

2006 NOV 28 PM 3 56

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Energen Resources

Carson National Forest, NE S25, T32N, R5W

Carracas Mesa

Carracas 25 A #2

Final Survey *unit*

30-039-29884

Surface 805/S 20W 30, 32N, 4W
1 origin lateral 2294/S 712/E 25, 32N, 5W
2 Termination lat. 2004/S 1838/E 25, 32N, 5W

Plan: Actual Drill Path

Md 1 -4350 TVd 1 3850
Md 2 5461 TVd 2 3898

Energen Resources - Survey

14 November, 2006

RCVD NOV29'06

OIL CONS. DIV

DIST. 3

by

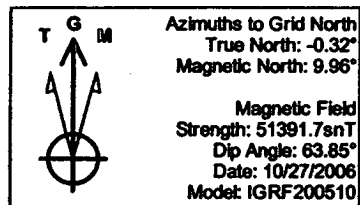


Project: Carson National Forest
Site: Carracas Mesa
Well: Carracas 25 A #2
Wellbore: Final Survey
Plan: Actual Drill Path (Carracas 25 A #2/Final Survey)

PROJECT DETAILS: Carson National Forest, NE S25, T32N, R5W

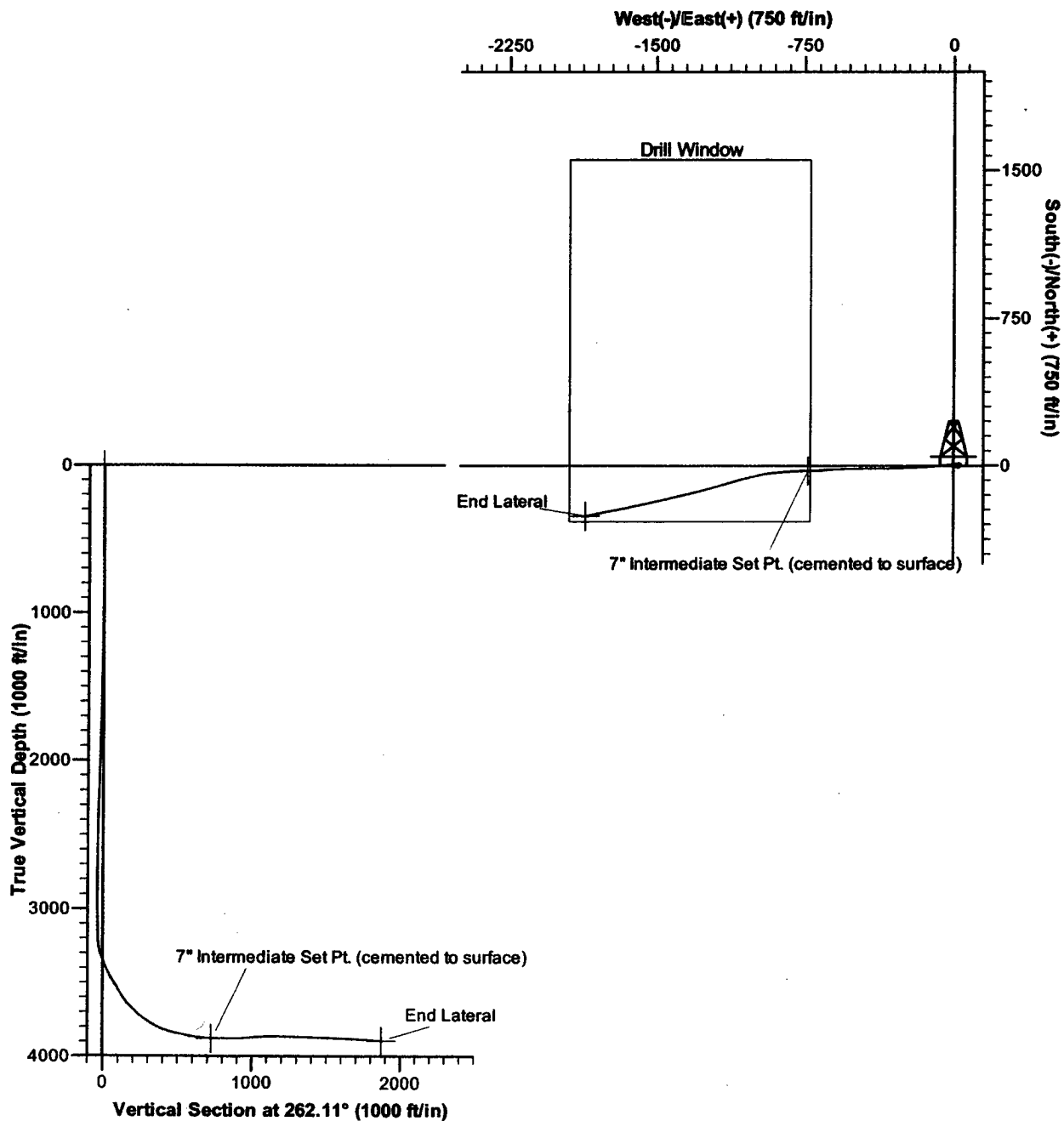
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Western Zone

