AT5-15-401

Form 3160-3
(August 2007)

OCD Hobbs

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

R-111-POTASH

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM 067110

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. (316492)
Tonto 31 B2BO Fed #1H

2. Name of Operator Mewbourne Oil Company (14744)

9. API Well No.
30-025-43355

3a. Address
PO Box 5270
Hobbs, NM 88241

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

10. Field and Pool, or Exploratory
Gem Bone Spring (27220)

HOBBS OCD
JUL 06 2016
RECEIVED

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface 185' FNL & 1910' FEL Sec. 31, T19S, R33E
At proposed prod. zone 330' FSL & 1980' FEL Sec. 31, T19S, R33E

11. Sec., T. R. M. or Blk. and Survey or Area
Sec. 31, T19S, R33E

14. Distance in miles and direction from nearest town or post office*
23 miles south of Maljamar, NM

12. County or Parish
Lea

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No. of acres in lease	17. Spacing Unit dedicated to this well
185'	160	320

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. on file
1000' MOC Federal 31 G #005	14,526'-MD 9,991'-TVD	NM-1693 nationwide, NMB-000919

21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3579'	03/01/2015	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
	BRADLEY BISHOP	2-5-15

Title

Approved by *(Signature)* /s/George MacDonell	Name *(Printed Typed)*	Date JUL 5 - 2016
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

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.

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, n
States any false, fictitious or fraudulent statements or represe

to any department or agency of the United

See attached NMOCD
Conditions of Approval

(Continued on page 2)

*(Instructions on page 2)

KA
07/07/16

Capitan Controlled Water Basin

Approval Subject to General Requirements
& Special Stipulations Attached

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

KA

Mewbourne Oil Company, Tonto 31 B2BO Fed #1H
Sec 31, T19S, R33E
SL: 185' FNL & 1910' FEL
BHL: 330' FSL & 1980' FEL

1. Geologic Formations

TVD of target	9991'	Pilot hole depth	NA
MD at TD:	14526'	Deepest expected fresh water:	250'

Reef

Formation	Depth (TVD) from KB)	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Alluvium	Surface	Water	
Rustler	1240	Water	
Top of Salt	1455	Salt	
Castile (Base of Salt)	2719		
Yates	2950	Oil	
Capitan Reef	3200		
Queen			
Delaware Group	5035	Oil/Gas	
Bone Spring	7870	Oil/Gas	
2nd Bone Spring	9560	Target Zone	
Wolfcamp		Will Not Penetrate	
Cisco			
Canyon			
Strawn			
Atoka			
Morrow			
Barnett Shale			
Woodford Shale			
Devonian			
Fusselman			
Ellenburger			
Granite Wash			

*H2S, water flows, loss of circulation, abnormal pressures, etc.

Mewbourne Oil Company, Tonto 31 B2BO Fed #1H
Sec 31, T19S, R33E
SL: 185' FNL & 1910' FEL
BHL: 330' FSL & 1980' FEL

2. Casing Program

Hole Size	Casing Interval From	Casing Interval To	Csg. Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
26"	0	875	20"	94	J55	BTC	1.14	4.64	5.84
	875	~~1265~~ 1305'	20"	133	J55	BTC	7.40	15.09	22.98
17.5"	0	1200	13.375"	48	H40	STC	1.19	2.77	1.95
	1200	1900	13.375"	54.5	J55	STC	1.14	2.76	4.77
	1900	2632	13.375"	61	J55	STC	1.13	2.26	8.54
	2632	~~3000~~ 3200'	13.375"	68	J55	STC	1.25	2.21	26.97
12.25"	0	3400	9.625"	36	J55	LTC	1.14	1.99	2.46
	3400	4350	9.625"	40	J55	LTC	1.14	1.75	8.47
	4350	4935	9.625"	40	N80	LTC	1.20	2.24	31.07
8.75"	0	1526	5.5"	17	P110	BTC	9.43	13.41	2.21
	1526	9487	5.5"	17	P110	LTC	1.52	2.16	2.01
	9487	10233	5.5"	17	P110	BTC	1.44	2.05	6.37
	10233	14526	5.5"	17	P110	BTC	1.44	2.05	6.08
				BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet

See COA

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
Does casing meet API specifications? 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 intermediate 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?	Y
Is well within the designated 4 string boundary.	Y
Is well located in SOPA but not in R-111-P?	Y
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	Y
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?	

