NM OIL CONSERVATION
OCD ARTESIA DISTRICT

MAR 27 2017

RECEIVED

Form 3160-3
(March 2012)

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM 117546

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.

1b. Type of Well: ☐ Oil Well ☑ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No. 317563
RIO BRAVO 17/20 W2AP FED C 1H

2. Name of Operator
MEWBOURNE OIL COMPANY

9. API Well No.
30-015-44110

3a. Address
PO Box 5270 Hobbs NM 88240

3b. Phone No. *(include area code)*
(575)393-5905

10. Field and Pool, or Exploratory
Avalon ~~WILDCAT~~ / WOLFCAMP 71120

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface NENE / 195 FNL / 1225 FEL / LAT 32.4862638 / LONG -104.4130271
At proposed prod. zone SESE / 330 FSL / 660 FEL / LAT 32.4584213 / LONG -104.4111841

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 17 / T21S / R25E / NMP

14. Distance in miles and direction from nearest town or post office*
12 miles

12. County or Parish
EDDY

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
195 feet

16. No. of acres in lease
160

17. Spacing Unit dedicated to this well
640

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
235 feet

19. Proposed Depth
7905 feet / 17917 feet

20. BLM/BIA Bond No. on file
FED: NM1693

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3377 feet

22. Approximate date work will start*
04/01/2017

23. Estimated duration
60 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	Bradley Bishop / Ph: (575)393-5905	11/15/2016

Title
Regulatory

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575)234-5959	03/24/2017

Title	Office
Supervisor Multiple Resources	CARLSBAD

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make 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.

(Continued on page 2)

*(Instructions on page 2)

APPROVED WITH CONDITIONS

RWP

NM OIL CONSERVATION
ARTESIA DISTRICT
MAR 27 2017
RECEIVED

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number	2 Pool Code	3 Pool Name
30-015-44110	71120	Avalon ~~WILDCAT~~ WOLFCAMP GAS

4 Property Code	5 Property Name	6 Well Number
317563	RIO BRAVO 17/20 W2AP FEDERAL COM	1H

7 OGRID NO.	8 Operator Name	9 Elevation
14744	MEWBOURNE OIL COMPANY	3377'

10 Surface Location

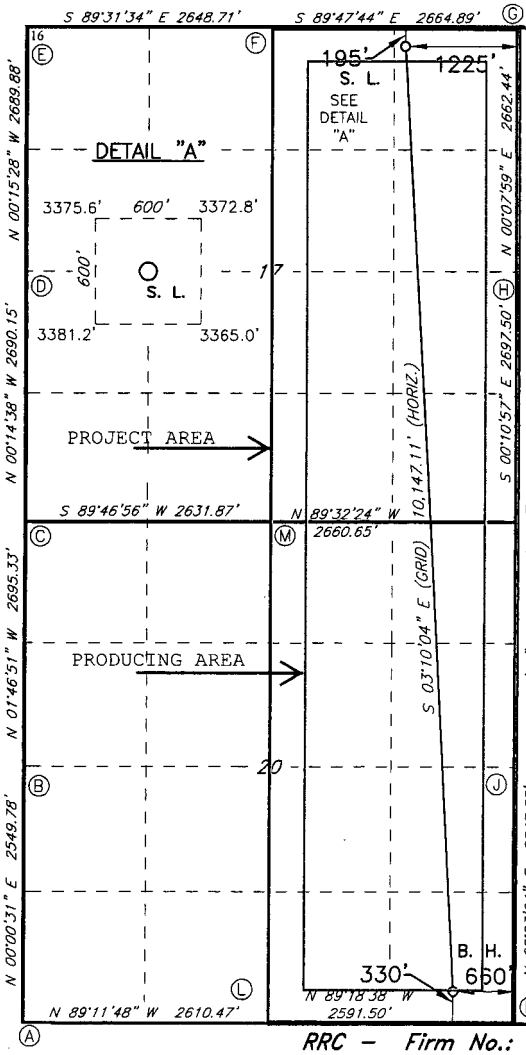
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet From the	East/West line	County
A	17	21S	25E		195	NORTH	1225	EAST	EDDY

11 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
P	20	21S	25E		330	SOUTH	660	EAST	EDDY

12 Dedicated Acres	13 Joint or Infill	14 Consolidation Code	15 Order No.
640			

No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.



GEODETIC DATA
NAD 27 GRID – NM EAST

SURFACE LOCATION
N: 540583.2 – E: 475585.3

LAT: 32.48614937° N
LONG: 104.41251231° W

BOTTOM HOLE
N: 530454.1 – E: 476145.9

LAT: 32.45830685° N
LONG: 104.41067050° W

GEODETIC DATA
NAD 83 GRID – NM EAST

SURFACE LOCATION
N: 540642.8 – E: 516764.6

LAT: 32.48626381° N
LONG: 104.41302714° W

BOTTOM HOLE
N: 530513.4 – E: 517325.5

LAT: 32.45842128° N
LONG: 104.41118409° W

CORNER DATA
NAD 27 GRID – NM EAST

A: FOUND BRASS CAP "1948"
N: 530184.0 – E: 471605.2

B: FOUND BRASS CAP "1948"
N: 532733.2 – E: 471605.5

C: FOUND BRASS CAP "1948"
N: 535426.5 – E: 471521.8

D: FOUND BRASS CAP "1948"
N: 538116.0 – E: 471510.3

E: FOUND BRASS CAP "1948" BENT
N: 540805.1 – E: 471498.2

F: FOUND BRASS CAP "1948"
N: 540783.2 – E: 474146.2

G: CALCULATED CORNER
N: 540773.7 – E: 476810.5

H: FOUND BRASS CAP "1948"
N: 538112.0 – E: 476804.3

I: FOUND BRASS CAP "1948"
N: 535415.2 – E: 476812.9

J: FOUND BRASS CAP "1948"
N: 532762.9 – E: 476807.8

K: FOUND BRASS CAP "1948"
N: 530116.2 – E: 476805.4

L: FOUND BRASS CAP "1948"
N: 530147.4 – E: 474214.7

M: FOUND BRASS CAP "1948"
N: 535436.5 – E: 474153.0

17 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 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.

Signature — Date: 11-14-2016

BRADLEY BISHOP
Printed Name

BBISHOP@MEWBOURNE.COM
E-mail Address

18 SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

8-13-2014
Date of Survey

Signature and Seal of Professional Surveyor

ROBERT M. HOWETT
NEW MEXICO
19680
PROFESSIONAL SURVEYOR

19680
Certificate Number

11-11-16 ADD B.H.

RRC – Firm No.: TX 10193838 NM 4655451 – Job No.: LS140327A

AFMSS

U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

APD Print Report

03/24/2017

APD ID: 10400007898
Submission Date: 11/15/2016
Highlight All Changes

Operator Name: MEWBOURNE OIL COMPANY
Federal/Indian APD: FED

Well Name: RIO BRAVO 17/20 W2AP FED COM
Well Number: 1H

Well Type: CONVENTIONAL GAS WELL
Well Work Type: Drill

Application

Section 1 - General

APD ID: 10400007898
Tie to previous NOS?
Submission Date: 11/15/2016

BLM Office: CARLSBAD
User: Bradley Bishop
Title: Regulatory

Federal/Indian APD: FED
Is the first lease penetrated for production Federal or Indian? FED

Lease number: NMNM 117546
Lease Acres: 160

Surface access agreement in place?
Allotted?
Reservation:

Agreement in place? NO
Federal or Indian agreement:

Agreement number:

Agreement name:

Keep application confidential? YES

Permitting Agent? NO
APD Operator: MEWBOURNE OIL COMPANY

Operator letter of designation: Rio Bravo 17-20 W2AP Fed Com 1H_Operator letter of designation_11-11-2016.pdf

Keep application confidential? YES

Operator Info

Operator Organization Name: MEWBOURNE OIL COMPANY

Operator Address: PO Box 5270

Zip: 88240

Operator PO Box:

Operator City: Hobbs
State: NM

Operator Phone: (575)393-5905

Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? NO
Mater Development Plan name:

Well in Master SUPO? NO
Master SUPO name:

Well in Master Drilling Plan? NO
Master Drilling Plan name:

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RIO BRAVO 17/20 W2AP FED COM **Well Number:** 1H

Well Name: RIO BRAVO 17/20 W2AP FED COM **Well Number:** 1H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** WILDCAT **Pool Name:** WOLFCAMP

Is the proposed well in an area containing other mineral resources? USEABLE WATER,NATURAL GAS,OIL

Describe other minerals:

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** NO **New surface disturbance?**

Type of Well Pad: SINGLE WELL **Multiple Well Pad Name:** **Number:**

Well Class: HORIZONTAL **Number of Legs:**

Well Work Type: Drill

Well Type: CONVENTIONAL GAS WELL

Describe Well Type:

Well sub-Type: APPRAISAL

Describe sub-type:

Distance to town: 12 Miles **Distance to nearest well:** 235 FT **Distance to lease line:** 195 FT

Reservoir well spacing assigned acres Measurement: 640 Acres

Well plat: Rio Bravo 17-20 W2AP Fed Com 1H_wellplat_11-14-2016.pdf

Well work start Date: 04/01/2017 **Duration:** 60 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number:

	STATE: NEW MEXICO	**Meridian:** NEW MEXICO PRINCIPAL	**County:** EDDY
	Latitude: 32.4862638	**Longitude:** -104.4130271	
SHL	**Elevation:** 3377	**MD:** 0	**TVD:** 0
Leg #: 1	**Lease Type:** FEE	**Lease #:** FEE	
	NS-Foot: 195	**NS Indicator:** FNL	
	EW-Foot: 1225	**EW Indicator:** FEL	
	Twsp: 21S	**Range:** 25E	**Section:** 17
	Aliquot: NENE	**Lot:**	**Tract:**

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RIO BRAVO 17/20 W2AP FED COM **Well Number:** 1H

	STATE: NEW MEXICO	**Meridian:** NEW MEXICO PRINCIPAL	**County:** EDDY
	Latitude: 32.4862638	**Longitude:** -104.4130271	
KOP	**Elevation:** -3930	**MD:** 7307	**TVD:** 7307
Leg #: 1	**Lease Type:** FEE	**Lease #:** FEE	
	NS-Foot: 195	**NS Indicator:** FNL	
	EW-Foot: 1225	**EW Indicator:** FEL	
	Twsp: 21S	**Range:** 25E	**Section:** 17
	Aliquot: NENE	**Lot:**	**Tract:**
	STATE: NEW MEXICO	**Meridian:** NEW MEXICO PRINCIPAL	**County:** EDDY
	Latitude: 32.4852528	**Longitude:** -104.4117506	
PPP	**Elevation:** -4493	**MD:** 8100	**TVD:** 7870
Leg #: 1	**Lease Type:** FEE	**Lease #:** FEE	
	NS-Foot: 521	**NS Indicator:** FNL	
	EW-Foot: 990	**EW Indicator:** FEL	
	Twsp: 21S	**Range:** 25E	**Section:** 17
	Aliquot: NENE	**Lot:**	**Tract:**
	STATE: NEW MEXICO	**Meridian:** NEW MEXICO PRINCIPAL	**County:** EDDY
	Latitude: 32.4584213	**Longitude:** -104.4111841	
EXIT	**Elevation:** -4528	**MD:** 17917	**TVD:** 7905
Leg #: 1	**Lease Type:** FEDERAL	**Lease #:** NMNM130850	
	NS-Foot: 330	**NS Indicator:** FSL	
	EW-Foot: 660	**EW Indicator:** FEL	
	Twsp: 21S	**Range:** 25E	**Section:** 20
	Aliquot: SESE	**Lot:**	**Tract:**
	STATE: NEW MEXICO	**Meridian:** NEW MEXICO PRINCIPAL	**County:** EDDY
	Latitude: 32.4584213	**Longitude:** -104.4111841	
BHL	**Elevation:** -4528	**MD:** 17917	**TVD:** 7905
Leg #: 1	**Lease Type:** FEDERAL	**Lease #:** NMNM130850	
	NS-Foot: 330	**NS Indicator:** FSL	
	EW-Foot: 660	**EW Indicator:** FEL	

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RIO BRAVO 17/20 W2AP FED COM **Well Number:** 1H

Twsp: 21S **Range:** 25E **Section:** 20

Aliquot: SESE **Lot:** **Tract:**

Drilling Plan

Section 1 - Geologic Formations

ID: Surface formation **Name:** UNKNOWN

Lithology(ies):

Elevation: 3404 **True Vertical Depth:** 27 **Measured Depth:** 27

Mineral Resource(s):

NONE

Is this a producing formation? N

ID: Formation 1 **Name:** QUEEN

Lithology(ies):

SANDSTONE

DOLOMITE

Elevation: 2879 **True Vertical Depth:** 525 **Measured Depth:** 525

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? N

ID: Formation 2 **Name:** GRAYBURG

Lithology(ies):

Elevation: 2449 **True Vertical Depth:** 955 **Measured Depth:** 955

Mineral Resource(s):

NONE

Is this a producing formation? N

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RIO BRAVO 17/20 W2AP FED COM **Well Number:** 1H

ID: Formation 3 **Name:** SAN ANDRES

Lithology(ies):

DOLOMITE

Elevation: 2144 **True Vertical Depth:** 1260 **Measured Depth:** 1260

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? N

ID: Formation 4 **Name:** LAMAR

Lithology(ies):

LIMESTONE

DOLOMITE

Elevation: 1684 **True Vertical Depth:** 1720 **Measured Depth:** 1720

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? N

ID: Formation 5 **Name:** BONE SPRING

Lithology(ies):

SANDSTONE

Elevation: 384 **True Vertical Depth:** 3020 **Measured Depth:** 3020

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? N

ID: Formation 6 **Name:** BONE SPRING 1ST

Lithology(ies):

SANDSTONE

Elevation: -1426 **True Vertical Depth:** 4830 **Measured Depth:** 4830

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? N

ID: Formation 7 **Name:** BONE SPRING 2ND

Lithology(ies):

SANDSTONE

Elevation: -2501 **True Vertical Depth:** 5905 **Measured Depth:** 5905

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? N

ID: Formation 8 **Name:** BONE SPRING 3RD

Lithology(ies):

SANDSTONE

Elevation: -3731 **True Vertical Depth:** 7135 **Measured Depth:** 7135

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? N

ID: Formation 9 **Name:** WOLFCAMP

Lithology(ies):

LIMESTONE

SHALE

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RIO BRAVO 17/20 W2AP FED COM **Well Number:** 1H

SANDSTONE

Elevation: -3971 **True Vertical Depth:** 7375 **Measured Depth:** 7375

Mineral Resource(s):

NATURAL GAS

OIL

Is this a producing formation? Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 3M **Rating Depth:** 3100

Equipment: Annular

Requesting Variance? NO

Variance request:

Testing Procedure: Test to 1500#

Choke Diagram Attachment:

Rio Bravo 17-20 W2AP Fed Com 1H_3M Surface BOPE Choke Diagram_11-15-2016.pdf

BOP Diagram Attachment:

Rio Bravo 17-20 W2AP Fed Com 1H_3M Surface BOPE Schematic_11-15-2016.pdf

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Pressure Rating (PSI): 5M **Rating Depth:** 17920

Equipment: Annular, Pipe Ram, Blind Ram

Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold.

Testing Procedure: Test Annular to 2500# Test BOPE to 5000#

Choke Diagram Attachment:

Rio Bravo 17-20 W2AP Fed Com 1H_5M BOPE Choke Diagram_11-15-2016.pdf

BOP Diagram Attachment:

Rio Bravo 17-20 W2AP Fed Com 1H_5M BOPE Schematic_11-15-2016.pdf

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RIO BRAVO 17/20 W2AP FED COM **Well Number:** 1H

Pressure Rating (PSI): 5M **Rating Depth:** 8025

Equipment: Annular, Pipe Ram, Blind Ram

Requesting Variance? YES

Variance request: A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold.

Testing Procedure: Test Annular to 2500#. Test BOPE to 5000#.

