

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**
Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.Carlsbad Field Office
NMCD ArtesiaWell No.
NMNM120898

Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 27. If Unit or CA/Agreement, Name and/or No.
NMNM071016X8. Well Name and No.
POKER LAKE UNIT 18 BD 122H9. API Well No.
30-015-4489410. Field and Pool or Exploratory Area
PURPLE SAGE; WOLFCAMP11. County or Parish, State
EDDY COUNTY, NM

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other2. Name of Operator
BOPCO, L.P.Contact: STEPHANIE RABADUE
E-Mail: stephanie_rabadue@xtoenergy.com3a. Address
6401 HOLIDAY HILL ROAD BLDG 5
MIDLAND, TX 797073b. Phone No. (include area code)
Ph: 432-620-67144. Location of Well (Footage, Sec., T., R., M., or Survey Description)
Sec 18 T25S R30E Mer NMP 2310FNL 1305FWLNM OIL CONSERVATION
ARTESIA DISTRICT

SEP 20 2018

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

RECEIVED

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original APD
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompletable horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

BOPCO, L.P. respectfully requests the following changes to the original APD:

- Well Name fr/Poker Lake Unit 18 Brushy Draw 122H to **Poker Lake Unit 18 BD 122H**
- SHL change fr/2310'FNL & 1305'FWL to 2310'FNL & 1275'FWL -- No additional surface disturbance associated with this change.
- Drilling Program
- Directional Program

SEE ATTACHED FOR
CONDITIONS OF APPROVALAttachments:
Updated C-102 & Supplement
Drilling Plan
Directional Program

Accepted For Record

NMCD 12/11-18

DOI-BLM-NM-P020-2018-0280-1
Surface good Covered under EA BJB 9-13-2018

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

Electronic Submission #434074 verified by the BLM Well Information System
For BOPCO, L.P., sent to the Carlsbad
Committed to AFMSS for processing by ZOTA STEVENS on 09/13/2018 ()

Name (Printed/Typed) STEPHANIE RABADUE

Title REGULATORY COORDINATOR

Signature (Electronic Submission)

Date 09/06/2018

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By

Title

Date

Conditions of approval, if any, are attached. Approval of this notice 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.

Office

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.

(Instructions on page 2)

** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED **

RWP 12-7-18

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

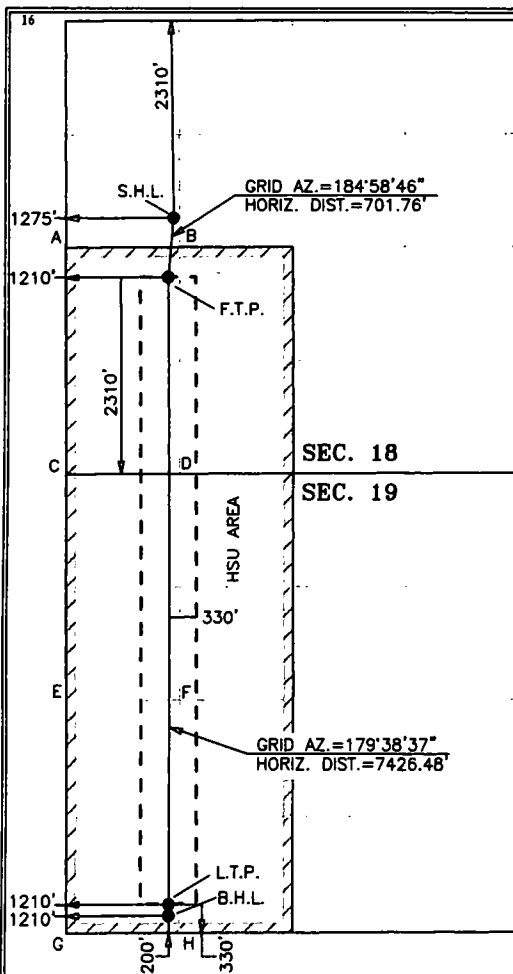
¹ API Number 30-01544894	² Pool Code 98220	³ Pool Name Purple Sage; Wolfcamp
⁴ Property Code 321737 322451	⁵ Property Name POKER LAKE UNIT 18 BD	⁶ Well Number 122H
⁷ OGRID No. 260737	⁸ Operator Name BOPCO, L.P.	⁹ Elevation 3168'

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
2	18	25 S	30 E		2,310	NORTH	1,275	WEST	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
4	19	25 S	30 E		200	SOUTH	1,210	WEST	EDDY

¹² Dedicated Acres 482.62	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y= 411,609.6 X= 626,461.9 LAT.= 32.130972°N LONG.= 103.924805°W	GEODETIC COORDINATES NAD 83 NME SURFACE LOCATION Y= 411,667.9 X= 667,646.5 LAT.= 32.131096°N LONG.= 103.925289°W
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FIRST TAKE POINT NAD 27 NME Y= 410,910.4 X= 626,401.0 LAT.= 32.129051°N LONG.= 103.925010°W	FIRST TAKE POINT NAD 83 NME Y= 410,968.7 X= 667,585.6 LAT.= 32.129175°N LONG.= 103.925494°W
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CORNER COORDINATES TABLE
NAD 27 NME

A - Y= 411,254.3 N, X= 625,189.0 E
B - Y= 411,260.5 N, X= 626,533.3 E
C - Y= 408,594.2 N, X= 625,204.2 E
D - Y= 408,601.2 N, X= 626,548.3 E
E - Y= 405,935.1 N, X= 625,221.5 E
F - Y= 405,943.0 N, X= 626,563.0 E
G - Y= 403,277.4 N, X= 625,238.2 E
H - Y= 403,285.0 N, X= 626,577.4 E

CORNER COORDINATES TABLE
NAD 83 NME

A - Y= 411,312.6 N, X= 666,373.6 E
B - Y= 411,318.8 N, X= 667,717.9 E
C - Y= 408,652.4 N, X= 666,388.9 E
D - Y= 408,659.4 N, X= 667,733.0 E
E - Y= 405,993.3 N, X= 666,406.3 E
F - Y= 406,001.2 N, X= 667,747.8 E
G - Y= 403,335.5 N, X= 666,423.1 E
H - Y= 403,343.1 N, X= 667,762.3 E

LAST TAKE POINT NAD 27 NME Y= 403,614.3 X= 626,446.1 LAT.= 32.108993°N LONG.= 103.924953°W	LAST TAKE POINT NAD 83 NME Y= 403,672.4 X= 667,631.0 LAT.= 32.109118°N LONG.= 103.925437°W
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BOTTOM HOLE LOCATION NAD 27 NME Y= 403,484.3 X= 626,446.9 LAT.= 32.108636°N LONG.= 103.924952°W	BOTTOM HOLE LOCATION NAD 83 NME Y= 403,542.4 X= 667,631.8 LAT.= 32.108760°N LONG.= 103.925436°W
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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.

Stephanie Rabadue 08/23/2018

Signature Date

Stephanie Rabadue

Printed Name

stephanie_rabadue@xtoenergy.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.

