

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 August 1, 2011

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

WELL API NO. 30-015-40826
5. Indicate Type of Lease STATE ☒ FEE ☐
6. State Oil & Gas Lease No.
7. Lease Name or Unit Agreement Name Harroun Trust 31
8. Well Number 4H
9. OGRID Number 6137
10. Pool name or Wildcat Harroun Ranch; Delaware
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 2958

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.)

1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐

2. Name of Operator
Devon Energy Production Company, L.P.

3. Address of Operator
333 West Sheridan
Oklahoma City, OK 73102-5015 405-228-7203

4. Well Location
Unit Letter O : 330 feet from the South line and 2310 feet from the South line
Section 31 Township 23S Range 29E NMPM Eddy County

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

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐
DOWNHOLE COMMINGLE ☐

OTHER: Chg Csg ☒

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ P AND A ☐
CASING/CEMENT JOB ☐

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 Production Company, L.P. respectfully requests a change to the setting depth of the surface casing string from 375' to 600' (Top of Salt 615'). While drilling the 5H circulation was lost at 430' (surface shoe 400'), and dry drilled to casing point.

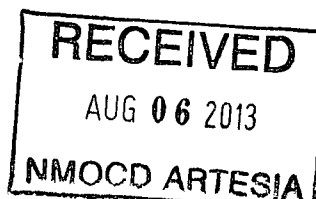
Devon also requests a change in the production long string from p-110 LTC and BTC connections to 5.5" 17# P110RY with DWC/C casing connections.

Attachments:

Drilling Plan
Directional Survey

www.emnrd.state.nm.us

Current forms are available on our website and should be used when filing regulatory documents.



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

SIGNATURE: Trina C. Couch TITLE: Regulatory Associate DATE: 8/5/2013

Type or print name Trina C. Couch E-mail address: trina.couch@dvn.com PHONE: 405-228-7203

For State Use Only

APPROVED BY: Dist. H. Spewisor TITLE: Dist. H. Spewisor DATE: 8/7/2013

Conditions of Approval (if any):

DEVON ENERGY

Project: Eddy County, NM (NAD-83)
Site: Harroun Trust 31
Well: 4H
Wellbore: OH
Design: Plan #1

PROJECT DETAILS: Eddy County, NM (NAD-83)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone



Azimuths to Grid North
True North: -0.17°
Magnetic North: 7.37°

Magnetic Field
Strength: 48376.2snT
Dip Angle: 60.09°
Date: 08/02/2013
Model: IGRF2010

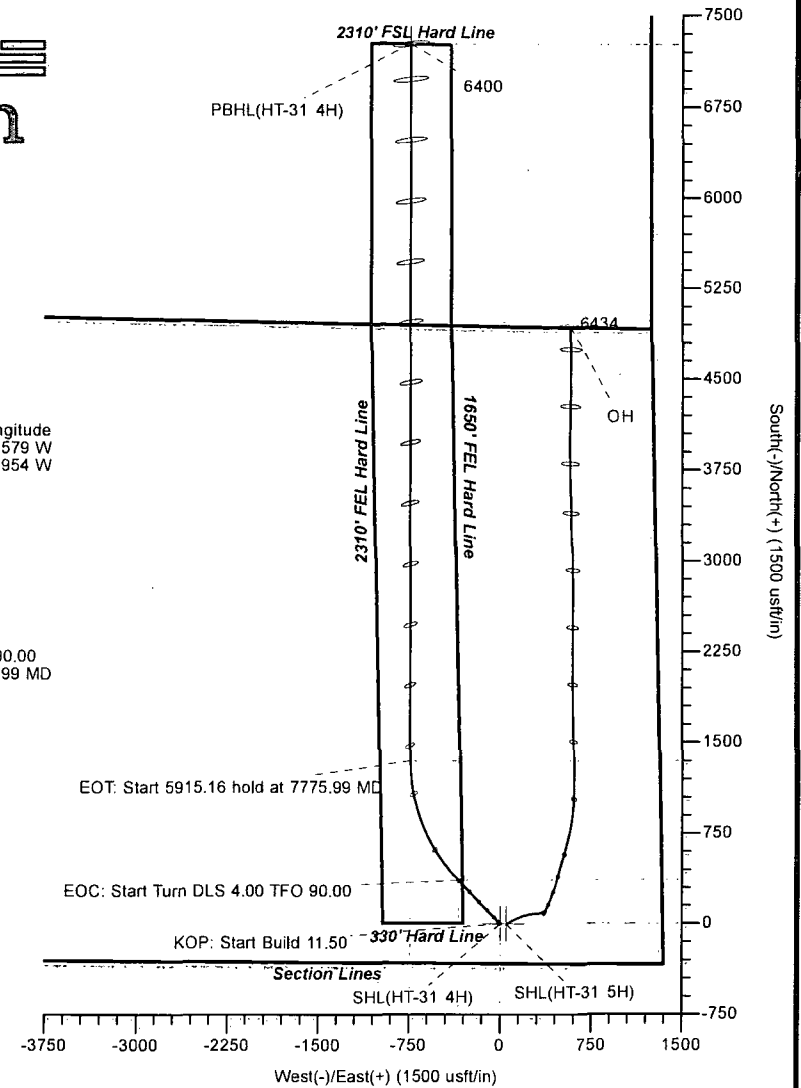
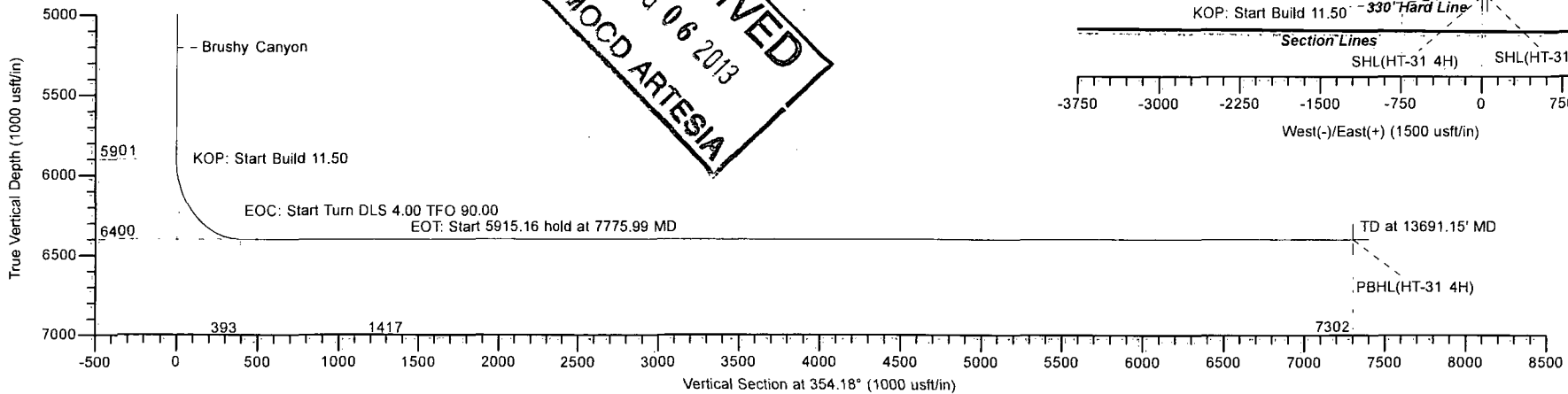


DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL(HT-31 4H)	0.00	0.00	0.00	456687.50	638319.40	32° 15' 18.431 N	104° 1' 10.579 W
PBHL(HT-31 4H)	6400.00	7264.55	-740.19	463952.05	637579.21	32° 16' 30.341 N	104° 1' 18.954 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	5901.78	0.00	0.00	5901.78	0.00	0.00	0.00	0.00	0.00	KOP: Start Build 11.50
3	6684.38	90.00	316.34	6400.00	360.41	-343.99	11.50	316.34	393.43	EOC: Start Turn DLS 4.00 TFO 90.00
4	7775.99	90.00	0.00	6400.00	1349.39	-740.19	4.00	90.00	1417.47	EOT: Start 5915.16 hold at 7775.99 MD
5	13691.15	90.00	0.00	6400.00	7264.55	-740.19	0.00	0.00	7302.16	TD at 13691.15' MD



LEAM DRILLING SYSTEMS LLC
2010 East Davis, Conroe, Texas 77301
Phone: 936/756-7577, Fax 936/756-7595

Plan: Plan #1 (4H/OH)
Harroun Trust 31
Created By: Tyler Carlson
Date: 15:44, August 02 2013
Approved: _____ Date: _____

Leam Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 4H
Company:	DEVON ENERGY	TVD Reference:	GE: 2957' + KB 26' @ 2983.00usft (Scan Texas)
Project:	Eddy County, NM (NAD-83)	MD Reference:	GE: 2957' + KB 26' @ 2983.00usft (Scan Texas)
Site:	Harroun Trust 31	North Reference:	Grid
Well:	4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

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

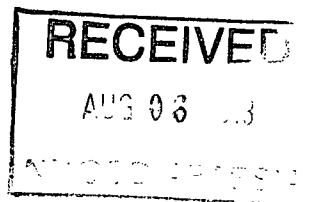
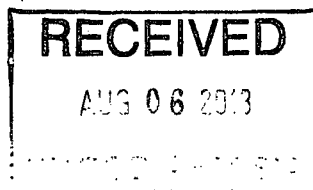
Site		Harroun Trust 31			
Site Position:		Northing:	456,687.60 usft	Latitude:	32° 15' 18.430 N
From:	Map	Easting:	638,369.30 usft	Longitude:	104° 1' 9.998 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.17 °

Well :	4H					
Well Position	+N-S	-0.10 usft	Northing:	456,687.50 usft	Latitude:	32° 15' 18.431 N
	+E-W	-49.90 usft	Easting:	638,319.40 usft	Longitude:	104° 1' 10.579 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	2,957.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	08/02/13	7.53	60.09	48,376

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	354.18

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,901.78	0.00	0.00	5,901.78	0.00	0.00	0.00	0.00	0.00	0.00	
6,684.38	90.00	316.34	6,400.00	360.41	-343.99	11.50	11.50	0.00	316.34	
7,775.99	90.00	0.00	6,400.00	1,349.39	-740.19	4.00	0.00	4.00	90.00	
13,691.15	90.00	0.00	6,400.00	7,264.55	-740.19	0.00	0.00	0.00	0.00	PBHL(HT-31 4H)



Leam Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 4H
Company:	DEVON ENERGY	TVD Reference:	GE: 2957' + KB 26' @ 2983.00usft (Scan Texas)
Project:	Eddy County, NM (NAD-83)	MD Reference:	GE: 2957' + KB 26' @ 2983.00usft (Scan Texas)
Site:	Harroun Trust 31	North Reference:	Grid
Well:	4H	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
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00

Leam Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 4H
Company:	DEVON ENERGY	TVD Reference:	GE: 2957' + KB 26' @ 2983.00usft (Scan Texas)
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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)	
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,901.78	0.00	0.00	5,901.78	0.00	0.00	0.00	0.00	0.00	0.00	
5,925.00	2.67	316.34	5,924.99	0.39	-0.37	0.43	11.50	11.50	0.00	
5,950.00	5.55	316.34	5,949.92	1.69	-1.61	1.84	11.50	11.50	0.00	
5,975.00	8.42	316.34	5,974.74	3.89	-3.71	4.24	11.50	11.50	0.00	
6,000.00	11.30	316.34	5,999.37	6.98	-6.66	7.62	11.50	11.50	0.00	
6,025.00	14.17	316.34	6,023.75	10.97	-10.47	11.97	11.50	11.50	0.00	
6,050.00	17.05	316.34	6,047.82	15.83	-15.11	17.28	11.50	11.50	0.00	
6,075.00	19.92	316.34	6,071.53	21.57	-20.58	23.54	11.50	11.50	0.00	
6,100.00	22.80	316.34	6,094.81	28.15	-26.87	30.73	11.50	11.50	0.00	
6,125.00	25.67	316.34	6,117.61	35.57	-33.95	38.83	11.50	11.50	0.00	
6,150.00	28.55	316.34	6,139.86	43.81	-41.82	47.83	11.50	11.50	0.00	
6,175.00	31.42	316.34	6,161.51	52.85	-50.44	57.69	11.50	11.50	0.00	
6,200.00	34.30	316.34	6,182.51	62.66	-59.81	68.40	11.50	11.50	0.00	
6,225.00	37.17	316.34	6,202.80	73.22	-69.89	79.93	11.50	11.50	0.00	
6,250.00	40.05	316.34	6,222.33	84.51	-80.66	92.25	11.50	11.50	0.00	
6,275.00	42.92	316.34	6,241.06	96.48	-92.09	105.32	11.50	11.50	0.00	
6,300.00	45.80	316.34	6,258.93	109.13	-104.15	119.12	11.50	11.50	0.00	
6,325.00	48.67	316.34	6,275.91	122.40	-116.82	133.61	11.50	11.50	0.00	
6,350.00	51.55	316.34	6,291.94	136.28	-130.07	148.76	11.50	11.50	0.00	
6,375.00	54.42	316.34	6,306.99	150.72	-143.85	164.52	11.50	11.50	0.00	
6,400.00	57.30	316.34	6,321.02	165.68	-158.13	180.86	11.50	11.50	0.00	
6,425.00	60.17	316.34	6,333.99	181.14	-172.88	197.73	11.50	11.50	0.00	
6,450.00	63.05	316.34	6,345.88	197.05	-188.07	215.09	11.50	11.50	0.00	
6,475.00	65.92	316.34	6,356.65	213.37	-203.64	232.91	11.50	11.50	0.00	
6,500.00	68.80	316.34	6,366.27	230.05	-219.57	251.13	11.50	11.50	0.00	
6,525.00	71.67	316.34	6,374.72	247.07	-235.81	269.70	11.50	11.50	0.00	
6,550.00	74.55	316.34	6,381.99	264.38	-252.33	288.59	11.50	11.50	0.00	
6,575.00	77.42	316.34	6,388.04	281.92	-269.07	307.74	11.50	11.50	0.00	
6,600.00	80.30	316.34	6,392.87	299.66	-286.01	327.11	11.50	11.50	0.00	
6,625.00	83.17	316.34	6,396.47	317.56	-303.09	346.64	11.50	11.50	0.00	
6,650.00	86.05	316.34	6,398.81	335.56	-320.27	366.30	11.50	11.50	0.00	
6,675.00	88.92	316.34	6,399.91	353.63	-337.51	386.02	11.50	11.50	0.00	
6,684.38	90.00	316.34	6,400.00	360.41	-343.99	393.43	11.50	11.50	0.00	
6,700.00	90.00	316.96	6,400.00	371.77	-354.71	405.81	4.00	0.00	4.00	
6,800.00	90.00	320.96	6,400.00	447.18	-420.35	487.49	4.00	0.00	4.00	
6,900.00	90.00	324.96	6,400.00	526.98	-480.58	572.98	4.00	0.00	4.00	
7,000.00	90.00	328.96	6,400.00	610.80	-535.09	661.89	4.00	0.00	4.00	
7,100.00	90.00	332.96	6,400.00	698.21	-583.62	753.77	4.00	0.00	4.00	
7,200.00	90.00	336.96	6,400.00	788.79	-625.94	848.18	4.00	0.00	4.00	
7,300.00	90.00	340.96	6,400.00	882.10	-661.83	944.65	4.00	0.00	4.00	
7,400.00	90.00	344.96	6,400.00	977.70	-691.13	1,042.72	4.00	0.00	4.00	
7,500.00	90.00	348.96	6,400.00	1,075.10	-713.69	1,141.90	4.00	0.00	4.00	
7,600.00	90.00	352.96	6,400.00	1,173.83	-729.40	1,241.73	4.00	0.00	4.00	
7,700.00	90.00	356.96	6,400.00	1,273.43	-738.18	1,341.70	4.00	0.00	4.00	
7,775.99	90.00	0.00	6,400.00	1,349.39	-740.19	1,417.47	4.00	0.00	4.00	