System Datum: Mean Sea Level



SURFACE LOCATION

Easting: 2877789.92
Northing: 2166570.48



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Energen Resources - Survey



Company:	Energen Resources	Local Co-ordinate Reference:	Well Carracas 25 A #2
Project:	Carson National Forest, NE S25, T32N, R5W	TVD Reference:	KB Height @ 7211.0ft (AWS 222)
Site:	Carracas Mesa	MD Reference:	KB Height @ 7211.0ft (AWS 222)
Well:	Carracas 25 A #2	North Reference:	Grid
Wellbore:	Final Survey	Survey Calculation Method:	Minimum Curvature
Design:	Actual Drill Path	Database:	EDM 2003.16 Single User Db

Project	Carson National Forest, NE S25, T32N, R5W, Carson National Forest		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site Carracas Mesa

Site Position:		Northing:	2,166,570.48 ft	Latitude:	36° 57' 10.000 N
From:	Lat/Long	Easting:	2,877,789.92 ft	Longitude:	107° 18' 14.000 W
Position Uncertainty:	0.0 ft	Spot Radius:	"	Grid Convergence:	0.32 °

Well Carracas 25 A #2

Well Position	+N/-S	0.0 ft	Northing:	2,166,570.48 ft	Latitude:	36° 57' 10.000 N
	+E/-W	0.0 ft	Easting:	2,877,789.92 ft	Longitude:	107° 18' 14.000 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	7,196.0 ft	Ground Level:	7,196.0 ft

Wellbore Final Survey

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	10/27/2006	10.28	63.85	51,392

Design Actual Drill Path

Audit Notes:

Version:	1	Phase:	PROTOTYPE	Tie On Depth:	0.0
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Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	262.11

Survey Tool Program		Date 11/14/2006		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	5,481.0	Actual Drill Path (Final Survey)	MWD	MWD - Standard

Planned Survey

MD (ft)	TVD (ft)	Inc (°)	Azi (°)	V. Sec (ft)	N/S (ft)	E/W (ft)
0.0	0.0	0.00	0.00	0.0	0.0	0.0
100.0	100.0	0.02	281.20	0.0	0.0	0.0
200.0	200.0	0.04	281.20	0.1	0.0	-0.1
300.0	300.0	0.06	281.20	0.1	0.0	-0.2
400.0	400.0	0.08	281.20	0.3	0.1	-0.3
450.0	450.0	0.09	281.20	0.3	0.1	-0.3
500.0	500.0	0.03	226.29	0.4	0.1	-0.4
600.0	600.0	0.15	128.79	0.3	0.0	-0.3
700.0	700.0	0.30	123.51	0.0	-0.3	0.0
800.0	800.0	0.46	121.79	-0.5	-0.6	0.6
900.0	900.0	0.61	120.95	-1.2	-1.1	1.4
1,000.0	1,000.0	0.77	120.44	-2.1	-1.7	2.4

Energen
Energen Resources - Survey



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Site:	Carracas Mesa	MD Reference:	KB Height @ 7211.0ft (AWS 222)
Well:	Carracas 25 A #2	North Reference:	Grid
Wellbore:	Final Survey	Survey Calculation Method:	Minimum Curvature
Design:	Actual Drill Path	Database:	EDM 2003.16 Single User Db