7-26-2018

Date of Survey

Signature and Seal of Professional Surveyor:

MARK DILLON HARP 23786

Certificate Number

AI/JC 2017050633

RWP 12-7-19

Intent ☒ As Drilled ☐

API #
30-015-44894

Operator Name: BOPCO, L.P.	Property Name: Poker Lake Unit 18 BD	Well Number 122H
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Kick Off Point (KOP)

UL	Section 18	Township 25S	Range 30E	Lot 2	Feet 2310	From N/S North	Feet 1275	From E/W West	County Eddy
Latitude 32.131096					Longitude -103.925289			NAD NAD83	

First Take Point (FTP)

UL	Section 18	Township 25S	Range 30E	Lot 3	Feet 2310	From N/S South	Feet 1210	From E/W West	County Eddy
Latitude 32.129175					Longitude -103.925494			NAD NAD83	

Last Take Point (LTP)

UL	Section 18	Township 25S	Range 30E	Lot 4	Feet 200	From N/S South	Feet 1210	From E/W West	County Eddy
Latitude 32.109118					Longitude -103.925437			NAD NAD83	

Is this well the defining well for the Horizontal Spacing Unit? ☐ N

Is this well an infill well? ☐ Y

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #
30-015-44891

Operator Name: BOPCO, L.P.	Property Name: Poker Lake Unit 18 BD	Well Number 103H
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KZ 06/29/2018

DRILLING PLAN: BLM COMPLIANCE
(Supplement to BLM 3160-3)

XTO Energy Inc.
Poker Lake Unit 18 BD 122H
Projected TD: 18695' MD / 1849' TVD
SHL: 2310' FNL & 1275' FWL , Section 18, T25S, R30E
BHL: 200' FSL & 1210' FWL , Section 19, T25S, R30E
Eddy County, NM

1. Geologic Name of Surface Formation

A. Quaternary

2. Estimated Tops of Geological Markers & Depths of Anticipated Fresh Water, Oil or Gas:

Formation	Well Depth (TVD)	Water/Oil/Gas
Rustler	720'	Water
Top of Salt	1035'	Water
Base of Salt	3307'	Water
Delaware	3490'	Water
Bone Spring	7218'	Water/Oil/Gas
1st Bone Spring Ss	8242'	Water/Oil/Gas
2nd Bone Spring Ss	9047'	Water/Oil/Gas
3rd Bone Spring Ss	10140'	Water/Oil/Gas
Wolfcamp A	10673'	Water/Oil/Gas
Target/Land Curve	1849'	Water/Oil/Gas

*** Hydrocarbons @ Brushy Canyon

*** Groundwater depth 40' (per NM State Engineers Office).

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 13-3/8 inch casing @ 885' and circulating cement back to surface. The salt will be isolated by setting 9-5/8 inch casing at 9510' with a DV tool @ 960', and cement will be circulated to surface. An 8-3/4 inch curve and lateral hole will be drilled to TD, where 5-1/2 inch casing will be set and cemented 500 feet into the previous casing.

3. Casing Design

Hole Size	Depth	OD Csg	Weight	Collar	Grade	New/Used	SF Burst	SF Collapse	SF Tension
17-1/2"	0' – 885'	13-3/8"	54.5	STC	J-55	New	1.26	2.79	17.69
12-1/4"	0' – 9510'	9-5/8"	40	BTC	HCL-80	New	8.83	1.92	2.20
8-3/4"	0' – 18695'	5-1/2"	20	BTC	P-110	New	1.33	10.48	1.82

- XTO requests to utilize centralizers only in the curve after the KOP and only a minimum of one every other joint.
- 9-5/8" Collapse analyzed using 50% evacuation based on regional experience.
- 5-1/2" tension calculated using vertical hanging weight plus the lateral weight multiplied by a friction factor of 0.35

WELLHEAD:

Permanent Wellhead – GE RSH Multibowl System

A. Starting Head: 13-5/8" 5M top flange x 13-3/8" SOW bottom

B. Tubing Head: 13-5/8" 5M bottom flange x 7-1/16" 10M top flange

- Wellhead will be installed by manufacturer's representatives.
- Manufacturer will monitor welding process to ensure appropriate temperature of seal.
- Operator will test the 9-5/8" casing per BLM Onshore Order 2
- Wellhead Manufacturer representative will not be present for BOP test plug installation

4. Cement Program

Surface Casing: 13-3/8", 54.5 New J-55, STC casing to be set at +/- 885'

Lead: 430 sxs EconoCem-HLTRRC (mixed at 12.9 ppg, 1.87 ft³/sx, 10.13 gal/sx water)

Tail: 300 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.35 ft³/sx, 6.39 gal/sx water)

Compressives: 12-hr = 900 psi 24 hr = 1500 psi

Intermediate Casing: 9-5/8", 40 New HCL-80, BTC casing to be set at +/- 9510'

First Stage

Lead: 2670 sxs Halcem-C + 2% CaCl (mixed at 12.9 ppg, 1.88 ft³/sx, 9.61 gal/sx water)

Tail: 230 sxs Halcem-C + 2% CaCl (mixed at 14.8 ppg, 1.33 ft³/sx, 6.39 gal/sx water)

Compressives: 12-hr = 900 psi 24 hr = 1500 psi

If losses are severe, a DV tool will be set @ 960' (100' below the surface shoe).

Second Stage

Lead: 200 sxs Halcem-C + 2% CaCl (mixed at 12.9 ppg, 1.87 ft³/sx, 9.61 gal/sx water)

Compressives: 12-hr = 900 psi 24 hr = 1500 psi

Production Casing: 5-1/2", 20 New P-110, BTC casing to be set at +/- 18695'

Lead: 70 sxs NeoCem (mixed at 10.5 ppg, 2.69 ft³/sx, 12.26 gal/sx water)

Tail: 1840 sxs VersaCem (mixed at 13.2 ppg, 1.61 ft³/sx, 8.38 gal/sx water)

Compressives: 12-hr = 1375 psi 24 hr = 2285 psi

5. Pressure Control Equipment

The blow out preventer equipment (BOP) for this well consists of a 13-5/8" minimum 3M Hydril and a 13-5/8" minimum 3M Double Ram BOP. MASP should not exceed 651 psi.

All BOP testing will be done by an independent service company. Annular pressure tests will be limited to 50% of the working pressure. When nipping up on the 13-5/8" 3M bradenhead and flange, the BOP test will be limited to 3000 psi. When nipping up on the 9-5/8", the BOP will be tested to a minimum of 3000 psi. All BOP tests will include a low pressure test as per BLM regulations. The 3M BOP diagrams are attached. Blind rams will be functioned tested each trip, pipe rams will be functioned tested each day.

A variance is requested to allow use of a flex hose as the choke line from the BOP to the Choke Manifold. If this hose is used, a copy of the manufacturer's certification and pressure test chart will be kept on the rig. Attached is an example of a certification and pressure test chart. The manufacturer does not require anchors.

6. Proposed Mud Circulation System

INTERVAL	Hole Size	Mud Type	MW (ppg)	Viscosity (sec/qt)	Fluid Loss (cc)
0' to 885'	17-1/2"	FW/Native	8.4-8.8	35-40	NC
885' to 9510'	12-1/4"	OBM	9.8-10.2	30-32	NC
9510' to 18695'	8-3/4"	FW / Cut Brine / Polymer	10.7 - 11	28-40	NC - 20

The necessary mud products for weight addition and fluid loss control will be on location at all times.

Spud with fresh water/native mud. Drill out from under 13-3/8" surface casing with Oil based mud. A 9.8ppg-10.2ppg Oil based mud will be used while drilling through the salt formation. Use fibrous materials as needed to control seepage and lost circulation. Pump viscous sweeps as needed for hole cleaning. Pump speed will be recorded on a daily drilling report after mudding up. A Pason or Totco will be used to detect changes in loss or gain of mud volume. A mud test will be performed every 24 hours to determine: density, viscosity, strength, filtration and pH as necessary. Use available solids controls equipment to help keep mud weight down after mud up. Rig up solids control equipment to operate as a closed loop system.

7. Auxiliary Well Control and Monitoring Equipment

- A. A Kelly cock will be in the drill string at all times.
- B. A full opening drill pipe stabbing valve having appropriate connections will be on the rig floor at all times.
- C. H2S monitors will be on location when drilling below the 13-3/8" casing.

8. Logging, Coring and Testing Program

Mud Logger: Mud Logging Unit (2 man) in surface section

Open hole logging will not be done on this well.

