

Submit 1 Copy To Appropriate District Office

District I – (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II – (575) 748-1283
811 S. First St., Artesia, NM 88210
District III – (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV – (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

Form C-103
Revised July 18, 2013

OCD - HOBBS 12/13/2016 RECEIVED OIL CONSERVATION DIVISION 1220 South St. Francis Dr. Santa Fe, NM 87505		WELL API NO. 30-025-43469
		5. Indicate Type of Lease STATE ☒ FEE ☐
		6. State Oil & Gas Lease No.
		7. Lease Name or Unit Agreement Name Thistle Unit
SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)		8. Well Number 254H
1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐		9. OGRID Number 6137
2. Name of Operator DEVON ENERGY PRODUCTION COMPANY, LP		10. Pool name or Wildcat Triple X; Bone Spring
3. Address of Operator 333 W. Sheridan Avenue Oklahoma City, OK 73102		
4. Well Location Unit Letter <u>O</u> : <u>248</u> feet from the <u>South</u> line and <u>1962</u> feet from the <u>East</u> line Section <u>34</u> Township <u>23S</u> Range <u>33E</u> NMPM <u>Lea</u> County		
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3643		

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☒	COMMENCE DRILLING OPNS. ☐	P AND A ☐
PULL OR ALTER CASING ☐	MULTIPLE COMPL ☐	CASING/CEMENT JOB ☐	
DOWNHOLE COMMINGLE ☐			
CLOSED-LOOP SYSTEM ☐			
OTHER: ☐		OTHER: ☐	

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

Devon Energy respectfully requests to change the bottom hole location from 2630 FSL & 1755 FEL to 2630 FSL & 1864 FEL, Sec. 27, T-23S, R-33E, and target formation from Leonard A to Leonard B. Please see the attached revised C-102, Drilling Plan & Directional Survey.

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE Rebecca Deal TITLE Regulatory Analyst DATE 12/8/2016

Type or print name Rebecca Deal E-mail address: rebecca.deal@dvn.com PHONE: 405-228-88429
For State Use Only

APPROVED BY: P. E. Kuntz TITLE Petroleum Engineer DATE 12/13/2016
Conditions of Approval (if any):

Devon Energy, Thistle Unit 254H

1. Geologic Formations

TVD of target	9,743'	Pilot hole depth	N/A
MD at TD:	17,132'	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	1,328		
Top of Salt	1,828		
Base of Salt	4,958		
Delaware	5,228		
Lower Brushy Canyon	8,953		
1 st Bone Spring Lime	9,113		
Leonard A	9,248		
Leonard B	9,616		

*H2S, water flows, loss of circulation, abnormal pressures, etc.

Devon Energy, Thistle Unit 254H

2. Casing Program

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn .	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	1,375'	13.375"	48	H-40	STC	1.18	2.64	8.05
12.25"	0	4,300'	9.625"	40	J-55	BTC	1.15	1.77	4.15
12.25"	4,300'	5,100'	9.625"	40	HCK-55	BTC	1.58	1.47	4.50
8.75"	0	17,132'	5.5"	17	P-110	BTC	1.56	1.93	2.09
BLM Minimum Safety Factor							1.125	1.00	1.6 Dry 1.8 Wet

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Must have table for contingency casing

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3 rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

Devon Energy, Thistle Unit 254H

3. Cementing Program

Casing	# Sks	Wt. lb/gal	H ₂ O gal/sk	Yld ft ³ /sack	500# Comp. Strength (hours)	Slurry Description
13-3/8" Surface	680	12.9	9.81	1.85	14	Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	550	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
13-3/8" Surface Two Stage	460	12.9	9.81	1.85	14	1 st Stage Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	550	14.8	6.32	1.33	6	1 st Stage Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
	DV Tool = 300ft					
	320	14.8	6.32	1.33	6	2 nd Stage Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
9-5/8" Inter.	1060	12.9	9.81	1.85	14	Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	430	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
5-1/2" Prod	365	10.9	20.6	3.31	24	Lead: (50:40:10) Class C: Silicalite: Enhancer 923 + 10% BWOC Bentonite + 0.05% BWOC SA-1015 + 0.3% BWOC HR-800 + 0.2% BWOC FE-2 + 0.125 lb/sk Pol-E-Flake + 0.5 lb/sk D-Air 5000
	1790	14.5	5.31	1.2	25	Tail: (50:50) Class H Cement: Poz (Fly Ash) + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.2% BWOC HR-601 + 2% bwoc Bentonite