See COA

Mewbourne Oil Company, Tonto 31 B2BO Fed #1H
Sec 31, T19S, R33E
SL: 185' FNL & 1910' FEL
BHL: 330' FSL & 1980' FEL

Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

3. Cementing Program

Casing	# Sks	Wt. lb/ gal	Yld ft3/ sack	H_20 gal/ sk	500# Comp. Strength (hours)	Slurry Description
Surf.	1670	12.5	2.12	11	10	Lead: Class C + 4.0% Bentonite + 0.6% CD-32 + 5% Sodium Chloride +0.25lb/sk Cello-Flake
	200	14.8	1.34	6.3	5	Tail: Class C + 0.005pps Static Free + 1% CaCl2 + 0.25 pps CelloFlake + 0.005 gps FP-6L
Inter.	1100	12.5	2.12	11	10	Lead: Class C + 4.0% Bentonite + 0.6% CD-32 + 5% Sodium Chloride +0.25lb/sk Cello-Flake
	200	14.8	1.34	6.3	5	Tail: Class C + 0.005pps Static Free + 1% CaCl2 + 0.25 pps CelloFlake + 0.005 gps FP-6L
2nd Inter.	205	12.5	2.12	11	10	1st Lead: Class C + 4.0% Bentonite + 0.6% CD-32 + 5% Sodium Chloride +0.25lb/sk Cello-Flake
	200	14.8	1.34	6.3	5	1st Tail: Class C + 0.005pps Static Free + 1% CaCl2 + 0.25 pps CelloFlake + 0.005 gps FP-6L
	DV Tool & ECP @ 3150'					
	460	12.5	2.12	11	10	2nd Lead: Class C + 4.0% Bentonite + 0.6% CD-32 + 5% Sodium Chloride +0.25lb/sk Cello-Flake
	200	14.8	1.32	8	5	2nd Tail: Class C + 0.25 lb/sk Cello Flake + 0.005 lb/sk Static Free
Prod.	1210	11.2	2.97	17	16	Class C (60:40:0) + 4% MPA5 + 1.2%BA10A + 10#/skBA90 + 5%A10 + 0.65%ASA301 + 1.5%SMS + 1.2%R21

additional Cement might be required. - See COA

DV tool depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	TOC	% Excess
Surface	0'	100%
Intermediate	0'	25%
2nd Intermediate	0'	25%
Production	3150'	25%

Mewbourne Oil Company, Tonto 31 B2BO Fed #1H
Sec 31, T19S, R33E
SL: 185' FNL & 1910' FEL
BHL: 330' FSL & 1980' FEL

4. Pressure Control Equipment – See COA

Y	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
12-1/4"	13-5/8"	2M	Annular	X	1250#
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other*		
8-3/4"	11"	3M	Annular	X	1500#
			Blind Ram	X	
			Pipe Ram	X	
			Double Ram		3000#
			Other *		
			Annular		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other *		

See COA

*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other

accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

X	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or 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. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
N	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
	Y /N | Are anchors required by manufacturer?
N	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. • Provide description here See attached schematic.

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	~~1265~~ 1305'	FW Gel	8.6-8.8	28-34	N/C
~~1265~~	~~3000~~ 3200'	Saturated Brine	10.0-10.2	29-34	N/C
~~3000~~	4935	FW*	8.5-9.3	28-34	N/C
4935	9487	Cut Brine	8.5-9.3	28-34	N/C
9487	14526	FW w/polymer	8.5-9.3	28-34	N/C

See COA

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.
*Aerated fluid w/fresh water will be used to drill 12 ¼" hole if circulation is lost. Water samples will be taken every 100' through the Capitan Reef formation.

What will be used to monitor the loss or gain of fluid?	Visual Monitoring

6. Logging and Testing Procedures

Logging, Coring and Testing.	
X	Will run GR/CNL from KOP to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No Logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain
	Coring? If yes, explain

Additional logs planned		Interval
X	GR	KOP(9487') to TD
	Density	
	CBL	
	Mud log	
	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4300 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
	H2S is present
	H2S Plan attached

See COA

8. Other facets of operation

Is this a walking operation? If yes, describe.
Will be pre-setting casing? If yes, describe.