Planned Survey

MD (ft)	TVD (ft)	Inc (°)	Azi (°)	V. Sec (ft)	N/S (ft)	E/W (ft)
1,074.0	1,074.0	0.88	120.18	-3.0	-2.2	3.3
1,100.0	1,100.0	0.91	119.35	-3.3	-2.4	3.7
1,200.0	1,200.0	1.02	116.59	-4.7	-3.2	5.2
1,300.0	1,299.9	1.13	114.37	-6.2	-4.0	6.8
1,400.0	1,399.9	1.24	112.55	-8.0	-4.9	8.7
1,500.0	1,499.9	1.36	111.04	-10.0	-5.7	10.9
1,600.0	1,599.9	1.47	109.76	-12.2	-6.6	13.2
1,700.0	1,699.8	1.59	108.67	-14.5	-7.4	15.7
1,800.0	1,799.8	1.71	107.73	-17.1	-8.3	18.4
1,845.0	1,844.8	1.76	107.35	-18.3	-8.8	19.7
1,900.0	1,899.7	1.66	101.27	-19.9	-9.2	21.3
2,000.0	1,999.7	1.54	88.53	-22.6	-9.4	24.1
2,100.0	2,099.7	1.50	74.36	-25.2	-9.0	26.7
2,200.0	2,199.6	1.55	60.33	-27.7	-8.0	29.1
2,300.0	2,299.6	1.69	47.93	-30.2	-6.3	31.4
2,338.0	2,337.6	1.76	43.81	-31.1	-5.5	32.2
2,400.0	2,399.5	1.64	39.51	-32.5	-4.2	33.4
2,500.0	2,499.5	1.47	31.21	-34.4	-2.0	35.0
2,600.0	2,599.5	1.34	21.02	-35.8	0.2	36.1
2,700.0	2,699.5	1.26	9.10	-36.7	2.4	36.7
2,800.0	2,799.4	1.24	356.20	-37.1	4.6	36.8
2,900.0	2,899.4	1.28	343.53	-37.0	6.7	36.4
2,944.0	2,943.4	1.32	338.33	-36.8	7.7	36.1
3,000.0	2,999.4	1.37	330.16	-36.4	8.8	35.5
3,100.0	3,099.4	1.51	317.38	-35.2	10.8	34.0
3,135.0	3,134.3	1.58	313.54	-34.6	11.5	33.3
3,160.0	3,159.3	1.41	309.06	-34.2	11.9	32.9
3,191.0	3,190.3	2.46	284.98	-33.3	12.4	31.9
3,200.0	3,199.3	3.31	276.60	-32.9	12.4	31.5
3,223.0	3,222.2	5.63	267.23	-31.1	12.5	29.7
3,225.0	3,224.2	5.88	266.55	-30.9	12.4	29.5
3,250.0	3,249.0	9.00	261.25	-27.7	12.1	26.3
3,254.0	3,253.0	9.50	260.72	-27.0	12.0	25.6
3,275.0	3,273.6	12.38	259.23	-23.1	11.3	21.7
3,286.0	3,284.3	13.89	258.70	-20.6	10.8	19.3
3,300.0	3,297.8	15.40	258.88	-17.0	10.1	15.8
3,317.0	3,314.1	17.24	259.05	-12.3	9.2	11.1
3,348.0	3,343.5	19.70	260.99	-2.4	7.5	1.4
3,350.0	3,345.4	19.83	261.10	-1.8	7.4	0.8
3,380.0	3,373.5	21.81	262.57	8.9	5.9	-9.8
3,400.0	3,391.9	23.17	263.56	16.5	5.0	-17.4
3,411.0	3,402.0	23.92	264.06	20.9	4.5	-21.8
3,442.0	3,430.2	25.76	263.45	33.9	3.1	-34.7
3,450.0	3,437.3	26.31	263.80	37.5	2.7	-38.2

Energen

Energen Resources - Survey



Company: Energen Resources
Project: Carson National Forest, NE S25, T32N, R5W
Site: Carracas Mesa
Well: Carracas 25 A #2
Wellbore: Final Survey
Design: Actual Drill Path

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well Carracas 25 A #2
 KB Height @ 7211.0ft (AWS 222)
 KB Height @ 7211.0ft (AWS 222)
 Grid
 Minimum Curvature
 EDM 2003.16 Single User Db

