

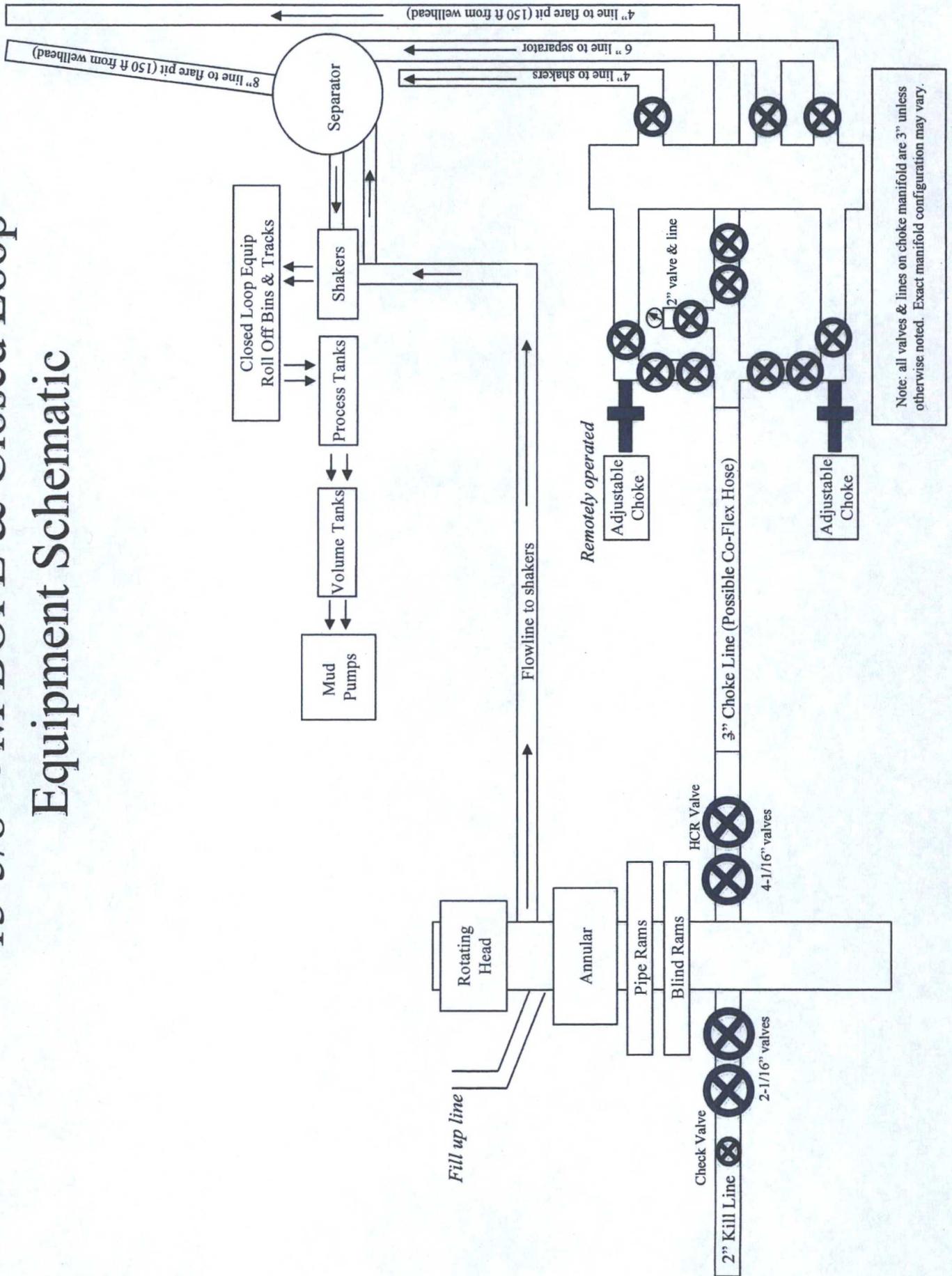
**NOTES REGARDING BLOWOUT PREVENTERS**

Devon Energy Production Company, L.P.  
**BLUE KRAIT 23 FED 6H**

**HOBBS OCD**  
**MAY 16 2016**  
**RECEIVED**

1. Drilling Nipple will be constructed so it can be removed mechanically without the aid of a welder. The minimum internal diameter will equal BOP bore.
2. Wear ring will be properly installed in head.
3. Blowout preventer and all associated filings will be in operable condition to withstand a minimum of 5000psi working pressure.
4. All fittings will be flanged.
5. A fill bore safety valve tested to a minimum of 5000psi WP with proper thread connections will be available on the rotary rig floor at all times.
6. All choke lines will be anchored to prevent movement.
7. All BOP equipment will be equal to or larger in bore than the internal diameter of the last casing string.
8. Will maintain a kelly cock attached to the kelly.
9. Hand wheels and wrenches will be properly installed and tested for safe operation.
10. Hydraulic floor control for blowout preventer will be located as near in proximity to driller's controls as possible.
11. All BOP equipment will meet API standards and include a minimum 40 gallon accumulator having two independent means of power to initiate closing operation.

# 13-5/8" 5M BOPE & Closed Loop Equipment Schematic



**Technical Specifications**

Connection Type:	Size(O.D.):	Weight (Wall):	Grade:
DWC/C Casing standard	5-1/2 in	17.00 lb/ft (0.304 in)	P-110RY

	Material
P-110RY	Grade
110,000	Minimum Yield Strength (psi)
125,000	Minimum Ultimate Strength (psi)



VAM-USA  
 4424 W. Sam Houston Pkwy. Suite 150  
 Houston, TX 77041  
 Phone: 713-479-3200  
 Fax: 713-479-3234  
 E-mail: [VAMUSAsales@vam-usa.com](mailto:VAMUSAsales@vam-usa.com)

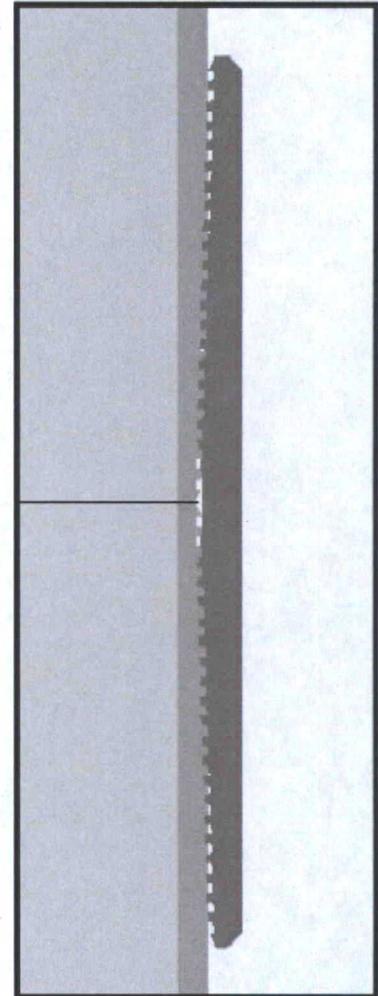
	Pipe Dimensions
5.500	Nominal Pipe Body O.D. (in)
4.892	Nominal Pipe Body I.D.(in)
0.304	Nominal Wall Thickness (in)
17.00	Nominal Weight (lbs/ft)
16.89	Plain End Weight (lbs/ft)
4.962	Nominal Pipe Body Area (sq in)

