

5D Plan Report**Kinder Morgan****Field Name:** *Kinder Morgan Montezuma Co., CO (NAD 83 COS)***Site Name:** *Cow Canyon N-4***Well Name:** *CN-4***Plan:** *P1:V1*

09 December 2013

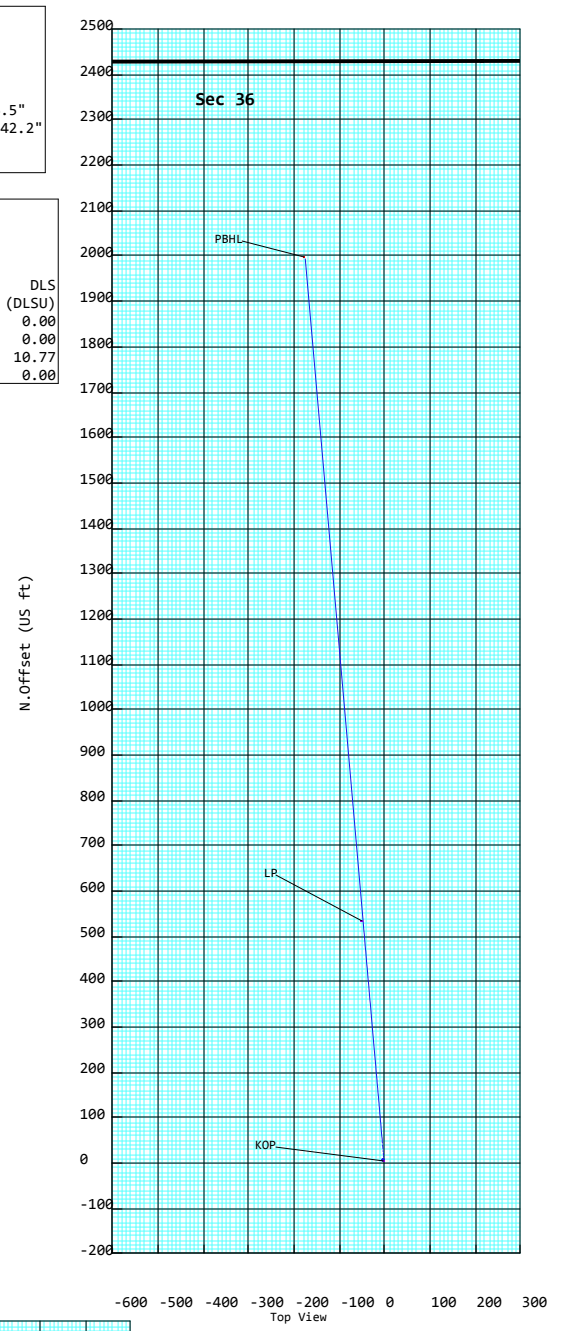
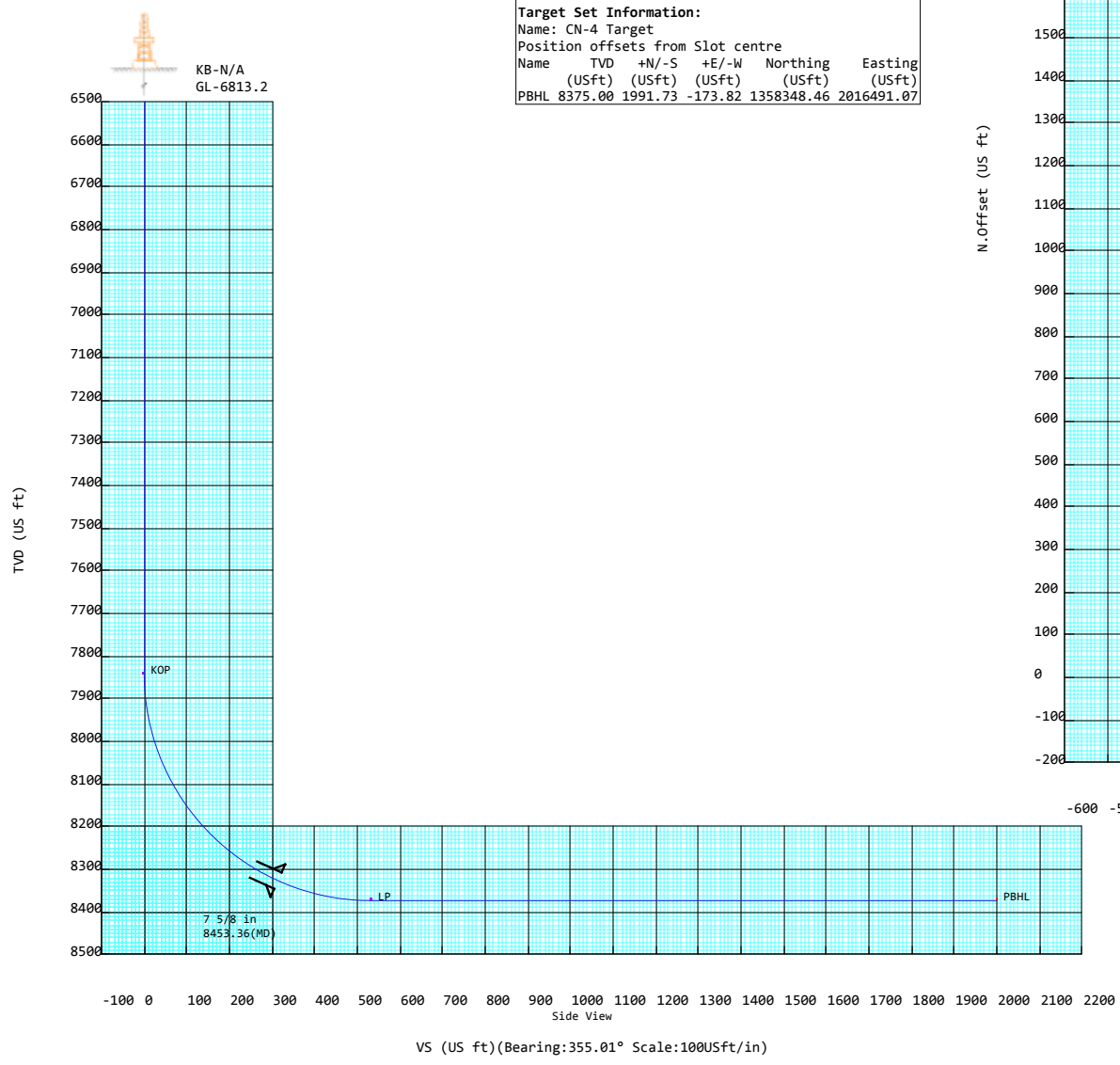


