

HOBBS OCD

OCD Hobbs

Form 3160-3
(April 2004)

JUL 15 2011

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No 1004-0137
Expires March 31, 2007

EA 11-884

5. Lease Serial No
NMLC071985, NMNM27509

6. If Indian, Allottee 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 **<38717>**
Battle Axe Federal #1H

2. Name of Operator
Manzano, LLC

9. API Well No.

30-025-40192

3a. Address **PO BOX 2107
Roswell, NM 88202**

3b. Phone No. (include area code)
575-623-1996

10. Field and Pool, or Exploratory
Wildcat- Bonesprings

4. Location of Well (Report location clearly and in accordance with any State requirements *)

At surface **400' FSL & 1980' FEL, Sec 34, T26S, R32E**

At proposed prod. zone **330' FNL & 1980' FEL, Sec 27, T26S, R32E (BHL)**

11. Sec., T. R. M. or Bk and Survey or Area

Sec. 34, T26S, R32E

14. Distance in miles and direction from nearest town or post office*
21 miles south west from Jal, NM

12. County or Parish

Lea County

13. State

NM

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

SHL 400'

BHL 330'

16. No. of acres in lease

940

17. Spacing Unit dedicated to this well

240

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

1650'

19. Proposed Depth

MD-15777' TVD- 9362'

20. BLM/BIA Bond No. on file

NM-2567

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3093'

22. Approximate date work will start*
08/01/2011

23. Estimated duration
35 Days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall 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 shall 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 authorized officer.

25. Signature

Paul Ragsdale

Name (Printed/Typed)

Paul Ragsdale

Date

05/16/2011

Title

Operations Manager

Approved by (Signature)

James A. Amos

Name (Printed/Typed)

James A. Amos

Date

JUL - 8 2011

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, 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)

Witness Surface Casing

Ka 07/01/11

Carlsbad Controlled Water Basin

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

DISTRICT I

1625 N. French Dr., Hobbs, NM 88240

DISTRICT II

1301 W. Grand Avenue, Artesia, NM 88210

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV

1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

HOBBS OCD

Form C-102

Revised July 16, 2010

Submit one copy to appropriate
District OfficeOIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

JUL 15 2011

WELL LOCATION AND ACREAGE DEDICATION PLAT

RECEIVED

☐ AMENDED REPORT

API Number 30-025-40192	Pool Code 96403	Pool Name Wildcat Bone Spring
Property Code 38217	Property Name BATTLE AXE FEDERAL	
OGRID No. 231429	Operator Name MANZANO, LLC	Well Number 1H
		Elevation 3093

Surface Location

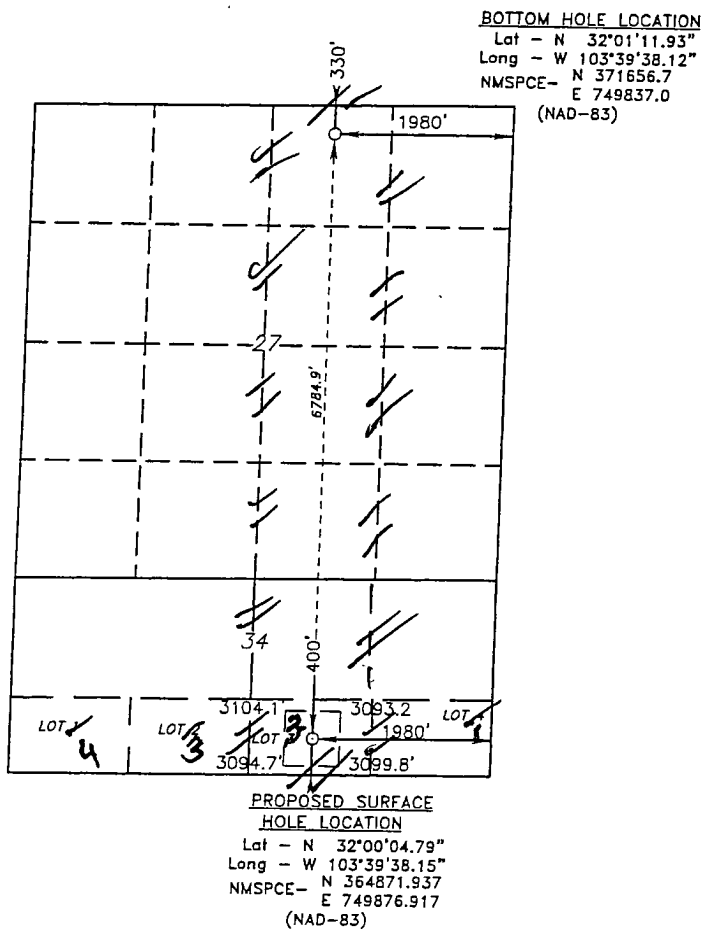
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
LOT 32	34	26 S	32 E		400	SOUTH	1980	EAST	LEA

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
B	27	26 S	32 E		330	NORTH	1980	EAST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
240	per operator	JH 7/8/11	

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



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location 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] 4/25/11
Signature Date

Printed Name

Email Address

SURVEYOR CERTIFICATION

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

Date Surveyed

Signature & Seal of
Professional Surveyor

W.C.

Certificate No. Gary L. Jones 7977

BASIN SURVEYS 24377

Manzano, LLC
DRILLING AND OPERATIONS PROGRAM

Battle Axe Federal #1H
Surface Location:
400' FSL & 1980' FEL
Section 34, T26S, R32E
Bottom Hole Location
330' FNL & 1980' FEL
Section 27, T26S, R32E
Lea County, New Mexico

In conjunction with Form 3160-3, Application for Permit to Drill subject well, Manzano, LLC submits the following ten items of pertinent information in accordance with BLM requirements.

1. Geological surface formation: Permian

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

Rustler	475'
Top of Salt	840'
Base of the Salt	4165'
Lamar	4385'
*Delaware	4410'
*Bone Spring	8445'

3. The estimated depths at which anticipated water, oil or gas formations are expected to be encountered:

A lease map of the surrounding wells is included as Exhibit 2D

Water Fresh water will be protected by setting surface casing at 650' and cementing to surface.
Fresh water is virtually none existent in this area but may be encountered from 100' to 200'.

Hydrocarbons Oil and gas are anticipated in the above (*) formations. These zones will be protected by casing if necessary

No other formations are expected to give up oil, gas, or fresh water in measurable quantities. The surface fresh water sands will be protected by setting 13 3/8" casing at 650' and circulating cement back to surface. Potash/ water sand formations will be protected by setting 9 5/8" casing at 4400'+/- and circulating cement back to surface.