Planned Survey

MD (ft)	TVD (ft)	Inc (°)	Azi (°)	V. Sep (ft)	N/S (ft)	E/W (ft)
3,474.0	3,458.7	27.96	264.77	48.4	1.6	-49.1
3,505.0	3,485.9	29.11	264.85	63.2	0.3	-63.8
3,536.0	3,512.9	30.07	265.47	78.5	-1.0	-79.1
3,565.0	3,537.9	31.13	265.99	93.2	-2.1	-93.8
3,596.0	3,564.2	32.62	266.08	109.5	-3.3	-110.1
3,600.0	3,567.5	32.75	266.12	111.7	-3.4	-112.3
3,628.0	3,591.0	33.68	266.43	127.0	-4.4	-127.6
3,650.0	3,609.1	35.25	266.80	139.4	-5.1	-140.0
3,660.0	3,617.2	35.96	266.96	145.2	-5.5	-145.8
3,693.0	3,643.5	38.43	266.87	165.1	-6.5	-165.7
3,700.0	3,649.0	39.17	266.78	169.4	-6.8	-170.1
3,722.0	3,665.8	41.50	266.52	183.6	-7.6	-184.3
3,725.0	3,668.0	41.89	266.57	185.6	-7.7	-186.3
3,750.0	3,686.1	45.16	267.00	202.8	-8.7	-203.5
3,753.0	3,688.2	45.55	267.05	204.9	-8.8	-205.7
3,784.0	3,709.3	48.89	266.79	227.6	-10.0	-228.4
3,800.0	3,719.7	50.25	267.01	239.7	-10.7	-240.5
3,816.0	3,729.7	51.62	267.23	252.1	-11.3	-252.9
3,848.0	3,749.2	53.64	267.58	277.4	-12.5	-278.3
3,850.0	3,750.3	53.79	267.67	279.0	-12.5	-280.0
3,878.0	3,766.5	55.93	268.90	301.8	-13.2	-302.8
3,900.0	3,778.4	58.05	269.40	320.1	-13.5	-321.3
3,909.0	3,783.1	58.92	269.60	327.7	-13.5	-329.0
3,940.0	3,798.4	61.99	270.21	354.4	-13.6	-355.9
3,950.0	3,803.0	63.18	270.27	363.2	-13.5	-364.8
3,971.0	3,812.1	65.69	270.39	382.0	-13.4	-383.7
3,975.0	3,813.7	66.17	270.39	385.6	-13.4	-387.4
4,000.0	3,823.2	69.20	270.39	408.5	-13.3	-410.5
4,003.0	3,824.3	69.56	270.39	411.2	-13.2	-413.3
4,025.0	3,831.4	72.55	269.95	431.8	-13.2	-434.1
4,034.0	3,834.0	73.78	269.78	440.4	-13.2	-442.7
4,050.0	3,838.3	75.28	269.21	455.7	-13.3	-458.2
4,064.0	3,841.7	76.59	268.72	469.1	-13.6	-471.7
4,095.0	3,848.6	77.65	268.19	499.2	-14.4	-502.0
4,100.0	3,849.7	77.91	268.09	504.0	-14.5	-506.8
4,127.0	3,855.0	79.32	267.58	530.4	-15.5	-533.3
4,158.0	3,860.4	80.64	267.14	560.8	-17.0	-563.8
4,190.0	3,865.6	80.64	266.87	592.2	-18.6	-595.3
4,200.0	3,867.2	80.55	266.70	602.1	-19.2	-605.2
4,221.0	3,870.7	80.37	266.35	622.7	-20.4	-625.8
4,252.0	3,875.2	82.75	266.43	653.3	-22.3	-656.4
4,284.0	3,878.3	86.35	266.26	685.1	-24.4	-688.2
4,300.0	3,879.2	87.27	267.04	701.0	-25.3	-704.2
4,351.0	3,880.3	90.22	269.51	751.7	-26.8	-755.1

Energen

Energen Resources - Survey



Company:	Energen Resources	Local Co-ordinate Reference:	Well Carracas 25 A #2
Project:	Carson National Forest, NE S25, T32N, R5W	TVD Reference:	KB Height @ 7211.0ft (AWS 222)
Site:	Carracas Mesa	MD Reference:	KB Height @ 7211.0ft (AWS 222)
Well:	Carracas 25 A #2	North Reference:	Grid
Wellbore:	Final Survey	Survey Calculation Method:	Minimum Curvature
Design:	Actual Drill Path	Database:	EDM 2003.16 Single User Db

