

OCD Hobbs

HOBBS OCD

Form 3160-3
(March 2012)

JUN 06 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 20141a. Type of work: ☒ DRILL ☐ REENTER1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

2. Name of Operator McELVAIN ENERGY, INC.

3a. Address 1050 17th STREET
SUITE 2500 DENVER COLORADO 802653b. Phone No. (include area code)
303-893-0933

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

At surface 220' FSL & 2180' FWL SECTION 7 T19S-R36E

At proposed prod. zone 330' FNL & 2310' FWL SECTION 7 T19S-R36E

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

Approximately 20 miles West Southwest of Hobbs New Mexico

15. Distance from proposed*

location to nearest
property or lease line, ft. 220'
(Also to nearest drig. unit line, if any)

16. No. of acres in lease

80

17. Spacing Unit dedicated to this well

160 Acres

18. Distance from proposed location*

to nearest well, drilling, completed,
applied for, on this lease, ft. NA

19. Proposed Depth

TVD-9525'

MD-14,155'

Pilot Hole 9900'

20. BLM/BIA Bond No. on file

COB# 000010

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

3760' GL

22. Approximate date work will start*

WHEN APPROVED

23. Estimated duration

35 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)

Joe T. Janica

Date

02/19/14

Title

Permit Eng.

Approved by (Signature)

Steve Caffey

Name (Printed/Typed)

Office

CARLSBAD FIELD OFFICE

Title

FIELD MANAGER

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.

(Continued on page 2)

LEA COUNTY CONTROLLED WATER BASIN

*(Instructions on page 2)

SEE ATTACHED FOR
CONDITIONS OF APPROVALApproval Subject to General Requirements
& Special Stipulations Attached

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OPERATOR CERTIFICATION

HOBBS OCD

JUN 09 2014

RECEIVED

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

OPERATORS REPRESENTATIVES

BEFORE CONSTRUCTION

TIERRA EXPLORATION, INC.

P. O. BOX 2188

HOBBS, NEW MEXICO 88241

OFFICE PHONE 575-391-8503

JOE T. JANICA CELL PH. 575-390-1598

DURING AND AFTER CONSTRUCTION

McELVAIN ENERGY, INC.

1050 17th STREET SUITE 2500

DENVER, COLORADO 80265

REED FISCHER OFFICE 303-893-0933 EXT 330

CELL 303-981-2921

NAME Joe T. Janica

TITLE Permit Eng.

DATE 02/19/14

APPLICATION TO DRILL

McELVAIN ENERGY, INC.

AMMONITE 7 FED/~~STATE~~ COM. #3H

UNIT "N"

SECTION 7

T19S-R36E

LEA CO. NM

In response to questions asked under Section II of Bulletin NTL-6, the following information on the above well will be provided.

1. LOCATION: SL: 220' FSL & 2180' FWL SECTION 7 T19S-R36E
BHL: 330' FNL & 2310' FWL SECTION 7 T19S-R36E
2. ELEVATION ABOVE SEA LEVEL: 3760' GL
3. GEOLOGICAL NAME OF SURFACE FORMATION: Quaternary Aeolian Deposits;
4. DRILLING TOOLS AND ASSOCIATED EQUIPMENT: Conventional rotary drilling rig using drilling mud as a circulating medium for the removal of solids.
5. PROPOSED DRILLING DEPTH: TVD-9525', MD-14,155', Pilot hole 9900' *T.D. in Bone Spring*
gr
6. ESTIMATED TOPS OF GEOLOGICAL FORMATIONS:

Rustler Anhydrite	1778'	Queen	4433'
Top of Salt	2768'	San Andres	5148'
Base of Salt	3088'	Delaware	5248'
yates	3088'	Bone Spring	7273'
Seven Rivers	3688'	1st Bone Spring Sd.	9130'
		2nd Bone Spring Sd.	9253'
7. POSSIBLE MINERAL BEARING FORMATIONS:

Seven Rivers	Oil/Gas/Water	1st Bone Spring Sd.	Oil/Gas/Water
Queen	Oil/Gas/Water	2nd Bone Spring Sd.	Oil/Gas/Water
San Andres	Oil/Gas/Water		
		Estimated fresh water	55'±
8. CASING PROGRAM:

HOLE SIZE	INTERVAL	CASING OD	WEIGHT	THREAD	COLLAR	GRADE	CONDITION
-----------	----------	-----------	--------	--------	--------	-------	-----------

<i>see</i> <i>CA</i>	26"	0-40' <i>1875</i>	20"	NA	NA	NA	Conductor	New
	17½"	0- 1803 <i>3200</i>	13 3/8"	48# 54.5#	8-R 8-R	ST&C ST&C	H-40 J-55	New New
	12½"	0- 3400	9 5/8"	40#	8-R	LT&C	J-55	New
	8 3/4"	0-14,155'	5½"	17#	8-R Buttress	LT&C BT&C	HCP-110 HCP-110	New New

CASING SAFETY FACTORS: Collapse 1.125 Burst 1.00 Body Yield 1.5
Joint Strength 8-Round 1.8
Buttress 1.6

McELVAIN ENERGY, INC.
AMMONITE 7 FLD/STAGE COM. #3H
UNIT "N"
SECTION 7
LEA CO. NM
T19S-R36E

9. CASING SETTING DEPTHS AND CEMENTING:

Drill 26" hole to 40'. Set 40' of 20" conductor pipe and cement to surface with Redi-mix.

20" Conductor

Drill 17 1/2" hole to 1803'. Run and set 13 3/8" casing as follows: 803' of 13 3/8" 54.5# J-55 ST&C, 1000' of 13 3/8" 48# H-40 ST&C casing. Cement with 1275 Sx. of Class "C" cement + 4% Bentonite, + 1/4# Cello Flakes/Sx., + defoamer, + 2% CaCl. Yield 1.75, 9.15 Gal/Sx. 100% excess, tail in with 200 Sx. of Class "C" cement + 2% CaCl. Yield 1.34 6.33 Gal/Sx. 35% excess, circulate cement to surface.

13 3/8" Surface

Drill 12 1/2" hole to 3400'. Run and set 3400' of 9 5/8" 40# J-55 LT&C casing. Cement with 600 Sx. of Class "C" 35/65 POZ cement + 6% Bentonite, + 5% Salt, + Defoamer, Yield 1.9, 8.67 Gal/Sx. 35% excess, tail in with 300 Sx. of Class "C" cement + defoamer, + 1% CaCl. Yield 1.333, 6.33 Gal/Sx. 35% excess, circulate cement to surface.

9 5/8" Intermediate

Drill 8 3/4" hole to 14,155'. Run and set 14,155' of 5 1/2" casing as follows: 5655' of 5 1/2" 17# HCP-110 BT&C, 8500' of 5 1/2" 17# HCP-110 LT&C casing. Cement in two stages DV tool @ 7500±'. Cement 1st stage with 1200 Sx. of Class "H" cement + fluid loss additives, + Retarders, + defoamer, Yield 1.69, 8.86 Gal/Sx. 20% excess. Stage 2 cement with 700 Sx. of Class "H" cement + fluid loss additives, + Retarders, + defoamers, Yield 1.69, 8.86 Gal/Sx. 20% excess, estimate top of cement 3000' from surface.

5 1/2" Production

Plug back 9900' pilot hole to 9075' (KO point) with 350 Sx. of Class "H" neat/defoamer, Yield 1.18, 5.22 Gal/Sx.

10. PRESSURE CONTROL EQUIPMENT:

Exhibit "E" shows a 3000 PSI working pressure B.O.P. consisting of a packoff an annular bag type preventor, blind rams, and pipe rams. A 13 5/8" B.O.P. will be nipple up on the 13 3/8" surface casing and will remain on the hole till the 9 5/8" 2000 PSI. A 11" 5000 PSI B.O.P. will be tested by a third party testing company to production hole. It will be tested by a third party testing company to 5000 PSI. The B.O.P.s will be operated at least once in each 24 hour period and the blind rams will be operated when the drill pipe is out of the hole. A full opening stabbing valve and an upper Kelly cock will be available on the derrick floor at all times and will be compatible with the drill pipe that is in use while drilling this well. Exhibit "E-1" shows a 3" 5000 PSI choke manifold with a manual choke and a hydraulic-ally operated remote choke. The choke manifold will be a rigid connection to the B.O.P.. No abnormal pressures or temperatures are expected while drilling of this well. Other wells drilled in this near vicinity have not encountered any abnormal pressures or temperatures. No H2S is expected to be encountered.

APPLICATION TO DRILL

McELVAIN ENERGY, INC.

AMMONITE 7 FED/ ~~STATE~~ COM. #3H

UNIT "N"

SECTION 7

T19S-R36E

LEA CO. NM

11. PROPOSED MUD CIRCULATING SYSTEM:

DEPTH	MUD WT.	VISC.	FLUID LOSS	TYPE MUD SYSTEM
40-1-1995 1799-3400' 3260	8.4-9.4	30-36	NC	Fresh water mud use paper to control seepage
1799-3400'	9.8-10.2	28-32	NC	Brine water use paper to control seepage and high viscosity sweeps to clean hole.
3400-14,155'	8.5-9.0	28-32	12-15 cc	Fresh water Polymer use high viscosity sweeps to clean hole.

Sufficient mud materials will be kept on location at all times in order to combat lost circulation, or unexpected kicks. In order to run DST's, open hole logs, cut cores, and run casing, the viscosity, water loss, and other properties may have to be altered to meet these requirements. Pit levels will be monitored visually, and an electronic pit level indicator will be employed.