Leam Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 4H
Company:	DEVON ENERGY	TVD Reference:	GE: 2957' + KB 26' @ 2983.00usft (Scan Texas)
Project:	Eddy County, NM (NAD-83)	MD Reference:	GE: 2957' + KB 26' @ 2983.00usft (Scan Texas)
Site:	Harroun Trust 31	North Reference:	Grid
Well:	4H	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)
7,800.00	90.00	0.00	6,400.00	1,373.39	-740.19	1,441.35	0.00	0.00	0.00
7,900.00	90.00	0.00	6,400.00	1,473.39	-740.19	1,540.83	0.00	0.00	0.00
8,000.00	90.00	0.00	6,400.00	1,573.39	-740.19	1,640.32	0.00	0.00	0.00
8,100.00	90.00	0.00	6,400.00	1,673.39	-740.19	1,739.80	0.00	0.00	0.00
8,200.00	90.00	0.00	6,400.00	1,773.39	-740.19	1,839.29	0.00	0.00	0.00
8,300.00	90.00	0.00	6,400.00	1,873.39	-740.19	1,938.77	0.00	0.00	0.00
8,400.00	90.00	0.00	6,400.00	1,973.39	-740.19	2,038.26	0.00	0.00	0.00
8,500.00	90.00	0.00	6,400.00	2,073.39	-740.19	2,137.74	0.00	0.00	0.00
8,600.00	90.00	0.00	6,400.00	2,173.39	-740.19	2,237.23	0.00	0.00	0.00
8,700.00	90.00	0.00	6,400.00	2,273.39	-740.19	2,336.71	0.00	0.00	0.00
8,800.00	90.00	0.00	6,400.00	2,373.39	-740.19	2,436.20	0.00	0.00	0.00
8,900.00	90.00	0.00	6,400.00	2,473.39	-740.19	2,535.68	0.00	0.00	0.00
9,000.00	90.00	0.00	6,400.00	2,573.39	-740.19	2,635.17	0.00	0.00	0.00
9,100.00	90.00	0.00	6,400.00	2,673.39	-740.19	2,734.65	0.00	0.00	0.00
9,200.00	90.00	0.00	6,400.00	2,773.39	-740.19	2,834.14	0.00	0.00	0.00
9,300.00	90.00	0.00	6,400.00	2,873.39	-740.19	2,933.62	0.00	0.00	0.00
9,400.00	90.00	0.00	6,400.00	2,973.39	-740.19	3,033.11	0.00	0.00	0.00
9,500.00	90.00	0.00	6,400.00	3,073.39	-740.19	3,132.59	0.00	0.00	0.00
9,600.00	90.00	0.00	6,400.00	3,173.39	-740.19	3,232.08	0.00	0.00	0.00
9,700.00	90.00	0.00	6,400.00	3,273.39	-740.19	3,331.56	0.00	0.00	0.00
9,800.00	90.00	0.00	6,400.00	3,373.39	-740.19	3,431.05	0.00	0.00	0.00
9,900.00	90.00	0.00	6,400.00	3,473.39	-740.19	3,530.53	0.00	0.00	0.00
10,000.00	90.00	0.00	6,400.00	3,573.39	-740.19	3,630.02	0.00	0.00	0.00
10,100.00	90.00	0.00	6,400.00	3,673.39	-740.19	3,729.50	0.00	0.00	0.00
10,200.00	90.00	0.00	6,400.00	3,773.39	-740.19	3,828.99	0.00	0.00	0.00
10,300.00	90.00	0.00	6,400.00	3,873.39	-740.19	3,928.47	0.00	0.00	0.00
10,400.00	90.00	0.00	6,400.00	3,973.39	-740.19	4,027.96	0.00	0.00	0.00
10,500.00	90.00	0.00	6,400.00	4,073.39	-740.19	4,127.44	0.00	0.00	0.00
10,600.00	90.00	0.00	6,400.00	4,173.39	-740.19	4,226.93	0.00	0.00	0.00
10,700.00	90.00	0.00	6,400.00	4,273.39	-740.19	4,326.41	0.00	0.00	0.00
10,800.00	90.00	0.00	6,400.00	4,373.39	-740.19	4,425.90	0.00	0.00	0.00
10,900.00	90.00	0.00	6,400.00	4,473.39	-740.19	4,525.38	0.00	0.00	0.00
11,000.00	90.00	0.00	6,400.00	4,573.39	-740.19	4,624.87	0.00	0.00	0.00
11,100.00	90.00	0.00	6,400.00	4,673.39	-740.19	4,724.35	0.00	0.00	0.00
11,200.00	90.00	0.00	6,400.00	4,773.39	-740.19	4,823.84	0.00	0.00	0.00
11,300.00	90.00	0.00	6,400.00	4,873.39	-740.19	4,923.32	0.00	0.00	0.00
11,400.00	90.00	0.00	6,400.00	4,973.39	-740.19	5,022.81	0.00	0.00	0.00
11,500.00	90.00	0.00	6,400.00	5,073.39	-740.19	5,122.29	0.00	0.00	0.00
11,600.00	90.00	0.00	6,400.00	5,173.39	-740.19	5,221.78	0.00	0.00	0.00
11,700.00	90.00	0.00	6,400.00	5,273.39	-740.19	5,321.26	0.00	0.00	0.00
11,800.00	90.00	0.00	6,400.00	5,373.39	-740.19	5,420.75	0.00	0.00	0.00
11,900.00	90.00	0.00	6,400.00	5,473.39	-740.19	5,520.23	0.00	0.00	0.00
12,000.00	90.00	0.00	6,400.00	5,573.39	-740.19	5,619.72	0.00	0.00	0.00
12,100.00	90.00	0.00	6,400.00	5,673.39	-740.19	5,719.20	0.00	0.00	0.00
12,200.00	90.00	0.00	6,400.00	5,773.39	-740.19	5,818.69	0.00	0.00	0.00
12,300.00	90.00	0.00	6,400.00	5,873.39	-740.19	5,918.17	0.00	0.00	0.00
12,400.00	90.00	0.00	6,400.00	5,973.39	-740.19	6,017.66	0.00	0.00	0.00
12,500.00	90.00	0.00	6,400.00	6,073.39	-740.19	6,117.14	0.00	0.00	0.00
12,600.00	90.00	0.00	6,400.00	6,173.39	-740.19	6,216.63	0.00	0.00	0.00
12,700.00	90.00	0.00	6,400.00	6,273.39	-740.19	6,316.11	0.00	0.00	0.00
12,800.00	90.00	0.00	6,400.00	6,373.39	-740.19	6,415.60	0.00	0.00	0.00
12,900.00	90.00	0.00	6,400.00	6,473.39	-740.19	6,515.08	0.00	0.00	0.00

