

15-40630

NADEL & GUSSMAN LLC

Atoka
Eddy County, NM
Maple Leaf #1H
VH - Job #32K09121229

Survey: Gyro

SDI Standard Survey Report

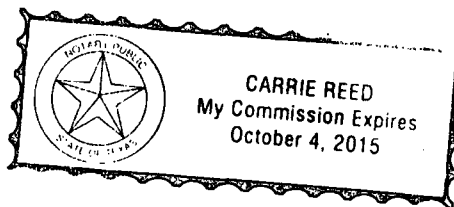
This survey is correct to the best of my knowledge and is supported by actual field data.

Richard

Notarized this date 8th of October, 2012.

Carrie Reed

Notary Signature
County of Midland
State of Texas



Scientific Drilling

Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	NADEL & GUSSMAN LLC	Local Co-ordinate Reference:	Well Maple Leaf #1H
Project:	Atoka	TVD Reference:	WELL @ 0.00usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0.00usft (Original Well Elev)
Well:	Maple Leaf #1H	North Reference:	Grid
Wellbore:	VH - Job #32K09121229	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K09121229	Database:	EDM-Regulatory

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

Site	Eddy County, NM		
Site Position:		Northing:	637,926.15 usft
From:	Lat/Long	Easting:	481,380.48 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"
		Latitude:	32° 45' 13.457 N
		Longitude:	104° 23' 38.033 W
		Grid Convergence:	-0.03 °

Well	Maple Leaf #1H, Directional (DDC)		
Well Position	+N/-S	0.00 usft	Northing: 643,475.55 usft
	+E/-W	0.00 usft	Easting: 487,499.89 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 46' 8.400 N
		Longitude:	104° 22' 26.400 W
		Ground Level:	0.00 usft

Wellbore	VH - Job #32K09121229				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	09/29/12	7.84	60.52	48,751

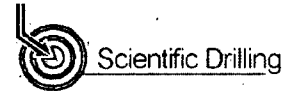
Design					VH - Job #32K09121229							
Audit Notes:												
Version:		1.0		Phase:		ACTUAL		Tie On Depth:		0.00		
Vertical Section:		Depth From (TVD)			+N/-S			+E/-W			Direction	
		(usft)			(usft)			(usft)			(°)	
		0.00			0.00			0.00			64.23	

Survey Program	Date	10/21/12		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
100.00	3,050.00	Gyro (VH - Job #32K09121229)	Keeper	Keeper Gyro

Survey							
Measured Depth	Inclination	Azimuth	True Vertical	North/South	East/West	Closure Azimuth	Closure Distance
(usft)	(°)	(°)	Depth	(usft)	(usft)	(°)	(usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.26	31.12	100.00	0.19	0.12	31.12	0.23
200.00	0.31	92.01	200.00	0.38	0.50	53.11	0.63
300.00	0.06	71.18	300.00	0.39	0.82	64.90	0.91
400.00	0.27	167.26	400.00	0.17	0.93	79.39	0.94
500.00	0.52	87.93	500.00	-0.04	1.43	91.60	1.43
600.00	1.19	74.90	599.98	0.25	2.89	85.11	2.90
700.00	1.58	63.51	699.95	1.13	5.12	77.54	5.25
800.00	1.97	53.13	799.91	2.78	7.73	70.24	8.22
900.00	2.16	59.69	899.84	4.76	10.74	66.08	11.74
1,000.00	2.12	69.36	999.77	6.36	14.09	65.70	15.46
1,100.00	2.30	61.09	1,099.70	7.99	17.58	65.57	19.31

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Well:	Maple Leaf #1H	North Reference:	Grid
Wellbore:	VH - Job #32K09121229	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K09121229	Database:	EDM-Regulatory

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
1,200.00	2.39	68.25	1,199.62	9.73	21.27	65.42	23.39
1,300.00	1.95	67.93	1,299.54	11.14	24.79	65.80	27.18
1,400.00	1.90	68.75	1,399.49	12.38	27.91	66.08	30.53
1,500.00	2.11	64.24	1,499.43	13.78	31.11	66.11	34.03
1,600.00	2.17	65.47	1,599.36	15.37	34.49	65.98	37.76
1,700.00	2.22	66.92	1,699.28	16.91	38.00	66.00	41.59
1,800.00	2.35	68.07	1,799.20	18.44	41.68	66.14	45.58
1,900.00	2.15	63.79	1,899.13	20.03	45.26	66.13	49.50
2,000.00	2.03	68.79	1,999.06	21.50	48.60	66.13	53.14
2,100.00	2.14	70.18	2,098.99	22.78	52.01	66.35	56.77
2,200.00	2.08	64.75	2,198.93	24.18	55.40	66.42	60.45
2,300.00	1.94	67.39	2,298.86	25.61	58.61	66.40	63.96
2,400.00	2.12	57.76	2,398.80	27.24	61.74	66.19	67.48
2,500.00	1.63	64.09	2,498.75	28.85	64.58	65.93	70.73
2,600.00	1.75	64.65	2,598.70	30.13	67.24	65.86	73.68
2,700.00	1.59	63.02	2,698.66	31.41	69.85	65.79	76.59
2,800.00	1.52	46.61	2,798.63	32.95	72.05	65.42	79.23
2,900.00	1.20	42.10	2,898.60	34.64	73.72	64.83	81.45
3,000.00	1.22	45.73	2,998.57	36.16	75.18	64.31	83.43
3,050.00	0.72	72.70	3,048.57	36.62	75.87	64.23	84.24