	Pipe Body Performance Properties
546,000	Minimum Pipe Body Yield Strength (lbs)
7,480	Minimum Collapse Pressure (psi)
10,640	Minimum Internal Yield Pressure (psi)
9,700	Hydrostatic Test Pressure (psi)

	Connection Dimensions
6.050	Connection O.D. (in)
4.892	Connection I.D. (in)
4.767	Connection Drift Diameter (in)
4.13	Make-up Loss (in)
4.962	Critical Area (sq in)
100.0	Joint Efficiency (%)

	Connection Performance Properties
546,000	Joint Strength (lbs)
22,940	Reference String Length (ft) 1.4 Design Factor
568,000	API Joint Strength (lbs)
546,000	Compression Rating (lbs)
7,480	API Collapse Pressure Rating (psi)
10,640	API Internal Pressure Resistance (psi)
91.7	Maximum Uniaxial Bend Rating [degrees/100 ft]

	Approximated Field End Torque Values
12,000	Minimum Final Torque (ft-lbs)
13,800	Maximum Final Torque (ft-lbs)
15,500	Connection Yield Torque (ft-lbs)



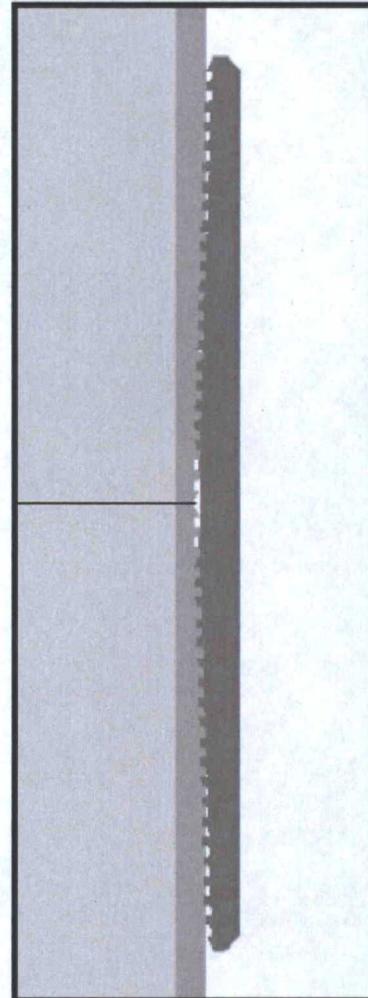
For detailed information on performance properties, refer to DWC Connection Data Notes on following page(s).

Connection specifications within the control of VAM-USA were correct as of the date printed. Specifications are subject to change without notice. Certain connection specifications are dependent on the mechanical properties of the pipe. Mechanical properties of mill proprietary pipe grades were obtained from mill publications and are subject to change. Properties of mill proprietary grades should be confirmed with the mill. Users are advised to obtain current connection specifications and verify pipe mechanical properties for each application.



#### DWC Connection Data Notes:

1. DWC connections are available with a seal ring (SR) option.
2. All standard DWC/C connections are interchangeable for a give pipe OD. DWC connections are interchangeable with DWC/C-SR connections of the same OD and wall.
3. Connection performance properties are based on nominal pipe body and connection dimensions.
4. DWC connection internal and external pressure resistance is calculated using the API rating for buttress connections. API Internal pressure resistance is calculated from formulas 31, 32, and 35 in the API Bulletin 5C3.
5. DWC joint strength is the minimum pipe body yield strength multiplied by the connection critical area.
6. API joint strength is for reference only. It is calculated from formulas 42 and 43 in the API Bulletin 5C3.
7. Bending efficiency is equal to the compression efficiency.
8. The torque values listed are recommended. The actual torque required may be affected by field conditions such as temperature, thread compound, speed of make-up, weather conditions, etc.
9. Connection yield torque is not to be exceeded.
10. Reference string length is calculated by dividing the joint strength by both the nominal weight in air and a design factor (DF) of 1.4. These values are offered for reference only and do not include load factors such as bending, buoyancy, temperature, load dynamics, etc.
11. DWC connections will accommodate API standard drift diameters.

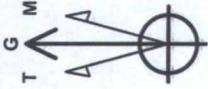


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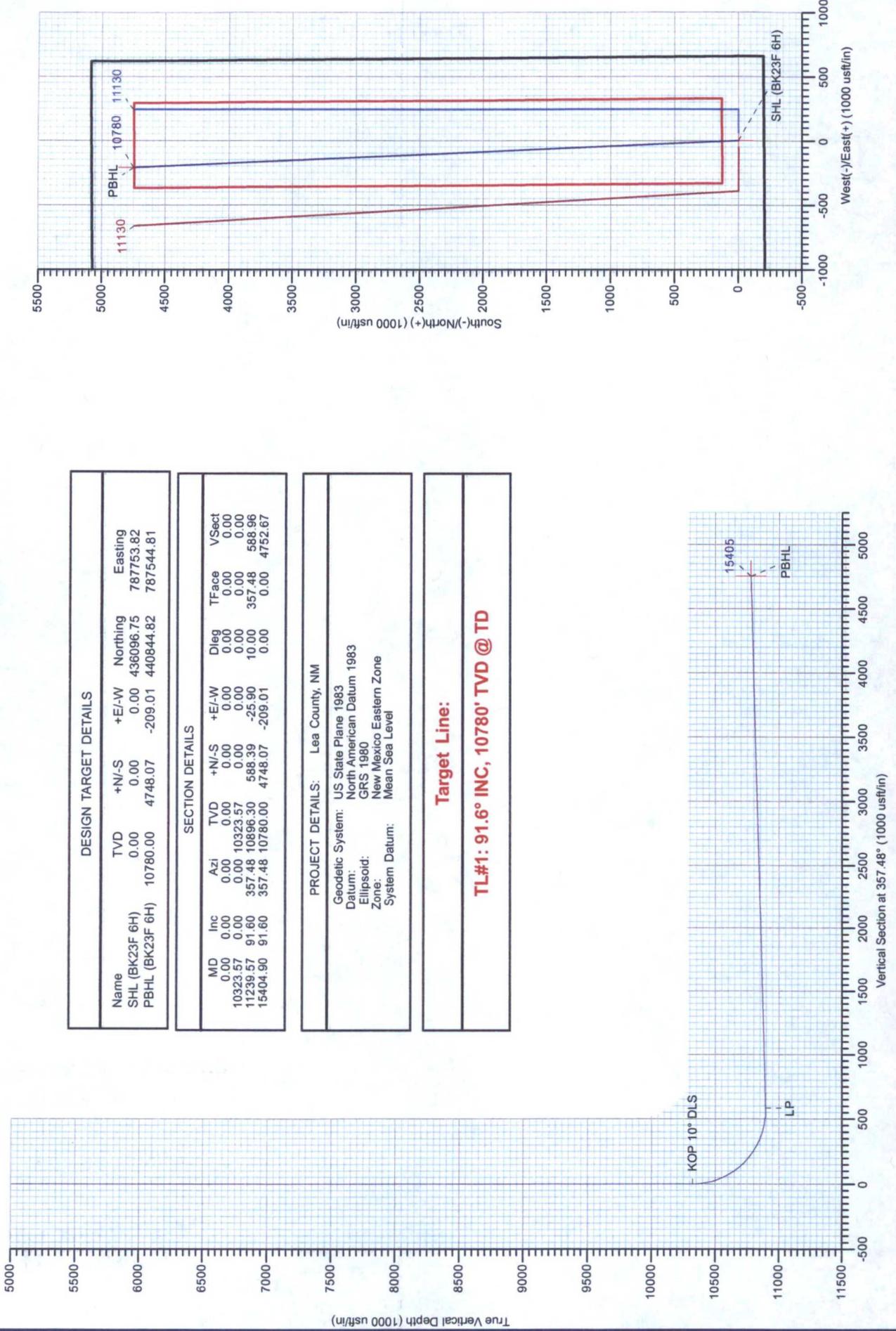
11/13/2013 3:17:42 PM