If a DV tool is used, depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	TOC	% Excess
13-3/8" Surface	0'	100%
13-3/8" Surface – Two Stage Option	1 st Stage = 300' / 2 nd Stage = 0'	100%
9-5/8" Intermediate	0'	75%
5-1/2" Production Casing	4900'	25%

Devon Energy, Thistle Unit 254H

4. Pressure Control Equipment

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.
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BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
12-1/4"	13-5/8"	3M	Annular	x	50% of working pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	x	
			Other*		
8-3/4"	13-5/8"	3M	Annular	x	50% testing pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	x	
			Other*		
			Annular		
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other*		

*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

Y	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
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Devon Energy, Thistle Unit 254H

Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
Y	Are anchors required by manufacturer?
Y	A multibowl wellhead may be used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. Devon proposes using a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 3000 (3M) psi. - Wellhead will be installed by wellhead representatives. - If the welding is performed by a third party, the wellhead representative will monitor the temperature to verify that it does not exceed the maximum temperature of the seal. - Wellhead representative will install the test plug for the initial BOP test. - Wellhead company will install a solid steel body pack-off to completely isolate the lower head after cementing intermediate casing. After installation of the pack-off, the pack-off and the lower flange will be tested to 3M, as shown on the attached schematic. Everything above the pack-off will not have been altered whatsoever from the initial nipple up. Therefore the BOP components will not be retested at that time. - If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head will be cut and top out operations will be conducted. - Devon will pressure test all seals above and below the mandrel (but still above the casing) to full working pressure rating. - Devon will test the casing to 0.22 psi/ft or 1500 psi, whichever is greater, as per Onshore Order #2. After running the 13-3/8" surface casing, a 13-5/8" BOP/BOPE system with a minimum rating of 3M will be installed on the wellhead system and will undergo a 250 psi low pressure test followed by a 3,000 psi high pressure test. The 3,000 psi high and 250 psi low test will cover testing requirements a maximum of 30 days, as per Onshore Order #2. If the well is not complete within 30 days of this BOP test, another full BOP test will be conducted, as per Onshore Order #2. After running the 9-5/8' intermediate casing with a mandrel hanger, the 13-5/8" BOP/BOPE system with a minimum rating of 3M will already be installed on the wellhead. 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 Energy, Thistle Unit 254H

	Devon's proposed wellhead manufactures will be FMC Technologies, Cactus Wellhead, or Cameron. 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.
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5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	1,375'	FW Gel	8.6-8.8	28-34	N/C
1,375'	5,100'	Saturated Brine	10.0-10.2	28-34	N/C
5,100'	17,132'	Cut Brine	8.5-9.3	28-34	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
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6. Logging and Testing Procedures

Logging, Coring and Testing.	
x	Will run GR/CNL from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
	No Logs are planned based on well control or offset log information.
	Drill stem test? If yes, explain
	Coring? If yes, explain

Additional logs planned		Interval
	Resistivity	Int. shoe to KOP
	Density	Int. shoe to KOP
X	CBL	Production casing
X	Mud log	Intermediate shoe to TD
	PEX	

Devon Energy, Thistle Unit 254H

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	4695 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

Hydrogen Sulfide (H ₂ S) monitors will be installed prior to drilling out the surface shoe. If H ₂ S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
N	H ₂ S is present
Y	H ₂ S Plan attached

8. Other facets of operation

Is this a walking operation? No.

Will be pre-setting casing? No.

Attachments

☒ Directional Plan

☐ Other, describe

**5D Plan Report****Devon Energy****Field Name:** *Lea Co, NM Nad 83 NMEZ***Site Name:** *Thistle Unit 254H***Well Name:** *Thistle Unit 254H***Plan:** *P1:V2*

