

Operator Name/Number: OXY USA Inc. 16696
 Lease Name/Number: Copperhead 18 State #2H State Lease No. VO-5638
 Pool Name/Number: Triple X Bone Spring, West 96674
 Surface Location: 340 FNL 660 FWL 1 Sec 18 T24S R33E
 Bottom Hole Location: 340 FSL 660 FWL 4 Sec 18 T24S R33E

C-102 Plats: 8/27/13 9/11/13 10/15/13 Elevation: 3569.5' GL Objective: 2nd Bone Spring

Proposed TD: Pilot Hole 11300' TVD Horizontal Lateral 10855' TVD 15148' TMD
 SL - Lat: 32.2238880 Long: 103.6171862 X=721463.2 Y=445907.5 NAD - 1927
 BH - Lat: 32.2112398 Long: 103.6171977 X=721490.3 Y=441306.3 NAD - 1927

Casing Program:

Hole Size	Interval	OD Csg	Weight	Collar	Grade	Condition	Collapse Design Factor	Burst Design Factor	Tension Design Factor
14-3/4"	0-1200'	11-3/4"	47	BT&C	J55	New	3.16	1.42	4.97
				Hole filled with 8.5# Mud			1514#	3072#	
10-5/8"	0-5050'	8-5/8"	32	LT&C	J-55	New	1.52	1.23	1.78
				Hole filled with 10.2# Mud			2533#	3928#	
7-7/8"	0-15148'	5-1/2"	17	BT&C	P-110	New	2.11	1.22	1.47
				Hole filled with 9.2# Mud			7480#	10640#	

Collapse and burst loads calculated using Stress Check with anticipated loads

Cement Program:

- 11-3/4" Surface Circulate cement to surface w/ 510sx PPC cmt w/ 1% CaCl₂ + 4% Bentonite + .125#/sx Poly-E-Flake, 13.5ppg 1.73 yield 888# 24hr CS 125% Excess followed by 250sx PPC cmt w/ 1% CaCl₂, 14.8ppg 1.34 yield 1416# 24hr CS 125% Excess
- 8-5/8" Intermediate Circulate cement to surface w/ 950sx HES Light PPC cmt w/ 5% salt + .25% HR-800, 12.9ppg 1.85 yield 771# 24hr CS 125% Excess followed by 310sx PPC cmt, 14.8ppg 1.33 yield 1779# 24hr CS 125% Excess
- Pilot Hole Plug Plug #1 cement w/ 415sx PPC cmt w/ .3% HR-601, 14.4ppg 1.23 yield 724# 24hr CS 50% Excess from 11300' to +/-10300'
 Plug #2 cement w/ 350sx PPC cmt w/ .85% CFR-3 + .25 HR-601, 18.0ppg .90 yield 697# 24hr CS 50% excess from 10300' to +/-9700'.
- 5-1/2" Production Cement w/ 660sx PP cmt w/ 14.8#/sx Silicalite 50/50 Blend + 15#/sx Schotchlite HGS-6000 + 3#/sx Kol-Seal + .125#/sx Poly-E-Flake + .25#/sx HR-800, 10.2ppg 2.95 yield 947# 24hr CS 100% Excess followed by 760sx Super H cmt w/ 3#/sx salt + .4% CFR-3 + .5% Halad-344 + .3% HR-800 + .125#/sx Poly-E-Flake, 13.2ppg 1.66 yield 615# 24hr CS 40% Excess. Calc TOC-4000'

Description of Cement Additives: Calcium Chloride, Salt (Accelerator); Silicalite (Additive Material);

CFR-3 (Dispersant); Bentonite, Schotchlite HGS-6000 (Light Weight Additive);

Kol-Seal, Poly-E-Flake (Lost Circulation Additive); Halad-344 (Low Fluid Loss Control); HR-601, HR-800 (Retarder)

The above cement volumes could be revised pending the caliper measurement.

Proposed Mud Circulation System:

Depth	Mud Wt. ppg	Visc sec	Fluid Loss	Type System
0 - 1200'	8.5	28-38	NC	Fresh Water/Spud Mud
1200 - 5050'	10.2	28-32	NC	Fresh water/NaCl Brine
5050-11300' - Pilot Hole	9.2	28-34	NC	Cut Brine/Sweeps
10000' - 15148' - Curve-Lateral	9.2	32-50	<18	Duo Vis/Salt Gel/Starch/PAC

Pump high viscosity sweeps as needed for hole cleaning. The mud system will be monitored visually/manually as well as with an electronic PVT. The necessary mud products for additional weight and fluid loss control will be on location at all times.

BOP Program:

Surface None
 Intermediate/Production 13-5/8" 10M three ram stack w/ 5M annular preventer, 5M Choke Manifold

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

Geological Marker	Depth	Type
a. Rustler	1178'	Formation
b. Top Salt	1542'	Formation
c. Bottom Salt/Base Anhydrite	4878'	Formation
d. Delaware-Bell Canyon	5004'	Oil/Gas
e. Delaware-Cherry Canyon	5900'	Oil/Gas
f. Delaware-Brushy Canyon	7269'	Oil/Gas
g. 1st Bone Spring	8942'	Oil/Gas
h. 2nd Bone Spring	10332'	Oil/Gas
i. 3rd Bone Spring	11114'	Oil/Gas

Fresh water may be present above the Rustler formation. Surface casing will be set below the top of the Rustler, which will cover potential fresh water sources.

A closed loop system will be utilized consisting of above ground steel tanks and haul-off bins. Disposal of liquids, drilling fluids and cuttings will be disposed of at an approved facility.

OCT 30 2013

30-025-41400

K2
10/30/13



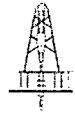
C18S 2H
Lea County, New Mexico
Northing: 445907.50
Easting: 721463.20
Design #1



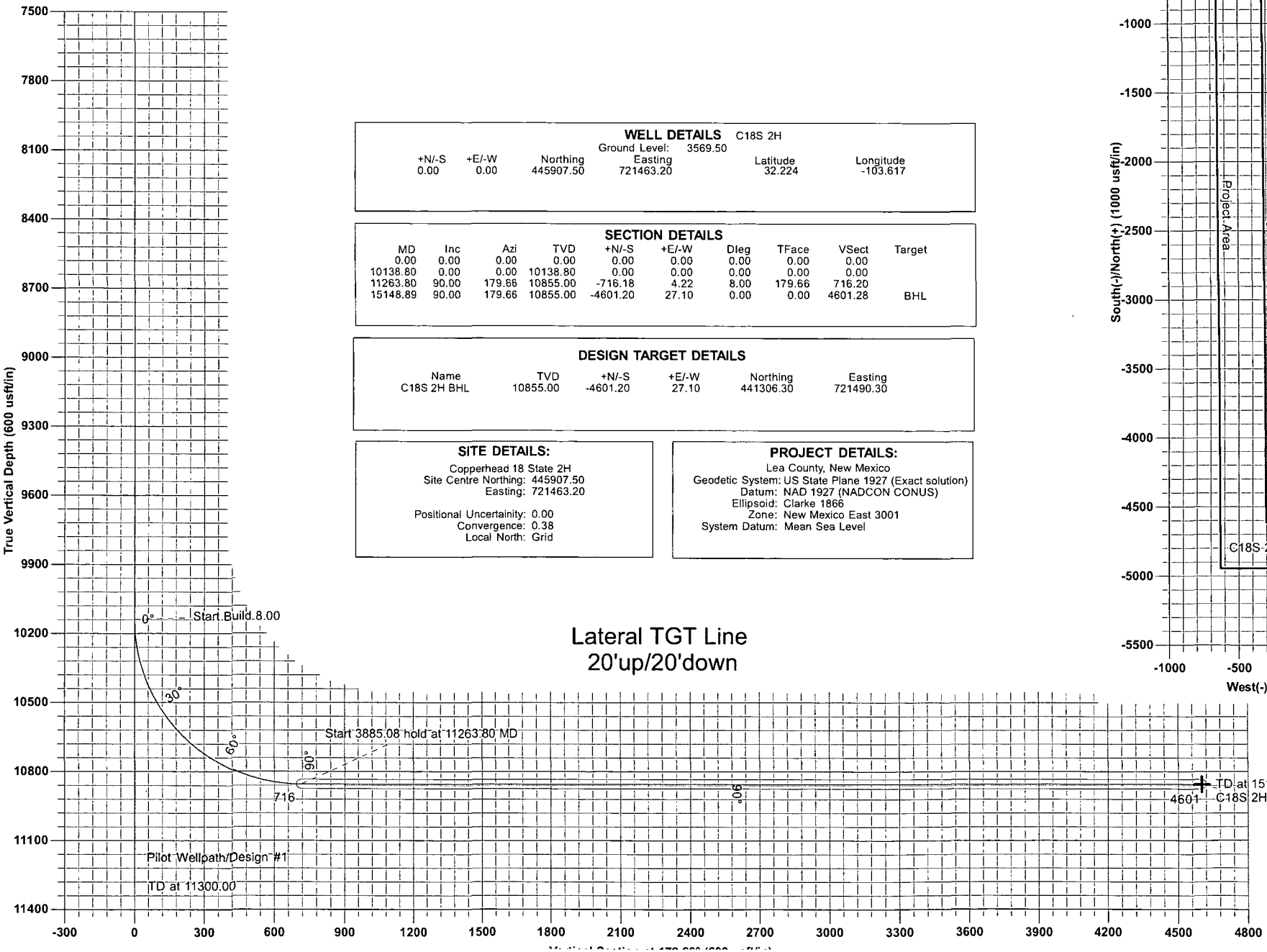
To convert a Magnetic Direction to a Grid Direction, Add 6.94°
To convert a True Direction to a Grid Direction, Subtract 0.38°

