Date: **3/26/2013 11:12 AM**
Client ID: Run ID: **MANTECH01_130326C** SeqNo: **3151875** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Alkalinity, Bicarbonate (As CaCO3)	93.73	6.0	0	0	0	0-0	92.43	1.4	0	
Alkalinity, Carbonate (As CaCO3)	ND	6.0	0	0	0	0-0	0	0	0	
Alkalinity, Hydroxide (As CaCO3)	ND	6.0	0	0	0	0-0	0	0	0	
Alkalinity, Total (As CaCO3)	93.73	6.0	0	0	0	0-0	92.43	1.4	20	

The following samples were analyzed in this batch: 1303855-01D

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1303855
Project: Injection Well Quarterly

QC BATCH REPORT

Batch ID: **R144637** Instrument ID **ManTech01** Method: **SW9040** **(Dissolve)**

LCS Sample ID: **LCS-PH-R144637** Units: **pH units** Analysis Date: **3/26/2013 10:50 AM**
Client ID: Run ID: **MANTECH01_130326D** SeqNo: **3152391** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	6.51	0.10	6	0	108	90-110	0			

DUP Sample ID: **1303819-01ZDUP** Units: **pH units** Analysis Date: **3/26/2013 11:12 AM**
Client ID: Run ID: **MANTECH01_130326D** SeqNo: **3152396** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.27	0.10	0	0	0	0-0	8.28	0.121	20	

The following samples were analyzed in this batch: 1303855-01C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1303855
Project: Injection Well Quarterly

QC BATCH REPORT

Batch ID: **R144691** Instrument ID **WetChem** Method: **SW1010** **(Dissolve)**

LCS Sample ID: **WLCSW1-130327-R144691** Units: **°F** Analysis Date: **3/27/2013 12:00 PM**

Client ID: Run ID: **WETCHEM_130327D** SeqNo: **3153656** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ignitability	85	50	84	0	101	80-120	0			

DUP Sample ID: **1303824-01DDUP** Units: **°F** Analysis Date: **3/27/2013 12:00 PM**

Client ID: Run ID: **WETCHEM_130327D** SeqNo: **3153660** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ignitability	ND	50	0	0	0	0-0	0	0	25	

The following samples were analyzed in this batch: 1303855-01E

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1303855
Project: Injection Well Quarterly

QC BATCH REPORT

Batch ID: **R144712** Instrument ID **Balance1** Method: **M2540C** **(Dissolve)**

MBLK Sample ID: **WBLK-032613-R144712** Units: **mg/L** Analysis Date: **3/26/2013 06:05 PM**
Client ID: Run ID: **BALANCE1_130326C** SeqNo: **3154077** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fil	ND	10								

LCS Sample ID: **WLCS-032613-R144712** Units: **mg/L** Analysis Date: **3/26/2013 06:05 PM**
Client ID: Run ID: **BALANCE1_130326C** SeqNo: **3154078** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fil	1022	10	1000	0	102	85-115	0			

DUP Sample ID: **1303714-01FDUP** Units: **mg/L** Analysis Date: **3/26/2013 06:05 PM**
Client ID: Run ID: **BALANCE1_130326C** SeqNo: **3154070** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fil	464	10	0	0	0	0-0	456	1.74	20	

DUP Sample ID: **1303876-01FDUP** Units: **mg/L** Analysis Date: **3/26/2013 06:05 PM**
Client ID: Run ID: **BALANCE1_130326C** SeqNo: **3155604** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolved Solids (Residue, Fil	472	10	0	0	0	0-0	476	0.844	20	

The following samples were analyzed in this batch: 1303855-01D

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Work Order: 1303855
Project: Injection Well Quarterly

QC BATCH REPORT

Batch ID: **R144819** Instrument ID **ICS3K2** Method: **E300** **(Dissolve)**

MBLK Sample ID: **WBLKW1-R144819** Units: **mg/L** Analysis Date: **3/28/2013 12:15 PM**
Client ID: Run ID: **ICS3K2_130328A** SeqNo: **3156592** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	ND	0.10								
Chloride	ND	0.50								
Fluoride	ND	0.10								
Sulfate	ND	0.50								
Surr: Selenate (surr)	4.899	0.10	*5*	0	*98*	*85-115*	0			