1 December 2016





Thistle Unit 254H

Field Name: Lea Co, NM Nad 83 NMEZ	Map Units: US ft		Company Name: Devon Energy	
	Vertical Reference Datum (VRD): Mean Sea Level			
	Projected Coordinate System: NAD83 / New Mexico East (ftUS)			
	Comment:			
Site: Thistle Unit 254H	Units: US ft	North Reference: Grid	Convergence Angle: 0.41	
	Position:	Northing: 457211.47 US ft	Latitude: 32° 15' 16.45"	
		Easting: 781015.05 US ft	Longitude: -103° 33' 28.84"	
	Elevation above MSL:3643.30 US ft			
Comment:				
Slot: Thistle Unit 254H	Position (Relative to Site Centre)			
	+N/-S: 0.00 US ft	Northing: 457211.47 US ft	Latitude: 32°15'16.45"	
	+E/-W: 0.00 US ft	Easting: 781015.05 US ft	Longitude: -103°33'28.84"	
	Slot TVD Reference: Ground Elevation			
	Elevation above MSL: 3643.30 US ft			
	Comment:			
Well: Thistle Unit 254H	Type:Main well		UWI:	Plan:P1:V2
	File Number:	Comment:		
	Closure Distance:7670.96US ft		Closure Azimuth:0.31°	
	Vertical Section: Position of Origin (Relative to Slot centre)			
	+N/-S: 0.00 US ft		+E/-W: 0.00 US ft	Az: 0.31°
	Magnetic Parameters:			
	Model: bggm2016	Field Strength:	Declination: 7.05°	Dip: 60.11°
	48103.0nT		Date: 31/Dec/2016	

Drill floor: Plan: P1:V2			
Rig Height (Drill Floor): 23.50 US ft	Elevation above MSL: 3666.80 US ft	Inclination: 0.00°	Azimuth: 0.00°

Target set: Thistle Unit 254H Tgts Comment:							
Target Name:	Shape:	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (USFt)	Easting (USFt)	Comment
PBHL 254H	Cuboid	9703.00	7670.85	40.74	464882.32	781055.79	

Wellpath created using minimum curvature.

Tie Point:						
MD: 0.00 USFt	Inclination: 0.00°	Azimuth: 0.00°	TVD: 0.00 USFt	North Offset: 0.00 USFt	East Offset: - 0.00 USFt	

5D Plan Report

Salient Points: (Relative to Slot centre)(TVD relative to Drill Floor)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (°/100US ft)	B.Rate (°/100US ft)	T.Rate (°/100US ft)	T.Face (°)	Comment
0.00	0.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00	0.00	0.00	
9163.23	0.00	0.00	9163.23	0.00	-0.00	0.00	0.00	0.00	0.00	0.00	KOP
9974.66	89.26	0.31	9684.06	514.11	2.74	514.12	11.00	11.00	0.00	0.31	LP
14542.48	89.26	0.31	9743.30	5081.48	27.09	5081.56	0.00	0.00	0.00	0.00	Build 1° DLS
14711.48	90.95	0.31	9743.00	5250.47	28.00	5250.54	1.00	1.00	0.00	0.28	Midpoint
17132.22	90.95	0.31	9703.00	7670.85	41.25	7670.96	0.00	0.00	0.00	0.00	PBHL 254H
Interpolated Points: (Relative to Slot centre)(TVD relative to Drill Floor)											
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (°/100US ft)	Northing (US ft)	Easting (US ft)		Comment
0.00	0.00	0.00	0.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
100.00	0.00	0.00	100.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
200.00	0.00	0.00	200.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
300.00	0.00	0.00	300.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
400.00	0.00	0.00	400.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
500.00	0.00	0.00	500.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
600.00	0.00	0.00	600.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
700.00	0.00	0.00	700.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
800.00	0.00	0.00	800.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
900.00	0.00	0.00	900.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
1000.00	0.00	0.00	1000.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
1100.00	0.00	0.00	1100.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
1200.00	0.00	0.00	1200.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
1300.00	0.00	0.00	1300.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
1400.00	0.00	0.00	1400.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
1500.00	0.00	0.00	1500.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
1600.00	0.00	0.00	1600.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
1700.00	0.00	0.00	1700.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
1800.00	0.00	0.00	1800.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
1900.00	0.00	0.00	1900.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
2000.00	0.00	0.00	2000.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
2100.00	0.00	0.00	2100.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
2200.00	0.00	0.00	2200.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
2300.00	0.00	0.00	2300.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
2400.00	0.00	0.00	2400.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
2500.00	0.00	0.00	2500.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
2600.00	0.00	0.00	2600.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
2700.00	0.00	0.00	2700.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
2800.00	0.00	0.00	2800.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
2900.00	0.00	0.00	2900.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
3000.00	0.00	0.00	3000.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
3100.00	0.00	0.00	3100.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
3200.00	0.00	0.00	3200.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
3300.00	0.00	0.00	3300.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
3400.00	0.00	0.00	3400.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
3500.00	0.00	0.00	3500.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
3600.00	0.00	0.00	3600.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
3700.00	0.00	0.00	3700.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
3800.00	0.00	0.00	3800.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
3900.00	0.00	0.00	3900.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
4000.00	0.00	0.00	4000.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
4100.00	0.00	0.00	4100.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
4200.00	0.00	0.00	4200.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
4300.00	0.00	0.00	4300.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
4400.00	0.00	0.00	4400.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
4500.00	0.00	0.00	4500.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
4600.00	0.00	0.00	4600.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		
4700.00	0.00	0.00	4700.00	0.00	-0.00	0.00	0.00	457211.47	781015.05		