Leam Drilling Systems LLC

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well 4H
Company:	DEVON ENERGY	TVD Reference:	GE: 2957' + KB 26' @ 2983.00usft (Scan Texas)
Project:	Eddy County, NM (NAD-83)	MD Reference:	GE: 2957' + KB 26' @ 2983.00usft (Scan Texas)
Site:	Harroun Trust 31	North Reference:	Grid
Well:	4H	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)
13,000.00	90.00	0.00	6,400.00	6,573.39	-740.19	6,614.56	0.00	0.00	0.00
13,100.00	90.00	0.00	6,400.00	6,673.39	-740.19	6,714.05	0.00	0.00	0.00
13,200.00	90.00	0.00	6,400.00	6,773.39	-740.19	6,813.53	0.00	0.00	0.00
13,300.00	90.00	0.00	6,400.00	6,873.39	-740.19	6,913.02	0.00	0.00	0.00
13,400.00	90.00	0.00	6,400.00	6,973.39	-740.19	7,012.50	0.00	0.00	0.00
13,500.00	90.00	0.00	6,400.00	7,073.39	-740.19	7,111.99	0.00	0.00	0.00
13,600.00	90.00	0.00	6,400.00	7,173.39	-740.19	7,211.47	0.00	0.00	0.00
13,691.15	90.00	0.00	6,400.00	7,264.55	-740.19	7,302.16	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
SHL(HT-31 4H)	0.00	0.01	0.00	0.00	0.00	456,687.50	638,319.40	32° 15' 18.431 N	104° 1' 10.579 W
- plan hits target center									
- Point									
PBHL(HT-31 4H)	0.00	0.01	6,400.00	7,264.55	-740.19	463,952.05	637,579.21	32° 16' 30.341 N	104° 1' 18.954 W
- plan hits target center									
- Point									

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction	
329.00	329.00	Rustler				
612.00	612.00	Salado				
1,080.00	1,080.00	Castile				
2,535.00	2,535.00	Base of Salt				
2,752.00	2,752.00	Delaware				
2,788.00	2,788.00	Bell Canyon				
3,651.00	3,651.00	Cherry Canyon				
5,205.00	5,205.00	Brushy Canyon				

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,901.78	5,901.78	0.00	0.00	KOP: Start Build 11.50
6,684.38	6,400.00	360.41	-343.99	EOC: Start Turn DLS 4.00 TFO 90.00
7,775.99	6,400.00	1,349.39	-740.19	EOT: Start 5915.16 hold at 7775.99 MD
13,691.15	6,400.00	7,264.55	-740.19	TD at 13691.15' MD

DEVON ENERGY

Eddy County, NM (NAD-83)

Harroun Trust 31

4H

OH

Plan #1

Anticollision Report

02 August, 2013

Leam Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 4H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE: 2957' + KB 26' @ 2983.00usft (Scan Texas)
Reference Site:	Harroun Trust 31	MD Reference:	GE: 2957' + KB 26' @ 2983.00usft (Scan Texas)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at:	2.00 sigma
Reference Wellbore:	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 9,999.98 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	08/02/13		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	13,691.15	Plan #1 (OH)	LEAM MWD+IGRF	MWD+IGRF	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Harroun Trust 31						
5H - OH - OH	0.00	0.00	49.90			
5H - OH - OH	11,500.00	11,129.00	1,324.93	1,122.61	6.549	SF