4. Proposed Casing Program:

Hole Size	Interval	OD Casing	New or Used	Wt	Collar	Grade	Collapse Design Factor	Burst Design Factor	Tension Design Factor
17.5"	0'-650'	13 3/8"	New	48#	STC	H40	1.125	1.125	1.6
12.25"	0'-4400'	9 5/8"	New	40	STC	N80	1.125	1.125	1.6
8.75"	0'-9625' MD/9331' TVD	7"	New	26#	LTC	P-110	1.125	1.125	1.6
6.125	9400'-15,800'	4.5"	New	11.6#	LTC	P-110	1.125	1.125	1.6

5. Proposed Cement Program:

- a. 13 3/8" Surf: 400 sks BJ Lite Class "C" (35:65:4) w/ 5% Salt, 2.5 SMS, 5% MPA5, 1/8#/sk Cello Flake & 5#/sk LCM1 (yd @ 2.15 cuft/sk @ 12.5 PPG). Tail w/ 200 sks Class "C" w/ 2% CaCl₂ (yd @ 1.34 cuft/sk @ 14.8 PPG). Using 130% percent excess.
Cement to surface.
- b. 9 5/8" Int: 1200 sks BJ Lite Class "C" (35:65:4) w/ 5# sk LCM 1 & 1/4 #/sk celloflake (yd @ 2.13 cuft/sk @ 12.5 PPG). Tail w/ 200 sks Class "C" Neat (yd @ 1.33 cuft/sk @ 14.8 PPG). Using 100% excess.
Cement to surface.
- c. 7" Prod: 400 sks BJ Lite Class "H" (35:65:6 w/ 5% salt, 5#/sk LCM1, 5% MPA5, .2% FL52, & .4% SMS. (yield @ 2.47 cuft/sk @ 12 PPG). Tail w/ 400 sks Class "H" w/ 1% Salt & .2 % FL52 (yield @ 1.18 cuft/sk @ 15.6 PPG) Using 100% Excess.
Tie back into 9 5/8" with T.O.C. at 3000'.
- d. 4 1/2" Liner: The 4 1/2" liner will be run with an anticipated 20 stages of packers/ports system to total depth of the horizontal lateral. The liner will be hung inside the 7" with approximately 200' of overlap. The packers will be set by hydraulic pressure and the rig will be moved off.
NO CEMENT WILL BE RUN ON THE LINER.

The above cement volumes could be revised pending the caliper measurement from the open hole logs.
All casing is new and API approved.

6. Minimum Specifications for Pressure Control:

Plan to nipple up on 13 3/8" with a 2M annular system and test to 1000 psig by a 3rd party tester. Nipple up on 9 5/8 with a 3m system and test to 3000 psig with independent tester.

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. A 2" kill line and a 3" choke line will be included in the drilling spool located below the ram-type BOP. Other accessories to the BOP equipment will include a Kelly cock, floor safety valve (inside BOP), choke lines and choke manifold with 3000 psi WP rating.

1. All blowout preventer (BOP) and related equipment shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. Minimum working pressure of the blowout preventer (BOP) and related equipment required for drilling below the surface casing shoe shall be 2000 (2m) psi.
 - i. See Exhibit 3
3. Minimum working pressure of the blowout preventer (BOP) and related equipment required for drilling below the intermediate casing shoe shall be 3000 (5m) psi.
 - i. See Exhibit 3A
4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the test
 - a. The test shall be done by an independent service company.

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

No abnormal pressures are anticipated during drilling.

Depth (feet)	Mud Weight (lb/gal)	Anticipated BHP (psig)	Bottom hole temp (deg F)
650'	8.4	200	70
4400'	10.0	1950	85
8445'	8.8	2800	top of Bone Springs 100
9362' TVD	8.8	3000	Total depth 116

7. **Mud Program:** The applicable depths and properties of this system are as follows:

Depth	Type System	Mud Weight	Viscosity (sec)	Waterloss (cc)
0' – 650'	Fresh Water Gel	8.4 – 8.9	32-34	N.C.
650' – 4400'	Brine	10.0 – 10.0	34-36	N.C
4400'-9700'	Cut- Brine	8.4-8.9	32-34	N.C.
9700'-15,800'	Fresh Water Gel	8.4-9.2	32-34	4-10

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

8. **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 the appropriate connections will be on the rig floor at all times.
- c. Hydrogen Sulfide detection equipment will be in operation after drilling out the 13 3/8" casing shoe until total depth is reached and isolated from surface. Breathing equipment will be on location upon drilling the 13 3/8" shoe until total depth is reached.

9. **Testing, Logging and Coring Program:**

- a. No drill stem test are planned
- b. The open hole electrical logging program will be:
 - i. Total Depth to Intermediate Casing: Dual Laterolog-Micro Laterolog and Gamma Ray. Compensated Neutron – Z Density log with Gamma Ray and Caliper.
 - ii. Total Depth to Surface: Compensated Neutron with Gamma Ray
 - iii. No coring program is planned
 - iv. Additional testing will be initiated subsequent to setting the 5 1/2" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

10. Potential Hazards:

a. No abnormal pressures or temperatures are expected. There is no known presence of H₂S in this area. If H₂S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. No H₂S is anticipated to be encountered.

HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

1. All company and Contract personnel admitted on location must be trained by a qualified H₂S safety instructor to the following:
 - a. Characteristics of H₂S
 - b. Physical effects and hazards
 - c. Proper use of safety equipment and life support systems
 - d. Principle and operations of H₂S detectors, warning system and briefing areas
 - e. Evacuation procedures, routes and first aid
 - f. Proper use of 30-minute pressure demand air pack
2. H₂S Detection and alarm System
 - a. H₂S detectors and audio alarm system to be located at bell nipple, end of bloop line (mud pit) and on derrick floor or doghouse.
3. Windsock and/or wind streamers
 - a. Windsock at mud pit area should be high enough to be visible
 - b. Windsock at briefing area should be high enough to be visible
 - c. There should be a windsock at entrance to location
4. Condition Flags and Signs
 - a. Warning Sign on access road to location
 - b. Flags to be displayed on sign at entrance to location. Green flag, normal safe condition. Yellow flag indicates potential pressure or danger. Red flag, danger, H₂S present in Dangerous concentration. Only emergency personnel admitted to location.
5. Well Control Equipment
 - a. See Exhibit 3, 3A, and 3B

6. Communication
 - a. While working under masks chalkboards will be used for communication.
 - b. Hand signals will be used where chalk board is inappropriate
 - c. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters
7. Drilling contractor supervisor will be required to be familiar with the effects H₂S has on tubular goods and other mechanical equipment
 - If H₂S is encountered, mud system will be altered if necessary to maintain control of formation.
 - A mud gas separator will be brought into service along with H₂S scavengers if necessary,

Emergency Procedures

In the case of a release of gas containing H₂S, the first responders must isolate the area and prevent entry by other persons into the 100 ppm ROE. Additionally the responders must evacuate any public places encompassed by the 100 ppm ROE. First responders must take care not to injure themselves during this operation. Company and/or local officials must be contacted to aid in this operation. Evacuation of the public should be beyond the 100 ppm ROE.