5D Plan Report

Interpolated Points: (Relative to Slot centre)(TVD relative to Drill Floor)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (°/100US ft)	Northing (US ft)	Easting (US ft)	Comment
4800.00	0.00	0.00	4800.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
4900.00	0.00	0.00	4900.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
5000.00	0.00	0.00	5000.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
5100.00	0.00	0.00	5100.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
5200.00	0.00	0.00	5200.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
5300.00	0.00	0.00	5300.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
5400.00	0.00	0.00	5400.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
5500.00	0.00	0.00	5500.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
5600.00	0.00	0.00	5600.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
5700.00	0.00	0.00	5700.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
5800.00	0.00	0.00	5800.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
5900.00	0.00	0.00	5900.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
6000.00	0.00	0.00	6000.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
6100.00	0.00	0.00	6100.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
6200.00	0.00	0.00	6200.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
6300.00	0.00	0.00	6300.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
6400.00	0.00	0.00	6400.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
6500.00	0.00	0.00	6500.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
6600.00	0.00	0.00	6600.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
6700.00	0.00	0.00	6700.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
6800.00	0.00	0.00	6800.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
6900.00	0.00	0.00	6900.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
7000.00	0.00	0.00	7000.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
7100.00	0.00	0.00	7100.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
7200.00	0.00	0.00	7200.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
7300.00	0.00	0.00	7300.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
7400.00	0.00	0.00	7400.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
7500.00	0.00	0.00	7500.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
7600.00	0.00	0.00	7600.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
7700.00	0.00	0.00	7700.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
7800.00	0.00	0.00	7800.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
7900.00	0.00	0.00	7900.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
8000.00	0.00	0.00	8000.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
8100.00	0.00	0.00	8100.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
8200.00	0.00	0.00	8200.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
8300.00	0.00	0.00	8300.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
8400.00	0.00	0.00	8400.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
8500.00	0.00	0.00	8500.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
8600.00	0.00	0.00	8600.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
8700.00	0.00	0.00	8700.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
8800.00	0.00	0.00	8800.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
8900.00	0.00	0.00	8900.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
9000.00	0.00	0.00	9000.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
9100.00	0.00	0.00	9100.00	0.00	-0.00	0.00	0.00	457211.47	781015.05	
9163.23	0.00	0.00	9163.23	0.00	-0.00	0.00	0.00	457211.47	781015.05	KOP
9200.00	4.04	0.31	9199.97	1.30	0.01	1.30	11.00	457212.77	781015.06	
9300.00	15.04	0.31	9298.43	17.85	0.10	17.85	11.00	457229.32	781015.15	
9400.00	26.04	0.31	9391.93	52.89	0.28	52.89	11.00	457264.36	781015.33	
9500.00	37.04	0.31	9477.02	105.13	0.56	105.13	11.00	457316.60	781015.61	
9600.00	48.04	0.31	9550.58	172.64	0.92	172.64	11.00	457384.11	781015.97	
9700.00	59.04	0.31	9609.91	252.95	1.35	252.95	11.00	457464.42	781016.40	
9800.00	70.04	0.31	9652.83	343.10	1.83	343.10	11.00	457554.57	781016.88	
9900.00	81.04	0.31	9677.75	439.78	2.34	439.79	11.00	457651.25	781017.39	
9974.66	89.26	0.31	9684.06	514.11	2.74	514.12	11.00	457725.58	781017.79	LP
10000.00	89.26	0.31	9684.39	539.45	2.88	539.46	0.00	457750.92	781017.93	
10100.00	89.26	0.31	9685.68	639.44	3.41	639.45	0.00	457850.91	781018.46	
10200.00	89.26	0.31	9686.98	739.43	3.94	739.44	0.00	457950.90	781018.99	
10300.00	89.26	0.31	9688.28	839.42	4.47	839.43	0.00	458050.89	781019.52	
10400.00	89.26	0.31	9689.57	939.41	5.01	939.42	0.00	458150.88	781020.06	