THIS WELL BE DRILLED USING A CLOSED MUD SYSTRM

APPLICATION TO DRILL

McELVAIN ENERGY, INC.
AMMONITE 7 FED/██████ COM. #3H
UNIT "N" SECTION 7
T19S-R36E LEA CO. NM

12. LOGGING, CORING, AND TESTING PROGRAM:

- A. Open hole logs: Dual Laterolog, GNL. LDT, Gamma Ray Neutron, Caliper, SP from TD of pilot hole to casing shoe 3400'±. Run Gamma Ray Neutron from 3400'± back to surface.
- B. Rig up mud logger on hole at 3500' and to remain on hole to TD.
- C. No DST's or cores are planned at this time.

13. POTENTIAL HAZARDS:

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. Estimated BHP 6125 PSI, and Estimated BHT 185°.

14. ANTICIPATED STARTING DATE AND DURATION OF OPERATION:

Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon after BLM approval and as soon as a rig will be available. Move in operation and drilling is expected to take 35 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flowlines in order to place well on production.

15. OTHER FACETS OF OPERATIONS:

After running casing, cased hole Gamma Ray, Neutron Collar logs will be run from TD back to all possible productive zones. The Bone Spring formation will be perforated and stimulated in order to establish production. The well will be swab tested and potentialized as an oil well.

McElvain Energy, Inc.

REV 1

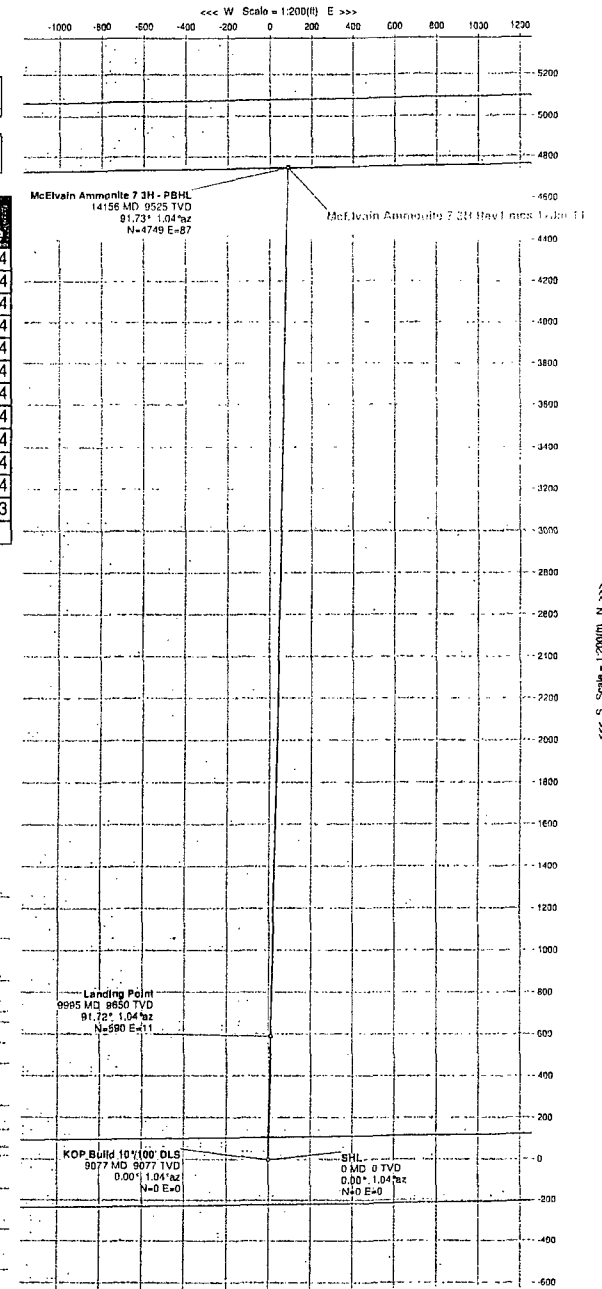
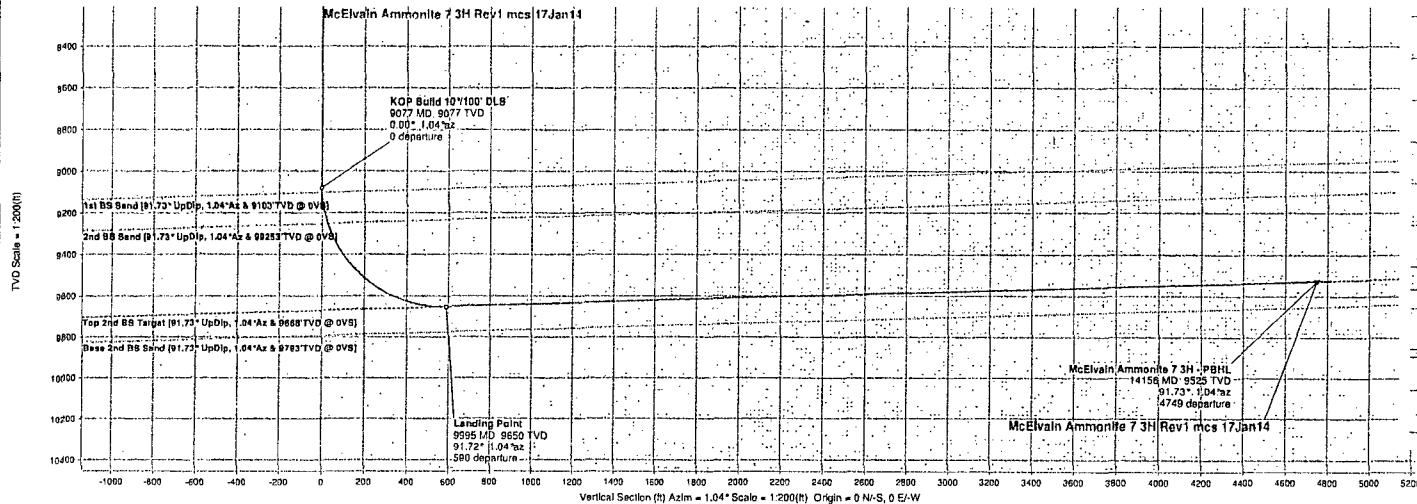
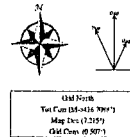
PATHFINDER
A Schlumberger Company

WELL: Ammonite 7 3H	POB: Lea County, NM (NAD 83)	STRICTURE: Ammonite 7 3H
Magnetometer Model: BTR2010-BTRP-11 Dip: 61.56° Mag Dec: 7.215°	Date: January 15, 2014 PC: 06611-067	Surface Location: NAD83 New Mexico State Plane, Eastern Zone, US Feet Lat: N 12 41 43.11 Long: W 103 23 42.074 Magnetic Declination: 61.73° Az 1.04° Grid Error: 0.307° Scale Factor: 1.0000157
Miscellaneous: Sht: Ammonite 7 3H Plan: Rev 1 mcs 17Jan14	TVD Ref: RKB(1774) above BLS Sht Date: January 15, 2014	

Comments	Survey MD	Inc	Azim	TVD	SSTVD	VS	NS	EW	Longitude	Latitude	Easting	Northing	DLS	Tool Face
SHL	0.00	0.00	1.04	0.00	-3778.00	0.00	0.00	0.00	W 103 23 42.074	N 32 40 6.311	830078.80	608178.42	0.00	1.04
Rustler	1778.00	0.00	1.04	1778.00	-2000.00	0.00	0.00	0.00	W 103 23 42.074	N 32 40 6.311	830078.80	608178.42	0.00	1.04
Salt	2768.00	0.00	1.04	2768.00	-1010.00	0.00	0.00	0.00	W 103 23 42.074	N 32 40 6.311	830078.80	608178.42	0.00	1.04
Yates	3088.00	0.00	1.04	3088.00	-690.00	0.00	0.00	0.00	W 103 23 42.074	N 32 40 6.311	830078.80	608178.42	0.00	1.04
Seven Rivers	3688.00	0.00	1.04	3688.00	-90.00	0.00	0.00	0.00	W 103 23 42.074	N 32 40 6.311	830078.80	608178.42	0.00	1.04
Queen	4433.00	0.00	1.04	4433.00	655.00	0.00	0.00	0.00	W 103 23 42.074	N 32 40 6.311	830078.80	608178.42	0.00	1.04
Penrose	4688.00	0.00	1.04	4688.00	910.00	0.00	0.00	0.00	W 103 23 42.074	N 32 40 6.311	830078.80	608178.42	0.00	1.04
San Andres	5148.00	0.00	1.04	5148.00	1370.00	0.00	0.00	0.00	W 103 23 42.074	N 32 40 6.311	830078.80	608178.42	0.00	1.04
Delaware	5248.00	0.00	1.04	5248.00	1470.00	0.00	0.00	0.00	W 103 23 42.074	N 32 40 6.311	830078.80	608178.42	0.00	1.04
Bone Spring	7273.00	0.00	1.04	7273.00	3495.00	0.00	0.00	0.00	W 103 23 42.074	N 32 40 6.311	830078.80	608178.42	0.00	1.04
KOP Build 10°/100° DLS	9077.30	0.00	1.04	9077.30	5299.30	0.00	0.00	0.00	W 103 23 42.074	N 32 40 6.311	830078.80	608178.42	0.00	1.04
Landing Point	9994.93	91.72	1.04	9650.27	5872.27	590.43	590.34	10.76	W 103 23 41.887	N 32 40 12.151	830089.56	608768.76	10.00	5.13
PBHL	14155.74	91.73	1.04	9525.00	5747.00	4749.36	4748.57	86.57	W 103 23 40.570	N 32 40 53.286	830165.37	612927.00	0.00	

Formation Target [91.73° UpDip, 1.04° Az & 9668' TVD @ 0VS]

