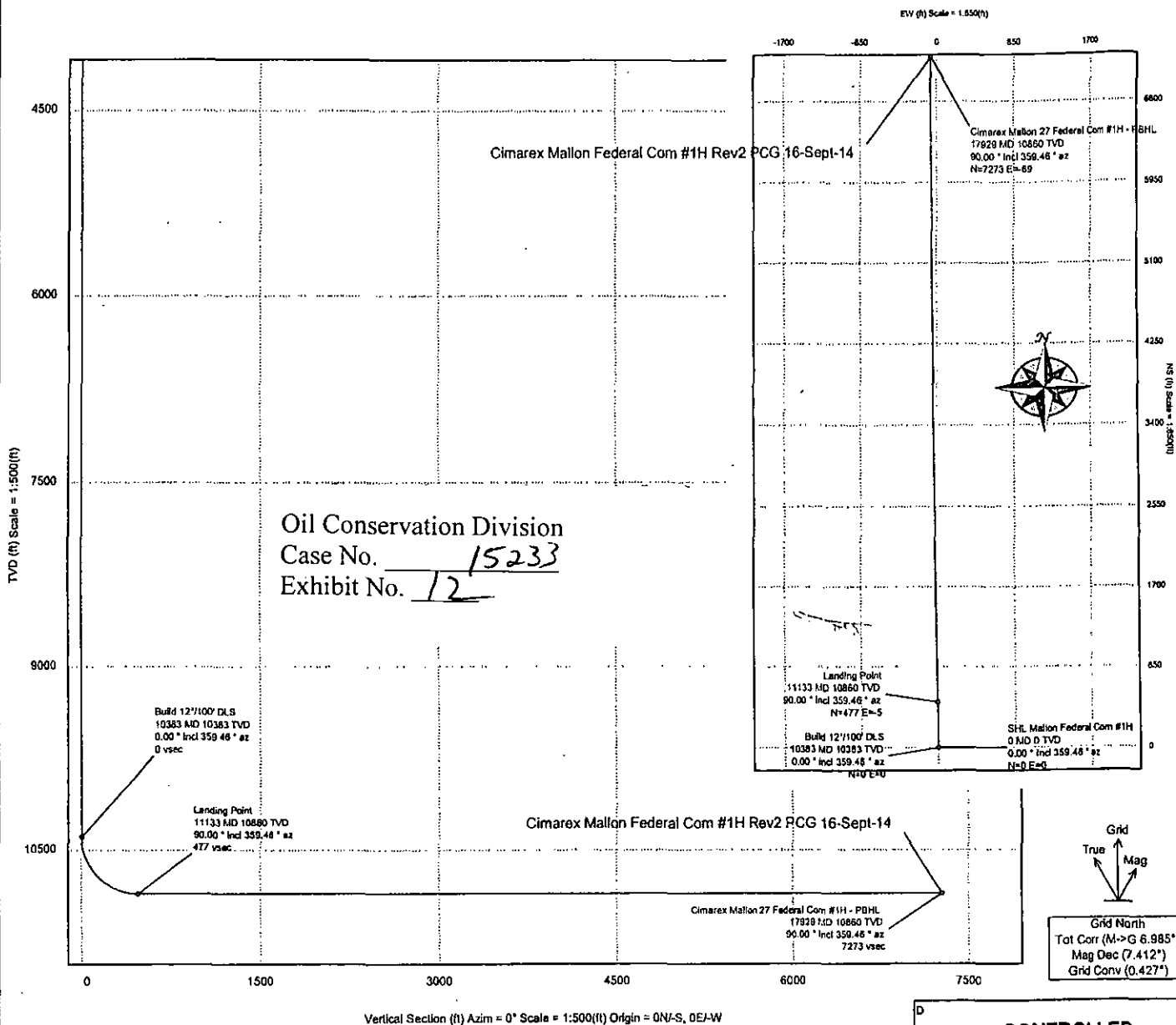




Cimarex

PATHFINDER
A Schlumberger Company

Borehole: Original Borehole	Well: Mallon 27 Federal Com #1H	Field: NM Lea County	Structure: TBD
Gravity & Magnetic Parameters			
Model: BGM 2012 Dip: 69.46° Date: 26-Nov-2013	Surface Location NAO83 New Mexico State Plane, Eastern Zone, US Feet		
MagDec: 7.412° FS: 48575.91nT Gravity FS: 984.718mgal (9.80665 Based)	Lat: N 32 37 26.71 Northing: 551964.6205 Grid Conv: 6.4259°	Miscellaneous: Mallon 27	Slac: Federal Com #1H TVD Ref: Ground Level (3722ft above MSL)
	Long: W 103 32 29.84 Easting: 745082.2105 Scale Fact: 0.9995713	Plan: Rev2 PCG 16-Sept-14	



Critical Points							
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)S(-)	E(+)W(-)
SHL Mallon Federal Com #1H	0.00	0.00	359.46	0.00	0.00	0.00	0.00
Build 12°/100' DLS	10382.54	0.00	359.46	10382.54	0.00	0.00	0.00
Landing Point	11132.54	90.00	359.46	10860.00	477.44	477.44	-4.50
Cimarex Mallon 27 Federal Com #1H - PBHL	17928.76	90.00	359.46	10660.00	7273.38	7273.38	-68.50

CONTROLLED	
Plan ref	Rev2 PCG 16-Sept-14
Drawing ref	
Copy number	1 of 1
Date	16-Sep-2014
1	Originator
2	DE Sign Off Authority
3	D&M Line Manager
4	Client
Copy number for	



Cimarex Mallon Federal Com #1H Rev2 PCG 16-Sept-14 Proposal Geodetic Report

(Non-Def Plan)



Report Date: September 16, 2014 - 09:34 AM
 Client: Cimarex
 Field: NM Lea County (NAD 83)
 Structure / Slot: Cimarex Mallon 27 Federal Com #1H / Mallon 27 Federal Com #1H
 Well: Mallon 27 Federal Com #1H
 Borehole: Original Borehole
 UWI / API#: Unknown / Unknown
 Survey Name: Cimarex Mallon Federal Com #1H Rev2 PCG 16-Sept-14
 Survey Date: November 20, 2013