Choke Diagram Attachment:

Rio Bravo 17-20 W2AP Fed Com 1H_5M BOPE Choke Diagram_11-15-2016.pdf

BOP Diagram Attachment:

Rio Bravo 17-20 W2AP Fed Com 1H_5M BOPE Schematic_11-15-2016.pdf

Section 3 - Casing

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RIO BRAVO 17/20 W2AP FED COM **Well Number:** 1H

String Type: SURFACE **Other String Type:**

Hole Size: 17.5

Top setting depth MD: 0 **Top setting depth TVD:** 0

Top setting depth MSL: -4528

Bottom setting depth MD: 415 **Bottom setting depth TVD:** 415

Bottom setting depth MSL: -4943

Calculated casing length MD: 415

Casing Size: 13.375 **Other Size**

Grade: H-40 **Other Grade:**

Weight: 48

Joint Type: STC **Other Joint Type:**

Condition: NEW

Inspection Document:

Standard: API

Spec Document:

Tapered String?: N

Tapered String Spec:

Safety Factors

Collapse Design Safety Factor: 3.57 **Burst Design Safety Factor:** 8.02

Joint Tensile Design Safety Factor type: DRY **Joint Tensile Design Safety Factor:** 16.16

Body Tensile Design Safety Factor type: DRY **Body Tensile Design Safety Factor:** 27.16

Casing Design Assumptions and Worksheet(s):

Rio Bravo 17-20 W2AP Fed Com 1H_Csg Assumptions_11-15-2016.pdf

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RIO BRAVO 17/20 W2AP FED COM **Well Number:** 1H

String Type: INTERMEDIATE **Other String Type:**

Hole Size: 12.25

Top setting depth MD: 0 **Top setting depth TVD:** 0

Top setting depth MSL: -4528

Bottom setting depth MD: 3100 **Bottom setting depth TVD:** 3100

Bottom setting depth MSL: -7628

Calculated casing length MD: 3100

Casing Size: 9.625 **Other Size**

Grade: J-55 **Other Grade:**

Weight: 36

Joint Type: LTC **Other Joint Type:**

Condition: NEW

Inspection Document:

Standard: API

Spec Document:

Tapered String?: N

Tapered String Spec:

Safety Factors

Collapse Design Safety Factor: 1.25 **Burst Design Safety Factor:** 2.18

Joint Tensile Design Safety Factor type: DRY **Joint Tensile Design Safety Factor:** 4.06

Body Tensile Design Safety Factor type: DRY **Body Tensile Design Safety Factor:** 5.05

Casing Design Assumptions and Worksheet(s):

Rio Bravo 17-20 W2AP Fed Com 1H_Csg Assumptions_11-15-2016.pdf

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RIO BRAVO 17/20 W2AP FED COM **Well Number:** 1H

String Type: PRODUCTION **Other String Type:**

Hole Size: 8.75

Top setting depth MD: 0 **Top setting depth TVD:** 0

Top setting depth MSL: -4528

Bottom setting depth MD: 8025 **Bottom setting depth TVD:** 7873

Bottom setting depth MSL: -12401

Calculated casing length MD: 8025

Casing Size: 7.0 **Other Size**

Grade: P-110 **Other Grade:**

Weight: 26

Joint Type: LTC **Other Joint Type:**

Condition: NEW

Inspection Document:

Standard: API

Spec Document:

Tapered String?: N

Tapered String Spec:

Safety Factors

Collapse Design Safety Factor: 2.05 **Burst Design Safety Factor:** 2.62

Joint Tensile Design Safety Factor type: DRY **Joint Tensile Design Safety Factor:** 3.32

Body Tensile Design Safety Factor type: DRY **Body Tensile Design Safety Factor:** 3.98

Casing Design Assumptions and Worksheet(s):

Rio Bravo 17-20 W2AP Fed Com 1H_Csg Assumptions_11-15-2016.pdf

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RIO BRAVO 17/20 W2AP FED COM **Well Number:** 1H

String Type: LINER **Other String Type:**

Hole Size: 6.125

Top setting depth MD: 7307 **Top setting depth TVD:** 7307

Top setting depth MSL: -11835

Bottom setting depth MD: 17920 **Bottom setting depth TVD:** 7905

Bottom setting depth MSL: -12433

Calculated casing length MD: 10613

Casing Size: 4.5 **Other Size**

Grade: P-110 **Other Grade:**

Weight: 13.5

Joint Type: LTC **Other Joint Type:**

Condition: NEW

Inspection Document:

Standard: API

Spec Document:

Tapered String?: N

Tapered String Spec:

Safety Factors

Collapse Design Safety Factor: 2 **Burst Design Safety Factor:** 2.32

Joint Tensile Design Safety Factor type: DRY **Joint Tensile Design Safety Factor:** 2.36

Body Tensile Design Safety Factor type: DRY **Body Tensile Design Safety Factor:** 2.95

Casing Design Assumptions and Worksheet(s):

Rio Bravo 17-20 W2AP Fed Com 1H_Csg Assumptions_11-15-2016.pdf

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Section 4 - Cement

Casing String Type: SURFACE

Stage Tool Depth:

Lead

Top MD of Segment: 0 **Bottom MD Segment:** 228 **Cement Type:** Class C
Additives: Salt, Gel, Extender, LCM **Quantity (sks):** 155 **Yield (cu.ff./sk):** 2.12
Density: 12.5 **Volume (cu.ft.):** 328 **Percent Excess:** 100

Tail

Top MD of Segment: 228 **Bottom MD Segment:** 415 **Cement Type:** Class C
Additives: Retarder **Quantity (sks):** 200 **Yield (cu.ff./sk):** 1.34
Density: 14.8 **Volume (cu.ft.):** 268 **Percent Excess:** 100

Casing String Type: INTERMEDIATE

Stage Tool Depth:

Lead

Top MD of Segment: 0 **Bottom MD Segment:** 2442 **Cement Type:** Class C
Additives: Salt, Gel, Extender, LCM **Quantity (sks):** 470 **Yield (cu.ff./sk):** 2.12
Density: 12.5 **Volume (cu.ft.):** 996 **Percent Excess:** 25

Tail

Top MD of Segment: 2442 **Bottom MD Segment:** 3100 **Cement Type:** Class C
Additives: Retarder **Quantity (sks):** 200 **Yield (cu.ff./sk):** 1.34
Density: 14.8 **Volume (cu.ft.):** 268 **Percent Excess:** 25

Casing String Type: PRODUCTION

Stage Tool Depth:

Lead

Top MD of Segment: 0 **Bottom MD Segment:** 5585 **Cement Type:** Class C
Additives: Gel, Retarder, Defoamer, Extender **Quantity (sks):** 510 **Yield (cu.ff./sk):** 2.12
Density: 12.5 **Volume (cu.ft.):** 1081 **Percent Excess:** 25

Tail

Top MD of Segment: 5585 **Bottom MD Segment:** 8025 **Cement Type:** Class H
Additives: Retarder, Fluid Loss, Defoamer **Quantity (sks):** 400 **Yield (cu.ff./sk):** 1.18
Density: 15.6 **Volume (cu.ft.):** 472 **Percent Excess:** 25

Casing String Type: LINER

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RIO BRAVO 17/20 W2AP FED COM **Well Number:** 1H

Stage Tool Depth:

Lead

Top MD of Segment: 7307

Bottom MD Segment: 17920

Cement Type: Class C

Additives: Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-Settling Agent

Quantity (sks): 430

Yield (cu.ff./sk): 2.97

Volume (cu.ft.): 1277

Percent Excess: 25

Density: 11.2

Tail

Bottom MD Segment:

Cement Type:

Top MD of Segment: 925

Quantity (sks):

Yield (cu.ff./sk):

Additives:

Volume (cu.ft.):

Percent Excess: 25

Density:

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: Lost circulation material Sweeps Mud scavengers in surface hole

Describe the mud monitoring system utilized: Pason/PVT/Visual Monitoring

Circulating Medium Table

Top Depth: 0

Bottom Depth: 415

Mud Type: SPUD MUD

Min Weight (lbs./gal.): 8.6

Max Weight (lbs./gal.): 8.8

Density (lbs/cu.ft.):

Gel Strength (lbs/100 sq.ft.):

PH:

Viscosity (CP):

Filtration (cc):

Salinity (ppm):

Additional Characteristics:

Top Depth: 415 **Bottom Depth:** 3100

Mud Type: WATER-BASED MUD

Min Weight (lbs./gal.): 8.6 **Max Weight (lbs./gal.):** 9.5

Density (lbs/cu.ft.): **Gel Strength (lbs/100 sq.ft.):**

PH: **Viscosity (CP):**

Filtration (cc): **Salinity (ppm):**

Additional Characteristics:

Top Depth: 3100 **Bottom Depth:** 7307

Mud Type: WATER-BASED MUD

Min Weight (lbs./gal.): 8.6 **Max Weight (lbs./gal.):** 9.7

Density (lbs/cu.ft.): **Gel Strength (lbs/100 sq.ft.):**

PH: **Viscosity (CP):**

Filtration (cc): **Salinity (ppm):**

Additional Characteristics:

Top Depth: 7307 **Bottom Depth:** 7905

Mud Type: OIL-BASED MUD

Min Weight (lbs./gal.): 10 **Max Weight (lbs./gal.):** 13

Density (lbs/cu.ft.): **Gel Strength (lbs/100 sq.ft.):**

PH: **Viscosity (CP):**

Filtration (cc): **Salinity (ppm):**

Additional Characteristics: 13.0 ppg mud may be required for shale control. The highest mud weight needed to balance formation pressure is expected to be 12.0 ppg.

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

Will run GR/CNL from KOP (7307') to surface

List of open and cased hole logs run in the well:

CNL,DS,GR,MWD,MUDLOG

Coring operation description for the well:

None

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RIO BRAVO 17/20 W2AP FED COM **Well Number:** 1H

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 4933 **Anticipated Surface Pressure:** 4933

Anticipated Bottom Hole Temperature(F): 160

Anticipated abnormal proessures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Rio Bravo 17-20 W2AP Fed Com 1H_H2S Plan_11-15-2016.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Rio Bravo 17-20 W2AP Fed Com 1H_Dir Plan_11-15-2016.pdf
Rio Bravo 17-20 W2AP Fed Com 1H_Dir Plot_11-15-2016.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Other Variance attachment:

Rio Bravo 17-20 W2AP Fed Com 1H_Flex Line Specs_11-15-2016.pdf

SUPO

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RIO BRAVO 17/20 W2AP FED COM **Well Number:** 1H

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

Rio Bravo 17-20 W2AP Fed Com 1H_existing road map_11-14-2016.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT **Row(s) Exist?** NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? NO

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

Rio Bravo 17-20 W2AP Fed Com 1H_existing well map_11-11-2016.pdf

Existing Wells description:

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RIO BRAVO 17/20 W2AP FED COM **Well Number:** 1H

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? SUBMIT

Estimated Production Facilities description:

Production Facilities description: a. All permanent, lasting more than 6 months, above ground structures including but not limited to pumpjacks, storage tanks, pipeline risers, meter housing, etc. that are not subject to safety requirements will be painted a non-reflective paint color that blends in with the surrounding landscape. The paint color will be one of the colors from the BLM Standard Environmental Colors chart selected by the BLM authorized officer. b. All proposed production facilities that are located on the well pad will be strategically placed to allow for maximum interim reclamation, recontouring, and revegetation of the well location. c. Production from the proposed well will be located on the South edge of location. d. If any plans change regarding the production facility or other infrastructure (pipeline, electric line, etc.), we will submit a sundry notice or right of way (if applicable) prior to installation of construction. e. An electric line will be applied for through a sundry notice or BLM right of way at a later date.

Production Facilities map:

Rio Bravo 17-20 W2AP Fed Com 1H_productionfacilitymap_11-11-2016.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: DUST CONTROL, INTERMEDIATE/PRODUCTION CASING, STIMULATION, SURFACE CASING

Water source type: IRRIGATION

Describe type:

Source longitude: -104.42118

Source latitude: 32.595226

Source datum: NAD83

Water source permit type: WATER WELL

Source land ownership: PRIVATE

Water source transport method: TRUCKING

Source transportation land ownership: COMMERCIAL

Water source volume (barrels): 2150

Source volume (acre-feet): 0.27712014

Source volume (gal): 90300

Water source use type: DUST CONTROL, INTERMEDIATE/PRODUCTION CASING, STIMULATION, SURFACE CASING

Water source type: IRRIGATION

Describe type:

Source longitude: -104.41799

Source latitude: 32.485107

Source datum: NAD83

Water source permit type: WATER WELL

Source land ownership: PRIVATE

Water source transport method: TRUCKING

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RIO BRAVO 17/20 W2AP FED COM **Well Number:** 1H

Source transportation land ownership: PRIVATE

Water source volume (barrels): 2150 **Source volume (acre-feet):** 0.27712014

Source volume (gal): 90300

Water source and transportation map:

Rio Bravo 17-20 W2AP Fed Com 1H_watersourceandtransportationmap_11-11-2016.pdf
Rio Bravo 17-20 W2AP Fed Com 1H_watersourceandtransportationmap2_11-11-2016.pdf

Water source comments:

New water well? NO

New Water Well Info

Well latitude: **Well Longitude:** **Well datum:**

Well target aquifer:

Est. depth to top of aquifer(ft): **Est thickness of aquifer:**

Aquifer comments:

Aquifer documentation:

Well depth (ft): **Well casing type:**

Well casing outside diameter (in.): **Well casing inside diameter (in.):**

New water well casing? **Used casing source:**

Drilling method: **Drill material:**

Grout material: **Grout depth:**

Casing length (ft.): **Casing top depth (ft.):**

Well Production type: **Completion Method:**

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description: Caliche

Construction Materials source location attachment:

Rio Bravo 17-20 W2AP Fed Com 1H_calichesourceandtransportationmap_11-11-2016.pdf
Rio Bravo 17-20 W2AP Fed Com 1H_calichesourceandtransportationmap2_11-11-2016.pdf

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RIO BRAVO 17/20 W2AP FED COM **Well Number:** 1H

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: Drill cuttings

Amount of waste: 940 barrels

Waste disposal frequency : One Time Only

Safe containment description: Drill cuttings will be properly contained in steel tanks (20 yard roll off bins.)

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE

Disposal type description:

Disposal location description: NMOCD approved waste disposal locations are CRI or Lea Land, both facilities are located on HWY 62/180, Sec. 27 T20S R32E.

Waste type: SEWAGE

Waste content description: Human waste & grey water

Amount of waste: 1500 gallons

Waste disposal frequency : Weekly

Safe containment description: 2,000 gallon plastic container

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE

Disposal type description:

Disposal location description: City of Carlsbad Water Treatment facility

Waste type: GARBAGE

Waste content description: Garbage & trash

Amount of waste: 1500 pounds

Waste disposal frequency : One Time Only

Safe containment description: Enclosed trash trailer

Safe containmant attachment:

Waste disposal type: HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE

Disposal type description:

Disposal location description: Waste Management facility in Carlsbad.

Reserve Pit

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RIO BRAVO 17/20 W2AP FED COM **Well Number:** 1H

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Are you storing cuttings on location? NO

Description of cuttings location

Cuttings area length (ft.) **Cuttings area width (ft.)**

Cuttings area depth (ft.) **Cuttings area volume (cu. yd.)**

Is at least 50% of the cuttings area in cut?

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

Rio Bravo 17-20 W2AP Fed Com 1H_wellsitelayout_11-14-2016.pdf

Comments: None

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RIO BRAVO 17/20 W2AP FED COM **Well Number:** 1H

Section 10 - Plans for Surface Reclamation

Type of disturbance: NEW

Recontouring attachment:

Drainage/Erosion control construction: None

Drainage/Erosion control reclamation: None

Wellpad long term disturbance (acres): 1.148

Wellpad short term disturbance (acres): 2.185

Access road long term disturbance (acres): 0

Access road short term disturbance (acres): 0

Pipeline long term disturbance (acres): 0

Pipeline short term disturbance (acres): 0

Other long term disturbance (acres): 0

Other short term disturbance (acres): 0

Total long term disturbance: 1.148

Total short term disturbance: 2.185

Reconstruction method: The areas planned for interim reclamation will then be recontoured to the original contour if feasible, or if not feasible, to an interim contour that blends with the surrounding topography as much as possible. Where applicable, the fill material of the well pad will be backfilled into the cut to bring the area back to the original contour. The interim cut and fill slopes prior to re-seeding will not be steeper than a 3:1 ratio, unless the adjacent native topography is steeper. Note: Constructed slopes may be much steeper during drilling, but will be recontoured to the above ratios during interim reclamation.