Legend
McElvain Ammonite 7 3H - PBHL
KOP Build 10°/100° DLS
1st SS Sand [91.73° UpDip, 1.04° Az & 9183' TVD @ 0VS]
2nd SS Sand [91.73° UpDip, 1.04° Az & 9223' TVD @ 0VS]
Top 2nd SS Target [91.73° UpDip, 1.04° Az & 9668' TVD @ 0VS]
Base 2nd SS Sand [91.73° UpDip, 1.04° Az & 9783' TVD @ 0VS]
Landing Point
McElvain Ammonite 7 3H Rev 1 mcs 17Jan14



Drawn By: Matthew Strasser
Date Created: January 17, 2014 12:55:18 PM
Checked By:
Checked Date:
Approved By:
Approved Date:

McElvain Ammonite 7 3H Rev1 mcs 17Jan14 Proposal Geodetic Report

(Non-Def Plan)

Report Date:	January 17, 2014 - 12:47 PM	Survey / DLS Computation:	Minimum Curvature / Lubinski
Client:	McElvain Energy, Inc.	Vertical Section Azimuth:	1.044 ° (Grid North)
Field:	NM Lea County (NAD 83)	Vertical Section Origin:	0.000 ft, 0.000 ft
Structure / Slot:	McElvain Ammonite 7 3H / McElvain Ammonite 7 3H	TVD Reference Datum:	RKB
Well:	McElvain Ammonite 7 3H	TVD Reference Elevation:	3778.000 ft above MSL
Borehole:	Original Borehole	Seabed / Ground Elevation:	3760.000 ft above MSL
UWI / API#:	Unknown / Unknown	Magnetic Declination:	7.215 °
Survey Name:	McElvain Ammonite 7 3H Rev1 mcs 17Jan14	Total Gravity Field Strength:	998.4896mgn (9.80665 Based)
Survey Date:	January 15, 2014	Total Magnetic Field Strength:	48641.389 nT
Tort / AHD / DDI / ERD Ratio:	91.731 ° / 4749.358 ft / 5.806 / 0.492	Magnetic Dip Angle:	60.561 °
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	Declination Date:	January 15, 2014
Location Lat / Long:	N 32° 40' 6.31100", W 103° 23' 42.07400"	Magnetic Declination Model:	IGRF2010/IGRF-11
Location Grid N/E Y/X:	N 608178.423 RUS, E 830078.803 RUS	North Reference:	Grid North
CRS Grid Convergence Angle:	0.5065 °	Grid Convergence Used:	0.5065 °
Grid Scale Factor:	1.00000457	Total Corr Mag North->Grid North:	6.7088 °
		Local Coord Referenced To:	Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Closure (ft)	Closure Azimuth (°)	Northing (RUS)	Easting (RUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
SHL	0.00	0.00	1.04	0.00	-3778.00	0.00	0.00	0.00	N/A	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
Rustler	1778.00	0.00	1.04	1778.00	-2000.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
Salt	2768.00	0.00	1.04	2768.00	-1010.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
Yates	3088.00	0.00	1.04	3088.00	-690.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
Seven Rivers	3688.00	0.00	1.04	3688.00	-90.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
Queen	4433.00	0.00	1.04	4433.00	655.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
Penrose	4688.00	0.00	1.04	4688.00	910.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
San Andres	5148.00	0.00	1.04	5148.00	1370.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
Delaware	5248.00	0.00	1.04	5248.00	1470.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
Bone Spring	7273.00	0.00	1.04	7273.00	3495.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
KOP Build 10°/100' DLS	9077.30	0.00	1.04	9077.30	5299.30	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
Landing Point	9994.93	91.72	1.04	9650.27	5872.27	590.43	590.34	10.76	10.00	590.43	1.04	608768.76	830089.56	N 32 40 12.15	W 103 23 41.89
McElvain Ammonite 7 3H - PBHL	14155.74	91.73	1.04	9525.00	5747.00	4749.36	4748.57	86.57	0.00	4749.36	1.04	612927.00	830185.37	N 32 40 53.29	W 103 23 40.57

Survey Type: Non-Def Plan

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

Survey Program:

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	18.000	1/100.000	30.000	30.000	SLB_MWD-STD-Depth Only	Original Borehole / McElvain Ammonite 7 3H Rev1 mcs
	18.000	14155.744	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / McElvain Ammonite 7 3H Rev1 mcs

McElvain Ammonite 7 3H Rev1 mcs 17Jan14 Proposal Geodetic Report

(Non-Def Plan)

Report Date: January 17, 2014 - 12:48 PM
Client: McElvain Energy, Inc.
Field: NM Lea County (NAD 83)
Structure / Slot: McElvain Ammonite 7 3H / McElvain Ammonite 7 3H
Well: McElvain Ammonite 7 3H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: McElvain Ammonite 7 3H Rev1 mcs 17Jan14
Survey Date: January 15, 2014
Tort / AHD / DDI / ERD Ratio: 91.731 ° / 4749.358 ft / 5.806 / 0.492
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 40' 6.31100", W 103° 23' 42.07400"
Location Grid N/E Y/X: N 608178.423 ftUS, E 830078.803 ftUS
CRS Grid Convergence Angle: 0.5065 °
Grid Scale Factor: 1.00000457