LCS Sample ID: **WLCSW1-R144819** Units: **mg/L** Analysis Date: **3/28/2013 12:37 PM**
Client ID: Run ID: **ICS3K2_130328A** SeqNo: **3156593** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	3.848	0.10	4	0	96.2	90-110	0			
Chloride	20.42	0.50	20	0	102	90-110	0			
Fluoride	3.645	0.10	4	0	91.1	90-110	0			
Sulfate	19.09	0.50	20	0	95.5	90-110	0			
Surr: Selenate (surr)	4.847	0.10	*5*	0	*96.9*	*85-115*	0			

MS Sample ID: **1303813-45DMS** Units: **mg/L** Analysis Date: **3/28/2013 04:18 PM**
Client ID: Run ID: **ICS3K2_130328A** SeqNo: **3156599** Prep Date: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	10.62	0.50	10	0	106	80-120	0			
Chloride	72.64	2.5	50	24.99	95.3	80-120	0			
Fluoride	8.866	0.50	10	0.139	87.3	80-120	0			
Sulfate	155.8	2.5	50	106	99.6	80-120	0			
Surr: Selenate (surr)	22.85	0.50	*25*	0	*91.4*	*85-115*	0			

MSD Sample ID: **1303813-45DMSD** Units: **mg/L** Analysis Date: **3/28/2013 04:40 PM**
Client ID: Run ID: **ICS3K2_130328A** SeqNo: **3156600** Prep Date: DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	10.65	0.50	10	0	106	80-120	10.62	0.244	20	
Chloride	72.71	2.5	50	24.99	95.4	80-120	72.64	0.1	20	
Fluoride	8.976	0.50	10	0.139	88.4	80-120	8.866	1.23	20	
Sulfate	156.8	2.5	50	106	101	80-120	155.8	0.582	20	
Surr: Selenate (surr)	23.07	0.50	*25*	0	*92.3*	*85-115*	22.85	*0.949*	*20*	

The following samples were analyzed in this batch: 1303855-01D

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company
Project: Injection Well Quarterly
WorkOrder: **1303855**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
M	Manually integrated, see raw data for justification
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DCS	Detectability Check Study
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
SD	Serial Dilution
SDL	Sample Detection Limit
TRRP	Texas Risk Reduction Program

Units Reported	Description
°F	Farenheit degrees
µmhos/cm	
mg/Kg	Milligrams per Kilogram
mg/L	Milligrams per Liter
pH units	

ALS Environmental

Sample Receipt Checklist

Client Name: **NAVAJO REFINING** Date/Time Received: **22-Mar-13 09:30**

Work Order: **1303855** Received by: **RDN**

Checklist completed by Paresh M. Giga (eSignature) 25-Mar-13 (Date) Reviewed by: Sonia Wist (eSignature) 26-Mar-13 (Date)

Matrices: Water
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	2.1c C/U	IR1	
Cooler(s)/Kit(s):	2896		
Date/Time sample(s) sent to storage:	3/25/13 16:50		
Water - VOA vials have zero headspace?	Yes ☑	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☑	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

☑ ALS Laboratory Group
10450 Stancliff Rd. #210
Houston, Texas 77099
(Tel) 281.530.5656
(Fax) 281.530.5887

Chain of Custody Fo

Page 1 of 1

1303855

NAVAJO REFINING: Navajo Refining Company

Project: Injection Well Quarterly

ALS Project Manager: Pat Lynch

Customer Information		Project Information	
Purchase Order		Project Name	Injection Well Quarterly
Work Order		Project Number	
Company Name	Navajo Refining Company	Bill To Company	Navajo Refining Company
Send Report To	Aaron Strange	Invoice Attn.	Aaron Strange
Address	P. O. Box 159	Address	501 East Main
City/State/Zip	Artesia, New Mexico 88211-0159	City/State/Zip	Artesia, New Mexico 88210
Phone	(575) 748-3311	Phone	(575) 748-3311
Fax	(575) 746-5451	Fax	(575) 746-5451
e-Mail Address	Aaron.Strange@hollyfrontier.com	e-Mail Address	Aaron.Strange@hollyfrontier.com

