

Permit

XTO Energy, Inc.

Rio Blanco, CO (Nad 83) Sec. 03-T01S-R97W (RNPU 197-3A2H)

API#

RNPU 197-3A2H

SHL: 2216' FEL 766' FSL (Tighthole)

OWB_Permit

Plan: Rev A0

Sperry Drilling Services

Combo Report

12 June, 2019

Well Coordinates: 39° 59' 18.590 N
108° 16' 0.670 W

North American Datum 1983
Colorado Northern Zone
1,250,750.82 N
2,224,851.31 E

Ground Level: 6,450.00 usft

Local Coordinate Origin:

Centered on Well RNPU 197-3A2H

Viewing Datum:

KB = 28' @ 6478.00usft (Permit)

TVDs to System:

N

North Reference:

Grid

Unit System:

API - US Survey Feet- Custom

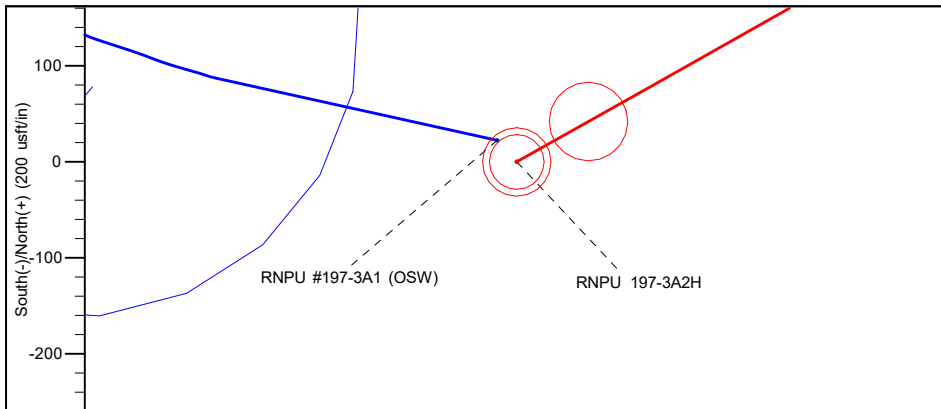
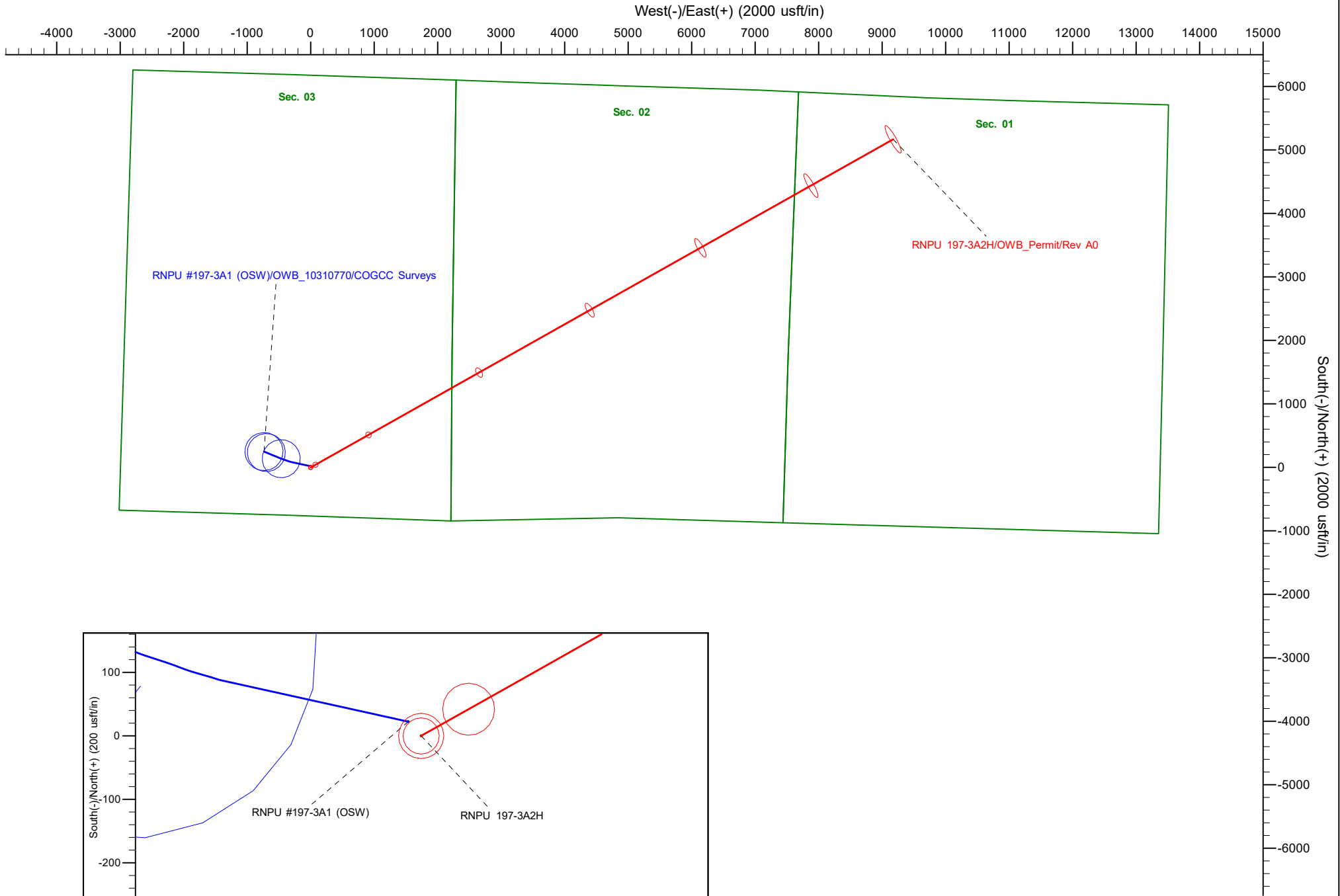
Version: 5000.15 Build: 91