 Tort / AHD / DDI / ERD Ratio: 90.001° / 7273.703 ft / 6.034 / 0.670
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 37' 29.71123", W 103° 32' 29.84491"
 Location Grid N/E Y/X: N 591984.600 ftUS, E 785082.200 ftUS
 CRS Grid Convergence Angle: 0.4269°
 Grid Scale Factor: 0.99997713
 Version / Patch: 2.7.1043.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 0.000° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: Ground Level
 TVD Reference Elevation: 3722.000 ft above MSL
 Seabed / Ground Elevation: 3722.000 ft above MSL
 Magnetic Declination: 7.412°
 Total Gravity Field Strength: 998.7191mgn (9.80665 Based)
 Gravity Model: DOX
 Total Magnetic Field Strength: 48575.910 nT
 Magnetic Dip Angle: 60.460°
 Declination Date: November 20, 2013
 Magnetic Declination Model: BGGM 2012
 North Reference: Grid North
 Grid Convergence Used: 0.4269°
 Total Corr Mag North->Grid North: 6.9855°
 Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL Mallon Federal Com #1H	0.00	0.00	359.46	0.00	0.00	0.00	0.00	N/A	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
Build 12"/100' DLS	10382.54	0.00	359.46	10382.54	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
Landing Point Cimarex Mallon 27 Federal Com #1H - PBHL	11132.54	90.00	359.46	10860.00	477.44	477.44	-4.50	12.00	592462.03	785077.70	N 32 37 34.44	W 103 32 29.86
	17928.78	90.00	359.46	10860.00	7273.38	7273.38	-68.50	0.00	599257.80	785013.70	N 32 38 41.68	W 103 32 30.01

Survey Type: Non-Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
 Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	17928.779	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Mallon Federal Com #1H Rev2