All responders must have training in the detection of H₂S, measures for protection against the gas, equipment used for protection and emergency response. Additionally, responders must be equipped with H₂S monitors and air packs in order to control the release. Use the "buddy system" to ensure no injuries during the response.



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Drilling Services

Proposal

MANZANO LLC

BATTLE AXE FED #1H

LEA CO, NM

WELL FILE: PLAN 2

APRIL 19, 2011

Weatherford International, Ltd.

P.O. Box 61028

Midland, TX 79711 USA

+1.432.561.8892 Main

+1 432.561.8895 Fax

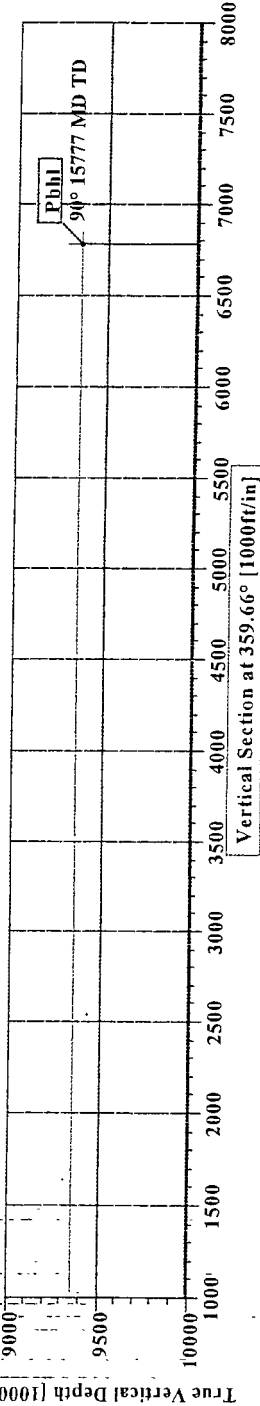
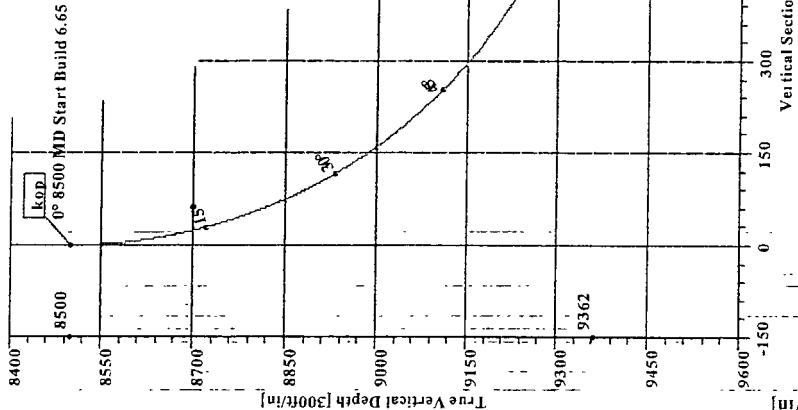
www.weatherford.com

Manzano, LLC

Battle Axe Fed 1H

Lea Co., New Mexico

KD ELEV: NA
GL ELEV: 3093



SECTION DETAILS

Sec	MD	Inc	Adi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	359.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	8500.00	0.00	359.66	8500.00	0.00	0.00	0.00	0.00	0.00	0.00
3	9854.03	90.00	359.66	9362.00	861.98	-39.92	0.00	359.66	862.00	0.00
4	15776.91	90.00	359.66	9362.00	6784.76	-39.92	0.00	0.00	6784.88	Pbhl

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Not thing	Eastng	Latitude	Longitude	Shape
Pbhl	9362.00	6784.76	-39.92	371656.70	749837.00	32°01'11.92IN	103°39'38.199W	Point

WELL DETAILS

Name	+N/-S	+E/-W	Northng	Eastng	Latitude	Longitude	Slot
B.A Fed 1H	0.00	0.00	364871.94	749876.92	32°00'04.779N	103°39'38.166W	N/A

FIELD DETAILS

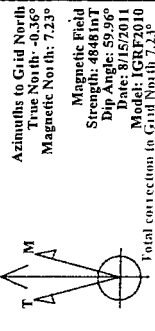
Lea Co., NM (NAD 83)
Geodetic System: US State Plane Coordinate System 1983
Ellipsoid: GRS 1980
Zone: New Mexico, Eastern Zone
Magnetic Model: IGRF2010
System Datum: Mean Sea Level
Local North: Grid North

SITE DETAILS

Battle Axe Fed 1H
Site Centre Northing: 364871.94
Easting: 749876.92
Ground Level: 3093.00
Positional Uncertainty: 0.00
Convergence: 0.36



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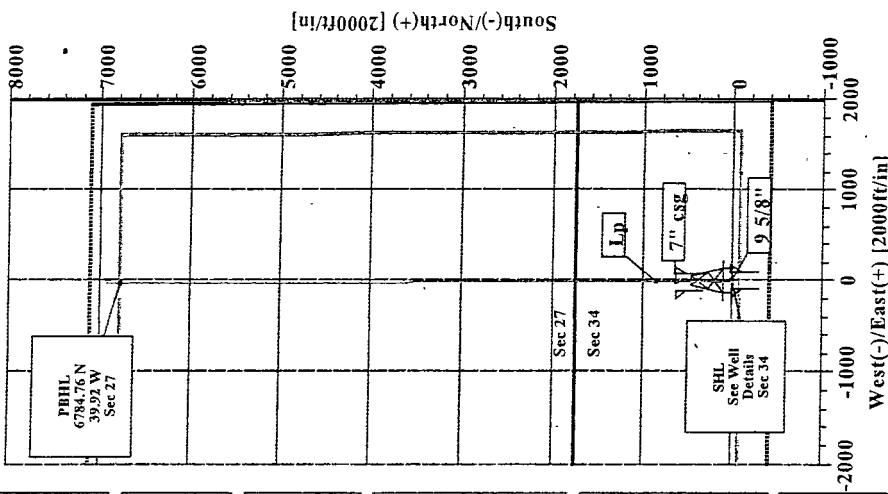


LEGEND

Plan #2

CASING DETAILS

No.	TVD	MD	Name	Size
1	4400.00	4400.00	9 5/8"	9.625
2	9331.75	9625.00	7" csg	0.000



Weatherford International Ltd.