Planned Survey

MD (ft)	TVD (ft)	Inc (°)	Azi (°)	V. Sec (ft)	N/S (ft)	E/W (ft)
4,383.0	3,880.2	90.13	266.17	783.5	-28.0	-787.1
4,400.0	3,880.2	89.57	265.80	800.5	-29.2	-804.1
4,415.0	3,880.4	89.08	265.47	815.4	-30.4	-819.0
4,447.0	3,881.1	88.64	266.35	847.4	-32.7	-850.9
4,478.0	3,881.7	88.90	265.64	878.3	-34.8	-881.8
4,500.0	3,881.7	91.13	264.49	900.2	-36.7	-903.8
4,510.0	3,881.4	92.15	263.97	910.2	-37.7	-913.7
4,525.0	3,880.6	94.09	261.83	925.2	-39.6	-928.6
4,542.0	3,879.1	96.29	259.40	942.1	-42.3	-945.3
4,550.0	3,878.2	96.00	258.72	950.1	-43.8	-953.1
4,574.0	3,875.9	95.14	256.68	973.9	-48.9	-976.4
4,605.0	3,873.3	94.53	256.24	1,004.6	-56.2	-1,006.4
4,637.0	3,870.8	94.26	255.80	1,036.4	-63.9	-1,037.4
4,650.0	3,870.0	93.37	255.44	1,049.2	-67.1	-1,050.0
4,669.0	3,869.0	92.07	254.92	1,068.1	-71.9	-1,068.3
4,700.0	3,868.2	91.01	254.31	1,098.8	-80.2	-1,098.2
4,732.0	3,867.8	90.31	253.52	1,130.5	-89.0	-1,128.9
4,764.0	3,867.7	90.04	253.69	1,162.1	-98.1	-1,159.6
4,796.0	3,867.7	90.04	254.13	1,193.8	-106.9	-1,190.4
4,800.0	3,867.7	89.95	254.21	1,197.8	-108.0	-1,194.2
4,827.0	3,867.9	89.34	254.74	1,224.5	-115.3	-1,220.2
4,858.0	3,868.3	89.08	254.92	1,255.3	-123.4	-1,250.2
4,890.0	3,869.0	88.64	255.80	1,287.0	-131.5	-1,281.1
4,900.0	3,869.2	88.34	256.18	1,297.0	-133.9	-1,290.8
4,922.0	3,870.0	87.67	257.03	1,318.9	-139.0	-1,312.2
4,954.0	3,871.4	87.41	257.12	1,350.7	-146.1	-1,343.4
4,986.0	3,872.9	87.14	256.50	1,382.5	-153.4	-1,374.5
5,000.0	3,873.6	86.99	256.58	1,396.4	-156.7	-1,388.1
5,018.0	3,874.6	86.79	256.68	1,414.3	-160.8	-1,405.6
5,049.0	3,876.1	87.41	256.94	1,445.2	-167.9	-1,435.7
5,081.0	3,877.4	88.20	257.47	1,477.0	-175.0	-1,466.9
5,100.0	3,878.0	88.20	257.47	1,496.0	-179.1	-1,485.4
5,112.0	3,878.3	88.20	257.47	1,507.9	-181.7	-1,497.1
5,143.0	3,879.3	88.37	257.47	1,538.8	-188.4	-1,527.4
5,175.0	3,880.1	88.72	257.38	1,570.7	-195.4	-1,558.6
5,206.0	3,880.8	88.64	257.47	1,601.6	-202.1	-1,588.9
5,238.0	3,882.0	87.14	258.00	1,633.4	-208.9	-1,620.1
5,270.0	3,883.6	87.14	259.14	1,665.3	-215.2	-1,651.4
5,301.0	3,885.1	87.32	258.79	1,696.3	-221.2	-1,681.8
5,333.0	3,886.6	87.14	258.79	1,728.2	-227.4	-1,713.2
5,365.0	3,888.1	87.49	258.53	1,760.1	-233.7	-1,744.5
5,396.0	3,889.8	86.35	257.65	1,791.0	-240.1	-1,774.8
5,400.0	3,890.0	86.12	257.74	1,794.9	-240.9	-1,778.7
5,428.0	3,892.3	84.50	258.35	1,822.8	-246.7	-1,806.0
5,481.0	3,897.7	83.80	258.35	1,875.4	-257.3	-1,857.6

4 1/2 prod cog @ 5481'

Energen
Energen Resources - Survey



Company: Energen Resources
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Site: Carracas Mesa
Well: Carracas 25 A #2
Wellbore: Final Survey
Design: Actual Drill Path

Local Co-ordinate Reference: Well Carracas 25 A #2
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MD Reference: KB Height @ 7211.0ft (AWS 222)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.16 Single User Db

Planned Survey

MD (ft)	TVD (ft)	Inc (°)	Azi (°)	V. Sec (ft)	N/S (ft)	E/W (ft)			
Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
7" Intermediate Set Pt. - plan hits target - Point	0.00	0.00	3,880.0	-26.4	-732.1	2,166,544.08	2,877,057.82	36° 57' 9.779 N	107° 18' 23.021 W
Legal Window - plan hits target - Rectangle (sides W257.0 H1,220.0 D0.0)	0.00	0.00	0.0	0.0	0.0	2,166,570.48	2,877,789.92	36° 57' 10.000 N	107° 18' 14.000 W

Checked By: _____ Approved By: _____ Date: _____