Cimarex Mallon Federal Com #1H Rev2 PCG 16-Sept-14 Proposal Geodetic Report - 100ft Interpolated (Non-Def Plan)



Report Date: September 16, 2014 - 09:35 AM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Mallon 27 Federal Com #1H / Mallon 27 Federal Com #1H
Well: Mallon 27 Federal Com #1H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Mallon Federal Com #1H Rev2 PCG 16-Sept-14
Survey Date: November 20, 2013
Tort / AHD / DDI / ERD Ratio: 90.001 ° / 7273.703 ft / 6.034 / 0.670
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 37' 29.71123", W 103° 32' 29.84491"
Location Grid N/E Y/X: N 591984.600 ftUS, E 785082.200 ftUS
CRS Grid Convergence Angle: 0.4269 °
Grid Scale Factor: 0.99997713
Version / Patch: 2.7.1043.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 0.000 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: Ground Level
TVD Reference Elevation: 3722.000 ft above MSL
Seabed / Ground Elevation: 3722.000 ft above MSL
Magnetic Declination: 7.412 °
Total Gravity Field Strength: 999.7191mgn (9.80665 Based)
Gravity Model: DOX
Total Magnetic Field Strength: 48575.910 nT
Magnetic Dip Angle: 60.460 °
Declination Date: November 20, 2013
Magnetic Declination Model: BGGM 2012
North Reference: Grid North
Grid Convergence Used: 0.4269 °
Total Corr Mag North->Grid North: 6.9855 °
Local Coord Referenced To: Structure Reference Point.