Project: Lea County, NM (NAD-83)  
 Site: Blue Krait 23 Fed  
 Well: 6H  
 Wellbore: OH  
 Design: Plan #1



Azimuths to Grid North  
 True North: -0.42°  
 Magnetic North: 6.84°  
 Magnetic Field  
 Strength: 48156.5snT  
 Dip Angle: 60.06°  
 Date: 5/15/2015  
 Model: BGGM2014

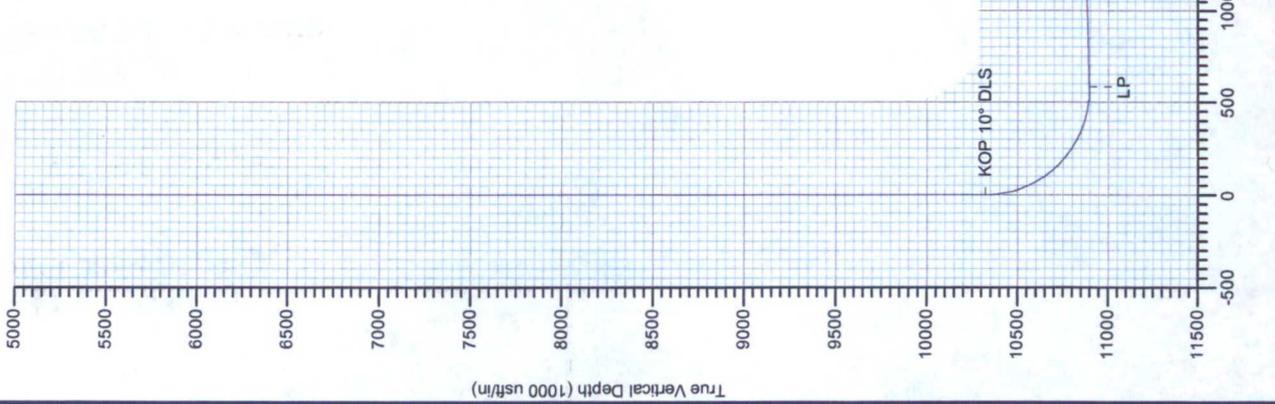


DESIGN TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	VSect
SHL (BK23F 6H)	0.00	0.00	0.00	436096.75	787753.82	0.00
PBHL (BK23F 6H)	10780.00	4748.07	-209.01	440844.82	787544.81	0.00

SECTION DETAILS								
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10323.57	0.00	0.00	10323.57	0.00	0.00	0.00	0.00	0.00
11239.57	91.60	357.48	10896.30	588.39	-25.90	10.00	357.48	588.96
15404.90	91.60	357.48	10780.00	4748.07	-209.01	0.00	0.00	4752.67

PROJECT DETAILS: Lea County, NM  
 Geodetic System: US State Plane 1983  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Zone: New Mexico Eastern Zone  
 System Datum: Mean Sea Level

**Target Line:**  
**TL#1: 91.6° INC, 10780' TVD @ TD**





## **DEVON ENERGY**

Lea County, NM (NAD-83)

Blue Krait 23 Fed

6H

OH

Plan: Plan #1

## **Standard Planning Report**

16 October, 2015





# LEAM Drilling Systems LLC

## Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well 6H
<b>Company:</b>	DEVON ENERGY	<b>TVD Reference:</b>	3562.7 + 25' RKB @ 3587.70usft
<b>Project:</b>	Lea County, NM (NAD-83)	<b>MD Reference:</b>	3562.7 + 25' RKB @ 3587.70usft
<b>Site:</b>	Blue Krait 23 Fed	<b>North Reference:</b>	Grid
<b>Well:</b>	6H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

<b>Project</b>	Lea County, NM (NAD-83)		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	New Mexico Eastern Zone		

<b>Site</b>	Blue Krait 23 Fed				
<b>Site Position:</b>		<b>Northing:</b>	436,068.33 usft	<b>Latitude:</b>	32° 11' 47.039 N
<b>From:</b>	Map	<b>Easting:</b>	783,797.48 usft	<b>Longitude:</b>	103° 32' 58.234 W
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.42 °

<b>Well</b>	6H, Leonard					
<b>Well Position</b>	<b>+N/-S</b>	28.42 usft	<b>Northing:</b>	436,096.75 usft	<b>Latitude:</b>	32° 11' 47.033 N
	<b>+E/-W</b>	3,956.34 usft	<b>Easting:</b>	787,753.82 usft	<b>Longitude:</b>	103° 32' 12.191 W
<b>Position Uncertainty</b>		0.00 usft	<b>Wellhead Elevation:</b>	3,587.70 usft	<b>Ground Level:</b>	3,562.70 usft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2014	5/15/2015	7.26	60.06	48,157

<b>Design</b>	Plan #1				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00	
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	357.48	

<b>Plan Sections</b>										
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	
10,323.57	0.00	0.00	10,323.57	0.00	0.00	0.00	0.00	0.00	0.00	
11,239.57	91.60	357.48	10,896.30	588.39	-25.90	10.00	10.00	0.00	357.48	
15,404.91	91.60	357.48	10,780.00	4,748.07	-209.01	0.00	0.00	0.00	0.00	PBHL (BK23F 6H)