WFT Plan Report - X & Y's



Weatherford

Company: Manzano LLC Date: 4/19/2011 Time: 10:52:39 Page: 1
 Field: Lea Co., NM (NAD 83) Co-ordinate(NE) Reference: Site: Battle Axe Fed 1H, Grid North
 Site: Battle Axe Fed 1H Vertical (TVD) Reference: SITE 0.0
 Well: B.A Fed 1H Section (VS) Reference: Well (0.00N,0.00E,359.66Azi)
 Wellpath: 1 Survey Calculation Method: Minimum Curvature Db: Sybase

Plan: Plan #2 Date Composed: 4/13/2011
 Principal: Yes Version: 1
 Tied-to: From Surface

Field: Lea Co., NM (NAD 83)

Map System: US State Plane Coordinate System 1983
 Geo Datum: GRS 1980
 Sys Datum: Mean Sea Level

Map Zone: New Mexico, Eastern Zone
 Coordinate System: Site Centre
 Geomagnetic Model: IGRF2010

Site: Battle Axe Fed 1H

Site Position: Northing: 364871.94 ft Latitude: 32 0 4 779 N
 From: Map Easting: 749876.92 ft Longitude: 103 39 38.166 W
 Position Uncertainty: 0.00 ft North Reference: Grd
 Ground Level: 3093.00 ft Grid Convergence: 0.36 deg

Well: B.A Fed 1H Slot Name:
 Well Position: +N/-S 0.00 ft Northing: 364871.94 ft Latitude: 32 0 4 779 N
 +E/-W 0.00 ft Easting: 749876.92 ft Longitude: 103 39 38.166 W
 Position Uncertainty: 0.00 ft

Wellpath: 1 Drilled From: Surface
 Current Datum: SITE Tie-on Depth: 0.00 ft
 Magnetic Data: 8/15/2011 Height 0.00 ft Above System Datum: Mean Sea Level
 Field Strength: 48481 nT Declination: 7.59 deg
 Vertical Section: Depth From (TVD) +N/-S +E/-W Mag Dip Angle: 59.96 deg
 ft ft ft Direction deg
 0.00 0.00 0.00 359.66

Plan Section Information

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	TFO deg	Target
0.00	0.00	359.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8500.00	0.00	359.66	8500.00	0.00	0.00	0.00	0.00	0.00	0.00	
9854.03	90.00	359.66	9362.00	861.98	-5.07	6.65	6.65	0.00	359.66	
15776.91	90.00	359.66	9362.00	6784.76	-39.92	0.00	0.00	0.00	0.00	Pbhl

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
8500.00	0.00	359.66	8500.00	0.00	0.00	0.00	0.00	364871.94	749876.92	kop
8600.00	6.65	359.66	8599.78	5.79	-0.03	5.79	6.65	364877.73	749876.88	
8700.00	13.29	359.66	8698.21	23.10	-0.14	23.10	6.65	364895.03	749876.78	
8800.00	19.94	359.66	8793.98	51.68	-0.30	51.68	6.65	364923.62	749876.61	
8900.00	26.59	359.66	8885.80	91.15	-0.54	91.15	6.65	364963.09	749876.38	
9000.00	33.23	359.66	8972.43	140.99	-0.83	140.99	6.65	365012.93	749876.09	
9100.00	39.88	359.66	9052.71	200.52	-1.18	200.52	6.65	365072.45	749875.74	
9200.00	46.53	359.66	9125.56	268.94	-1.58	268.94	6.65	365140.88	749875.33	
9300.00	53.17	359.66	9190.00	345.33	-2.03	345.34	6.65	365217.27	749874.89	
9400.00	59.82	359.66	9245.17	428.67	-2.52	428.68	6.65	365300.61	749874.39	
9500.00	66.47	359.66	9290.32	517.83	-3.05	517.84	6.65	365389.77	749873.87	
9600.00	73.12	359.66	9324.84	611.62	-3.60	611.63	6.65	365483.56	749873.32	
9625.00	74.78	359.66	9331.75	635.65	-3.74	635.66	6.65	365507.58	749873.18	7" csg
9700.00	79.76	359.66	9348.28	708.78	-4.17	708.79	6.65	365580.72	749872.75	
9800.00	86.41	359.66	9360.31	807.99	-4.75	808.01	6.65	365679.93	749872.16	
9854.03	90.00	359.66	9362.00	861.98	-5.07	862.00	6.65	365733.92	749871.85	Lp
9900.00	90.00	359.66	9362.00	907.96	-5.34	907.97	0.00	365779.89	749871.58	

Weatherford International Ltd.

WFT Plan Report - X & Y's



Weatherford

Company: Manzano LLC
Field: Lea Co., NM (NAD 83)
Site: Battle Axe Fed 1H
Well: B.A Fed 1H
Wellpath: 1

