1. Casing Program:

Hole Size	Hole Interval	Casing OD	Casing Interval	Weight	Collar	Grade
17-1/2"	0-2,100'	13-3/8"	0 – 2,100'	54.5#	BTC	J-55
12-1/4"	2,100' - 3,300'	9-5/8"	0 - 3,300	36#	BTC	J-55
8-3/4"	3,300' – 13,762'	5-1/2"	0-13,762'	17#	BTC	P-110

Maximum TVD in lateral: 9,299 ft

2. Design Factors:

Casing Size	Collapse Design Factor	Burst Design Factor	Tension Design Factor
13-3/8"	1.18	2.85	8.14
9-5/8"	1.50	2.30	3.94
5-1/2"	1.72	2.44	3.45

3. Cement Program:

Cementing Program (cement volumes based on at least 25% excess)

String	Number of sx	Weight lbs/gal	Water Volume g/sx	Yield cf/sx	Stage; Lead/Tail	Slurry Description
13-3/8"	1260	13.5	9.08	1.72	Lead	Class C Cement + 0.125 lbs/sack Poly-E-Flake + 4% bwoc Bentonite + 70.1% Fresh Water
Surface	560	14.8	6.32	1.33	Tail	Class C Cement + 63.5% Fresh Water
9-5/8" Intermediate	500	12.9	9.81	1.85	Lead	(65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 Ibs/sack Poly-E-Flake + 70.9 % Fresh Water
	430	14.8	6.32	1.33	Tail	Class C Cement + 63.5% Fresh Water
Pilot Hole Plug Back	540	15.6	5.39	1.19	Plug Cement	Class H Cement + 0.2% Halad-9 + 0.2% HR-601 + 60.5 % Fresh Water
5-1/2" Production	680	11.0	15.23	2.71	Lead	Tuned Light Blend + 0.125 lb/sk Pol-E-Flake + 76.3% Fresh Water
Casing Single Stage	1340	14.5	5.32	1.21	Tail	(50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.25% bwoc CFR-3 + 0.1% bwoc HR-601 + 2% bwoc Bentonite + 58.8% Fresh Water

	510	12.5	10.86	1.96	Lead	(65:35) Class H Cement: Poz (Fly Ash) + 6% BWOC Bentonite + 0.25% BWOC HR-601 + 0.125 lbs/sack Poly- E-Flake + 74.1 % Fresh Water
5-1/2" Production Casing	1340	14.5	5.38	1.22	Tail	(50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.25% bwoc CFR-3 + 0.1% bwoc HR-601 + 2% bwoc Bentonite + 58.8% Fresh Water
2-Stage					DV Too	@ 5600ft
Option	310	11.9	12.89	2.26	Lead	(50:50) Class H Cement: Poz (Fly Ash) + 10% BWOC Bentonite + 1 lb/sk of Kol-Seal + 0.3% BWOC HR-601 + 0.5lb/sk D-Air 5000 + 76.4% Fresh Water
	120	14.8	6.32	1.33	Tail	Class C Cement + 0.125 lbs/sack Poly-E-Flake + 63.5% Fresh Water

TOC for all Strings:

13-3/8" Surface

0ft

9-5/8" Intermediate

0ft

Pilot Hole Plug Back

8514ft

5-1/2" Production Single Stage

2800ft

5-1/2" Production 2-Stage

Stage #1 = 5600ft

Stage #2 = 2800ft

Notes:

- Cement volumes Surface 100%, Intermediate 75%, Pilot 10% and Production based on at least 25% excess
- Actual cement volumes will be adjusted based on fluid caliper and caliper log data
- If lost circulation is encountered while drilling the production and/or the intermediate wellbores, a DV tool will be installed a minimum of 50' below the previous casing shoe and a minimum of 200' above the current shoe. If the DV tool has to be moved, the cement volumes will be adjusted proportionately. Both single and double stage proposals are listed in the cement table.