Attachments
___ Directional Plan
___ Other, describe

Notes Regarding Blowout Preventer
Mewbourne Oil Company
Tonto 31 B2BO Fed #1H
185' FNL 1910' FEL (SHL)
Sec 31-T19S-R33E
Lea County, New Mexico

I. Drilling nipple (bell nipple) to be constructed so that it can be removed without the use of a welder through the opening of the rotary table, with minimum internal diameter equal to blowout preventer bore.

II. Blowout preventer and all fittings must be in good condition with a minimum 3000 psi working pressure on 9 5/8" and 7" casing.

III. Safety valve must be available on the rig floor at all times with proper connections to install in the drill string. Valve must be full bore with minimum 3000 psi working pressure.

IV. Equipment through which bit must pass shall be at least as large as internal diameter of the casing.

V. A kelly cock shall be installed on the kelly at all times.

Blowout preventer closing equipment to include and accumulator of at least 40 gallon capacity, two independent sources of pressure on closing unit, and meet all other API specifications.

11" 3M BOPE & Closed Loop Equipment Schematic

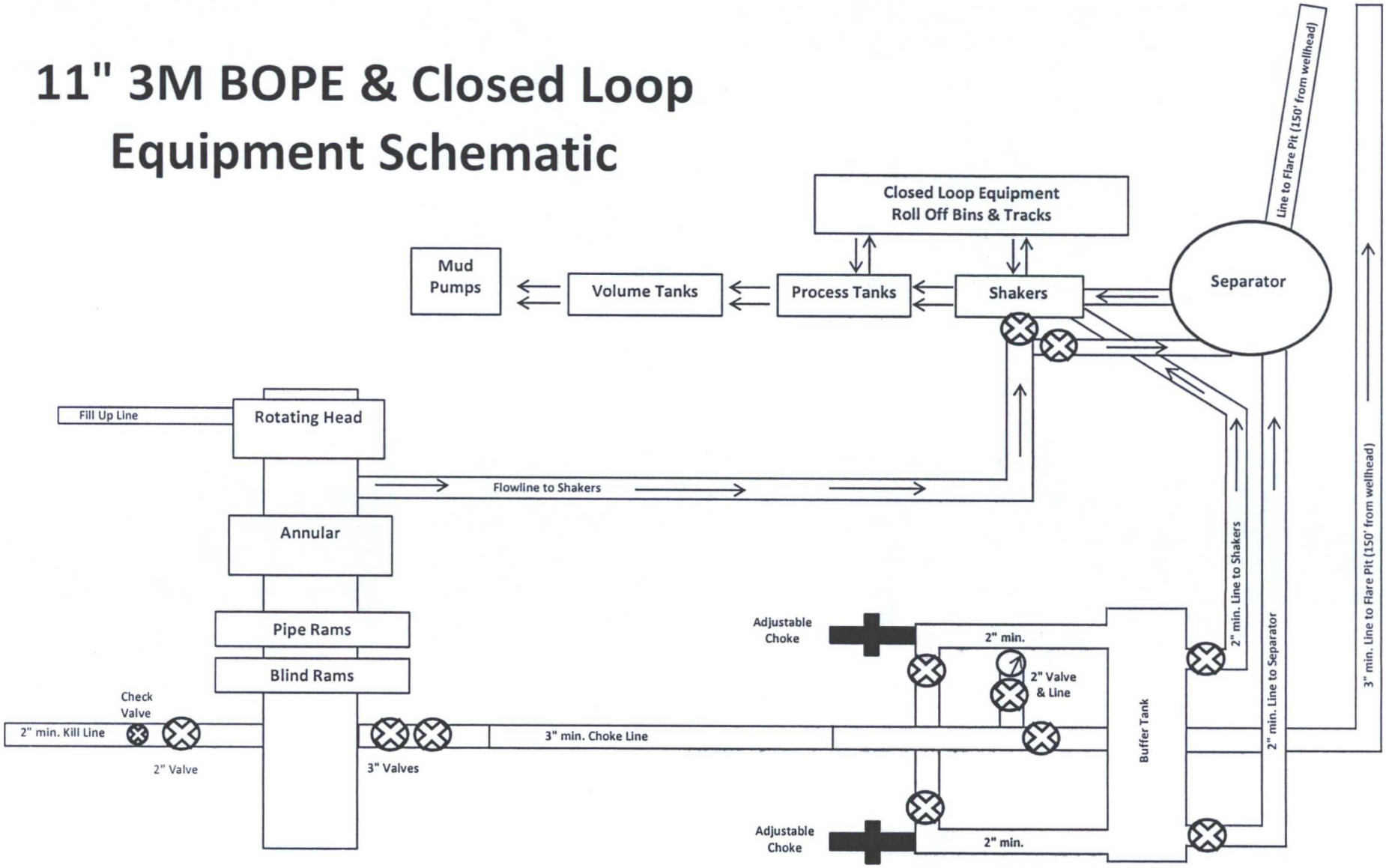


Exhibit "2"
Tonto 31 B2BO Fed #1H

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

13 ⅝" 2M BOPE & Closed Loop Equipment Schematic

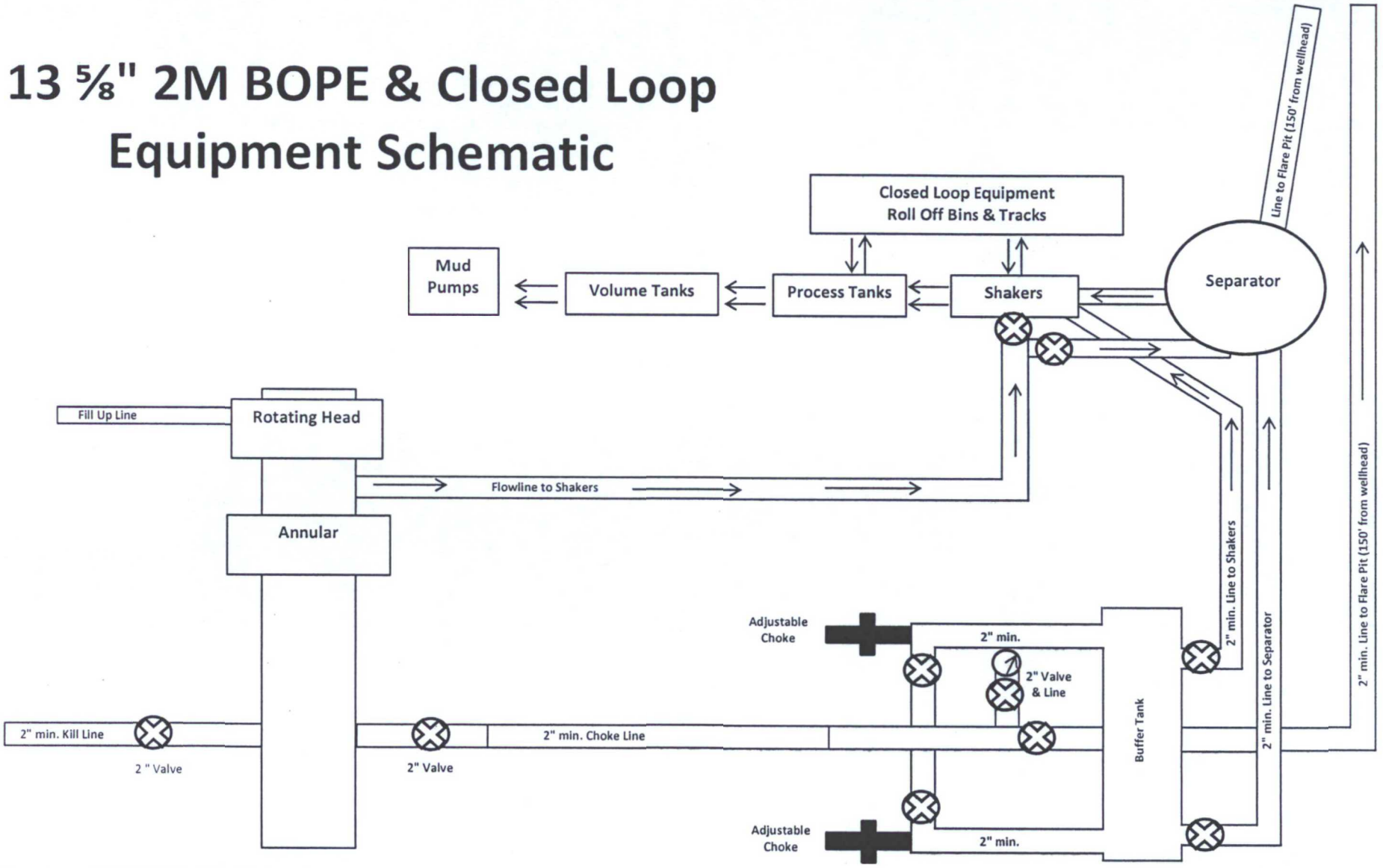


EXHIBIT "2"
