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NM OIL CONSERVATION
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NORTHERN DELAWARE BASIN

EDDY COUNTY, NM

ATLAS

ROAD RUNNER FED COM #3H

OWB

Design: ACTUAL WELLPATH

Standard Survey Report

19 June, 2018



Survey Report

Company: NORTHERN DELAWARE BASIN
Project: EDDY COUNTY, NM
Site: ATLAS
Well: ROAD RUNNER FED COM #3H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well ROAD RUNNER FED COM #3H
TVD Reference: RKB=3241.4+26 @ 3267.4usft (MCVAY 8)
MD Reference: RKB=3241.4+26 @ 3267.4usft (MCVAY 8)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

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

Site	ATLAS			
Site Position:		Northing:	371,480.80 usft	Latitude: 32° 1' 15.933 N
From:	Map	Easting:	573,599.60 usft	Longitude: 104° 5' 45.086 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.13 °

Well	ROAD RUNNER FED COM #3H			
Well Position	+N/-S	0.0 usft	Northing:	397,932.60 usft
	+E/-W	0.0 usft	Easting:	526,403.60 usft
Position Uncertainty	3.0 usft		Wellhead Elevation:	usft
			Ground Level:	3,241.4 usft

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	WMM2015	1/10/2018	7.22	59.81	47,717.65943862

Design	ACTUAL WELLPATH			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	359.25

Survey Program	Date 6/7/2018			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	6,636.0	GYRO - INTERMEDIATE (OWB)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4
6,743.0	17,268.0	MWD - CURVE/LATERAL (OWB)	MWD+IFR1+MS	OWSG MWD + IFR1 + Multi-Station Correction

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.58	304.69	100.0	0.3	-0.4	0.3	0.58	0.58	0.00
125.0	0.71	303.15	125.0	0.4	-0.6	0.5	0.52	0.52	-6.16
150.0	0.74	291.36	150.0	0.6	-0.9	0.6	0.61	0.12	-47.16
175.0	0.72	301.60	175.0	0.7	-1.2	0.7	0.53	-0.08	40.96
200.0	0.81	303.01	200.0	0.9	-1.5	0.9	0.37	0.36	5.64
225.0	0.89	301.47	225.0	1.1	-1.8	1.1	0.33	0.32	-6.16
250.0	1.03	309.74	250.0	1.4	-2.1	1.4	0.79	0.56	33.08
275.0	1.11	311.08	275.0	1.7	-2.5	1.7	0.34	0.32	5.36
300.0	1.13	312.07	300.0	2.0	-2.9	2.0	0.11	0.08	3.96

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Site:	ATLAS	MD Reference:	RKB=3241.4+26 @ 3267.4usft (MCVAY 8)
Well:	ROAD RUNNER FED COM #3H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH	Database:	EDM_Users

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)
325.0	1.12	309.62	325.0	2.3	-3.2	2.3	0.20	-0.04	-9.80
350.0	1.10	309.82	350.0	2.6	-3.6	2.7	0.08	-0.08	0.80
375.0	1.11	308.66	375.0	2.9	-4.0	3.0	0.10	0.04	-4.64
400.0	1.10	305.26	400.0	3.2	-4.4	3.3	0.27	-0.04	-13.60
425.0	1.08	307.16	425.0	3.5	-4.8	3.5	0.17	-0.08	7.60
450.0	0.90	299.05	449.9	3.7	-5.1	3.8	0.91	-0.72	-32.44
475.0	0.53	284.45	474.9	3.8	-5.4	3.9	1.64	-1.48	-58.40
500.0	0.40	245.59	499.9	3.8	-5.6	3.9	1.33	-0.52	-155.44
525.0	0.40	220.65	524.9	3.7	-5.7	3.8	0.69	0.00	-99.76
550.0	0.42	208.85	549.9	3.6	-5.8	3.7	0.35	0.08	-47.20
575.0	0.44	207.47	574.9	3.4	-5.9	3.5	0.09	0.08	-5.52
600.0	0.45	203.13	599.9	3.2	-6.0	3.3	0.14	0.04	-17.36
625.0	0.51	198.38	624.9	3.1	-6.1	3.1	0.29	0.24	-19.00
650.0	0.51	198.49	649.9	2.8	-6.1	2.9	0.00	0.00	0.44
675.0	0.44	195.96	674.9	2.6	-6.2	2.7	0.29	-0.28	-10.12
700.0	0.43	194.41	699.9	2.5	-6.3	2.5	0.06	-0.04	-6.20
725.0	0.45	192.07	724.9	2.3	-6.3	2.4	0.11	0.08	-9.36
750.0	0.45	194.36	749.9	2.1	-6.3	2.2	0.07	0.00	9.16
775.0	0.46	196.81	774.9	1.9	-6.4	2.0	0.09	0.04	9.80
800.0	0.48	199.70	799.9	1.7	-6.5	1.8	0.12	0.08	11.56
825.0	0.56	202.59	824.9	1.5	-6.5	1.6	0.34	0.32	11.56
850.0	0.53	195.74	849.9	1.3	-6.6	1.3	0.29	-0.12	-27.40
875.0	0.53	193.46	874.9	1.0	-6.7	1.1	0.08	0.00	-9.12
900.0	0.51	186.06	899.9	0.8	-6.7	0.9	0.28	-0.08	-29.60
925.0	0.50	182.56	924.9	0.6	-6.7	0.7	0.13	-0.04	-14.00
950.0	0.52	187.73	949.9	0.4	-6.8	0.5	0.20	0.08	20.68
975.0	0.47	186.32	974.9	0.2	-6.8	0.2	0.21	-0.20	-5.64
1,000.0	0.46	188.09	999.9	0.0	-6.8	0.0	0.07	-0.04	7.08
1,025.0	0.53	186.67	1,024.9	-0.3	-6.8	-0.2	0.28	0.28	-5.68
1,050.0	0.54	183.01	1,049.9	-0.5	-6.9	-0.4	0.14	0.04	-14.64
1,075.0	0.57	169.17	1,074.9	-0.7	-6.8	-0.6	0.55	0.12	-55.36
1,100.0	0.68	163.36	1,099.9	-1.0	-6.8	-0.9	0.51	0.44	-23.24
1,125.0	0.72	157.38	1,124.9	-1.3	-6.7	-1.2	0.33	0.16	-23.92
1,150.0	0.78	152.88	1,149.9	-1.6	-6.5	-1.5	0.34	0.24	-18.00
1,175.0	0.94	143.20	1,174.9	-1.9	-6.3	-1.8	0.86	0.64	-38.72
1,200.0	1.24	132.77	1,199.9	-2.2	-6.0	-2.2	1.43	1.20	-41.72
1,225.0	1.38	126.56	1,224.9	-2.6	-5.6	-2.5	0.80	0.56	-24.84
1,250.0	1.46	125.34	1,249.9	-3.0	-5.1	-2.9	0.34	0.32	-4.88
1,275.0	1.41	124.40	1,274.9	-3.3	-4.6	-3.3	0.22	-0.20	-3.76
1,300.0	1.12	122.21	1,299.9	-3.6	-4.1	-3.6	1.18	-1.16	-8.76
1,325.0	0.69	119.49	1,324.9	-3.8	-3.8	-3.8	1.73	-1.72	-10.88
1,350.0	0.15	102.46	1,349.9	-3.9	-3.6	-3.9	2.19	-2.16	-68.12
1,375.0	0.16	96.66	1,374.9	-3.9	-3.5	-3.9	0.07	0.04	-23.20



