



Scientific Drilling Survey Report



Company: Apache Corporation Date: 2006-01-17 Time: 11:38:12 Page: 1
Field: NEDU Co-ordinate(NE) Reference: Well: NEDU #628, Grid North
Site: Lea County, NM Vertical (TVD) Reference: GL 3460.0
Well: NEDU #628 Section (VS) Reference: Well (0.00N,0.00E,0.00Azi)
Wellpath: Plan #1 Survey Calculation Method: Minimum Curvature Db: Sybase

Field: NEDU

Map System: US State Plane Coordinate System 1927
Geo Datum: NAD27 (Clarke 1866)
Sys Datum: Mean Sea Level

Map Zone: New Mexico, Eastern Zone
Coordinate System: Well Centre
Geomagnetic Model: igrf2005

Site: Lea County, NM

Site Position: Northing: 544965.000 ft Latitude: 32 29 33.349 N
From: Map Easting: 866763.000 ft Longitude: 103 8 37.823 W
Position Uncertainty: 0.00 ft North Reference: Grid
Ground Level: 0.00 ft Grid Convergence: 0.64 deg

Well: NEDU #628

Slot Name:

Well Position: +N/-S -4831.60 ft Northing: 540133.400 ft Latitude: 32 28 46.016 N
+E/-W -4282.00 ft Easting: 862481.000 ft Longitude: 103 9 28.430 W
Position Uncertainty: 0.00 ft

Wellpath: Plan #1
7 7/8" Hole
Current Datum: GL Height 3460.00 ft
Magnetic Data: 2005-09-26
Field Strength: 49445 nT
Vertical Section: Depth From (TVD) +N/-S
ft ft
0.00 0.00 0.00 0.00

Drilled From: Surface
Tie-on Depth: 0.00 ft
Above System Datum: Mean Sea Level
Declination: 8.08 deg
Mag Dip Angle: 60.66 deg
Direction deg
0.00

Survey: Actual Start Date: 2006-01-06
Company: Scientific Drilling Engineer: Julio Pina
Tool: MWD;MWD - Standard ISWWSA Tied-to: From: GYRO

Survey: Actual

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
2020.00	1.27	42.80	2019.93	-5.31	9.67	-5.31	0.00	0.00	0.00	MWD
2129.00	1.75	33.88	2128.90	-3.04	11.42	-3.04	0.49	0.44	-8.18	MWD
2255.00	1.54	26.24	2254.84	0.07	13.24	0.07	0.24	-0.17	-6.06	MWD
2412.00	3.20	5.32	2411.71	6.33	14.58	6.33	1.18	1.06	-13.32	MWD
2538.00	6.03	4.98	2537.28	16.42	15.48	16.42	2.25	2.25	-0.27	MWD
2633.00	7.16	2.07	2631.65	27.31	16.13	27.31	1.24	1.19	-3.06	MWD
2727.00	8.48	355.30	2724.78	40.07	15.77	40.07	1.71	1.40	-7.20	MWD
2790.00	9.58	355.64	2787.00	49.93	14.99	49.93	1.75	1.75	0.54	MWD
2916.00	12.20	358.99	2910.72	73.70	13.96	73.70	2.14	2.08	2.66	MWD
2979.00	13.42	0.55	2972.15	87.67	13.91	87.67	2.01	1.94	2.48	MWD
3105.00	13.86	0.17	3094.60	117.38	14.10	117.38	0.36	0.35	-0.30	MWD
3168.00	14.13	358.84	3155.73	132.62	13.97	132.62	0.67	0.43	-2.11	MWD
3231.00	14.86	359.75	3216.72	148.38	13.77	148.38	1.21	1.16	1.44	MWD
3325.00	14.24	358.34	3307.71	171.99	13.39	171.99	0.76	-0.66	-1.50	MWD
3388.00	14.05	357.83	3368.80	187.38	12.87	187.38	0.36	-0.30	-0.81	MWD
3451.00	13.50	358.59	3429.98	202.37	12.40	202.37	0.92	-0.87	1.21	MWD
3514.00	14.63	359.28	3491.09	217.68	12.12	217.68	1.81	1.79	1.10	MWD
3577.00	14.56	359.01	3552.06	233.55	11.88	233.55	0.15	-0.11	-0.43	MWD
3673.00	14.51	359.29	3644.99	257.64	11.53	257.64	0.09	-0.05	0.29	MWD
3765.00	14.23	359.15	3734.11	280.47	11.22	280.47	0.31	-0.30	-0.15	MWD
3828.00	14.07	358.38	3795.20	295.87	10.89	295.87	0.39	-0.25	-1.22	MWD
3891.00	13.98	357.12	3856.32	311.13	10.29	311.13	0.51	-0.14	-2.00	MWD
3985.00	13.78	355.86	3947.58	333.63	8.91	333.63	0.39	-0.21	-1.34	MWD
4048.00	13.47	355.82	4008.80	348.43	7.83	348.43	0.49	-0.49	-0.06	MWD