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 1.044 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3778.000 ft above MSL
Seabed / Ground Elevation: 3760.000 ft above MSL
Magnetic Declination: 7.215 °
Total Gravity Field Strength: 998.4896mgm (9.80665 Based)
Total Magnetic Field Strength: 48641.389 nT
Magnetic Dip Angle: 60.561 °
Declination Date: January 15, 2014
Magnetic Declination Model: IGRF2010/IGRF-11
North Reference: Grid North
Grid Convergence Used: 0.5065 °
Total Corr Mag North->Grid North: 6.7088 °
Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Closure (ft)	Closure Azimuth (°)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
SHL	0.00	0.00	1.04	0.00	-3778.00	0.00	0.00	0.00	N/A	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	100.00	0.00	1.04	100.00	-3678.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	200.00	0.00	1.04	200.00	-3578.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	300.00	0.00	1.04	300.00	-3478.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	400.00	0.00	1.04	400.00	-3378.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	500.00	0.00	1.04	500.00	-3278.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	600.00	0.00	1.04	600.00	-3178.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	700.00	0.00	1.04	700.00	-3078.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	800.00	0.00	1.04	800.00	-2978.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	900.00	0.00	1.04	900.00	-2878.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
Rusflr	1000.00	0.00	1.04	1000.00	-2778.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	1100.00	0.00	1.04	1100.00	-2678.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	1200.00	0.00	1.04	1200.00	-2578.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	1300.00	0.00	1.04	1300.00	-2478.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	1400.00	0.00	1.04	1400.00	-2378.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	1500.00	0.00	1.04	1500.00	-2278.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	1600.00	0.00	1.04	1600.00	-2178.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	1700.00	0.00	1.04	1700.00	-2078.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	1778.00	0.00	1.04	1778.00	-2000.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	1800.00	0.00	1.04	1800.00	-1978.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
Salt	1900.00	0.00	1.04	1900.00	-1878.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	2000.00	0.00	1.04	2000.00	-1778.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	2100.00	0.00	1.04	2100.00	-1678.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	2200.00	0.00	1.04	2200.00	-1578.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	2300.00	0.00	1.04	2300.00	-1478.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	2400.00	0.00	1.04	2400.00	-1378.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	2500.00	0.00	1.04	2500.00	-1278.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	2600.00	0.00	1.04	2600.00	-1178.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	2700.00	0.00	1.04	2700.00	-1078.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	2768.00	0.00	1.04	2768.00	-1010.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
Yates	2800.00	0.00	1.04	2800.00	-978.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	2900.00	0.00	1.04	2900.00	-878.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	3000.00	0.00	1.04	3000.00	-778.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	3088.00	0.00	1.04	3088.00	-690.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	3100.00	0.00	1.04	3100.00	-678.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS ("/100ft)	Closure (ft)	Closure Azimuth (°)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	3200.00	0.00	1.04	3200.00	-578.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	3300.00	0.00	1.04	3300.00	-478.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	3400.00	0.00	1.04	3400.00	-378.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	3500.00	0.00	1.04	3500.00	-278.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	3600.00	0.00	1.04	3600.00	-178.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
Seven Rivers	3688.00	0.00	1.04	3688.00	-90.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	3700.00	0.00	1.04	3700.00	-78.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	3800.00	0.00	1.04	3800.00	22.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	3900.00	0.00	1.04	3900.00	122.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	4000.00	0.00	1.04	4000.00	222.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	4100.00	0.00	1.04	4100.00	322.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	4200.00	0.00	1.04	4200.00	422.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	4300.00	0.00	1.04	4300.00	522.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	4400.00	0.00	1.04	4400.00	622.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
Queen	4433.00	0.00	1.04	4433.00	655.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	4500.00	0.00	1.04	4500.00	722.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	4600.00	0.00	1.04	4600.00	822.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
Penrose	4688.00	0.00	1.04	4688.00	910.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	4700.00	0.00	1.04	4700.00	922.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	4800.00	0.00	1.04	4800.00	1022.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	4900.00	0.00	1.04	4900.00	1122.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	5000.00	0.00	1.04	5000.00	1222.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	5100.00	0.00	1.04	5100.00	1322.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
San Andres	5148.00	0.00	1.04	5148.00	1370.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	5200.00	0.00	1.04	5200.00	1422.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	5248.00	0.00	1.04	5248.00	1470.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
Deleware	5300.00	0.00	1.04	5300.00	1522.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	5400.00	0.00	1.04	5400.00	1622.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	5500.00	0.00	1.04	5500.00	1722.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	5600.00	0.00	1.04	5600.00	1822.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	5700.00	0.00	1.04	5700.00	1922.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	5800.00	0.00	1.04	5800.00	2022.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	5900.00	0.00	1.04	5900.00	2122.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	6000.00	0.00	1.04	6000.00	2222.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	6100.00	0.00	1.04	6100.00	2322.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	6200.00	0.00	1.04	6200.00	2422.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	6300.00	0.00	1.04	6300.00	2522.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	6400.00	0.00	1.04	6400.00	2622.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	6500.00	0.00	1.04	6500.00	2722.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	6600.00	0.00	1.04	6600.00	2822.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	6700.00	0.00	1.04	6700.00	2922.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	6800.00	0.00	1.04	6800.00	3022.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	6900.00	0.00	1.04	6900.00	3122.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	7000.00	0.00	1.04	7000.00	3222.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	7100.00	0.00	1.04	7100.00	3322.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	7200.00	0.00	1.04	7200.00	3422.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
Bone Spring	7273.00	0.00	1.04	7273.00	3495.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	7300.00	0.00	1.04	7300.00	3522.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	7400.00	0.00	1.04	7400.00	3622.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	7500.00	0.00	1.04	7500.00	3722.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	7600.00	0.00	1.04	7600.00	3822.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	7700.00	0.00	1.04	7700.00	3922.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	7800.00	0.00	1.04	7800.00	4022.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	7900.00	0.00	1.04	7900.00	4122.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	8000.00	0.00	1.04	8000.00	4222.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	8100.00	0.00	1.04	8100.00	4322.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	8200.00	0.00	1.04	8200.00	4422.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	8300.00	0.00	1.04	8300.00	4522.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Closure (ft)	Closure Azimuth (°)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
	8400.00	0.00	1.04	8400.00	4622.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	8500.00	0.00	1.04	8500.00	4722.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	8600.00	0.00	1.04	8600.00	4822.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	8700.00	0.00	1.04	8700.00	4922.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	8800.00	0.00	1.04	8800.00	5022.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	8900.00	0.00	1.04	8900.00	5122.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	9000.00	0.00	1.04	9000.00	5222.00	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
KOP Build 10°/100° DLS	9077.30	0.00	1.04	9077.30	5299.30	0.00	0.00	0.00	0.00	0.00	0.00	608178.42	830078.80	N 32 40 6.31	W 103 23 42.07
	9100.00	2.27	1.04	9099.99	5321.99	0.45	0.45	0.01	10.00	0.45	1.04	608178.87	830078.81	N 32 40 6.32	W 103 23 42.07
	9200.00	12.26	1.04	9199.07	5421.07	13.08	13.08	0.24	10.00	13.08	1.04	608191.50	830079.04	N 32 40 6.44	W 103 23 42.07
	9300.00	22.26	1.04	9294.44	5516.44	42.72	42.71	0.78	10.00	42.72	1.04	608221.13	830079.58	N 32 40 6.73	W 103 23 42.06
	9400.00	32.25	1.04	9383.22	5605.22	88.46	88.44	1.61	10.00	88.46	1.04	608266.87	830080.41	N 32 40 7.19	W 103 23 42.05
	9500.00	42.25	1.04	9462.72	5684.72	148.91	148.89	2.71	10.00	148.91	1.04	608327.31	830081.52	N 32 40 7.78	W 103 23 42.03
	9600.00	52.25	1.04	9530.52	5752.52	222.25	222.21	4.05	10.00	222.25	1.04	608400.64	830082.85	N 32 40 8.51	W 103 23 42.00
	9700.00	62.24	1.04	9584.56	5806.56	306.24	306.19	5.58	10.00	306.24	1.04	608484.61	830084.38	N 32 40 9.34	W 103 23 41.98
	9800.00	72.24	1.04	9623.20	5845.20	398.34	398.27	7.26	10.00	398.34	1.04	608576.69	830086.06	N 32 40 10.25	W 103 23 41.95
	9900.00	82.23	1.04	9645.27	5867.27	495.74	495.66	9.03	10.00	495.74	1.04	608674.08	830087.84	N 32 40 11.21	W 103 23 41.92
Landing Point	9994.93	91.72	1.04	9650.27	5872.27	590.43	590.34	10.76	10.00	590.43	1.04	608768.76	830089.56	N 32 40 12.15	W 103 23 41.89
	10000.00	91.72	1.04	9650.12	5872.12	595.50	595.40	10.85	0.00	595.50	1.04	608773.82	830089.65	N 32 40 12.20	W 103 23 41.89
	10100.00	91.72	1.04	9647.12	5869.12	695.45	695.34	12.67	0.00	695.45	1.04	608873.76	830091.47	N 32 40 13.19	W 103 23 41.85
	10200.00	91.72	1.04	9644.11	5866.11	795.41	795.28	14.49	0.00	795.41	1.04	608973.70	830093.30	N 32 40 14.18	W 103 23 41.82
	10300.00	91.72	1.04	9641.11	5863.11	895.36	895.21	16.31	0.00	895.36	1.04	609073.64	830095.12	N 32 40 15.17	W 103 23 41.79
	10400.00	91.72	1.04	9638.11	5860.11	995.32	995.15	18.14	0.00	995.32	1.04	609173.58	830096.94	N 32 40 16.16	W 103 23 41.76
	10500.00	91.72	1.04	9635.10	5857.10	1095.27	1095.09	19.96	0.00	1095.27	1.04	609273.52	830098.76	N 32 40 17.14	W 103 23 41.73
	10600.00	91.72	1.04	9632.10	5854.10	1195.23	1195.03	21.78	0.00	1195.23	1.04	609373.46	830100.58	N 32 40 18.13	W 103 23 41.70
	10700.00	91.72	1.04	9629.10	5851.10	1295.18	1294.97	23.60	0.00	1295.18	1.04	609473.39	830102.40	N 32 40 19.12	W 103 23 41.66
	10800.00	91.72	1.04	9626.09	5848.09	1395.14	1394.91	25.42	0.00	1395.14	1.04	609573.33	830104.22	N 32 40 20.11	W 103 23 41.63
	10900.00	91.72	1.04	9623.09	5845.09	1495.09	1494.84	27.24	0.00	1495.09	1.04	609673.27	830106.05	N 32 40 21.10	W 103 23 41.60
	11000.00	91.72	1.04	9620.08	5842.08	1595.05	1594.78	29.06	0.00	1595.05	1.04	609773.21	830107.87	N 32 40 22.09	W 103 23 41.57
	11100.00	91.72	1.04	9617.07	5839.07	1695.00	1694.72	30.89	0.00	1695.00	1.04	609873.15	830109.69	N 32 40 23.08	W 103 23 41.54
	11200.00	91.72	1.04	9614.07	5836.07	1794.96	1794.66	32.71	0.00	1794.96	1.04	609973.09	830111.51	N 32 40 24.06	W 103 23 41.51
	11300.00	91.72	1.04	9611.06	5833.06	1894.91	1894.60	34.53	0.00	1894.91	1.04	610073.02	830113.33	N 32 40 25.05	W 103 23 41.47
	11400.00	91.72	1.04	9608.05	5830.05	1994.87	1994.54	36.35	0.00	1994.87	1.04	610172.96	830115.15	N 32 40 26.04	W 103 23 41.44
	11500.00	91.72	1.04	9605.05	5827.05	2094.82	2094.47	38.17	0.00	2094.82	1.04	610272.90	830116.98	N 32 40 27.03	W 103 23 41.41
	11600.00	91.72	1.04	9602.04	5824.04	2194.78	2194.41	39.99	0.00	2194.78	1.04	610372.84	830118.80	N 32 40 28.02	W 103 23 41.38
	11700.00	91.72	1.04	9599.03	5821.03	2294.73	2294.35	41.82	0.00	2294.73	1.04	610472.78	830120.62	N 32 40 29.01	W 103 23 41.35
	11800.00	91.72	1.04	9596.02	5818.02	2394.69	2394.29	43.64	0.00	2394.69	1.04	610572.72	830122.44	N 32 40 30.00	W 103 23 41.32
	11900.00	91.72	1.04	9593.01	5815.01	2494.64	2494.23	45.46	0.00	2494.64	1.04	610672.65	830124.26	N 32 40 30.99	W 103 23 41.28
	12000.00	91.73	1.04	9590.00	5812.00	2594.59	2594.16	47.28	0.00	2594.59	1.04	610772.59	830126.09	N 32 40 31.97	W 103 23 41.25
	12100.00	91.73	1.04	9586.99	5808.99	2694.55	2694.10	49.10	0.00	2694.55	1.04	610872.53	830127.91	N 32 40 32.96	W 103 23 41.22
	12200.00	91.73	1.04	9583.98	5805.98	2794.50	2794.04	50.93	0.00	2794.50	1.04	610972.47	830129.73	N 32 40 33.95	W 103 23 41.19
	12300.00	91.73	1.04	9580.97	5802.97	2894.46	2893.98	52.75	0.00	2894.46	1.04	611072.41	830131.55	N 32 40 34.94	W 103 23 41.16
	12400.00	91.73	1.04	9577.95	5799.95	2994.41	2993.92	54.57	0.00	2994.41	1.04	611172.35	830133.37	N 32 40 35.93	W 103 23 41.13
	12500.00	91.73	1.04	9574.94	5796.94	3094.37	3093.85	56.39	0.00	3094.37	1.04	611272.28	830135.20	N 32 40 36.92	W 103 23 41.09
	12600.00	91.73	1.04	9571.93	5793.93	3194.32	3193.79	58.21	0.00	3194.32	1.04	611372.22	830137.02	N 32 40 37.91	W 103 23 41.06
	12700.00	91.73	1.04	9568.92	5790.92	3294.28	3293.73	60.04	0.00	3294.28	1.04	611472.16	830138.84	N 32 40 38.89	W 103 23 41.03
	12800.00	91.73	1.04	9565.90	5787.90	3394.23	3393.67	61.86	0.00	3394.23	1.04	611572.10	830140.66	N 32 40 39.88	W 103 23 41.00
	12900.00	91.73	1.04	9562.89	5784.89	3494.19	3493.61	63.68	0.00	3494.19	1.04	611672.04	830142.48	N 32 40 40.87	W 103 23 40.97
	13000.00	91.73	1.04	9559.87	5781.87	3594.14	3593.54	65.50	0.00	3594.14	1.04	611771.98	830144.31	N 32 40 41.86	W 103 23 40.94
	13100.00	91.73	1.04	9556.86	5778.86	3694.10	3693.48	67.33	0.00	3694.10	1.04	611871.91	830146.13	N 32 40 42.85	W 103 23 40.90
	13200.00	91.73	1.04	9553.84	5775.84	3794.05	3793.42	69.15	0.00	3794.05	1.04	611971.85	830147.95	N 32 40 43.84	W 103 23 40.87
	13300.00	91.73	1.04	9550.83	5772.83	3894.00	3893.36	70.97	0.00	3894.00	1.04	612071.79	830149.77	N 32 40 44.83	W 103 23 40.84
	13400.00	91.73	1.04	9547.81	5769.81	3993.96	3993.30	72.79	0.00	3993.96	1.04	612171.73	830151.60	N 32 40 45.81	W 103 23 40.81
	13500.00	91.73	1.04	9544.79	5766.79	4093.91	4093.23	74.62	0.00	4093.91	1.04	612271.67	830153.42	N 32 40 46.80	W 103 23 40.78
	13600.00	91.73	1.04	9541.78	5763.78	4193.87	4193.17	76.44	0.00	4193.87	1.04	612371.60	830155.24	N 32 40 47.79	W 103 23 40.75
	13700.00	91.73	1.04	9538.76	5760.76	4293.82	4293.11	78.26	0.00	4293.82	1.04	612471.54	830157.06	N 32 40 48.78	W 103 23 40.71
	13800.00	91.73	1.04	9535.74	5757.74	4393.78	4393.05	80.08	0.00	4393.78	1.04	612571.48	830158.89	N 32 40 49.77	W 103 23 40.68
	13900.00	91.73	1.04	9532.72	5754.72	4493.73	4492.98	81.91	0.00	4493.73	1.04	612671.42	830160.71	N 32 40 50.76	W 103 23 40.65