4. Pressure Control Equipment

A 3M 13-5/8" BOP system (Double Ram and Annular preventer) will be installed and tested prior to drilling out the surface casing shoe. The BOP system used to drill the intermediate hole will be tested per BLM Onshore Oil and Gas Order 2.

A 3M 13-5/8" BOP system (Double Ram and Annular preventer) will be installed and tested prior to drilling out the intermediate casing shoe. The BOP system used to drill the production hole will be tested per BLM Onshore Oil and Gas Order 2.

The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at 3,000 psi WP.

Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns.

5. Proposed Mud Circulation System:

Depth Range	Mud Weight	Viscosity	Fluid Loss	Type System
0 - 2050'	8.4-9.0	30-34	N/C	FW
2050' - 3,300'	9.8-10.0	28-32	N/C	Brine
3,300' – 13,762'	8.6-9.0	28-32	N/C	FW

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

6. Auxiliary Well Control and Monitoring Equipment:

- a. A Kelly cock will be in the drill string at all times.
- b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.
- c. Hydrogen Sulfide detection equipment will be in operation after drilling out the 13-3/8" casing shoe until the 5-1/2" casing is cemented. Breathing equipment will be on location upon drilling the 13-3/8" shoe until total depth is reached.



devon

LEGEND

- Airpath C101, Original Hole, Original Hole V0

- Design #1

Project: Lea County (NAD83)

Site: Dopplebock 8 State Com 1H Well: Dopplebock 8 State Com 1H

> Original Hole Design #1



Azimuths to Grid North True North: -0.52° Magnetic North: 6.79°

Magnetic Field Strength: 48647.0snT Dip Angle: 60.61° Date: 2/24/2014 Model: BGGM2012

-1000

South(-)/North(+) (1000 usft/in) -3000

US State Plane 1983 New Mexico Eastern Zone

PATHENDER.

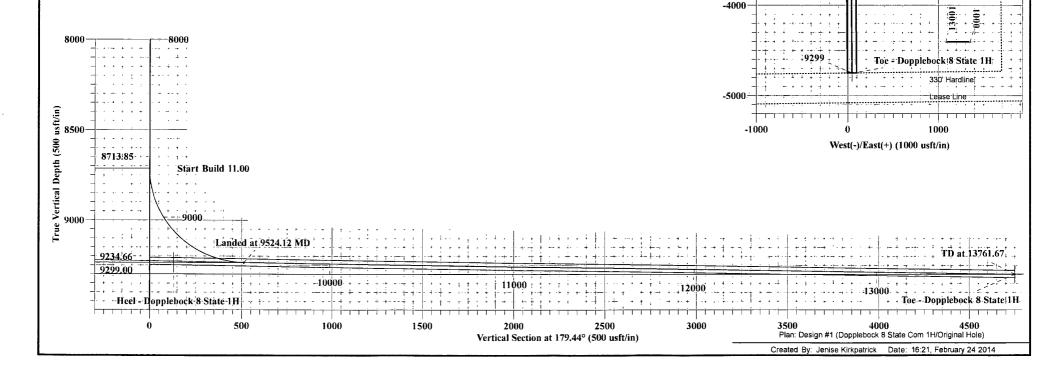
A Schlumberger Company

WELL DETAILS: Dopplebock 8 State Com 1H

+N/-S +E/-W Northing Easting Latitude Longitude 0.00 0.00 6.404747.23 83603.31 32 87 .592 N 103*22*28.494 W

SECTION DETAILS

Sec	MD	inc	Azi	TVD	+N/-S	+E/-W	Dlea	TFace	VSect	Target
4	0.00	0.00	0.00							larget
				0.00	0.00	0.00	0.00	0.00	0.00	
2	8713.85	0.00	0.00	8713.85	0.00	0.00	0.00	0.00	0.00	
~										
3	9524.12	89.13	179.44	9234.66	-512.94	5.04	11.00	179.44	512.96	
Λ	13761.67	89.13	179.44	9299.00	-4749.79	46.70	0.00	0.00	4750.02	Toe - Dopplebock 8 State 1H
7	10101.07	00.10	173,44	0205,00		40.70	0.00	0.00	47.00.02	IOE - DOPPIEDOCK O STATE IN



Devon Energy, Inc.