Azimuths to Grid North
True North: -0.38°
Magnetic North: 6.94°

Magnetic Field
Strength: 48378.9snT
Dip Angle: 60.12°
Date: 10/7/2013
Model: IGRF2010



KB @ 3593.50
Gr @ 3569.50



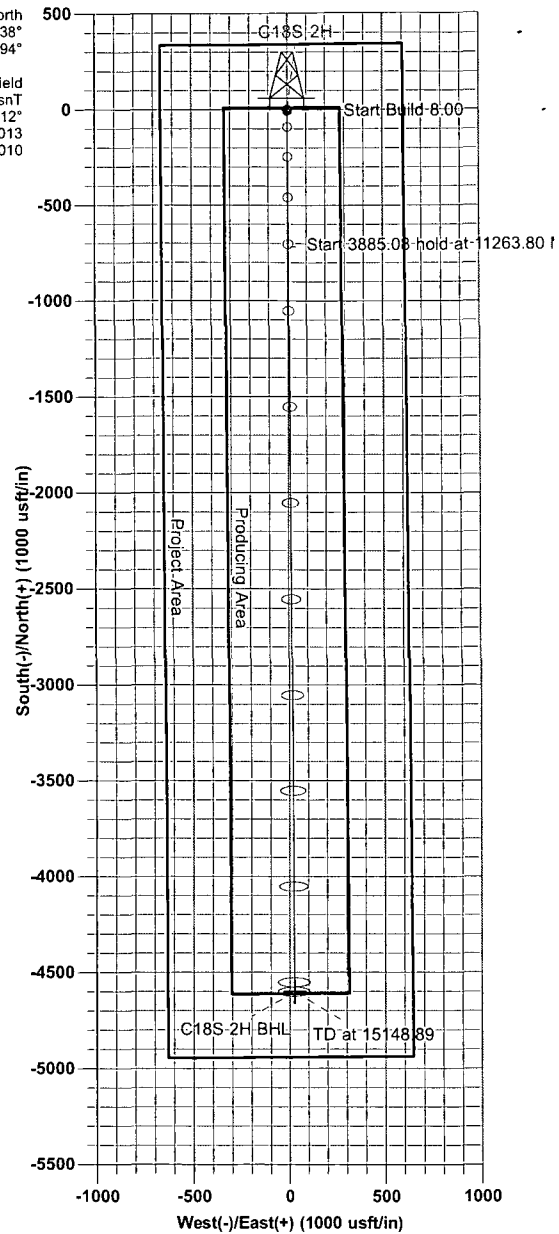
WELL DETAILS C18S 2H					
Ground Level: 3569.50					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	445907.50	721463.20	32.224	-103.617

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
10138.80	0.00	0.00	10138.80	0.00	0.00	0.00	0.00	0.00	
11263.80	90.00	179.66	10855.00	-716.18	4.22	8.00	179.66	716.20	
15148.89	90.00	179.66	10855.00	-4601.20	27.10	0.00	0.00	4601.28	BHL

DESIGN TARGET DETAILS					
Name	TVD	+N/-S	+E/-W	Northing	Easting
C18S 2H BHL	10855.00	-4601.20	27.10	441306.30	721490.30

SITE DETAILS:	
Copperhead 18 State 2H	
Site Centre Northing: 445907.50	
Easting: 721463.20	
Positional Uncertainty: 0.00	
Convergence: 0.38	
Local North: Grid	

PROJECT DETAILS:	
Lea County, New Mexico	
Geodetic System: US State Plane 1927 (Exact solution)	
Datum: NAD 1927 (NADCON CONUS)	
Ellipsoid: Clarke 1866	
Zone: New Mexico East 3001	
System Datum: Mean Sea Level	



Jody Barclay
15:48, October 07 2013

Scientific Drilling
2740 N. Highway 287
P.O. Box 70001



Scientific Drilling

Planning Report



Database:	CompassC	Local Co-ordinate Reference:	Well C18S 2H
Company:	OXY	TVD Reference:	KB @ 3593.50usft
Project:	Lea County, New Mexico	MD Reference:	KB @ 3593.50usft
Site:	Copperhead 18 State 2H	North Reference:	Grid
Well:	C18S 2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot Wellpath		
Design:	Design #1		

Project	Lea County, New Mexico		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site		Copperhead 18 State 2H			
Site Position:		Northing:	445,907.50 usft	Latitude:	32.224
From:	Map	Easting:	721,463.20 usft	Longitude:	-103.617
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.38

Well:	C18S 2H					
Well Position	+N/-S	0.00 usft	Northing:	445,907.50 usft	Latitude:	32.224
	+E/-W	0.00 usft	Easting:	721,463.20 usft	Longitude:	-103.617
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,569.50 usft

Wellbore	Pilot Wellpath				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/7/2013	7.32	60.12	48,379

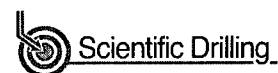
Design	Design #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	0.00

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
11,300.00	0.00	0.00	11,300.00	0.00	0.00	0.00	0.00	0.00	0.00	



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Company:	OXY	TVD Reference:	KB @ 3593.50usft
Project:	Lea County, New Mexico	MD Reference:	KB @ 3593.50usft
Site:	Copperhead 18 State 2H	North Reference:	Grid
Well:	C18S 2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot Wellpath		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00



Scientific Drilling

Planning Report



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Company:	OXY	TVD Reference:	KB @ 3593.50usft
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Site:	Copperhead 18 State 2H	North Reference:	Grid
Well:	C18S 2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot Wellpath		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	0.00	0.00
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	0.00	0.00
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	0.00	0.00
7,900.00	0.00	0.00	7,900.00	0.00	0.00	0.00	0.00	0.00	0.00
8,000.00	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	0.00	0.00
8,100.00	0.00	0.00	8,100.00	0.00	0.00	0.00	0.00	0.00	0.00
8,200.00	0.00	0.00	8,200.00	0.00	0.00	0.00	0.00	0.00	0.00
8,300.00	0.00	0.00	8,300.00	0.00	0.00	0.00	0.00	0.00	0.00
8,400.00	0.00	0.00	8,400.00	0.00	0.00	0.00	0.00	0.00	0.00
8,500.00	0.00	0.00	8,500.00	0.00	0.00	0.00	0.00	0.00	0.00
8,600.00	0.00	0.00	8,600.00	0.00	0.00	0.00	0.00	0.00	0.00
8,700.00	0.00	0.00	8,700.00	0.00	0.00	0.00	0.00	0.00	0.00
8,800.00	0.00	0.00	8,800.00	0.00	0.00	0.00	0.00	0.00	0.00
8,900.00	0.00	0.00	8,900.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000.00	0.00	0.00	9,000.00	0.00	0.00	0.00	0.00	0.00	0.00
9,100.00	0.00	0.00	9,100.00	0.00	0.00	0.00	0.00	0.00	0.00
9,200.00	0.00	0.00	9,200.00	0.00	0.00	0.00	0.00	0.00	0.00
9,300.00	0.00	0.00	9,300.00	0.00	0.00	0.00	0.00	0.00	0.00
9,400.00	0.00	0.00	9,400.00	0.00	0.00	0.00	0.00	0.00	0.00
9,500.00	0.00	0.00	9,500.00	0.00	0.00	0.00	0.00	0.00	0.00
9,600.00	0.00	0.00	9,600.00	0.00	0.00	0.00	0.00	0.00	0.00
9,700.00	0.00	0.00	9,700.00	0.00	0.00	0.00	0.00	0.00	0.00
9,800.00	0.00	0.00	9,800.00	0.00	0.00	0.00	0.00	0.00	0.00
9,900.00	0.00	0.00	9,900.00	0.00	0.00	0.00	0.00	0.00	0.00
10,000.00	0.00	0.00	10,000.00	0.00	0.00	0.00	0.00	0.00	0.00
10,100.00	0.00	0.00	10,100.00	0.00	0.00	0.00	0.00	0.00	0.00
10,200.00	0.00	0.00	10,200.00	0.00	0.00	0.00	0.00	0.00	0.00
10,300.00	0.00	0.00	10,300.00	0.00	0.00	0.00	0.00	0.00	0.00
10,400.00	0.00	0.00	10,400.00	0.00	0.00	0.00	0.00	0.00	0.00
10,500.00	0.00	0.00	10,500.00	0.00	0.00	0.00	0.00	0.00	0.00
10,600.00	0.00	0.00	10,600.00	0.00	0.00	0.00	0.00	0.00	0.00
10,700.00	0.00	0.00	10,700.00	0.00	0.00	0.00	0.00	0.00	0.00