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	TVDSS (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Closure (ft)	Closure Azimuth (°)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	14000.00	91.73	1.04	9529.70	5751.70	4593.69	4592.92	83.73	0.00	4593.69	1.04	612771.36	830162.53	N 32 40 51.75	W 103 23 40.62
	14100.00	91.73	1.04	9526.68	5748.68	4693.64	4692.86	85.55	0.00	4693.64	1.04	612871.30	830164.36	N 32 40 52.73	W 103 23 40.59
McElvain Ammonite 7 3H - PBHL	14155.74	91.73	1.04	9525.00	5747.00	4749.36	4748.57	86.57	0.00	4749.36	1.04	612927.00	830165.37	N 32 40 53.29	W 103 23 40.57

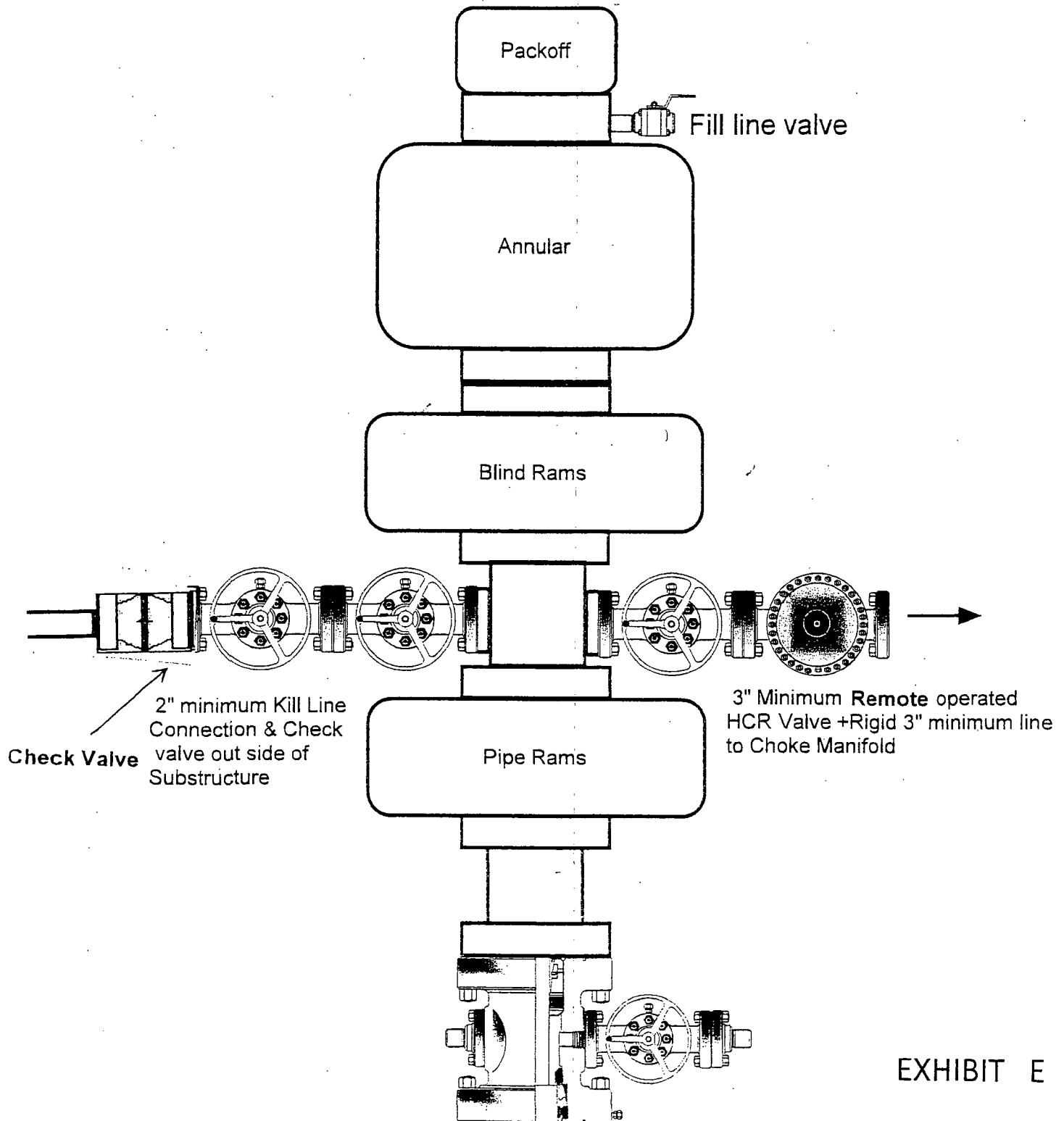
Survey Type: Non-Def Plan

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

Survey Program:

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	18.000	1/100.000	30.000	30.000	SLB_MWD-STD-Depth Only	Original Borehole / McElvain Ammonite 7 3H Rev1 mcs
	18.000	14155.744	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / McElvain Ammonite 7 3H Rev1 mcs

AMMONITE 7 FED COM. #3H
13 5/8" 3000 PSI BOP SCHEMATIC



AMMONITE 7 FED COM. #3H

~~1100~~ 5000 PSI BOP SCHEMATIC

[Handwritten signature]

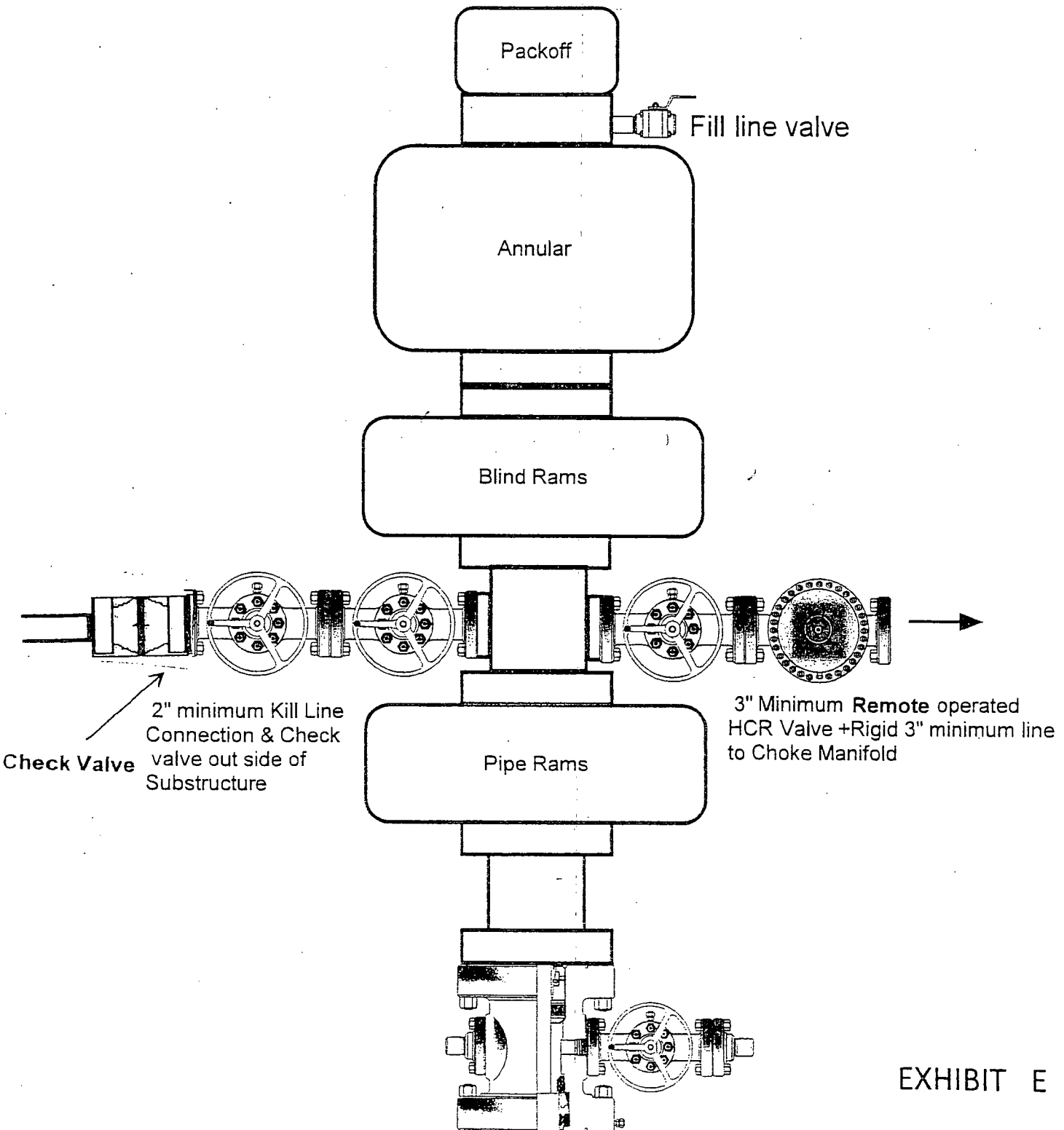


EXHIBIT E

5,000 psi Manifold Equipment- Configuration of chokes may vary.