Lea County (NAD83)
Dopplebock 8 State Com 1H
Dopplebock 8 State Com 1H

Original Hole

Plan: Design #1

Standard Planning Report

24 February, 2014

Pathfinder - A Schlumberger Company

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Dopplebock 8 State Com 1H
Company:	Devon Energy, Inc.	TVD Reference:	WELL @ 3867.00usft (Original Well Elev)
Project:	Lea County (NAD83)	MD Reference:	WELL @ 3867.00usft (Original Well Elev)
Site:	Dopplebock 8 State Com 1H	North Reference:	Grid
Well:	Dopplebock 8 State Com 1H	Survey Calculation Method:	Minimum Curvature
Nellbore:	Original Hole	,	
Design:	Design #1		

Project	Lea County (NAD83)			
Map System: Geo Datum: Map Zone:	US State Plane 1983 North American Datum 1983 New Mexico Eastern Zone	System Datum:	Mean Sea Level	

Site	Dopplebock 8	State Com 1H				Color to the color
Site Position:			Northing:	644,747.23 usft	Latitude:	32° 46' 7.592 N
From:	Map		Easting:	836,038.31 usft	Longitude:	103° 22' 28.494 W
Position Uncertainty:		0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.52°

Well	Dopplebock	8 State Com 1H	and the second s		kalanda ay ay katalan kalanda ay katalan kalanda ay kalanda ay kalanda ay kalanda ay kalanda ay kalanda ay kal Kalanda ay kalanda ay	The same of the sa
Well Position	+N/-S	0.00 usft	Northing:	644,747.23 usft	Latitude:	32° 46' 7.592 N
	+E/-W	0.00 usft	Easting:	836,038.31 usft	Longitude:	103° 22' 28.494 W
Position Uncertaint	у	0.00 usft	Wellhead Elevation:	3,867.00 usft	Ground Level:	3,840.00 usft

Wellbore	Original Hole			The second secon	From the incompany series (1.5) the southern are found the construction of southern and the construction of the construction o
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2012	2/24/2014	7.31	60.61	48,647

Design	Design #1		الراجية ساليسانية	e ja ja ja paganja geografija	
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(usft)	(usft)	(usft)	(°)	
	0.00	0.00	0.00	179.44	

Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	T
(usft)		(°)	(usft)	(usft)	(usft) 0.00	(°/100usft) 0.00	(°/100usft)	(°/100usft)	(°) 0.00	Target
0.00 8,713.85	0.00 0.00	0.00 0.00	0.00 8,713.85	0.00 0.00	0.00	0.00	0.00 0.00	0.00 0.00	0.00	
9,524.12	89.13	179.44	9,234.66	-512.94	5.04	11.00	11.00	0.00	179.44	
13,761.67	89.13	179.44	9,299.00	-4,749.79	46.70	0.00	0.00	0.00	0.00	Toe - Dopplebock 8

Pathfinder - A Schlumberger Company

Planning Report

Database: EDM 5000.1 Single User Db

Company: Devon Energy, Inc.
Project: Lea County (NAD83)

Site: Dopplebock 8 State Com 1H
Well: Dopplebock 8 State Com 1H

Wellbore: Original Hole

Local Co-ordinate Reference:

TVD Reference:

North Reference: Survey Calculation Method: Well Dopplebock 8 State Com 1H

WELL @ 3867.00usft (Original Well Elev)
WELL @ 3867.00usft (Original Well Elev)