A	VOC (8260) Select
B	SVOC (8270) Select
C	Total Metals (6020 / 7000) NM GW Metals + Ca, K, Mg, Na
D	R.C.I. Profile
E	Anions (300) F, Cl, SO4, Br
F	Alkalinity
G	pH
H	Conductivity
I	TDS
J	Specific Gravity

No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	WW Effluent	3/21/13	14:55	Liquid	Yes	10	X	X	X	X	X	X	X	X	X	X	
2	Temperature Blank					1											
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Sampler(s): Please Print & Sign
Aaron Strange

Shipment Method: FedEx

Required Turnaround Time: ☑ STD 10 Wk Days ☐ 5 Wk Days ☐ 2 Wk Days ☐ 24 Hour ☐ Other _____

Results Due Date:

Relinquished by: Aaron Strange	Date: 3/21/2013	Time: 16:15	Received by:	Notes: See attachment for more detail.
Relinquished by:	Date: 3/22/13	Time: 09:30	Received by (Laboratory): RN AS	Cooler Temp.
Logged by (Laboratory):	Date:	Time:	Checked by (Laboratory):	

QC Package: (Check Box Below)

- ☐ Level II: Standard QC
- ☐ Level III: Std QC + Raw Data
- ☐ Level IV: SW846 CLP-Like
- ☐ Other: _____
- ☐ TRRP-Checklist
- ☐ TRRP Level IV

Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-5035

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.

ALS Group USA, Corp

Date: 28-Mar-13

Client: ALS Environmental
Project: 1303855
Work Order: **1303831**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1303831-01	1303855-01H	Liquid		3/21/2013 14:55	3/26/2013 09:30	☐

ALS Group USA, Corp

Date: 28-Mar-13

Client: ALS Environmental
Project: 1303855
WorkOrder: **1303831**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
RPD	Relative Percent Difference
TDL	Target Detection Limit
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
mg/Kg	Milligrams per Kilogram

ALS Group USA, Corp

Date: *28-Mar-13*

Client: ALS Environmental
Project: 1303855
Work Order: 1303831
Sample ID: 1303855-01H
Lab ID: 1303831-01
Collection Date: 3/21/2013 02:55 PM
Matrix: LIQUID

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CYANIDE, REACTIVE			**SW7.3.3.2**			Analyst: **EE**
Cyanide, Reactive	ND		40.0	mg/Kg	1	3/28/2013 09:45 AM
SULFIDE, REACTIVE			**SW7.3.4.2**			Analyst: **EE**
Sulfide, Reactive	ND		40.0	mg/Kg	1	3/28/2013 09:45 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

QC BATCH REPORT

Batch ID: **R118051** Instrument ID **WETCHEM** Method: **SW7.3.4.2**

MBLK Sample ID: **WBLKW1-032813-R118051** Units: **mg/Kg** Analysis Date: **3/28/2013 09:45 AM**
Client ID: Run ID: **WETCHEM_130328I** SeqNo: **2252596** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide, Reactive	ND	40								

LCS Sample ID: **WLCSW1-032813-R118051** Units: **mg/Kg** Analysis Date: **3/28/2013 09:45 AM**
Client ID: Run ID: **WETCHEM_130328I** SeqNo: **2252597** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sulfide, Reactive	699.2	40	1075	0	65	60-120	0			

The following samples were analyzed in this batch: 1303831-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ALS Environmental
Work Order: 1303831
Project: 1303855

QC BATCH REPORT

Batch ID: **R118052** Instrument ID **WETCHEM** Method: **SW7.3.3.2**

MBLK	Sample ID: **WBLKW1-032813-R118052**				Units: **mg/Kg**			Analysis Date: **3/28/2013 09:45 AM**		
Client ID:		Run ID: **WETCHEM_130328J**			SeqNo: **2252608**		Prep Date:		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	ND	40								

LCS	Sample ID: **WLCSW1-032813-R118052**				Units: **mg/Kg**			Analysis Date: **3/28/2013 09:45 AM**		
Client ID:		Run ID: **WETCHEM_130328J**			SeqNo: **2252609**		Prep Date:		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	234.9	40	250	0	94	75-125	0			