Date: 4/19/2011 Time: 10:52:39 Page: 2
Co-ordinate(NE) Reference: Site: Battle Axe Fed 1H, Grid North
Vertical (TVD) Reference: SITE 0.0
Section (VS) Reference: Well (0.00N,0.00E,359.66Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
10000.00	90.00	359.66	9362.00	1007.96	-5.93	1007.97	0.00	365879.89	749870.99	
10100.00	90.00	359.66	9362.00	1107.95	-6.52	1107.97	0.00	365979.89	749870.40	
10200.00	90.00	359.66	9362.00	1207.95	-7.11	1207.97	0.00	366079.89	749869.81	
10300.00	90.00	359.66	9362.00	1307.95	-7.70	1307.97	0.00	366179.89	749869.22	
10400.00	90.00	359.66	9362.00	1407.95	-8.28	1407.97	0.00	366279.89	749868.63	
10500.00	90.00	359.66	9362.00	1507.95	-8.87	1507.97	0.00	366379.88	749868.05	
10600.00	90.00	359.66	9362.00	1607.95	-9.46	1607.97	0.00	366479.88	749867.46	
10700.00	90.00	359.66	9362.00	1707.94	-10.05	1707.97	0.00	366579.88	749866.87	
10800.00	90.00	359.66	9362.00	1807.94	-10.64	1807.97	0.00	366679.88	749866.28	
10900.00	90.00	359.66	9362.00	1907.94	-11.23	1907.97	0.00	366779.88	749865.69	
11000.00	90.00	359.66	9362.00	2007.94	-11.81	2007.97	0.00	366879.88	749865.10	
11100.00	90.00	359.66	9362.00	2107.94	-12.40	2107.97	0.00	366979.87	749864.52	
11200.00	90.00	359.66	9362.00	2207.94	-12.99	2207.97	0.00	367079.87	749863.93	
11300.00	90.00	359.66	9362.00	2307.93	-13.58	2307.97	0.00	367179.87	749863.34	
11400.00	90.00	359.66	9362.00	2407.93	-14.17	2407.97	0.00	367279.87	749862.75	
11500.00	90.00	359.66	9362.00	2507.93	-14.75	2507.97	0.00	367379.87	749862.16	
11600.00	90.00	359.66	9362.00	2607.93	-15.34	2607.97	0.00	367479.87	749861.57	
11700.00	90.00	359.66	9362.00	2707.93	-15.93	2707.97	0.00	367579.86	749860.99	
11800.00	90.00	359.66	9362.00	2807.93	-16.52	2807.97	0.00	367679.86	749860.40	
11900.00	90.00	359.66	9362.00	2907.92	-17.11	2907.97	0.00	367779.86	749859.81	
12000.00	90.00	359.66	9362.00	3007.92	-17.70	3007.97	0.00	367879.86	749859.22	
12100.00	90.00	359.66	9362.00	3107.92	-18.28	3107.97	0.00	367979.86	749858.63	
12200.00	90.00	359.66	9362.00	3207.92	-18.87	3207.97	0.00	368079.86	749858.04	
12300.00	90.00	359.66	9362.00	3307.92	-19.46	3307.97	0.00	368179.85	749857.46	
12400.00	90.00	359.66	9362.00	3407.91	-20.05	3407.97	0.00	368279.85	749856.87	
12500.00	90.00	359.66	9362.00	3507.91	-20.64	3507.97	0.00	368379.85	749856.28	
12600.00	90.00	359.66	9362.00	3607.91	-21.23	3607.97	0.00	368479.85	749855.69	
12700.00	90.00	359.66	9362.00	3707.91	-21.81	3707.97	0.00	368579.85	749855.10	
12800.00	90.00	359.66	9362.00	3807.91	-22.40	3807.97	0.00	368679.84	749854.51	
12900.00	90.00	359.66	9362.00	3907.91	-22.99	3907.97	0.00	368779.84	749853.93	
13000.00	90.00	359.66	9362.00	4007.90	-23.58	4007.97	0.00	368879.84	749853.34	
13100.00	90.00	359.66	9362.00	4107.90	-24.17	4107.97	0.00	368979.84	749852.75	
13200.00	90.00	359.66	9362.00	4207.90	-24.76	4207.97	0.00	369079.84	749852.16	
13300.00	90.00	359.66	9362.00	4307.90	-25.34	4307.97	0.00	369179.84	749851.57	
13400.00	90.00	359.66	9362.00	4407.90	-25.93	4407.97	0.00	369279.83	749850.98	
13500.00	90.00	359.66	9362.00	4507.90	-26.52	4507.97	0.00	369379.83	749850.40	
13600.00	90.00	359.66	9362.00	4607.89	-27.11	4607.97	0.00	369479.83	749849.81	
13700.00	90.00	359.66	9362.00	4707.89	-27.70	4707.97	0.00	369579.83	749849.22	
13800.00	90.00	359.66	9362.00	4807.89	-28.29	4807.97	0.00	369679.83	749848.63	
13900.00	90.00	359.66	9362.00	4907.89	-28.87	4907.97	0.00	369779.83	749848.04	
14000.00	90.00	359.66	9362.00	5007.89	-29.46	5007.97	0.00	369879.82	749847.45	
14100.00	90.00	359.66	9362.00	5107.89	-30.05	5107.97	0.00	369979.82	749846.87	
14200.00	90.00	359.66	9362.00	5207.88	-30.64	5207.97	0.00	370079.82	749846.28	
14300.00	90.00	359.66	9362.00	5307.88	-31.23	5307.97	0.00	370179.82	749845.69	
14400.00	90.00	359.66	9362.00	5407.88	-31.82	5407.97	0.00	370279.82	749845.10	
14500.00	90.00	359.66	9362.00	5507.88	-32.40	5507.97	0.00	370379.82	749844.51	
14600.00	90.00	359.66	9362.00	5607.88	-32.99	5607.97	0.00	370479.81	749843.92	
14700.00	90.00	359.66	9362.00	5707.87	-33.58	5707.97	0.00	370579.81	749843.34	
14800.00	90.00	359.66	9362.00	5807.87	-34.17	5807.97	0.00	370679.81	749842.75	
14900.00	90.00	359.66	9362.00	5907.87	-34.76	5907.97	0.00	370779.81	749842.16	
15000.00	90.00	359.66	9362.00	6007.87	-35.35	6007.97	0.00	370879.81	749841.57	
15100.00	90.00	359.66	9362.00	6107.87	-35.93	6107.97	0.00	370979.80	749840.98	
15200.00	90.00	359.66	9362.00	6207.87	-36.52	6207.97	0.00	371079.80	749840.39	

Weatherford International Ltd.