Grid

Minimum Curvature

Design:	Design #1								and the second s
Planned Survey	1			A CONTRACT OF STREET	The second of th				The second of th
Measured			Vertical			Vertical	Dogleg	Build	Turn
Depth (usft)	Inclinațion (°)	Az i muth (°)	Depth (usft)	+N/-S (usft)	+E/-W (usft)	Section (usft)	Rate (°/100usft)	Rate (°/100usft)	Rate (°/100usft)
8,700.00	0.00	0.00	8,700.00	0.00	0.00	0.00	0.00	0.00	0.00
8,713.85	0.00	0.00	8,713.85	0.00	0.00	0.00	0.00	0.00	0.00
8,800.00	9.48	179.44	8,799.61	-7.11	0.07	7.11	11.00	11.00	0.00
8,900.00	20.48	179.44	8,896.06	-32.91	0.32	32.91	11.00	11.00	0.00
9,000.00	31.48	179.44	8,985.82	-76.64	0.75	76.65	11.00	11.00	0.00
9,100.00	42.48	179.44	9,065.59	-136.70	1.34	136.70	11.00	11.00	0.00
9,200.00	53.48	179.44	9,132.43	-210.87					
•					2.07	210.88	11.00	11.00	0.00
9,300.00	64.48	179.44	9,183.89	-296.43	2.91	296.44	11.00	11.00	0.00
9,400.00	75.48	179.44	9,218.07	-390.23	3.84	390.25	11.00	11.00	0.00
9,500.00	86.48	179.44	9,233.73	-488.84	4.81	488.86	11.00	11.00	0.00
9,519.74	88.65	179.44	9,234.57	-508.56	5.00	508.58	11.00	11.00	0.00
Target Line			-,	333,33	0.00	000.00	11.00	71.00	0.00
•		470.44	0.224.66	542.04	5.04	C40.00	44.00	44.00	0.00
9,524.12	89.13	179.44	9,234.66	-512.94	5.04	512.96	11.00	11.00	0.00
9,600.00	89.13	179.44	9,235.81	-588.80	5.79	588.83	0.00	0.00	0.00
9,700.00	89.13	179.44	9,237.33	-688.79	6.77	688.82	0.00	0.00	0.00
9,800.00	89.13	179.44	9,238.85	-788.77	7.76	788.81	0.00	0.00	0.00
9,900.00	89.13	179.44	9,240.37	-888.76	8.74	888.80	0.00	0.00	0.00
10,000.00	89.13	179.44	9,241.88	-988.74	9.72	988.79	0.00	0.00	0.00
10,100.00	89.13	179.44	9,243.40	-1,088.72	10.70	1,088.78	0.00	0.00	0.00
			9,243.40	-1,000.72	10.70	1,000.70	0.00	0.00	0.00
10,200.00	89.13	179.44	9,244.92	-1,188.71	11.69	1,188.76	0.00	0.00	0.00
10,300.00	89.13	179.44	9,246.44	-1,288.69	12.67	1,288.75	0.00	0.00	0.00
10,400.00	89.13	179.44	9,247.96	-1,388.67	13.65	1,388.74	0.00	0.00	0.00
10,500.00	89.13	179.44	9,249.48	-1,488.66	14.64	1,488.73	0.00	0.00	0.00
10,600.00	89.13	179.44	9,250.99	-1,588.64	15.62	1,588.72	0.00	0.00	0.00
	00.10			1,000.04	13.02	1,500.72	0.00	0.00	0.00
10,700.00	89.13	179.44	9,252.51	-1,688.62	16.60	1,688.71	0.00	0.00	0.00