9. Abnormal Pressures and Temperatures / Potential Hazards

None Anticipated. BHT of 150 to 170 F is anticipated. No H2S is expected but monitors will be in place to detect any H2S occurrences. Should these circumstances be encountered the operator and drilling contractor are prepared to take all necessary steps to ensure safety of all personnel and environment. Lost circulation could occur but is not expected to be a serious problem in this area and hole seepage will be compensated for by additions of small amounts of LCM in the drilling fluid. The maximum anticipated bottom hole pressure for this well is 1058 psi.

10. Anticipated Starting Date and Duration of Operations

Road and location construction will begin after Santa Fe and BLM have approved the APD. Anticipated spud date will be as soon after Santa Fe and BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 40 days. If production casing is run, an additional 30 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.

XTO Poker Lake Unit 18 BD 122H Rev0 RM 21Aug18 Proposal Geodetic Report (Def Plan)



Report Date: August 22, 2018 - 09:42 AM
Client: XTO Energy
Field: NM Eddy County (NAD 27)
Structure / Slot: XTO Poker Lake Unit 18 BD 122H / New Slot
Well: Poker Lake Unit 18 BD 122H
Borehole: Poker Lake Unit 18 BD 122H
UWI / API#: Unknown / Unknown
Survey Name: XTO Poker Lake Unit 18 BD 122H Rev0 RM 21Aug18
Survey Date: August 21, 2018
Tort / AHD / DDI / ERD Ratio: 97.454 * / 8191.188 ft / 6.138 / 0.755
Coordinate Reference System: NAD27 New Mexico State Plane, Eastam Zone, US Feet
Location Lat / Long: N 32° 7' 51.49979", W 103° 55' 29.29610"
Location Grid N/E Y/X: N 411609.600 NUS, E 626461.900 NUS
CRS Grid Convergence Angle: 0.2173 *
Grid Scale Factor: 0.99992741
Version / Patch: 2.10.740.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 180.106 * (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3191.000 ft above MSL
Seabed / Ground Elevation: 3168.000 ft above MSL
Magnetic Declination: 6.903 *
Total Gravity Field Strength: 988.4421mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47942.673 nT
Magnetic Dip Angle: 59.855 *
Declination Date: August 21, 2018
Magnetic Declination Model: HDGM 2018
North Reference: Grid North
Grid Convergence Used: 0.2173 *
Total Corr Mag North->Grid North: 6.6853 *
Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL	0.00	0.00	0.00	0.00	-3191.00	0.00	0.00	0.00	N/A	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	100.00	0.00	270.00	100.00	-3091.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	200.00	0.00	270.00	200.00	-2991.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	300.00	0.00	270.00	300.00	-2891.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	400.00	0.00	270.00	400.00	-2791.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	500.00	0.00	270.00	500.00	-2691.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	600.00	0.00	270.00	600.00	-2591.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	700.00	0.00	270.00	700.00	-2491.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
Rustler	720.00	0.00	270.00	720.00	-2471.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	800.00	0.00	270.00	800.00	-2391.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	900.00	0.00	270.00	900.00	-2291.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	1000.00	0.00	270.00	1000.00	-2191.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
Sealed (Top of Salt)	1035.00	0.00	270.00	1035.00	-2156.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	1100.00	0.00	270.00	1100.00	-2091.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	1200.00	0.00	270.00	1200.00	-1991.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	1300.00	0.00	270.00	1300.00	-1891.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	1400.00	0.00	270.00	1400.00	-1791.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	1500.00	0.00	270.00	1500.00	-1691.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	1600.00	0.00	270.00	1600.00	-1591.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	1700.00	0.00	270.00	1700.00	-1491.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	1800.00	0.00	270.00	1800.00	-1391.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	1900.00	0.00	270.00	1900.00	-1291.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	2000.00	0.00	270.00	2000.00	-1191.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	2100.00	0.00	270.00	2100.00	-1091.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	2200.00	0.00	270.00	2200.00	-991.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	2300.00	0.00	270.00	2300.00	-891.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	2400.00	0.00	270.00	2400.00	-791.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	2500.00	0.00	270.00	2500.00	-691.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	2600.00	0.00	270.00	2600.00	-591.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	2700.00	0.00	270.00	2700.00	-491.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	2800.00	0.00	270.00	2800.00	-391.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	2900.00	0.00	270.00	2900.00	-291.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
Nudge 2"/100' DLS	3000.00	0.00	270.00	3000.00	-191.00	0.00	0.00	0.00	0.00	411609.60	626461.90	N 32 7 51.50	W 103 55 29.30
	3100.00	2.00	270.00	3099.98	-91.02	0.00	0.00	-1.75	2.00	411609.60	626460.15	N 32 7 51.50	W 103 55 29.32
Hold Nudge	3188.35	3.73	270.00	3188.22	-4.78	0.01	0.00	-6.06	2.00	411609.60	626455.84	N 32 7 51.50	W 103 55 29.37
	3200.00	3.73	270.00	3199.84	8.84	0.01	0.00	-6.95	0.00	411609.60	626454.95	N 32 7 51.50	W 103 55 29.38
	3300.00	3.73	270.00	3209.63	108.63	0.02	0.00	-13.45	0.00	411609.60	626448.45	N 32 7 51.50	W 103 55 29.45
Base of Salt	3307.39	3.73	270.00	3307.00	116.00	0.03	0.00	-13.82	0.00	411609.60	626447.97	N 32 7 51.50	W 103 55 29.46
	3400.00	3.73	270.00	3399.42	208.42	0.04	0.00	-19.95	0.00	411609.60	626441.95	N 32 7 51.50	W 103 55 29.53
Delaware (Ball Canyon)	3490.78	3.73	270.00	3490.00	299.00	0.05	0.00	-25.85	0.00	411609.60	626436.05	N 32 7 51.50	W 103 55 29.60
	3500.00	3.73	270.00	3499.21	308.21	0.05	0.00	-26.45	0.00	411609.60	626435.46	N 32 7 51.50	W 103 55 29.60
	3600.00	3.73	270.00	3598.99	407.99	0.06	0.00	-32.95	0.00	411609.60	626428.96	N 32 7 51.50	W 103 55 29.68
	3700.00	3.73	270.00	3698.78	507.78	0.07	0.00	-39.45	0.00	411609.60	626422.46	N 32 7 51.50	W 103 55 29.75
	3800.00	3.73	270.00	3798.57	607.57	0.08	0.00	-45.95	0.00	411609.60	626415.96	N 32 7 51.50	W 103 55 29.83
	3900.00	3.73	270.00	3898.36	707.36	0.10	0.00	-52.45	0.00	411609.60	626409.46	N 32 7 51.50	W 103 55 29.91
	4000.00	3.73	270.00	3998.15	807.15	0.11	0.00	-58.95	0.00	411609.60	626402.96	N 32 7 51.50	W 103 55 29.98
Drop to Vertical	4001.86	3.73	270.00	4000.00	809.00	0.11	0.00	-59.07	0.00	411609.60	626402.84	N 32 7 51.50	W 103 55 29.98
	4100.00	1.76	270.00	4098.03	907.03	0.12	0.00	-63.77	2.00	411609.60	626398.14	N 32 7 51.50	W 103 55 30.04
Hold Vertical	4188.21	0.00	270.00	4186.22	995.22	0.12	0.00	-65.13	2.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	4200.00	0.00	270.00	4198.01	1007.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	4300.00	0.00	270.00	4298.01	1107.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
Cherry Canyon	4372.99	0.00	270.00	4371.00	1180.00	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	4400.00	0.00	270.00	4388.01	1207.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	4500.00	0.00	270.00	4498.01	1307.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	4600.00	0.00	270.00	4598.01	1407.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	4700.00	0.00	270.00	4698.01	1507.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	4800.00	0.00	270.00	4798.01	1607.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	4900.00	0.00	270.00	4898.01	1707.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	5000.00	0.00	270.00	4998.01	1807.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	5100.00	0.00	270.00	5098.01	1907.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	5200.00	0.00	270.00	5198.01	2007.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	5300.00	0.00	270.00	5298.01	2107.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	5400.00	0.00	270.00	5398.01	2207.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	5500.00	0.00	270.00	5498.01	2307.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	5600.00	0.00	270.00	5598.01	2407.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	5700.00	0.00	270.00	5698.01	2507.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	5800.00	0.00	270.00	5798.01	2607.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	5900.00	0.00	270.00	5898.01	2707.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	6000.00	0.00	270.00	5998.01	2807.01	0.12</							