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 6H
Company:	DEVON ENERGY	TVD Reference:	3562.7 + 25' RKB @ 3587.70usft
Project:	Lea County, NM (NAD-83)	MD Reference:	3562.7 + 25' RKB @ 3587.70usft
Site:	Blue Krait 23 Fed	North Reference:	Grid
Well:	6H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #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	0.00
<b>SHL (BK23F 6H)</b>										
100.00	0.00	0.00	100.00	0.00	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	0.00
300.00	0.00	0.00	300.00	0.00	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	0.00
500.00	0.00	0.00	500.00	0.00	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	0.00
700.00	0.00	0.00	700.00	0.00	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	0.00
900.00	0.00	0.00	900.00	0.00	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	0.00
1,100.00	0.00	0.00	1,100.00	0.00	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	0.00
1,300.00	0.00	0.00	1,300.00	0.00	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	0.00
1,500.00	0.00	0.00	1,500.00	0.00	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	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,770.00	0.00	0.00	1,770.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Top Salt</b>										
1,800.00	0.00	0.00	1,800.00	0.00	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	0.00
2,000.00	0.00	0.00	2,000.00	0.00	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	0.00
2,200.00	0.00	0.00	2,200.00	0.00	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	0.00
2,400.00	0.00	0.00	2,400.00	0.00	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	0.00
2,600.00	0.00	0.00	2,600.00	0.00	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	0.00
2,800.00	0.00	0.00	2,800.00	0.00	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	0.00
3,000.00	0.00	0.00	3,000.00	0.00	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	0.00
3,200.00	0.00	0.00	3,200.00	0.00	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	0.00
3,400.00	0.00	0.00	3,400.00	0.00	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	0.00
3,600.00	0.00	0.00	3,600.00	0.00	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	0.00
3,800.00	0.00	0.00	3,800.00	0.00	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	0.00
4,000.00	0.00	0.00	4,000.00	0.00	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	0.00
4,200.00	0.00	0.00	4,200.00	0.00	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	0.00
4,400.00	0.00	0.00	4,400.00	0.00	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	0.00
4,600.00	0.00	0.00	4,600.00	0.00	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	0.00
4,800.00	0.00	0.00	4,800.00	0.00	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	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



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Site:	Blue Krait 23 Fed	North Reference:	Grid
Well:	6H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #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)	
5,090.00	0.00	0.00	5,090.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Base Salt</b>										
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5,190.00	0.00	0.00	5,190.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Delaware</b>										
5,200.00	0.00	0.00	5,200.00	0.00	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	0.00
5,400.00	0.00	0.00	5,400.00	0.00	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	0.00
5,600.00	0.00	0.00	5,600.00	0.00	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	0.00
5,800.00	0.00	0.00	5,800.00	0.00	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	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6,060.00	0.00	0.00	6,060.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Cherry Canyon</b>										
6,100.00	0.00	0.00	6,100.00	0.00	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	0.00
6,300.00	0.00	0.00	6,300.00	0.00	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	0.00
6,500.00	0.00	0.00	6,500.00	0.00	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	0.00
6,700.00	0.00	0.00	6,700.00	0.00	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	0.00
6,900.00	0.00	0.00	6,900.00	0.00	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	0.00
7,100.00	0.00	0.00	7,100.00	0.00	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	0.00
7,300.00	0.00	0.00	7,300.00	0.00	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	0.00
7,500.00	0.00	0.00	7,500.00	0.00	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	0.00
7,640.00	0.00	0.00	7,640.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Brushy Canyon</b>										
7,700.00	0.00	0.00	7,700.00	0.00	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	0.00
7,900.00	0.00	0.00	7,900.00	0.00	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	0.00
8,100.00	0.00	0.00	8,100.00	0.00	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	0.00
8,300.00	0.00	0.00	8,300.00	0.00	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	0.00
8,500.00	0.00	0.00	8,500.00	0.00	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	0.00
8,700.00	0.00	0.00	8,700.00	0.00	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	0.00
8,900.00	0.00	0.00	8,900.00	0.00	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	0.00
9,070.00	0.00	0.00	9,070.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>1st BS LM</b>										
9,100.00	0.00	0.00	9,100.00	0.00	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	0.00
9,245.00	0.00	0.00	9,245.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