5D Plan Report

Interpolated Points: (Relative to Slot centre)(TVD relative to Drill Floor)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	VS (US ft)	DLS (°/100US ft)	Northing (US ft)	Easting (US ft)	Comment
10500.00	89.26	0.31	9690.87	1039.40	5.54	1039.41	0.00	458250.87	781020.59	
10600.00	89.26	0.31	9692.17	1139.39	6.07	1139.41	0.00	458350.86	781021.12	
10700.00	89.26	0.31	9693.46	1239.38	6.61	1239.40	0.00	458450.85	781021.66	
10800.00	89.26	0.31	9694.76	1339.37	7.14	1339.39	0.00	458550.84	781022.19	
10900.00	89.26	0.31	9696.06	1439.36	7.67	1439.38	0.00	458650.83	781022.72	
11000.00	89.26	0.31	9697.36	1539.35	8.21	1539.37	0.00	458750.82	781023.26	
11100.00	89.26	0.31	9698.65	1639.34	8.74	1639.36	0.00	458850.81	781023.79	
11200.00	89.26	0.31	9699.95	1739.33	9.27	1739.36	0.00	458950.80	781024.32	
11300.00	89.26	0.31	9701.25	1839.32	9.80	1839.35	0.00	459050.79	781024.85	
11400.00	89.26	0.31	9702.54	1939.31	10.34	1939.34	0.00	459150.78	781025.39	
11500.00	89.26	0.31	9703.84	2039.30	10.87	2039.33	0.00	459250.77	781025.92	
11600.00	89.26	0.31	9705.14	2139.29	11.40	2139.32	0.00	459350.76	781026.45	
11700.00	89.26	0.31	9706.43	2239.28	11.94	2239.31	0.00	459450.75	781026.99	
11800.00	89.26	0.31	9707.73	2339.27	12.47	2339.31	0.00	459550.74	781027.52	
11900.00	89.26	0.31	9709.03	2439.26	13.00	2439.30	0.00	459650.73	781028.05	
12000.00	89.26	0.31	9710.33	2539.25	13.54	2539.29	0.00	459750.72	781028.59	
12100.00	89.26	0.31	9711.62	2639.24	14.07	2639.28	0.00	459850.71	781029.12	
12200.00	89.26	0.31	9712.92	2739.23	14.60	2739.27	0.00	459950.70	781029.65	
12300.00	89.26	0.31	9714.22	2839.22	15.13	2839.26	0.00	460050.69	781030.18	
12400.00	89.26	0.31	9715.51	2939.21	15.67	2939.26	0.00	460150.68	781030.72	
12500.00	89.26	0.31	9716.81	3039.20	16.20	3039.25	0.00	460250.67	781031.25	
12600.00	89.26	0.31	9718.11	3139.19	16.73	3139.24	0.00	460350.66	781031.78	
12700.00	89.26	0.31	9719.40	3239.18	17.27	3239.23	0.00	460450.65	781032.32	
12800.00	89.26	0.31	9720.70	3339.17	17.80	3339.22	0.00	460550.64	781032.85	
12900.00	89.26	0.31	9722.00	3439.16	18.33	3439.21	0.00	460650.63	781033.38	
13000.00	89.26	0.31	9723.29	3539.15	18.87	3539.20	0.00	460750.62	781033.92	
13100.00	89.26	0.31	9724.59	3639.14	19.40	3639.20	0.00	460850.61	781034.45	
13200.00	89.26	0.31	9725.89	3739.13	19.93	3739.19	0.00	460950.60	781034.98	
13300.00	89.26	0.31	9727.19	3839.12	20.46	3839.18	0.00	461050.59	781035.51	
13400.00	89.26	0.31	9728.48	3939.12	21.00	3939.17	0.00	461150.59	781036.05	
13500.00	89.26	0.31	9729.78	4039.11	21.53	4039.16	0.00	461250.58	781036.58	
13600.00	89.26	0.31	9731.08	4139.10	22.06	4139.15	0.00	461350.57	781037.11	
13700.00	89.26	0.31	9732.37	4239.09	22.60	4239.15	0.00	461450.56	781037.65	
13800.00	89.26	0.31	9733.67	4339.08	23.13	4339.14	0.00	461550.55	781038.18	
13900.00	89.26	0.31	9734.97	4439.07	23.66	4439.13	0.00	461650.54	781038.71	
14000.00	89.26	0.31	9736.26	4539.06	24.20	4539.12	0.00	461750.53	781039.25	
14100.00	89.26	0.31	9737.56	4639.05	24.73	4639.11	0.00	461850.52	781039.78	
14200.00	89.26	0.31	9738.86	4739.04	25.26	4739.10	0.00	461950.51	781040.31	
14300.00	89.26	0.31	9740.16	4839.03	25.79	4839.10	0.00	462050.50	781040.84	
14400.00	89.26	0.31	9741.45	4939.02	26.33	4939.09	0.00	462150.49	781041.38	
14500.00	89.26	0.31	9742.75	5039.01	26.86	5039.08	0.00	462250.48	781041.91	
14542.48	89.26	0.31	9743.30	5081.48	27.09	5081.56	0.00	462292.95	781042.14	Build 1° DLS
14600.00	89.83	0.31	9743.76	5139.00	27.40	5139.07	1.00	462350.47	781042.45	
14700.00	90.83	0.31	9743.18	5239.00	27.94	5239.07	1.00	462450.47	781042.99	
14711.48	90.95	0.31	9743.00	5250.47	28.00	5250.54	1.00	462461.94	781043.05	Midpoint
14800.00	90.95	0.31	9741.54	5338.98	28.48	5339.06	0.00	462550.45	781043.53	
14900.00	90.95	0.31	9739.88	5438.97	29.03	5439.04	0.00	462650.44	781044.08	
15000.00	90.95	0.31	9738.23	5538.95	29.58	5539.03	0.00	462750.42	781044.63	
15100.00	90.95	0.31	9736.58	5638.93	30.13	5639.02	0.00	462850.40	781045.18	
15200.00	90.95	0.31	9734.93	5738.92	30.67	5739.00	0.00	462950.39	781045.72	
15300.00	90.95	0.31	9733.28	5838.90	31.22	5838.99	0.00	463050.37	781046.27	
15400.00	90.95	0.31	9731.62	5938.89	31.77	5938.97	0.00	463150.36	781046.82	
15500.00	90.95	0.31	9729.97	6038.87	32.32	6038.96	0.00	463250.34	781047.37	
15600.00	90.95	0.31	9728.32	6138.86	32.86	6138.95	0.00	463350.33	781047.91	
15700.00	90.95	0.31	9726.67	6238.84	33.41	6238.93	0.00	463450.31	781048.46	
15800.00	90.95	0.31	9725.01	6338.83	33.96	6338.92	0.00	463550.30	781049.01	
15900.00	90.95	0.31	9723.36	6438.81	34.51	6438.91	0.00	463650.28	781049.56	
16000.00	90.95	0.31	9721.71	6538.80	35.05	6538.89	0.00	463750.27	781050.10	
16100.00	90.95	0.31	9720.06	6638.78	35.60	6638.88	0.00	463850.25	781050.65	