SUR: E-15-21s-37e, 1410N & 380M
BHL: D-15-21s-37e, 323N & 375M
API # 30-025-37223



Scientific Drilling Survey Report

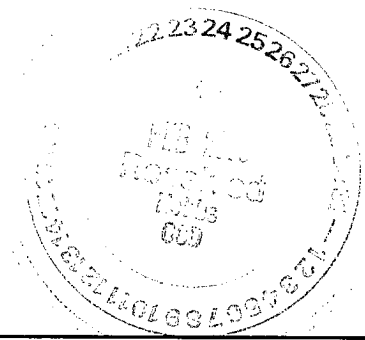


Company: Apache Corporation
Field: NEDU
Site: Lea County, NM
Well: NEDU #628
Wellpath: Plan #1

Date: 2006-01-17 Time: 11:38:12 Page: 2
Co-ordinate(NE) Reference: Well: NEDU #628, Grid North
Vertical (TVD) Reference: GL 3460.0
Section (VS) Reference: Well (0.00N,0.00E,0.00Azi)
Survey Calculation Method: Minimum Curvature Db: Sybase

Survey: Actual

MD ft	Incl deg	Azim deg	TVD ft	+N/-S ft	+E/-W ft	VS ft	DLS deg/100ft	Build deg/100ft	Turn deg/100ft	Tool/Comment
4112.00	14.15	357.78	4070.95	363.69	6.98	363.69	1.29	1.06	3.06	MWD
4175.00	14.50	357.26	4132.00	379.26	6.31	379.26	0.59	0.56	-0.83	MWD
4238.00	14.25	356.50	4193.02	394.88	5.46	394.88	0.50	-0.40	-1.21	MWD
4300.00	14.39	356.53	4253.10	410.18	4.53	410.18	0.23	0.23	0.05	MWD
4363.00	14.04	356.23	4314.17	425.62	3.55	425.62	0.57	-0.56	-0.48	MWD
4489.00	13.97	355.68	4436.42	456.04	1.40	456.04	0.12	-0.06	-0.44	MWD
4552.00	13.91	356.12	4497.57	471.18	0.31	471.18	0.19	-0.10	0.70	MWD
4615.00	13.76	356.38	4558.74	486.21	-0.67	486.21	0.26	-0.24	0.41	MWD
4678.00	14.43	0.75	4619.84	501.54	-1.04	501.54	2.00	1.06	6.94	MWD
4773.00	14.65	1.02	4711.80	525.38	-0.67	525.38	0.24	0.23	0.28	MWD
4868.00	14.49	1.09	4803.75	549.28	-0.23	549.28	0.17	-0.17	0.07	MWD
4962.00	14.19	0.59	4894.82	572.56	0.11	572.56	0.35	-0.32	-0.53	MWD
5056.00	14.27	0.53	4985.93	595.66	0.34	595.66	0.09	0.09	-0.06	MWD
5151.00	14.25	1.17	5078.01	619.06	0.68	619.06	0.17	-0.02	0.67	MWD
5245.00	13.88	2.21	5169.19	641.89	1.35	641.89	0.48	-0.39	1.11	MWD
5339.00	13.68	2.83	5260.48	664.26	2.34	664.26	0.26	-0.21	0.66	MWD
5434.00	13.95	357.39	5352.74	686.92	2.37	686.92	1.40	0.28	-5.73	MWD
5528.00	13.44	357.74	5444.06	709.16	1.42	709.16	0.55	-0.54	0.37	MWD
5685.00	13.01	1.91	5596.90	745.05	1.29	745.05	0.67	-0.27	2.66	MWD
5748.00	13.94	2.34	5658.17	759.72	1.84	759.72	1.48	1.48	0.68	MWD
5810.00	14.82	1.86	5718.23	775.11	2.40	775.11	1.43	1.42	-0.77	MWD
5874.00	14.77	1.99	5780.10	791.44	2.95	791.44	0.09	-0.08	0.20	MWD