Topsoil redistribution: Topsoil will be evenly respread and aggressively revegetated over the entire disturbed area not needed for all-weather operations including cuts & fills. To seed the area, the proper BLM seed mixture, free of noxious weeds, will be used.

Soil treatment: NA

Existing Vegetation at the well pad: Various brush & grasses

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: Various brush & grasses

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: NA

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: NA

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RIO BRAVO 17/20 W2AP FED COM **Well Number:** 1H

Seed Management

Seed Table

Seed type: **Seed source:**

Seed name:

Source name: **Source address:**

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre: **Proposed seeding season:**

Seed Summary

Total pounds/Acre:

Seed Type	Pounds/Acre

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: Bradley **Last Name:** Bishop

Phone: (575)393-5905 **Email:** bbishop@mewbourne.com

Seedbed prep: Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting in order to break the soil crust and create seed germination micro-sites.
Seed BMP: To seed the area, the proper BLM seed mixture, free of noxious weeds, will be used.

Seed method: drilling or broadcasting seed over entire reclaimed area.

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: NA

Weed treatment plan attachment:

Monitoring plan description: vii. All reclaimed areas will be monitored periodically to ensure that revegetation occurs, that the area is not redisturbed, and that erosion and invasive/noxious weeds are controlled.
Monitoring plan attachment:

Success standards: regrowth within 1 full growing season of reclamation.

Pit closure description: NA

Pit closure attachment:

Section 11 - Surface Ownership

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RIO BRAVO 17/20 W2AP FED COM **Well Number:** 1H

Disturbance type: EXISTING ACCESS ROAD

Describe:

Surface Owner: PRIVATE OWNERSHIP

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Fee Owner: Gregory Rockhouse Ranch, LLC **Fee Owner Address:** 1108 W Pierce Carlsbad, NM 88220

Phone: (432)254-1260 **Email:**

Surface use plan certification: NO

Surface use plan certification document:

Surface access agreement or bond: Agreement

Surface Access Agreement Need description: SUA in place

Surface Access Bond BLM or Forest Service:

BLM Surface Access Bond number:

USFS Surface access bond number:

Disturbance type: WELL PAD

Describe:

Surface Owner: PRIVATE OWNERSHIP

Other surface owner description:

BIA Local Office:

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RIO BRAVO 17/20 W2AP FED COM **Well Number:** 1H

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Fee Owner: Gregory Rockhouse Ranch, LLC **Fee Owner Address:** 1108 W Pierce Carlsbad, NM 88229

Phone: (432)254-1260 **Email:**

Surface use plan certification: NO

Surface use plan certification document:

Surface access agreement or bond: Agreement

Surface Access Agreement Need description: Ranch wide surface use agreement in place with landowner.

Surface Access Bond BLM or Forest Service:

BLM Surface Access Bond number:

USFS Surface access bond number:

Section 12 - Other Information

Right of Way needed? NO **Use APD as ROW?**

ROW Type(s):

ROW Applications

SUPO Additional Information: well staked as Rio Bravo 17 B3AP Fed Com #1H.

Use a previously conducted onsite? YES

Previous Onsite information: AUG 13 2014 Met with RRC Surveying, Amanda Lynch (BLM), Rebecca Hill (Boone Arch), & Bill Travelstead (Gregory Rockhouse Ranch) & staked location @ 185' FNL & 660' FEL, Sec 17, T21S, R25E, Eddy Co., NM.

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RIO BRAVO 17/20 W2AP FED COM **Well Number:** 1H

This location was unacceptable due to grave site. Moved location to 195' FNL & 1225' FEL, Sec 17, T21S, R25E, Eddy Co., NM. (Elevation @ 3377'). This appears to be a drillable location with pit area to the N. Battery will be on S side. Topsoil will be stockpiled 30' wide on the W side of well pad. Reclaim 30' N, 70' E & W with battery. Existing road enters SE corner heading east to existing lease road

Other SUPO Attachment

PWD

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RIO BRAVO 17/20 W2AP FED COM **Well Number:** 1H

Unlined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number: **Injection well name:**

Assigned injection well API number? **Injection well API number:**

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? NO

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? NO

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RIO BRAVO 17/20 W2AP FED COM **Well Number:** 1H

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Other PWD discharge volume (bbl/day):

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

Bond Info

Bond Information

Federal/Indian APD: FED

BLM Bond number: NM1693

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment:

Operator Certification

Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME: Bradley Bishop **Signed on:** 11/11/2016

Title: Regulatory

Street Address: PO Box 5270

Operator Name: MEWBOURNE OIL COMPANY

Well Name: RIO BRAVO 17/20 W2AP FED COM **Well Number:** 1H

City: Hobbs **State:** NM **Zip:** 88240

Phone: (575)393-5905

Email address: bbishop@mewbourne.com

Field Representative

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

Payment Info

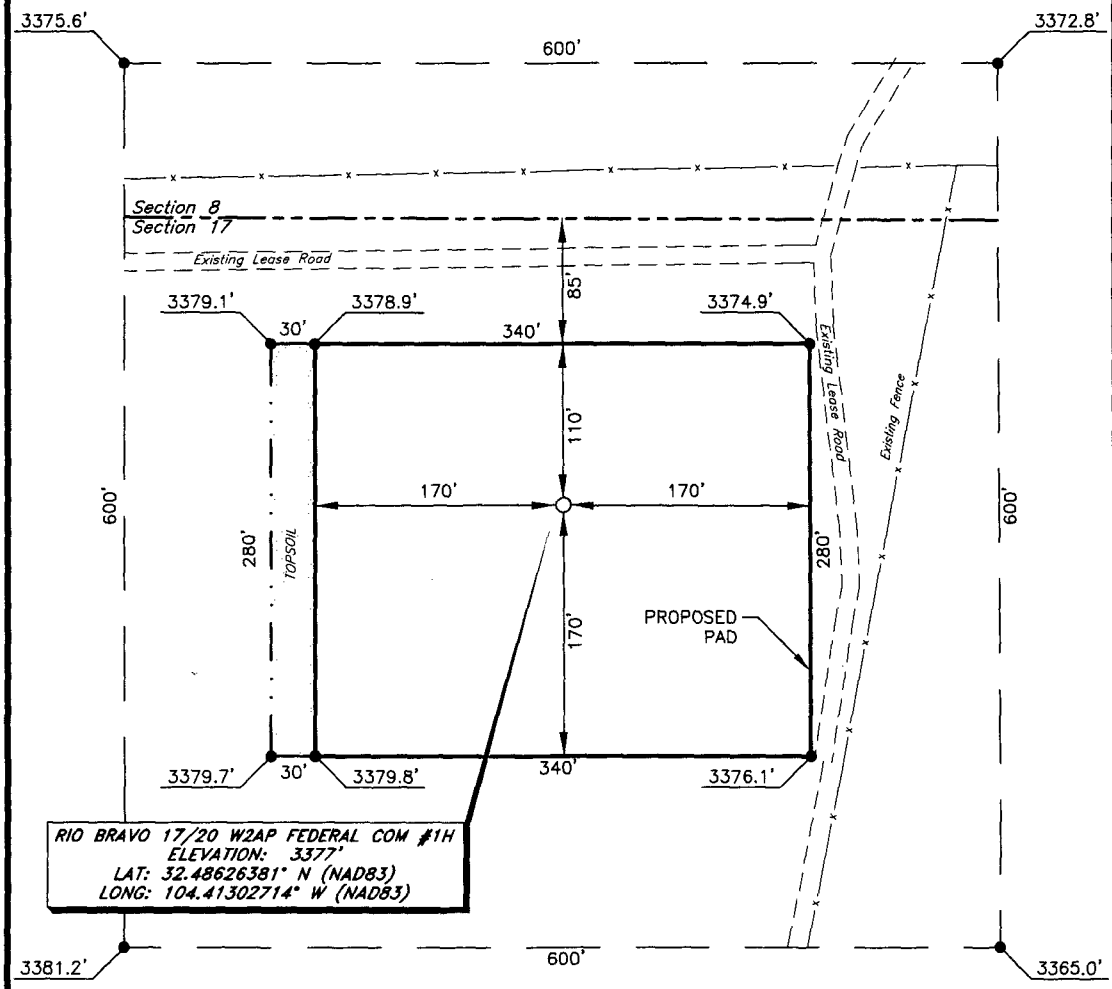
Payment

APD Fee Payment Method: PAY.GOV

pay.gov Tracking ID: 25V18292

MEWBOURNE OIL COMPANY

RIO BRAVO 17/20 W2AP FEDERAL COM #1H
(195' FNL & 1225' FEL)
SECTION 17 T21S, R25E
N. M. P. M., EDDY CO., NEW MEXICO



DIRECTIONS TO LOCATION

From the intersection of State Hwy 137 (Queens Hwy.) and CR-406 (Waterhole);

Go Southeast on CR-406 approx. 0.5 miles to a lease road on right;

Turn right on lease road and go Southwest approx. 0.1 miles to the proposed location on the right.

SCALE: 1" = 100'
0 50 100

BEARINGS ARE NAD 83 GRID - NM EAST DISTANCES ARE GROUND.

THIS IS NOT A BOUNDARY SURVEY, APPARENT PROPERTY CORNERS AND PROPERTY LINES ARE SHOWN FOR INFORMATION ONLY. BOUNDARY DATA IS SHOWN FROM A PREVIOUS SURVEY REFERENCED HEREON.

I, R. M. Howett, a N. M. Professional Surveyor, hereby certify that I prepared this unclassified survey of a well location from an actual survey made on the ground under my direct supervision, said survey and plat meet the Min. Stds. for Land Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

Robert M. Howett
Robert M. Howett NM PS 19680

ROBERT M. HOWETT
NEW MEXICO
19680
PROFESSIONAL SURVEYOR
11/11/16

Firm No.. TX 10193838 NM 4655451

NO.	REVISION	DATE

JOB NO.: LS140327A
DWG. NO.: 140327APAD

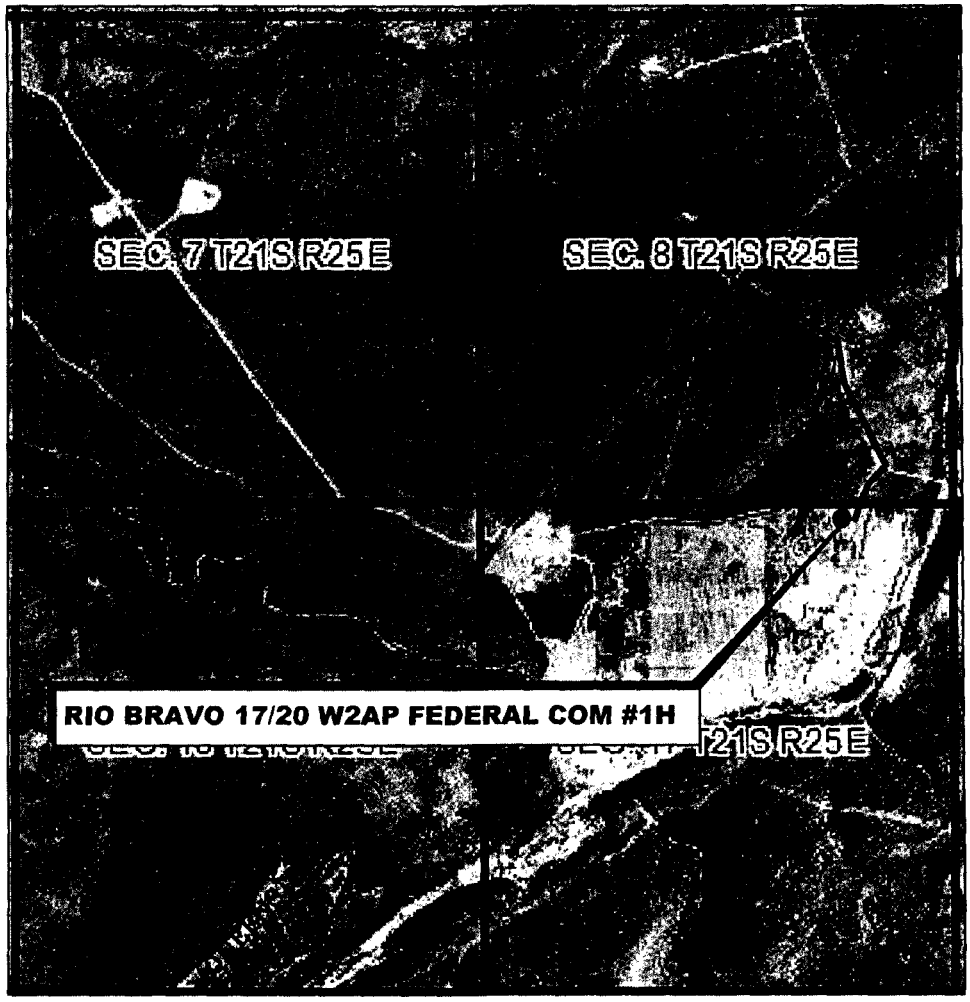
RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 100'
DATE: 8-13-2014
SURVEYED BY: BK/SM
DRAWN BY: CMJ
APPROVED BY: RMH
SHEET : 1 OF 1

VICINITY MAP

NOT TO SCALE



SECTION 17, TWP. 21 SOUTH, RGE. 25 EAST,
N. M. P. M., EDDY COUNTY, NEW MEXICO

OPERATOR: Mewbourne Oil Company
LEASE: Rio Bravo 17/20 W2AP Federal Com
WELL NO.: 1H

LOCATION: 195' FNL & 1225' FEL
ELEVATION: 3377'

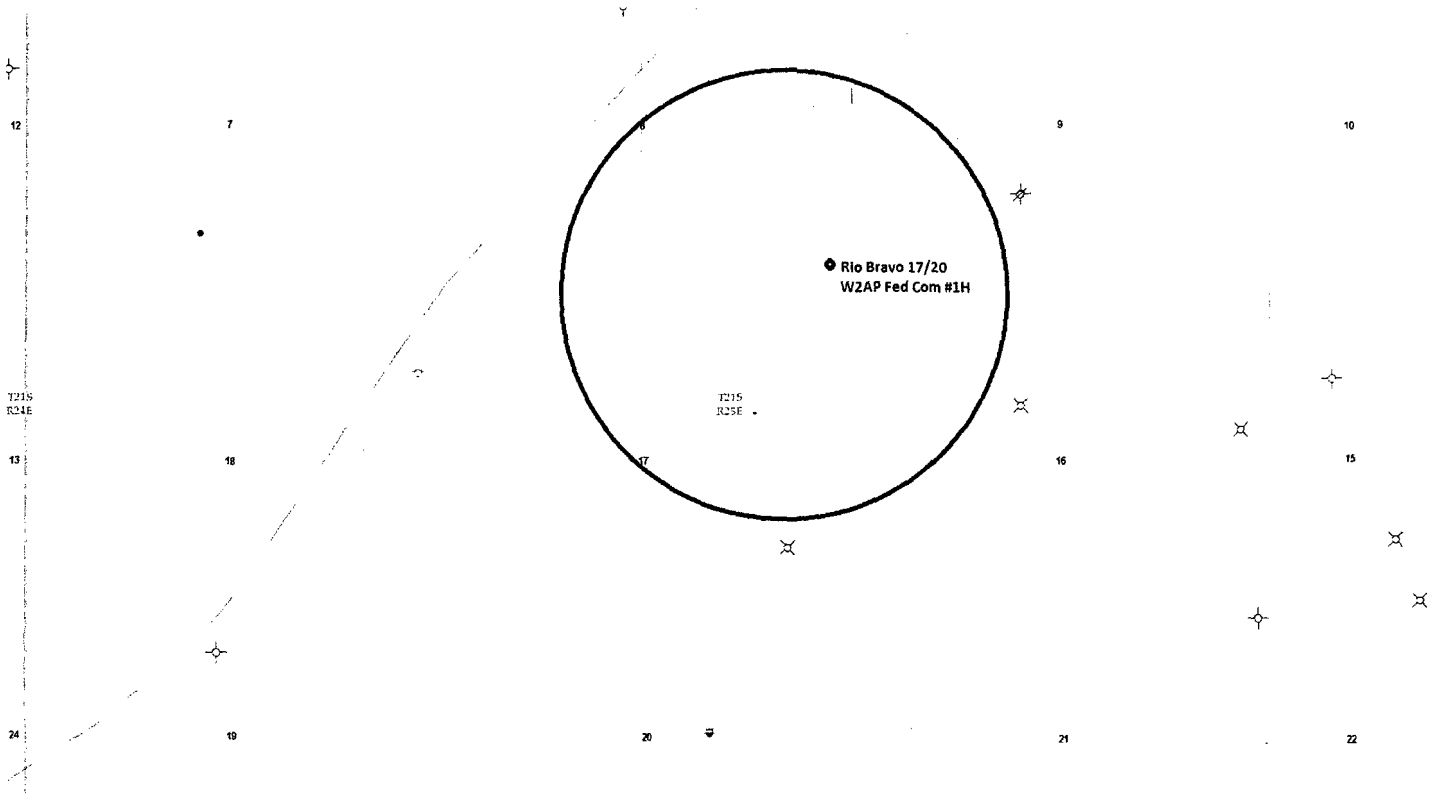
NO.	REVISION	DATE

JOB NO.: LS140327A
DWG. NO.: 140327AVM

RRC

308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: N. T. S.
DATE: 8-13-2014
SURVEYED BY: BK/SM
DRAWN BY: CMJ
APPROVED BY: RMH
SHEET : 1 OF 1