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL Mallon Federal Com #1H	0.00	0.00	359.46	0.00	0.00	0.00	0.00	N/A	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	100.00	0.00	359.46	100.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	200.00	0.00	359.46	200.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	300.00	0.00	359.46	300.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	400.00	0.00	359.46	400.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	500.00	0.00	359.46	500.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	600.00	0.00	359.46	600.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	700.00	0.00	359.46	700.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	800.00	0.00	359.46	800.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	900.00	0.00	359.46	900.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	1000.00	0.00	359.46	1000.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	1100.00	0.00	359.46	1100.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	1200.00	0.00	359.46	1200.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	1300.00	0.00	359.46	1300.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	1400.00	0.00	359.46	1400.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	1500.00	0.00	359.46	1500.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	1600.00	0.00	359.46	1600.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	1700.00	0.00	359.46	1700.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	1800.00	0.00	359.46	1800.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	1900.00	0.00	359.46	1900.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
	2000.00	0.00	359.46	2000.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	2100.00	0.00	359.46	2100.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	2200.00	0.00	359.46	2200.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	2300.00	0.00	359.46	2300.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	2400.00	0.00	359.46	2400.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	2500.00	0.00	359.46	2500.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	2600.00	0.00	359.46	2600.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	2700.00	0.00	359.46	2700.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	2800.00	0.00	359.46	2800.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	2900.00	0.00	359.46	2900.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	3000.00	0.00	359.46	3000.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	3100.00	0.00	359.46	3100.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	3200.00	0.00	359.46	3200.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	3300.00	0.00	359.46	3300.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	3400.00	0.00	359.46	3400.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	3500.00	0.00	359.46	3500.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	3600.00	0.00	359.46	3600.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	3700.00	0.00	359.46	3700.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	3800.00	0.00	359.46	3800.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	3900.00	0.00	359.46	3900.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	4000.00	0.00	359.46	4000.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	4100.00	0.00	359.46	4100.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	4200.00	0.00	359.46	4200.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	4300.00	0.00	359.46	4300.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	4400.00	0.00	359.46	4400.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	4500.00	0.00	359.46	4500.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	4600.00	0.00	359.46	4600.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	4700.00	0.00	359.46	4700.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	4800.00	0.00	359.46	4800.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	4900.00	0.00	359.46	4900.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	5000.00	0.00	359.46	5000.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	5100.00	0.00	359.46	5100.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	5200.00	0.00	359.46	5200.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	5300.00	0.00	359.46	5300.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	5400.00	0.00	359.46	5400.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	5500.00	0.00	359.46	5500.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	5600.00	0.00	359.46	5600.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	5700.00	0.00	359.46	5700.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	5800.00	0.00	359.46	5800.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	5900.00	0.00	359.46	5900.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	6000.00	0.00	359.46	6000.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	6100.00	0.00	359.46	6100.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	6200.00	0.00	359.46	6200.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	6300.00	0.00	359.46	6300.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	6400.00	0.00	359.46	6400.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	6500.00	0.00	359.46	6500.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	6600.00	0.00	359.46	6600.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	6700.00	0.00	359.46	6700.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	6800.00	0.00	359.46	6800.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	6900.00	0.00	359.46	6900.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	7000.00	0.00	359.46	7000.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	7100.00	0.00	359.46	7100.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	7200.00	0.00	359.46	7200.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	7300.00	0.00	359.46	7300.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	7400.00	0.00	359.46	7400.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	7500.00	0.00	359.46	7500.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	7600.00	0.00	359.46	7600.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	7700.00	0.00	359.46	7700.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	7800.00	0.00	359.46	7800.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	7900.00	0.00	359.46	7900.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	8000.00	0.00	359.46	8000.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	8100.00	0.00	359.46	8100.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	8200.00	0.00	359.46	8200.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	8300.00	0.00	359.46	8300.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	8400.00	0.00	359.46	8400.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	8500.00	0.00	359.46	8500.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	8600.00	0.00	359.46	8600.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	8700.00	0.00	359.46	8700.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	8800.00	0.00	359.46	8800.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	8900.00	0.00	359.46	8900.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	9000.00	0.00	359.46	9000.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	9100.00	0.00	359.46	9100.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	9200.00	0.00	359.46	9200.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	9300.00	0.00	359.46	9300.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	9400.00	0.00	359.46	9400.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	9500.00	0.00	359.46	9500.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	9600.00	0.00	359.46	9600.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	9700.00	0.00	359.46	9700.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	9800.00	0.00	359.46	9800.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	9900.00	0.00	359.46	9900.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	10000.00	0.00	359.46	10000.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	10100.00	0.00	359.46	10100.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	10200.00	0.00	359.46	10200.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	10300.00	0.00	359.46	10300.00	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
Build 12°/100' DLS	10382.54	0.00	359.46	10382.54	0.00	0.00	0.00	0.00	591984.60	785082.20	N 32 37 29.71	W 103 32 29.84
	10400.00	2.10	359.46	10400.00	0.32	0.32	0.00	12.00	591984.92	785082.20	N 32 37 29.71	W 103 32 29.84
	10500.00	14.10	359.46	10498.82	14.37	14.37	-0.14	12.00	591998.97	785082.06	N 32 37 29.85	W 103 32 29.85
	10600.00	26.10	359.46	10592.56	48.67	48.67	-0.46	12.00	592033.27	785081.74	N 32 37 30.19	W 103 32 29.85
	10700.00	38.10	359.46	10677.12	101.70	101.70	-0.96	12.00	592086.30	785081.24	N 32 37 30.72	W 103 32 29.85
	10800.00	50.10	359.46	10748.81	171.16	171.16	-1.61	12.00	592155.75	785080.59	N 32 37 31.40	W 103 32 29.85
	10900.00	62.10	359.46	10804.49	254.00	254.00	-2.39	12.00	592238.59	785079.81	N 32 37 32.22	W 103 32 29.85
	11000.00	74.10	359.46	10841.73	346.61	346.61	-3.27	12.00	592331.20	785078.93	N 32 37 33.14	W 103 32 29.85
	11100.00	86.10	359.46	10858.90	444.93	444.93	-4.19	12.00	592429.52	785078.01	N 32 37 34.11	W 103 32 29.86
Landing Point	11132.54	90.00	359.46	10860.00	477.44	477.44	-4.50	12.00	592462.03	785077.70	N 32 37 34.44	W 103 32 29.86
	11200.00	90.00	359.46	10860.00	544.90	544.90	-5.14	0.00	592529.49	785077.06	N 32 37 35.10	W 103 32 29.86