Scientific Drilling
Planning Report



Database:	CompassC	Local Co-ordinate Reference:	Well C18S 2H
Company:	OXY	TVD Reference:	KB @ 3593.50usft
Project:	Lea County, New Mexico	MD Reference:	KB @ 3593.50usft
Site:	Copperhead 18 State 2H	North Reference:	Grid
Well:	C18S.2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Pilot Wellpath		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,800.00	0.00	0.00	10,800.00	0.00	0.00	0.00	0.00	0.00	0.00
10,900.00	0.00	0.00	10,900.00	0.00	0.00	0.00	0.00	0.00	0.00
11,000.00	0.00	0.00	11,000.00	0.00	0.00	0.00	0.00	0.00	0.00
11,100.00	0.00	0.00	11,100.00	0.00	0.00	0.00	0.00	0.00	0.00
11,200.00	0.00	0.00	11,200.00	0.00	0.00	0.00	0.00	0.00	0.00
11,300.00	0.00	0.00	11,300.00	0.00	0.00	0.00	0.00	0.00	0.00



Scientific Drilling Planning Report



Database:	CompassC	Local Co-ordinate Reference:	Well C18S 2H
Company:	OXY	TVD Reference:	KB @ 3593.50usft
Project:	Lea County, New Mexico	MD Reference:	KB @ 3593.50usft
Site:	Copperhead 18 State 2H	North Reference:	Grid
Well:	C18S 2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellpath		
Design:	Design #1		

Project	Lea County, New Mexico		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Copperhead 18 State 2H		
Site Position:	Northing:	445,907.50 usft	Latitude: 32.224
From: Map	Easting:	721,463.20 usft	Longitude: -103.617
Position Uncertainty:	0.00 usft	Slot Radius: 13-3/16 "	Grid Convergence: 0.38 °

Well	C18S 2H		
Well Position	+N/-S	0.00 usft	Northing: 445,907.50 usft
	+E/-W	0.00 usft	Easting: 721,463.20 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Ground Level:	3,569.50 usft

Wellbore	Original Wellpath				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/7/2013	7.32	60.12	48,379

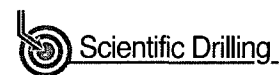
Design	Design #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	179.66

Plan Sections:										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
10,138.80	0.00	0.00	10,138.80	0.00	0.00	0.00	0.00	0.00	0.00	
11,263.80	90.00	179.66	10,855.00	-716.18	4.22	8.00	8.00	0.00	179.66	
15,148.89	90.00	179.66	10,855.00	-4,601.20	27.10	0.00	0.00	0.00	0.00	C18S 2H BHL



Scientific Drilling

Planning Report



Database:	CompassC	Local Co-ordinate Reference:	Well C18S 2H
Company:	OXY	TVD Reference:	KB @ 3593.50usft
Project:	Lea County, New Mexico	MD Reference:	KB @ 3593.50usft
Site:	Copperhead 18 State 2H	North Reference:	Grid
Well:	C18S 2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellpath		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00



Scientific Drilling
Planning Report



Database:	CompassC	Local Co-ordinate Reference:	Well C18S 2H
Company:	OXY	TVD Reference:	KB @ 3593.50usft
Project:	Lea County, New Mexico	MD Reference:	KB @ 3593.50usft
Site:	Copperhead 18 State 2H	North Reference:	Grid
Well:	C18S 2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellpath		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	0.00	0.00
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	0.00	0.00
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	0.00	0.00
7,900.00	0.00	0.00	7,900.00	0.00	0.00	0.00	0.00	0.00	0.00
8,000.00	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	0.00	0.00
8,100.00	0.00	0.00	8,100.00	0.00	0.00	0.00	0.00	0.00	0.00
8,200.00	0.00	0.00	8,200.00	0.00	0.00	0.00	0.00	0.00	0.00
8,300.00	0.00	0.00	8,300.00	0.00	0.00	0.00	0.00	0.00	0.00
8,400.00	0.00	0.00	8,400.00	0.00	0.00	0.00	0.00	0.00	0.00
8,500.00	0.00	0.00	8,500.00	0.00	0.00	0.00	0.00	0.00	0.00
8,600.00	0.00	0.00	8,600.00	0.00	0.00	0.00	0.00	0.00	0.00
8,700.00	0.00	0.00	8,700.00	0.00	0.00	0.00	0.00	0.00	0.00
8,800.00	0.00	0.00	8,800.00	0.00	0.00	0.00	0.00	0.00	0.00
8,900.00	0.00	0.00	8,900.00	0.00	0.00	0.00	0.00	0.00	0.00
9,000.00	0.00	0.00	9,000.00	0.00	0.00	0.00	0.00	0.00	0.00
9,100.00	0.00	0.00	9,100.00	0.00	0.00	0.00	0.00	0.00	0.00
9,200.00	0.00	0.00	9,200.00	0.00	0.00	0.00	0.00	0.00	0.00
9,300.00	0.00	0.00	9,300.00	0.00	0.00	0.00	0.00	0.00	0.00
9,400.00	0.00	0.00	9,400.00	0.00	0.00	0.00	0.00	0.00	0.00
9,500.00	0.00	0.00	9,500.00	0.00	0.00	0.00	0.00	0.00	0.00
9,600.00	0.00	0.00	9,600.00	0.00	0.00	0.00	0.00	0.00	0.00
9,700.00	0.00	0.00	9,700.00	0.00	0.00	0.00	0.00	0.00	0.00
9,800.00	0.00	0.00	9,800.00	0.00	0.00	0.00	0.00	0.00	0.00
9,900.00	0.00	0.00	9,900.00	0.00	0.00	0.00	0.00	0.00	0.00
10,000.00	0.00	0.00	10,000.00	0.00	0.00	0.00	0.00	0.00	0.00
10,100.00	0.00	0.00	10,100.00	0.00	0.00	0.00	0.00	0.00	0.00
10,138.80	0.00	0.00	10,138.80	0.00	0.00	0.00	0.00	0.00	0.00
10,150.00	0.90	179.66	10,150.00	-0.09	0.00	0.09	8.00	8.00	0.00
10,200.00	4.90	179.66	10,199.93	-2.61	0.02	2.61	8.00	8.00	0.00
10,250.00	8.90	179.66	10,249.55	-8.61	0.05	8.61	8.00	8.00	0.00
10,300.00	12.90	179.66	10,298.64	-18.06	0.11	18.06	8.00	8.00	0.00
10,350.00	16.90	179.66	10,346.95	-30.91	0.18	30.91	8.00	8.00	0.00