Rio Bravo 17/20
W2AP Fed Com #1H
T21S
R24E
T21S
R25E
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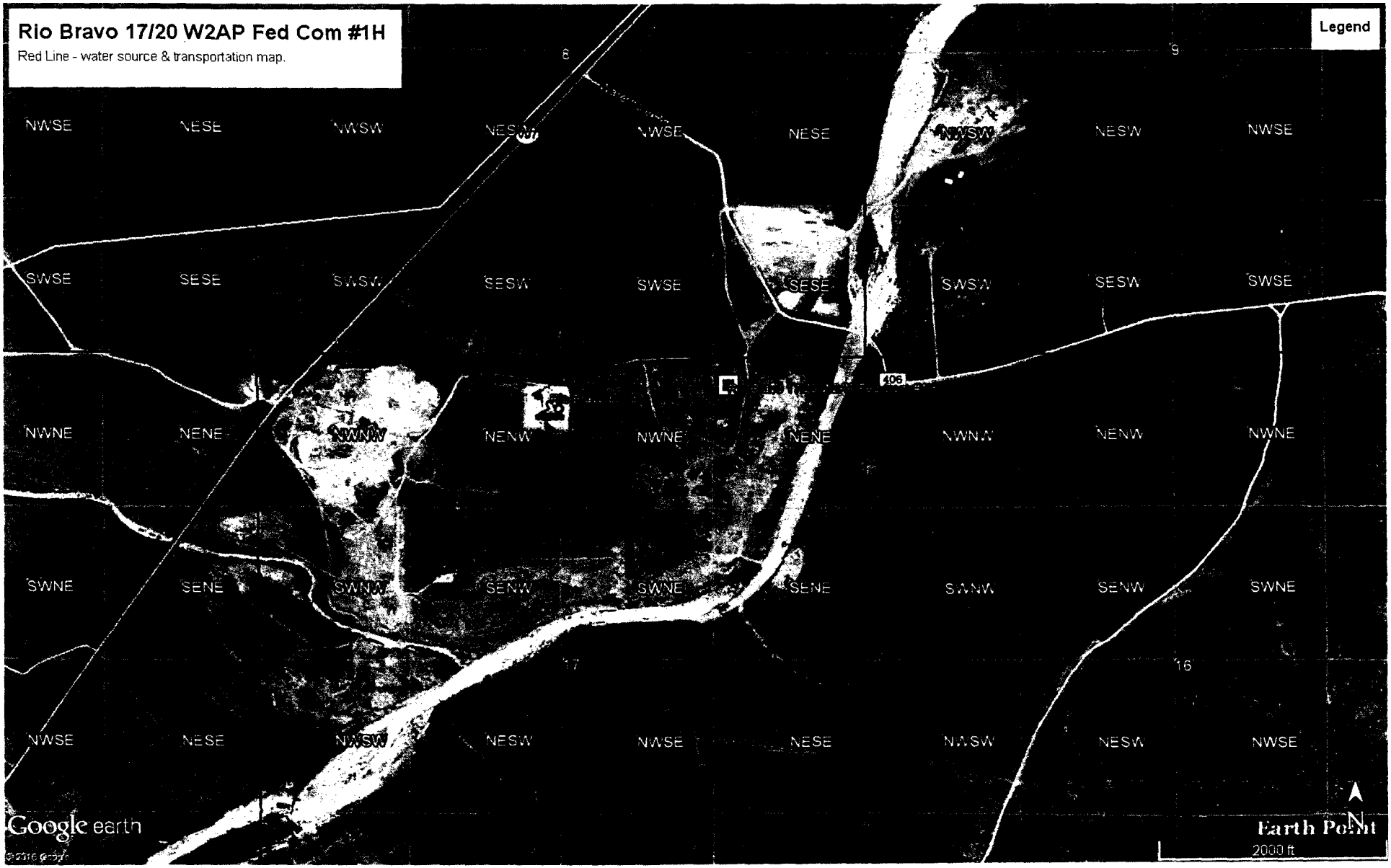
Rio Bravo 17/20 W2AP Fed Com #1H
Red Line - water source & transportation map.
Legend
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9
16
17
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SWSE
SESE
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SESW
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NENE
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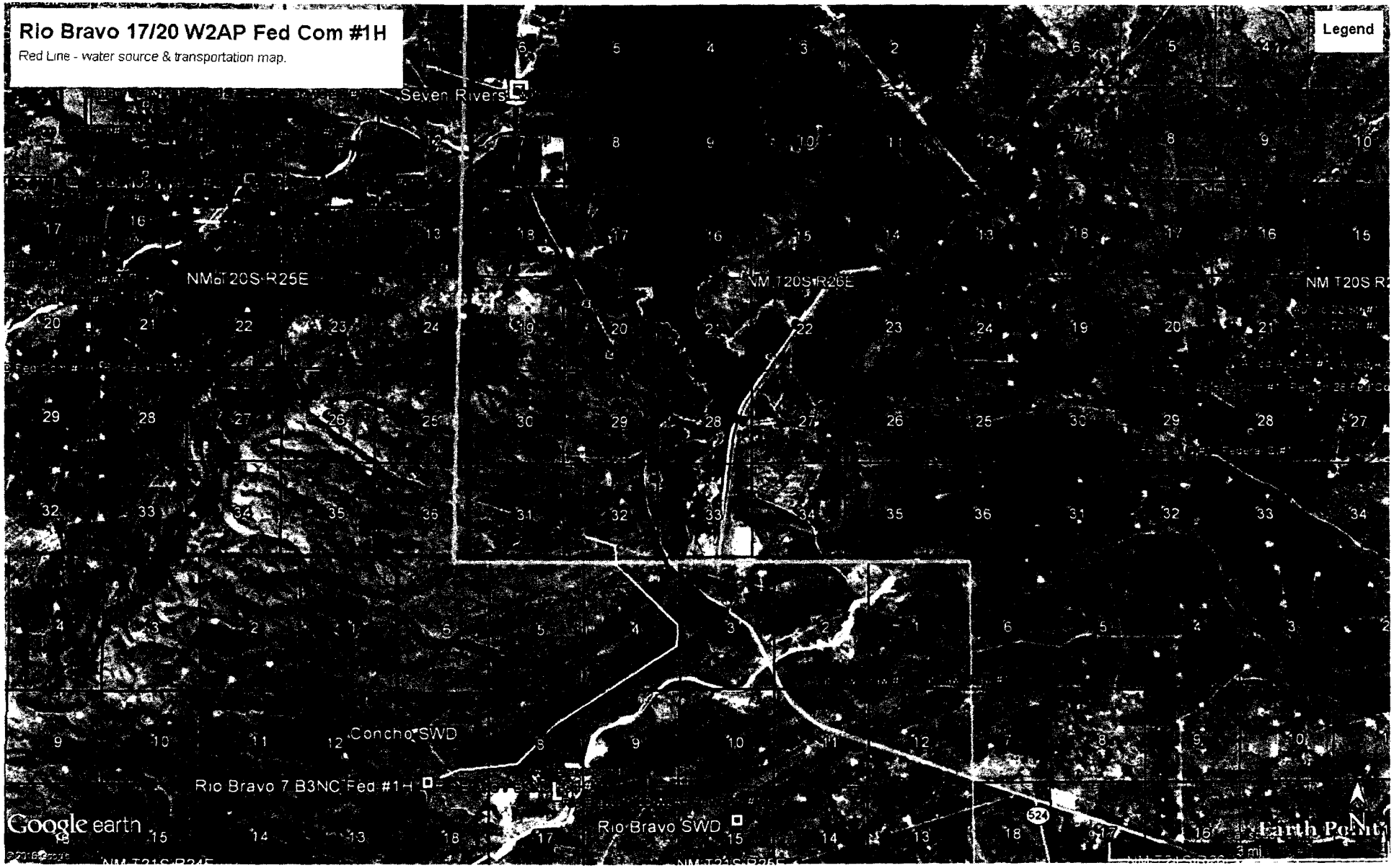
Rio Bravo 17/20 W2AP Fed Com #1H
Red Line - water source & transportation map.
Legend
Seven Rivers
NM T20S R25E
NM T20S R26E
NM T20S R2
Concho SWD
Rio Bravo 7 B3NC Fed #1H
Rio Bravo SWD
Google earth
3 mi


Rio Bravo 17/20 W2AP Fed Com #1H
Red Line - caliche source & transportation map.
Legend
SWSW
SESW
SWSE
SESE
SWSW
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NENE
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SWNW
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SENE
SWN
Google earth
Earth Point
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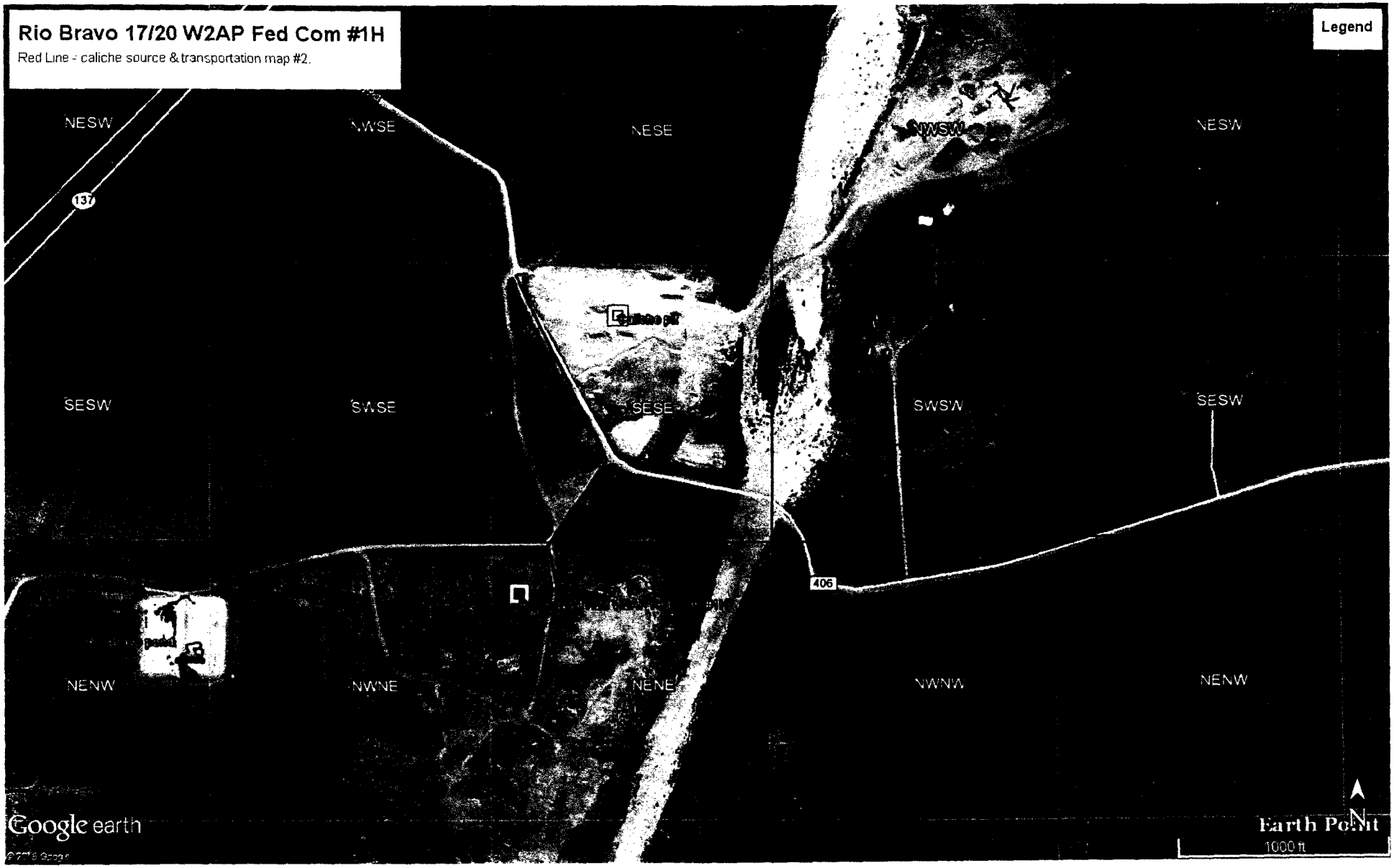
Rio Bravo 17/20 W2AP Fed Com #1H
Red Line - caliche source & transportation map #2.
Legend
NESW
NWSE
NESE
NESW
137
SESW
SWSE
SESE
SWSW
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NENE
NWNW
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Google earth
Earth Point
1000 ft
N

Mewbourne Oil Company, Rio Bravo 17/20 W2AP Fed Com #1H
Sec 17, T21S, R25E
SL: 195' FNL & 1225' FEL, Sec 17
BHL: 330' FSL & 660' FEL, Sec 20

Casing Program

Hole Size	Casing Interval From	Casing Interval To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Jt Tension	SF Body Tension
17.5"	0'	415'	13.375"	48	H40	STC	3.57	8.02	16.16	27.16
12.25"	0'	3100'	9.625"	36	J55	LTC	1.25	2.18	4.06	5.05
8.75"	0'	8025'	7"	26	HCP110	LTC	2.05	2.62	3.32	3.98
6.125"	7307'	17920'	4.5"	13.5	P110	LTC	2.00	2.32	2.36	2.95
				BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h
Must have table for contingency casing

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Is casing API approved? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	Y
If yes, are there three strings cemented to surface?	Y

Additional Assumption: There is no salt present in this wellbore. We plan to drill a 12 ¾" hole into the top of the Bone Spring to 3100' and set intermediate casing.