Offset Design												Harroun Trust 31 - 5H - OH - OH		Offset Site Error: 0.00 usft	
Survey Program: 100-NS-GYRO-MS-5931-LEAM MWD+IGRF												Offset Well Error: 0.00 usft			
Reference		Offset		Semi Major Axis		Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
0.00	0.00	0.00	0.00	0.00	0.00	89.89	0.10	49.90	49.90						
100.00	100.00	99.45	99.45	0.08	0.10	89.52	0.42	50.44	50.44	50.26	0.18	278.668			
200.00	200.00	199.49	199.48	0.31	0.36	89.14	0.78	51.49	51.50	50.83	0.67	77.418			
300.00	300.00	299.48	299.47	0.53	0.62	89.13	0.80	52.50	52.51	51.36	1.15	45.644			
400.00	400.00	399.50	399.49	0.76	0.88	89.19	0.75	53.49	53.50	51.86	1.64	32.682			
500.00	500.00	499.47	499.44	0.98	1.14	89.31	0.66	54.48	54.49	52.37	2.12	25.654			
600.00	600.00	599.12	599.08	1.21	1.40	89.52	0.47	55.81	55.82	53.21	2.61	21.384			
700.00	700.00	698.67	698.62	1.43	1.67	89.76	0.25	57.82	57.84	54.74	3.10	18.669			
800.00	800.00	798.34	798.26	1.66	1.93	89.48	0.54	60.45	60.47	56.89	3.59	16.869			
900.00	900.00	897.90	897.75	1.88	2.19	88.54	1.62	63.62	63.68	59.61	4.07	15.650			
1,000.00	1,000.00	997.77	997.54	2.11	2.44	87.00	3.52	67.13	67.27	62.72	4.55	14.795			
1,100.00	1,100.00	1,097.55	1,097.23	2.33	2.69	85.02	6.16	70.72	71.04	66.02	5.02	14.153			
1,200.00	1,200.00	1,196.72	1,196.26	2.56	2.94	82.94	9.26	74.79	75.46	69.97	5.49	13.737			
1,300.00	1,300.00	1,297.00	1,296.39	2.78	3.19	80.89	12.68	79.12	80.22	74.24	5.97	13.434			
1,400.00	1,400.00	1,396.12	1,395.36	3.01	3.45	79.25	15.86	83.55	85.17	78.72	6.45	13.203			
1,500.00	1,500.00	1,494.26	1,493.27	3.23	3.71	77.85	19.22	89.26	91.55	84.62	6.93	13.203			
1,600.00	1,600.00	1,592.20	1,590.84	3.45	3.97	76.29	23.55	96.56	99.81	92.40	7.42	13.455			
1,700.00	1,700.00	1,689.82	1,687.93	3.68	4.23	75.00	28.27	105.51	109.90	102.00	7.90	13.904			
1,800.00	1,800.00	1,787.15	1,784.56	3.90	4.50	74.07	33.15	116.11	121.73	113.34	8.39	14.505			
1,900.00	1,900.00	1,885.24	1,881.78	4.13	4.77	73.18	38.67	127.94	134.89	126.01	8.88	15.185			
2,000.00	2,000.00	1,984.52	1,980.14	4.35	5.05	72.65	43.85	140.37	148.40	139.02	9.38	15.823			
2,100.00	2,100.00	2,083.95	2,078.68	4.58	5.33	72.24	48.89	152.63	161.68	151.80	9.87	16.373			
2,200.00	2,200.00	2,183.30	2,177.17	4.80	5.60	71.91	53.81	164.73	174.79	164.42	10.37	16.855			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Leam Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 4H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE: 2957' + KB 26' @ 2983.00usft (Scan Texas)
Reference Site:	Harroun Trust 31	MD Reference:	GE: 2957' + KB 26' @ 2983.00usft (Scan Texas)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore:	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design: Harroun Trust 31 - 5H - OH - OH											Offset Site Error:	0.00 usft
Survey Program: 100-NS-GYRO-MS, 5931-LEAM MWD+IGRF											Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Highside		Distance		Minimum		Separation		Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation (usft)	
2,300.00	2,300.00	2,280.13	2,273.10	5.03	5.88	71.50	59.15	176.79	188.35	177.49	10.86	17.344
2,400.00	2,400.00	2,374.07	2,365.90	5.25	6.14	71.22	64.68	190.19	203.77	192.42	11.34	17.966
2,500.00	2,500.00	2,471.85	2,462.20	5.48	6.42	71.68	68.45	206.72	221.01	209.17	11.84	18.672
2,600.00	2,600.00	2,573.66	2,562.61	5.70	6.71	71.87	72.98	222.94	237.55	225.21	12.34	19.247
2,700.00	2,700.00	2,677.84	2,665.64	5.93	7.01	72.15	76.61	237.90	252.28	239.43	12.85	19.629
2,800.00	2,800.00	2,784.20	2,771.18	6.15	7.31	72.52	78.99	250.87	264.59	251.22	13.37	19.797
2,900.00	2,900.00	2,886.87	2,873.29	6.38	7.59	73.04	79.77	261.58	274.77	260.91	13.86	19.819
3,000.00	3,000.00	2,986.47	2,972.40	6.60	7.86	73.43	80.74	271.33	284.43	270.08	14.35	19.814
3,100.00	3,100.00	3,088.90	3,074.38	6.83	8.14	73.72	82.03	280.86	293.72	278.86	14.85	19.773
3,200.00	3,200.00	3,189.53	3,174.63	7.05	8.41	73.99	83.07	289.48	302.23	286.88	15.35	19.692
3,300.00	3,300.00	3,293.10	3,277.87	7.28	8.69	74.28	83.81	297.69	310.05	294.20	15.85	19.564
3,400.00	3,400.00	3,394.34	3,378.86	7.50	8.96	74.53	84.33	304.77	316.93	300.58	16.34	19.395
3,500.00	3,500.00	3,494.57	3,478.87	7.73	9.23	74.78	84.75	311.50	323.52	306.69	16.83	19.222
3,600.00	3,600.00	3,593.75	3,577.83	7.95	9.50	74.96	85.49	318.10	330.14	312.82	17.32	19.063
3,700.00	3,700.00	3,697.79	3,681.66	8.17	9.78	75.03	86.76	324.36	336.27	318.45	17.82	18.869
3,800.00	3,800.00	3,802.04	3,785.80	8.40	10.05	75.04	87.95	329.23	341.07	322.75	18.32	18.615
3,900.00	3,900.00	3,904.18	3,887.86	8.62	10.32	75.06	88.88	333.03	344.90	326.09	18.82	18.328
4,000.00	4,000.00	4,005.11	3,988.73	8.85	10.59	75.08	89.65	336.35	348.27	328.96	19.31	18.036
4,100.00	4,100.00	4,104.62	4,088.19	9.07	10.85	75.08	90.46	339.53	351.58	331.78	19.80	17.759
4,200.00	4,200.00	4,205.77	4,189.29	9.30	11.12	75.08	91.29	342.67	354.79	334.50	20.29	17.486
4,300.00	4,300.00	4,309.43	4,292.92	9.52	11.39	75.08	91.99	345.17	357.28	336.49	20.79	17.187
4,400.00	4,400.00	4,412.25	4,395.72	9.75	11.66	75.07	92.42	346.68	358.81	337.53	21.28	16.859
4,500.00	4,500.00	4,511.73	4,495.19	9.97	11.92	75.08	92.71	347.91	360.09	338.32	21.77	16.541
4,600.00	4,600.00	4,611.90	4,595.35	10.20	12.18	75.09	92.97	349.20	361.39	339.14	22.26	16.238
4,700.00	4,700.00	4,711.89	4,695.34	10.42	12.44	75.15	92.95	350.54	362.69	339.95	22.74	15.952
4,800.00	4,800.00	4,812.37	4,795.80	10.65	12.68	75.27	92.53	351.93	363.91	340.71	23.20	15.684
4,900.00	4,900.00	4,912.99	4,896.42	10.87	12.90	75.42	91.85	353.20	364.97	341.31	23.65	15.429
5,000.00	5,000.00	5,013.15	4,996.56	11.10	13.12	75.58	91.11	354.39	365.93	341.84	24.10	15.185
5,100.00	5,100.00	5,113.75	5,097.15	11.32	13.33	75.77	90.19	355.54	366.81	342.28	24.53	14.952
5,200.00	5,200.00	5,215.19	5,198.58	11.55	13.52	75.96	89.12	356.41	367.39	342.44	24.94	14.729
5,300.00	5,300.00	5,316.26	5,299.65	11.77	13.67	76.13	88.10	356.90	367.61	342.29	25.33	14.515
5,400.00	5,400.00	5,416.68	5,400.06	12.00	13.81	76.29	87.12	357.19	367.68	341.97	25.69	14.313
5,500.00	5,500.00	5,517.30	5,500.67	12.22	13.93	76.44	86.16	357.31	367.55	341.52	26.03	14.120
5,600.00	5,600.00	5,617.82	5,601.19	12.45	14.03	76.60	85.12	357.30	367.30	340.94	26.36	13.935
5,700.00	5,700.00	5,718.06	5,701.43	12.67	14.12	76.75	84.10	357.13	366.90	340.23	26.67	13.755
5,800.00	5,800.00	5,816.83	5,800.20	12.89	14.23	76.86	83.38	357.10	366.70	339.70	27.01	13.578
5,843.52	5,843.52	5,860.16	5,843.52	12.99	14.28	76.89	83.17	357.13	366.69	339.53	27.16	13.501
5,901.78	5,901.78	5,917.68	5,901.05	13.12	14.32	76.93	82.91	357.25	366.75	339.41	27.33	13.418
5,925.00	5,924.99	5,939.86	5,923.22	13.18	14.33	120.65	82.82	357.34	367.09	339.84	27.25	13.471
5,950.00	5,949.92	5,963.00	5,946.36	13.23	14.33	120.76	82.89	357.51	368.20	340.93	27.27	13.503
5,975.00	5,974.74	5,980.77	5,964.13	13.29	14.33	120.79	83.30	357.78	370.26	342.99	27.27	13.575
6,000.00	5,999.37	5,994.00	5,977.33	13.34	14.33	120.68	83.95	358.11	373.46	346.19	27.27	13.694
6,025.00	6,023.75	6,015.74	5,998.98	13.40	14.34	120.63	85.70	358.94	377.70	350.44	27.26	13.854
6,050.00	6,047.82	6,032.45	6,015.56	13.46	14.34	120.42	87.62	359.83	383.11	355.86	27.25	14.060
6,075.00	6,071.53	6,048.58	6,031.48	13.52	14.34	120.12	89.97	360.91	389.64	362.41	27.23	14.308
6,100.00	6,094.81	6,064.15	6,046.75	13.58	14.34	119.70	92.70	362.18	397.29	370.07	27.22	14.597
6,125.00	6,117.61	6,079.06	6,061.29	13.64	14.35	119.18	95.70	363.63	406.03	378.83	27.20	14.925
6,150.00	6,139.86	6,089.00	6,070.92	13.71	14.35	118.41	97.89	364.73	415.88	388.68	27.20	15.286
6,175.00	6,161.51	6,107.85	6,089.03	13.78	14.35	117.82	102.56	367.09	426.68	399.47	27.21	15.680
6,200.00	6,182.51	6,120.00	6,100.57	13.86	14.36	116.90	105.95	368.79	438.50	411.26	27.24	16.097
6,225.00	6,202.80	6,134.83	6,114.52	13.95	14.36	115.96	110.46	371.05	451.23	423.94	27.29	16.534