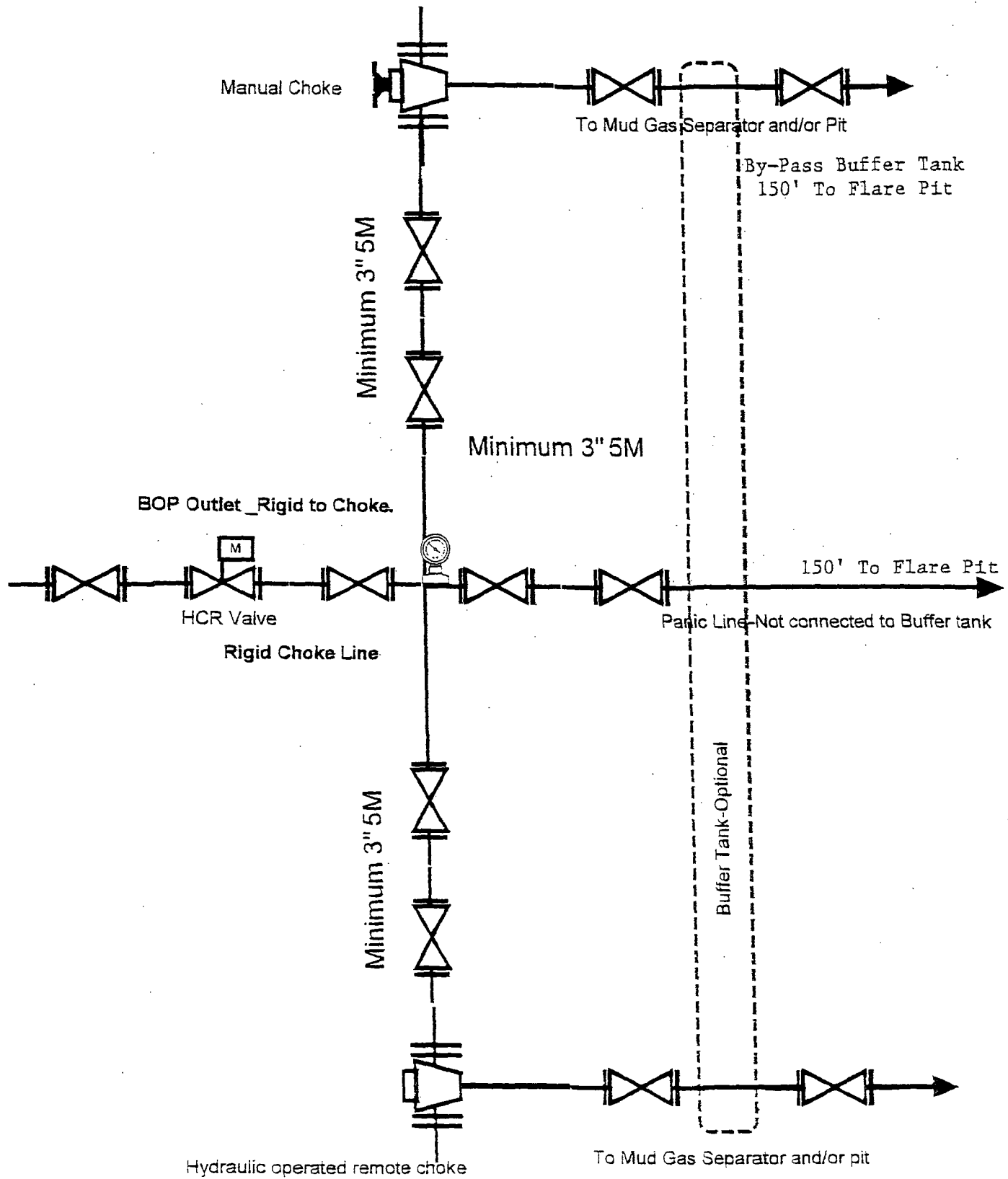
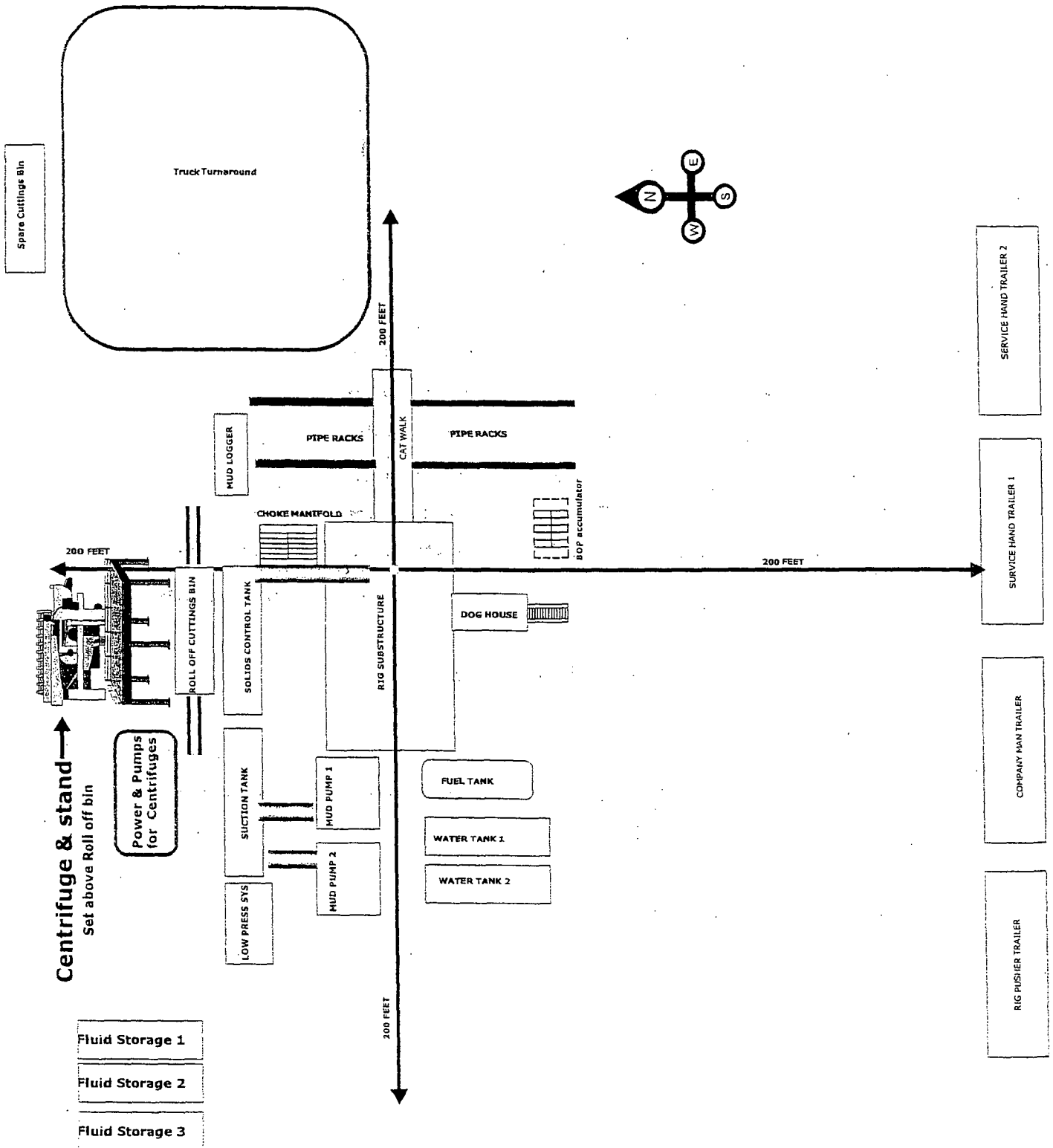


EXHIBIT "E-1"

Closed Loop Oil Well



Note: The Rig and Closed System Company for this well have not been selected thus the set up shown is simply generic.

Operations and Maintenance Plan

Closed Loop equipment will be inspected and monitored closely on a daily basis by each drilling rig Tour and by those hired specifically to operate the equipment. Any leak or release detected will be repaired immediately and the proper NMOCD official will be notified within the 48 hr requirement. A large release will require McELVAIN ENERGY, INC. representatives to contact BLM immediately at the Carlsbad office "575 234 5972" Hobbs "575 393 3612" as well as the NMOCD @ 575 393 6161 as stated by NMOCD rule 116.