5D Plan Report

Interpolated Points: (Relative to Slot centre)(TVD relative to Drill Floor)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	VS (US ft)	DLS (°/100US ft)	Northing (US ft)	Easting (US ft)	Comment
16200.00	90.95	0.31	9718.40	6738.77	36.15	6738.87	0.00	463950.24	781051.20	
16300.00	90.95	0.31	9716.75	6838.75	36.69	6838.85	0.00	464050.22	781051.74	
16400.00	90.95	0.31	9715.10	6938.74	37.24	6938.84	0.00	464150.21	781052.29	
16500.00	90.95	0.31	9713.45	7038.72	37.79	7038.82	0.00	464250.19	781052.84	
16600.00	90.95	0.31	9711.79	7138.71	38.34	7138.81	0.00	464350.18	781053.39	
16700.00	90.95	0.31	9710.14	7238.69	38.88	7238.80	0.00	464450.16	781053.93	
16800.00	90.95	0.31	9708.49	7338.68	39.43	7338.78	0.00	464550.15	781054.48	
16900.00	90.95	0.31	9706.84	7438.66	39.98	7438.77	0.00	464650.13	781055.03	
17000.00	90.95	0.31	9705.18	7538.65	40.53	7538.76	0.00	464750.12	781055.58	
17100.00	90.95	0.31	9703.53	7638.63	41.07	7638.74	0.00	464850.10	781056.12	
17132.22	90.95	0.31	9703.00	7670.85	41.25	7670.96	0.00	464882.32	781056.30	PBHL 254H