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	11300.00	90.00	359.46	10860.00	644.90	644.90	-6.08	0.00	592629.48	785076.12	N 32 37 36.09	W 103 32 29.86
	11400.00	90.00	359.46	10860.00	744.89	744.89	-7.02	0.00	592729.47	785075.18	N 32 37 37.08	W 103 32 29.86
	11500.00	90.00	359.46	10860.00	844.89	844.89	-7.96	0.00	592829.47	785074.24	N 32 37 38.07	W 103 32 29.86
	11600.00	90.00	359.46	10860.00	944.88	944.88	-8.90	0.00	592929.46	785073.30	N 32 37 39.06	W 103 32 29.87
	11700.00	90.00	359.46	10860.00	1044.88	1044.88	-9.84	0.00	593029.45	785072.36	N 32 37 40.05	W 103 32 29.87
	11800.00	90.00	359.46	10860.00	1144.87	1144.87	-10.79	0.00	593129.45	785071.41	N 32 37 41.04	W 103 32 29.87
	11900.00	90.00	359.46	10860.00	1244.87	1244.87	-11.73	0.00	593229.44	785070.47	N 32 37 42.03	W 103 32 29.87
	12000.00	90.00	359.46	10860.00	1344.87	1344.87	-12.67	0.00	593329.43	785069.53	N 32 37 43.02	W 103 32 29.88
	12100.00	90.00	359.46	10860.00	1444.86	1444.86	-13.61	0.00	593429.42	785068.59	N 32 37 44.01	W 103 32 29.88
	12200.00	90.00	359.46	10860.00	1544.86	1544.86	-14.55	0.00	593529.42	785067.65	N 32 37 45.00	W 103 32 29.88
	12300.00	90.00	359.46	10860.00	1644.85	1644.85	-15.49	0.00	593629.41	785066.71	N 32 37 45.99	W 103 32 29.88
	12400.00	90.00	359.46	10860.00	1744.85	1744.85	-16.44	0.00	593729.40	785065.76	N 32 37 46.98	W 103 32 29.89
	12500.00	90.00	359.46	10860.00	1844.84	1844.84	-17.38	0.00	593829.40	785064.82	N 32 37 47.97	W 103 32 29.89
	12600.00	90.00	359.46	10860.00	1944.84	1944.84	-18.32	0.00	593929.39	785063.88	N 32 37 48.96	W 103 32 29.89
	12700.00	90.00	359.46	10860.00	2044.83	2044.83	-19.26	0.00	594029.38	785062.94	N 32 37 49.94	W 103 32 29.89
	12800.00	90.00	359.46	10860.00	2144.83	2144.83	-20.20	0.00	594129.38	785062.00	N 32 37 50.93	W 103 32 29.89
	12900.00	90.00	359.46	10860.00	2244.83	2244.83	-21.14	0.00	594229.37	785061.06	N 32 37 51.92	W 103 32 29.90
	13000.00	90.00	359.46	10860.00	2344.82	2344.82	-22.09	0.00	594329.36	785060.11	N 32 37 52.91	W 103 32 29.90
	13100.00	90.00	359.46	10860.00	2444.82	2444.82	-23.03	0.00	594429.36	785059.17	N 32 37 53.90	W 103 32 29.90
	13200.00	90.00	359.46	10860.00	2544.81	2544.81	-23.97	0.00	594529.35	785058.23	N 32 37 54.89	W 103 32 29.90
	13300.00	90.00	359.46	10860.00	2644.81	2644.81	-24.91	0.00	594629.34	785057.29	N 32 37 55.88	W 103 32 29.91
	13400.00	90.00	359.46	10860.00	2744.80	2744.80	-25.85	0.00	594729.33	785056.35	N 32 37 56.87	W 103 32 29.91
	13500.00	90.00	359.46	10860.00	2844.80	2844.80	-26.79	0.00	594829.33	785055.41	N 32 37 57.86	W 103 32 29.91