MS	Sample ID: **1303827-01A MS**				Units: **mg/Kg**			Analysis Date: **3/28/2013 09:45 AM**		
Client ID:		Run ID: **WETCHEM_130328J**			SeqNo: **2252611**		Prep Date:		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	218.9	40	250	0	87.6	50-150	0			

MSD	Sample ID: **1303827-01A MSD**				Units: **mg/Kg**			Analysis Date: **3/28/2013 09:45 AM**		
Client ID:		Run ID: **WETCHEM_130328J**			SeqNo: **2252612**		Prep Date:		DF: **1**	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide, Reactive	233.5	40	250	0	93.4	50-150	218.9	6.45	35	

The following samples were analyzed in this batch: 1303831-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

1303831

Subcontractor:
ALS Laboratory Group
3352 128th Ave.
Holland, MI 49424
TEL: (616) 399-6070
FAX: (616) 399-6185
Acct #:

CHAIN-OF-CUSTODY RECORD

Date: 25-Mar-13
COC ID: 13717
Due Date 28-Mar-13

Salesperson: Mala H. Belmonte

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	1303855	A	Reactive Cyanide (SW-846)
Work Order		Project Number		B	Reactive Sulfide (SW-846)
Company Name	ALS Group USA, Corp.	Bill To Company	ALS Group USA, Corp.	C	
Send Report To	Sonia West	Inv Attn	Accounts Payable	D	
Address	10450 Stancliff Rd, Suite 210	Address	10450 Stancliff Rd, Suite 210	E	
				F	
City/State/Zip	Houston, Texas 77099-4338	City/State/Zip	Houston, Texas 77099-4338	G	
Phone	(281) 530-5656	Phone	(281) 530-5656	H	
Fax	(281) 530-5887	Fax	(281) 530-5887	I	
eMail Address	Sonia.West@alsglobal.com	eMail CC		J	

Sample ID	Matrix	Collection Date 24hr	Bottle	A	B	C	D	E	F	G	H	I	J
1303855-01H (WW Effluent)	Liquid	21/Mar/2013 14:55	(1) 250PNEAT	X	X								

Comments:

Please analyze for reactive cyanide & reactive sulfide. Due on 3/28/13. Send report to sonia.west@alsglobal.com & cc : results to jumoke.lawal@alsglobal.com & luke.hernandez@alsglobal.com

Relinquished by:	Date/Time	Received by:	Date/Time	Cooler IDs	Report/QC Level
	3/25/13 1800				Std
Relinquished by:	Date/Time	Received by:	Date/Time		
			3/26/13 0930		

3.2°C

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **ALS - HOUSTON** Date/Time Received: **26-Mar-13 09:30**

Work Order: **1303831** Received by: **DS**

Checklist completed by Diane Shaw (eSignature) 26-Mar-13 (Date) Reviewed by: Bill Carey (eSignature) 26-Mar-13 (Date)

Matrices: Liquid
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.2 c		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	3/26/2013 1:31:30 PM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