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Leam Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 4H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE: 2957' + KB 26' @ 2983.00usft (Scan Texas)
Reference Site:	Harroun Trust 31	MD Reference:	GE: 2957' + KB 26' @ 2983.00usft (Scan Texas)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.00 usft
Survey Program: 100-NS-GYRO-MS, 5931-LEAM MWD+IGRF														Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)							
6,250.00	6,222.33	6,152.00	6,130.46	14.06	14.37	115.01	116.14	373.96	464.88	437.52	27.36	16.991			
6,275.00	6,241.06	6,160.25	6,138.04	14.17	14.37	113.56	119.04	375.45	479.29	451.81	27.48	17.442			
6,300.00	6,258.93	6,172.74	6,149.41	14.30	14.38	112.18	123.61	377.82	494.47	466.85	27.62	17.901			
6,325.00	6,275.91	6,184.00	6,159.57	14.44	14.38	110.60	127.92	380.06	510.35	482.55	27.81	18.353			
6,350.00	6,291.94	6,196.38	6,170.61	14.60	14.39	108.96	132.90	382.64	526.88	498.85	28.03	18.798			
6,375.00	6,306.99	6,207.59	6,180.46	14.77	14.40	107.12	137.66	385.06	543.99	515.69	28.29	19.227			
6,400.00	6,321.02	6,215.00	6,186.90	14.97	14.40	104.86	140.94	386.70	561.65	533.04	28.61	19.632			
6,425.00	6,333.99	6,229.84	6,199.60	15.18	14.42	103.00	147.83	390.08	579.74	550.81	28.93	20.040			
6,450.00	6,345.88	6,240.64	6,208.67	15.42	14.43	100.73	153.13	392.59	598.26	568.97	29.29	20.424			
6,475.00	6,356.65	6,250.93	6,217.17	15.68	14.44	98.28	158.40	395.03	617.16	587.48	29.68	20.795			
6,500.00	6,366.27	6,260.69	6,225.09	15.96	14.45	95.68	163.58	397.38	636.37	606.30	30.07	21.161			
6,525.00	6,374.72	6,270.01	6,232.53	16.26	14.46	92.94	168.71	399.65	655.88	625.41	30.47	21.527			
6,550.00	6,381.99	6,279.00	6,239.59	16.58	14.47	90.08	173.82	401.88	675.62	644.78	30.85	21.903			
6,575.00	6,388.04	6,287.27	6,245.97	16.92	14.49	87.08	178.66	403.96	695.57	664.37	31.20	22.295			
6,600.00	6,392.87	6,295.21	6,251.99	17.28	14.50	84.00	183.42	405.97	715.67	684.17	31.51	22.713			
6,625.00	6,396.47	6,302.69	6,257.58	17.65	14.51	80.86	188.02	407.89	735.91	704.14	31.77	23.164			
6,650.00	6,398.81	6,310.00	6,262.94	18.05	14.53	77.70	192.61	409.78	756.22	724.25	31.97	23.652			
6,675.00	6,399.91	6,316.17	6,267.41	18.45	14.54	74.45	196.55	411.39	776.59	744.48	32.11	24.186			
6,684.38	6,400.00	6,318.46	6,269.05	18.61	14.54	73.24	198.02	411.99	784.24	752.10	32.14	24.398			
6,700.00	6,400.00	6,322.29	6,271.78	18.86	14.55	73.90	200.51	413.00	796.97	764.51	32.45	24.556			
6,800.00	6,400.00	6,352.74	6,292.68	20.57	14.63	78.14	221.08	421.18	877.97	843.50	34.47	25.471			
6,900.00	6,400.00	6,402.77	6,324.01	22.39	14.80	82.72	257.58	434.87	957.29	920.74	36.54	26.195			
7,000.00	6,400.00	6,528.96	6,391.27	24.26	15.50	89.31	359.45	466.24	1,032.43	993.66	38.78	26.626			
7,100.00	6,400.00	6,595.00	6,418.84	26.16	16.02	91.32	417.59	480.94	1,101.09	1,060.29	40.80	26.991			
7,200.00	6,400.00	6,649.60	6,435.07	28.04	16.53	92.22	467.93	494.35	1,165.86	1,123.06	42.80	27.240			
7,300.00	6,400.00	6,701.81	6,443.57	29.89	17.09	92.53	517.29	508.92	1,227.05	1,182.25	44.79	27.395			
7,400.00	6,400.00	6,869.14	6,444.42	31.69	19.18	92.26	678.52	553.21	1,280.57	1,232.66	47.91	26.727			
7,500.00	6,400.00	7,163.41	6,439.71	33.43	23.32	91.79	968.77	599.51	1,318.10	1,265.01	53.09	24.828			
7,600.00	6,400.00	7,389.91	6,445.54	35.11	26.82	91.97	1,195.02	603.62	1,333.96	1,275.98	57.98	23.006			
7,700.00	6,400.00	7,483.52	6,446.02	36.72	28.35	91.97	1,288.62	602.31	1,341.36	1,280.57	60.79	22.064			
7,775.99	6,400.00	7,552.42	6,445.04	37.89	29.51	91.92	1,357.51	601.72	1,342.70	1,279.94	62.76	21.394			
7,800.00	6,400.00	7,573.87	6,444.46	38.25	29.87	91.90	1,378.95	601.63	1,342.57	1,279.04	63.54	21.131			
7,900.00	6,400.00	7,679.01	6,441.39	39.76	31.64	91.77	1,484.04	601.29	1,342.17	1,275.15	67.02	20.027			
8,000.00	6,400.00	7,781.83	6,439.96	41.31	33.39	91.71	1,586.85	600.35	1,341.20	1,270.68	70.52	19.018			
8,100.00	6,400.00	7,871.98	6,437.56	42.90	34.99	91.61	1,676.96	599.79	1,340.52	1,266.62	73.90	18.139			
8,200.00	6,400.00	8,006.58	6,435.63	44.53	37.37	91.53	1,811.52	597.79	1,339.00	1,260.91	78.10	17.146			
8,300.00	6,400.00	8,103.03	6,435.52	46.19	39.09	91.52	1,907.93	594.96	1,336.07	1,254.42	81.65	16.363			
8,400.00	6,400.00	8,183.40	6,436.06	47.89	40.52	91.55	1,988.27	593.50	1,334.26	1,249.34	84.92	15.711			
8,500.00	6,400.00	8,272.29	6,436.67	49.60	42.11	91.58	2,077.16	592.87	1,333.57	1,245.20	88.37	15.091			
8,549.97	6,400.00	8,318.49	6,436.70	50.47	42.97	91.58	2,123.36	592.80	1,333.50	1,243.33	90.17	14.789			
8,600.00	6,400.00	8,365.60	6,436.47	51.35	43.84	91.57	2,170.47	592.87	1,333.57	1,241.59	91.98	14.498			
8,700.00	6,400.00	8,474.62	6,437.33	53.12	45.85	91.60	2,279.49	592.59	1,333.32	1,237.44	95.88	13.906			
8,781.46	6,400.00	8,550.00	6,438.31	54.57	47.24	91.65	2,354.86	592.39	1,333.14	1,234.31	98.82	13.490			
8,800.00	6,400.00	8,567.65	6,438.49	54.90	47.57	91.65	2,372.51	592.39	1,333.14	1,233.63	99.51	13.397			
8,900.00	6,400.00	8,662.92	6,439.32	56.71	49.38	91.69	2,467.77	592.58	1,333.36	1,230.13	103.23	12.916			
9,000.00	6,400.00	8,755.84	6,439.72	58.53	51.15	91.71	2,560.69	593.22	1,334.07	1,227.14	106.93	12.476			
9,100.00	6,400.00	8,851.58	6,439.84	60.37	52.97	91.71	2,656.42	594.28	1,335.18	1,224.50	110.68	12.063			
9,200.00	6,400.00	8,966.53	6,440.51	62.23	55.10	91.74	2,771.36	595.66	1,336.47	1,221.71	114.75	11.647			
9,300.00	6,400.00	9,095.43	6,443.50	64.09	57.50	91.87	2,900.21	593.71	1,334.89	1,215.79	119.10	11.208			
9,400.00	6,400.00	9,200.47	6,445.87	65.97	59.50	91.97	3,005.20	591.33	1,332.70	1,209.64	123.06	10.830			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Leam Drilling Systems LLC