Scientific Drilling
Planning Report



Database Company:	CompassC OXY	Local Co-ordinate Reference:	Well C18S 2H
Project:	Lea County, New Mexico	TVD Reference:	KB @ 3593.50usft
Site:	Copperhead 18 State 2H	MD Reference:	KB @ 3593.50usft
Well:	C18S 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,400.00	20.90	179.66	10,394.25	-47.10	0.28	47.10	8.00	8.00	0.00
10,450.00	24.90	179.66	10,440.30	-66.55	0.39	66.55	8.00	8.00	0.00
10,500.00	28.90	179.66	10,484.88	-89.16	0.53	89.17	8.00	8.00	0.00
10,550.00	32.90	179.66	10,527.78	-114.83	0.68	114.84	8.00	8.00	0.00
10,600.00	36.90	179.66	10,568.78	-143.43	0.84	143.43	8.00	8.00	0.00
10,650.00	40.90	179.66	10,607.69	-174.82	1.03	174.82	8.00	8.00	0.00
10,700.00	44.90	179.66	10,644.31	-208.85	1.23	208.85	8.00	8.00	0.00
10,750.00	48.90	179.66	10,678.47	-245.34	1.45	245.35	8.00	8.00	0.00
10,800.00	52.90	179.66	10,710.00	-284.13	1.67	284.14	8.00	8.00	0.00
10,850.00	56.90	179.66	10,738.75	-325.03	1.91	325.04	8.00	8.00	0.00
10,900.00	60.90	179.66	10,764.57	-367.83	2.17	367.84	8.00	8.00	0.00
10,950.00	64.90	179.66	10,787.35	-412.33	2.43	412.34	8.00	8.00	0.00
11,000.00	68.90	179.66	10,806.96	-458.31	2.70	458.32	8.00	8.00	0.00
11,050.00	72.90	179.66	10,823.32	-505.55	2.98	505.56	8.00	8.00	0.00
11,100.00	76.90	179.66	10,836.35	-553.81	3.26	553.82	8.00	8.00	0.00
11,150.00	80.90	179.66	10,845.98	-602.86	3.55	602.87	8.00	8.00	0.00
11,200.00	84.90	179.66	10,852.16	-652.47	3.84	652.48	8.00	8.00	0.00
11,250.00	88.90	179.66	10,854.87	-702.38	4.14	702.40	8.00	8.00	0.00
11,263.80	90.00	179.66	10,855.00	-716.18	4.22	716.20	8.00	8.00	0.00
11,300.00	90.00	179.66	10,855.00	-752.38	4.43	752.39	0.00	0.00	0.00
11,400.00	90.00	179.66	10,855.00	-852.38	5.02	852.39	0.00	0.00	0.00
11,500.00	90.00	179.66	10,855.00	-952.38	5.61	952.39	0.00	0.00	0.00
11,600.00	90.00	179.66	10,855.00	-1,052.38	6.20	1,052.39	0.00	0.00	0.00
11,700.00	90.00	179.66	10,855.00	-1,152.37	6.79	1,152.39	0.00	0.00	0.00
11,800.00	90.00	179.66	10,855.00	-1,252.37	7.38	1,252.39	0.00	0.00	0.00
11,900.00	90.00	179.66	10,855.00	-1,352.37	7.97	1,352.39	0.00	0.00	0.00
12,000.00	90.00	179.66	10,855.00	-1,452.37	8.55	1,452.39	0.00	0.00	0.00
12,100.00	90.00	179.66	10,855.00	-1,552.37	9.14	1,552.39	0.00	0.00	0.00
12,200.00	90.00	179.66	10,855.00	-1,652.37	9.73	1,652.39	0.00	0.00	0.00
12,300.00	90.00	179.66	10,855.00	-1,752.36	10.32	1,752.39	0.00	0.00	0.00
12,400.00	90.00	179.66	10,855.00	-1,852.36	10.91	1,852.39	0.00	0.00	0.00
12,500.00	90.00	179.66	10,855.00	-1,952.36	11.50	1,952.39	0.00	0.00	0.00
12,600.00	90.00	179.66	10,855.00	-2,052.36	12.09	2,052.39	0.00	0.00	0.00
12,700.00	90.00	179.66	10,855.00	-2,152.36	12.68	2,152.39	0.00	0.00	0.00
12,800.00	90.00	179.66	10,855.00	-2,252.36	13.27	2,252.39	0.00	0.00	0.00
12,900.00	90.00	179.66	10,855.00	-2,352.35	13.85	2,352.39	0.00	0.00	0.00
13,000.00	90.00	179.66	10,855.00	-2,452.35	14.44	2,452.39	0.00	0.00	0.00
13,100.00	90.00	179.66	10,855.00	-2,552.35	15.03	2,552.39	0.00	0.00	0.00
13,200.00	90.00	179.66	10,855.00	-2,652.35	15.62	2,652.39	0.00	0.00	0.00
13,300.00	90.00	179.66	10,855.00	-2,752.35	16.21	2,752.39	0.00	0.00	0.00
13,400.00	90.00	179.66	10,855.00	-2,852.35	16.80	2,852.39	0.00	0.00	0.00
13,500.00	90.00	179.66	10,855.00	-2,952.34	17.39	2,952.39	0.00	0.00	0.00
13,600.00	90.00	179.66	10,855.00	-3,052.34	17.98	3,052.39	0.00	0.00	0.00
13,700.00	90.00	179.66	10,855.00	-3,152.34	18.57	3,152.39	0.00	0.00	0.00
13,800.00	90.00	179.66	10,855.00	-3,252.34	19.16	3,252.39	0.00	0.00	0.00
13,900.00	90.00	179.66	10,855.00	-3,352.34	19.74	3,352.39	0.00	0.00	0.00
14,000.00	90.00	179.66	10,855.00	-3,452.33	20.33	3,452.39	0.00	0.00	0.00
14,100.00	90.00	179.66	10,855.00	-3,552.33	20.92	3,552.39	0.00	0.00	0.00
14,200.00	90.00	179.66	10,855.00	-3,652.33	21.51	3,652.39	0.00	0.00	0.00
14,300.00	90.00	179.66	10,855.00	-3,752.33	22.10	3,752.39	0.00	0.00	0.00
14,400.00	90.00	179.66	10,855.00	-3,852.33	22.69	3,852.39	0.00	0.00	0.00
14,500.00	90.00	179.66	10,855.00	-3,952.33	23.28	3,952.39	0.00	0.00	0.00
14,600.00	90.00	179.66	10,855.00	-4,052.32	23.87	4,052.39	0.00	0.00	0.00
14,700.00	90.00	179.66	10,855.00	-4,152.32	24.46	4,152.39	0.00	0.00	0.00



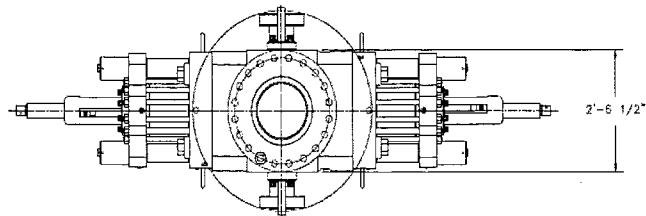
Scientific Drilling
Planning Report



Database:	CompassC	Local Co-ordinate Reference:	Well C18S 2H
Company:	OXY	TVD Reference:	KB @ 3593.50usft
Project:	Lea County, New Mexico	MD Reference:	KB @ 3593.50usft
Site:	Copperhead 18 State 2H	North Reference:	Grid
Well:	C18S 2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Wellpath		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,800.00	90.00	179.66	10,855.00	-4,252.32	25.05	4,252.39	0.00	0.00	0.00
14,900.00	90.00	179.66	10,855.00	-4,352.32	25.63	4,352.39	0.00	0.00	0.00
15,000.00	90.00	179.66	10,855.00	-4,452.32	26.22	4,452.39	0.00	0.00	0.00
15,100.00	90.00	179.66	10,855.00	-4,552.32	26.81	4,552.39	0.00	0.00	0.00
15,148.89	90.00	179.66	10,855.00	-4,601.20	27.10	4,601.28	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
C18S 2H BHL	0.00	0.00	10,855.00	-4,601.20	27.10	441,306.30	721,490.30	32.211	-103.617
- plan hits target center									
- Point									



LEGEND

- ① - 4 1/16"-10M FLANGED END GATE VALVE
- ② - 4 1/16"-10M FLANGED END GATE VALVE WITH DOUBLE ACTING HYDRAULIC ACTUATOR
- ③ - 2 1/16"-10M FLANGED END GATE VALVE
- ④ - 2 1/16"-10M FLANGED END CHECK VALVE
- ⑤ - DOUBLE STUDDED ADAPTER