Comments	MD (ft)	Incl (°)	Azlm Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northng (ftUS)	Easting (ftUS)	Latitude (N/S ° ° °)	Longitude (E/W ° ° °)
Bone Spring Lime	7232.99	0.00	270.00	7231.00	4040.00	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	7300.00	0.00	270.00	7298.01	4107.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	7400.00	0.00	270.00	7398.01	4207.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	7500.00	0.00	270.00	7498.01	4307.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	7600.00	0.00	270.00	7598.01	4407.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	7700.00	0.00	270.00	7698.01	4507.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	7800.00	0.00	270.00	7798.01	4607.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	7900.00	0.00	270.00	7898.01	4707.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	8000.00	0.00	270.00	7998.01	4807.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	8100.00	0.00	270.00	8098.01	4907.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	8200.00	0.00	270.00	8198.01	5007.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
1st Bone Spring Sand	8243.99	0.00	270.00	8242.00	5051.00	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	8300.00	0.00	270.00	8298.01	5107.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	8400.00	0.00	270.00	8398.01	5207.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	8500.00	0.00	270.00	8498.01	5307.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	8600.00	0.00	270.00	8598.01	5407.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
2nd Bone Spring Lime	8622.99	0.00	270.00	8621.00	5430.00	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	8700.00	0.00	270.00	8698.01	5507.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	8800.00	0.00	270.00	8798.01	5607.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	8900.00	0.00	270.00	8898.01	5707.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	9000.00	0.00	270.00	8998.01	5807.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
2nd Bone Spring Sand	9048.99	0.00	270.00	9047.00	5856.00	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	9100.00	0.00	270.00	9098.01	5907.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	9200.00	0.00	270.00	9198.01	6007.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	9300.00	0.00	270.00	9298.01	6107.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
3rd Bone Spring Lime	9314.99	0.00	270.00	9313.00	6122.00	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	9400.00	0.00	270.00	9398.01	6207.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	9500.00	0.00	270.00	9498.01	6307.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	9600.00	0.00	270.00	9598.01	6407.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
Harkey Sand	9688.99	0.00	270.00	9687.00	6496.00	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	9700.00	0.00	270.00	9698.01	6507.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	9800.00	0.00	270.00	9798.01	6607.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	9900.00	0.00	270.00	9898.01	6707.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
Lower 3rd Bone Spring Lime	9935.99	0.00	270.00	9934.00	6743.00	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	10000.00	0.00	270.00	9998.01	6807.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
Lower 3rd Bone Spring Shale	10001.99	0.00	270.00	10000.00	6809.00	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
	10100.00	0.00	270.00	10098.01	6907.01	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
KOP - Build 8"/100' DLS	10134.79	0.00	270.00	10132.80	6941.80	0.12	0.00	-65.13	0.00	411609.60	626396.78	N 32 7 51.50	W 103 55 30.05
3rd Bone Spring Sand	10141.99	0.58	179.65	10140.00	6949.00	0.18	-0.04	-65.13	8.00	411609.56	626396.78	N 32 7 51.50	W 103 55 30.05
	10200.00	5.22	179.65	10197.92	7006.92	3.09	-2.97	-65.11	8.00	411606.63	626396.80	N 32 7 51.47	W 103 55 30.05
	10300.00	13.22	179.65	10296.55	7105.55	19.09	-18.97	-65.01	8.00	411590.63	626396.89	N 32 7 51.31	W 103 55 30.05
	10400.00	21.22	179.65	10391.99	7200.99	48.66	-48.54	-64.83	8.00	411561.06	626397.08	N 32 7 51.02	W 103 55 30.05
3rd Bone Spring Red Hills Sand	10492.70	28.63	179.65	10478.00	7285.00	87.70	-87.58	-64.59	8.00	411522.02	626397.32	N 32 7 50.64	W 103 55 30.05
	10500.00	29.22	179.65	10482.39	7291.39	91.23	-91.11	-64.57	8.00	411518.49	626397.34	N 32 7 50.60	W 103 55 30.05
Wolfcamp	10569.13	34.75	179.65	10541.00	7350.00	127.83	-127.71	-64.34	8.00	411481.90	626397.57	N 32 7 50.24	W 103 55 30.05
Wolfcamp X Sand	10565.01	36.82	179.65	10562.00	7371.00	142.96	-142.85	-64.25	8.00	411466.76	626397.66	N 32 7 50.09	W 103 55 30.05
	10600.00	37.22	179.65	10585.98	7374.98	145.97	-145.85	-64.23	8.00	411463.76	626397.68	N 32 7 50.06	W 103 55 30.05
Wolfcamp Y Sand	10678.06	43.30	179.65	10624.00	7433.00	195.10	-194.98	-63.92	8.00	411414.63	626397.98	N 32 7 49.57	W 103 55 30.05
	10700.00	45.22	179.65	10641.14	7450.14	211.80	-211.68	-63.82	8.00	411397.93	626398.08	N 32 7 49.41	W 103 55 30.05
Wolfcamp A	10748.80	48.96	179.65	10673.00	7482.00	246.07	-245.95	-63.61	8.00	411363.67	626398.29	N 32 7 49.07	W 103 55 30.05
	10800.00	53.22	179.65	10706.41	7515.41	287.46	-287.34	-63.35	8.00	411322.28	626398.55	N 32 7 48.66	W 103 55 30.05
	10900.00	61.22	179.65	10760.51	7569.51	371.46	-371.34	-62.84	8.00	411238.28	626399.07	N 32 7 47.83	W 103 55 30.04
	11000.00	69.22	179.65	10802.40	7611.40	462.17	-462.05	-62.28	8.00	411147.58	626399.63	N 32 7 46.83	W 103 55 30.04
	11100.00	77.22	179.65	10831.25	7640.25	557.83	-557.72	-61.69	8.00	411051.92	626400.22	N 32 7 45.98	W 103 55 30.04
	11200.00	85.22	179.65	10846.51	7655.51	656.58	-656.46	-61.08	8.00	410953.19	626400.83	N 32 7 45.01	W 103 55 30.04
Landing Point	11259.79	90.00	179.65	10849.00	7658.00	716.29	-716.18	-60.71	8.00	410893.47	626401.19	N 32 7 44.42	W 103 55 30.03
	11300.00	90.00	179.65	10849.00	7658.00	756.50	-756.39	-60.48	8.00	410853.26	626401.44	N 32 7 44.02	W 103 55 30.03
	11400.00	90.00	179.65	10849.00	7658.00	856.50	-856.39	-59.84	0.00	410753.27	626402.06	N 32 7 43.03	W 103 55 30.03
	11500.00	90.00	179.65	10849.00	7658.00	956.50	-956.39	-59.23	0.00	410653.28	626402.68	N 32 7 42.04	W 103 55 30.03
	11600.00	90.00	179.65	10849.00	7658.00	1056.49	-1056.39	-58.61	0.00	410553.29	626403.29	N 32 7 41.05	W 103 55 30.02
	11700.00	90.00	179.65	10849.00	7658.00	1156.49	-1156.38	-57.99	0.00	410453.30	626403.91	N 32 7 40.06	W 103 55 30.02
	11800.00	90.00	179.65	10849.00	7658.00	1256.49	-1256.38	-57.38	0.00	410353.31	626404.53	N 32 7 39.07	W 103 55 30.02
	11900.00	90.00	179.65	10849.00	7658.00	1356.48	-1356.38	-56.76	0.00	410253.32	626405.14	N 32 7 38.08	W 103 55 30.02
	12000.00	90.00	179.65	10849.00	7658.00	1456.48	-1456.38	-56.14	0.00	410153.33	626405.76	N 32 7 37.09	W 103 55 30.01
	12100.00	90.00	179.65	10849.00	7658.00	1556.48	-1556.38	-55.53	0.00	410053.34	626406.38	N 32 7 36.10	W 103 55 30.01
	12200.00	90.00	179.65	10849.00	7658.00	1656.47	-1656.38	-54.91	0.00	409953.35	626406.99	N 32 7 35.11	W 103 55 30.01
	12300.00	90.00	179.65	10849.00	7658.00	1756.47	-1756.37	-54.29	0.00	409853.36	626407.61	N 32 7 34.12	W 103 55 30.00
	12400.00	90.00	179.65	10849.00	7658.00	1856.47	-1856.37	-53.68	0.00	409753.37	626408.23	N 32 7 33.13	W 103 55 30.00
	12500.00	90.00	179.65	10849.00	7658.00	1956.46	-1956.37	-53.06	0.00	409653.38	626408.84	N 32 7 32.14	W 103 55 30.00
	12600.00	90.00	179.65	10849.00	7658.00	2056.46	-2056.37	-52.44	0.00	409553.39	626409.46	N 32 7 31.15	W 103 55 30.00
	12700.00	90.00	179.65	10849.00	7658.00	2156.46	-2156.37	-51.83	0.00	409453.39	626410.08	N 32 7 30.16	W 103 55 29.99
	12800.00	90.00	179.65	1									