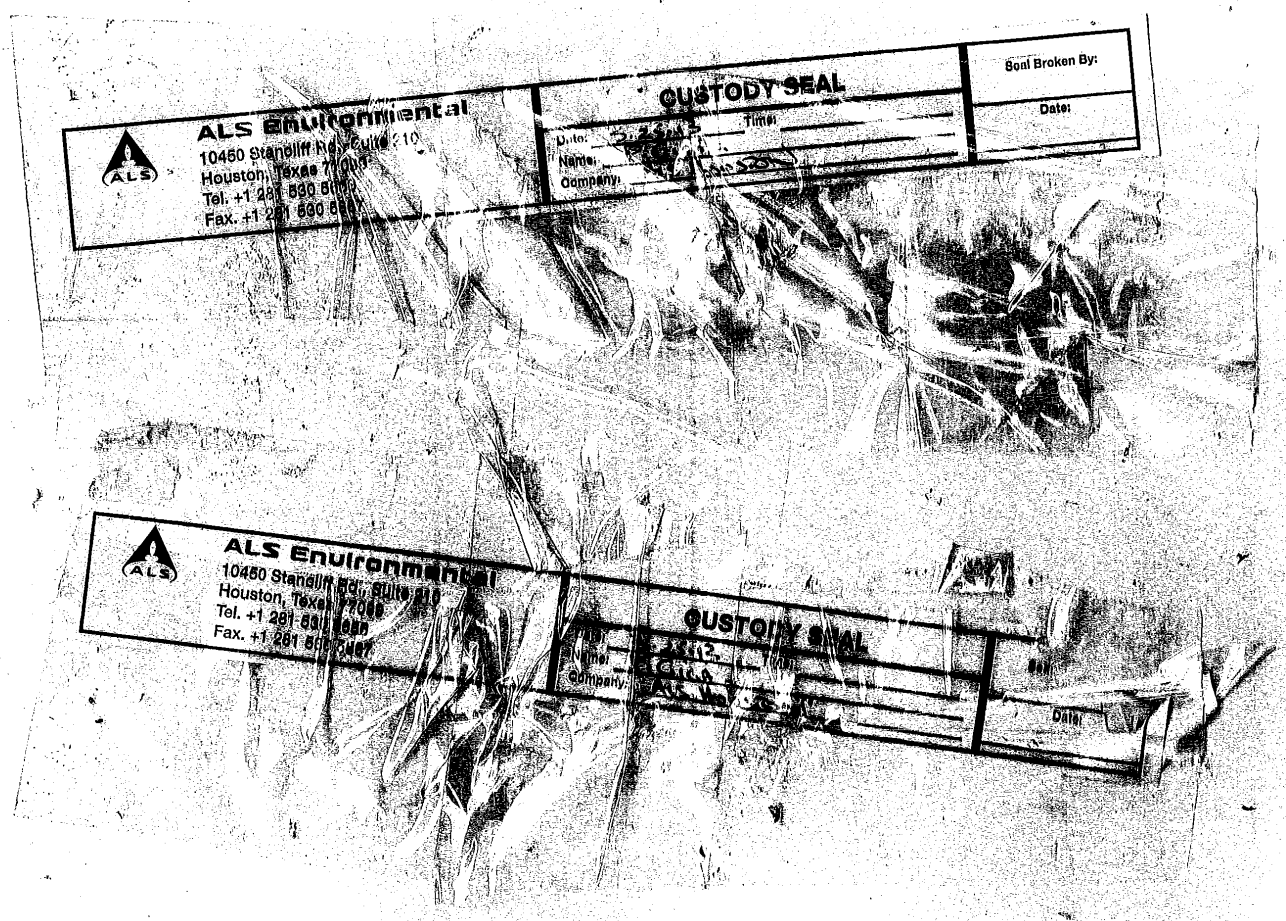
Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:


ALS Environmental
CUSTODY SEAL
Seal Broken By:
Date:
Time:
Name:
Company:
ALS Environmental
CUSTODY SEAL
Date:

Certificate of Analysis

SINCE 1985

Quality Controlled Through Analysis

10630 FALLSTONE RD. HOUSTON, TEXAS 77099
P.O. BOX 741905, HOUSTON, TEXAS 77274

TEL: (281) 495-2400
FAX: (281) 495-2410

CLIENT:	ALS Group USA, Corp.	**REQUESTED BY:**	Ms. Sonia West
CLIENT PROJECT:	1303855-01G	**PURCHASE ORDER NO:**	10-2125597
LABORATORY NO:	70395	**REPORT DATE:**	March 28, 2013
SAMPLE:	1303855-01G (WW Effluent)		