SHAFFER BOLTED-COVER SPHERICAL ANNULAR PREVENTER, (API 16A MONOGRAMMED, 13 5/8"-5M WP), 10M BOTTOM FLANGE x 5M STUDDED TOP (WEIGHT = 14,300 LBS WITH SHAFFER API 16A HOT OIL RESISTANT ACRYLONITRILE ELEMENT)

CAMERON UM DOUBLE RAM-TYPE PREVENTER (API 16A MONOGRAMMED, 13 5/8"-10M WP), WITH 5" CAMERON PIPE RAMS (CAMRAM FRONT PACKERS & TOP SEALS) IN TOP CAVITY AND CAMERON DS SHEARING BLIND RAMS IN BOTTOM CAVITY. BOTTOM FLANGE x STUDDED TOP (WEIGHT = 21,100 LBS; WITH RAMS)

13 5/8"-10M WP CAMERON DRILLING SPOOL (API 16A MONOGRAMMED), STUDDED TOP x FLANGED BOTTOM, WITH 4 1/16"-10M WP, FLANGED OUTLETS (WEIGHT APPROXIMATELY 6,000 LBS)

CAMERON UM SINGLE-RAM-TYPE PREVENTER (API 16A MONOGRAMMED, 13 5/8"-10M WP), WITH 5" CAMERON PIPE RAMS (CAMRAM FRONT-PACKERS & TOP SEALS) BOTTOM FLANGE x STUDDED TOP (WEIGHT = 10,900 LBS)

H&P FURNISHED
13 5/8"-10M x 13 5/8"-5M
ADAPTER SPOOL 2'-0" LONG

SEE LIFT LUG DETAIL

3'-11 7/8"

4'-3 7/8"

14'-7 1/2"

1'-3 7/8"

2'-6 1/8"

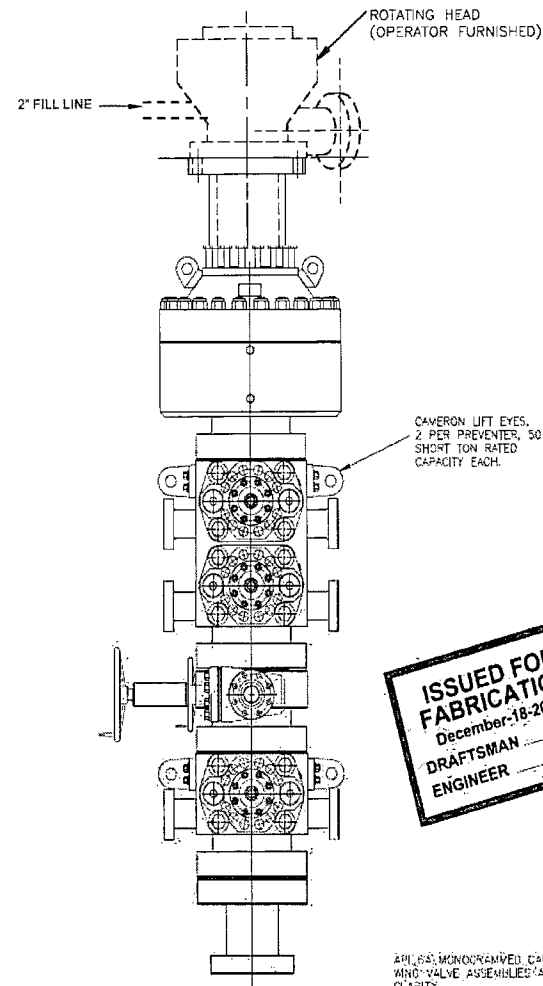
2'-0"

11'-7 5/8" CLOSED

12'-5 3/8" OPERATING

16'-5" OPENED

13 5/8 - 10M BOP STACK WITH 13 5/8 - 5M ANNULAR



**ISSUED FOR
FABRICATION**
December-18-2007
DRAFTSMAN
ENGINEER

API 6A MONOGRAMMED CAMERON CHUCK AND KILL
WIND-UP VALVE ASSEMBLIES ARE NOT SHOWN FOR
CLARITY

WEIGHTS DO NOT INCLUDE HOSES, ADAPTER SPOOLS
OR QUICK-CONNECT FITTINGS

PROPRIETARY

THIS DRAWING AND THE IDEAS AND INFORMATION INCLUDED
IN THIS DRAWING ARE PROPRIETARY AND ARE NOT TO BE
REPRODUCED, DISSEMINATED OR COPIED IN ANY MANNER
WITHOUT THE PRIOR WRITTEN CONSENT OF A QUALIFIED
OFFICE OF HELMERICH & PAYNE INT'L DRILLING CO.

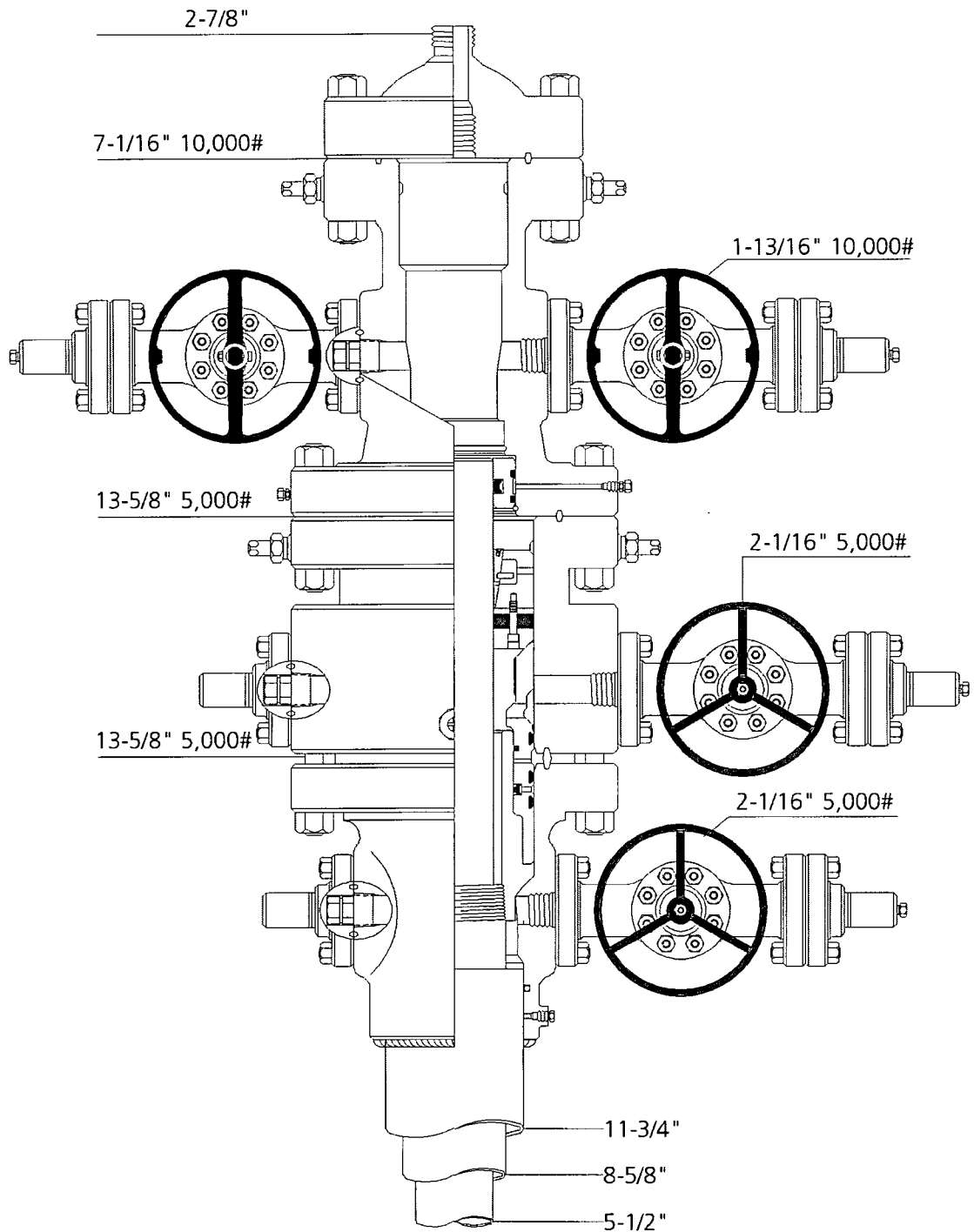
HELMERICH & PAYNE
INTERNATIONAL DRILLING CO.