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	16000.00	90.00	179.65	10849.00	7658.00	5456.35	-5456.30	-31.47	0.00	406153.70	626430.43	N 32 6 57.51	W 103 55 29.90
	16100.00	90.00	179.65	10849.00	7658.00	5556.35	-5556.30	-30.85	0.00	406053.71	626431.05	N 32 6 56.52	W 103 55 29.90
	16200.00	90.00	179.65	10849.00	7658.00	5656.35	-5656.30	-30.24	0.00	405953.72	626431.67	N 32 6 55.53	W 103 55 29.90
	16300.00	90.00	179.65	10849.00	7658.00	5756.34	-5756.30	-29.62	0.00	405853.73	626432.28	N 32 6 54.54	W 103 55 29.89
	16400.00	90.00	179.65	10849.00	7658.00	5856.34	-5856.30	-29.00	0.00	405753.74	626432.90	N 32 6 53.55	W 103 55 29.89
	16500.00	90.00	179.65	10849.00	7658.00	5956.34	-5956.29	-28.38	0.00	405653.75	626433.52	N 32 6 52.56	W 103 55 29.89
	16600.00	90.00	179.65	10849.00	7658.00	6056.33	-6056.29	-27.77	0.00	405553.76	626434.13	N 32 6 51.57	W 103 55 29.89
	16700.00	90.00	179.65	10849.00	7658.00	6156.33	-6156.29	-27.15	0.00	405453.77	626434.75	N 32 6 50.58	W 103 55 29.88
	16800.00	90.00	179.65	10849.00	7658.00	6256.33	-6256.29	-26.53	0.00	405353.78	626435.37	N 32 6 49.59	W 103 55 29.88
	16900.00	90.00	179.65	10849.00	7658.00	6356.32	-6356.29	-25.92	0.00	405253.79	626435.98	N 32 6 48.60	W 103 55 29.88
	17000.00	90.00	179.65	10849.00	7658.00	6456.32	-6456.28	-25.30	0.00	405153.80	626436.60	N 32 6 47.61	W 103 55 29.87
	17100.00	90.00	179.65	10849.00	7658.00	6556.32	-6556.28	-24.68	0.00	405053.81	626437.22	N 32 6 46.62	W 103 55 29.87
	17200.00	90.00	179.65	10849.00	7658.00	6656.31	-6656.28	-24.07	0.00	404953.82	626437.83	N 32 6 45.63	W 103 55 29.87
	17300.00	90.00	179.65	10849.00	7658.00	6756.31	-6756.28	-23.45	0.00	404853.83	626438.45	N 32 6 44.64	W 103 55 29.87
	17400.00	90.00	179.65	10849.00	7658.00	6856.31	-6856.28	-22.83	0.00	404753.83	626439.07	N 32 6 43.65	W 103 55 29.86
	17500.00	90.00	179.65	10849.00	7658.00	6956.30	-6956.27	-22.22	0.00	404653.84	626439.69	N 32 6 42.66	W 103 55 29.86
	17600.00	90.00	179.65	10849.00	7658.00	7056.30	-7056.27	-21.60	0.00	404553.85	626440.30	N 32 6 41.67	W 103 55 29.86
	17700.00	90.00	179.65	10849.00	7658.00	7156.30	-7156.27	-20.98	0.00	404453.86	626440.92	N 32 6 40.69	W 103 55 29.86
	17800.00	90.00	179.65	10849.00	7658.00	7256.29	-7256.27	-20.37	0.00	404353.87	626441.54	N 32 6 39.70	W 103 55 29.85
	17900.00	90.00	179.65	10849.00	7658.00	7356.29	-7356.27	-19.75	0.00	404253.88	626442.15	N 32 6 38.71	W 103 55 29.85
	18000.00	90.00	179.65	10849.00	7658.00	7456.29	-7456.27	-19.13	0.00	404153.89	626442.77	N 32 6 37.72	W 103 55 29.85
	18100.00	90.00	179.65	10849.00	7658.00	7556.28	-7556.26	-18.52	0.00	404053.90	626443.39	N 32 6 36.73	W 103 55 29.84
	18200.00	90.00	179.65	10849.00	7658.00	7656.28	-7656.26	-17.90	0.00	403953.91	626444.00	N 32 6 35.74	W 103 55 29.84
	18300.00	90.00	179.65	10849.00	7658.00	7756.28	-7756.26	-17.28	0.00	403853.92	626444.62	N 32 6 34.75	W 103 55 29.84
	18400.00	90.00	179.65	10849.00	7658.00	7856.27	-7856.26	-16.66	0.00	403753.93	626445.24	N 32 6 33.76	W 103 55 29.84
	18500.00	90.00	179.65	10849.00	7658.00	7956.27	-7956.26	-16.05	0.00	403653.94	626445.85	N 32 6 32.77	W 103 55 29.83
	18600.00	90.00	179.65	10849.00	7658.00	8056.27	-8056.25	-15.43	0.00	403553.95	626446.47	N 32 6 31.78	W 103 55 29.83
XTO Poker Lake Unit 18 BD 122H - BHL	18669.65	90.00	179.65	10849.00	7658.00	8125.92	-8125.91	-15.00	0.00	403484.30	626446.90	N 32 6 31.09	W 103 55 29.83

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	23.000	1/100.000	17.500	13.375		NAL_MWD_1.0_DEG-Depth Only	Poker Lake Unit 18 BD 122H / XTO Poker Lake Unit 18 BD 122H Rev0 RM 21Aug18
	1	23.000	720.000	1/100.000	17.500	13.375		NAL_MWD_1.0_DEG	Poker Lake Unit 18 BD 122H / XTO Poker Lake Unit 18 BD 122H
	1	720.000	18669.654	1/100.000	12.250	9.625		NAL_MWD_1.0_DEG	Poker Lake Unit 18 BD 122H / XTO Poker Lake Unit 18 BD 122H