Cow Canyon N-4 (CN-4) Montezuma Co, CO

Plan Data for CN-4					
Site: Cow Canyon N-4					
Unit: USFeet		TVD Reference:			
Company Name: Kinder Morgan					
Position:	Northing:	1356351.73USft	Latitude:	37°35'46.5"	
	Easting:	2016592.40USft	Longitude:	-108°53'42.2"	
North Reference: True		Grid Convergence:		-2.08°	
Elevation Above VRD: 6813.20USft					

Plan Data for CN-4										
Plan Point Information:										
DogLeg Severity Unit: °/100.00ft										
MD	Inc	Az	TVD	+N/-S	+E/-W	Northing	Easting	VSec	DLS	
(USft)	(°)	(°)	(USft)	(USft)	(USft)	(USft)	(USft)	(USft)	(DLSU)	
0.00	0.00	0.00	0.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
7843.00	0.00	0.00	7843.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
8678.66	90.00	355.01	8375.00	529.99	-46.25	1356883.04	2016565.44	532.00	10.77	
10145.97	90.00	355.01	8375.00	1991.73	-173.82	1358348.46	2016491.07	1999.30	0.00	

Plan Data for CN-4					
Target Set Information:					
Name: CN-4 Target					
Position offsets from Slot centre					
Name	TVD	+N/-S	+E/-W	Northing	Easting
(USft)	(USft)	(USft)	(USft)	(USft)	(USft)
PBHL	8375.00	1991.73	-173.82	1358348.46	2016491.07





CN-4

Field Name Kinder Morgan Montezuma Co., CO (NAD 83 COS)	Map Units : US ft		Company Name : Kinder Morgan	
	Vertical Reference Datum (VRD) : Mean Sea Level			
	Projected Coordinate System : NAD83 / Colorado South (ftUS)			
	Comment :			
Site Name Cow Canyon N-4	Units : US ft	North Reference : True		Convergence Angle : -2.08
	Position	Northing : 1356351.73 US ft		Latitude : 37° 35' 46.50"
		Easting : 2016592.40 US ft		Longitude : -108° 53' 42.18"
	Elevation above Mean Sea Level:6813.20 US ft			
Comment :				
Slot Name CN-4	Position (Offsets relative to Site Centre)			
	+N / -S : 0.00 US ft	Northing :1356351.73 US ft		Latitude : 37°35'46.50"
	+E / -W : 0.00 US ft	Easting :2016592.40 US ft		Longitude : -108°53'42.18"
	Slot TVD Reference : Ground Elevation			
	Elevation above Mean Sea Level : 6813.20 US ft			
	Comment :			
Well Name CN-4	Type : Main well		UWI :	Plan : P1:V1
	Rig Height <i>Drill Floor</i> : 0.00 US ft		Comment :	
	Relative to Mean Sea Level: 6813.20 US ft			
	Closure Distance : 1999.3 US ft		Closure Azimuth : 355.012°	
	Vertical Section (Position of Origin Relative to Slot)			
	+N / -S : 0.00 US ft		+E / -W : 0.00 US ft	Az :355.01°
	Magnetic Parameters			
	Model : BGGM	Field Strength : 50795.3nT	Dec : 10.22°	Dip : 63.93°

Target Set

Name : CN-4 Target **Number of Targets** : 1

Comment :

Target Name: PBHL	Position (Relative to Slot centre)	
	+N / -S : 1991.73US ft	Northing : 1358348.46 US ft
	+E / -W : -173.82 US ft	Easting : 2016491.07US ft
Shape: Cuboid	Latitude : 37°36'6.19"	
	Longitude : -108°53'44.34"	
	TVD (Drill Floor) : 8375.00 US ft	
	Orientation	Azimuth : 0.00°
	Inclination : 0.00°	
	Dimensions	Length : 0.00 US ft
	Breadth : 0.00 US ft	Height : 0.00 US ft

5D Plan Report

Casing Points (Relative to Slot centre, TVD relative to Drill Floor)		
Name	MD (US ft)	TVD (US ft)
7 5/8 in	8453.36	8328.00

Well path created using minimum curvature

Salient Points (Relative to Slot centre, TVD relative to Drill Floor)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100 US ft)	VS (US ft)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
7843.00	0.00	0.00	7843.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	KOP
8678.66	90.00	355.01	8375.00	529.99	-46.25	1356883.04	2016565.44	10.77	532.00	LP
10145.97	90.00	355.01	8375.00	1991.73	-173.82	1358348.46	2016491.07	0.00	1999.30	PBHL