10,800.00	89.13	179.44	9,254.03	-1,788.61	17.59	1,788.69	0.00	0.00	0.00
10,900.00	89.13	179.44	9,255.55	-1,888.59	18.57	1,888.68	0.00	0.00	0.00
11,000.00	89.13	179.44	9,257.07	-1,988.58	19.55	1,988.67	0.00	0.00	0.00
11,100.00	89.13	179.44	9,258.59	-2,088.56	20.53	2,088.66	0.00	0.00	0.00
11,200.00	89.13	179.44	9,260.10	-2,188.54	21.52	2,188.65	0.00	0.00	0.00
11,300.00	89.13	179.44	9,261.62	-2,288.53	22.50	2,288.64	0.00	0.00	0.00
11,400.00	89.13	179.44	9,263.14	-2,388.51	23.48	2,388.63	0.00	0.00	0.00
11,500.00	89.13	179.44	9,264.66	-2,488.49	24.47	2,488.61	0.00	0.00	0.00
11,600.00	89.13	179.44	9,266.18	-2,588.48	25.45	2,588.60	0.00	0.00	0.00
11,700.00	89.13	179.44	9,267.70	-2,688.46	20.42	2 699 50	0.00	0.00	0.00
					26.43	2,688.59	0.00	0.00	0.00
11,800.00	89.13	179.44	9,269.21	-2,788.44	27.42	2,788.58	0.00	0.00	0.00
11,900.00	89.13	179.44	9,270.73	-2,888.43	28.40	2,888.57	0.00	0.00	0.00
12,000.00	89.13	179.44	9,272.25	-2,988.41	29.38	2,988.56	0.00	0.00	0.00
12,100.00	89.13	179.44	9,273.77	-3,088.40	30.37	3,088.54	0.00	0.00	0.00
12,200.00	89.13	179.44	9.275.29	-3,188.38	31.35	3,188.53	0.00	0.00	0.00
12,300.00	89.13	179.44	9,276.81	-3,288.36	32.33	3,288.52	0.00	0.00	0.00
12,400.00	89.13	179.44	9,278.32	-3,388.35	33.31	3,388.51	0.00	0.00	
12,500.00	89.13	179.44	9,279.84						0.00
,				-3,488.33	34.30	3,488.50	0.00	0.00	0.00
12,600.00	89.13	179.44	9,281.36	-3,588.31	35.28	3,588.49	0.00	0.00	0.00
12,700.00	89.13	179.44	9,282.88	-3,688.30	36.26	3,688.48	0.00	0.00	0.00
12,800.00	89.13	179.44	9,284.40	-3,788.28	37.25	3,788.46	0.00	0.00	0.00
12,900.00	89.13	179.44	9,285.92	-3,888.26	38.23	3,888.45	0.00	0.00	0.00
13,000.00	89.13	179.44	9,287.44	-3,988.25	39.21	3,988.44	0.00	0.00	0.00
13,100.00	89.13	179.44	9,288.95	-3,966.23 -4,088.23					
	05.13		3,200.30	-4,000.23	40.20	4,088.43	0.00	0.00	0.00
13,200.00	89.13	179.44	9,290.47	-4,188.22	41.18	4,188.42	0.00	0.00	0.00
13,300.00	89.13	179.44	9,291.99	-4,288.20	42.16	4,288.41	0.00	0.00	0.00
13,400.00	89.13	179.44	9,293.51	-4,388.18	43.14	4,388.40	0.00	0.00	0.00
13,500.00	89.13	179.44	9,295.03	-4,488.17	44.13	4,488.38	0.00	0.00	0.00
13,600.00	89.13	179.44	9,296.55	-4,588.15	45.11	4,588.37	0.00	0.00	0.00