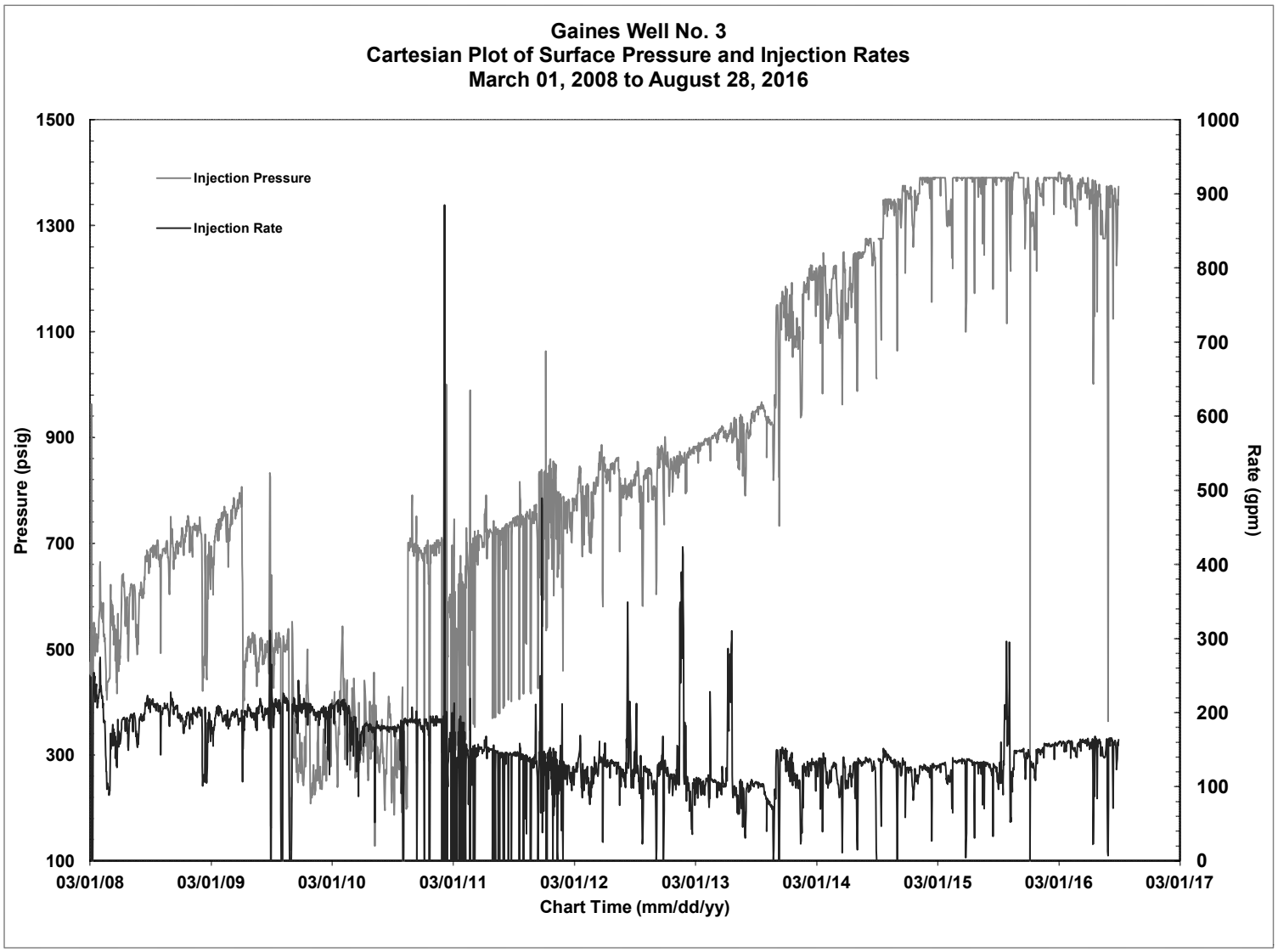
TEST **RESULT**

API Gravity of Petroleum Products, Hydrometer Method (Density, Relative Density, Specific Gravity), ASTM D 1298

	Results
Specific Gravity @ 60°F(15°C)	0.9998
Density, g/cm³	0.9958

Respectfully submitted
For Texas OilTech Laboratories, L.P.

A. Phillip Sorurbakhsh
Director of Laboratory Operations


Gaines Well No. 3
Cartesian Plot of Surface Pressure and Injection Rates
March 01, 2008 to August 28, 2016
Injection Pressure
Injection Rate
Pressure (psig)
Rate (gpm)
1500
1300
1100
900
700
500
300
100
1000
900
800
700
600
500
400
300
200
100
0
03/01/08
03/01/09
03/01/10
03/01/11
03/01/12
03/01/13
03/01/14
03/01/15
03/01/16
03/01/17
Chart Time (mm/dd/yy)