Anticollision Report

Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 4H
Project:	Eddy County, NM (NAD-83)	TVD Reference:	GE: 2957' + KB 26' @ 2983.00usft (Scan Texas)
Reference Site:	Harroun Trust 31	MD Reference:	GE: 2957' + KB 26' @ 2983.00usft (Scan Texas)
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Harroun Trust 31 - 5H - OH - OH												Offset Site Error:	0.00 usft
Survey Program: 100-NS-GYRO-MS, 5931-LEAM MWD+IGRF												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
9,500.00	6,400.00	9,302.00	6,446.35	67.86	61.48	92.00	3,106.69	588.82	1,330.24	1,203.24	127.00	10.475	
9,600.00	6,400.00	9,401.82	6,445.58	69.76	63.37	91.97	3,206.47	586.34	1,327.73	1,196.86	130.87	10.145	
9,700.00	6,400.00	9,497.74	6,444.91	71.67	65.17	91.94	3,302.37	584.13	1,325.40	1,190.75	134.65	9.844	
9,800.00	6,400.00	9,599.23	6,444.28	73.59	67.08	91.92	3,403.83	581.93	1,323.21	1,184.67	138.54	9.551	
9,900.00	6,400.00	9,705.39	6,442.22	75.51	69.11	91.83	3,509.93	579.03	1,320.40	1,177.84	142.56	9.262	
10,000.00	6,400.00	9,794.47	6,442.27	77.44	70.80	91.84	3,598.99	577.19	1,318.31	1,172.07	146.25	9.014	
10,100.00	6,400.00	9,902.00	6,443.72	79.38	72.87	91.91	3,706.46	574.22	1,315.55	1,165.25	150.31	8.752	
10,200.00	6,400.00	9,997.12	6,444.53	81.33	74.75	91.94	3,801.55	571.87	1,313.12	1,158.94	154.18	8.517	
10,300.00	6,400.00	10,091.00	6,445.17	83.28	76.56	91.97	3,895.41	569.84	1,310.99	1,153.01	157.98	8.298	
10,376.79	6,400.00	10,145.79	6,445.54	84.78	77.61	91.99	3,950.19	569.24	1,310.22	1,149.68	160.57	8.160	
10,400.00	6,400.00	10,161.16	6,445.60	85.23	77.90	91.99	3,985.56	569.28	1,310.29	1,148.97	161.33	8.122	
10,500.00	6,400.00	10,242.60	6,445.24	87.20	79.49	91.98	4,046.99	570.57	1,311.81	1,146.89	164.91	7.954	
10,600.00	6,400.00	10,347.06	6,442.31	89.16	81.53	91.85	4,151.38	572.81	1,313.88	1,144.90	168.97	7.776	
10,700.00	6,400.00	10,465.22	6,439.54	91.13	83.81	91.72	4,269.50	574.10	1,314.90	1,141.62	173.27	7.589	
10,800.00	6,400.00	10,554.55	6,438.89	93.11	85.51	91.69	4,358.82	574.71	1,315.56	1,138.57	176.99	7.433	
10,900.00	6,400.00	10,657.00	6,439.07	95.09	87.46	91.70	4,461.27	575.79	1,316.62	1,135.67	180.95	7.276	
11,000.00	6,400.00	10,753.48	6,439.73	97.07	89.34	91.73	4,557.74	576.81	1,317.69	1,132.85	184.84	7.129	
11,100.00	6,400.00	10,871.80	6,439.94	99.05	91.66	91.74	4,676.06	577.32	1,318.12	1,128.94	189.18	6.968	
11,200.00	6,400.00	10,973.98	6,438.22	101.04	93.66	91.66	4,778.22	578.88	1,317.64	1,124.44	193.20	6.820	
11,241.51	6,400.00	11,010.82	6,437.37	101.87	94.38	91.63	4,815.05	576.84	1,317.56	1,122.79	194.77	6.765	
11,300.00	6,400.00	11,069.46	6,435.93	103.03	95.53	91.56	4,873.67	576.93	1,317.62	1,120.52	197.10	6.685	
11,356.00	6,400.00	11,130.81	6,434.15	104.15	96.73	91.49	4,934.99	576.84	1,317.49	1,118.05	199.44	6.606	
11,400.00	6,400.00	11,129.00	6,434.21	105.03	96.69	91.49	4,933.19	576.85	1,318.10	1,117.81	200.29	6.581	
11,500.00	6,400.00	11,129.00	6,434.21	107.02	96.69	91.49	4,933.19	576.85	1,324.93	1,122.61	202.31	6.549 SF	
11,600.00	6,400.00	11,129.00	6,434.21	109.02	96.69	91.49	4,933.19	576.85	1,339.21	1,134.87	204.34	6.554	
11,700.00	6,400.00	11,129.00	6,434.21	111.02	96.69	91.49	4,933.19	576.85	1,360.70	1,154.34	206.36	6.594	
11,800.00	6,400.00	11,129.00	6,434.21	113.03	96.69	91.49	4,933.19	576.85	1,389.08	1,180.69	208.39	6.666	
11,900.00	6,400.00	11,129.00	6,434.21	115.03	96.69	91.49	4,933.19	576.85	1,423.94	1,213.52	210.42	6.767	
12,000.00	6,400.00	11,129.00	6,434.21	117.04	96.69	91.49	4,933.19	576.85	1,464.80	1,252.35	212.45	6.895	
12,100.00	6,400.00	11,129.00	6,434.21	119.05	96.69	91.49	4,933.19	576.85	1,511.18	1,296.70	214.48	7.046	
12,200.00	6,400.00	11,129.00	6,434.21	121.06	96.69	91.49	4,933.19	576.85	1,562.60	1,346.09	216.51	7.217	
12,300.00	6,400.00	11,129.00	6,434.21	123.08	96.69	91.49	4,933.19	576.85	1,618.57	1,400.02	218.54	7.406	
12,400.00	6,400.00	11,129.00	6,434.21	125.09	96.69	91.49	4,933.19	576.85	1,678.63	1,458.05	220.58	7.610	
12,500.00	6,400.00	11,129.00	6,434.21	127.11	96.69	91.49	4,933.19	576.85	1,742.37	1,519.75	222.61	7.827	
12,600.00	6,400.00	11,129.00	6,434.21	129.13	96.69	91.49	4,933.19	576.85	1,809.39	1,584.74	224.65	8.054	
12,700.00	6,400.00	11,129.00	6,434.21	131.15	96.69	91.49	4,933.19	576.85	1,879.34	1,652.66	226.68	8.291	
12,800.00	6,400.00	11,129.00	6,434.21	133.17	96.69	91.49	4,933.19	576.85	1,951.91	1,723.19	228.72	8.534	
12,900.00	6,400.00	11,129.00	6,434.21	135.19	96.69	91.49	4,933.19	576.85	2,026.82	1,796.06	230.76	8.783	
13,000.00	6,400.00	11,129.00	6,434.21	137.21	96.69	91.49	4,933.19	576.85	2,103.82	1,871.02	232.80	9.037	
13,100.00	6,400.00	11,129.00	6,434.21	139.24	96.69	91.49	4,933.19	576.85	2,182.68	1,947.84	234.84	9.294	
13,200.00	6,400.00	11,129.00	6,434.21	141.26	96.69	91.49	4,933.19	576.85	2,263.21	2,026.34	236.88	9.554	
13,300.00	6,400.00	11,129.00	6,434.21	143.29	96.69	91.49	4,933.19	576.85	2,345.24	2,106.33	238.92	9.816	
13,400.00	6,400.00	11,129.00	6,434.21	145.32	96.69	91.49	4,933.19	576.85	2,428.62	2,187.67	240.96	10.079	
13,500.00	6,400.00	11,129.00	6,434.21	147.35	96.69	91.49	4,933.19	576.85	2,513.22	2,270.22	243.00	10.343	
13,600.00	6,400.00	11,129.00	6,434.21	149.38	96.69	91.49	4,933.19	576.85	2,598.90	2,353.86	245.04	10.606	
13,691.15	6,400.00	11,129.00	6,434.21	151.23	96.69	91.49	4,933.19	576.85	2,677.87	2,430.97	246.90	10.846	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Harroun Trust 31 Com 4H- APD DRILLING PLAN
KKS 10-29-12
Revised SKS 7-31-13