WFT Plan Report - X & Y's



Weatherford

Company: Manzano LLC
Field: Lea Co., NM (NAD 83)
Site: Battle Axe Fed 1H
Well: B.A Fed 1H
Wellpath: 1

Date: 4/19/2011 Time: 10:52:39 Page: 3
Co-ordinate(NE) Reference: Site: Battle Axe Fed 1H, Grd North
Vertical (TVD) Reference: SITE 0 0
Section (VS) Reference: Well (0.00N,0.00E,359.66Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	VS ft	DLS deg/100ft	MapN ft	MapE ft	Comment
15300.00	90.00	359.66	9362.00	6307.86	-37.11	6307.97	0.00	371179.80	749839.81	
15400.00	90.00	359.66	9362.00	6407.86	-37.70	6407.97	0.00	371279.80	749839.22	
15500.00	90.00	359.66	9362.00	6507.86	-38.29	6507.97	0.00	371379.80	749838.63	
15600.00	90.00	359.66	9362.00	6607.86	-38.88	6607.97	0.00	371479.80	749838.04	
15700.00	90.00	359.66	9362.00	6707.86	-39.46	6707.97	0.00	371579.79	749837.45	
15776.91	90.00	359.66	9362.00	6784.76	-39.92	6784.88	0.00	371656.70	749837.00	Pbhl

Targets

Name	Description Dip.	Dir.	TVD ft	+N/-S ft	+E/-W ft	Map Northing ft	Map Easting ft	<--- Latitude --->			<--- Longitude --->				
								Deg	Min	Sec	Deg	Min	Sec		
Pbhl			9362.00	6784.76	-39.92	371656.70	749837.00	32	1	11.921	N	103	39	38.139	W

Casing Points

MD ft	TVD ft	Diameter in	Hole Size in	Name
4400.00	4400.00	9.625	12.250	9 5/8"
9625.00	9331.75	0.000	0.000	7" csg

Annotation

MD ft	TVD ft	
8500.00	8500.00	kop
9854.03	9362.00	Lp
15776.90	9362.00	Pbhl

Formations

MD ft	TVD ft	Formations	Lithology	Dip Angle deg	Dip Direction deg
4410.00	4410.00	Delaware		0.00	0.00
8445.00	8445.00	Bone Spring		0.00	0.00

**Weatherford****Weatherford Drilling Services**

GeoDec v5.03

Report Date: April 19, 2011

Job Number: _____

Customer: Manzano, LLC

Well Name: Battle Axe Fed 1H

API Number: _____

Rig Name: _____

Location: Lea County, New Mexico

Block: _____

Engineer: R Joyner

US State Plane 1983

Geodetic Latitude / Longitude

System: New Mexico Eastern Zone

System: Latitude / Longitude

Projection: Transverse Mercator/Gauss Kruger

Projection: Geodetic Latitude and Longitude

Datum: North American Datum 1983

Datum: North American Datum 1983

Ellipsoid: GRS 1980

Ellipsoid: GRS 1980

North/South 364871.940 USFT

Latitude 32.0013294 DEG

East/West 749876.920 USFT

Longitude -103.6605968 DEG

Grid Convergence: .36°

Total Correction: +7.23°

Geodetic Location WGS84

Elevation = 0.0 Meters

Latitude = 32.00133° N 32° 0 min 4.786 sec

Longitude = 103.66060° W 103° 39 min 38.148 sec

Magnetic Declination = 7.59° [True North Offset]