Interpolated Points (Relative to Slot centre, TVD relative to Drill Floor)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100 US ft)	VS (US ft)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
700.00	0.00	0.00	700.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
900.00	0.00	0.00	900.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
1000.00	0.00	0.00	1000.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
1100.00	0.00	0.00	1100.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
1200.00	0.00	0.00	1200.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
1300.00	0.00	0.00	1300.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
1400.00	0.00	0.00	1400.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
1500.00	0.00	0.00	1500.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
1600.00	0.00	0.00	1600.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
1700.00	0.00	0.00	1700.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
1800.00	0.00	0.00	1800.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
1900.00	0.00	0.00	1900.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
2000.00	0.00	0.00	2000.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
2100.00	0.00	0.00	2100.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
2200.00	0.00	0.00	2200.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
2300.00	0.00	0.00	2300.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
2400.00	0.00	0.00	2400.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
2500.00	0.00	0.00	2500.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
2600.00	0.00	0.00	2600.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
2700.00	0.00	0.00	2700.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
2800.00	0.00	0.00	2800.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
2900.00	0.00	0.00	2900.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
3000.00	0.00	0.00	3000.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
3100.00	0.00	0.00	3100.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
3200.00	0.00	0.00	3200.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
3300.00	0.00	0.00	3300.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
3400.00	0.00	0.00	3400.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
3500.00	0.00	0.00	3500.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
3600.00	0.00	0.00	3600.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
3700.00	0.00	0.00	3700.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
3800.00	0.00	0.00	3800.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
3900.00	0.00	0.00	3900.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
4000.00	0.00	0.00	4000.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
4100.00	0.00	0.00	4100.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
4200.00	0.00	0.00	4200.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
4300.00	0.00	0.00	4300.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
4400.00	0.00	0.00	4400.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	

5D Plan Report

Interpolated Points (Relative to Slot centre, TVD relative to Drill Floor)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100 US ft)	VS (US ft)	Comment
4500.00	0.00	0.00	4500.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
4600.00	0.00	0.00	4600.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
4700.00	0.00	0.00	4700.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
4800.00	0.00	0.00	4800.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
4900.00	0.00	0.00	4900.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
5000.00	0.00	0.00	5000.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
5100.00	0.00	0.00	5100.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
5200.00	0.00	0.00	5200.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
5300.00	0.00	0.00	5300.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
5400.00	0.00	0.00	5400.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
5500.00	0.00	0.00	5500.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
5600.00	0.00	0.00	5600.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
5700.00	0.00	0.00	5700.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
5800.00	0.00	0.00	5800.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
5900.00	0.00	0.00	5900.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
6000.00	0.00	0.00	6000.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
6100.00	0.00	0.00	6100.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
6200.00	0.00	0.00	6200.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
6300.00	0.00	0.00	6300.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
6400.00	0.00	0.00	6400.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
6500.00	0.00	0.00	6500.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
6600.00	0.00	0.00	6600.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
6700.00	0.00	0.00	6700.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
6800.00	0.00	0.00	6800.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
6900.00	0.00	0.00	6900.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
7000.00	0.00	0.00	7000.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
7100.00	0.00	0.00	7100.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
7200.00	0.00	0.00	7200.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
7300.00	0.00	0.00	7300.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
7400.00	0.00	0.00	7400.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
7500.00	0.00	0.00	7500.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
7600.00	0.00	0.00	7600.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
7700.00	0.00	0.00	7700.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
7800.00	0.00	0.00	7800.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	
7843.00	0.00	0.00	7843.00	0.00	0.00	1356351.73	2016592.40	0.00	0.00	KOP
7900.00	6.14	355.01	7899.89	3.04	-0.27	1356354.77	2016592.25	10.77	3.05	
8000.00	16.91	355.01	7997.73	22.91	-2.00	1356374.69	2016591.24	10.77	23.00	
8100.00	27.68	355.01	8090.12	60.65	-5.29	1356412.53	2016589.32	10.77	60.88	
8200.00	38.45	355.01	8173.80	114.92	-10.03	1356466.93	2016586.56	10.77	115.35	
8300.00	49.22	355.01	8245.83	183.81	-16.04	1356536.00	2016583.05	10.77	184.51	
8400.00	59.99	355.01	8303.67	264.90	-23.12	1356617.29	2016578.93	10.77	265.91	
8453.36	65.74	355.01	8328.00	312.18	-27.24	1356664.69	2016576.52	10.77	313.37	7 5/8 in
8500.00	70.76	355.01	8345.28	355.33	-31.01	1356707.94	2016574.33	10.77	356.68	
8600.00	81.53	355.01	8369.19	451.91	-39.44	1356804.77	2016569.41	10.77	453.62	
8678.66	90.00	355.01	8375.00	529.99	-46.25	1356883.04	2016565.44	10.77	532.00	LP
8700.00	90.00	355.01	8375.00	551.24	-48.11	1356904.35	2016564.36	0.00	553.34	
8800.00	90.00	355.01	8375.00	650.86	-56.80	1357004.22	2016559.29	0.00	653.34	
8900.00	90.00	355.01	8375.00	750.48	-65.50	1357104.09	2016554.22	0.00	753.34	
9000.00	90.00	355.01	8375.00	850.11	-74.19	1357203.97	2016549.15	0.00	853.34	
9100.00	90.00	355.01	8375.00	949.73	-82.88	1357303.84	2016544.08	0.00	953.34	
9200.00	90.00	355.01	8375.00	1049.35	-91.58	1357403.71	2016539.02	0.00	1053.34	
9300.00	90.00	355.01	8375.00	1148.97	-100.27	1357503.58	2016533.95	0.00	1153.34	
9400.00	90.00	355.01	8375.00	1248.59	-108.97	1357603.45	2016528.88	0.00	1253.34	
9500.00	90.00	355.01	8375.00	1348.21	-117.66	1357703.32	2016523.81	0.00	1353.34	
9600.00	90.00	355.01	8375.00	1447.83	-126.35	1357803.19	2016518.74	0.00	1453.34	
9700.00	90.00	355.01	8375.00	1547.45	-135.05	1357903.07	2016513.67	0.00	1553.34	
9800.00	90.00	355.01	8375.00	1647.08	-143.74	1358002.94	2016508.61	0.00	1653.34	
9900.00	90.00	355.01	8375.00	1746.70	-152.44	1358102.81	2016503.54	0.00	1753.34	
10000.00	90.00	355.01	8375.00	1846.32	-161.13	1358202.68	2016498.47	0.00	1853.34	