	13600.00	90.00	359.46	10860.00	2944.79	2944.79	-27.74	0.00	594929.32	785054.46	N 32 37 58.85	W 103 32 29.91
	13700.00	90.00	359.46	10860.00	3044.79	3044.79	-28.68	0.00	595029.31	785053.52	N 32 37 59.84	W 103 32 29.91
	13800.00	90.00	359.46	10860.00	3144.79	3144.79	-29.62	0.00	595129.31	785052.58	N 32 38 0.83	W 103 32 29.92
	13900.00	90.00	359.46	10860.00	3244.78	3244.78	-30.56	0.00	595229.30	785051.64	N 32 38 1.82	W 103 32 29.92
	14000.00	90.00	359.46	10860.00	3344.78	3344.78	-31.50	0.00	595329.29	785050.70	N 32 38 2.81	W 103 32 29.92
	14100.00	90.00	359.46	10860.00	3444.77	3444.77	-32.45	0.00	595429.29	785049.76	N 32 38 3.80	W 103 32 29.92
	14200.00	90.00	359.46	10860.00	3544.77	3544.77	-33.39	0.00	595529.28	785048.81	N 32 38 4.79	W 103 32 29.93
	14300.00	90.00	359.46	10860.00	3644.76	3644.76	-34.33	0.00	595629.27	785047.87	N 32 38 5.78	W 103 32 29.93
	14400.00	90.00	359.46	10860.00	3744.76	3744.76	-35.27	0.00	595729.27	785046.93	N 32 38 6.77	W 103 32 29.93
	14500.00	90.00	359.46	10860.00	3844.75	3844.75	-36.21	0.00	595829.26	785045.99	N 32 38 7.75	W 103 32 29.93
	14600.00	90.00	359.46	10860.00	3944.75	3944.75	-37.15	0.00	595929.25	785045.05	N 32 38 8.74	W 103 32 29.94
	14700.00	90.00	359.46	10860.00	4044.75	4044.75	-38.10	0.00	596029.24	785044.11	N 32 38 9.73	W 103 32 29.94
	14800.00	90.00	359.46	10860.00	4144.74	4144.74	-39.04	0.00	596129.24	785043.16	N 32 38 10.72	W 103 32 29.94
	14900.00	90.00	359.46	10860.00	4244.74	4244.74	-39.98	0.00	596229.23	785042.22	N 32 38 11.71	W 103 32 29.94
	15000.00	90.00	359.46	10860.00	4344.73	4344.73	-40.92	0.00	596329.22	785041.28	N 32 38 12.70	W 103 32 29.94
	15100.00	90.00	359.46	10860.00	4444.73	4444.73	-41.86	0.00	596429.22	785040.34	N 32 38 13.69	W 103 32 29.95
	15200.00	90.00	359.46	10860.00	4544.72	4544.72	-42.80	0.00	596529.21	785039.40	N 32 38 14.68	W 103 32 29.95
	15300.00	90.00	359.46	10860.00	4644.72	4644.72	-43.75	0.00	596629.20	785038.46	N 32 38 15.67	W 103 32 29.95
	15400.00	90.00	359.46	10860.00	4744.71	4744.71	-44.69	0.00	596729.20	785037.51	N 32 38 16.66	W 103 32 29.95
	15500.00	90.00	359.46	10860.00	4844.71	4844.71	-45.63	0.00	596829.19	785036.57	N 32 38 17.65	W 103 32 29.96
	15600.00	90.00	359.46	10860.00	4944.71	4944.71	-46.57	0.00	596929.18	785035.63	N 32 38 18.64	W 103 32 29.96
	15700.00	90.00	359.46	10860.00	5044.70	5044.70	-47.51	0.00	597029.18	785034.69	N 32 38 19.63	W 103 32 29.96
	15800.00	90.00	359.46	10860.00	5144.70	5144.70	-48.45	0.00	597129.17	785033.75	N 32 38 20.62	W 103 32 29.96
	15900.00	90.00	359.46	10860.00	5244.69	5244.69	-49.40	0.00	597229.16	785032.81	N 32 38 21.61	W 103 32 29.97