LEAM Drilling Systems LLC

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 6H
Company:	DEVON ENERGY	TVD Reference:	3562.7 + 25' RKB @ 3587.70usft
Project:	Lea County, NM (NAD-83)	MD Reference:	3562.7 + 25' RKB @ 3587.70usft
Site:	Blue Krait 23 Fed	North Reference:	Grid
Well:	6H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #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)
<b>Leonard</b>									
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
10,323.57	0.00	0.00	10,323.57	0.00	0.00	0.00	0.00	0.00	0.00
<b>KOP 10° DLS</b>									
10,350.00	2.64	357.48	10,349.99	0.61	-0.03	0.61	10.00	10.00	0.00
10,400.00	7.64	357.48	10,399.77	5.09	-0.22	5.09	10.00	10.00	0.00
10,450.00	12.64	357.48	10,448.98	13.88	-0.61	13.89	10.00	10.00	0.00
10,500.00	17.64	357.48	10,497.23	26.92	-1.19	26.95	10.00	10.00	0.00
10,550.00	22.64	357.48	10,544.15	44.12	-1.94	44.16	10.00	10.00	0.00
10,600.00	27.64	357.48	10,589.40	65.34	-2.88	65.40	10.00	10.00	0.00
10,650.00	32.64	357.48	10,632.63	90.41	-3.98	90.50	10.00	10.00	0.00
10,700.00	37.64	357.48	10,673.50	119.16	-5.25	119.27	10.00	10.00	0.00
10,750.00	42.64	357.48	10,711.71	151.35	-6.66	151.50	10.00	10.00	0.00
10,800.00	47.64	357.48	10,746.96	186.75	-8.22	186.93	10.00	10.00	0.00
10,850.00	52.64	357.48	10,779.00	225.08	-9.91	225.30	10.00	10.00	0.00
10,900.00	57.64	357.48	10,807.56	266.06	-11.71	266.32	10.00	10.00	0.00
10,950.00	62.64	357.48	10,832.45	309.37	-13.62	309.67	10.00	10.00	0.00
11,000.00	67.64	357.48	10,853.46	354.68	-15.61	355.02	10.00	10.00	0.00
11,050.00	72.64	357.48	10,870.44	401.64	-17.68	402.03	10.00	10.00	0.00
11,100.00	77.64	357.48	10,883.25	449.91	-19.80	450.34	10.00	10.00	0.00
11,150.00	82.64	357.48	10,891.81	499.11	-21.97	499.59	10.00	10.00	0.00
11,200.00	87.64	357.48	10,896.04	548.86	-24.16	549.40	10.00	10.00	0.00
11,239.57	91.60	357.48	10,896.30	588.39	-25.90	588.96	10.00	10.00	0.00
<b>LP</b>									
11,300.00	91.60	357.48	10,894.62	648.74	-28.56	649.36	0.00	0.00	0.00
11,400.00	91.60	357.48	10,891.82	748.60	-32.95	749.32	0.00	0.00	0.00
11,500.00	91.60	357.48	10,889.03	848.46	-37.35	849.29	0.00	0.00	0.00
11,600.00	91.60	357.48	10,886.24	948.33	-41.75	949.25	0.00	0.00	0.00
11,700.00	91.60	357.48	10,883.45	1,048.19	-46.14	1,049.21	0.00	0.00	0.00
11,800.00	91.60	357.48	10,880.66	1,148.06	-50.54	1,149.17	0.00	0.00	0.00
11,900.00	91.60	357.48	10,877.86	1,247.92	-54.93	1,249.13	0.00	0.00	0.00
12,000.00	91.60	357.48	10,875.07	1,347.79	-59.33	1,349.09	0.00	0.00	0.00
12,100.00	91.60	357.48	10,872.28	1,447.65	-63.73	1,449.05	0.00	0.00	0.00
12,200.00	91.60	357.48	10,869.49	1,547.51	-68.12	1,549.01	0.00	0.00	0.00
12,300.00	91.60	357.48	10,866.69	1,647.38	-72.52	1,648.97	0.00	0.00	0.00
12,400.00	91.60	357.48	10,863.90	1,747.24	-76.91	1,748.93	0.00	0.00	0.00
12,500.00	91.60	357.48	10,861.11	1,847.11	-81.31	1,848.90	0.00	0.00	0.00
12,600.00	91.60	357.48	10,858.32	1,946.97	-85.71	1,948.86	0.00	0.00	0.00
12,700.00	91.60	357.48	10,855.53	2,046.84	-90.10	2,048.82	0.00	0.00	0.00
12,800.00	91.60	357.48	10,852.73	2,146.70	-94.50	2,148.78	0.00	0.00	0.00
12,900.00	91.60	357.48	10,849.94	2,246.56	-98.89	2,248.74	0.00	0.00	0.00
13,000.00	91.60	357.48	10,847.15	2,346.43	-103.29	2,348.70	0.00	0.00	0.00
13,100.00	91.60	357.48	10,844.36	2,446.29	-107.69	2,448.66	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 6H
Company:	DEVON ENERGY	TVD Reference:	3562.7 + 25' RKB @ 3587.70usft
Project:	Lea County, NM (NAD-83)	MD Reference:	3562.7 + 25' RKB @ 3587.70usft
Site:	Blue Krait 23 Fed	North Reference:	Grid
Well:	6H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #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)	
13,200.00	91.60	357.48	10,841.56	2,546.16	-112.08	2,548.62	0.00	0.00	0.00	
13,300.00	91.60	357.48	10,838.77	2,646.02	-116.48	2,648.58	0.00	0.00	0.00	
13,400.00	91.60	357.48	10,835.98	2,745.89	-120.87	2,748.54	0.00	0.00	0.00	
13,500.00	91.60	357.48	10,833.19	2,845.75	-125.27	2,848.51	0.00	0.00	0.00	
13,600.00	91.60	357.48	10,830.40	2,945.61	-129.67	2,948.47	0.00	0.00	0.00	
13,700.00	91.60	357.48	10,827.60	3,045.48	-134.06	3,048.43	0.00	0.00	0.00	
13,800.00	91.60	357.48	10,824.81	3,145.34	-138.46	3,148.39	0.00	0.00	0.00	
13,900.00	91.60	357.48	10,822.02	3,245.21	-142.85	3,248.35	0.00	0.00	0.00	
14,000.00	91.60	357.48	10,819.23	3,345.07	-147.25	3,348.31	0.00	0.00	0.00	
14,100.00	91.60	357.48	10,816.44	3,444.94	-151.65	3,448.27	0.00	0.00	0.00	
14,200.00	91.60	357.48	10,813.64	3,544.80	-156.04	3,548.23	0.00	0.00	0.00	
14,300.00	91.60	357.48	10,810.85	3,644.66	-160.44	3,648.19	0.00	0.00	0.00	
14,400.00	91.60	357.48	10,808.06	3,744.53	-164.83	3,748.15	0.00	0.00	0.00	
14,500.00	91.60	357.48	10,805.27	3,844.39	-169.23	3,848.12	0.00	0.00	0.00	
14,600.00	91.60	357.48	10,802.47	3,944.26	-173.63	3,948.08	0.00	0.00	0.00	
14,700.00	91.60	357.48	10,799.68	4,044.12	-178.02	4,048.04	0.00	0.00	0.00	
14,800.00	91.60	357.48	10,796.89	4,143.99	-182.42	4,148.00	0.00	0.00	0.00	
14,900.00	91.60	357.48	10,794.10	4,243.85	-186.81	4,247.96	0.00	0.00	0.00	
15,000.00	91.60	357.48	10,791.31	4,343.71	-191.21	4,347.92	0.00	0.00	0.00	
15,100.00	91.60	357.48	10,788.51	4,443.58	-195.61	4,447.88	0.00	0.00	0.00	
15,200.00	91.60	357.48	10,785.72	4,543.44	-200.00	4,547.84	0.00	0.00	0.00	
15,300.00	91.60	357.48	10,782.93	4,643.31	-204.40	4,647.80	0.00	0.00	0.00	
15,404.90	91.60	357.48	10,780.00	4,748.07	-209.01	4,752.66	0.00	0.00	0.00	

**TD - PBHL (BK23F 6H)**

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
SHL (BK23F 6H) - hit/miss target - Shape - Point	0.00	0.00	0.00	0.00	0.00	436,096.75	787,753.82	32° 11' 47.033 N	103° 32' 12.191 W	
PBHL (BK23F 6H) - plan hits target center - Point	0.00	0.01	10,780.00	4,748.07	-209.01	440,844.82	787,544.81	32° 12' 34.031 N	103° 32' 14.214 W	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,770.00	1,770.00	Top Salt		0.00		
5,090.00	5,090.00	Base Salt		0.00		
5,190.00	5,190.00	Delaware		0.00		
6,060.00	6,060.00	Cherry Canyon		0.00		
7,640.00	7,640.00	Brushy Canyon		0.00		
9,070.00	9,070.00	1st BS LM		0.00		
9,245.00	9,245.00	Leonard		0.00		



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 6H
Company:	DEVON ENERGY	TVD Reference:	3562.7 + 25' RKB @ 3587.70usft
Project:	Lea County, NM (NAD-83)	MD Reference:	3562.7 + 25' RKB @ 3587.70usft
Site:	Blue Krait 23 Fed	North Reference:	Grid
Well:	6H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,323.57	10,323.57	0.00	0.00	KOP 10° DLS
11,239.57	10,896.30	588.39	-25.90	LP
15,404.90	10,780.00	4,748.07	-209.01	TD



Fluid Technology

ContiTech Beattie Corp.  
Website: [www.contitechbeattie.com](http://www.contitechbeattie.com)

Monday, June 14, 2010

RE: Drilling & Production Hoses  
Lifting & Safety Equipment

To Helmerich & Payne,

A Continental ContiTech hose assembly can perform as intended and suitable for the application regardless of whether the hose is secured or unsecured in its configuration. As a manufacturer of High Pressure Hose Assemblies for use in Drilling & Production, we do offer the corresponding lifting and safety equipment, this has the added benefit of easing the lifting and handling of each hose assembly whilst affording hose longevity by ensuring correct handling methods and procedures as well as securing the hose in the unlikely event of a failure; but in no way does the lifting and safety equipment affect the performance of the hoses providing the hoses have been handled and installed correctly. It is good practice to use lifting & safety equipment but not mandatory.