Closure Plan

During and after drilling operations, liquids (which apply), all drill cuttings and drilling fluids will be hauled and disposed of at the R-360 disposal (permit number NM 01-0006) located about 30 miles East of Carlsbad, New Mexico. An alternate approved disposal site has been selected Parabo disposal "Sundance " which is 4 miles East of Eunice (permit number NM 01-0003). The Second site would be used in the event of economics or physical problems with R-360 disposal.

355'

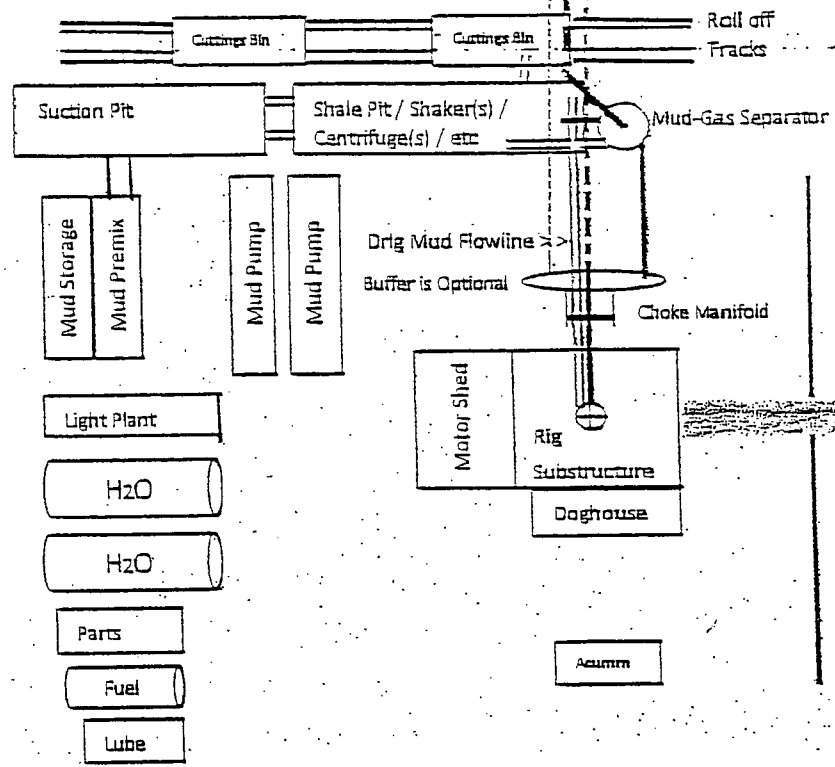
SECONDARY
EGRESS

Flare Pit & Wall >



Mud Logger

Vent lines may be buried to Flare Pit by moving equipment on location >>



375'

ACCESS ROAD PRIMARY
BRIEFING AREA

Tool Pusher Housing

Company Man Housing

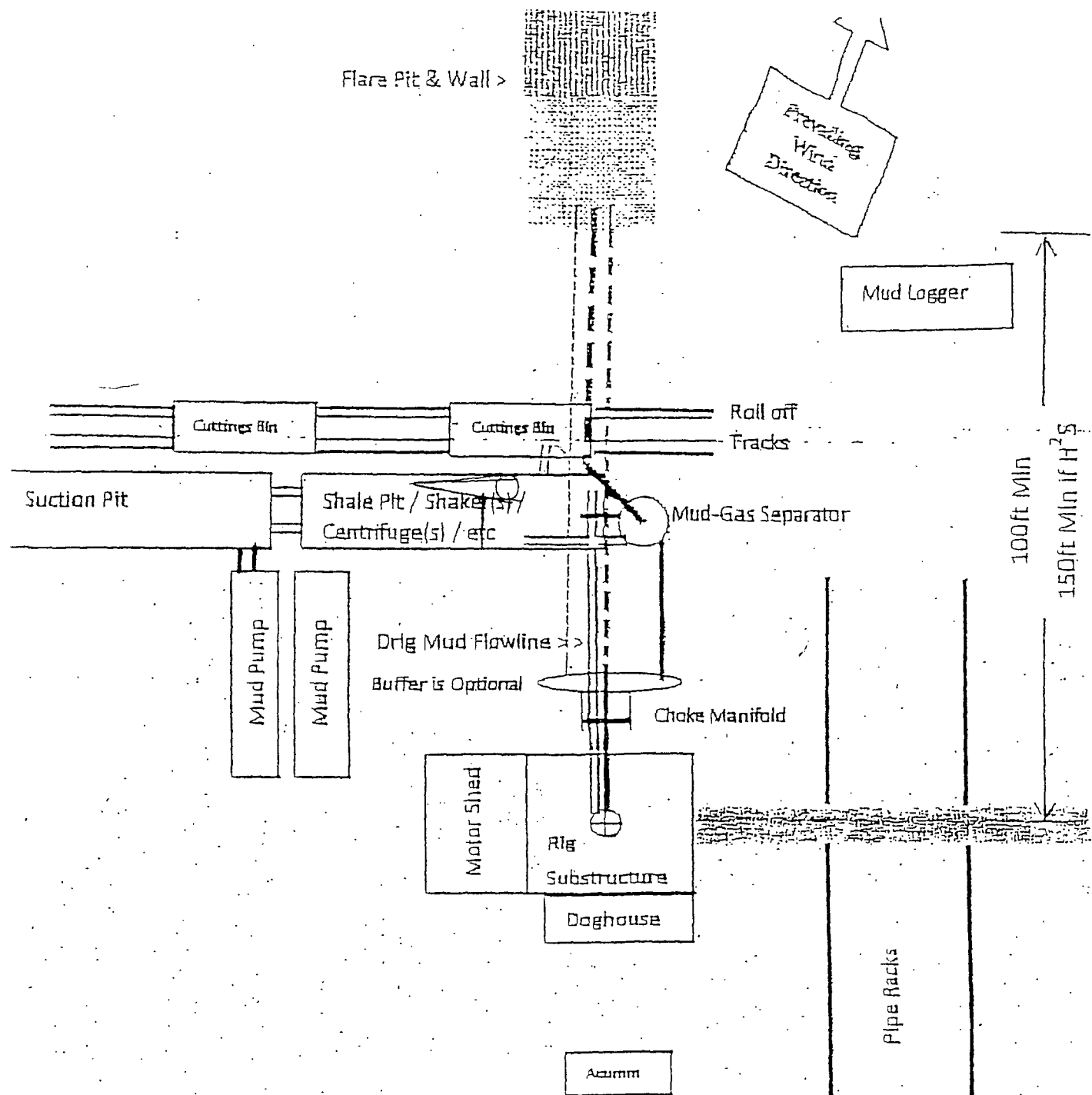
SECONDARY
EGRESS

Generic Drill Site
Layout

Preplanning reasonable spacing accommodations for a useable "Closed Loop" drillsite layout is challenging. Particular site specific conflicts need to be resolved. This generic APD plat was prepared to demonstrate several necessary elements. The plat should include: a north arrow, prevailing wind direction, spacing access for truck removal of cutting bins, flare pit location, and piping provision to vent all combustible gas to the flare pit. Include the choke manifold and mud-gas separator location and their connection routing.

EXHIBIT "D"
RIG LAY OUT PLAT

McELVAIN ENERGY, INC.
AMMONITE 7 FED/COM. #3H
UNIT "N" SECTION 7
T19S-R36E LEA CO. NM



EXPANDED VIEW OF
RIG LAYOUT PLAT
FLOWLINES TO MUD-GAS
SEPERATOR AND BLOWDOWN
LINES TO FLARE PIT

McELVAIN ENERGY, INC.

AMMONITE "7" FED COM. #3H

EMERGENCY CALL LIST: (Start and continue until ONE of these people have been contacted)

	<u>OFFICE</u>	<u>MOBILE</u>	<u>HOME</u>
REED FISCHER	303-893-0933 EXT330	303-981-2921	303-694-4655
JOE McMANES	575-390-4780	575-390-4780	575-390-4780

EMERGENCY RESPONSE NUMBERS:

State Police:	Eddy County		575 748 9718
State Police:	Lea County		575 392 5588
Sheriff	Eddy County		575 746 2701
Sheriff	Lea County		
Emergency Medical Ser	Eddy County		911 or 575 746 2701
(Ambulance)	Lea County	Eunice	911 or 575 394 3258
Emergency Response	Eddy County SERC		575 476 9620
	Lea County		
Artesia Police Dept			575 746 5001
Artesia Fire Dept			575 746 5001
Carlsbad Police Dept			575 885 2111
Carlsbad Fire Dept			575 885 3125
Loco Hills Police Dept			575 677 2349
Jal Police Dept			575 395 2501
Jal Fire Dept			575 395 2221

McELVAIN ENERGY, INC.

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Jal ambulance		575 395 2221
Eunice Police Dept		575 394 0112
Eunice Fire Dept		575 394 3258
Eunice Ambulance		575 394 3258
Hobbs Police Dept		
NMOCD	District 1 (Lea, Roosevelt, Curry)	575 393 6161
	District 2 (Eddy Chavez)	575 748 1283
BLM Carlsbad		575 234 5972
BLM Hobbs		575 393 3612
Lea County Information		575 393 8203
Midland Safety	Lea/Eddy County	432 520 3838
		888 262 4964
American Safety	Lea/Eddy County	575 746 1096
		575 393 3093
Baker Pressure pmp'g	Artesia	575 746 3140
	Hobbs	800 530 4485
		575 392 5556
	Midland	800 694 6601
		432 685 8900
Halliburton	Artesia	800 844 8451
	Hobbs	800 844 8451
	Midland	800 844 8451
Schlumberger pmp'd Ser	Hobbs	800 548 9196
		575 393 6186
	Artersia	575 748 1391
	Midland	432 683 1887
Wild Well Control	Midland	281 784 4700
		281 443 4873
Boots & Coots		800 256 9688
		281 931 8884

McELVAIN ENERGY, INC.