Mewbourne Oil Company

Eddy County, New Mexico
Rio Bravo 17/20 W2AP Fed Com #1H
Sec 17, T21S, R25E
SL: 195' FNL & 1225' FEL, Sec 17
BHL: 330' FSL & 660' FEL, Sec 20

Plan: Design #1

Standard Planning Report

14 November, 2016

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Rio Bravo 17/20 W2AP Fed Com #1H
Company:	Mewbourne Oil Company	**TVD Reference:**	WELL @ 3404.0usft (Original Well Elev)
Project:	Eddy County, New Mexico	**MD Reference:**	WELL @ 3404.0usft (Original Well Elev)
Site:	Rio Bravo 17/20 W2AP Fed Com #1H	**North Reference:**	Grid
Well:	Sec 17, T21S, R25E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 330' FSL & 660' FEL, Sec 20		
Design:	Design #1		

Project	Eddy County, New Mexico		
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 Rio Bravo 17/20 W2AP Fed Com #1H

Site Position:		**Northing:**	540,583.00 usft	**Latitude:**	32° 29' 10.136 N
From:	Map	**Easting:**	475,585.00 usft	**Longitude:**	104° 24' 45.048 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	-0.04 °

Well Sec 17, T21S, R25E

Well Position	**+N/-S**	0.0 usft	**Northing:**	540,583.00 usft	**Latitude:**	32° 29' 10.136 N
	+E/-W	0.0 usft	**Easting:**	475,585.00 usft	**Longitude:**	104° 24' 45.048 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	3,404.0 usft	**Ground Level:**	3,377.0 usft

Wellbore BHL: 330' FSL & 660' FEL, Sec 20

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/31/2009	8.15	60.34	48,855

Design Design #1

Audit Notes:

Version:	**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	176.83

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
7,307.0	0.00	0.00	7,307.0	0.0	0.0	0.00	0.00	0.00	0.00	KOP @ 7307'
8,207.0	90.00	144.23	7,880.0	-464.9	334.9	10.00	10.00	0.00	144.23	
8,207.2	90.00	144.23	7,880.0	-465.0	335.0	0.00	0.00	0.00	0.00	LP: 660' FNL & 890' F
8,921.3	89.85	179.94	7,881.0	-1,133.6	551.2	5.00	-0.02	5.00	90.26	BHL: 330' FSL & 660'
17,916.8	89.85	179.94	7,904.5	-10,129.0	561.0	0.00	0.00	0.00	0.00	BHL: 330' FSL & 660'

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Rio Bravo 17/20 W2AP Fed Com #1H
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Project:	Eddy County, New Mexico	**MD Reference:**	WELL @ 3404.0usft (Original Well Elev)
Site:	Rio Bravo 17/20 W2AP Fed Com #1H	**North Reference:**	Grid
Well:	Sec 17, T21S, R25E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 330' FSL & 660' FEL, Sec 20		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
SL: 195' FNL & 1225' FEL, Sec 17									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00

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Wellbore:	BHL: 330' FSL & 660' FEL, Sec 20		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,800.0	0.0	0.0	0.0	0.00	0.00	0.00
6,900.0	0.00	0.00	6,900.0	0.0	0.0	0.0	0.00	0.00	0.00
7,000.0	0.00	0.00	7,000.0	0.0	0.0	0.0	0.00	0.00	0.00
7,100.0	0.00	0.00	7,100.0	0.0	0.0	0.0	0.00	0.00	0.00
7,200.0	0.00	0.00	7,200.0	0.0	0.0	0.0	0.00	0.00	0.00
7,300.0	0.00	0.00	7,300.0	0.0	0.0	0.0	0.00	0.00	0.00
7,307.0	0.00	0.00	7,307.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP @ 7307'									
7,400.0	9.30	144.23	7,399.6	-6.1	4.4	6.3	10.00	10.00	0.00
7,500.0	19.30	144.23	7,496.4	-26.1	18.8	27.1	10.00	10.00	0.00
7,600.0	29.30	144.23	7,587.4	-59.5	42.8	61.7	10.00	10.00	0.00
7,700.0	39.30	144.23	7,669.9	-105.1	75.7	109.1	10.00	10.00	0.00
7,800.0	49.30	144.23	7,741.4	-161.7	116.5	167.9	10.00	10.00	0.00
7,900.0	59.30	144.23	7,799.7	-227.5	163.9	236.2	10.00	10.00	0.00
8,000.0	69.30	144.23	7,843.0	-300.5	216.5	312.0	10.00	10.00	0.00
8,033.5	72.64	144.23	7,853.9	-326.2	235.0	338.7	10.00	10.00	0.00
FTP: 521' FNL & 990' FEL, Sec 17									
8,100.0	79.30	144.23	7,870.0	-378.5	272.7	393.0	10.00	10.00	0.00
8,200.0	89.30	144.23	7,880.0	-459.2	330.8	476.8	10.00	10.00	0.00
8,207.0	90.00	144.23	7,880.0	-464.9	334.9	482.7	10.00	10.00	0.00
8,207.2	90.00	144.23	7,880.0	-465.0	335.0	482.8	0.00	0.00	0.00
LP: 660' FNL & 890' FEL, Sec 17									
8,300.0	89.98	148.87	7,880.0	-542.4	386.1	562.9	5.00	-0.02	5.00
8,400.0	89.96	153.87	7,880.1	-630.2	434.0	653.2	5.00	-0.02	5.00
8,500.0	89.94	158.87	7,880.2	-721.7	474.1	746.9	5.00	-0.02	5.00
8,600.0	89.91	163.87	7,880.3	-816.5	506.0	843.2	5.00	-0.02	5.00
8,700.0	89.89	168.87	7,880.5	-913.6	529.6	941.5	5.00	-0.02	5.00
8,800.0	89.87	173.87	7,880.7	-1,012.5	544.6	1,041.0	5.00	-0.02	5.00
8,900.0	89.85	178.87	7,880.9	-1,112.2	550.9	1,141.0	5.00	-0.02	5.00
8,921.3	89.85	179.94	7,881.0	-1,133.6	551.2	1,162.3	5.00	-0.02	5.00
9,000.0	89.85	179.94	7,881.2	-1,212.2	551.2	1,240.9	0.00	0.00	0.00
9,100.0	89.85	179.94	7,881.4	-1,312.2	551.4	1,340.7	0.00	0.00	0.00
9,200.0	89.85	179.94	7,881.7	-1,412.2	551.5	1,440.6	0.00	0.00	0.00
9,300.0	89.85	179.94	7,882.0	-1,512.2	551.6	1,540.4	0.00	0.00	0.00
9,400.0	89.85	179.94	7,882.2	-1,612.2	551.7	1,640.3	0.00	0.00	0.00
9,500.0	89.85	179.94	7,882.5	-1,712.2	551.8	1,740.1	0.00	0.00	0.00
9,600.0	89.85	179.94	7,882.7	-1,812.2	551.9	1,840.0	0.00	0.00	0.00
9,700.0	89.85	179.94	7,883.0	-1,912.2	552.0	1,939.8	0.00	0.00	0.00

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Wellbore:	BHL: 330' FSL & 660' FEL, Sec 20		
Design:	Design #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,800.0	89.85	179.94	7,883.3	-2,012.2	552.1	2,039.7	0.00	0.00	0.00
9,900.0	89.85	179.94	7,883.5	-2,112.2	552.2	2,139.5	0.00	0.00	0.00
10,000.0	89.85	179.94	7,883.8	-2,212.2	552.3	2,239.4	0.00	0.00	0.00
10,100.0	89.85	179.94	7,884.1	-2,312.2	552.4	2,339.2	0.00	0.00	0.00
10,200.0	89.85	179.94	7,884.3	-2,412.2	552.6	2,439.1	0.00	0.00	0.00
10,300.0	89.85	179.94	7,884.6	-2,512.2	552.7	2,538.9	0.00	0.00	0.00
10,400.0	89.85	179.94	7,884.8	-2,612.2	552.8	2,638.8	0.00	0.00	0.00
10,500.0	89.85	179.94	7,885.1	-2,712.2	552.9	2,738.7	0.00	0.00	0.00
10,600.0	89.85	179.94	7,885.4	-2,812.2	553.0	2,838.5	0.00	0.00	0.00
10,700.0	89.85	179.94	7,885.6	-2,912.2	553.1	2,938.4	0.00	0.00	0.00
10,800.0	89.85	179.94	7,885.9	-3,012.2	553.2	3,038.2	0.00	0.00	0.00
10,900.0	89.85	179.94	7,886.1	-3,112.2	553.3	3,138.1	0.00	0.00	0.00
11,000.0	89.85	179.94	7,886.4	-3,212.2	553.4	3,237.9	0.00	0.00	0.00
11,100.0	89.85	179.94	7,886.7	-3,312.2	553.5	3,337.8	0.00	0.00	0.00
11,200.0	89.85	179.94	7,886.9	-3,412.2	553.6	3,437.6	0.00	0.00	0.00
11,300.0	89.85	179.94	7,887.2	-3,512.2	553.8	3,537.5	0.00	0.00	0.00
11,400.0	89.85	179.94	7,887.5	-3,612.2	553.9	3,637.3	0.00	0.00	0.00
11,500.0	89.85	179.94	7,887.7	-3,712.2	554.0	3,737.2	0.00	0.00	0.00
11,600.0	89.85	179.94	7,888.0	-3,812.2	554.1	3,837.0	0.00	0.00	0.00
11,700.0	89.85	179.94	7,888.2	-3,912.2	554.2	3,936.9	0.00	0.00	0.00
11,800.0	89.85	179.94	7,888.5	-4,012.2	554.3	4,036.7	0.00	0.00	0.00
11,900.0	89.85	179.94	7,888.8	-4,112.2	554.4	4,136.6	0.00	0.00	0.00
12,000.0	89.85	179.94	7,889.0	-4,212.2	554.5	4,236.4	0.00	0.00	0.00
12,100.0	89.85	179.94	7,889.3	-4,312.2	554.6	4,336.3	0.00	0.00	0.00
12,200.0	89.85	179.94	7,889.5	-4,412.2	554.7	4,436.1	0.00	0.00	0.00
12,300.0	89.85	179.94	7,889.8	-4,512.2	554.9	4,536.0	0.00	0.00	0.00
12,400.0	89.85	179.94	7,890.1	-4,612.2	555.0	4,635.9	0.00	0.00	0.00
12,500.0	89.85	179.94	7,890.3	-4,712.2	555.1	4,735.7	0.00	0.00	0.00
12,600.0	89.85	179.94	7,890.6	-4,812.2	555.2	4,835.6	0.00	0.00	0.00
12,700.0	89.85	179.94	7,890.9	-4,912.2	555.3	4,935.4	0.00	0.00	0.00
12,800.0	89.85	179.94	7,891.1	-5,012.2	555.4	5,035.3	0.00	0.00	0.00
12,900.0	89.85	179.94	7,891.4	-5,112.2	555.5	5,135.1	0.00	0.00	0.00
13,000.0	89.85	179.94	7,891.6	-5,212.2	555.6	5,235.0	0.00	0.00	0.00
13,100.0	89.85	179.94	7,891.9	-5,312.2	555.7	5,334.8	0.00	0.00	0.00
13,200.0	89.85	179.94	7,892.2	-5,412.2	555.8	5,434.7	0.00	0.00	0.00
13,300.0	89.85	179.94	7,892.4	-5,512.2	555.9	5,534.5	0.00	0.00	0.00
13,400.0	89.85	179.94	7,892.7	-5,612.2	556.1	5,634.4	0.00	0.00	0.00
13,500.0	89.85	179.94	7,893.0	-5,712.2	556.2	5,734.2	0.00	0.00	0.00
13,600.0	89.85	179.94	7,893.2	-5,812.2	556.3	5,834.1	0.00	0.00	0.00
13,700.0	89.85	179.94	7,893.5	-5,912.2	556.4	5,933.9	0.00	0.00	0.00
13,800.0	89.85	179.94	7,893.7	-6,012.2	556.5	6,033.8	0.00	0.00	0.00
13,900.0	89.85	179.94	7,894.0	-6,112.2	556.6	6,133.6	0.00	0.00	0.00
14,000.0	89.85	179.94	7,894.3	-6,212.2	556.7	6,233.5	0.00	0.00	0.00
14,100.0	89.85	179.94	7,894.5	-6,312.2	556.8	6,333.3	0.00	0.00	0.00
14,200.0	89.85	179.94	7,894.8	-6,412.2	556.9	6,433.2	0.00	0.00	0.00
14,300.0	89.85	179.94	7,895.0	-6,512.2	557.0	6,533.1	0.00	0.00	0.00
14,400.0	89.85	179.94	7,895.3	-6,612.2	557.2	6,632.9	0.00	0.00	0.00
14,500.0	89.85	179.94	7,895.6	-6,712.2	557.3	6,732.8	0.00	0.00	0.00
14,600.0	89.85	179.94	7,895.8	-6,812.2	557.4	6,832.6	0.00	0.00	0.00
14,700.0	89.85	179.94	7,896.1	-6,912.2	557.5	6,932.5	0.00	0.00	0.00
14,800.0	89.85	179.94	7,896.4	-7,012.2	557.6	7,032.3	0.00	0.00	0.00
14,900.0	89.85	179.94	7,896.6	-7,112.2	557.7	7,132.2	0.00	0.00	0.00
15,000.0	89.85	179.94	7,896.9	-7,212.2	557.8	7,232.0	0.00	0.00	0.00
15,100.0	89.85	179.94	7,897.1	-7,312.2	557.9	7,331.9	0.00	0.00	0.00

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Rio Bravo 17/20 W2AP Fed Com #1H
Company:	Mewbourne Oil Company	**TVD Reference:**	WELL @ 3404.0usft (Original Well Elev)
Project:	Eddy County, New Mexico	**MD Reference:**	WELL @ 3404.0usft (Original Well Elev)
Site:	Rio Bravo 17/20 W2AP Fed Com #1H	**North Reference:**	Grid
Well:	Sec 17, T21S, R25E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 330' FSL & 660' FEL, Sec 20		
Design:	Design #1		