Local Gravity = .9988 g CheckSum = 6812

Local Field Strength = 48477 nT Magnetic Vector X = 24055 nT

Magnetic Dip = 59.96° Magnetic Vector Y = 3206 nT

Magnetic Model = IGRF-2010g11 Magnetic Vector Z = 41965 nT

Spud Date = Aug 15, 2011 Magnetic Vector H = 24268 nT

Signed: _____

Date: _____

13 3/8" 2000 psi Annular B.O.P Stack

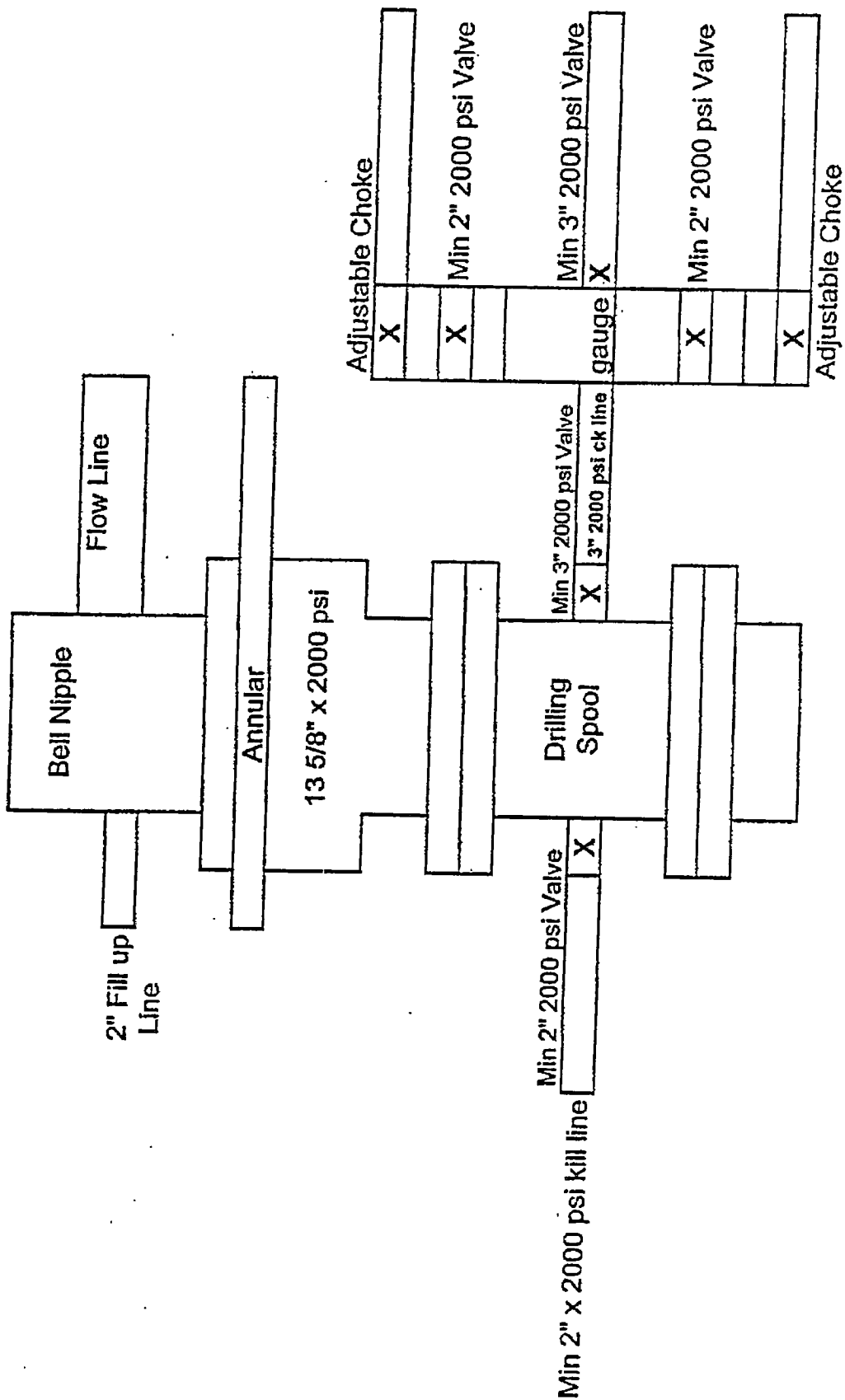


Exhibit 3

3-M WP BOPE WITH 3-M WP ANNULAR

E MANIFOLD EQUIPMENT-CONFIGURATION MAY VARY

11" X 3000 PSIG ROP STACK
ROTATING HEAD

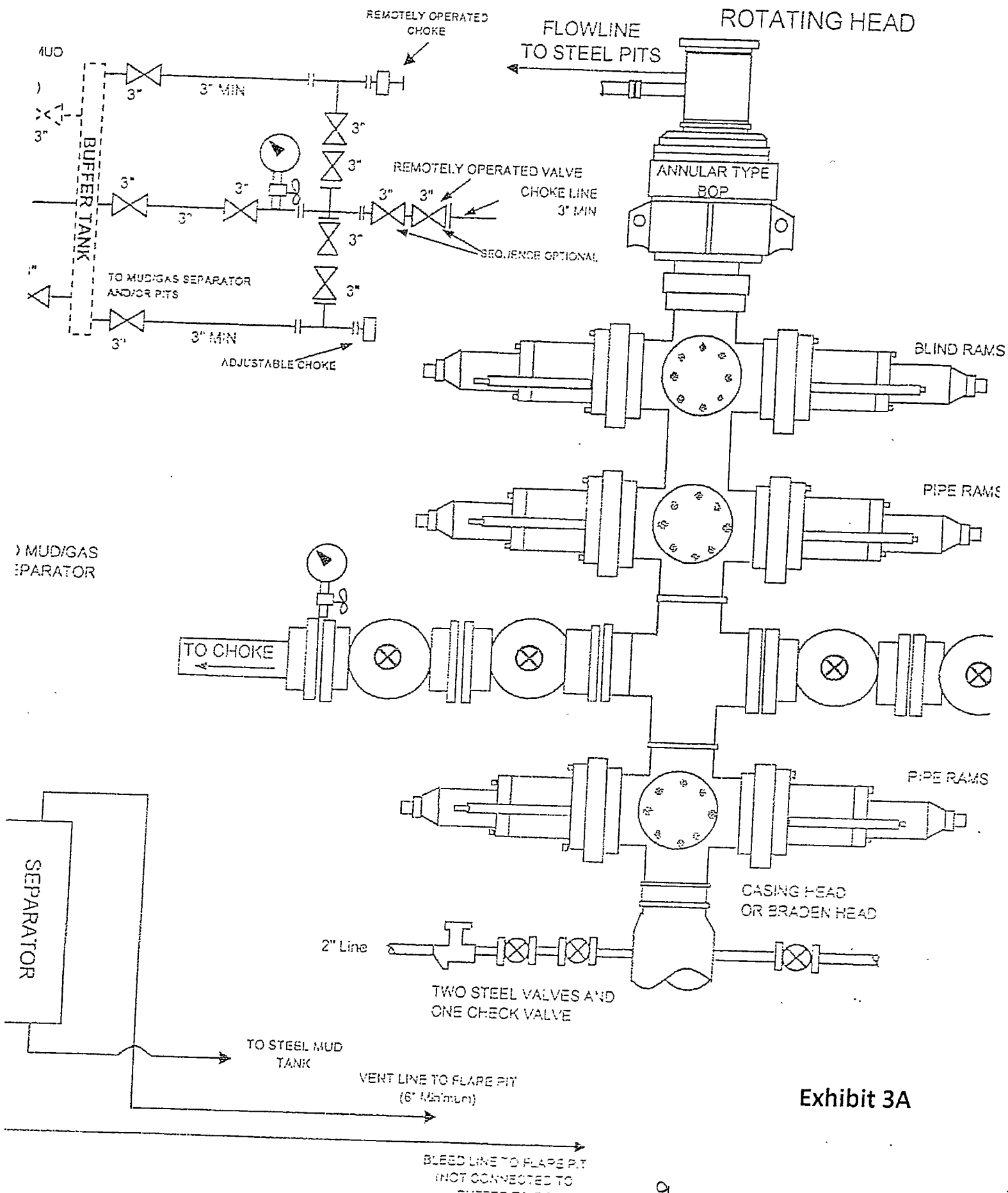
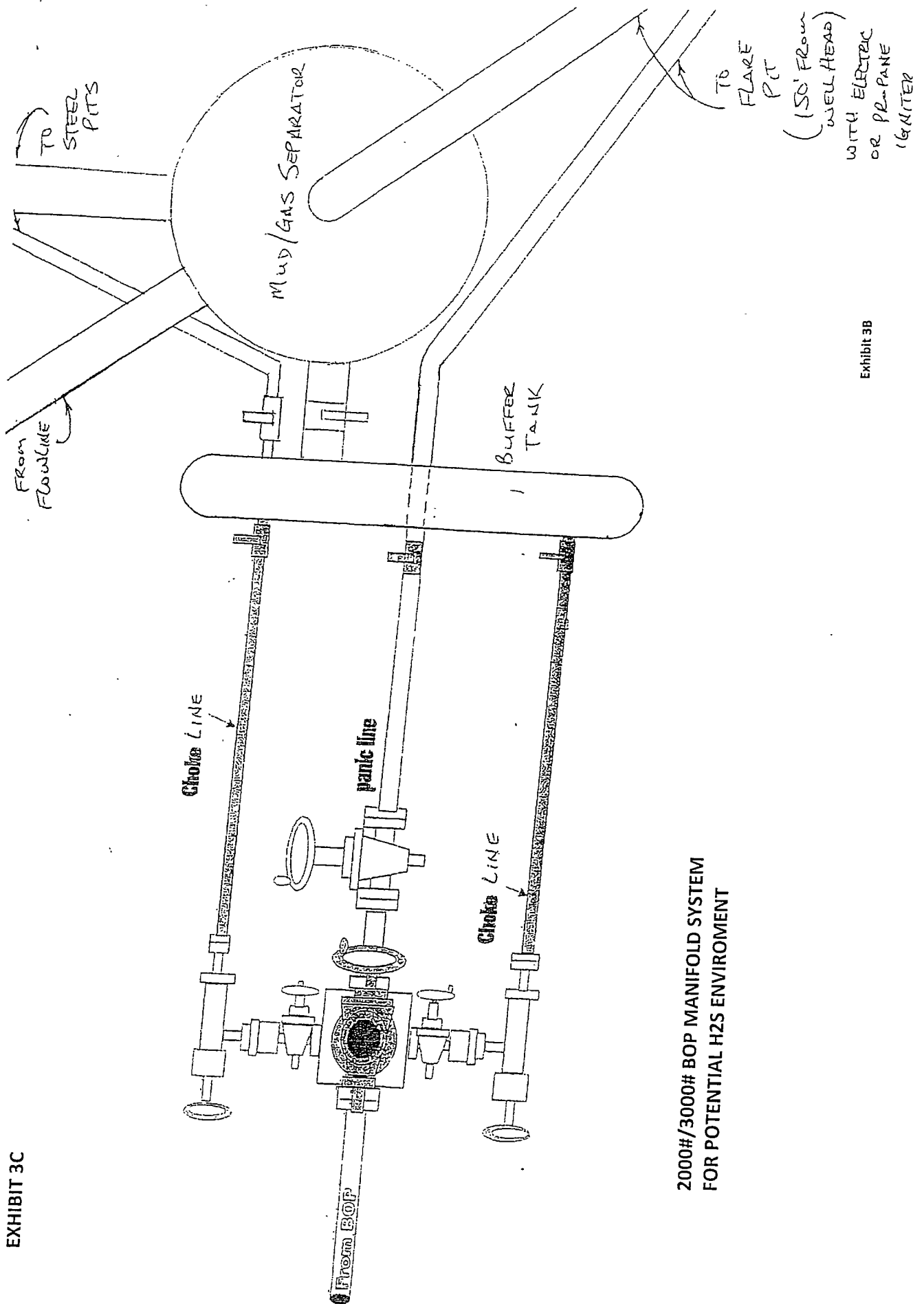