5934.00	14.80	0.83	5838.12	806.75	3.33	806.75	0.50	0.05	-1.93	MWD
5997.00	15.07	0.36	5898.99	822.98	3.50	822.98	0.47	0.43	-0.75	MWD
6029.00	14.91	1.14	5929.90	831.26	3.60	831.26	0.80	-0.50	2.44	MWD
6123.00	14.93	355.65	6020.74	855.43	2.93	855.43	1.50	0.02	-5.84	MWD
6249.00	14.12	356.30	6142.71	886.95	0.70	886.95	0.66	-0.64	0.52	MWD
6312.00	13.00	358.57	6203.95	901.70	0.03	901.70	1.97	-1.78	3.60	MWD
6375.00	12.52	359.77	6265.40	915.61	-0.17	915.61	0.87	-0.76	1.90	MWD
6469.00	13.57	358.41	6356.97	936.83	-0.52	936.83	1.16	1.12	-1.45	MWD
6532.00	13.87	358.94	6418.17	951.76	-0.87	951.76	0.52	0.48	0.84	MWD
6626.00	13.98	358.89	6509.41	974.38	-1.29	974.38	0.12	0.12	-0.05	MWD
6721.00	14.22	359.05	6601.55	997.52	-1.71	997.52	0.26	0.25	0.17	MWD
6783.00	14.03	355.83	6661.67	1012.63	-2.38	1012.63	1.30	-0.31	-5.19	MWD
6878.00	13.88	357.82	6753.87	1035.50	-3.65	1035.50	0.53	-0.16	2.09	MWD
6941.00	13.37	358.16	6815.10	1050.33	-4.17	1050.33	0.82	-0.81	0.54	MWD
7056.00	12.70	357.99	6927.13	1076.26	-5.05	1076.26	0.58	-0.58	-0.15	MWD
7106.00	12.70	357.99	6975.91	1087.24	-5.43	1087.24	0.00	0.00	0.00	MWD





Scientific Drilling

Directional Drilling Operations

Field: NEDU
Site: Lea County, NM
Well: NEDU #628
Wellpath: Plan #1
Survey: Actual



SURVEY PROGRAM

Date : 2006-01-17 Validated : No Version : 0

Depth Fm	Depth To	Survey/Plan	Tool
100.00	2020.00	GYRO	Keeper
2129.00	7106.00	Actual	MWD

SITE DETAILS

Lea County, NM

Site Centre Northing: 544965.000
Easting: 866763.000
Water Depth: 0.00
Positional Uncertainty: 0.00
Convergence: 0.64

FIELD DETAILS

NEDU

Geodetic System: US State Plane Coordinate System 1927
Ellipsoid: NAD27 (Clarke 1866)
Zone: New Mexico, Eastern Zone
Magnetic Model: Igrf2005
System Datum: Mean Sea Level
Local North: Grid North

WELL DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
NEDU #628	-4831.60	-4282.00	540133.400	862481.000	32°28'46.016N	103°09'28.430W	N/A

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
330 HL	0.00	0.00	0.00	540133.400	862481.000	Polygon
Section Lines	0.00	0.00	0.00	540133.400	862481.000	Polygon