Should you have any questions or require any additional information/clarifications then please do not hesitate to contact us.

ContiTech Beattie is part of the Continental AG Corporation and can offer the full support resources associated with a global organization.

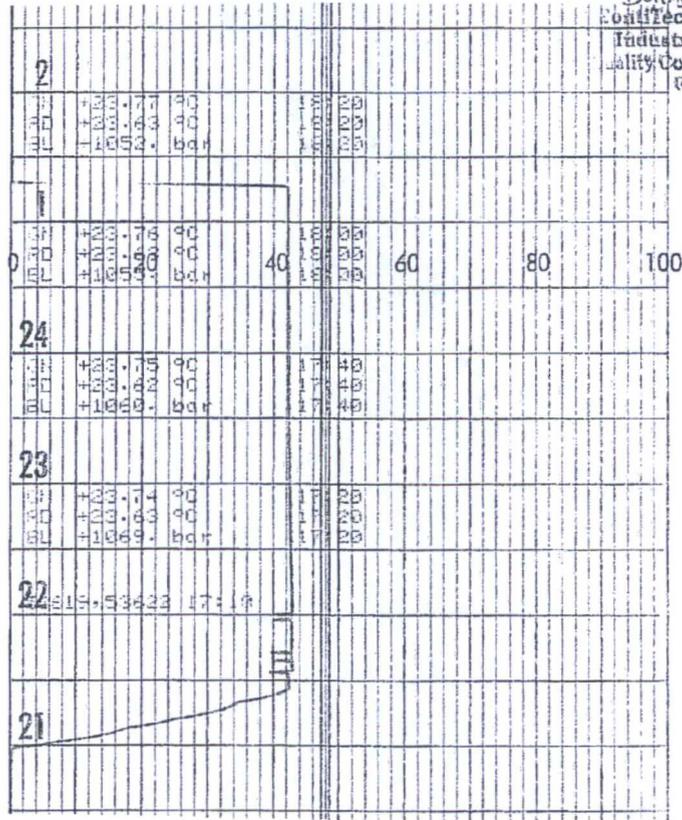
Best regards,

Robin Hodgson  
Sales Manager  
ContiTech Beattie Corp

ContiTech Beattie Corp,  
11535 Brittnoore Park Drive,  
Houston, TX 77041  
Phone: +1 (832) 327-0141  
Fax: +1 (832) 327-0148  
[www.contitechbeattie.com](http://www.contitechbeattie.com)

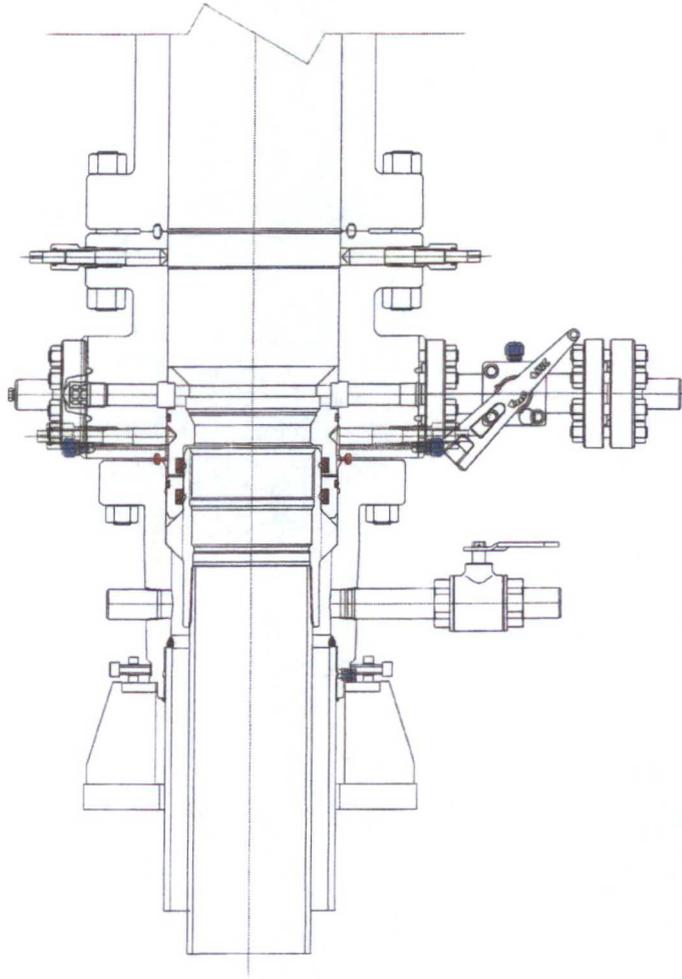


HARTMANN &



KonifTech Rubber  
 Industrial Kft.  
 Quality Control Dept.  
 (2)

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 1713												
PURCHASER: ContiTech Beattie Co.			P.O. N°: 002808													
CONTITECH ORDER N°: 426127		HOSE TYPE: 3" ID		Choke and Kill Hose												
HOSE SERIAL N°: 53622		NOMINAL / ACTUAL LENGTH: 10,67 m														
W.P. 68,96 MPa 10000 psi		T.P. 103,4 MPa 15000 psi		Duration: 60 min.												
<p>Pressure test with water at ambient temperature</p> <p style="text-align: center;">See attachment. (1 page)</p> <p>↑ 10 mm = 10 Min. → 10 mm = 25 MPa</p> <table border="1"> <thead> <tr> <th>COUPLINGS Type</th> <th>Serial N°</th> <th>Quality</th> <th>Heat N°</th> </tr> </thead> <tbody> <tr> <td>3" coupling with 4 1/16" Flange end</td> <td>5503 2029</td> <td>AISI 4130 AISI 4130</td> <td>N1590P 27566</td> </tr> </tbody> </table> <p><b>INFOCHIP INSTALLED</b> <span style="float: right;"><b>API Spec 16 C</b> <b>Temperature rate:"B"</b></span></p> <p>All metal parts are flawless <span style="float: right;"><b>Hose conform to NACE MR 01-75</b></span></p> <p><b>WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER INSPECTED AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.</b></p> <p>STATEMENT OF CONFORMITY: We hereby certify that the above items/equipment supplied by us are in conformity with the terms, conditions and specifications of the above Purchaser Order and that these items/equipment were fabricated inspected and tested in accordance with the referenced standards, codes and specifications and meet the relevant acceptance criteria and design requirements.</p> <p style="text-align: center;">COUNTRY OF ORIGIN HUNGARY/EU</p> <table border="1"> <tr> <td>Date:  25. August. 2008</td> <td>Inspector</td> <td>Quality Control  ContiTech Rubber Industrial Kft. Quality Control Dept. <i>(Signature)</i></td> </tr> </table>						COUPLINGS Type	Serial N°	Quality	Heat N°	3" coupling with 4 1/16" Flange end	5503 2029	AISI 4130 AISI 4130	N1590P 27566	Date:  25. August. 2008	Inspector	Quality Control  ContiTech Rubber Industrial Kft. Quality Control Dept. <i>(Signature)</i>
COUPLINGS Type	Serial N°	Quality	Heat N°													
3" coupling with 4 1/16" Flange end	5503 2029	AISI 4130 AISI 4130	N1590P 27566													
Date:  25. August. 2008	Inspector	Quality Control  ContiTech Rubber Industrial Kft. Quality Control Dept. <i>(Signature)</i>														