PREDICTW - RESERVOIR PRESSURE INCREASE PROGRAM

The pressure response for radial flow of a slightly compressible fluid in a planar (porous) injection layer with spatially-constant properties is determined by the well-known diffusivity equation (Lee, 1982):

$$\frac{\partial^2 p}{\partial r^2} + \frac{1}{r}\frac{\partial p}{\partial r} = \frac{\phi \mu c_t}{0.000264k}\frac{\partial p}{\partial t}, \qquad \text{Equation 1}$$

where ϕ, μ, c_t, and k refer to porosity, viscosity (cp), compressibility (psi^{-1}), and permeability (md), respectively. The pressure, p, is expressed in psi; radial distance, r, is in feet; and time, t, is indicated in hours. For an infinite reservoir of thickness h (ft) with $p \rightarrow p_o$ (initial pressure) as $r \rightarrow \infty$, the transient pressure, p (r, t), for a single line source injector at r = 0 is determined from Equation 1 as (Muskat, 1937):

$$p\,(r,t) = p_o - \frac{70.6\,q\mu}{kh}\,Ei\left(\frac{-39.5\phi\mu c_t r^2}{kt}\right), \qquad \text{Equation 2}$$

where Ei represents the exponential integral defined by:

$$Ei\,(-x) = -\int_x^{\infty} \frac{e^{-\varepsilon}}{\varepsilon}\,d\varepsilon,$$

and q represents the (constant) injection rate in barrels per day (bbl/day). Time, t, in Equation 2 is expressed in days.

For the general case of multiple wells in a single layer, in which injection from each is represented by a succession of piece-wise constant flow rate intervals, the pressure response is readily obtained by superposition of elementary solutions given by Equation 1. In terms of Cartesian coordinates, the pressure transient at an arbitrary point (x, y) is given by:

$$p(x,y,t) = p_o + \sum_{j=1}^{N} \frac{70.6\,q_1^j\mu}{kh}\,Ei\left(\frac{-39.5\phi\mu c_t\left[(x-x_j)^2 + (y-y_j)^2\right]}{kt}\right)$$

$$+ \sum_{j=1}^{N}\sum_{i=1}^{n_{j-1}} \frac{70.6\,[(q_{i+1}^j - q_i^j)\mu]}{kh}\,Ei\left(\frac{-39.5\phi\mu c_t\left[(x-x_j)^2 + (y-y_j)^2\right]}{k(t-t_i^j)}\right) \qquad \text{Equation 3}$$

for all $t_i^j < t$. In Equation 3, the following notation is employed:

N	=	number of wells injecting into the reservoir
n_j	=	number of constant flow rate increments for well j operative over time t
i	=	flow rate summation index ($1 < i < n_j$)
j	=	well number summation index ($1 < j < N$)
t_i^j	=	cumulative time corresponding to the end of injection rate interval i for well j
x_j, y_j	=	cartesian coordinates of well j
q_i^j	=	flow rate from well j during flow increment i

Equation 3 forms the basis for determining the cone of influence for a general multi-well system.

To determine shutin or flowing pressures at a generic wellbore location, Equation 3 is modified to include a dimensionless skin factor, s_b, which reflects the effects of altered properties in the near-wellbore region (Van Everdingen, 1953). The associated augmentation, Δp^b_{skin}, of the theoretical flowing pressure is assumed to be of the form:

$$\Delta p^b_{skin}\ (psi) = 141.2\ \frac{q_i^b \mu}{kh}\ s_b \qquad \text{Equation 4}$$

Incorporation of Equation 4 into Equation 3 and replacement of the quantity $[(x-x_b)^2 + (y-y_b)^2]$ in the Ei-function argument by $r^2_{w,b}$ (wellbore radius squared) leads to the following expression for the transient flowing pressure at a generic wellbore (b):

$$p^b_{wf}(x_b,y_b,t) = p_o + \sum_{j=1}^{N} \frac{70.6 q_1^j \mu}{kh}\ Ei\left(\frac{-39.5\phi\mu c_t[(x_b-x_j)^2 + (y_b-y_j)^2]}{kt}\right)$$

$$+ \sum_{j=1(j\neq b)}^{N} \sum_{i=1}^{n_{j-1}} \frac{70.6(q_{i+1}^j - q_i^j)\mu}{kh}\ Ei\left(\frac{-39.5\phi\mu c_t[(x_b-x_j)^2 + (y_b-y_j)^2]}{k(t-t_i^j)}\right)$$

$$+ \frac{70.6 q_1^b \mu}{kh}\left[Ei\left(\frac{-39.5\phi\mu c_t r^2_{w,b}}{kt}\right) - 2s_b\right]$$

$$+ \sum_{i=1}^{n_{j-1}} \frac{70.6(q_{i+1}^b - q_i^b)\mu}{kh}\left[Ei\left(\frac{-39.5\phi\mu c_t r^2_{w,b}}{k(t-t_i^b)}\right) - 2s_b\right]$$

Equation 5

where x_b, y_b denote the wellbore coordinates at well b where the pressure response is evaluated.