Pathfinder - A Schlumberger Company

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Dopplebock 8 State Com 1H
Company:	Devon Energy, Inc.	TVD Reference:	WELL @ 3867.00usft (Original Well Elev)
Project:	Lea County (NAD83)	MD Reference:	WELL @ 3867.00usft (Original Well Elev)
Site:	Dopplebock 8 State Com 1H	North Reference:	Grid
Well:	Dopplebock 8 State Com 1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	Design #1		

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Р	lanı	nea	51	rvev

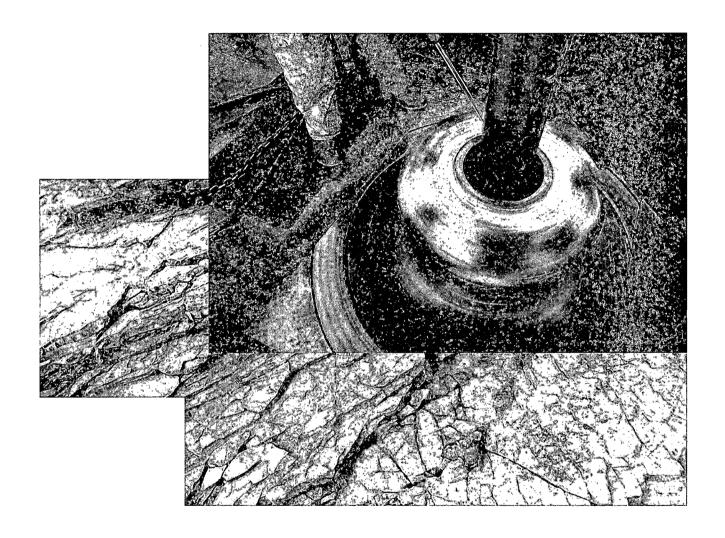
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)
13,700.00	89.13	179.44	9,298.06	-4,688.13	46.09	4,688.36	0.00	0.00	0.00
13,761.67	89.13	179.44	9,299.00	-4,749.79	46.70	4,750.02	0.00	0.00	0.00

Design Targets						The state of the state of	a transmission of the second	and a second of the contract o	and the ground all and the second of the second
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude [`]	Longitude
Target Line (Dopplebock - plan misses target o - Rectangle (sides W	center by 210			0.00 O (9070.29 TV	0.00 D, -141.05 N,	644,747.23 1.39 E)	836,038.31	32° 46′ 7.592 N	103° 22' 28.494 W
Heel - Dopplebock 8 Sta - plan misses target o - Point	0.00 center by 125	0.00 .95usft at 92	9,229.00 00.00usft MI	-130.02 D (9132.43 TV	0.93 D, -210.87 N,	644,617.22 2.07 E)	836,039.24	32° 46′ 6.306 N	103° 22' 28.497 V
Toe - Dopplebock 8 Stati - plan hits target cent - Point	0.00 ter	0.00	9,299.00	-4,749.79	46.70	639,997.44	836,085.01	32° 45′ 20.595 N	103° 22' 28.451 V

Formations	<u></u>	nang ng ngapang pandahangka	And design and the first second section of the section of the second section of the section of the section of the second section of the section of	MET THE MORE PERSON OF PERSON OF THE PERSON	10 M / 10	or providence comments of the comment of the commen	
	Measured Depth	Vertical Depth			Dip	Dip Direction	
· · · · · · · · · · · · · · · · · · ·	(usft)	(usft)	Name	Lithology	(°)	(°) .	
	9,519.74	9,234.57	Target Line		0.87	179.44	



Commitment Runs Deep



Design Plan
Operation and Maintenance Plan
Closure Plan

SENM - Closed Loop Systems February 2014

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.

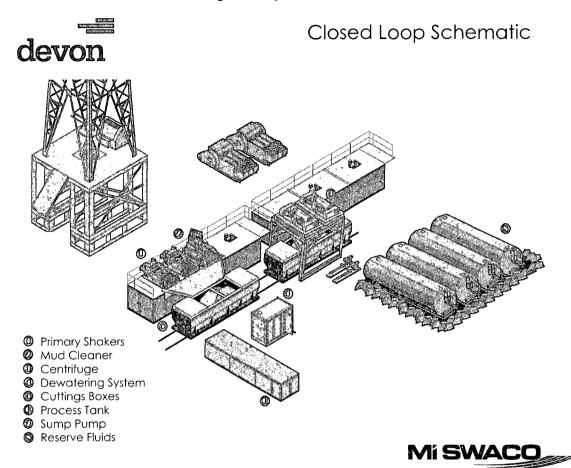
Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

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.



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.