Fill Line

Flowline

3000# (3M)
BOP

SRR & A

Annular Preventer

Pipe Rams

Blind Rams

2" Minimum Kill Line

Kill Line

1 Kill Line Valve
(Minimum)

Drilling Spool

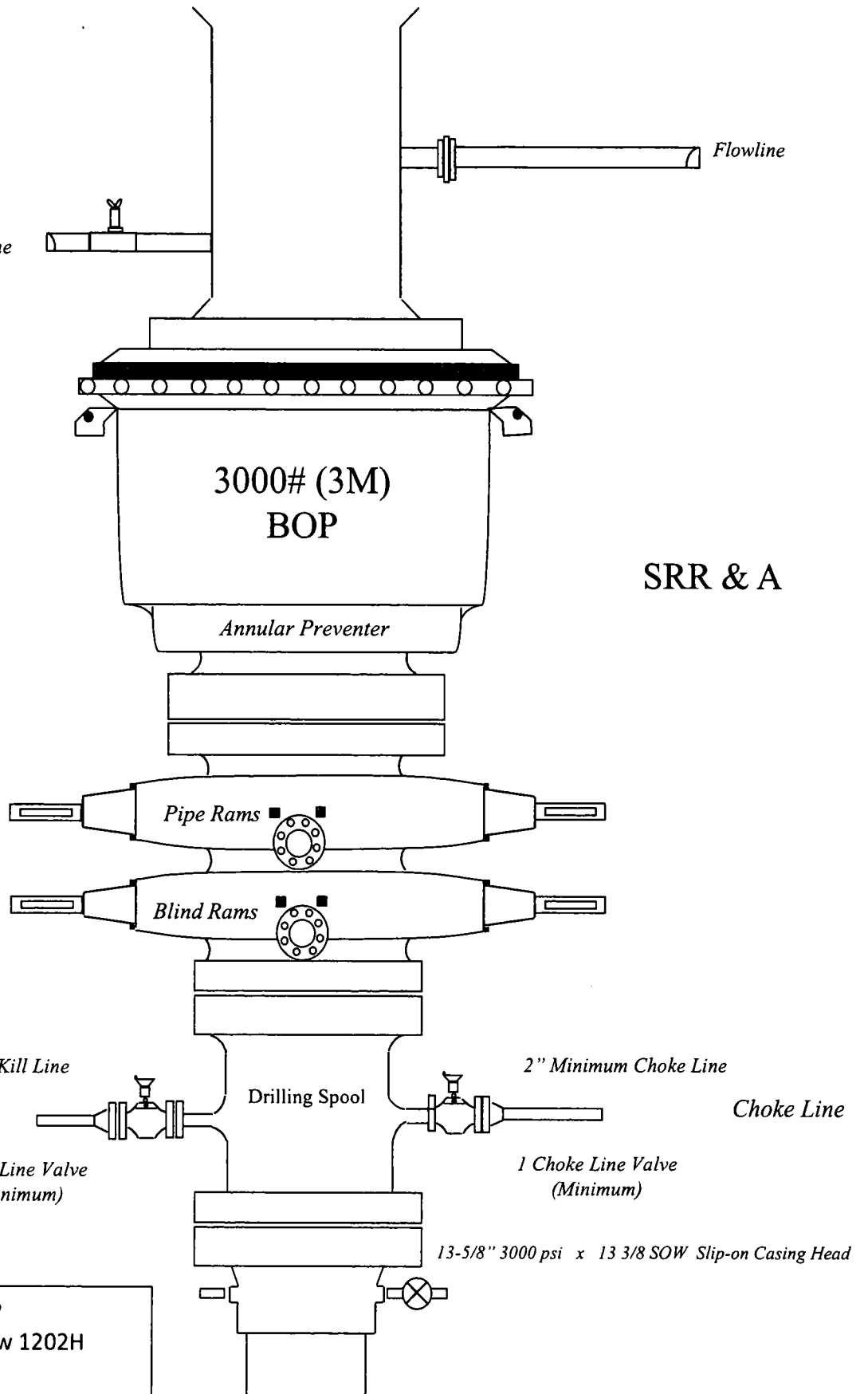
2" Minimum Choke Line

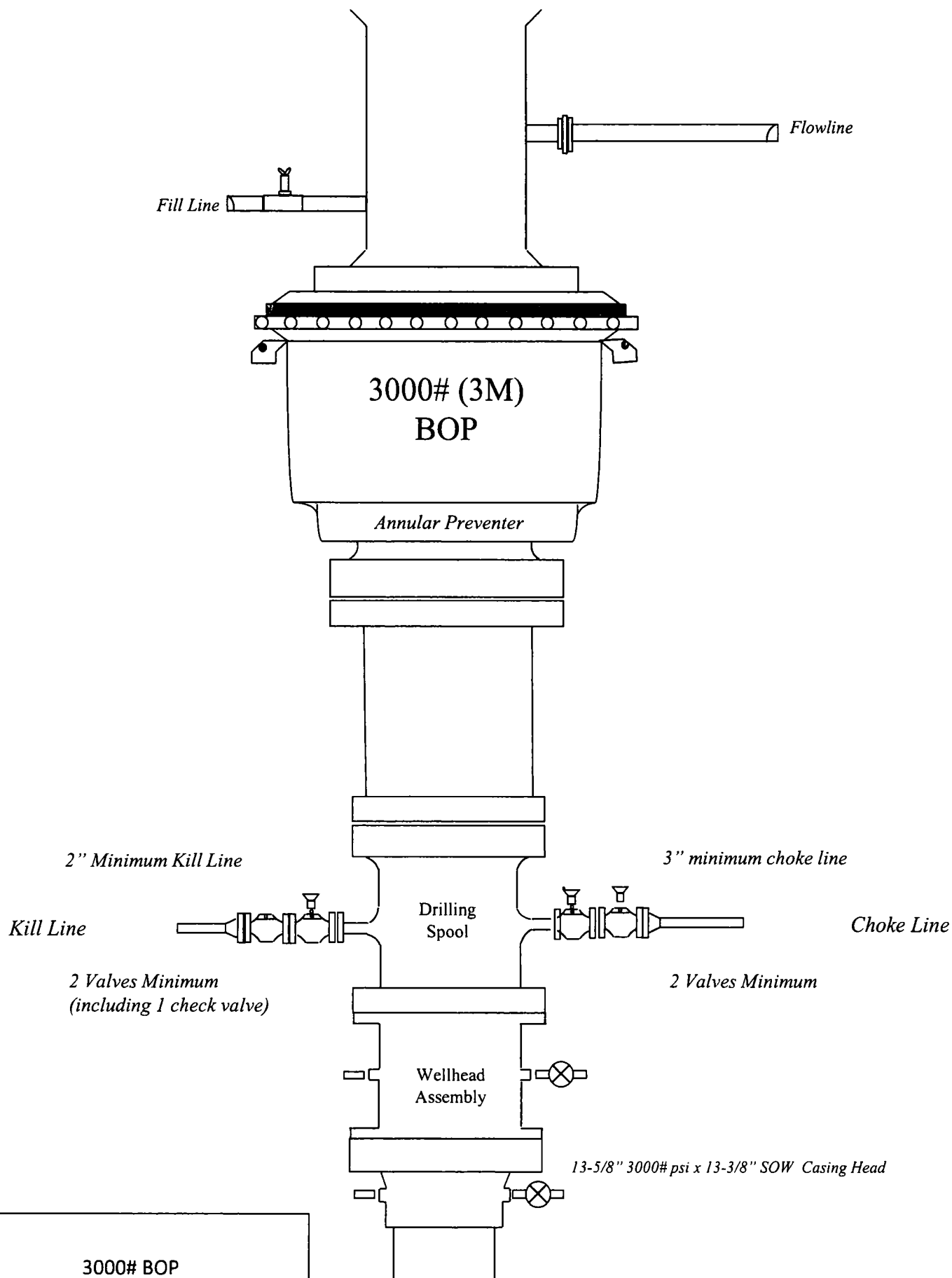
Choke Line

1 Choke Line Valve
(Minimum)

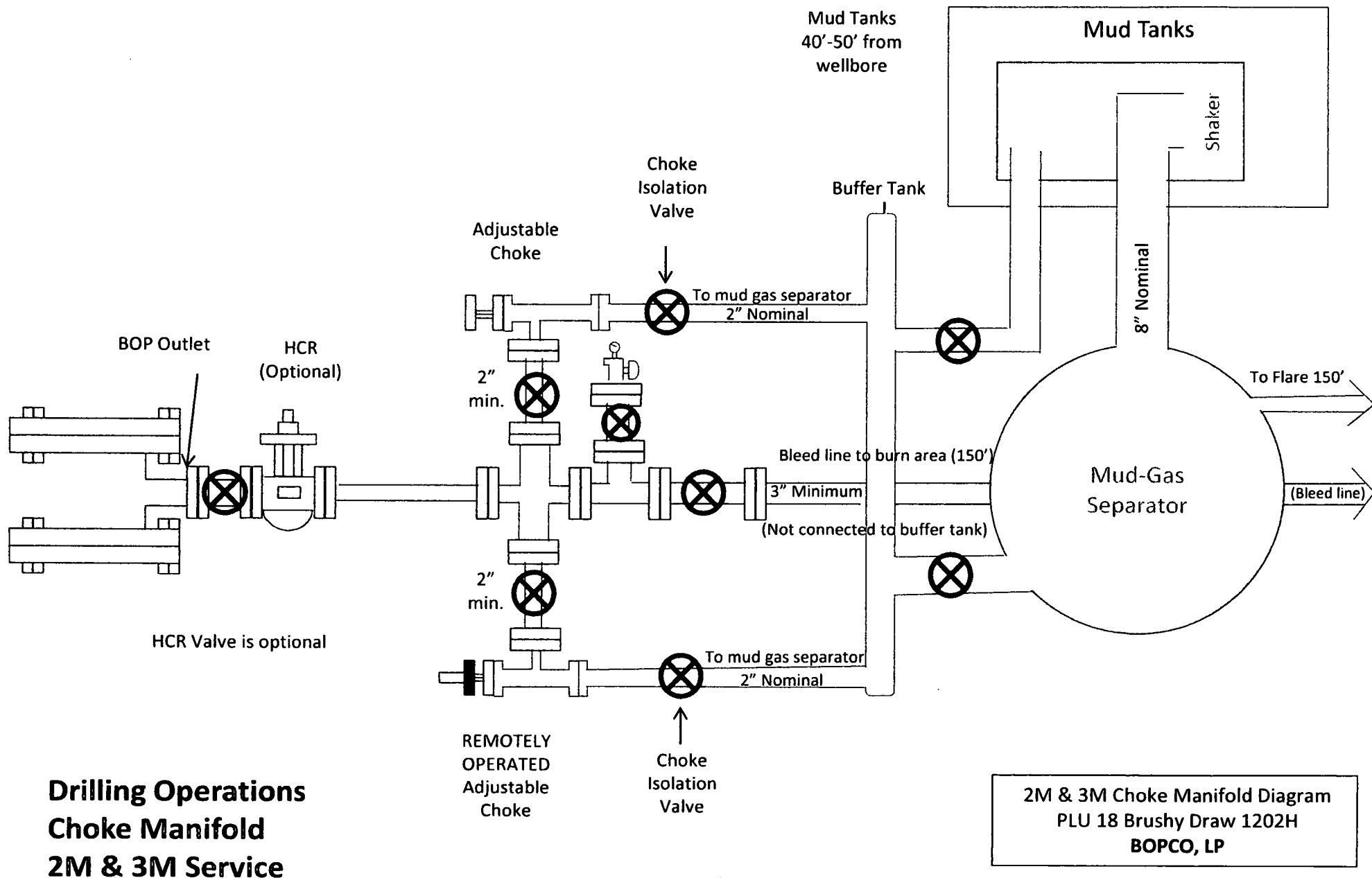