5D Plan Report

Interpolated Points (Relative to Slot centre, TVD relative to Drill Floor)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100 US ft)	VS (US ft)	Comment
10100.00	90.00	355.01	8375.00	1945.94	-169.82	1358302.55	2016493.40	0.00	1953.34	
10145.97	90.00	355.01	8375.00	1991.73	-173.82	1358348.46	2016491.07	0.00	1999.30	PBHL

**Weatherford®****Weatherford Drilling Services**

GeoDec v5.03

Report Date: November 15, 2013
Job Number: _____
Customer: Kinder Morgan
Well Name: Cow Canyon N-4 (CN-4)
API Number: _____
Rig Name: _____
Location: Montezuma Co., CO
Block: _____
Engineer: Patrick Rudolph

Geodetic Latitude / Longitude	Geodetic Latitude / Longitude
System: Latitude / Longitude	System: Latitude / Longitude
Projection: Geodetic Latitude and Longitude	Projection: Geodetic Latitude and Longitude
Datum: North American Datum 1983	Datum: North American Datum 1983
Ellipsoid: GRS 1980	Ellipsoid: GRS 1980
Latitude 37.5962500 DEG	Latitude 37 35 46.5000000 DMS
Longitude -108.8950500 DEG	Longitude -108 53 42.1800000 DMS

Geodetic Location WGS84	Elevation =	0.0 Meters
Latitude =	37.59625° N	37° 35 min 46.500 sec
Longitude =	108.89505° W	108° 53 min 42.180 sec

Magnetic Declination =	10.22°	[True North Offset]
Local Gravity =	.9993 g	Checksum = 7459
Local Field Strength =	50795 nT	Magnetic Vector X = 21967 nT
Magnetic Dip =	63.93°	Magnetic Vector Y = 3961 nT
Magnetic Model =	bggm2013	Magnetic Vector Z = 45628 nT
Spud Date =	Jan 01, 2014	Magnetic Vector H = 22321 nT

Signed: _____

Date: _____