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	16000.00	90.00	359.46	10860.00	5344.69	5344.69	-50.34	0.00	597329.11	785031.86	N 32 38 22.60	W 103 32 29.97
	16100.00	90.00	359.46	10860.00	5444.68	5444.68	-51.28	0.00	597429.15	785030.92	N 32 38 23.59	W 103 32 29.97
	16200.00	90.00	359.46	10860.00	5544.68	5544.68	-52.22	0.00	597529.11	785029.98	N 32 38 24.58	W 103 32 29.97
	16300.00	90.00	359.46	10860.00	5644.67	5644.67	-53.16	0.00	597629.13	785029.04	N 32 38 25.56	W 103 32 29.97
	16400.00	90.00	359.46	10860.00	5744.67	5744.67	-54.10	0.00	597729.13	785028.10	N 32 38 26.55	W 103 32 29.98
	16500.00	90.00	359.46	10860.00	5844.67	5844.67	-55.05	0.00	597829.12	785027.15	N 32 38 27.54	W 103 32 29.98
	16600.00	90.00	359.46	10860.00	5944.66	5944.66	-55.99	0.00	597929.11	785026.21	N 32 38 28.53	W 103 32 29.98
	16700.00	90.00	359.46	10860.00	6044.66	6044.66	-56.93	0.00	598029.11	785025.27	N 32 38 29.52	W 103 32 29.98
	16800.00	90.00	359.46	10860.00	6144.65	6144.65	-57.87	0.00	598129.10	785024.33	N 32 38 30.51	W 103 32 29.99
	16900.00	90.00	359.46	10860.00	6244.65	6244.65	-58.81	0.00	598229.09	785023.39	N 32 38 31.50	W 103 32 29.99
	17000.00	90.00	359.46	10860.00	6344.64	6344.64	-59.76	0.00	598329.09	785022.45	N 32 38 32.49	W 103 32 29.99
	17100.00	90.00	359.46	10860.00	6444.64	6444.64	-60.70	0.00	598429.08	785021.50	N 32 38 33.48	W 103 32 29.99
	17200.00	90.00	359.46	10860.00	6544.63	6544.63	-61.64	0.00	598529.07	785020.56	N 32 38 34.47	W 103 32 30.00
	17300.00	90.00	359.46	10860.00	6644.63	6644.63	-62.58	0.00	598629.05	785019.62	N 32 38 35.46	W 103 32 30.00
	17400.00	90.00	359.46	10860.00	6744.63	6744.63	-63.52	0.00	598729.05	785018.68	N 32 38 36.45	W 103 32 30.00
	17500.00	90.00	359.46	10860.00	6844.62	6844.62	-64.46	0.00	598829.05	785017.74	N 32 38 37.44	W 103 32 30.00
	17600.00	90.00	359.46	10860.00	6944.62	6944.62	-65.41	0.00	598929.04	785016.80	N 32 38 38.43	W 103 32 30.00
	17700.00	90.00	359.46	10860.00	7044.61	7044.61	-66.35	0.00	599029.04	785015.85	N 32 38 39.42	W 103 32 30.01
	17800.00	90.00	359.46	10860.00	7144.61	7144.61	-67.29	0.00	599129.03	785014.91	N 32 38 40.41	W 103 32 30.01
	17900.00	90.00	359.46	10860.00	7244.60	7244.60	-68.23	0.00	599229.02	785013.97	N 32 38 41.40	W 103 32 30.01
Cimarex Mallon 27 Federal Com #1H - PBHL	17928.78	90.00	359.46	10860.00	7273.38	7273.38	-68.50	0.00	599257.00	785013.70	N 32 38 41.68	W 103 32 30.01

Survey Type: Non-Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	17928.779	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Mallon Federal Com #1H Rev2