TITLE:
13 5/8"-10M BOP 3 RAM STACK
FLEXRIC3

CUSTOMER: H&P
PROJECT: FLEXRIC3
DRAWN: NTS DATE: 6-8-02
SCALE: 3/4"=1' SHEET: 1 OF 2 210-P1-07

ENGINEERING APPROVAL DATE

	12/15/07	ADDED SHEET 03	JAY
	4-18-07	CAMERON UM DOUBLE STAGED ADAPTER NUMBER 1, 2, 3, 4, AND NO THEY WERE ADDED	JAY
	4-24-07	8" ADDED TO SPACER ADAPTER SPOOL	JAY
	02-07-07	ADDED ADAPTER SPOOL	VAL
	06-13-02	"CORRECTED BOP STACK"	VAL
REV	DATE	DESCRIPTION	BY

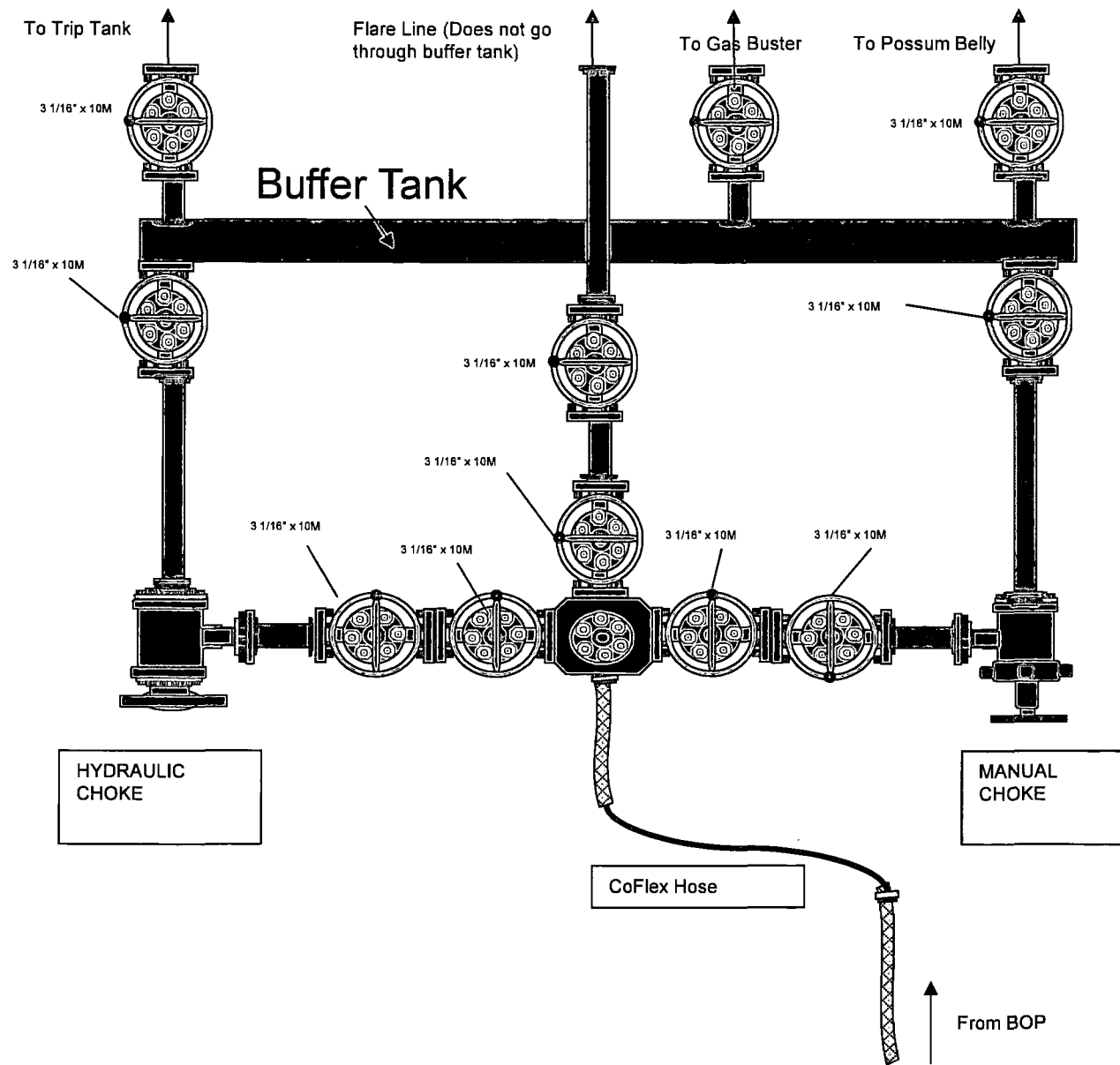


Permian Basin
MBS

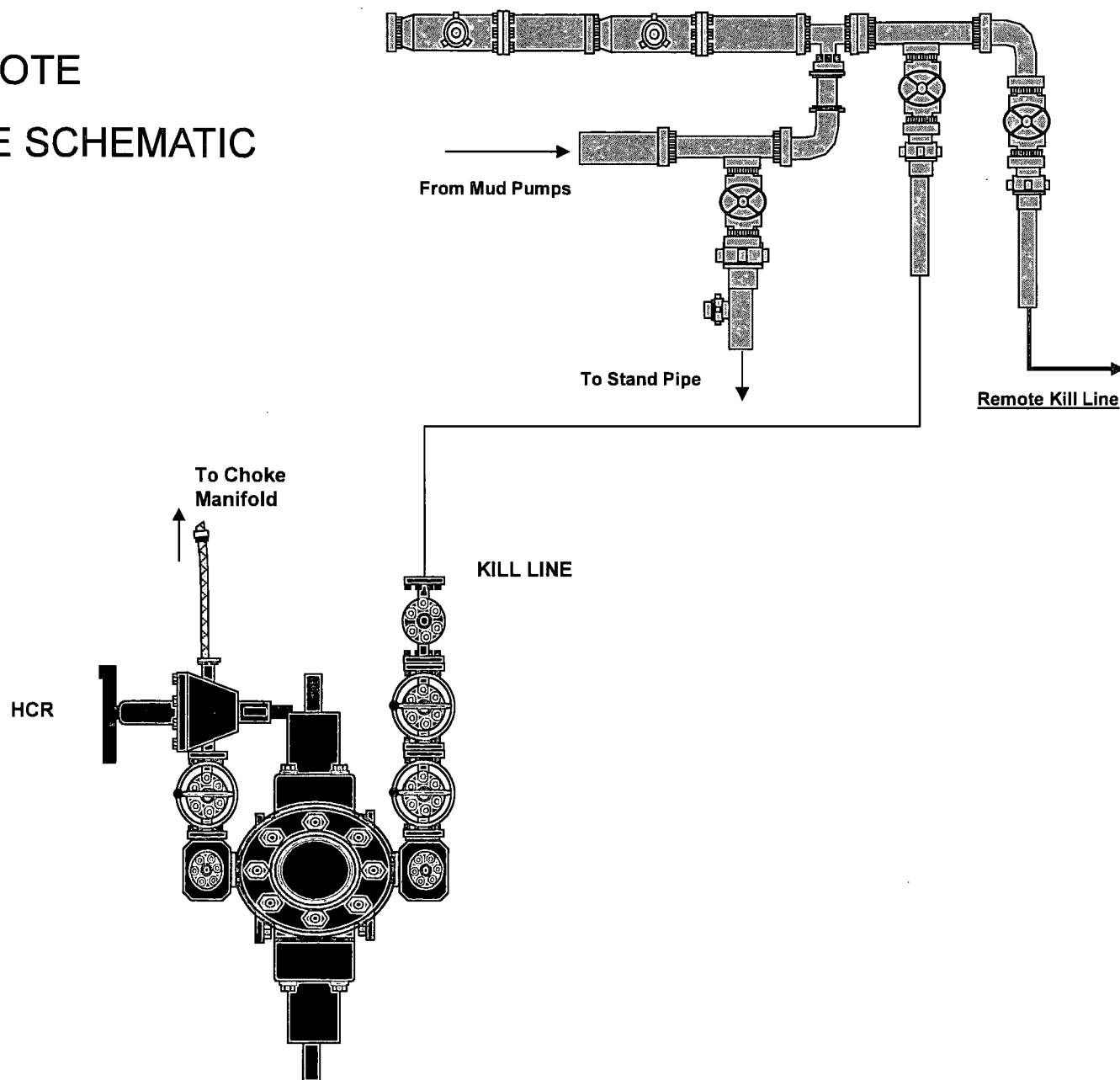


Name: Jeanette	Date: 1-31-13	Working Pressure:	# 21073221
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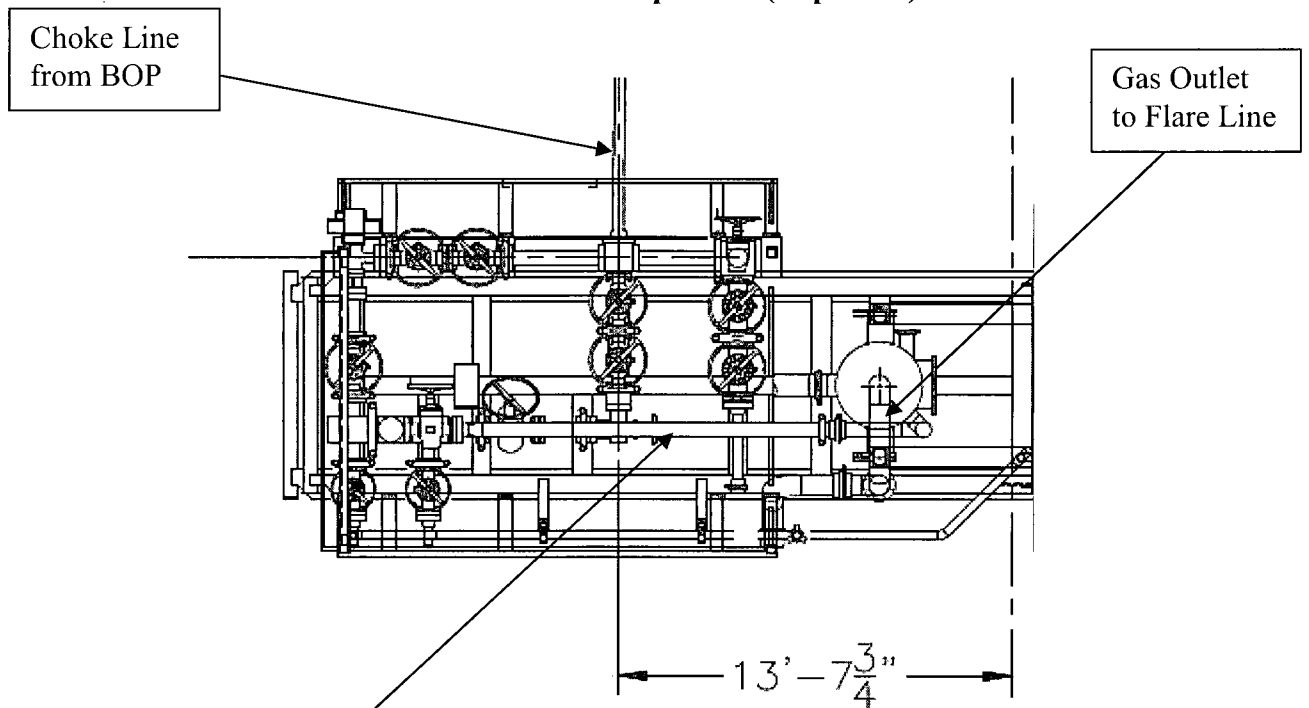
FLEX3 STD CHOKE MANIFOLD (COMPREHENSIVE)



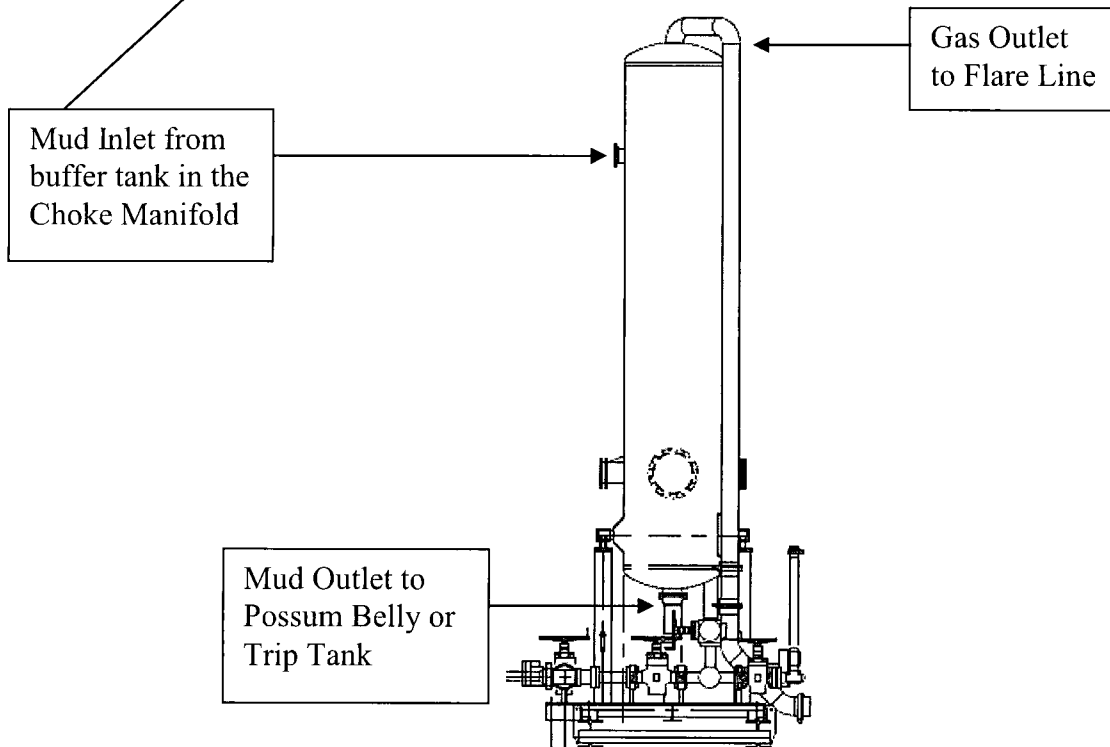
10M REMOTE KILL LINE SCHEMATIC



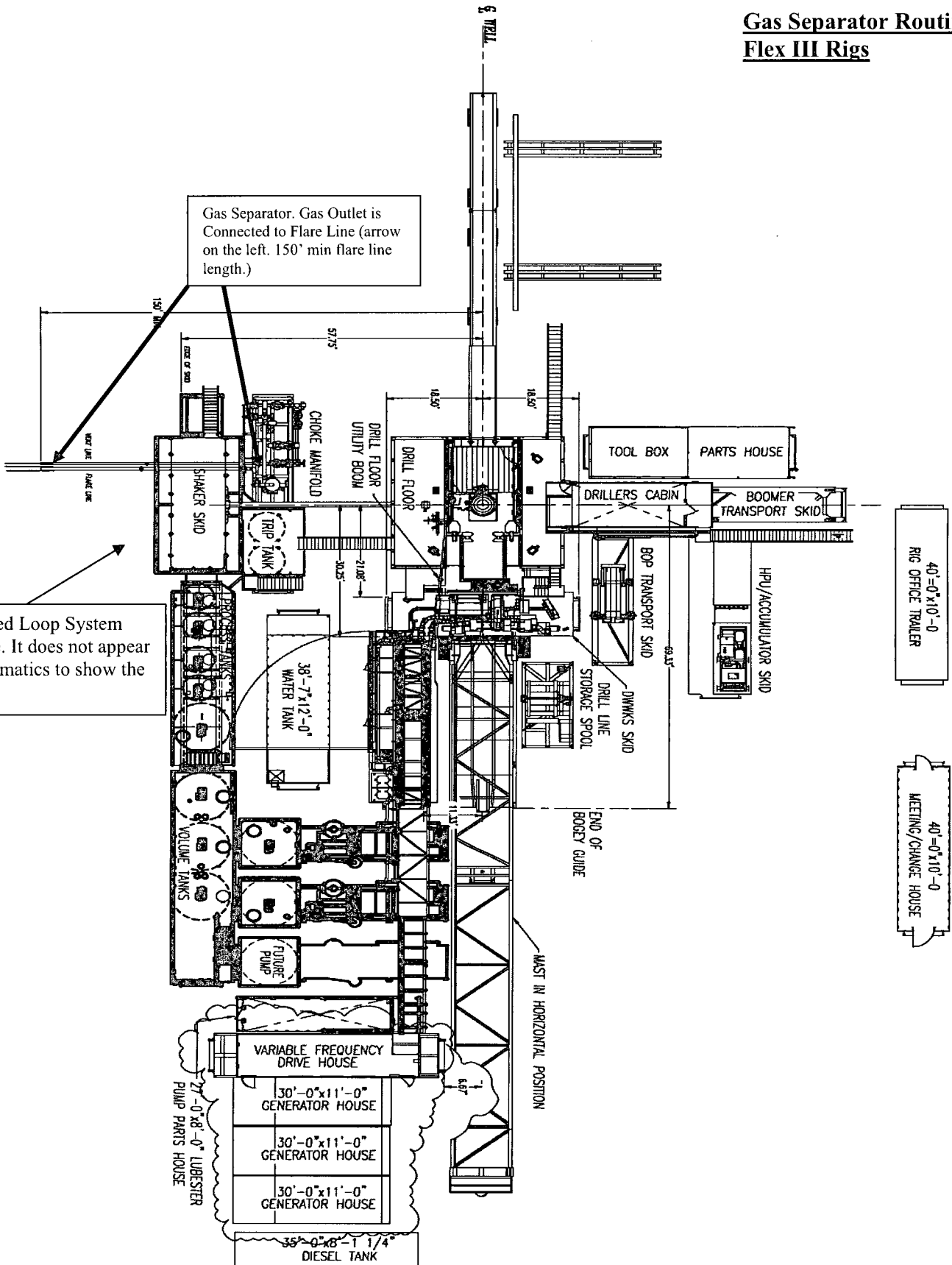
Choke Manifold – Gas Separator (Top View)