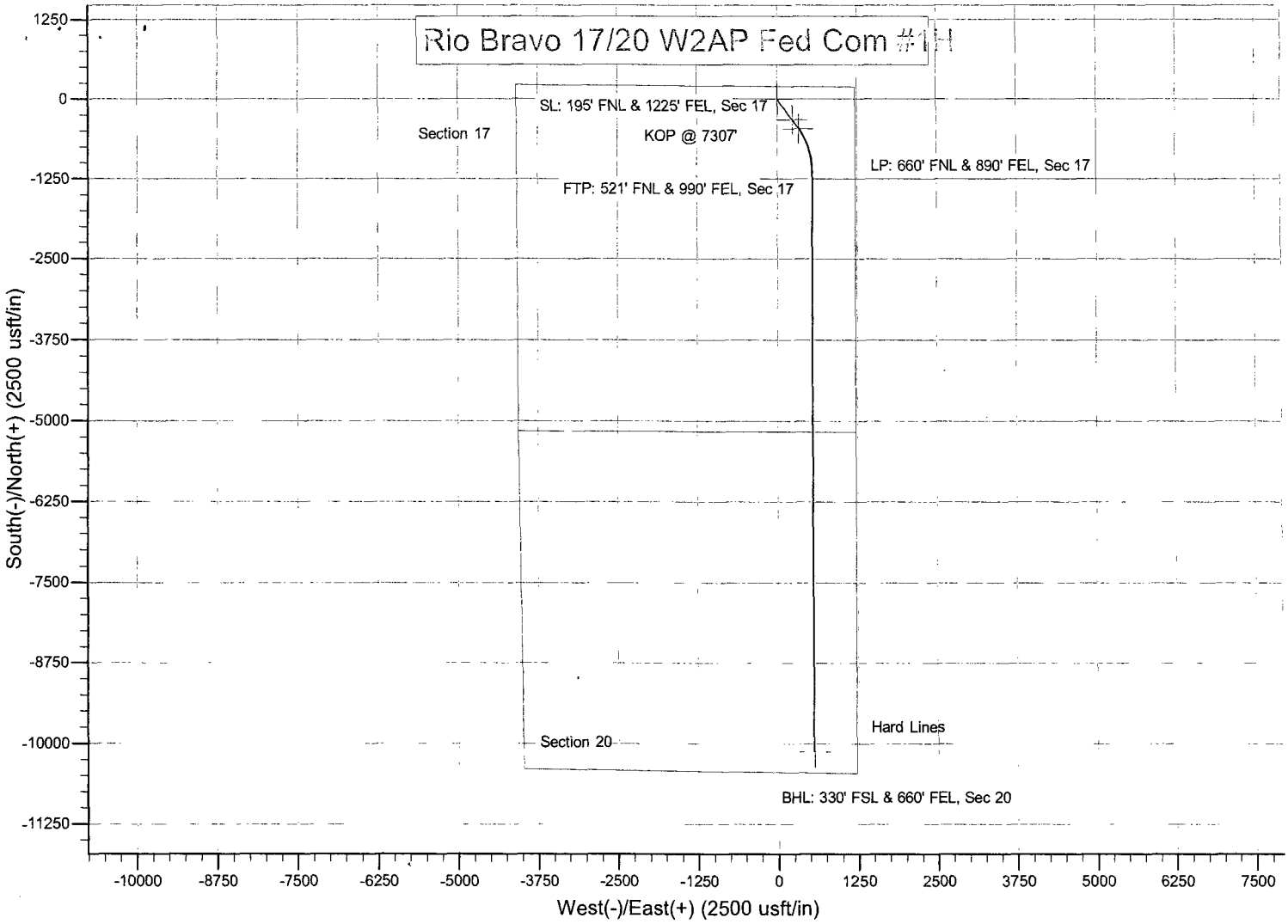
Planned Survey

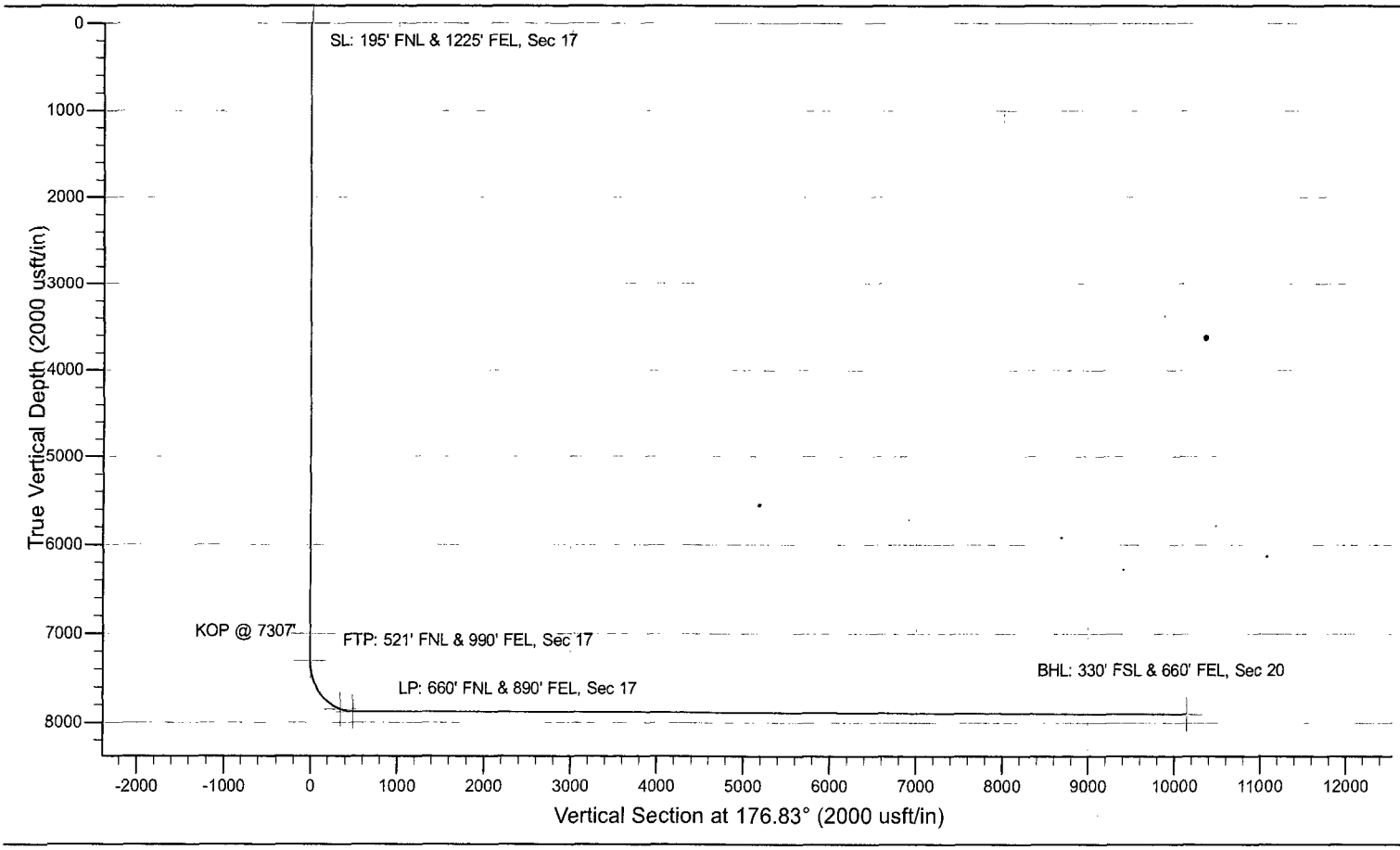
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,200.0	89.85	179.94	7,897.4	-7,412.2	558.0	7,431.7	0.00	0.00	0.00
15,300.0	89.85	179.94	7,897.7	-7,512.2	558.1	7,531.6	0.00	0.00	0.00
15,400.0	89.85	179.94	7,897.9	-7,612.2	558.2	7,631.4	0.00	0.00	0.00
15,500.0	89.85	179.94	7,898.2	-7,712.2	558.4	7,731.3	0.00	0.00	0.00
15,600.0	89.85	179.94	7,898.5	-7,812.2	558.5	7,831.1	0.00	0.00	0.00
15,700.0	89.85	179.94	7,898.7	-7,912.2	558.6	7,931.0	0.00	0.00	0.00
15,800.0	89.85	179.94	7,899.0	-8,012.2	558.7	8,030.8	0.00	0.00	0.00
15,900.0	89.85	179.94	7,899.2	-8,112.2	558.8	8,130.7	0.00	0.00	0.00
16,000.0	89.85	179.94	7,899.5	-8,212.2	558.9	8,230.5	0.00	0.00	0.00
16,100.0	89.85	179.94	7,899.8	-8,312.2	559.0	8,330.4	0.00	0.00	0.00
16,200.0	89.85	179.94	7,900.0	-8,412.2	559.1	8,430.3	0.00	0.00	0.00
16,300.0	89.85	179.94	7,900.3	-8,512.2	559.2	8,530.1	0.00	0.00	0.00
16,400.0	89.85	179.94	7,900.5	-8,612.2	559.3	8,630.0	0.00	0.00	0.00
16,500.0	89.85	179.94	7,900.8	-8,712.2	559.4	8,729.8	0.00	0.00	0.00
16,600.0	89.85	179.94	7,901.1	-8,812.2	559.6	8,829.7	0.00	0.00	0.00
16,700.0	89.85	179.94	7,901.3	-8,912.2	559.7	8,929.5	0.00	0.00	0.00
16,800.0	89.85	179.94	7,901.6	-9,012.2	559.8	9,029.4	0.00	0.00	0.00
16,900.0	89.85	179.94	7,901.9	-9,112.2	559.9	9,129.2	0.00	0.00	0.00
17,000.0	89.85	179.94	7,902.1	-9,212.2	560.0	9,229.1	0.00	0.00	0.00
17,100.0	89.85	179.94	7,902.4	-9,312.2	560.1	9,328.9	0.00	0.00	0.00
17,200.0	89.85	179.94	7,902.6	-9,412.2	560.2	9,428.8	0.00	0.00	0.00
17,300.0	89.85	179.94	7,902.9	-9,512.2	560.3	9,528.6	0.00	0.00	0.00
17,400.0	89.85	179.94	7,903.2	-9,612.2	560.4	9,628.5	0.00	0.00	0.00
17,500.0	89.85	179.94	7,903.4	-9,712.2	560.5	9,728.3	0.00	0.00	0.00
17,600.0	89.85	179.94	7,903.7	-9,812.2	560.7	9,828.2	0.00	0.00	0.00
17,700.0	89.85	179.94	7,903.9	-9,912.2	560.8	9,928.0	0.00	0.00	0.00
17,800.0	89.85	179.94	7,904.2	-10,012.2	560.9	10,027.9	0.00	0.00	0.00
17,900.0	89.85	179.94	7,904.5	-10,112.2	561.0	10,127.7	0.00	0.00	0.00
17,916.8	89.85	179.94	7,904.5	-10,129.0	561.0	10,144.5	0.00	0.00	0.00
BHL: 330' FSL & 660' FEL, Sec 20									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SL: 195' FNL & 1225' FE - plan hits target center - Point	0.00	360.00	0.0	0.0	0.0	540,583.00	475,585.00	32° 29' 10.136 N	104° 24' 45.048 W
KOP @ 7307' - plan hits target center - Point	0.00	360.00	7,307.0	0.0	0.0	540,583.00	475,585.00	32° 29' 10.136 N	104° 24' 45.048 W
FTP: 521' FNL & 990' FE - plan hits target center - Point	0.00	360.00	7,853.9	-326.2	235.0	540,256.81	475,820.00	32° 29' 6.910 N	104° 24' 42.302 W
LP: 660' FNL & 890' FEL - plan hits target center - Point	0.00	360.00	7,880.0	-465.0	335.0	540,118.00	475,920.00	32° 29' 5.537 N	104° 24' 41.133 W
BHL: 330' FSL & 660' FE - plan misses target center by 0.5usft at 17916.8usft MD (7904.5 TVD, -10129.0 N, 561.0 E) - Point	0.00	360.00	7,905.0	-10,129.0	561.0	530,454.00	476,146.00	32° 27' 29.904 N	104° 24' 38.413 W

Database:	Hobbs	**Local Co-ordinate Reference:**	Site Rio Bravo 17/20 W2AP Fed Com #1H
Company:	Mewbourne Oil Company	**TVD Reference:**	WELL @ 3404.0usft (Original Well Elev)
Project:	Eddy County, New Mexico	**MD Reference:**	WELL @ 3404.0usft (Original Well Elev)
Site:	Rio Bravo 17/20 W2AP Fed Com #1H	**North Reference:**	Grid
Well:	Sec 17, T21S, R25E	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BHL: 330' FSL & 660' FEL, Sec 20		
Design:	Design #1		


Rio Bravo 17/20 W2AP Fed Com #1H
SL: 195' FNL & 1225' FEL, Sec 17
Section 17
KOP @ 7307'
LP: 660' FNL & 890' FEL, Sec 17
FTP: 521' FNL & 990' FEL, Sec 17
Section 20
Hard Lines
BHL: 330' FSL & 660' FEL, Sec 20
South(-)/North(+) (2500 usft/in)
West(-)/East(+) (2500 usft/in)
1250
0
-1250
-2500
-3750
-5000
-6250
-7500
-8750
-10000
-11250
-10000
-8750
-7500
-6250
-5000
-3750
-2500
-1250
0
1250
2500
3750
5000
6250
7500


SL: 195' FNL & 1225' FEL, Sec 17
KOP @ 7307'
FTP: 521' FNL & 990' FEL, Sec 17
LP: 660' FNL & 890' FEL, Sec 17
BHL: 330' FSL & 660' FEL, Sec 20
True Vertical Depth (2000 usft/in)
Vertical Section at 176.83° (2000 usft/in)
0
1000
2000
3000
4000
5000
6000
7000
8000
-2000
-1000
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
10000
11000
12000

3M BOPE & Closed Loop Equipment Schematic

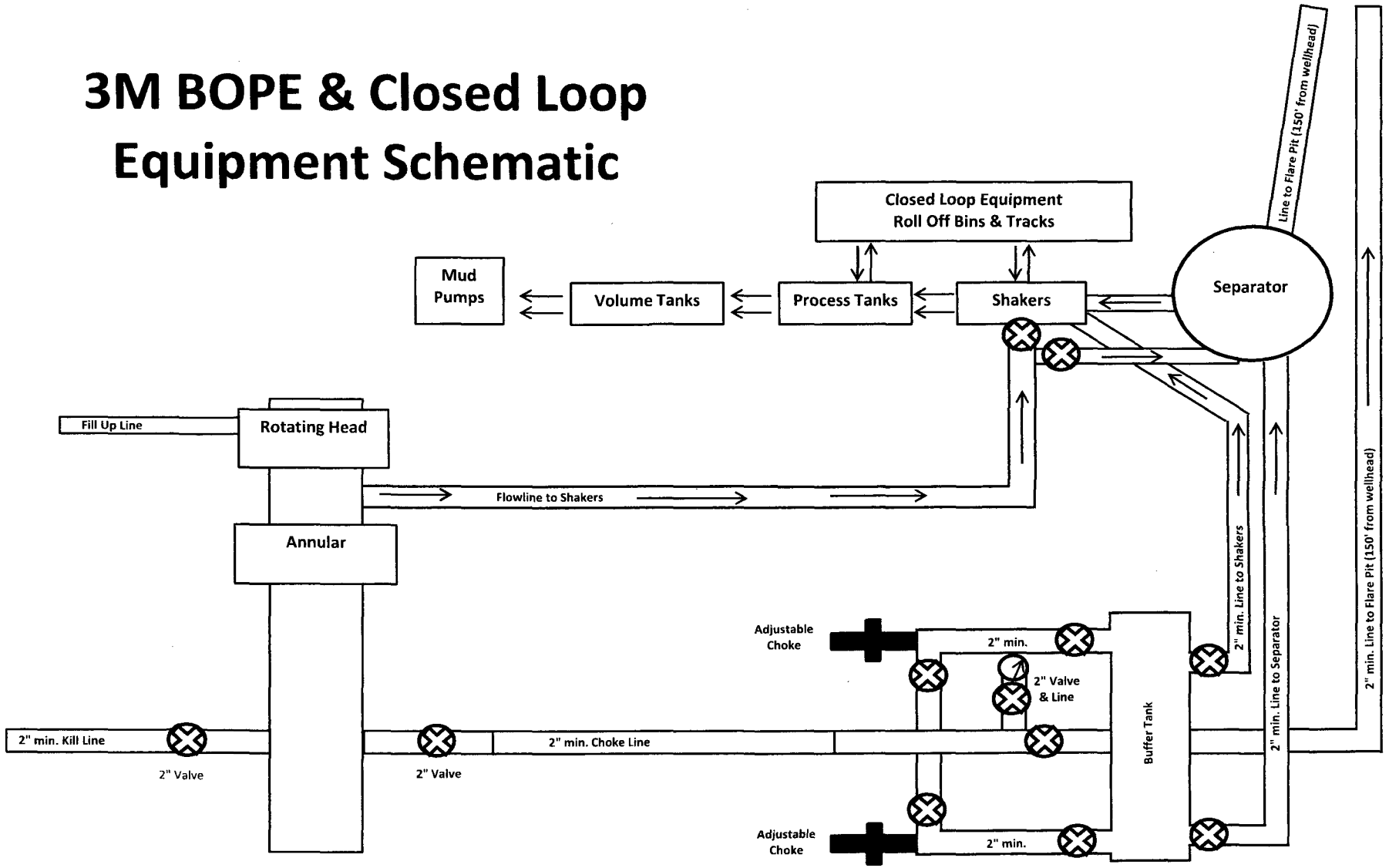


Exhibit "2"