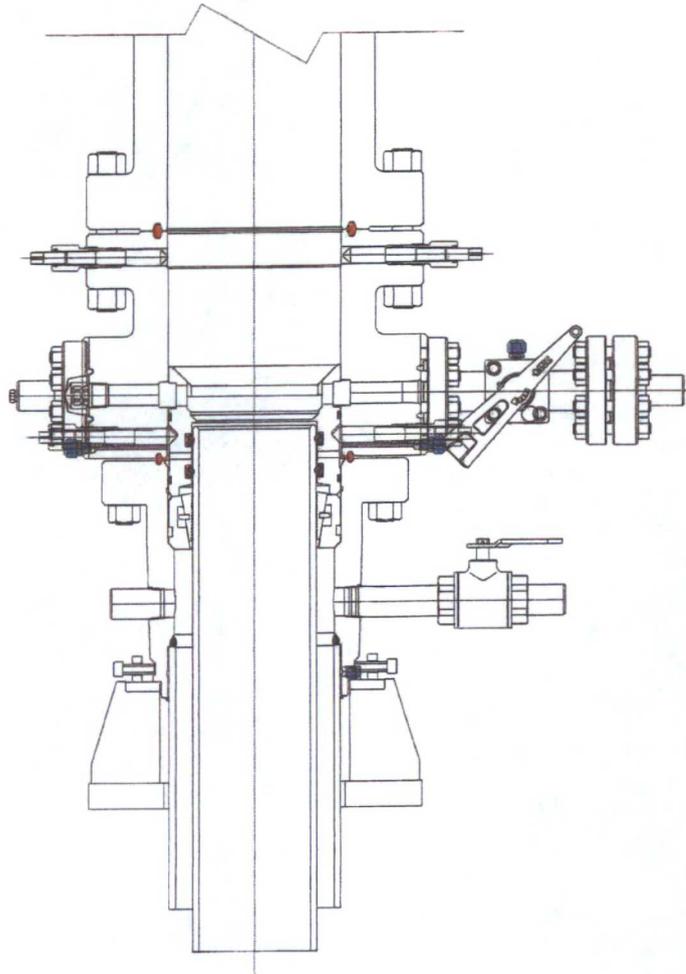


PRIMARY MODE

**DEVON ENERGY**  
 ARTESIA  
 S.E.N.M  
 13 3/8 X 9 5/8

QUOTE LAYOUT  
 F18648  
 REF: DM100161737  
 DM100151315

<p><b>PRIVATE AND CONFIDENTIAL</b></p> <p>THIS DOCUMENT AND ALL THE INFORMATION CONTAINED HEREIN ARE THE CONFIDENTIAL AND EXCLUSIVE PROPERTY OF FMC TECHNOLOGIES AND MAY NOT BE REPRODUCED, USED, DISCLOSED, OR MADE PUBLIC IN ANY MANNER WITHOUT EXPRESS WRITTEN AUTHORIZATION BY FMC TECHNOLOGIES. THIS DOCUMENT IS ACCEPTED BY RECIPIENT PURSUANT TO AGREEMENT TO THE FOREGOING, AND MUST BE RETURNED UPON DEMAND.</p> <p>MANUFACTURER AGREES THAT ARTICLES MADE IN ACCORDANCE WITH THIS DOCUMENT SHALL BE CONSIDERED FMC TECHNOLOGIES DESIGN AND THAT IDENTICAL ARTICLES OR PARTS THEREOF SHALL NOT BE MANUFACTURED FOR THE USE OR SALE BY MANUFACTURER OR ANY OTHER PERSON WITHOUT THE PRIOR EXPRESS WRITTEN AUTHORIZATION BY FMC TECHNOLOGIES</p>	<p>REVISIONS</p> <p>A 05-08-13</p> <p>B 1-22-14</p> <p>C 5-13-14</p>	<p>DESCRIPTION</p> <p>SURFACE WELLHEAD LAYOUT              UNIHEAD, UH-1, SOW,              DEVON ENERGY, ODESSA</p>	<p>DRAWN BY</p> <p>K. VU 05-08-13</p>	<p><b>FMC</b> Technologies</p> <p>DRAWING NUMBER</p> <p>DM100161771-2A</p>
			<p>GRADING REVIEW</p> <p>Z. MARQUEZ 05-08-13</p>	
			<p>DESIGN REVIEW</p> <p>K. TAHA 05-08-13</p>	
			<p>APPROVED BY</p> <p>R. HAMILTON 05-08-13</p>	



CONTINGENCY MODE

DEVON ENERGY  
ARTESIA  
S.E.N.M  
13 3/8 X 9 5/8

QUOTE LAYOUT  
F18648  
REF: DM100161737  
DM100151315

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			<p>CHECKED BY</p> <p>Z. MARQUEZ 05-08-13</p>	
			<p>DESIGN REVIEW</p> <p>K. TAHA 05-08-13</p>	
			<p>APPROVED BY</p> <p>R. HAMILTON 05-08-13</p>	



Commitment Runs Deep



Design Plan  
Operation and Maintenance Plan  
Closure Plan

SENM - Closed Loop Systems  
February 2015

## I. Design Plan

Devon uses MI SWACO closed loop system (CLS). The MI SWACO CLS is designed to maintain drill solids at or below 5%. The equipment is arranged to progressively remove solids from the largest to the smallest size. Drilling fluids can thus be reused and savings is realized on mud and disposal costs. Dewatering may be required with the centrifuges to insure removal of ultra fine solids.

The drilling location is constructed to allow storm water to flow to a central sump normally the cellar. This insures no contamination leaves the drilling pad in the event of a spill. Storm water is reused in the mud system or stored in a reserve fluid tank farm until it can be reused. All lubricants, oils, or chemicals are removed immediately from the ground to prevent the contamination of storm water. An oil trap is normally installed on the sump if an oil spill occurs during a storm.

A tank farm is utilized to store drilling fluids including fresh water and brine fluids. The tank farm is constructed on a 20 ml plastic lined, bermed pad to prevent the contamination of the drilling site during a spill. Fluids from other sites may be stored in these tanks for processing by the solids control equipment and reused in the mud system. At the end of the well the fluids are transported from the tank farm to an adjoining well or to the next well for the rig.

Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

Signs will be posted on the fence surrounding the closed-loop system unless the closed-loop system is located on a site where there is an existing well, that is operated by Devon.

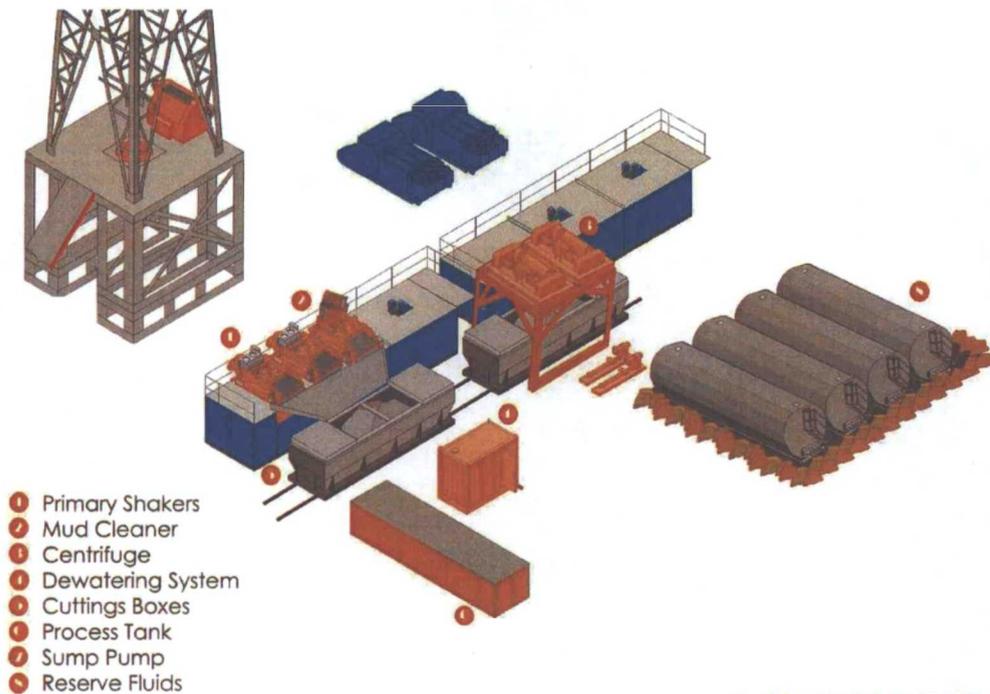
## II. Operations and Maintenance Plan

*Primary Shakers:* The primary shakers make the first removal of drill solids from the drilling mud as it leaves the well bore. The shakers are sized to handle maximum drilling rate at optimal screen size. The shakers normally remove solids down to 74 microns.

**Mud Cleaner:** The Mud Cleaner cleans the fluid after it leaves the shakers. A set of hydrocyclones are sized to handle 1.25 to 1.5 times the maximum circulating rate. This ensures all the fluid is being processed to an average cut point of 25 microns. The wet discharged is dewatered on a shaker equipped with ultra fine mesh screens and generally cut at 40 microns.



### Closed Loop Schematic



**Centrifuges:** The centrifuges can be one or two in number depending on the well geometry or depth of well. The centrifuges are sized to maintain low gravity solids at 5% or below. They may or may not need a dewatering system to enhance the removal rates. The centrifuges can make a cut point of 8-10 microns depending on bowl speed, feed rate, solids loading and other factors.

The centrifuge system is designed to work on the active system and be flexible to process incoming fluids from other locations. This set-up is also dependant on well factors.

**Dewatering System:** The dewatering system is a chemical mixing and dosing system designed to enhance the solids removal of the centrifuge. Not commonly used in shallow wells. It may contain pH adjustment, coagulant mixing and dosing, and polymer mixing and dosing. Chemical flocculation binds ultra fine solids into a mass that is within the centrifuge operating design. The

dewatering system improves the centrifuge cut point to infinity or allows for the return of clear water or brine fluid. This ability allows for the ultimate control of low gravity solids.

*Cuttings Boxes:* Cuttings boxes are utilized to capture drill solids that are discarded from the solids control equipment. These boxes are set upon a rail system that allows for the removal and replacement of a full box of cuttings with an empty one. They are equipped with a cover that insures no product is spilled into the environment during the transportation phase.

*Process Tank:* (Optional) The process tank allows for the holding and process of fluids that are being transferred into the mud system. Additionally, during times of lost circulation the process tank may hold active fluids that are removed for additional treatment. It can further be used as a mixing tank during well control conditions.

*Sump and Sump Pump:* The sump is used to collect storm water and the pump is used to transfer this fluid to the active system or to the tank for to hold in reserve. It can also be used to collect fluids that may escape during spills. The location contains drainage ditches that allow the location fluids to drain to the sump.

*Reserve Fluids (Tank Farm):* A series of frac tanks are used to replace the reserve pit. These are steel tanks that are equipped with a manifold system and a transfer pump. These tanks can contain any number of fluids used during the drilling process. These can include fresh water, cut brine, and saturated salt fluid. The fluid can be from the active well or reclaimed fluid from other locations. A 20 ml liner and berm system is employed to ensure the fluids do not migrate to the environment during a spill.

If a leak develops, the appropriate division district office will be notified within 48 hours of the discovery and the leak will be addressed. Spill prevention is accomplished by maintaining pump packing, hoses, and pipe fittings to insure no leaks are occurring. During an upset condition the source of the spill is isolated and repaired as soon as it is discovered. Free liquid is removed by a diaphragm pump and returned to the mud system. Loose topsoil may be used to stabilize the spill and the contaminated soil is excavated and placed in the cuttings boxes. After the well is finished and the rig has moved, the entire location is scrapped and testing will be performed to determine if a release has occurred.

All trash is kept in a wire mesh enclosure and removed to an approved landfill when full. All spent motor oils are kept in separate containers and they are removed and sent to an approved recycling center. Any spilled lubricants, pipe

dope, or regulated chemicals are removed from soil and sent to landfills approved for these products.

These operations are monitored by Mi Swaco service technicians. Daily logs are maintained to ensure optimal equipment operation and maintenance. Screen and chemical use is logged to maintain inventory control. Fluid properties are monitored and recorded and drilling mud volumes are accounted for in the mud storage farm. This data is kept for end of well review to insure performance goals are met. Lessons learned are logged and used to help with continuous improvement.

A MI SWACO field supervisor manages from 3-5 wells. They are responsible for training personnel, supervising installations, and inspecting sites for compliance of MI SWACO safety and operational policy.

### **III. Closure Plan**

A maximum 340' X 340' caliche pad is built per well. All of the trucks and steel tanks fit on this pad. All fluid cuttings go to the steel tanks to be hauled by various trucking companies to an agency approved disposal.

# H&P Flex Rig Location Layout

## 3 Well Pad