Tonto 31 B2BO Fed #1H

20" Diverter & Closed Loop Equipment Schematic

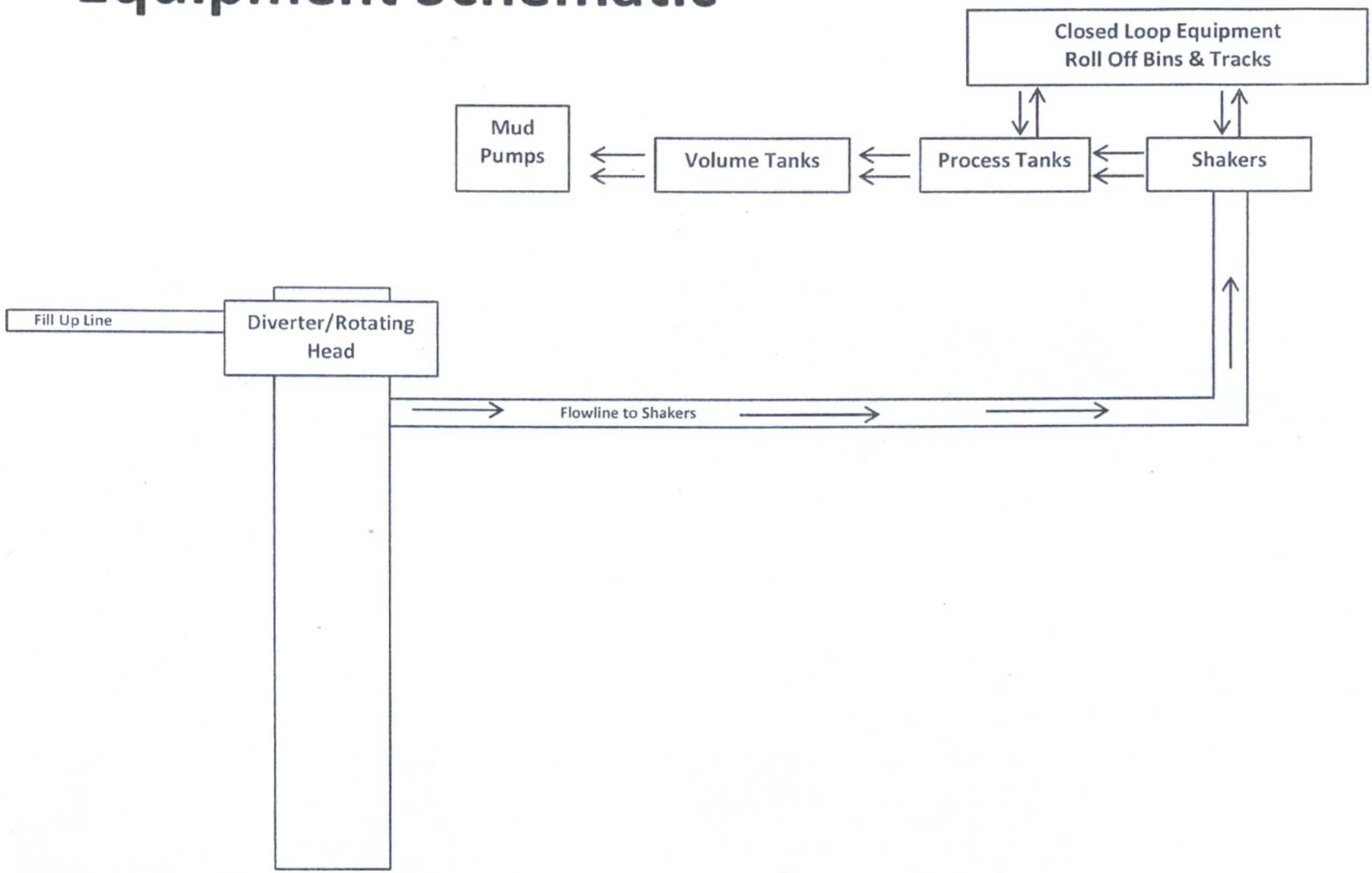
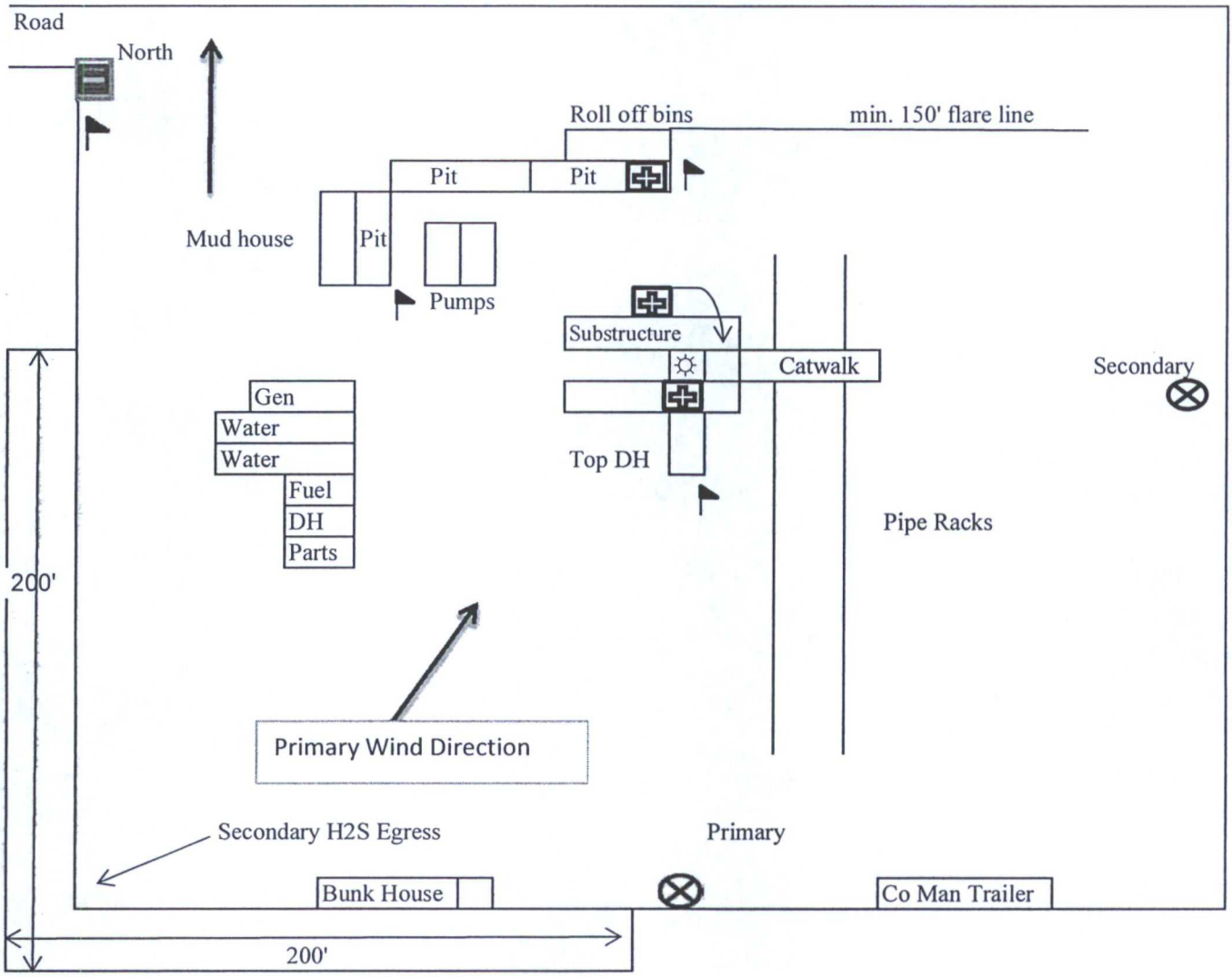


Exhibit 2B

Tonto 31 B2AP Fed-1H

Exhibit 6: Production Facilities (H2S Diagram)

Closed Loop Pad Dimensions 340' x 340'



= Safety Stations

= Wind Markers

= H2S Monitors

= Warning Signs

Mewbourne Oil Company
Tonto 31 B2BO Federal #1H
185' FNL & 1910' FEL
Sec. 31, T-19S, R-33E
Lea County, NM