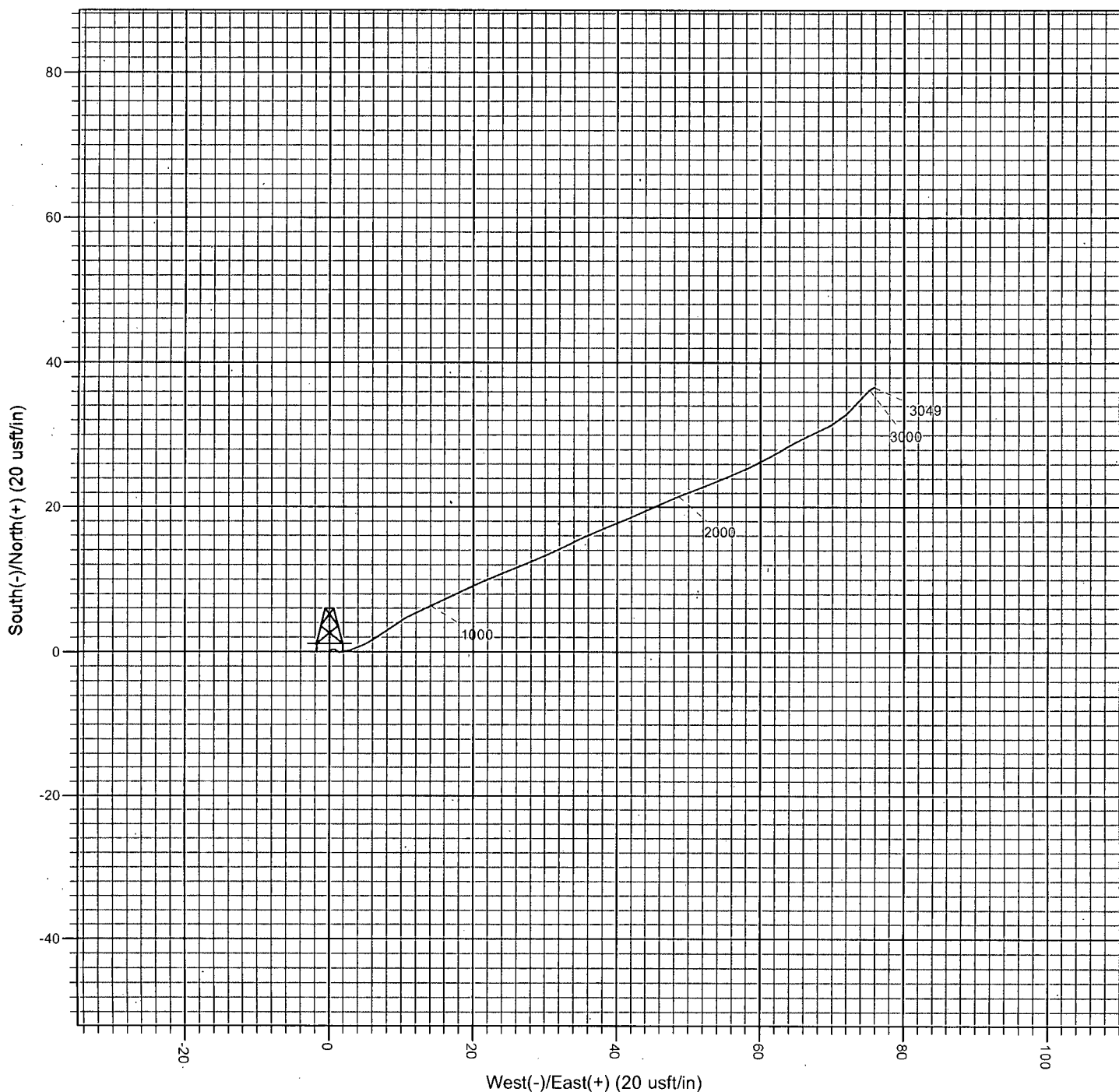


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Project: Atoka
Eddy County, NM
Well: Maple Leaf #1H
Wellbore: VH - Job #32K09121229
Design: VH - Job #32K09121229

WELL DETAILS: Maple Leaf #1H
WELL @ 0.00usft (Original Well Elev)
Ground Level: 0.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	643475.55	487499.89	32° 46' 8.400 N	104° 22' 26.400 W	



PROJECT DETAILS: Atoka	SITE DETAILS: Eddy County, NM
Geodetic System: US State Plane 1927 (Exact solution)	Site Centre Latitude: 32° 45' 13.457 N
Datum: NAD 1927 (NADCON CONUS)	Longitude: 104° 23' 38.033 W
Ellipsoid: Clarke 1866	Positional Uncertainty: 0.00
Zone: New Mexico East 3001	Convergence: -0.03
System Datum: Mean Sea Level	Local North: Grid