Exhibit 3A

EXHIBIT 3C



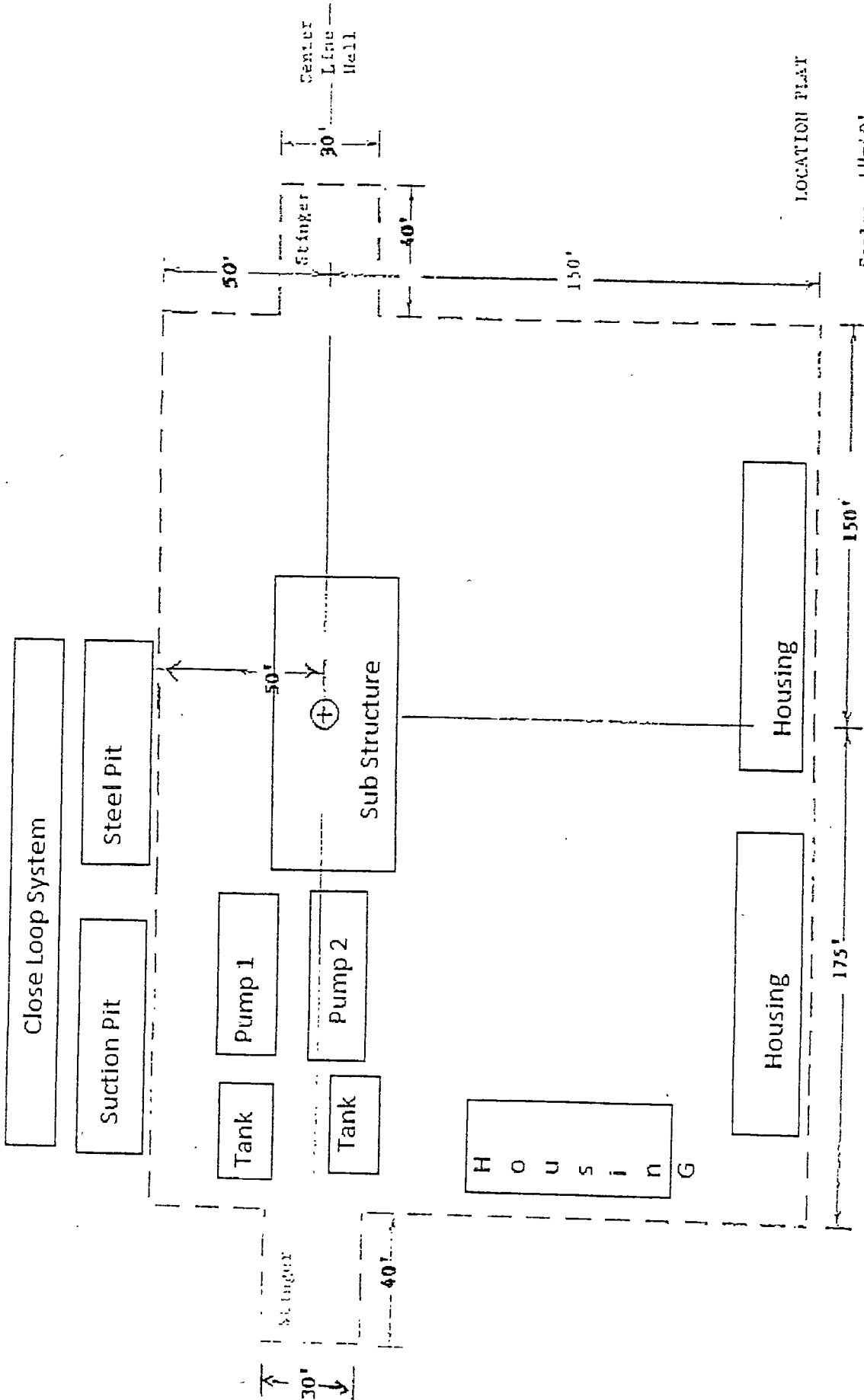
2000#/3000# BOP MANIFOLD SYSTEM
FOR POTENTIAL H2S ENVIRONMENT

Exhibit 3B

Manzano, LLC
 Battle Axe Fed #1H
 400' FSL & 1980' FEL
 Sec. 34 - T26S - R32E
 Lea County, NM

Housing

Mud Logger



25 FEET

I N T E R I M R E C L A I M E D A R E A

25' X 150'