Survey Report

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Site:	ATLAS	MD Reference:	RKB=3241.4+26 @ 3267.4usft (MCVAY 8)
Well:	ROAD RUNNER FED COM #3H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH	Database:	EDM_Users

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)
1,400.0	0.17	85.88	1,399.9	-3.9	-3.5	-3.9	0.13	0.04	-43.12
1,425.0	0.27	78.25	1,424.9	-3.9	-3.4	-3.9	0.42	0.40	-30.52
1,450.0	0.41	92.98	1,449.9	-3.9	-3.2	-3.9	0.66	0.56	58.92
1,475.0	0.47	93.75	1,474.9	-3.9	-3.0	-3.9	0.24	0.24	3.08
1,500.0	0.49	89.73	1,499.9	-3.9	-2.8	-3.9	0.16	0.08	-16.08
1,525.0	0.41	93.01	1,524.9	-3.9	-2.6	-3.9	0.34	-0.32	13.12
1,550.0	0.35	82.40	1,549.9	-3.9	-2.4	-3.9	0.37	-0.24	-42.44
1,575.0	0.20	82.62	1,574.9	-3.9	-2.3	-3.9	0.60	-0.60	0.88
1,600.0	0.23	250.47	1,599.9	-3.9	-2.3	-3.9	1.71	0.12	671.40
1,625.0	0.66	263.24	1,624.9	-3.9	-2.5	-3.9	1.75	1.72	51.08
1,650.0	0.78	262.99	1,649.9	-4.0	-2.8	-4.0	0.48	0.48	-1.00
1,675.0	0.79	264.51	1,674.9	-4.0	-3.2	-4.0	0.09	0.04	6.08
1,700.0	0.76	265.20	1,699.9	-4.1	-3.5	-4.0	0.13	-0.12	2.76
1,725.0	0.53	263.34	1,724.9	-4.1	-3.8	-4.0	0.92	-0.92	-7.44
1,750.0	0.49	269.65	1,749.9	-4.1	-4.0	-4.0	0.28	-0.16	25.24
1,775.0	0.43	285.11	1,774.9	-4.1	-4.2	-4.0	0.55	-0.24	61.84
1,800.0	0.45	270.28	1,799.9	-4.0	-4.4	-4.0	0.46	0.08	-59.32
1,825.0	0.48	270.00	1,824.9	-4.0	-4.6	-4.0	0.12	0.12	-1.12
1,850.0	0.60	277.21	1,849.9	-4.0	-4.8	-4.0	0.55	0.48	28.84
1,875.0	1.19	269.59	1,874.9	-4.0	-5.2	-3.9	2.40	2.36	-30.48
1,900.0	1.63	271.26	1,899.9	-4.0	-5.8	-3.9	1.77	1.76	6.68
1,925.0	1.88	272.99	1,924.8	-4.0	-6.6	-3.9	1.02	1.00	6.92
1,950.0	1.89	271.84	1,949.8	-3.9	-7.4	-3.8	0.16	0.04	-4.60
1,975.0	1.87	273.18	1,974.8	-3.9	-8.2	-3.8	0.19	-0.08	5.36
2,000.0	1.88	271.45	1,999.8	-3.9	-9.1	-3.8	0.23	0.04	-6.92
2,025.0	1.90	273.20	2,024.8	-3.8	-9.9	-3.7	0.24	0.08	7.00
2,050.0	1.88	271.25	2,049.8	-3.8	-10.7	-3.7	0.27	-0.08	-7.80
2,075.0	1.84	272.38	2,074.8	-3.8	-11.5	-3.6	0.22	-0.16	4.52
2,100.0	1.88	272.53	2,099.7	-3.8	-12.3	-3.6	0.16	0.16	0.60
2,125.0	1.83	272.80	2,124.7	-3.7	-13.1	-3.5	0.20	-0.20	1.08
2,150.0	1.89	274.31	2,149.7	-3.7	-14.0	-3.5	0.31	0.24	6.04
2,175.0	1.83	274.06	2,174.7	-3.6	-14.8	-3.4	0.24	-0.24	-1.00
2,200.0	1.87	273.94	2,199.7	-3.5	-15.6	-3.3	0.16	0.16	-0.48
2,225.0	1.83	272.99	2,224.7	-3.5	-16.4	-3.3	0.20	-0.16	-3.80
2,250.0	1.90	273.51	2,249.7	-3.5	-17.2	-3.2	0.29	0.28	2.08
2,275.0	1.90	273.65	2,274.7	-3.4	-18.0	-3.2	0.02	0.00	0.56
2,300.0	1.91	274.64	2,299.6	-3.3	-18.8	-3.1	0.14	0.04	3.96
2,325.0	1.95	273.49	2,324.6	-3.3	-19.7	-3.0	0.22	0.16	-4.60
2,350.0	2.05	270.99	2,349.6	-3.2	-20.6	-3.0	0.53	0.40	-10.00
2,375.0	2.17	269.30	2,374.6	-3.2	-21.5	-3.0	0.54	0.48	-6.76
2,400.0	2.17	268.54	2,399.6	-3.3	-22.4	-3.0	0.12	0.00	-3.04
2,425.0	2.13	269.32	2,424.6	-3.3	-23.4	-3.0	0.20	-0.16	3.12
2,450.0	2.15	267.32	2,449.5	-3.3	-24.3	-3.0	0.31	0.08	-8.00