Application of Equations 3 and 5 to address actual operational conditions often requires inclusion of many wells (including image injectors), each having several hundred flow rate increments. Accordingly, a Visual Basic computer program, PREDICTW, was created to evaluate these equations. When isobaric contours at a given time in a given injection zone are desired, Equation 3, actually $p - p_o$, is evaluated at each node of a predefined uniform grid. The resulting Δp-x-y array is then input into a 3-D graphics routine, SURFER (® Golden Software, Inc.), to generate selected isobaric contours. When transient wellbore responses are desired to determine flowing pressures at a given well or to simulate pressure falloff tests, Equation 5 is utilized. The output for this case consists of a record of $\Delta p = p - p_o$ at a single well location over a specified time interval.

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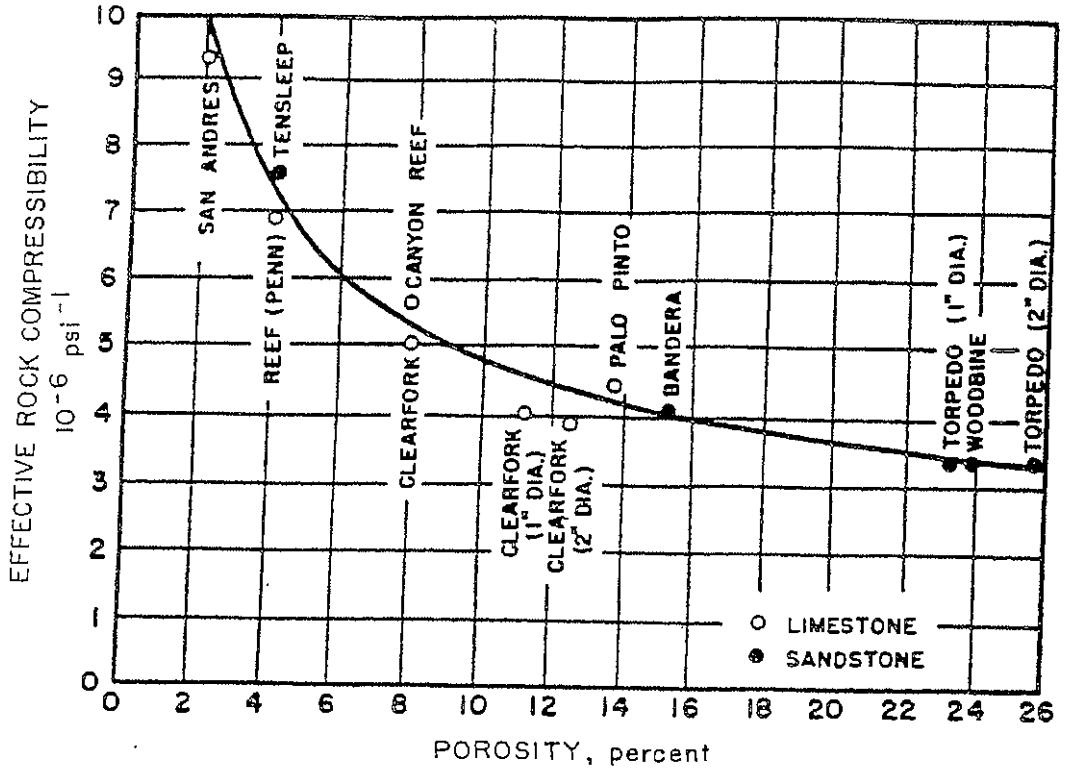

Fig. G.5 Effective formation (rock) compressibility. From Hall, *Trans.*, AIME (1953) **198**, 309.

Source: Matthews and Russell, 1967, Pressure Buildup and Flow Tests in Wells