Casing Program

<u>Hole Size</u>	<u>Hole Interval</u>	<u>OD Csg</u>	<u>Casing Interval</u>	<u>Weight</u>	<u>Collar</u>	<u>Grade</u>
17-1/2"	0 – 600	13-3/8"	0 – 600	48#	STC	H-40
12-1/4"	600 – 2,750	9-5/8"	0 – 2,750	40#	LTC	J-55
8-3/4"	2,750– 13,691	5-1/2"	0 – 13,691	17#	DWC/C	P-110RY

Max TVD in lateral: 6,400'

Mud Program:

<u>Depth</u>	<u>Mud Wt.</u>	<u>Visc.</u>	<u>Fluid Loss</u>	<u>Type System</u>
0 – 600	8.4 – 9.0	30 – 34	N/C	FW
600 – 2,750	9.6 – 10.0	28 – 32	N/C	Brine
2,750 – 13,691	8.6 – 9.0	28 – 32	N/C-12	FW

Pressure Control Equipment:

The BOP system used to drill the intermediate hole will consist of a 13-5/8" 3M Double Ram and Annular preventer. The BOP system will be tested as a 3M system prior to drilling out the surface casing shoe.

The BOP system used to drill the production hole will consist of a 13-5/8" 3M Double Ram and Annular preventer. The BOP system will be tested as a 3M system prior to drilling out the intermediate casing shoe.

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.

Cementing Program

13-3/8" Surface

Lead: 650 sacks Class C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Cello Flake + 56.3% Fresh Water, 14.8 ppg

Yield: 1.35 cf/sk

TOC @ surface.

9-5/8" Intermediate

Lead: 840 sacks (60:40) Poz (Fly Ash):Class C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 0.2% bwoc FL-52 + 1% bwoc Sodium Metasilicate + 86.6% Fresh Water, 12.8 ppg

Yield: 1.65 cf/sk

TOC @ surface

Tail: 300 sacks (60:40) Poz (Fly Ash):Class C Cement + 5% bwow Sodium Chloride + 0.125 lbs/sack Cello Flake + 0.4% bwoc Sodium Metasilicate + 0.5% bwoc BA-10A + 4% bwoc MPA-5 + 65.3% Fresh Water, 13.8 ppg

Yield: 1.38 cf/sk.

5-1/2" Production (single stage)

1st Lead: 450 sacks (50:50) Poz (Fly Ash):Class H Cement + 0.5% bwoc FL-52 + 0.3% bwoc ASA-01 + 10% bwoc Bentonite + 0.35% bwoc R-21 + 130.7% Fresh Water, 11.8 ppg

Yield: 2.30 cf/sk

2nd Lead: 380 sacks (35:65) Poz (Fly Ash):Class H Cement + 3% bwow Sodium Chloride + 0.2% bwoc R-3 + 0.125 lbs/sack Cello Flake + 0.7% bwoc FL-52 + 0.3% bwoc ASA-301 + 6% bwoc Bentonite + 105.5% Fresh Water, 12.5 ppg

Yield: 2.01 cf/sk

Tail: 1980 sacks (50:50) Poz (Fly Ash):Class H Cement + 5% bwow Sodium Chloride + 0.3% bwoc CD-32 + 0.5% bwoc FL-25 + 0.4% bwoc FL-52 + 0.5% bwoc Sodium Metasilicate + 57.3% Fresh Water, 14.2 ppg

Yield: 1.28 cf/sk

TOC for All Strings:

Surface:	0'
Intermediate:	0'
Production:	2,200

ACTUAL CEMENT VOLUMES WILL BE ADJUSTED BASED ON FLUID CALIPER AND CALIPER LOG DATA.