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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)
2,475.0	2.19	266.16	2,474.5	-3.4	-25.2	-3.0	0.24	0.16	-4.64
2,500.0	2.19	266.10	2,499.5	-3.4	-26.2	-3.1	0.01	0.00	-0.24
2,525.0	2.23	264.89	2,524.5	-3.5	-27.2	-3.1	0.25	0.16	-4.84
2,550.0	2.20	265.15	2,549.5	-3.6	-28.1	-3.2	0.13	-0.12	1.04
2,575.0	2.17	264.66	2,574.4	-3.7	-29.1	-3.3	0.14	-0.12	-1.96
2,600.0	2.16	263.70	2,599.4	-3.8	-30.0	-3.4	0.15	-0.04	-3.84
2,625.0	2.16	262.71	2,624.4	-3.9	-30.9	-3.5	0.15	0.00	-3.96
2,650.0	2.18	262.95	2,649.4	-4.0	-31.9	-3.6	0.09	0.08	0.96
2,675.0	2.17	262.41	2,674.4	-4.1	-32.8	-3.7	0.09	-0.04	-2.16
2,700.0	2.13	262.43	2,699.4	-4.2	-33.7	-3.8	0.16	-0.16	0.08
2,725.0	1.78	257.76	2,724.3	-4.4	-34.6	-3.9	1.54	-1.40	-18.68
2,750.0	1.39	247.78	2,749.3	-4.6	-35.2	-4.1	1.91	-1.56	-39.92
2,775.0	1.04	225.67	2,774.3	-4.9	-35.7	-4.4	2.32	-1.40	-88.44
2,800.0	0.93	220.25	2,799.3	-5.2	-36.0	-4.7	0.58	-0.44	-21.68
2,825.0	1.00	217.29	2,824.3	-5.5	-36.2	-5.0	0.34	0.28	-11.84
2,850.0	0.93	218.81	2,849.3	-5.8	-36.5	-5.4	0.30	-0.28	6.08
2,875.0	0.91	219.09	2,874.3	-6.1	-36.8	-5.7	0.08	-0.08	1.12
2,900.0	1.03	216.34	2,899.3	-6.5	-37.0	-6.0	0.51	0.48	-11.00
2,925.0	1.08	218.61	2,924.3	-6.8	-37.3	-6.4	0.26	0.20	9.08
2,950.0	1.01	220.22	2,949.3	-7.2	-37.6	-6.7	0.30	-0.28	6.44
2,975.0	1.01	220.15	2,974.3	-7.5	-37.9	-7.0	0.00	0.00	-0.28
3,000.0	1.04	217.68	2,999.3	-7.9	-38.2	-7.4	0.21	0.12	-9.88
3,025.0	1.13	218.61	3,024.3	-8.3	-38.4	-7.7	0.37	0.36	3.72
3,050.0	1.17	216.53	3,049.3	-8.6	-38.7	-8.1	0.23	0.16	-8.32
3,075.0	1.13	214.49	3,074.3	-9.1	-39.0	-8.5	0.23	-0.16	-8.16
3,100.0	1.16	217.35	3,099.3	-9.5	-39.3	-8.9	0.26	0.12	11.44
3,125.0	1.17	216.52	3,124.3	-9.9	-39.6	-9.4	0.08	0.04	-3.32
3,150.0	1.18	215.73	3,149.3	-10.3	-39.9	-9.8	0.08	0.04	-3.16
3,175.0	1.20	218.58	3,174.3	-10.7	-40.3	-10.2	0.25	0.08	11.40
3,200.0	1.20	212.91	3,199.3	-11.1	-40.6	-10.6	0.47	0.00	-22.68
3,225.0	1.25	215.87	3,224.2	-11.6	-40.9	-11.0	0.32	0.20	11.84
3,250.0	1.27	216.46	3,249.2	-12.0	-41.2	-11.5	0.10	0.08	2.36
3,275.0	1.24	218.19	3,274.2	-12.4	-41.5	-11.9	0.19	-0.12	6.92
3,300.0	1.21	218.02	3,299.2	-12.9	-41.8	-12.3	0.12	-0.12	-0.68
3,325.0	1.22	212.68	3,324.2	-13.3	-42.2	-12.7	0.45	0.04	-21.36
3,350.0	1.20	218.87	3,349.2	-13.7	-42.5	-13.2	0.53	-0.08	24.76
3,375.0	1.23	218.16	3,374.2	-14.1	-42.8	-13.6	0.13	0.12	-2.84
3,400.0	1.24	219.23	3,399.2	-14.6	-43.1	-14.0	0.10	0.04	4.28
3,425.0	1.23	218.84	3,424.2	-15.0	-43.5	-14.4	0.05	-0.04	-1.56
3,450.0	1.16	219.38	3,449.2	-15.4	-43.8	-14.8	0.28	-0.28	2.16
3,475.0	1.15	217.57	3,474.2	-15.8	-44.1	-15.2	0.15	-0.04	-7.24
3,500.0	0.85	236.39	3,499.2	-16.1	-44.4	-15.5	1.76	-1.20	75.28
3,525.0	0.73	300.87	3,524.2	-16.1	-44.7	-15.5	3.40	-0.48	257.92
3,550.0	0.80	314.34	3,549.2	-15.9	-45.0	-15.3	0.77	0.28	53.88

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well ROAD RUNNER FED COM #3H
Project:	EDDY COUNTY, NM	TVD Reference:	RKB=3241.4+26 @ 3267.4usft (MCVAY 8)
Site:	ATLAS	MD Reference:	RKB=3241.4+26 @ 3267.4usft (MCVAY 8)
Well:	ROAD RUNNER FED COM #3H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH	Database:	EDM_Users

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)
3,575.0	0.85	313.91	3,574.2	-15.6	-45.2	-15.1	0.20	0.20	-1.72
3,600.0	0.87	314.63	3,599.2	-15.4	-45.5	-14.8	0.09	0.08	2.88
3,625.0	0.84	312.57	3,624.2	-15.1	-45.8	-14.5	0.17	-0.12	-8.24
3,650.0	0.83	315.01	3,649.2	-14.9	-46.0	-14.3	0.15	-0.04	9.76
3,675.0	0.83	318.51	3,674.2	-14.6	-46.3	-14.0	0.20	0.00	14.00
3,700.0	0.81	317.89	3,699.2	-14.3	-46.5	-13.7	0.09	-0.08	-2.48
3,725.0	0.78	319.97	3,724.2	-14.1	-46.7	-13.5	0.17	-0.12	8.32
3,750.0	0.80	317.07	3,749.2	-13.8	-47.0	-13.2	0.18	0.08	-11.60
3,775.0	0.81	317.54	3,774.2	-13.6	-47.2	-12.9	0.05	0.04	1.88
3,800.0	0.75	318.39	3,799.2	-13.3	-47.4	-12.7	0.24	-0.24	3.40
3,825.0	0.72	310.72	3,824.2	-13.1	-47.7	-12.5	0.41	-0.12	-30.68
3,850.0	0.77	309.52	3,849.2	-12.9	-47.9	-12.2	0.21	0.20	-4.80
3,875.0	0.81	314.36	3,874.2	-12.6	-48.2	-12.0	0.31	0.16	19.36
3,900.0	0.78	312.43	3,899.2	-12.4	-48.4	-11.8	0.16	-0.12	-7.72
3,925.0	0.82	316.23	3,924.1	-12.2	-48.7	-11.5	0.27	0.16	15.20
3,950.0	0.77	311.16	3,949.1	-11.9	-48.9	-11.3	0.35	-0.20	-20.28
3,975.0	0.75	308.49	3,974.1	-11.7	-49.2	-11.1	0.16	-0.08	-10.68
4,000.0	0.77	309.77	3,999.1	-11.5	-49.4	-10.9	0.10	0.08	5.12
4,025.0	0.80	311.97	4,024.1	-11.3	-49.7	-10.6	0.17	0.12	8.80
4,050.0	0.74	311.65	4,049.1	-11.1	-49.9	-10.4	0.24	-0.24	-1.28
4,075.0	0.68	314.38	4,074.1	-10.8	-50.2	-10.2	0.28	-0.24	10.92
4,100.0	0.63	312.01	4,099.1	-10.6	-50.4	-10.0	0.23	-0.20	-9.48
4,125.0	0.60	311.04	4,124.1	-10.5	-50.6	-9.8	0.13	-0.12	-3.88
4,150.0	0.50	306.38	4,149.1	-10.3	-50.8	-9.7	0.44	-0.40	-18.64
4,175.0	0.51	302.76	4,174.1	-10.2	-50.9	-9.5	0.13	0.04	-14.48
4,200.0	0.50	304.07	4,199.1	-10.1	-51.1	-9.4	0.06	-0.04	5.24
4,225.0	0.59	297.38	4,224.1	-9.9	-51.3	-9.3	0.44	0.36	-26.76
4,250.0	0.60	297.77	4,249.1	-9.8	-51.6	-9.2	0.04	0.04	1.56
4,275.0	0.66	303.91	4,274.1	-9.7	-51.8	-9.0	0.36	0.24	24.56
4,300.0	0.60	299.86	4,299.1	-9.5	-52.0	-8.9	0.30	-0.24	-16.20
4,325.0	0.53	299.22	4,324.1	-9.4	-52.3	-8.7	0.28	-0.28	-2.56
4,350.0	0.51	300.26	4,349.1	-9.3	-52.4	-8.6	0.09	-0.08	4.16
4,375.0	0.45	304.26	4,374.1	-9.2	-52.6	-8.5	0.27	-0.24	16.00
4,400.0	0.36	297.79	4,399.1	-9.1	-52.8	-8.4	0.40	-0.36	-25.88
4,425.0	0.43	293.86	4,424.1	-9.0	-52.9	-8.3	0.30	0.28	-15.72
4,450.0	0.46	293.94	4,449.1	-9.0	-53.1	-8.3	0.12	0.12	0.32
4,475.0	0.45	296.25	4,474.1	-8.9	-53.3	-8.2	0.08	-0.04	9.24
4,500.0	0.39	302.79	4,499.1	-8.8	-53.4	-8.1	0.31	-0.24	26.16
4,525.0	0.31	291.51	4,524.1	-8.7	-53.6	-8.0	0.42	-0.32	-45.12
4,550.0	0.31	284.01	4,549.1	-8.7	-53.7	-8.0	0.16	0.00	-30.00
4,575.0	0.29	298.17	4,574.1	-8.6	-53.8	-7.9	0.31	-0.08	56.64
4,600.0	0.23	298.75	4,599.1	-8.6	-53.9	-7.9	0.24	-0.24	2.32
4,625.0	0.15	300.85	4,624.1	-8.5	-54.0	-7.8	0.32	-0.32	8.40

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well ROAD RUNNER FED COM #3H
Project:	EDDY COUNTY, NM	TVD Reference:	RKB=3241.4+26 @ 3267.4usft (MCVAY 8)
Site:	ATLAS	MD Reference:	RKB=3241.4+26 @ 3267.4usft (MCVAY 8)
Well:	ROAD RUNNER FED COM #3H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH	Database:	EDM_Users

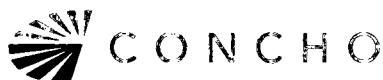
Survey

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)
4,650.0	0.18	288.05	4,649.1	-8.5	-54.1	-7.8	0.19	0.12	-51.20
4,675.0	0.12	280.36	4,674.1	-8.5	-54.1	-7.8	0.25	-0.24	-30.76
4,700.0	0.18	294.55	4,699.1	-8.5	-54.2	-7.8	0.28	0.24	56.76
4,725.0	0.15	316.20	4,724.1	-8.4	-54.3	-7.7	0.27	-0.12	86.60
4,750.0	0.09	314.11	4,749.1	-8.4	-54.3	-7.7	0.24	-0.24	-8.36
4,775.0	0.08	229.48	4,774.1	-8.4	-54.3	-7.7	0.46	-0.04	-338.52
4,800.0	0.08	246.62	4,799.1	-8.4	-54.3	-7.7	0.10	0.00	68.56
4,825.0	0.15	196.72	4,824.1	-8.4	-54.4	-7.7	0.46	0.28	-199.60
4,850.0	0.10	198.97	4,849.1	-8.5	-54.4	-7.8	0.20	-0.20	9.00
4,875.0	0.08	185.70	4,874.1	-8.5	-54.4	-7.8	0.12	-0.08	-53.08
4,900.0	0.20	191.99	4,899.1	-8.6	-54.4	-7.9	0.48	0.48	25.16
4,925.0	0.19	204.84	4,924.1	-8.7	-54.4	-8.0	0.18	-0.04	51.40
4,950.0	0.15	192.69	4,949.1	-8.7	-54.5	-8.0	0.21	-0.16	-48.60
4,975.0	0.15	182.49	4,974.1	-8.8	-54.5	-8.1	0.11	0.00	-40.80
5,000.0	0.20	196.07	4,999.1	-8.9	-54.5	-8.2	0.26	0.20	54.32
5,025.0	0.24	194.34	5,024.1	-9.0	-54.5	-8.3	0.16	0.16	-6.92
5,050.0	0.26	187.92	5,049.1	-9.1	-54.5	-8.4	0.14	0.08	-25.68
5,075.0	0.39	166.96	5,074.1	-9.2	-54.5	-8.5	0.70	0.52	-83.84
5,100.0	0.36	171.50	5,099.1	-9.4	-54.5	-8.7	0.17	-0.12	18.16
5,125.0	0.33	175.51	5,124.1	-9.5	-54.5	-8.8	0.15	-0.12	16.04
5,150.0	0.37	168.76	5,149.1	-9.7	-54.4	-9.0	0.23	0.16	-27.00
5,175.0	0.35	162.53	5,174.1	-9.8	-54.4	-9.1	0.18	-0.08	-24.92
5,200.0	0.38	170.37	5,199.1	-10.0	-54.4	-9.3	0.23	0.12	31.36
5,225.0	0.36	167.90	5,224.1	-10.1	-54.3	-9.4	0.10	-0.08	-9.88
5,250.0	0.39	160.97	5,249.1	-10.3	-54.3	-9.6	0.22	0.12	-27.72
5,275.0	0.48	161.21	5,274.1	-10.5	-54.2	-9.8	0.36	0.36	0.96
5,300.0	0.44	167.81	5,299.1	-10.7	-54.2	-10.0	0.27	-0.16	26.40
5,325.0	0.52	166.67	5,324.1	-10.9	-54.1	-10.2	0.32	0.32	-4.56
5,350.0	0.48	167.47	5,349.1	-11.1	-54.1	-10.4	0.16	-0.16	3.20
5,375.0	0.56	160.88	5,374.1	-11.3	-54.0	-10.6	0.40	0.32	-26.36
5,400.0	0.61	167.67	5,399.1	-11.5	-54.0	-10.8	0.34	0.20	27.16
5,425.0	0.56	163.67	5,424.1	-11.8	-53.9	-11.1	0.26	-0.20	-16.00
5,450.0	0.53	159.90	5,449.1	-12.0	-53.8	-11.3	0.19	-0.12	-15.08
5,475.0	0.35	197.82	5,474.1	-12.2	-53.8	-11.5	1.33	-0.72	151.68
5,500.0	0.91	289.02	5,499.1	-12.2	-54.0	-11.5	3.93	2.24	364.80
5,525.0	1.71	298.41	5,524.1	-12.0	-54.5	-11.3	3.30	3.20	37.56
5,550.0	2.05	295.91	5,549.1	-11.6	-55.3	-10.9	1.40	1.36	-10.00
5,575.0	2.29	292.11	5,574.1	-11.2	-56.1	-10.5	1.12	0.96	-15.20
5,600.0	2.38	290.47	5,599.0	-10.8	-57.1	-10.1	0.45	0.36	-6.56
5,625.0	2.40	289.67	5,624.0	-10.5	-58.1	-9.7	0.16	0.08	-3.20
5,650.0	2.42	289.15	5,649.0	-10.1	-59.0	-9.4	0.12	0.08	-2.08
5,675.0	2.07	288.65	5,674.0	-9.8	-60.0	-9.0	1.40	-1.40	-2.00
5,700.0	1.07	287.60	5,699.0	-9.6	-60.6	-8.8	4.00	-4.00	-4.20

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well ROAD RUNNER FED COM #3H
Project:	EDDY COUNTY, NM	TVD Reference:	RKB=3241.4+26 @ 3267.4usft (MCVAY 8)
Site:	ATLAS	MD Reference:	RKB=3241.4+26 @ 3267.4usft (MCVAY 8)
Well:	ROAD RUNNER FED COM #3H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH	Database:	EDM_Users

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)
5,725.0	0.59	281.44	5,724.0	-9.5	-61.0	-8.7	1.95	-1.92	-24.64
5,750.0	0.51	285.03	5,749.0	-9.5	-61.2	-8.7	0.35	-0.32	14.36
5,775.0	0.47	285.37	5,774.0	-9.4	-61.4	-8.6	0.16	-0.16	1.36
5,800.0	0.38	282.84	5,799.0	-9.4	-61.6	-8.5	0.37	-0.36	-10.12
5,825.0	0.53	277.00	5,824.0	-9.3	-61.8	-8.5	0.63	0.60	-23.36
5,850.0	0.50	282.02	5,849.0	-9.3	-62.0	-8.5	0.22	-0.12	20.08
5,875.0	0.45	280.30	5,874.0	-9.2	-62.2	-8.4	0.21	-0.20	-6.88
5,900.0	0.57	275.53	5,899.0	-9.2	-62.4	-8.4	0.51	0.48	-19.08
5,925.0	0.69	277.28	5,924.0	-9.2	-62.7	-8.4	0.49	0.48	7.00
5,950.0	0.67	276.56	5,949.0	-9.1	-63.0	-8.3	0.09	-0.08	-2.88
5,975.0	0.66	267.51	5,974.0	-9.1	-63.3	-8.3	0.42	-0.04	-36.20
6,000.0	0.71	259.34	5,999.0	-9.2	-63.6	-8.3	0.44	0.20	-32.68
6,025.0	0.69	256.90	6,023.9	-9.2	-63.9	-8.4	0.14	-0.08	-9.76
6,050.0	0.70	256.94	6,048.9	-9.3	-64.2	-8.5	0.04	0.04	0.16
6,075.0	0.73	252.07	6,073.9	-9.4	-64.5	-8.5	0.27	0.12	-19.48
6,100.0	0.74	247.70	6,098.9	-9.5	-64.8	-8.7	0.23	0.04	-17.48
6,125.0	0.78	249.30	6,123.9	-9.6	-65.1	-8.8	0.18	0.16	6.40
6,150.0	0.84	258.66	6,148.9	-9.7	-65.4	-8.9	0.58	0.24	37.44
6,175.0	0.84	271.67	6,173.9	-9.7	-65.8	-8.9	0.76	0.00	52.04
6,200.0	0.83	282.85	6,198.9	-9.7	-66.1	-8.8	0.65	-0.04	44.72
6,225.0	0.92	289.99	6,223.9	-9.6	-66.5	-8.7	0.56	0.36	28.56
6,250.0	0.91	292.88	6,248.9	-9.4	-66.9	-8.6	0.19	-0.04	11.56
6,275.0	0.93	298.16	6,273.9	-9.3	-67.2	-8.4	0.35	0.08	21.12
6,300.0	0.95	302.78	6,298.9	-9.1	-67.6	-8.2	0.31	0.08	18.48
6,325.0	1.02	307.62	6,323.9	-8.8	-67.9	-7.9	0.43	0.28	19.36
6,350.0	1.11	310.28	6,348.9	-8.5	-68.3	-7.6	0.41	0.36	10.64
6,375.0	1.24	314.89	6,373.9	-8.2	-68.7	-7.3	0.64	0.52	18.44
6,400.0	1.39	313.37	6,398.9	-7.8	-69.1	-6.9	0.62	0.60	-6.08
6,425.0	1.45	313.02	6,423.9	-7.4	-69.5	-6.4	0.24	0.24	-1.40
6,450.0	1.49	315.15	6,448.9	-6.9	-70.0	-6.0	0.27	0.16	8.52
6,475.0	1.59	319.54	6,473.9	-6.4	-70.5	-5.5	0.62	0.40	17.56
6,500.0	1.57	323.78	6,498.9	-5.9	-70.9	-4.9	0.47	-0.08	16.96
6,525.0	1.63	323.75	6,523.9	-5.3	-71.3	-4.4	0.24	0.24	-0.12
6,550.0	1.68	326.39	6,548.8	-4.7	-71.7	-3.8	0.36	0.20	10.56
6,575.0	1.71	325.75	6,573.8	-4.1	-72.1	-3.2	0.14	0.12	-2.56
6,600.0	1.67	327.60	6,598.8	-3.5	-72.5	-2.5	0.27	-0.16	7.40
6,625.0	1.68	327.03	6,623.8	-2.9	-72.9	-1.9	0.08	0.04	-2.28
6,636.0	1.62	330.37	6,634.8	-2.6	-73.1	-1.6	1.03	-0.55	30.36
6,743.0	1.16	313.19	6,741.8	-0.5	-74.6	0.4	0.58	-0.43	-16.06
6,775.0	3.27	350.54	6,773.8	0.6	-75.0	1.6	7.66	6.59	116.72
6,807.0	7.17	2.15	6,805.6	3.5	-75.1	4.5	12.57	12.19	36.28
6,839.0	10.85	6.66	6,837.2	8.5	-74.7	9.4	11.70	11.50	14.09
6,871.0	14.95	6.76	6,868.4	15.6	-73.8	16.5	12.81	12.81	0.31
6,902.0	16.58	359.31	6,898.2	24.0	-73.4	24.9	8.37	5.26	-24.03



Survey Report

Company: NORTHERN DELAWARE BASIN
Project: EDDY COUNTY, NM
Site: ATLAS
Well: ROAD RUNNER FED COM #3H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well ROAD RUNNER FED COM #3H
TVD Reference: RKB=3241.4+26 @ 3267.4usft (MCVAY 8)
MD Reference: RKB=3241.4+26 @ 3267.4usft (MCVAY 8)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

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)
6,934.0	19.99	355.36	6,928.6	34.0	-73.9	34.9	11.33	10.66	-12.34
6,966.0	23.79	354.56	6,958.3	45.9	-75.0	46.8	11.91	11.88	-2.50
6,998.0	27.97	355.28	6,987.1	59.8	-76.2	60.8	13.10	13.06	2.25
7,029.0	31.33	354.49	7,014.0	75.0	-77.6	76.0	10.91	10.84	-2.55
7,060.0	33.75	354.08	7,040.2	91.6	-79.2	92.6	7.84	7.81	-1.32
7,092.0	35.85	352.67	7,066.4	109.8	-81.3	110.8	7.03	6.56	-4.41
7,123.0	38.00	350.78	7,091.2	128.2	-84.0	129.3	7.84	6.94	-6.10
7,155.0	40.89	349.54	7,115.9	148.2	-87.5	149.3	9.36	9.03	-3.88
7,186.0	42.51	350.42	7,139.1	168.5	-91.1	169.7	5.56	5.23	2.84
7,217.0	44.14	351.30	7,161.6	189.5	-94.5	190.7	5.61	5.26	2.84
7,249.0	44.45	354.49	7,184.5	211.7	-97.2	212.9	7.03	0.97	9.97
7,280.0	46.80	357.31	7,206.2	233.8	-98.8	235.1	9.99	7.58	9.10
7,312.0	49.41	358.34	7,227.6	257.6	-99.7	258.9	8.50	8.16	3.22
7,343.0	52.51	358.00	7,247.1	281.7	-100.5	282.9	10.04	10.00	-1.10
7,375.0	56.00	357.45	7,265.8	307.6	-101.5	308.9	11.00	10.91	-1.72
7,406.0	59.34	356.76	7,282.4	333.8	-102.8	335.1	10.94	10.77	-2.23
7,437.0	62.18	356.71	7,297.5	360.8	-104.4	362.1	9.16	9.16	-0.16
7,468.0	64.67	355.43	7,311.4	388.4	-106.3	389.8	8.84	8.03	-4.13
7,499.0	67.02	355.49	7,324.1	416.6	-108.5	418.0	7.58	7.58	0.19
7,531.0	69.73	354.74	7,335.9	446.2	-111.1	447.7	8.74	8.47	-2.34
7,562.0	73.13	354.06	7,345.7	475.5	-113.9	476.9	11.16	10.97	-2.19
7,594.0	76.86	353.34	7,354.0	506.2	-117.3	507.7	11.86	11.66	-2.25
7,625.0	79.94	352.87	7,360.2	536.3	-121.0	537.9	10.05	9.94	-1.52
7,657.0	82.46	352.73	7,365.1	567.7	-124.9	569.3	7.89	7.88	-0.44
7,688.0	84.92	353.21	7,368.5	598.3	-128.7	599.9	8.08	7.94	1.55
7,719.0	87.67	354.36	7,370.5	629.0	-132.0	630.7	9.61	8.87	3.71
7,781.0	90.39	358.24	7,371.6	690.9	-136.0	692.6	7.64	4.39	6.26
7,807.0	90.64	358.75	7,371.4	716.9	-136.7	718.6	2.18	0.96	1.96
7,901.0	92.52	358.94	7,368.8	810.8	-138.6	812.6	2.01	2.00	0.20
7,995.0	92.81	359.40	7,364.4	904.7	-140.0	906.5	0.58	0.31	0.49
8,089.0	91.47	359.70	7,360.9	998.6	-140.7	1,000.4	1.46	-1.43	0.32
8,185.0	89.95	0.79	7,359.7	1,094.6	-140.3	1,096.4	1.95	-1.58	1.14
8,280.0	90.78	1.10	7,359.1	1,189.6	-138.7	1,191.3	0.93	0.87	0.33
8,374.0	89.62	1.38	7,358.8	1,283.6	-136.7	1,285.3	1.27	-1.23	0.30
8,469.0	90.76	1.59	7,358.5	1,378.6	-134.2	1,380.2	1.22	1.20	0.22
8,565.0	89.92	0.79	7,357.9	1,474.5	-132.3	1,476.1	1.21	-0.88	-0.83
8,659.0	88.91	0.24	7,358.8	1,568.5	-131.4	1,570.1	1.22	-1.07	-0.59
8,753.0	89.55	359.78	7,360.1	1,662.5	-131.4	1,664.1	0.84	0.68	-0.49
8,848.0	90.92	0.00	7,359.7	1,757.5	-131.6	1,759.1	1.46	1.44	0.23
8,943.0	89.82	359.72	7,359.1	1,852.5	-131.8	1,854.1	1.19	-1.16	-0.29
9,039.0	90.08	359.42	7,359.2	1,948.5	-132.5	1,950.1	0.41	0.27	-0.31
9,133.0	89.04	359.52	7,359.9	2,042.5	-133.4	2,044.1	1.11	-1.11	0.11
9,228.0	89.10	359.66	7,361.4	2,137.5	-134.1	2,139.0	0.16	0.06	0.15

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well ROAD RUNNER FED COM #3H
Project:	EDDY COUNTY, NM	TVD Reference:	RKB=3241.4+26 @ 3267.4usft (MCVAY 8)
Site:	ATLAS	MD Reference:	RKB=3241.4+26 @ 3267.4usft (MCVAY 8)
Well:	ROAD RUNNER FED COM #3H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH	Database:	EDM_Users

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)
9,322.0	90.07	359.82	7,362.1	2,231.5	-134.5	2,233.0	1.05	1.03	0.17
9,417.0	91.70	0.27	7,360.7	2,326.5	-134.4	2,328.0	1.78	1.72	0.47
9,511.0	91.27	0.97	7,358.2	2,420.4	-133.4	2,422.0	0.87	-0.46	0.74
9,606.0	89.05	0.95	7,358.0	2,515.4	-131.8	2,516.9	2.34	-2.34	-0.02
9,700.0	89.33	1.18	7,359.3	2,609.4	-130.1	2,610.8	0.39	0.30	0.24
9,794.0	91.02	1.31	7,359.0	2,703.3	-128.0	2,704.8	1.80	1.80	0.14
9,890.0	89.95	0.35	7,358.2	2,799.3	-126.6	2,800.7	1.50	-1.11	-1.00
9,984.0	87.50	358.67	7,360.3	2,893.3	-127.4	2,894.7	3.16	-2.61	-1.79
10,080.0	88.53	359.42	7,363.6	2,989.2	-129.0	2,990.6	1.33	1.07	0.78
10,175.0	90.95	359.79	7,364.0	3,084.2	-129.7	3,085.6	2.58	2.55	0.39
10,270.0	90.42	0.17	7,362.9	3,179.2	-129.7	3,180.6	0.69	-0.56	0.40
10,366.0	89.70	359.67	7,362.8	3,275.2	-129.9	3,276.6	0.91	-0.75	-0.52
10,460.0	90.44	359.80	7,362.7	3,369.2	-130.3	3,370.6	0.80	0.79	0.14
10,556.0	92.35	0.15	7,360.3	3,465.2	-130.3	3,466.6	2.02	1.99	0.36
10,651.0	91.92	0.43	7,356.8	3,560.1	-129.9	3,561.5	0.54	-0.45	0.29
10,746.0	89.10	359.71	7,356.0	3,655.1	-129.7	3,656.5	3.06	-2.97	-0.76
10,841.0	89.99	359.80	7,356.7	3,750.1	-130.1	3,751.5	0.94	0.94	0.09
10,937.0	89.10	358.83	7,357.5	3,846.1	-131.3	3,847.5	1.37	-0.93	-1.01
11,033.0	89.99	358.10	7,358.2	3,942.0	-133.9	3,943.4	1.20	0.93	-0.76
11,128.0	89.08	357.94	7,359.0	4,037.0	-137.2	4,038.4	0.97	-0.96	-0.17
11,224.0	89.25	357.77	7,360.4	4,132.9	-140.7	4,134.4	0.25	0.18	-0.18
11,319.0	91.33	357.87	7,359.9	4,227.8	-144.4	4,229.3	2.19	2.19	0.11
11,414.0	91.38	359.22	7,357.7	4,322.8	-146.8	4,324.3	1.42	0.05	1.42
11,509.0	87.94	0.52	7,358.3	4,417.7	-147.0	4,419.3	3.87	-3.62	1.37
11,605.0	89.21	1.34	7,360.6	4,513.7	-145.4	4,515.2	1.57	1.32	0.85
11,700.0	91.10	2.30	7,360.4	4,608.6	-142.4	4,610.1	2.23	1.99	1.01
11,795.0	90.82	2.67	7,358.8	4,703.5	-138.3	4,704.9	0.49	-0.29	0.39
11,890.0	89.55	0.70	7,358.5	4,798.5	-135.5	4,799.8	2.47	-1.34	-2.07
11,985.0	91.49	0.16	7,357.6	4,893.5	-134.8	4,894.8	2.12	2.04	-0.57
12,081.0	91.01	359.74	7,355.5	4,989.5	-134.9	4,990.8	0.66	-0.50	-0.44
12,176.0	89.39	358.61	7,355.2	5,084.4	-136.2	5,085.8	2.08	-1.71	-1.19
12,271.0	90.16	358.19	7,355.6	5,179.4	-138.9	5,180.8	0.92	0.81	-0.44
12,367.0	92.17	358.42	7,353.6	5,275.3	-141.7	5,276.7	2.11	2.09	0.24
12,462.0	92.81	358.05	7,349.5	5,370.2	-144.7	5,371.6	0.78	0.67	-0.39
12,558.0	91.50	358.99	7,345.9	5,466.1	-147.1	5,467.5	1.68	-1.36	0.98
12,653.0	90.18	359.24	7,344.5	5,561.1	-148.6	5,562.5	1.41	-1.39	0.26
12,748.0	90.53	359.55	7,343.9	5,656.1	-149.6	5,657.5	0.49	0.37	0.33
12,841.0	90.19	359.81	7,343.3	5,749.1	-150.1	5,750.5	0.46	-0.37	0.28
12,935.0	89.82	0.78	7,343.3	5,843.1	-149.6	5,844.5	1.10	-0.39	1.03
13,029.0	89.19	0.26	7,344.1	5,937.1	-148.8	5,938.5	0.87	-0.67	-0.55
13,124.0	90.73	0.34	7,344.2	6,032.0	-148.3	6,033.5	1.62	1.62	0.08
13,219.0	90.49	0.77	7,343.2	6,127.0	-147.4	6,128.4	0.52	-0.25	0.45
13,315.0	88.54	1.15	7,344.0	6,223.0	-145.8	6,224.4	2.07	-2.03	0.40