Choke Manifold – Gas Separator (Side View)

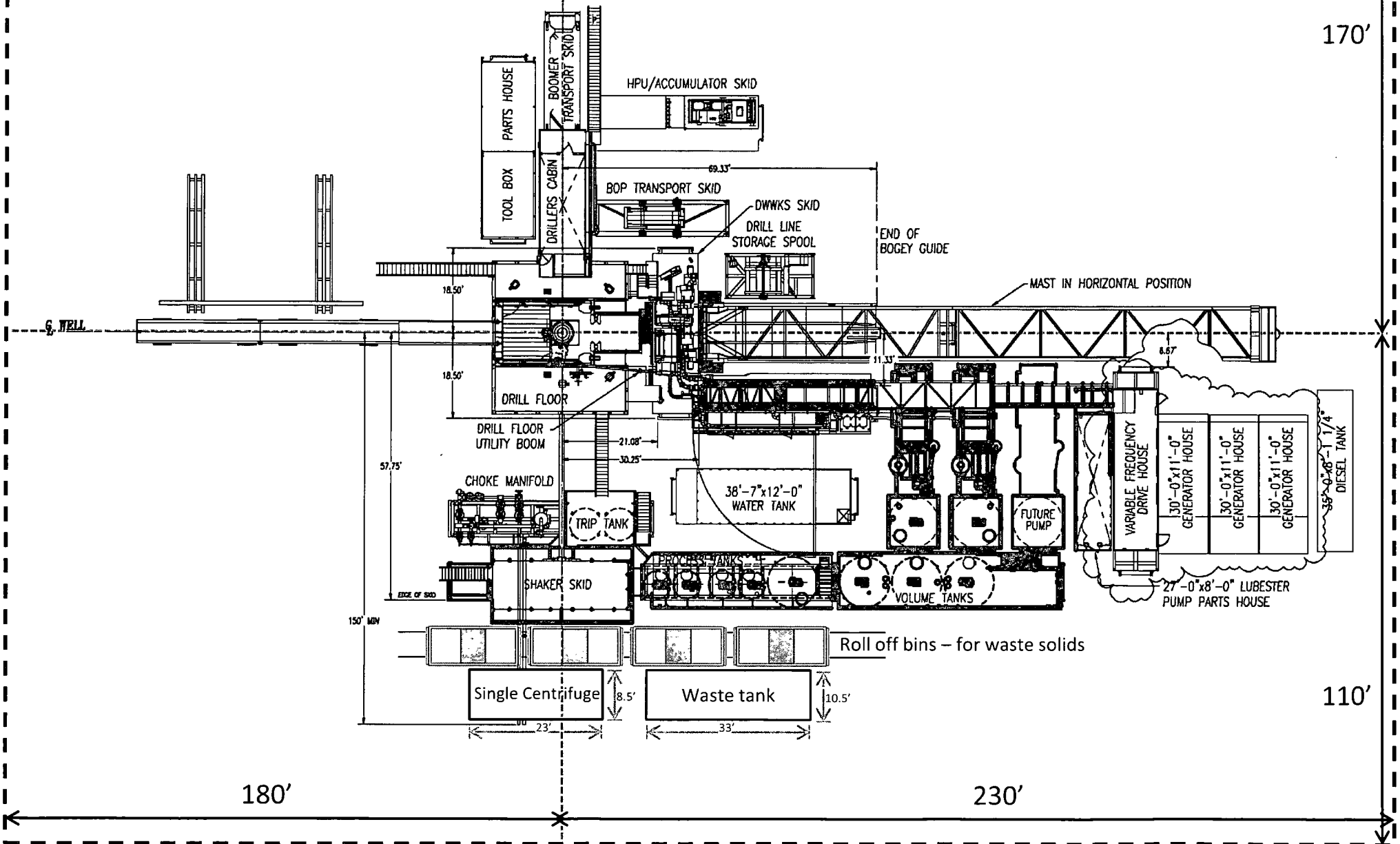


Gas Separator Routing Flex III Rigs

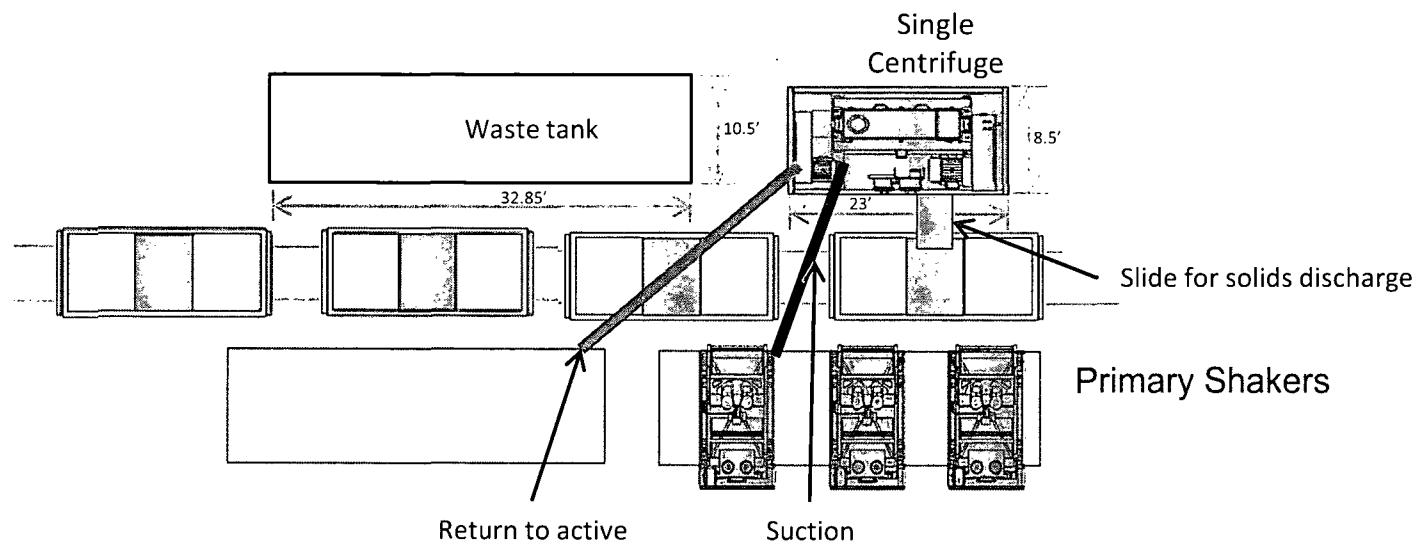


Oxy Single Centrifuge
Closed Loop System – New
Mexico Flex III

May 28, 2013



Oxy



Oxy Single Centrifuge
Closed Loop System – New
Mexico Flex III
May 28, 2013