Mewbourne Oil Company
BOP Schematic for

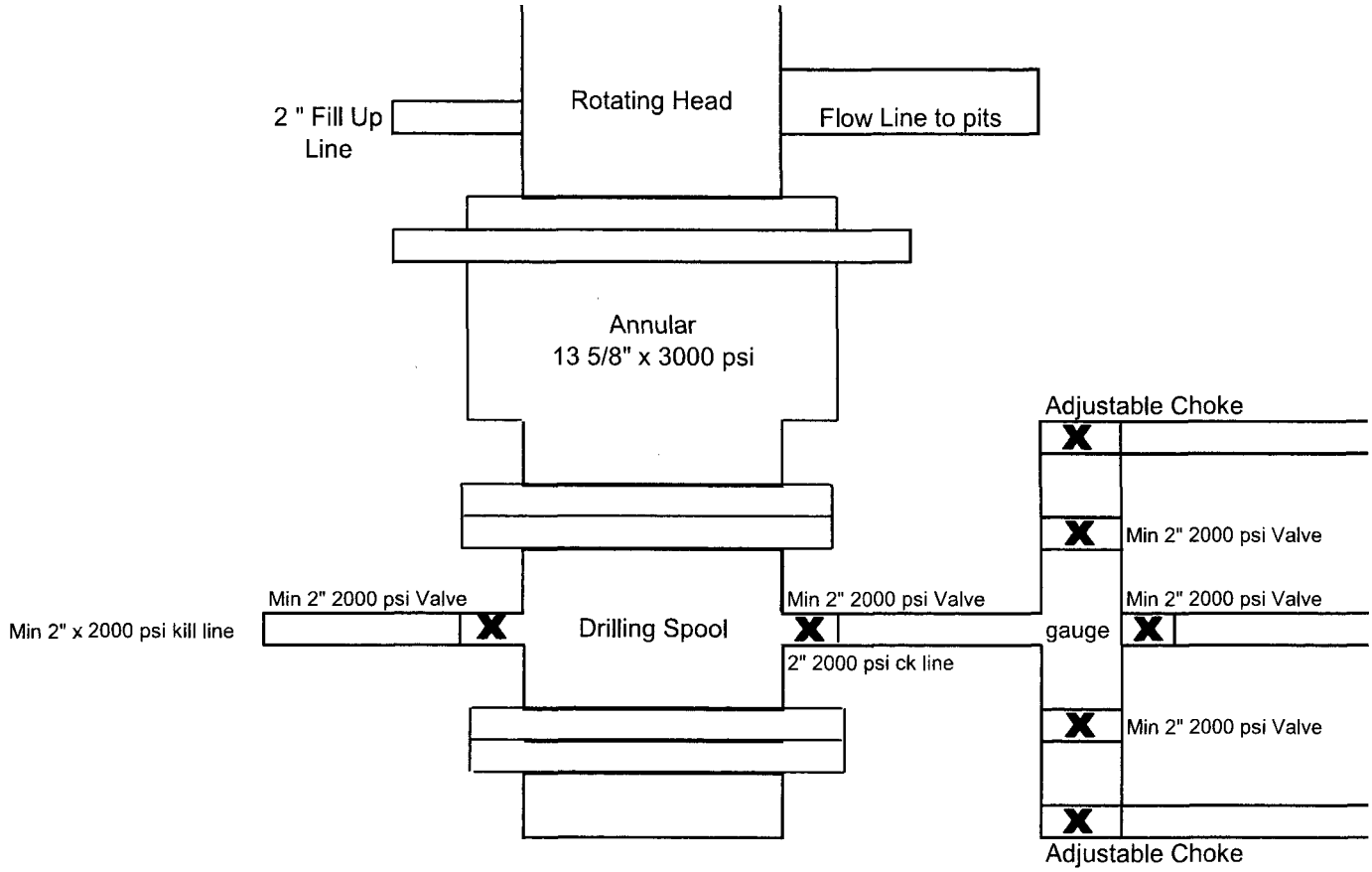


Exhibit #2

5M BOPE & Closed Loop Equipment Schematic

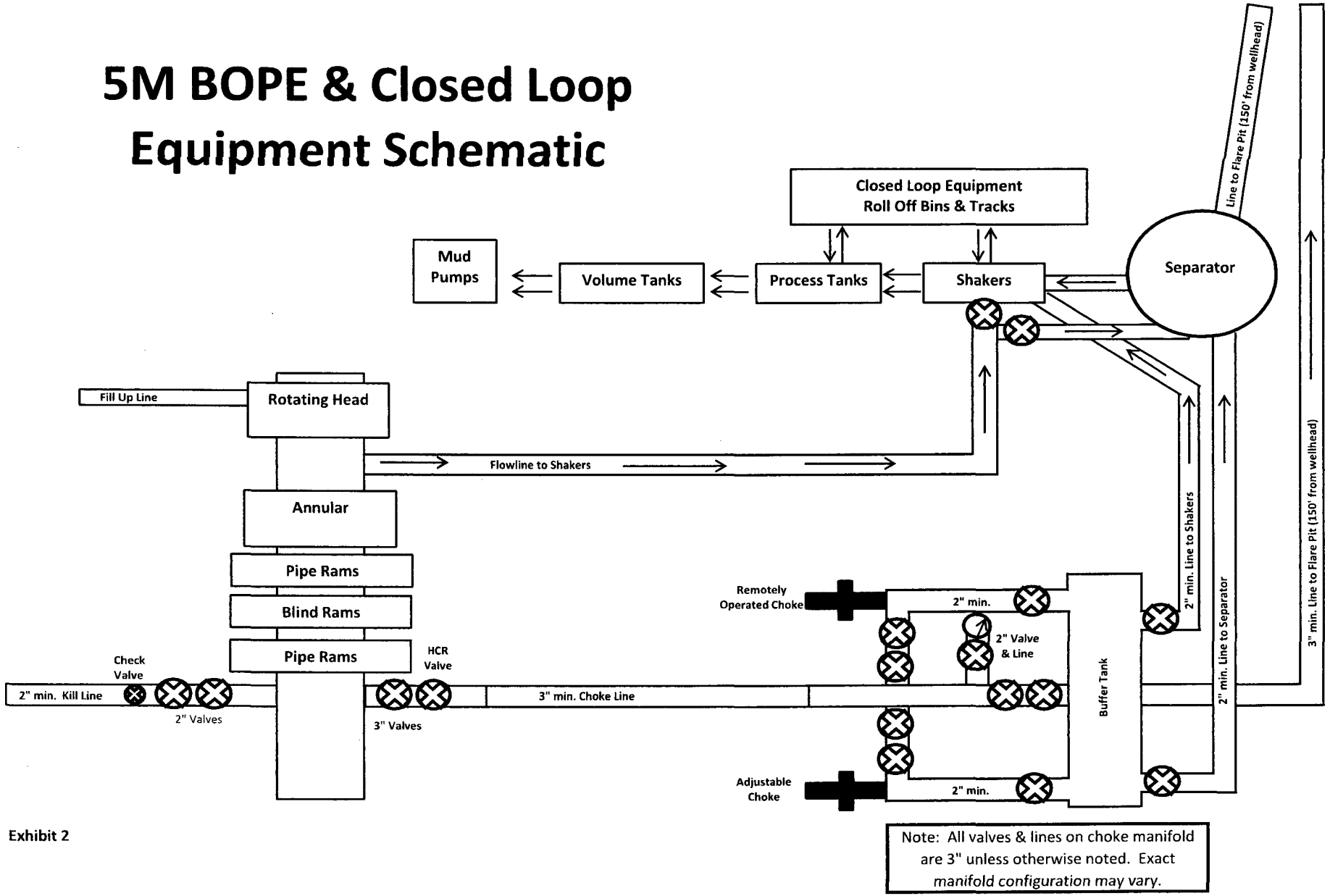
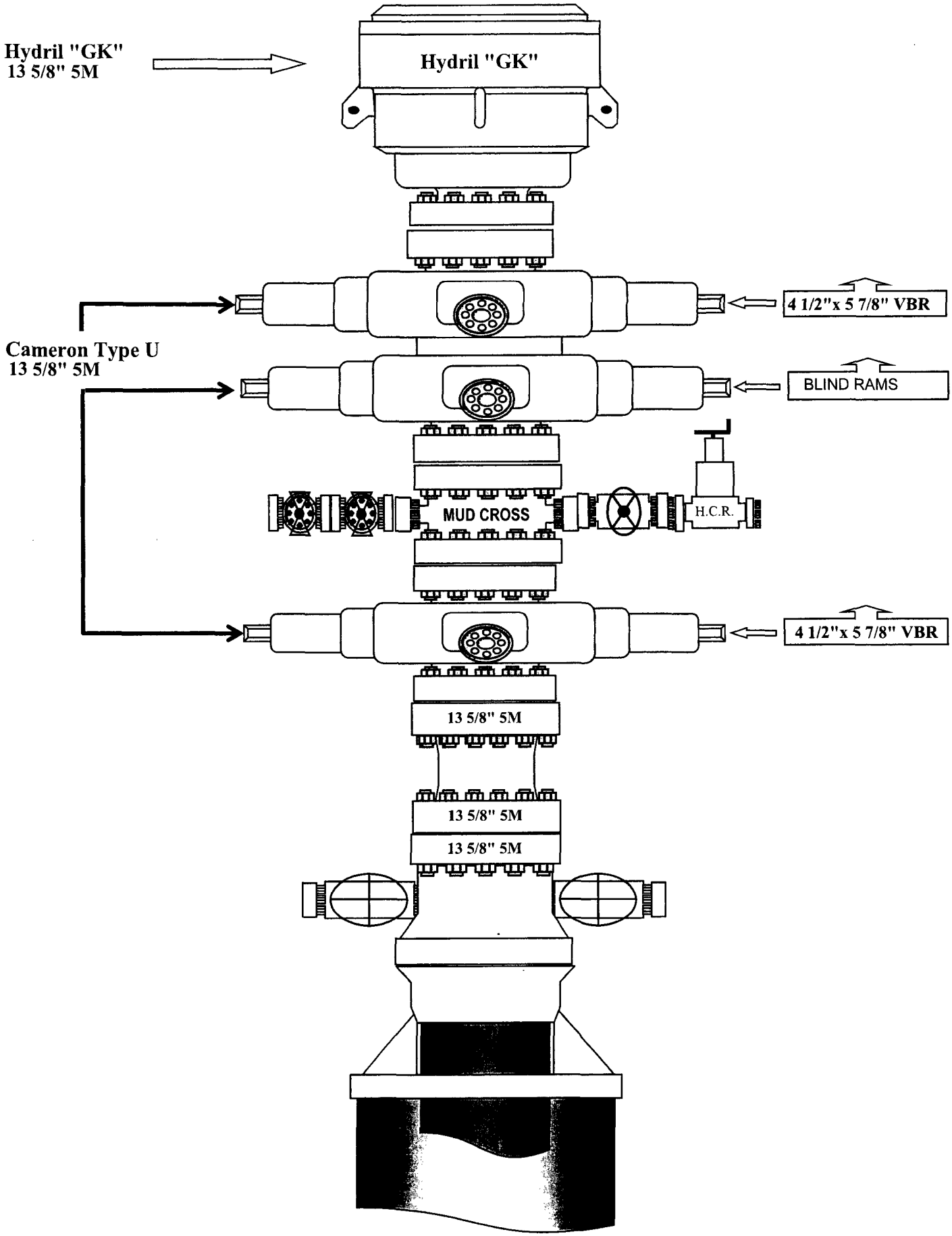


Exhibit 2

Note: All valves & lines on choke manifold are 3" unless otherwise noted. Exact *manifold configuration may vary.*


Hydril "GK"
13 5/8" 5M
Hydril "GK"
4 1/2"x 5 7/8" VBR
Cameron Type U
13 5/8" 5M
BLIND RAMS
MUD CROSS
H.C.R.
4 1/2"x 5 7/8" VBR
13 5/8" 5M
13 5/8" 5M
13 5/8" 5M

Hydrogen Sulfide Drilling Operations Plan
Mewbourne Oil Company

1. General Requirements

Rule 118 does not apply to this well because MOC has researched this area and no high concentrations of H2S were found. MOC will have on location and working all H2S safety equipment before the Delaware formation for purposes of safety and insurance requirements.

2. Hydrogen Sulfide Training

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will have received training from a qualified instructor in the following areas prior to entering the drilling pad area of the well:

1. The hazards and characteristics of hydrogen sulfide gas.
2. The proper use of personal protective equipment and life support systems.
3. The proper use of hydrogen sulfide detectors, alarms, warning systems, briefing areas, evacuation procedures.
4. The proper techniques for first aid and rescue operations.

Additionally, supervisory personnel will be trained in the following areas:

1 The effects of hydrogen sulfide on metal components. If high tensile tubular systems are utilized, supervisory personnel will be trained in their special maintenance requirements.
2 Corrective action and shut in procedures, blowout prevention, and well control procedures while drilling a well.
3 The contents of the Hydrogen Sulfide Drilling Operations Plan.

There will be an initial training session prior to encountering a know hydrogen sulfide source. The initial training session shall include a review of the site specific Hydrogen Sulfide Drilling Operations Plan.

3. Hydrogen Sulfide Safety Equipment and Systems

All hydrogen sulfide safety equipment and systems will be installed, tested, and operational prior to drilling below the 9 5/8" intermediate casing.

1. Well Control Equipment
   - A. Choke manifold with minimum of one adjustable choke/remote choke.
   - B. Blowout preventers equipped with blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit
   - C. Auxiliary equipment including annular type blowout preventer.
2. Protective Equipment for Essential Personnel
   Thirty minute self contained work unit located in the dog house and at briefing areas.

Additionally: If H2S is encountered in concentrations less than 10 ppm, fans will be placed in work areas to prevent the accumulation of hazardous amounts of poisonous gas. If higher concentrations of H2S are detected the well will be shut in and a rotating head, mud/gas separator, remote choke and flare line with igniter will be installed.

3. Hydrogen Sulfide Protection and Monitoring Equipment
Two portable hydrogen sulfide monitors positioned on location for optimum coverage and detection. The units shall have audible sirens to notify personnel when hydrogen sulfide levels exceed 20 PPM.

4. Visual Warning Systems
A. Wind direction indicators as indicated on the wellsite diagram.
B. Caution signs shall be posted on roads providing access to location. Signs shall be painted a high visibility color with lettering of sufficient size to be readable at reasonable distances from potentially contaminated areas.

4. Mud Program

The mud program has been designed to minimize the amount of hydrogen sulfide entrained in the mud system. Proper mud weight, safe drilling practices, and the use of hydrogen sulfide scavengers will minimize hazards while drilling the well.

5. Metallurgy

All tubular systems, wellheads, blowout preventers, drilling spools, kill lines, choke manifolds, and valves shall be suitable for service in a hydrogen sulfide environment when chemically treated.

6. Communications

State & County Officials phone numbers are posted on rig floor and supervisors trailer. Communications in company vehicles and toolpushers are either two way radios or cellular phones.

7. Well Testing

Drill stem testing is not an anticipated requirement for evaluation of this well. If a drill stem test is required, it will be conducted with a minimum number of personnel in the immediate vicinity. The test will be conducted during daylight hours only.

8. Emergency Phone Numbers

Eddy County Sheriff's Office	**911 or 575-887-7551**
Ambulance Service	**911 or 575-885-2111**
Carlsbad Fire Dept	**911 or 575-885-2111**
Loco Hills Volunteer Fire Dept.	**911 or 575-677-3266**
Closest Medical Facility - Columbia Medical Center of Carlsbad	**575-492-5000**

Mewbourne Oil Company	**Hobbs District Office**	**575-393-5905**
	Fax	**575-397-6252**
	2nd Fax	**575-393-7259**
District Manager	**Robin Terrell**	**575-390-4816**
Drilling Superintendent	**Frosty Lathan**	**575-390-4103**
	Bradley Bishop	**575-390-6838**
Drilling Foreman	**Wesley Noseff**	**575-441-0729**

ENGINEERING & SERVICES

GATES E & S NORTH AMERICA, INC.
134 44TH STREET
CORPUS CHRISTI, TEXAS 78405

PHONE: 361-887-9807
FAX: 361-887-0812
EMAIL: *Tim.Cantu@gates.com*
WEB: www.gates.com

10K CEMENTING ASSEMBLY PRESSURE TEST CERTIFICATE

Customer :	AUSTIN DISTRIBUTING	Test Date:	4/30/2015
Customer Ref. :	4060578	Hose Serial No.:	D-043015-7
Invoice No. :	500506	Created By:	JUSTIN CROPPER