AMMONITE "7" FED COM. #3H

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General H2S Emergency Actions:

1. All personnel will immediately evacuate to an up-wind and if possible up-hill "safe area"
2. If for any reason a person must enter the hazardous area, they must wear a SCBA (Self Contained Breathing Apparatus)
3. Always use the "buddy system"
4. Isolate the well/problem if possible
5. Account for all personnel
6. Display the proper colors warning all unsuspecting personnel of the danger at hand.
7. Contact the Company personnel as soon as possible if not at the location. (use the enclosed call list as instructed

At this point the company representative will evaluate the situation and coordinate the necessary duties to bring the situation under control, and if necessary, the notification of the emergency response agencies and nearby residents.

EMERGENCY PROCEDURES FOR AN UNCONTROLLABLE RELEASE OF H2S

1. All personnel will wear the self-contained breathing apparatus.
2. Remove all personnel to the "safe area". (always use the buddy system).
3. Contact company personnel if not on location.
4. Set in motion the steps to protect and or remove the general public to an upwind "safe area".
Maintain strict security & safety procedures while dealing with the source.
5. No entry to any unauthorized personnel.
6. Notify the appropriate agencies: City Police-City Street (s)
State Police- State Rd
County Sheriff – County Rd.
7. Call the NMOCD & BLM

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PROTECTION OF THE GENERAL PUBLIC (ROE):

- 100 ppm at any public area (any place not associated with this site)
- 500 ppm at any public road (any road which the general public may travel)
- 100 ppm radius of ¼ mile in New Mexico will be assumed if there is insufficient data to do the calculations, and there is a reasonable expectation that H2S could be present in concentrations greater than 100 ppm in the gas mixture

CALCULATIONS FOR THE 100 PPM (ROE) "Pasquill-Gifford equation"

$X = [(1.589) (\text{mole fraction}) (Q\text{- volume in std cu ft})]$ to the power of (0.6258)

CALCULATION FOR THE 500 PPM ROE:

$X = [(.4546) (\text{mole fraction}) (Q\text{- volume in std cu ft})]$ to the power of (0.6258)

Example:

If a well/facility has been determined to have 150 / 500 ppm H2S in the gas mixture and the well/facility is producing at a gas rate of 100 MCFPD then:

150 ppm $X = [(1.589) (.00015) (100,000 \text{ cfd})]$ to the power of (.6258)
 $X = 7 \text{ ft}$

500 ppm $X = [(.4546) (.0005) (100,000 \text{ cfd})]$ to the power of (.6258)
 $X = 3.3 \text{ ft}$

(These calculations will be forwarded to the appropriate District NMOCD office when Applicable)

PUBLIC EVACUATION PLAN:

- 1. Notification of the emergency response agencies of the hazardous condition and implement evacuation procedures.
- A trained person in H2S safety, shall monitor with detection equipment the H2S concentration, wind and area exposure (ROE). This person will determine the outer perimeter of the hazardous area. The extent of the evacuation area will be determined from the data being collected. Monitoring shall continue until the situation has been resolved. (All monitoring equipment shall be UL approved, for use in class 1 groups A,B,C &D, Division 1, hazardous locations. All monitor will have a minimum capability of measuring H2S , oxygen, and flammable values).
- Law enforcement shall be notified to set up necessary barriers and maintain such for the duration of the situation as well as aid in the evacuation procedure.

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- The company supervising personnel shall stay in communication with all agencies through out the duration of the situation and inform such agencies when the situation has been contained and the effected area(s) is safe to enter.

PROCEDURE FOR IGNITING AN UNCONTROLABLE CONDITION:

- 1. Human life and/or property are in danger
- 2. There is no hope of bringing the situation under control with the prevailing conditions at the site.

INSTRUCTION FOR IGNITION:

- 1. Two people are required. They must be equipped with positive pressure, self contained breathing apparatus and a "D" ring style full body, OSHA approved safety harness. Non flammable rope will be attached.
- 2. One of the people will be qualified safety person who will test the atmosphere for H₂S, Oxygen & LFL. The other person will be the company supervisor; he is responsible for igniting the well.
- 3. Ignite up wind from a distance no closer than necessary. Make sure that where you ignite from has the maximum escape avenue available. A 25 mm flare gun shall be used, with a ± 500 ft. range to ignite the gas.
- 4. Prior to ignition, make a final check for combustible gases.
- 5. Following ignition, continue with the emergency actions & procedures as before.

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- A. All personnel shall receive proper H2S training in accordance with Onshore Order III.C.3.a.
- B. Briefing Area: two perpendicular areas will be designated by signs and readily accessible.
- C. Required Emergency Equipment:

- Well control equipment

- a. Flare line 150' from wellhead to be ignited by flare gun or automatic striker.
- b. Choke manifold with a remotely operated choke.
- c. Mud/gas separator

- Protective equipment for essential personnel.

Breathing apparatus:

- a. Rescue Packs (SCBA) — 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
- b. Work/Escapes packs — 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity.
- c. Emergency Escape Packs — 4 packs shall be stored in the doghouse for emergency evacuation.

Auxiliary Rescue Equipment:

- a. Stretcher
- b. Two OSHA full body harness
- c. 100 ft 5/8 inch OSHA approved rope
- d. 1-20# class ABC fire extinguisher

- H2S detection and monitoring equipment:

The stationary detector with three sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible @ 14 ppm. Calibrate a minimum of every 30 days or as needed. The sensors will be placed in the following places: Rig floor / Bell nipple / End of flow line or where well bore fluid is being discharged.

(Gas sample tubes will be stored in the safety trailer)

- Visual warning systems.

- a. One color code condition sign will be placed at the entrance to the site reflecting the possible conditions at the site.
- b. A colored condition flag will be on display, reflecting the current condition at the site at the time.

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- c. Two wind socks will be placed in strategic locations, visible from all angles.
- Mud program:
The mud program has been designed to minimize the volume of H₂S circulated to surface. The operator will have the necessary mud products to minimize hazards while drilling in H₂S bearing zones.
- Metallurgy:
 - a. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H₂S service.
 - b. All elastomers used for packing and seals shall be H₂S trim.
- Communication:
Communication will be via two way radio in emergency and company vehicles. Cell phones and land lines where available.

USING SELF CONTAINED BREATHING AIR EQUIPMENT (SCBA):

- (SCBA) SHOULD BE WORN WHEN ANY OF THE FOLLOWING ARE PERFORMED:
 - Working near the top or on top of a tank
 - Disconnecting any line where H₂S can reasonably be expected
 - Sampling air in the area to determine if toxic concentrations of H₂S exist.
 - Working in areas where over 10 ppm on H₂S has been detected.
 - At any time there is a doubt as the level of H₂S in the area.
- All personnel shall be trained in the use of SCBA prior to working in a potentially hazardous location.
- Facial hair and standard eyeglasses are not allowed with SCBA.
- Contact lenses are never allowed with SCBA.
- Air quality shall be continuously be checked during the entire operation.
- After each use, the SCBA unit shall be cleaned, disinfected, serviced and inspected
- All SCBA shall be inspected monthly.

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RESCUE AND FIRST AID FOR VICTIMS OF HYDROGEN SULFIDE (H₂S) POISONING:

- Do not panic
- Remain Calm & think
- Get on the breathing apparatus
- Remove the victim to the safe breathing area as quickly as possible. Up wind and uphill from source or cross wind to achieve upwind.
- Notify emergency response personnel.
- Provide artificial respiration and or CPR, as necessary
- Remove all contaminated clothing to avoid further exposure.
- A minimum of two personnel on location shall be trained in CPR and First Aid.

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Hydrogen Sulfide (H₂S) Toxic Effects

H₂S is extremely toxic. The acceptable ceiling for eight hours of exposure is 10 ppm, which is .001% by volume. H₂S is approximately 20% heavier than air (Sp. Gr= 1.19)(Air = 1) and H₂S is colorless. It forms an explosive mixture with air between 4.3% and 46%. By volume hydrogen sulfide is almost as toxic as hydrogen cyanide and 5-6 times more toxic than carbon monoxide.

Various Gases

COMMON NAME	CHEMICAL ABBREV.	SPECIFIC GRVTY.	THRESHOLD LIMITS	HAZARDOUS LIMITS	LETHAL CONCENTRATIONS
Hydrogen Sulfide	H ₂ S	1.19	10ppm 15 ppm	100 ppm/hr	600 ppm
Hydrogen Cyanide	HCN	0.94	10 ppm	150 ppm/hr	300 ppm
Sulfur Dioxide	SO ₂	2.21	2 ppm	N/A	1000 ppm
Chlorine	CL ₂	2.45	1 ppm	4 ppm/hr	1000 ppm
Carbon Monoxide	CO	0.97	50 ppm	400 ppm/hr	1000 ppm
Carbon Dioxide	CO ₂	1.52	5000 ppm	5%	10%
Methane	CH ₄	0.55	90,000	Combustible@ 5%	N/A

Threshold Limit: Concentrations at which it is believed that all workers may be repeatedly exposed, day after day without adverse effects.

Hazardous Limit: Concentrations that may cause death.

Lethal Concentrations: Concentrations that will cause death with short term exposure.

Threshold Limit- 10 ppm: NIOSH guide to chemical hazards.

PHYSICAL EFFECTS OF HYDROGEN SULFIDE:

CONCENTRATION	PHYSICAL EFFECTS
.001% 10 PPM	Obvious and unpleasant odor. Safe for 8 hr exposure
.005% 50 ppm	Can cause some flu like symptoms and can cause pneumonia
.01% 100 ppm	Kills the sense of smell in 3-15 minutes. May irritate the eyes and throat.
.02% 200 ppm	Kills the sense of smell rapidly. Severly irritates the eyes and throat. Severe flu like symptoms after 4 or more ours. May cause lung damage and or death.
.06% 600 ppm	Loss of consciousness quickly, death will result if not rescued promptly.