13-5/8" 3000 psi x 13 3/8 SOW Slip-on Casing Head

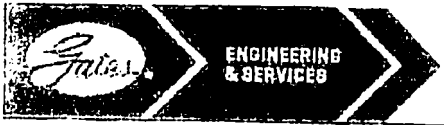
3000# BOP
PLU 18 Brushy Draw 1202H
BOPCO, LP





3000# BOP
PLU 18 Brushy Draw 1202H
BOPCO, LP





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

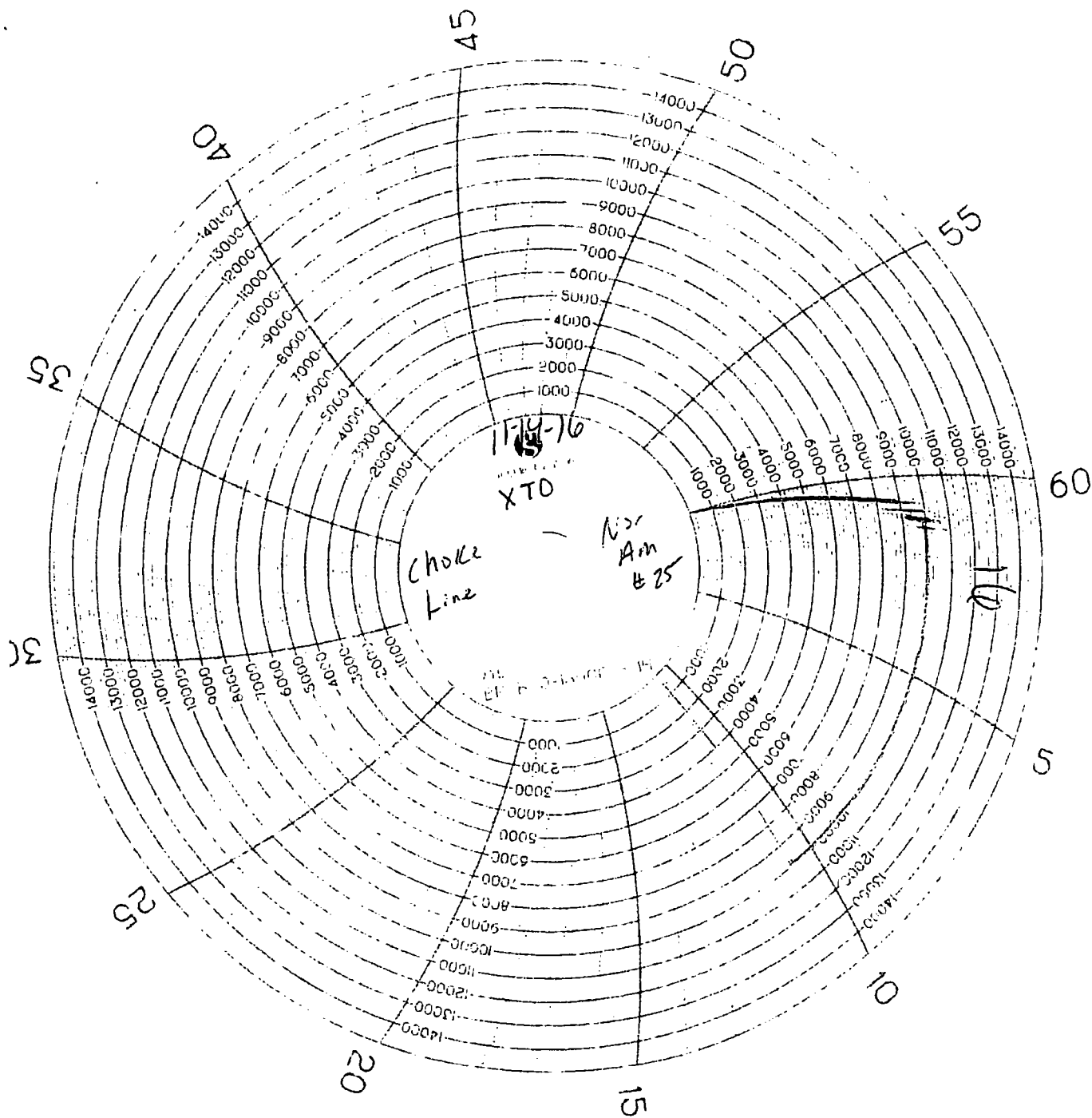
PHONE: 361-887-9807
FAX: 361-887-0812
EMAIL: crpe&s@gates.com
WEB: www.gates.com

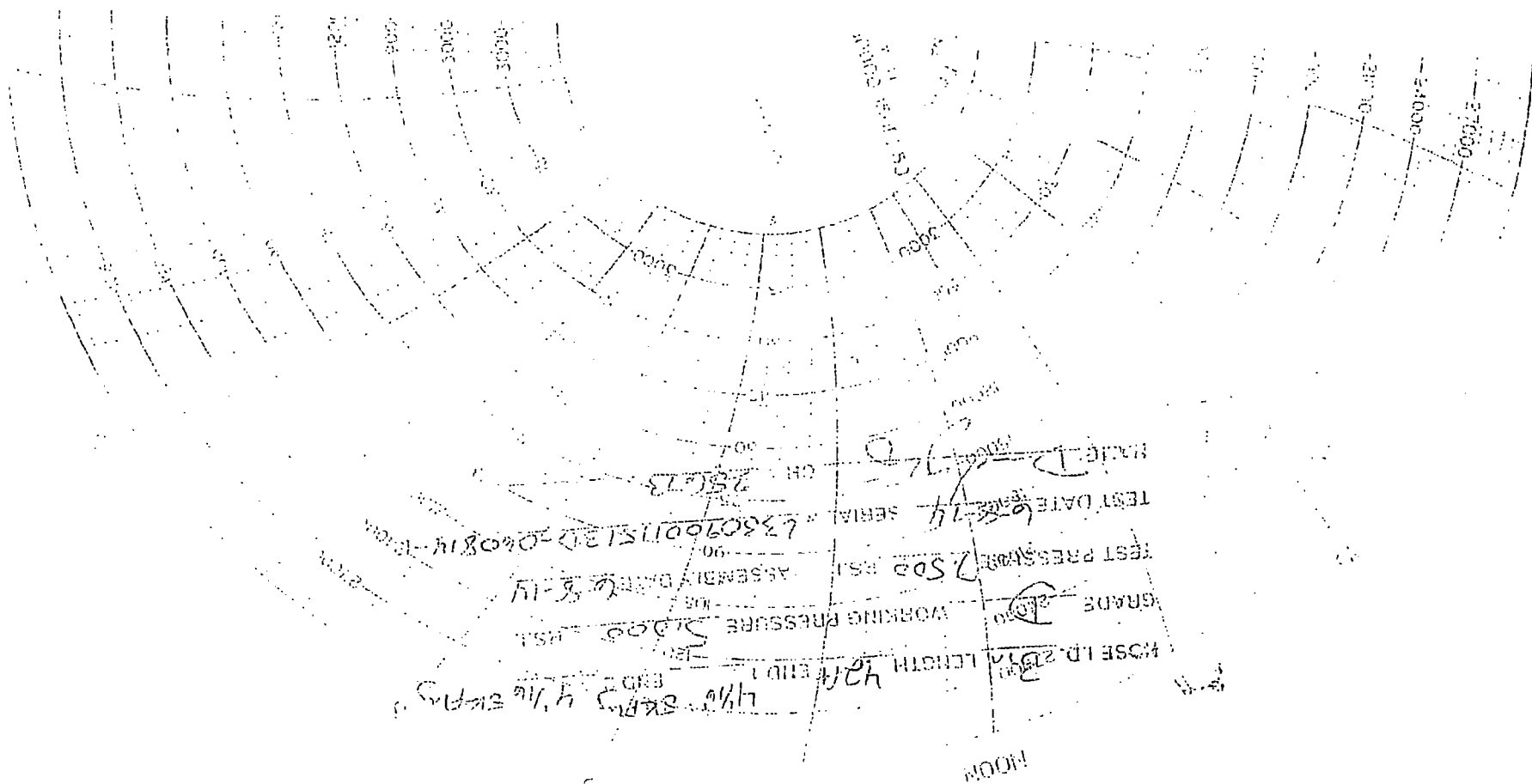
GRADE D PRESSURE TEST CERTIFICATE

Customer :	AUSTIN DISTRIBUTING	Test Date:	6/8/2014
Customer Ref. :	PENDING	Hose Serial No.:	D-060814-1
Invoice No. :	201709	Created By:	NORIKA
Product Description:	FDJ-042.0R41/16.5KFLGE/E LE		
End Fitting 1 :	4 1/16 in.5K FLG	End Fitting 2 :	4 1/16 in.5K FLG
Gates Part No. :	4774-6001	Assembly Code :	L33090011513D-060814-1
Working Pressure :	5,000 PSI	Test Pressure :	7,500 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 7,500 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:	QUALITY	Technical Supervisor:	PRODUCTION
Date:	6/8/2014	Date:	6/8/2014
Signature:		Signature:	





PECOS DISTRICT

DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	BOPCO, LP
LEASE NO.:	POKER LAKE UNIT 18 BD 122H
WELL NAME & NO.:	NMNM120898
SURFACE HOLE FOOTAGE:	2310' FNL & 1275' FWL
BOTTOM HOLE FOOTAGE:	200' FSL & 1210' FWL
LOCATION:	Section 18, T. 25 S., R 30 E., NMPM
COUNTY:	Eddy County, New Mexico

COA

All previous COAs still apply expect the following:

H2S	☒ Yes	☐ No	
Potash	☒ None	☐ Secretary	☐ R-111-P
Cave/Karst Potential	☐ Low	☒ Medium	☐ High
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	☐ Conventional	☒ Multibowl	☐ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP

A. Hydrogen Sulfide

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware** formation. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

1. The 13-3/8 inch surface casing shall be set at approximately **860** feet (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 will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - 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: Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
- b. Second stage above DV tool: Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification. Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Additional cement maybe required. Excess calculates to 10%.**

❖ In Medium Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
 - Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification. **Additional cement maybe required. Excess calculates to 20%.**

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).
2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 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.

GENERAL 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)

☒ Chaves and Roosevelt Counties

Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.

During office hours call (575) 627-0272.

After office hours call (575)

☒ Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,

(575) 361-2822

☒ Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)

393-3612

1. 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.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. 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 are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log (one log per well pad is acceptable) 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.

A. CASING

1. 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.
2. Wait on cement (WOC) for Potash Areas: 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 for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. 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. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. 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.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. 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.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. 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 RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher 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. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
 - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
5. 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. In potash areas, 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. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
- c. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.
- d. 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.
- 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. 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.

C. 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.

D. 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.

Waste Minimization Plan (WMP)

In the interest of resource development, submission of additional well gas capture development plan information is deferred but may be required by the BLM Authorized Officer at a later date.

ZS 091318