Product Description:	10K3.548.0CK4.1/1610KFLGE/E LE

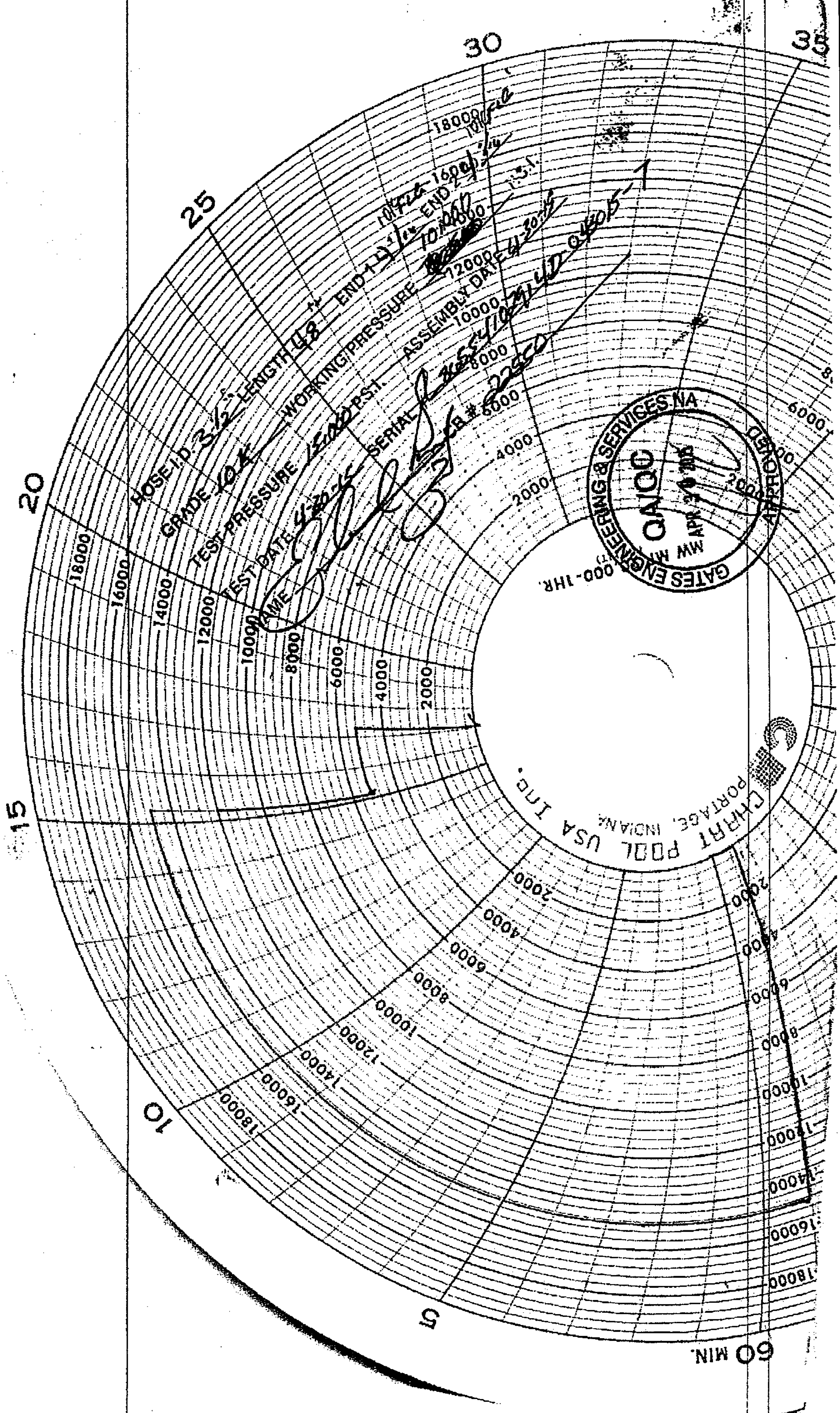
End Fitting 1 :	4 1/16 10K FLG	End Fitting 2 :	4 1/16 10K FLG
Gates Part No. :	4773-6290	Assembly Code :	L36554102914D-043015-7
Working Pressure :	10,000 PSI	Test Pressure :	15,000 PSI

Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Oilfield Roughneck Agreement/Specification requirements and passed the 15 minute hydrostatic test per API Spec 7K/Q1, Fifth Edition, June 2010, Test pressure 9.6.7 and per Table 9 to 15,000 psi in accordance with this product number. Hose burst pressure 9.6.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9.

Quality Manager :	QUALITY	Produciton:	PRODUCTION
Date :	4/30/2015	Date :	4/30/2015
Signature :		Signature :	

Form-PTC - 01 Rev.0 2

Gates



HOSE I.D.
LENGTH
END 1
END 2
GRADE
WORKING PRESSURE
TEST PRESSURE
P.S.I.
ASSEMBLY DATE
TEST DATE
SERIAL
CB #
NAME
GATES ENGINEERING & SERVICES NA
QA/QC
APPROVED
APR 20 2015
CHART POOL USA Inc.
PORTAGE, INDIANA
60 MIN.

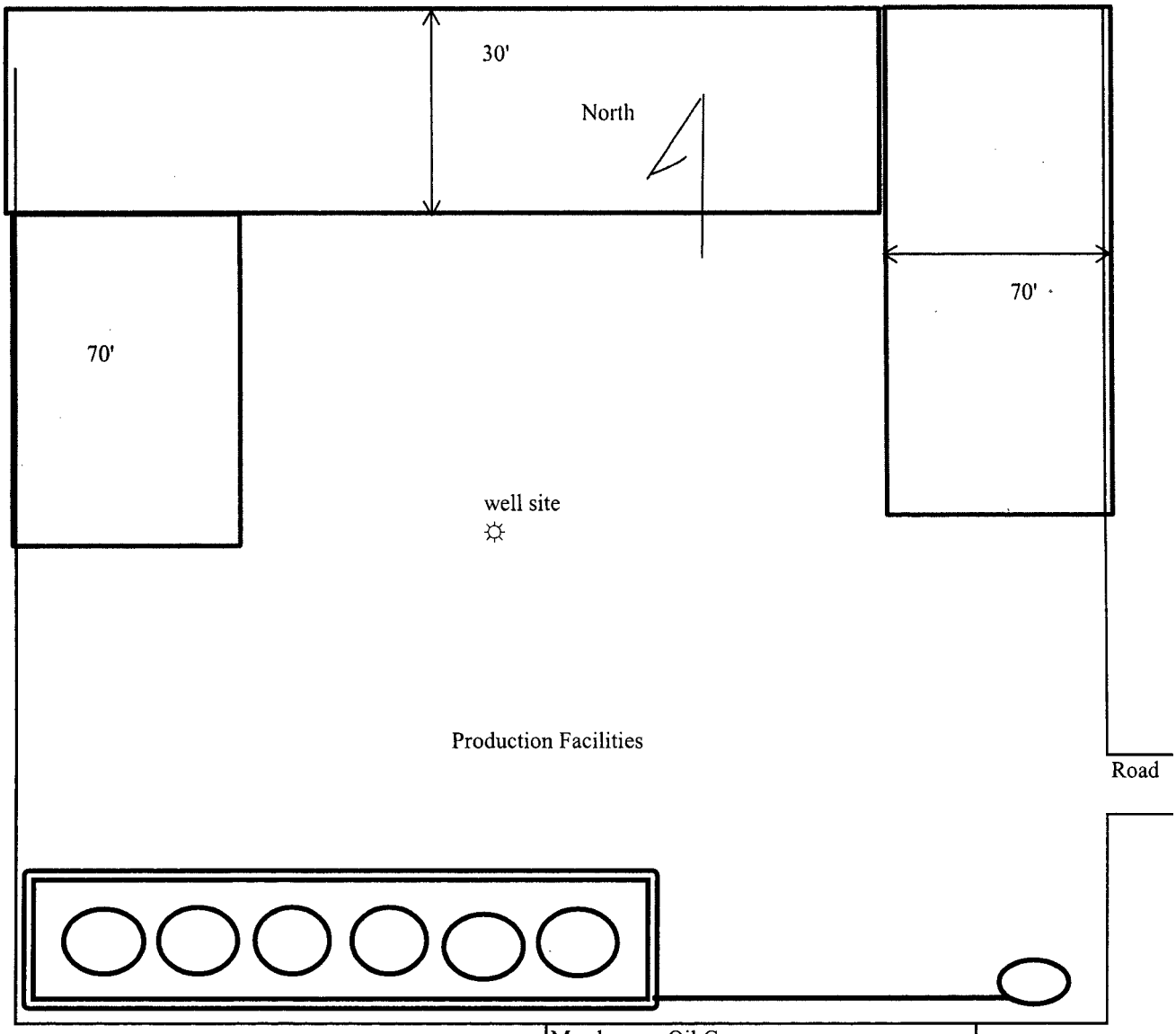


Exhibit 6

Mewbourne Oil Company
Rio Bravo 17/20 W2AP Fed Com #1H
195' FNL & 1225' FEL
Sec 17 T21S R25E
Eddy Co. NM

PECOS DISTRICT
DRILLING OPERATIONS
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Mewbourne Oil Co
LEASE NO.:	NM130850
WELL NAME & NO.:	Rio Bravo 17 20 W2AP Fed Com – 1H
SURFACE HOLE FOOTAGE:	195'/FNL & 1225'/FEL
BOTTOM HOLE FOOTAGE	330'/FSL & 660'/FEL
LOCATION:	Sec. 17, T. 21 S, R. 25 E
COUNTY:	Eddy County

Communitization Agreement

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

I. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ **Eddy County**
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. A **Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.

4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) for Water Basin:
After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. During this WOC time, no drill pipe, etc, shall be run in the hole.

Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

A CIT is to be performed on this casing per Onshore Oil and Gas Order 2.III.B.1.h prior to drilling the shoe plug.

Possibility for water flows in the Castile and Salado
Possibility of lost circulation in the Rustler, Red Beds, and Delaware
High Cave/Karst
Abnormal pressures may exist within the 3rd Bone Spring Sand and Wolfcamp formation.

1. The **13 3/8** inch surface casing shall be set at approximately **415** in a **competent bed** (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.

    a) If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

    b) Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

    c) Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d) If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9 5/8"** inch intermediate casing is:

    ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above.

Formation below the 9 5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

3. The minimum required fill of cement behind the **7** inch production casing is:

   ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above.

Formation below the 7" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

4. The minimum required fill of cement behind the **4 1/2"** liner is:

   ☒ Cement should tie-back to the top of the liner. Operator shall provide method of verification.

5. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API 53.

2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **13 3/8" surface** casing shoe shall be **3000 (3M)** psi.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9 5/8" Intermediate** casing shoe shall be **5000 (5M)** psi. **5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**

4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.

c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

d. The results of the test shall be reported to the appropriate BLM office.

e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**

f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

D. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** formation, and shall be used until production casing is run and cemented.

E. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

F. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

TMAK03172017

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Mewbourne Oil Co
LEASE NO.:	NM130850
WELL NAME & NO.:	Rio Bravo 17 20 W2AP Federal Com - 1H
SURFACE HOLE FOOTAGE:	195'/N & 1225'/E
BOTTOM HOLE FOOTAGE	330'/S & 660'/E
LOCATION:	Section 17, T. 21 S., R. 25 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

☐ **General Provisions**
☐ **Permit Expiration**
☐ **Archaeology, Paleontology, and Historical Sites**
☐ **Noxious Weeds**
☒ **Special Requirements**
- Cave/Karst
- Visual Resources

☐ **Construction**
- Notification
- Topsoil
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- Federal Mineral Material Pits
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- Roads

☐ **Road Section Diagram**
☐ **Production (Post Drilling)**
- Well Structures & Facilities

☐ **Interim Reclamation**
☐ **Final Abandonment & Reclamation**

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

A. Cave and Karst Conditions of Approval

** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production.

Construction:

In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

No Blasting:

No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Pad Berming:

The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.

- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g. caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)

Tank Battery Liners and Berms:

Tank battery locations and all facilities will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Leak Detection System:
A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating values and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Automatic Shut-off Systems:
Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

Rotary Drilling with Fresh Water:
Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:
Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

Lost Circulation:
ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:
Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:
Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

B. Visual Resources:

All above-ground structures including meter housing that are not subject to safety requirements are painted a flat non-reflective paint color, Shale Green from the BLM Standard Environmental Color Chart (CC-001: June 2008).

All above ground structures including but not limited to pumpjacks, storage tanks, production equipment, etc. shall be shorter than 8 feet to minimize visual impacts to the natural features of the landscape.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing
The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching
Ditching shall be required on both sides of the road.

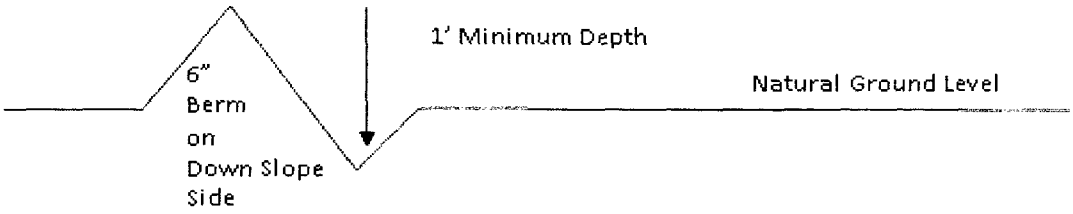
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ lead-off ditch interval

Cattle guards

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

Fence Requirement

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Construction Steps

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

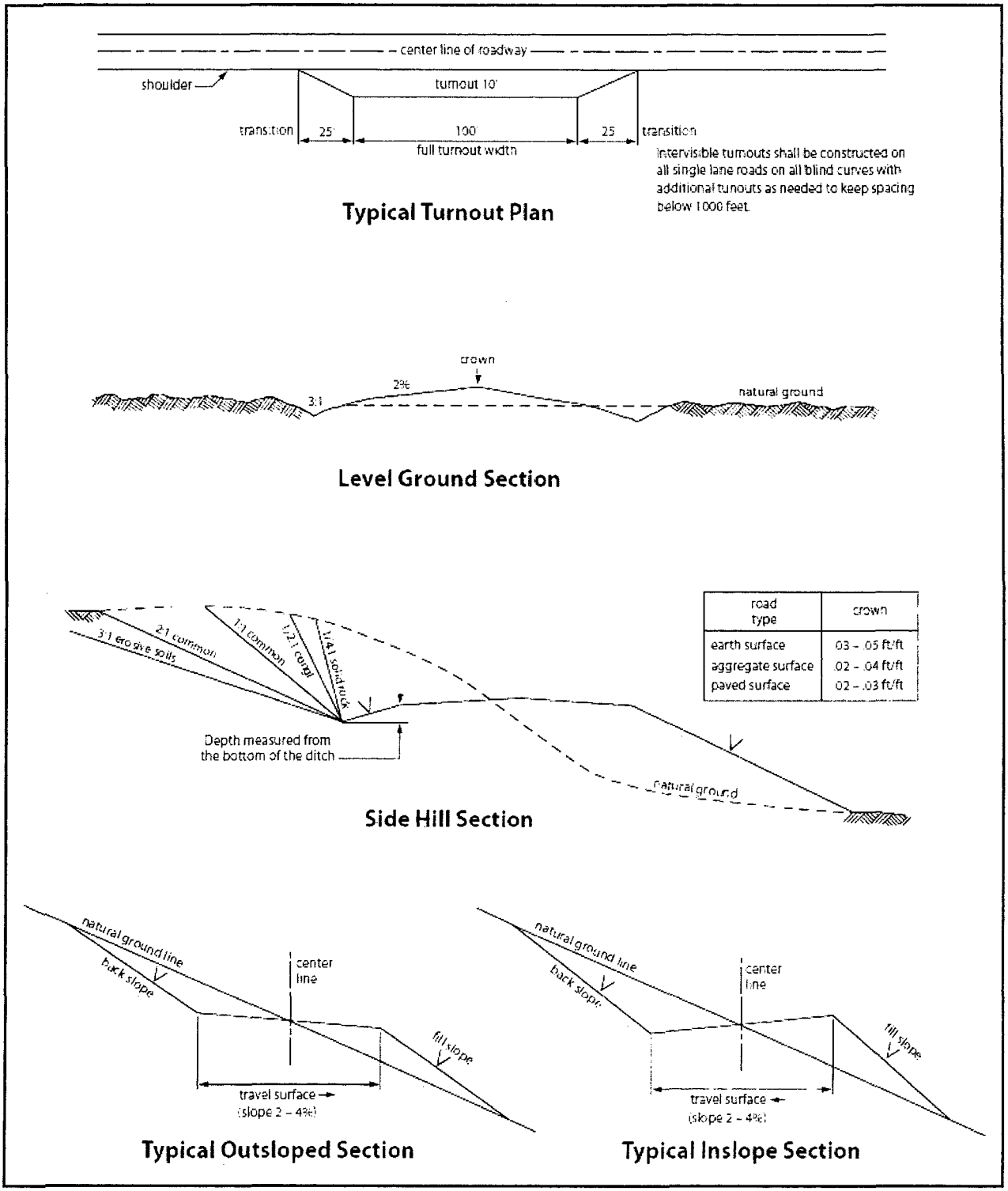


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Exclosure Netting (Open-top Tanks)
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures
The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

VIII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

IX. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Seed Mixture 1 for Loamy Sites

Holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed shall be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed shall be planted using a drill equipped with a depth regulator to ensure proper depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture shall be evenly and uniformly planted over the disturbed area (small/heavier seeds have a tendency to drop the bottom of the drill and are planted first). Holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed shall be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre shall be doubled. The seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Plains lovegrass (Eragrostis intermedia)	0.5
Sand dropseed (Sporobolus cryptandrus)	1.0
Sideoats grama (Bouteloua curtipendula)	5.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed