



CONCHO

NORTHERN DELAWARE BASIN

EDDY COUNTY, NM

ATLAS

BIG PAPI FED COM #12H

OWB

30.015.43779

NM OIL CONSERVATION
ARTESIA DISTRICT

JAN 24 2019

RECEIVED

Design: ACTUAL WELLPATH

Standard Survey Report

03 October, 2018

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BIG PAPI FED COM #12H
Project:	EDDY COUNTY, NM	TVD Reference:	RKB=2976.5+31 @ 3007.5usft (PD106)
Site:	ATLAS	MD Reference:	RKB=2976.5+31 @ 3007.5usft (PD106)
Well:	BIG PAPI FED COM #12H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	ACTUAL WELLPATH	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
From:	Map	Easting:	573,599.60 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 1' 15.933 N
		Longitude:	104° 5' 45.086 W
		Grid Convergence:	0.13 °

Well	BIG PAPI FED COM #12H		
Well Position	+N-S	0.0 usft	Northing: 392,376.40 usft
	+E-W	0.0 usft	Easting: 607,303.40 usft
Position Uncertainty	3.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 4' 41.825 N
		Longitude:	103° 59' 12.817 W
		Ground Level:	2,976.5 usft

Wellbore	OWB		
Magnetics	Model Name	Sample Date	Declination (°)
	WMM2015	6/4/2018	7.06
			Dip Angle (°)
			59.83
			Field Strength (nT)
			47,697.04007620

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)
	0.0	0.0	0.0
			Direction (°)
			178.84

Survey Program	Date 10/1/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
100.0	7,900.0	GYRO (OWB)	Standard Keeper 104
8,059.0	18,529.0	MWD-CURVE/LATERAL (OWB)	MWD+IFR1+MS
			Description
			Standard Wireline Keeper ver 1.0.4
			OWSG MWD + IFR 1 + 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	1.36	142.01	100.0	-0.9	0.7	0.9	1.36	1.36	0.00
125.0	0.20	156.22	125.0	-1.2	0.9	1.2	4.67	-4.64	56.84
150.0	0.15	125.24	150.0	-1.3	1.0	1.3	0.42	-0.20	-123.92
175.0	0.11	90.47	175.0	-1.3	1.0	1.3	0.35	-0.16	-139.08
200.0	0.19	110.74	200.0	-1.3	1.1	1.3	0.38	0.32	81.08
225.0	0.29	112.52	225.0	-1.3	1.2	1.4	0.40	0.40	7.12
250.0	0.38	127.04	250.0	-1.4	1.3	1.4	0.49	0.36	58.08
275.0	0.62	133.25	275.0	-1.6	1.5	1.6	0.98	0.96	24.84
300.0	0.81	143.78	300.0	-1.8	1.7	1.8	0.92	0.76	42.12

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BIG PAPI FED COM #12H
Project:	EDDY COUNTY, NM	TVD Reference:	RKB=2976.5+31 @ 3007.5usft (PD106)
Site:	ATLAS	MD Reference:	RKB=2976.5+31 @ 3007.5usft (PD106)
Well:	BIG PAPI FED COM #12H	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	1.05	144.29	325.0	-2.1	1.9	2.2	0.96	0.96	2.04
350.0	1.27	148.45	350.0	-2.5	2.2	2.6	0.94	0.88	16.64
375.0	1.15	146.46	375.0	-3.0	2.5	3.0	0.51	-0.48	-7.96
400.0	1.32	148.99	400.0	-3.4	2.8	3.5	0.71	0.68	10.12
425.0	1.35	146.38	425.0	-3.9	3.1	4.0	0.27	0.12	-10.44
450.0	1.30	143.24	450.0	-4.4	3.4	4.5	0.35	-0.20	-12.56
475.0	1.30	143.18	474.9	-4.9	3.7	4.9	0.01	0.00	-0.24
500.0	1.17	141.13	499.9	-5.3	4.1	5.4	0.55	-0.52	-8.20
525.0	1.09	141.13	524.9	-5.7	4.4	5.8	0.32	-0.32	0.00
550.0	0.99	150.10	549.9	-6.0	4.6	6.1	0.76	-0.40	35.88
575.0	0.80	148.24	574.9	-6.4	4.8	6.5	0.77	-0.76	-7.44
600.0	0.81	152.94	599.9	-6.7	5.0	6.8	0.27	0.04	18.80
625.0	0.82	158.08	624.9	-7.0	5.2	7.1	0.30	0.04	20.56
650.0	0.88	159.87	649.9	-7.4	5.3	7.5	0.26	0.24	7.16
675.0	0.92	152.48	674.9	-7.7	5.5	7.8	0.49	0.16	-29.56
700.0	0.82	158.90	699.9	-8.1	5.6	8.2	0.56	-0.40	25.68
725.0	0.66	150.86	724.9	-8.4	5.7	8.5	0.76	-0.64	-32.16
750.0	0.39	136.43	749.9	-8.5	5.9	8.7	1.19	-1.08	-57.72
775.0	0.16	115.05	774.9	-8.6	6.0	8.7	0.99	-0.92	-85.52
800.0	0.12	128.00	799.9	-8.6	6.0	8.8	0.20	-0.16	51.80
825.0	0.09	101.45	824.9	-8.7	6.1	8.8	0.23	-0.12	-106.20
850.0	0.09	52.84	849.9	-8.7	6.1	8.8	0.30	0.00	-194.44
875.0	0.09	46.13	874.9	-8.6	6.1	8.8	0.04	0.00	-26.84
900.0	0.09	36.69	899.9	-8.6	6.1	8.7	0.06	0.00	-37.76
925.0	0.18	11.36	924.9	-8.5	6.2	8.7	0.42	0.36	-101.32
950.0	0.13	25.08	949.9	-8.5	6.2	8.6	0.25	-0.20	54.88
975.0	0.16	18.28	974.9	-8.4	6.2	8.6	0.14	0.12	-27.20
1,000.0	0.12	6.57	999.9	-8.4	6.2	8.5	0.20	-0.16	-46.84
1,025.0	0.22	12.95	1,024.9	-8.3	6.2	8.4	0.41	0.40	25.52
1,050.0	0.26	16.04	1,049.9	-8.2	6.3	8.3	0.17	0.16	12.36
1,075.0	0.43	2.91	1,074.9	-8.0	6.3	8.2	0.75	0.68	-52.52
1,100.0	0.43	9.76	1,099.9	-7.9	6.3	8.0	0.21	0.00	27.40
1,125.0	0.45	13.75	1,124.9	-7.7	6.3	7.8	0.15	0.08	15.96
1,150.0	0.57	10.30	1,149.9	-7.5	6.4	7.6	0.50	0.48	-13.80
1,175.0	0.49	7.78	1,174.9	-7.2	6.4	7.4	0.33	-0.32	-10.08
1,200.0	0.49	1.78	1,199.9	-7.0	6.4	7.1	0.21	0.00	-24.00
1,225.0	0.55	14.51	1,224.9	-6.8	6.5	6.9	0.52	0.24	50.92
1,250.0	0.44	358.96	1,249.9	-6.6	6.5	6.7	0.69	-0.44	-62.20
1,275.0	0.38	0.40	1,274.9	-6.4	6.5	6.5	0.24	-0.24	5.76
1,300.0	0.42	25.96	1,299.9	-6.2	6.5	6.4	0.72	0.16	102.24
1,325.0	0.42	22.89	1,324.9	-6.1	6.6	6.2	0.09	0.00	-12.28
1,350.0	0.45	33.55	1,349.9	-5.9	6.7	6.0	0.34	0.12	42.64
1,375.0	0.56	34.61	1,374.9	-5.7	6.8	5.9	0.44	0.44	4.24

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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)
1,400.0	0.60	34.30	1,399.9	-5.5	7.0	5.6	0.16	0.16	-1.24
1,425.0	0.61	38.58	1,424.9	-5.3	7.1	5.4	0.19	0.04	17.12
1,450.0	0.63	37.86	1,449.9	-5.1	7.3	5.2	0.09	0.08	-2.88
1,475.0	0.60	38.89	1,474.9	-4.9	7.5	5.0	0.13	-0.12	4.12
1,500.0	0.62	37.28	1,499.9	-4.7	7.6	4.8	0.11	0.08	-6.44
1,525.0	0.69	25.02	1,524.9	-4.4	7.8	4.6	0.62	0.28	-49.04
1,550.0	0.60	22.34	1,549.9	-4.2	7.9	4.3	0.38	-0.36	-10.72
1,575.0	0.57	17.60	1,574.9	-3.9	8.0	4.1	0.23	-0.12	-18.96
1,600.0	0.58	24.43	1,599.9	-3.7	8.1	3.9	0.28	0.04	27.32
1,625.0	0.52	27.04	1,624.9	-3.5	8.2	3.6	0.26	-0.24	10.44
1,650.0	0.50	24.64	1,649.9	-3.3	8.3	3.4	0.12	-0.08	-9.60
1,675.0	0.48	26.96	1,674.9	-3.1	8.4	3.2	0.11	-0.08	9.28
1,700.0	0.55	24.33	1,699.9	-2.9	8.5	3.0	0.30	0.28	-10.52
1,725.0	0.55	25.14	1,724.9	-2.7	8.6	2.8	0.03	0.00	3.24
1,750.0	0.49	40.81	1,749.9	-2.5	8.7	2.6	0.61	-0.24	62.68
1,775.0	0.55	32.51	1,774.9	-2.3	8.8	2.5	0.38	0.24	-33.20
1,800.0	0.45	26.75	1,799.9	-2.1	8.9	2.3	0.45	-0.40	-23.04
1,825.0	0.44	35.11	1,824.9	-1.9	9.0	2.1	0.26	-0.04	33.44
1,850.0	0.45	26.18	1,849.9	-1.8	9.1	2.0	0.28	0.04	-35.72
1,875.0	0.43	25.71	1,874.9	-1.6	9.2	1.8	0.08	-0.08	-1.88
1,900.0	0.37	34.40	1,899.9	-1.4	9.3	1.6	0.34	-0.24	34.76
1,925.0	0.38	23.88	1,924.9	-1.3	9.4	1.5	0.28	0.04	-42.08
1,950.0	0.36	29.01	1,949.9	-1.2	9.4	1.3	0.15	-0.08	20.52
1,975.0	0.51	27.72	1,974.9	-1.0	9.5	1.2	0.60	0.60	-5.16
2,000.0	0.49	24.69	1,999.9	-0.8	9.6	1.0	0.13	-0.08	-12.12
2,025.0	0.49	20.17	2,024.9	-0.6	9.7	0.8	0.15	0.00	-18.08
2,050.0	0.68	22.50	2,049.9	-0.4	9.8	0.6	0.77	0.76	9.32
2,075.0	0.69	21.75	2,074.9	-0.1	9.9	0.3	0.05	0.04	-3.00
2,100.0	0.67	26.77	2,099.9	0.2	10.0	0.0	0.25	-0.08	20.08
2,125.0	0.67	29.01	2,124.9	0.4	10.2	-0.2	0.10	0.00	8.96
2,150.0	0.65	22.90	2,149.9	0.7	10.3	-0.5	0.29	-0.08	-24.44
2,175.0	0.68	24.92	2,174.9	1.0	10.4	-0.8	0.15	0.12	8.08
2,200.0	0.70	23.99	2,199.9	1.2	10.5	-1.0	0.09	0.08	-3.72
2,225.0	0.65	30.76	2,224.9	1.5	10.7	-1.3	0.38	-0.20	27.08
2,250.0	0.73	50.36	2,249.9	1.7	10.9	-1.5	0.99	0.32	78.40
2,275.0	1.11	70.05	2,274.9	1.9	11.2	-1.7	1.96	1.52	78.76
2,300.0	1.50	81.18	2,299.8	2.0	11.8	-1.8	1.85	1.56	44.52
2,325.0	1.83	87.75	2,324.8	2.1	12.5	-1.9	1.52	1.32	26.28
2,350.0	2.21	92.81	2,349.8	2.1	13.4	-1.8	1.68	1.52	20.24
2,375.0	2.59	93.21	2,374.8	2.0	14.4	-1.8	1.52	1.52	1.60
2,400.0	2.62	93.74	2,399.8	2.0	15.6	-1.7	0.15	0.12	2.12
2,425.0	2.42	92.56	2,424.7	1.9	16.7	-1.6	0.83	-0.80	-4.72
2,450.0	2.42	93.51	2,449.7	1.9	17.7	-1.5	0.16	0.00	3.80

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Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
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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	2.39	91.45	2,474.7	1.8	18.8	-1.4	0.37	-0.12	-8.24
2,500.0	2.51	93.84	2,499.7	1.8	19.8	-1.4	0.63	0.48	9.56
2,525.0	2.49	94.46	2,524.7	1.7	20.9	-1.3	0.13	-0.08	2.48
2,550.0	2.66	98.06	2,549.6	1.6	22.0	-1.1	0.94	0.68	14.40
2,575.0	2.91	101.73	2,574.6	1.4	23.2	-0.9	1.23	1.00	14.68
2,600.0	3.46	107.86	2,599.6	1.0	24.6	-0.5	2.58	2.20	24.52
2,625.0	4.04	111.22	2,624.5	0.4	26.1	0.1	2.48	2.32	13.44
2,650.0	4.82	113.38	2,649.4	-0.3	27.9	0.9	3.19	3.12	8.64
2,675.0	5.68	116.39	2,674.3	-1.3	30.0	1.9	3.61	3.44	12.04
2,700.0	6.48	117.13	2,699.2	-2.5	32.3	3.1	3.22	3.20	2.96
2,725.0	6.75	116.72	2,724.0	-3.8	34.9	4.5	1.10	1.08	-1.64
2,750.0	6.76	116.05	2,748.8	-5.1	37.5	5.8	0.32	0.04	-2.68
2,775.0	6.62	115.84	2,773.7	-6.3	40.1	7.1	0.57	-0.56	-0.84
2,800.0	6.56	114.62	2,798.5	-7.6	42.7	8.4	0.61	-0.24	-4.88
2,825.0	6.30	114.26	2,823.4	-8.7	45.3	9.6	1.05	-1.04	-1.44
2,850.0	6.12	113.79	2,848.2	-9.8	47.8	10.8	0.75	-0.72	-1.88
2,875.0	5.84	114.03	2,873.1	-10.9	50.1	11.9	1.12	-1.12	0.96
2,900.0	5.57	114.12	2,897.9	-11.9	52.4	12.9	1.08	-1.08	0.36
2,925.0	5.15	115.57	2,922.8	-12.9	54.5	14.0	1.77	-1.68	5.80
2,950.0	4.79	115.58	2,947.7	-13.8	56.5	14.9	1.44	-1.44	0.04
2,975.0	4.54	115.64	2,972.7	-14.7	58.3	15.9	1.00	-1.00	0.24
3,000.0	4.42	115.28	2,997.6	-15.5	60.1	16.7	0.49	-0.48	-1.44
3,025.0	4.35	114.77	3,022.5	-16.3	61.8	17.6	0.32	-0.28	-2.04
3,050.0	4.27	114.22	3,047.4	-17.1	63.5	18.4	0.36	-0.32	-2.20
3,075.0	4.27	114.95	3,072.4	-17.9	65.2	19.2	0.22	0.00	2.92
3,100.0	4.25	115.07	3,097.3	-18.7	66.9	20.0	0.09	-0.08	0.48
3,125.0	4.24	114.47	3,122.2	-19.4	68.6	20.8	0.18	-0.04	-2.40
3,150.0	4.16	114.88	3,147.2	-20.2	70.2	21.6	0.34	-0.32	1.64
3,175.0	3.97	112.64	3,172.1	-20.9	71.9	22.4	0.99	-0.76	-8.96
3,200.0	2.92	115.08	3,197.1	-21.5	73.2	23.0	4.24	-4.20	9.76
3,225.0	2.18	116.18	3,222.0	-22.0	74.2	23.5	2.97	-2.96	4.40
3,250.0	1.69	117.62	3,247.0	-22.4	75.0	23.9	1.97	-1.96	5.76
3,275.0	1.14	117.78	3,272.0	-22.7	75.5	24.2	2.20	-2.20	0.64
3,300.0	0.47	104.58	3,297.0	-22.8	75.9	24.3	2.76	-2.68	-52.80
3,325.0	0.16	48.10	3,322.0	-22.8	76.0	24.3	1.62	-1.24	-225.92
3,350.0	0.14	345.33	3,347.0	-22.8	76.0	24.3	0.63	-0.08	-251.08
3,375.0	0.22	333.37	3,372.0	-22.7	76.0	24.2	0.35	0.32	-47.84
3,400.0	0.26	329.34	3,397.0	-22.6	75.9	24.1	0.17	0.16	-16.12
3,425.0	0.35	330.21	3,422.0	-22.5	75.9	24.0	0.36	0.36	3.48
3,450.0	0.42	316.01	3,447.0	-22.4	75.8	23.9	0.47	0.28	-56.80
3,475.0	0.37	312.12	3,472.0	-22.2	75.6	23.8	0.23	-0.20	-15.56
3,500.0	0.41	306.17	3,497.0	-22.1	75.5	23.6	0.23	0.16	-23.80
3,525.0	0.50	307.72	3,522.0	-22.0	75.3	23.5	0.36	0.36	6.20
3,550.0	0.46	309.35	3,547.0	-21.9	75.2	23.4	0.17	-0.16	6.52

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BIG PAPI FED COM #12H
Project:	EDDY COUNTY, NM	TVD Reference:	RKB=2976.5+31 @ 3007.5usft (PD106)
Site:	ATLAS	MD Reference:	RKB=2976.5+31 @ 3007.5usft (PD106)
Well:	BIG PAPI FED COM #12H	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	0.44	303.71	3,572.0	-21.8	75.0	23.3	0.19	-0.08	-22.56
3,600.0	0.46	306.98	3,597.0	-21.6	74.9	23.2	0.13	0.08	13.08
3,625.0	0.55	309.58	3,622.0	-21.5	74.7	23.0	0.37	0.36	10.40
3,650.0	0.46	310.19	3,647.0	-21.4	74.5	22.9	0.36	-0.36	2.44
3,675.0	0.45	305.27	3,672.0	-21.2	74.4	22.7	0.16	-0.04	-19.68
3,700.0	0.47	300.70	3,697.0	-21.1	74.2	22.6	0.17	0.08	-18.28
3,725.0	0.49	307.74	3,722.0	-21.0	74.0	22.5	0.25	0.08	28.16
3,750.0	0.78	300.61	3,747.0	-20.9	73.8	22.4	1.20	1.16	-28.52
3,775.0	1.57	289.06	3,772.0	-20.7	73.3	22.1	3.28	3.16	-46.20
3,800.0	1.94	288.37	3,797.0	-20.4	72.6	21.9	1.48	1.48	-2.76
3,825.0	2.03	287.30	3,822.0	-20.2	71.8	21.6	0.39	0.36	-4.28
3,850.0	2.09	287.32	3,847.0	-19.9	70.9	21.3	0.24	0.24	0.08
3,875.0	2.06	285.94	3,871.9	-19.6	70.0	21.0	0.23	-0.12	-5.52
3,900.0	2.06	288.33	3,896.9	-19.4	69.2	20.8	0.34	0.00	9.56
3,925.0	2.02	288.01	3,921.9	-19.1	68.3	20.5	0.17	-0.16	-1.28
3,950.0	2.08	285.75	3,946.9	-18.8	67.5	20.2	0.40	0.24	-9.04
3,975.0	1.97	283.83	3,971.9	-18.6	66.6	19.9	0.52	-0.44	-7.68
4,000.0	2.08	283.67	3,996.9	-18.4	65.8	19.7	0.44	0.44	-0.64
4,025.0	1.96	286.32	4,021.8	-18.2	64.9	19.5	0.61	-0.48	10.60
4,050.0	1.94	286.39	4,046.8	-17.9	64.1	19.2	0.08	-0.08	0.28
4,075.0	1.90	287.61	4,071.8	-17.7	63.3	19.0	0.23	-0.16	4.88
4,100.0	2.01	288.31	4,096.8	-17.4	62.5	18.7	0.45	0.44	2.80
4,125.0	2.03	289.05	4,121.8	-17.1	61.7	18.4	0.13	0.08	2.96
4,150.0	2.05	289.08	4,146.8	-16.8	60.8	18.1	0.08	0.08	0.12
4,175.0	2.02	289.34	4,171.7	-16.6	60.0	17.8	0.13	-0.12	1.04
4,200.0	2.04	288.20	4,196.7	-16.3	59.1	17.5	0.18	0.08	-4.56
4,225.0	2.12	289.61	4,221.7	-16.0	58.3	17.1	0.38	0.32	5.64
4,250.0	2.09	289.20	4,246.7	-15.7	57.4	16.8	0.13	-0.12	-1.64
4,275.0	2.03	289.29	4,271.7	-15.4	56.6	16.5	0.24	-0.24	0.36
4,300.0	2.05	287.18	4,296.7	-15.1	55.7	16.2	0.31	0.08	-8.44
4,325.0	2.22	290.23	4,321.7	-14.8	54.8	15.9	0.82	0.68	12.20
4,350.0	2.30	288.60	4,346.6	-14.5	53.9	15.6	0.41	0.32	-6.52
4,375.0	2.33	288.66	4,371.6	-14.1	53.0	15.2	0.12	0.12	0.24
4,400.0	2.21	289.21	4,396.6	-13.8	52.0	14.9	0.49	-0.48	2.20
4,425.0	2.34	283.86	4,421.6	-13.5	51.1	14.6	1.00	0.52	-21.40
4,450.0	2.30	286.86	4,446.6	-13.3	50.1	14.3	0.51	-0.16	12.00
4,475.0	2.29	286.16	4,471.5	-13.0	49.1	14.0	0.12	-0.04	-2.80
4,500.0	2.40	284.52	4,496.5	-12.7	48.1	13.7	0.52	0.44	-6.56
4,525.0	2.37	284.51	4,521.5	-12.5	47.1	13.4	0.12	-0.12	-0.04
4,550.0	2.32	284.52	4,546.5	-12.2	46.1	13.1	0.20	-0.20	0.04
4,575.0	2.39	281.57	4,571.4	-12.0	45.1	12.9	0.56	0.28	-11.80
4,600.0	2.48	282.00	4,596.4	-11.8	44.1	12.6	0.37	0.36	1.72
4,625.0	2.42	283.57	4,621.4	-11.5	43.1	12.4	0.36	-0.24	6.28

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BIG PAPI FED COM #12H
Project:	EDDY COUNTY, NM	TVD Reference:	RKB=2976.5+31 @ 3007.5usft (PD106)
Site:	ATLAS	MD Reference:	RKB=2976.5+31 @ 3007.5usft (PD106)
Well:	BIG PAPI FED COM #12H	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	2.37	282.00	4,646.4	-11.3	42.0	12.1	0.33	-0.20	-6.28
4,675.0	2.39	279.64	4,671.4	-11.1	41.0	11.9	0.40	0.08	-9.44
4,700.0	2.46	277.18	4,696.3	-10.9	40.0	11.7	0.50	0.28	-9.84
4,725.0	2.56	276.69	4,721.3	-10.8	38.9	11.6	0.41	0.40	-1.96
4,750.0	2.48	278.12	4,746.3	-10.7	37.8	11.4	0.41	-0.32	5.72
4,775.0	2.42	278.20	4,771.3	-10.5	36.7	11.3	0.24	-0.24	0.32
4,800.0	2.36	279.47	4,796.2	-10.4	35.7	11.1	0.32	-0.24	5.08
4,825.0	2.48	279.18	4,821.2	-10.2	34.7	10.9	0.48	0.48	-1.16
4,850.0	2.46	279.35	4,846.2	-10.0	33.6	10.7	0.09	-0.08	0.68
4,875.0	2.47	278.19	4,871.2	-9.8	32.5	10.5	0.20	0.04	-4.64
4,900.0	2.50	278.48	4,896.2	-9.7	31.5	10.3	0.13	0.12	1.16
4,925.0	2.47	278.31	4,921.1	-9.5	30.4	10.1	0.12	-0.12	-0.68
4,950.0	2.60	278.01	4,946.1	-9.4	29.3	10.0	0.52	0.52	-1.20
4,975.0	2.49	277.74	4,971.1	-9.2	28.2	9.8	0.44	-0.44	-1.08
5,000.0	2.53	278.33	4,996.1	-9.1	27.1	9.6	0.19	0.16	2.36
5,025.0	2.56	277.19	5,021.0	-8.9	26.0	9.4	0.24	0.12	-4.56
5,050.0	2.62	278.25	5,046.0	-8.8	24.9	9.3	0.31	0.24	4.24
5,075.0	2.57	279.50	5,071.0	-8.6	23.8	9.1	0.30	-0.20	5.00
5,100.0	2.67	278.02	5,096.0	-8.4	22.7	8.9	0.48	0.40	-5.92
5,125.0	2.61	277.23	5,120.9	-8.3	21.5	8.7	0.28	-0.24	-3.16
5,150.0	2.39	276.79	5,145.9	-8.1	20.4	8.5	0.88	-0.88	-1.76
5,175.0	1.96	252.38	5,170.9	-8.2	19.5	8.6	4.04	-1.72	-97.64
5,200.0	2.10	245.39	5,195.9	-8.5	18.7	8.9	1.14	0.56	-27.96
5,225.0	2.04	241.95	5,220.9	-8.9	17.9	9.3	0.55	-0.24	-13.76
5,250.0	2.15	239.49	5,245.8	-9.4	17.1	9.7	0.57	0.44	-9.84
5,275.0	2.04	241.87	5,270.8	-9.8	16.3	10.1	0.56	-0.44	9.52
5,300.0	2.07	240.09	5,295.8	-10.3	15.5	10.6	0.28	0.12	-7.12
5,325.0	2.13	239.11	5,320.8	-10.7	14.7	11.0	0.28	0.24	-3.92
5,350.0	2.15	237.55	5,345.8	-11.2	13.9	11.5	0.25	0.08	-6.24
5,375.0	2.26	240.38	5,370.7	-11.7	13.1	12.0	0.62	0.44	11.32
5,400.0	2.27	237.74	5,395.7	-12.2	12.2	12.5	0.42	0.04	-10.56
5,425.0	2.15	237.71	5,420.7	-12.7	11.4	13.0	0.48	-0.48	-0.12
5,450.0	1.27	229.57	5,445.7	-13.2	10.8	13.4	3.64	-3.52	-32.56
5,475.0	0.81	227.17	5,470.7	-13.5	10.5	13.7	1.85	-1.84	-9.60
5,500.0	0.71	231.37	5,495.7	-13.7	10.2	13.9	0.46	-0.40	16.80
5,525.0	0.79	229.55	5,520.7	-13.9	10.0	14.1	0.33	0.32	-7.28
5,550.0	0.79	228.19	5,545.7	-14.1	9.7	14.3	0.08	0.00	-5.44
5,575.0	0.71	236.41	5,570.7	-14.3	9.5	14.5	0.54	-0.32	32.88
5,600.0	0.81	226.11	5,595.7	-14.5	9.2	14.7	0.68	0.40	-41.20
5,625.0	0.93	231.61	5,620.7	-14.8	8.9	14.9	0.58	0.48	22.00
5,650.0	0.86	228.09	5,645.7	-15.0	8.6	15.2	0.36	-0.28	-14.08
5,675.0	0.91	225.69	5,670.7	-15.3	8.3	15.4	0.25	0.20	-9.60
5,700.0	0.88	227.06	5,695.7	-15.5	8.1	15.7	0.15	-0.12	5.48

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BIG PAPI FED COM #12H
Project:	EDDY COUNTY, NM	TVD Reference:	RKB=2976.5+31 @ 3007.5usft (PD106)
Site:	ATLAS	MD Reference:	RKB=2976.5+31 @ 3007.5usft (PD106)
Well:	BIG PAPI FED COM #12H	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	0.89	225.47	5,720.7	-15.8	7.8	16.0	0.11	0.04	-6.36
5,750.0	0.86	228.36	5,745.7	-16.1	7.5	16.2	0.21	-0.12	11.56
5,775.0	0.97	224.16	5,770.7	-16.4	7.2	16.5	0.52	0.44	-16.80
5,800.0	0.88	223.55	5,795.7	-16.6	6.9	16.8	0.36	-0.36	-2.44
5,825.0	0.85	217.25	5,820.7	-16.9	6.7	17.1	0.40	-0.12	-25.20
5,850.0	0.90	217.00	5,845.7	-17.2	6.5	17.4	0.20	0.20	-1.00
5,875.0	0.94	221.73	5,870.7	-17.5	6.2	17.7	0.34	0.16	18.92
5,900.0	0.98	221.11	5,895.6	-17.9	5.9	18.0	0.17	0.16	-2.48
5,925.0	0.98	216.21	5,920.6	-18.2	5.7	18.3	0.34	0.00	-19.60
5,950.0	1.11	222.23	5,945.6	-18.5	5.4	18.6	0.68	0.52	24.08
5,975.0	1.13	218.11	5,970.6	-18.9	5.1	19.0	0.33	0.08	-16.48
6,000.0	1.22	221.23	5,995.6	-19.3	4.7	19.4	0.44	0.36	12.48
6,025.0	1.18	217.04	6,020.6	-19.7	4.4	19.8	0.39	-0.16	-16.76
6,050.0	1.13	215.48	6,045.6	-20.1	4.1	20.2	0.24	-0.20	-6.24
6,075.0	1.15	217.53	6,070.6	-20.5	3.8	20.6	0.18	0.08	8.20
6,100.0	0.96	221.46	6,095.6	-20.9	3.5	20.9	0.81	-0.76	15.72
6,125.0	0.83	216.25	6,120.6	-21.2	3.3	21.2	0.61	-0.52	-20.84
6,150.0	0.80	217.05	6,145.6	-21.5	3.1	21.5	0.13	-0.12	3.20
6,175.0	0.74	223.54	6,170.6	-21.7	2.8	21.8	0.42	-0.24	25.96
6,200.0	0.43	311.23	6,195.6	-21.8	2.7	21.8	3.36	-1.24	350.76
6,225.0	0.79	345.93	6,220.6	-21.5	2.5	21.6	2.00	1.44	138.80
6,250.0	0.84	346.20	6,245.6	-21.2	2.5	21.2	0.20	0.20	1.08
6,275.0	0.82	346.19	6,270.6	-20.9	2.4	20.9	0.08	-0.08	-0.04
6,300.0	0.79	346.59	6,295.6	-20.5	2.3	20.6	0.12	-0.12	1.60
6,325.0	0.71	342.02	6,320.6	-20.2	2.2	20.2	0.40	-0.32	-18.28
6,350.0	0.67	330.44	6,345.6	-19.9	2.1	20.0	0.58	-0.16	-46.32
6,375.0	0.67	341.49	6,370.6	-19.7	2.0	19.7	0.52	0.00	44.20
6,400.0	0.52	333.90	6,395.6	-19.4	1.9	19.4	0.68	-0.60	-30.36
6,425.0	0.48	326.75	6,420.6	-19.2	1.8	19.3	0.30	-0.16	-28.60
6,450.0	0.46	309.48	6,445.6	-19.1	1.6	19.1	0.57	-0.08	-69.08
6,475.0	0.42	300.65	6,470.6	-19.0	1.5	19.0	0.31	-0.16	-35.32
6,500.0	0.48	285.68	6,495.6	-18.9	1.3	18.9	0.53	0.24	-59.88
6,525.0	0.55	283.75	6,520.6	-18.8	1.1	18.8	0.29	0.28	-7.72
6,550.0	0.64	279.54	6,545.6	-18.8	0.8	18.8	0.40	0.36	-16.84
6,575.0	0.64	279.39	6,570.6	-18.7	0.5	18.7	0.01	0.00	-0.60
6,600.0	0.65	278.65	6,595.6	-18.7	0.3	18.7	0.05	0.04	-2.96
6,625.0	0.74	278.24	6,620.6	-18.6	0.0	18.6	0.36	0.36	-1.64
6,650.0	0.93	271.07	6,645.6	-18.6	-0.4	18.6	0.87	0.76	-28.68
6,675.0	1.23	268.63	6,670.6	-18.6	-0.9	18.6	1.21	1.20	-9.76
6,700.0	1.45	264.92	6,695.6	-18.7	-1.5	18.6	0.95	0.88	-14.84
6,725.0	1.65	268.12	6,720.6	-18.7	-2.1	18.6	0.87	0.80	12.80
6,750.0	1.68	288.93	6,745.5	-18.6	-2.8	18.5	2.41	0.12	83.24
6,775.0	2.17	324.37	6,770.5	-18.1	-3.5	18.0	5.04	1.96	141.76
6,800.0	2.71	334.09	6,795.5	-17.2	-4.0	17.1	2.71	2.16	38.88

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BIG PAPI FED COM #12H
Project:	EDDY COUNTY, NM	TVD Reference:	RKB=2976.5+31 @ 3007.5usft (PD106)
Site:	ATLAS	MD Reference:	RKB=2976.5+31 @ 3007.5usft (PD106)
Well:	BIG PAPI FED COM #12H	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)
6,825.0	2.89	332.12	6,820.5	-16.1	-4.5	16.0	0.82	0.72	-7.88
6,850.0	2.94	331.95	6,845.4	-15.0	-5.1	14.8	0.20	0.20	-0.68
6,875.0	2.98	329.67	6,870.4	-13.8	-5.8	13.7	0.50	0.16	-9.12
6,900.0	2.98	327.76	6,895.4	-12.7	-6.4	12.6	0.40	0.00	-7.64
6,925.0	2.67	327.95	6,920.3	-11.7	-7.1	11.5	1.24	-1.24	0.76
6,950.0	1.90	336.74	6,945.3	-10.8	-7.6	10.6	3.38	-3.08	35.16
6,975.0	1.44	341.54	6,970.3	-10.1	-7.8	10.0	1.92	-1.84	19.20
7,000.0	1.34	338.88	6,995.3	-9.6	-8.0	9.4	0.48	-0.40	-10.64
7,025.0	1.10	323.66	7,020.3	-9.1	-8.3	8.9	1.60	-0.96	-60.88
7,050.0	0.93	319.86	7,045.3	-8.7	-8.6	8.6	0.73	-0.68	-15.20
7,075.0	0.98	299.36	7,070.3	-8.5	-8.9	8.3	1.37	0.20	-82.00
7,100.0	0.90	298.55	7,095.3	-8.3	-9.2	8.1	0.32	-0.32	-3.24
7,125.0	0.97	285.46	7,120.3	-8.1	-9.6	7.9	0.90	0.28	-52.36
7,150.0	0.97	282.42	7,145.3	-8.0	-10.0	7.8	0.21	0.00	-12.16
7,175.0	0.95	285.13	7,170.3	-7.9	-10.4	7.7	0.20	-0.08	10.84
7,200.0	1.04	289.07	7,195.3	-7.8	-10.8	7.6	0.45	0.36	15.76
7,225.0	0.91	292.08	7,220.3	-7.6	-11.2	7.4	0.56	-0.52	12.04
7,250.0	0.67	287.74	7,245.3	-7.5	-11.6	7.3	0.99	-0.96	-17.36
7,275.0	0.67	286.47	7,270.3	-7.4	-11.8	7.2	0.06	0.00	-5.08
7,300.0	0.76	284.54	7,295.3	-7.4	-12.2	7.1	0.37	0.36	-7.72
7,325.0	0.77	273.54	7,320.3	-7.3	-12.5	7.1	0.59	0.04	-44.00
7,350.0	0.80	271.75	7,345.3	-7.3	-12.8	7.0	0.15	0.12	-7.16
7,375.0	0.83	270.62	7,370.3	-7.3	-13.2	7.0	0.14	0.12	-4.52
7,400.0	0.88	266.39	7,395.3	-7.3	-13.5	7.0	0.32	0.20	-16.92
7,425.0	0.92	264.74	7,420.3	-7.3	-13.9	7.0	0.19	0.16	-6.60
7,450.0	1.02	264.19	7,445.3	-7.4	-14.4	7.1	0.40	0.40	-2.20
7,475.0	1.33	278.06	7,470.2	-7.3	-14.9	7.0	1.67	1.24	55.48
7,500.0	1.42	275.37	7,495.2	-7.3	-15.5	7.0	0.44	0.36	-10.76
7,525.0	1.56	278.95	7,520.2	-7.2	-16.1	6.9	0.67	0.56	14.32
7,550.0	1.53	279.62	7,545.2	-7.1	-16.8	6.7	0.14	-0.12	2.68
7,575.0	1.33	274.39	7,570.2	-7.0	-17.4	6.7	0.95	-0.80	-20.92
7,600.0	0.82	262.21	7,595.2	-7.0	-17.9	6.7	2.22	-2.04	-48.72
7,625.0	0.56	219.65	7,620.2	-7.1	-18.1	6.8	2.23	-1.04	-170.24
7,650.0	0.56	200.27	7,645.2	-7.3	-18.2	7.0	0.75	0.00	-77.52
7,675.0	0.60	198.62	7,670.2	-7.6	-18.3	7.2	0.17	0.16	-6.60
7,700.0	0.68	195.00	7,695.2	-7.8	-18.4	7.5	0.36	0.32	-14.48
7,725.0	0.66	196.35	7,720.2	-8.1	-18.5	7.8	0.10	-0.08	5.40
7,750.0	0.75	198.40	7,745.2	-8.4	-18.6	8.0	0.37	0.36	8.20
7,775.0	0.86	192.80	7,770.2	-8.8	-18.7	8.4	0.54	0.44	-22.40
7,800.0	1.11	200.91	7,795.2	-9.2	-18.8	8.8	1.14	1.00	32.44
7,825.0	1.15	200.50	7,820.2	-9.6	-19.0	9.2	0.16	0.16	-1.64
7,850.0	1.04	192.27	7,845.2	-10.1	-19.1	9.7	0.77	-0.44	-32.92
7,875.0	0.83	189.01	7,870.2	-10.5	-19.2	10.1	0.87	-0.84	-13.04

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BIG PAPI FED COM #12H
Project:	EDDY COUNTY, NM	TVD Reference:	RKB=2976.5+31 @ 3007.5usft (PD106)
Site:	ATLAS	MD Reference:	RKB=2976.5+31 @ 3007.5usft (PD106)
Well:	BIG PAPI FED COM #12H	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)
7,900.0	0.72	172.89	7,895.2	-10.8	-19.2	10.4	0.97	-0.44	-64.48
8,059.0	0.71	89.63	8,054.2	-11.8	-18.1	11.4	0.60	-0.01	-52.36
8,122.0	7.04	172.98	8,117.0	-15.6	-17.2	15.3	11.10	10.05	132.30
8,153.0	11.07	177.91	8,147.6	-20.5	-16.9	20.2	13.23	13.00	15.90
8,200.0	13.99	182.54	8,193.5	-30.7	-17.0	30.3	6.57	6.21	9.85
8,247.0	18.51	181.83	8,238.6	-43.8	-17.5	43.5	9.63	9.62	-1.51
8,294.0	22.39	182.31	8,282.6	-60.2	-18.1	59.9	8.26	8.26	1.02
8,341.0	26.13	178.02	8,325.5	-79.5	-18.1	79.2	8.79	7.96	-9.13
8,388.0	30.36	173.75	8,366.9	-101.7	-16.4	101.3	9.97	9.00	-9.09
8,435.0	33.32	177.10	8,406.8	-126.4	-14.5	126.1	7.33	6.30	7.13
8,482.0	37.52	179.90	8,445.1	-153.6	-13.8	153.3	9.58	8.94	5.96
8,529.0	39.46	177.51	8,481.9	-182.9	-13.1	182.6	5.20	4.13	-5.09
8,576.0	43.23	179.26	8,517.2	-213.9	-12.2	213.6	8.39	8.02	3.72
8,623.0	48.22	178.44	8,550.0	-247.5	-11.6	247.2	10.69	10.62	-1.74
8,670.0	53.49	178.59	8,579.6	-283.9	-10.6	283.7	11.22	11.21	0.32
8,717.0	57.61	179.12	8,606.2	-322.7	-9.9	322.4	8.82	8.77	1.13
8,764.0	63.45	178.58	8,629.3	-363.6	-9.0	363.3	12.47	12.43	-1.15
8,810.0	66.63	175.95	8,648.7	-405.2	-7.0	405.0	8.64	6.91	-5.72
8,856.0	70.93	174.43	8,665.4	-447.9	-3.4	447.8	9.84	9.35	-3.30
8,903.0	76.93	177.52	8,678.4	-493.0	-0.3	492.9	14.24	12.77	6.57
8,950.0	82.10	180.22	8,686.9	-539.2	0.6	539.1	12.36	11.00	5.74
8,996.0	88.24	181.34	8,690.8	-585.0	0.0	584.8	13.57	13.35	2.43
9,056.0	90.10	179.90	8,691.7	-645.0	-0.6	644.8	3.92	3.10	-2.40
9,127.0	89.99	180.59	8,691.6	-715.9	-0.9	715.8	0.98	-0.15	0.97
9,220.0	90.57	180.28	8,691.2	-808.9	-1.7	808.7	0.71	0.62	-0.33
9,313.0	90.03	178.63	8,690.7	-901.9	-0.8	901.7	1.87	-0.58	-1.77
9,407.0	90.95	179.61	8,689.9	-995.9	0.7	995.7	1.43	0.98	1.04
9,501.0	88.59	178.98	8,690.3	-1,089.9	1.8	1,089.7	2.60	-2.51	-0.67
9,595.0	88.28	178.07	8,692.8	-1,183.8	4.3	1,183.7	1.02	-0.33	-0.97
9,689.0	88.77	179.18	8,695.2	-1,277.8	6.5	1,277.6	1.29	0.52	1.18
9,781.0	87.81	177.52	8,698.0	-1,369.7	9.2	1,369.6	2.08	-1.04	-1.80
9,873.0	87.82	176.96	8,701.5	-1,461.5	13.6	1,461.5	0.61	0.01	-0.61
9,967.0	90.14	178.16	8,703.2	-1,555.4	17.6	1,555.4	2.78	2.47	1.28
10,062.0	91.43	178.28	8,701.9	-1,650.4	20.5	1,650.4	1.36	1.36	0.13
10,155.0	89.68	178.63	8,701.0	-1,743.3	23.0	1,743.4	1.92	-1.88	0.38
10,248.0	89.88	177.93	8,701.3	-1,836.3	25.8	1,836.4	0.78	0.22	-0.75
10,341.0	89.12	176.53	8,702.1	-1,929.2	30.3	1,929.4	1.71	-0.82	-1.51
10,433.0	89.45	176.00	8,703.3	-2,021.0	36.3	2,021.3	0.68	0.36	-0.58
10,525.0	89.41	177.80	8,704.2	-2,112.8	41.3	2,113.2	1.96	-0.04	1.96
10,618.0	89.62	178.35	8,705.0	-2,205.8	44.4	2,206.2	0.63	0.23	0.59
10,709.0	90.13	178.39	8,705.2	-2,296.7	47.0	2,297.2	0.56	0.56	0.04
10,802.0	90.76	178.62	8,704.5	-2,389.7	49.4	2,390.2	0.72	0.68	0.25
10,896.0	90.08	179.16	8,703.8	-2,483.7	51.3	2,484.2	0.92	-0.72	0.57

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BIG PAPI FED COM #12H
Project:	EDDY COUNTY, NM	TVD Reference:	RKB=2976.5+31 @ 3007.5usft (PD106)
Site:	ATLAS	MD Reference:	RKB=2976.5+31 @ 3007.5usft (PD106)
Well:	BIG PAPI FED COM #12H	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)
10,989.0	87.70	178.44	8,705.6	-2,576.6	53.2	2,577.2	2.67	-2.56	-0.77
11,082.0	87.59	178.57	8,709.4	-2,669.5	55.6	2,670.1	0.18	-0.12	0.14
11,176.0	88.22	178.74	8,712.8	-2,763.4	57.8	2,764.0	0.69	0.67	0.18
11,268.0	88.91	178.79	8,715.1	-2,855.4	59.8	2,856.0	0.75	0.75	0.05
11,363.0	89.96	178.65	8,716.1	-2,950.3	61.9	2,951.0	1.12	1.11	-0.15
11,456.0	90.90	178.42	8,715.4	-3,043.3	64.3	3,044.0	1.04	1.01	-0.25
11,550.0	91.62	178.48	8,713.3	-3,137.2	66.9	3,138.0	0.77	0.77	0.06
11,644.0	90.01	179.36	8,712.0	-3,231.2	68.6	3,231.9	1.95	-1.71	0.94
11,736.0	90.05	179.50	8,711.9	-3,323.2	69.5	3,323.9	0.16	0.04	0.15
11,829.0	88.36	179.85	8,713.2	-3,416.2	70.1	3,416.9	1.86	-1.82	0.38
11,922.0	89.16	179.65	8,715.2	-3,509.2	70.5	3,509.9	0.89	0.86	-0.22
12,014.0	91.04	180.07	8,715.1	-3,601.2	70.7	3,601.9	2.09	2.04	0.46
12,108.0	92.11	180.30	8,712.5	-3,695.1	70.4	3,695.8	1.16	1.14	0.24
12,202.0	90.19	179.12	8,710.6	-3,789.1	70.9	3,789.8	2.40	-2.04	-1.26
12,295.0	90.13	178.69	8,710.3	-3,882.1	72.6	3,882.8	0.47	-0.06	-0.46
12,388.0	91.08	179.28	8,709.4	-3,975.1	74.3	3,975.8	1.20	1.02	0.63
12,480.0	91.83	179.76	8,707.0	-4,067.0	75.1	4,067.7	0.97	0.82	0.52
12,573.0	89.17	179.12	8,706.2	-4,160.0	76.0	4,160.7	2.94	-2.86	-0.69
12,666.0	88.86	181.87	8,707.8	-4,253.0	75.2	4,253.6	2.98	-0.33	2.96
12,760.0	88.30	183.90	8,710.1	-4,346.8	70.4	4,347.4	2.24	-0.60	2.16
12,852.0	87.37	183.43	8,713.6	-4,438.6	64.6	4,439.0	1.13	-1.01	-0.51
12,945.0	87.07	181.25	8,718.1	-4,531.4	60.8	4,531.7	2.36	-0.32	-2.34
13,038.0	88.66	180.45	8,721.6	-4,624.3	59.4	4,624.6	1.91	1.71	-0.86
13,132.0	88.29	177.87	8,724.1	-4,718.3	60.8	4,718.5	2.77	-0.39	-2.74
13,226.0	89.13	175.53	8,726.2	-4,812.1	66.2	4,812.4	2.64	0.89	-2.49
13,320.0	91.85	174.89	8,725.4	-4,905.7	74.0	4,906.2	2.97	2.89	-0.68
13,413.0	93.19	174.75	8,721.3	-4,998.3	82.4	4,998.9	1.45	1.44	-0.15
13,506.0	92.53	178.20	8,716.7	-5,090.9	88.1	5,091.7	3.77	-0.71	3.71
13,600.0	92.97	178.43	8,712.2	-5,184.8	90.9	5,185.6	0.53	0.47	0.24
13,692.0	91.47	178.26	8,708.6	-5,276.7	93.5	5,277.5	1.64	-1.63	-0.18
13,787.0	91.61	179.92	8,706.0	-5,371.6	95.0	5,372.5	1.75	0.15	1.75
13,880.0	90.41	179.37	8,704.4	-5,464.6	95.6	5,465.4	1.42	-1.29	-0.59
13,973.0	90.03	178.29	8,704.0	-5,557.6	97.5	5,558.4	1.23	-0.41	-1.16
14,066.0	89.13	175.90	8,704.7	-5,650.5	102.2	5,651.4	2.75	-0.97	-2.57
14,159.0	89.73	176.74	8,705.7	-5,743.3	108.2	5,744.3	1.11	0.65	0.90
14,253.0	89.41	177.58	8,706.4	-5,837.2	112.9	5,838.2	0.96	-0.34	0.89
14,345.0	89.59	178.37	8,707.2	-5,929.1	116.1	5,930.2	0.88	0.20	0.86
14,438.0	89.78	178.32	8,707.7	-6,022.1	118.8	6,023.2	0.21	0.20	-0.05
14,532.0	90.13	178.88	8,707.7	-6,116.0	121.1	6,117.2	0.70	0.37	0.60
14,626.0	89.82	178.87	8,707.8	-6,210.0	122.9	6,211.2	0.33	-0.33	-0.01
14,718.0	90.67	179.14	8,707.4	-6,302.0	124.5	6,303.2	0.97	0.92	0.29
14,810.0	91.58	179.60	8,705.6	-6,394.0	125.6	6,395.2	1.11	0.99	0.50
14,906.0	89.56	179.88	8,704.6	-6,490.0	126.0	6,491.2	2.12	-2.10	0.29
14,999.0	88.66	177.32	8,706.1	-6,582.9	128.3	6,584.2	2.92	-0.97	-2.75

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BIG PAPI FED COM #12H
Project:	EDDY COUNTY, NM	TVD Reference:	RKB=2976.5+31 @ 3007.5usft (PD106)
Site:	ATLAS	MD Reference:	RKB=2976.5+31 @ 3007.5usft (PD106)
Well:	BIG PAPI FED COM #12H	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)
15,093.0	88.97	177.61	8,708.0	-6,676.8	132.4	6,678.1	0.45	0.33	0.31
15,187.0	89.31	177.98	8,709.4	-6,770.7	136.0	6,772.1	0.53	0.36	0.39
15,279.0	90.04	178.06	8,710.0	-6,862.7	139.2	6,864.1	0.80	0.79	0.09
15,374.0	90.96	177.98	8,709.1	-6,957.6	142.5	6,959.1	0.97	0.97	-0.08
15,468.0	89.25	179.26	8,709.0	-7,051.6	144.8	7,053.0	2.27	-1.82	1.36
15,562.0	89.43	178.90	8,710.0	-7,145.5	146.3	7,147.0	0.43	0.19	-0.38
15,655.0	89.96	179.42	8,710.5	-7,238.5	147.6	7,240.0	0.80	0.57	0.56
15,747.0	89.64	179.44	8,710.9	-7,330.5	148.5	7,332.0	0.35	-0.35	0.02
15,841.0	89.82	179.01	8,711.3	-7,424.5	149.8	7,426.0	0.50	0.19	-0.46
15,934.0	89.15	178.92	8,712.1	-7,517.5	151.5	7,519.0	0.73	-0.72	-0.10
16,027.0	89.57	178.74	8,713.2	-7,610.5	153.4	7,612.0	0.49	0.45	-0.19
16,120.0	90.11	178.89	8,713.4	-7,703.5	155.3	7,705.0	0.60	0.58	0.16
16,213.0	89.25	177.30	8,713.9	-7,796.4	158.4	7,798.0	1.94	-0.92	-1.71
16,306.0	91.79	177.73	8,713.1	-7,889.3	162.4	7,891.0	2.77	2.73	0.46
16,400.0	90.97	177.87	8,710.8	-7,983.2	166.0	7,984.9	0.88	-0.87	0.15
16,492.0	91.68	177.70	8,708.7	-8,075.1	169.6	8,076.9	0.79	0.77	-0.18
16,586.0	91.41	177.42	8,706.2	-8,169.0	173.6	8,170.8	0.41	-0.29	-0.30
16,680.0	90.24	177.65	8,704.8	-8,262.9	177.6	8,264.8	1.27	-1.24	0.24
16,774.0	90.28	177.82	8,704.4	-8,356.8	181.4	8,358.8	0.19	0.04	0.18
16,867.0	90.74	178.27	8,703.6	-8,449.8	184.5	8,451.8	0.69	0.49	0.48
16,961.0	91.24	178.60	8,701.9	-8,543.7	187.1	8,545.7	0.64	0.53	0.35
17,055.0	91.83	179.19	8,699.4	-8,637.7	188.9	8,639.7	0.89	0.63	0.63
17,148.0	92.64	179.56	8,695.8	-8,730.6	189.9	8,732.6	0.96	0.87	0.40
17,242.0	90.24	179.91	8,693.4	-8,824.5	190.4	8,826.6	2.58	-2.55	0.37
17,335.0	89.55	180.83	8,693.6	-8,917.5	189.8	8,919.5	1.24	-0.74	0.99
17,429.0	90.11	180.94	8,693.9	-9,011.5	188.3	9,013.5	0.61	0.60	0.12
17,521.0	90.57	181.55	8,693.3	-9,103.5	186.3	9,105.4	0.83	0.50	0.66
17,615.0	90.44	181.17	8,692.5	-9,197.5	184.1	9,199.3	0.43	-0.14	-0.40
17,709.0	91.13	181.10	8,691.2	-9,291.4	182.2	9,293.2	0.74	0.73	-0.07
17,802.0	91.55	181.42	8,689.1	-9,384.4	180.2	9,386.1	0.57	0.45	0.34
17,884.0	90.49	180.50	8,687.6	-9,466.4	178.8	9,468.0	1.71	-1.29	-1.12
17,978.0	88.68	178.64	8,688.3	-9,560.4	179.5	9,562.0	2.76	-1.93	-1.98
18,071.0	89.71	176.90	8,689.6	-9,653.3	183.1	9,655.0	2.17	1.11	-1.87
18,164.0	90.88	176.00	8,689.1	-9,746.1	188.9	9,747.9	1.59	1.26	-0.97
18,258.0	92.41	175.87	8,686.4	-9,839.8	195.5	9,841.7	1.63	1.63	-0.14
18,351.0	91.81	176.91	8,683.0	-9,932.6	201.4	9,934.6	1.29	-0.65	1.12
18,443.0	92.10	177.81	8,679.8	-10,024.4	205.6	10,026.5	1.03	0.32	0.98
18,471.0	90.87	177.26	8,679.1	-10,052.4	206.8	10,054.5	4.81	-4.39	-1.96
18,529.0	90.87	177.26	8,678.2	-10,110.3	209.6	10,112.5	0.00	0.00	0.00



Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well BIG PAPI FED COM #12H
Project:	EDDY COUNTY, NM	TVD Reference:	RKB=2976.5+31 @ 3007.5usft (PD106)
Site:	ATLAS	MD Reference:	RKB=2976.5+31 @ 3007.5usft (PD106)
Well:	BIG PAPI FED COM #12H	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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