Survey Report

Company: NORTHERN DELAWARE BASIN
Project: EDDY COUNTY, NM
Site: ATLAS
Well: ROAD RUNNER FED COM #3H
Wellbore: OWB
Design: ACTUAL WELLPATH

Local Co-ordinate Reference: Well ROAD RUNNER FED COM #3H
TVD Reference: RKB=3241.4+26 @ 3267.4usft (MCVAY 8)
MD Reference: RKB=3241.4+26 @ 3267.4usft (MCVAY 8)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM_Users

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)
13,410.0	89.58	0.78	7,345.5	6,318.0	-144.2	6,319.3	1.16	1.09	-0.39
13,505.0	91.53	1.23	7,344.6	6,413.0	-142.5	6,414.3	2.11	2.05	0.47
13,600.0	89.38	1.11	7,343.9	6,507.9	-140.5	6,509.2	2.27	-2.26	-0.13
13,696.0	88.24	0.46	7,345.9	6,603.9	-139.2	6,605.2	1.37	-1.19	-0.68
13,791.0	88.51	0.80	7,348.6	6,698.9	-138.2	6,700.1	0.46	0.28	0.36
13,886.0	87.82	1.38	7,351.6	6,793.8	-136.4	6,795.0	0.95	-0.73	0.61
13,982.0	86.71	1.59	7,356.2	6,889.6	-133.9	6,890.8	1.18	-1.16	0.22
14,077.0	86.34	1.44	7,361.9	6,984.4	-131.4	6,985.6	0.42	-0.39	-0.16
14,172.0	87.71	1.37	7,366.9	7,079.3	-129.1	7,080.4	1.44	1.44	-0.07
14,267.0	89.22	1.64	7,369.4	7,174.2	-126.6	7,175.3	1.61	1.59	0.28
14,362.0	89.05	2.09	7,370.8	7,269.2	-123.5	7,270.1	0.51	-0.18	0.47
14,458.0	90.15	1.20	7,371.5	7,365.1	-120.7	7,366.1	1.47	1.15	-0.93
14,553.0	89.81	0.49	7,371.5	7,460.1	-119.3	7,461.0	0.83	-0.36	-0.75
14,648.0	88.85	0.12	7,372.7	7,555.1	-118.8	7,556.0	1.08	-1.01	-0.39
14,743.0	89.56	359.65	7,374.0	7,650.1	-119.0	7,651.0	0.90	0.75	-0.49
14,838.0	90.99	0.04	7,373.5	7,745.1	-119.3	7,746.0	1.56	1.51	0.41
14,933.0	90.76	0.02	7,372.1	7,840.1	-119.2	7,840.9	0.24	-0.24	-0.02
15,028.0	91.06	0.38	7,370.6	7,935.0	-118.9	7,935.9	0.49	0.32	0.38
15,124.0	91.12	0.57	7,368.7	8,031.0	-118.1	8,031.9	0.21	0.06	0.20
15,220.0	89.96	359.54	7,367.8	8,127.0	-118.0	8,127.9	1.62	-1.21	-1.07
15,314.0	90.04	359.51	7,367.8	8,221.0	-118.8	8,221.9	0.09	0.09	-0.03
15,410.0	90.50	359.66	7,367.4	8,317.0	-119.5	8,317.9	0.50	0.48	0.16
15,506.0	90.01	357.89	7,367.0	8,413.0	-121.5	8,413.9	1.91	-0.51	-1.84
15,601.0	89.51	357.62	7,367.4	8,507.9	-125.2	8,508.8	0.60	-0.53	-0.28
15,697.0	89.25	357.78	7,368.4	8,603.8	-129.1	8,604.8	0.32	-0.27	0.17
15,791.0	89.02	358.92	7,369.8	8,697.8	-131.8	8,698.8	1.24	-0.24	1.21
15,886.0	88.96	359.58	7,371.5	8,792.8	-133.0	8,793.7	0.70	-0.06	0.69
15,981.0	89.25	0.47	7,373.0	8,887.7	-133.0	8,888.7	0.99	0.31	0.94
16,076.0	88.42	0.85	7,374.9	8,982.7	-131.9	8,983.7	0.96	-0.87	0.40
16,171.0	89.39	1.46	7,376.7	9,077.7	-130.0	9,078.6	1.21	1.02	0.64
16,265.0	89.25	1.09	7,377.8	9,171.6	-127.9	9,172.5	0.42	-0.15	-0.39
16,360.0	89.59	0.83	7,378.8	9,266.6	-126.3	9,267.5	0.45	0.36	-0.27
16,453.0	90.04	1.09	7,379.1	9,359.6	-124.8	9,360.4	0.56	0.48	0.28
16,547.0	90.76	1.09	7,378.4	9,453.6	-123.0	9,454.4	0.77	0.77	0.00
16,641.0	90.87	1.24	7,377.1	9,547.6	-121.1	9,548.3	0.20	0.12	0.16
16,734.0	89.53	0.33	7,376.8	9,640.6	-119.8	9,641.3	1.74	-1.44	-0.98
16,828.0	89.41	0.28	7,377.6	9,734.5	-119.3	9,735.3	0.14	-0.13	-0.05
16,921.0	88.99	0.50	7,378.9	9,827.5	-118.6	9,828.2	0.51	-0.45	0.24
17,016.0	88.67	0.71	7,380.9	9,922.5	-117.6	9,923.2	0.40	-0.34	0.22
17,110.0	88.31	0.57	7,383.4	10,016.5	-116.6	10,017.1	0.41	-0.38	-0.15
17,202.0	87.57	0.80	7,386.7	10,108.4	-115.5	10,109.1	0.84	-0.80	0.25
17,268.0	87.57	0.80	7,389.5	10,174.3	-114.6	10,175.0	0.00	0.00	0.00

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well ROAD RUNNER FED COM #3H
Project:	EDDY COUNTY, NM	TVD Reference:	RKB=3241.4+26 @ 3267.4usft (MCVAY 8)
Site:	ATLAS	MD Reference:	RKB=3241.4+26 @ 3267.4usft (MCVAY 8)
Well:	ROAD RUNNER FED COM #3H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH	Database:	EDM_Users

Checked By: _____	Approved By: _____	Date: _____
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