Report Version: Midcon Combo v1.13

HALLIBURTON

Project: Rio Blanco, CO (Nad 83)
Site: Sec. 03-T01S-R97W (RNPU 197-3A2H)
Well: RNPU 197-3A2H
Wellbore: OWB_Permit
Design: Rev A0

XTO Energy, Inc. Permit



Company: XTO Energy, Inc.
 Well Name: RNPU 197-3A2H
 County: Rio Blanco, CO (Nad 83)
 Rig: Permit
 Wellbore: OWB_Permit
 Plan: Rev A0
 Created By: Kansa Becker
 Date: 15:55, June 12 2019

PROJECT DETAILS: Rio Blanco, CO (Nad 83)

Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: Colorado Northern Zone
 System Datum: Mean Sea Level
 Job:

WELL DETAILS: RNPU 197-3A2H

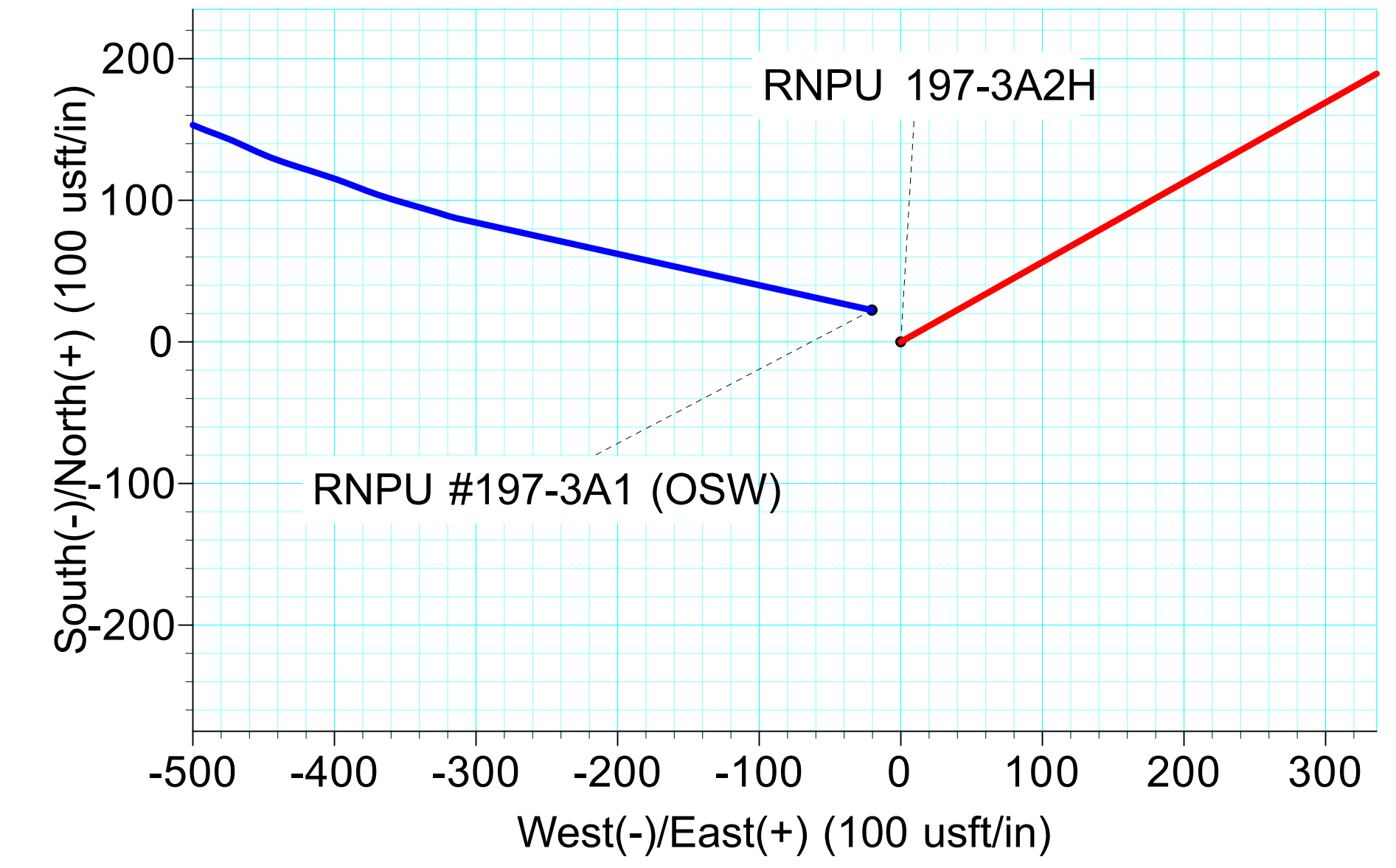
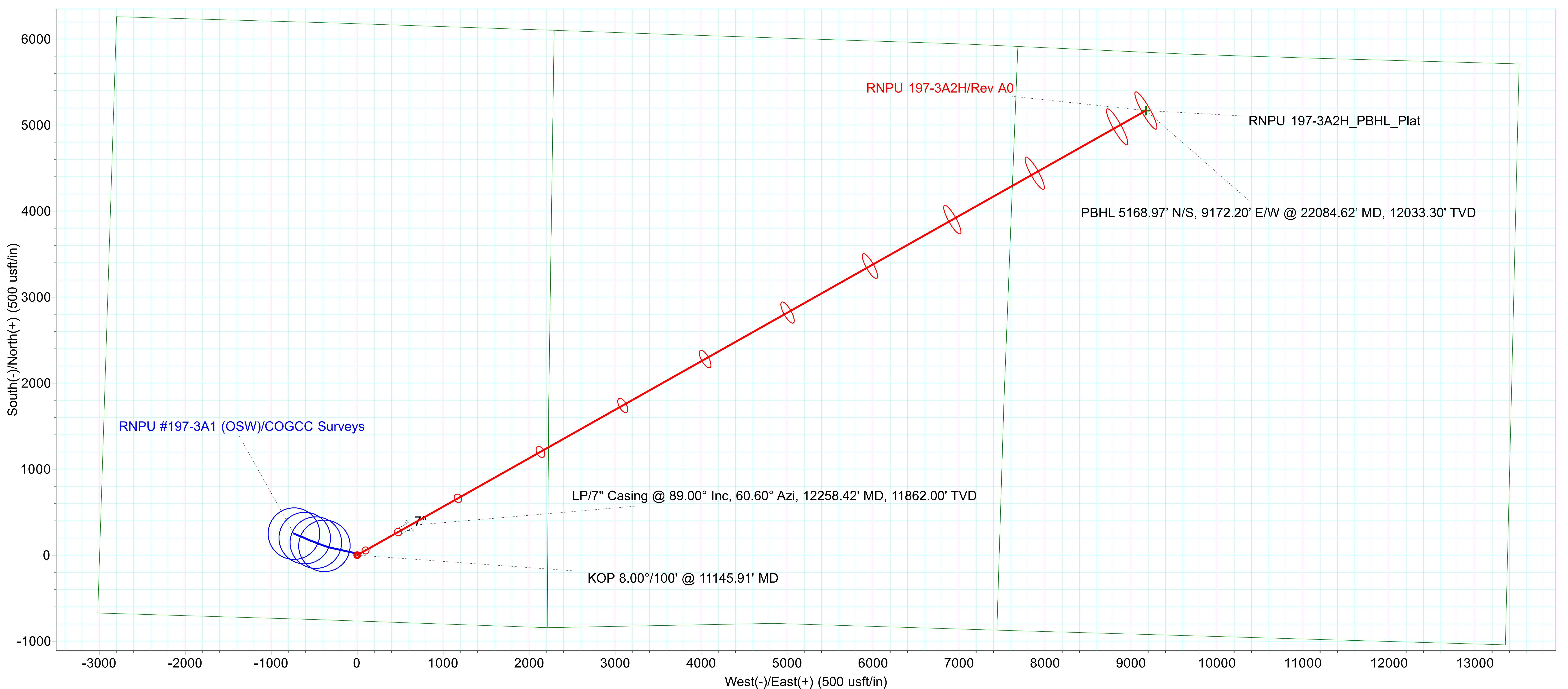
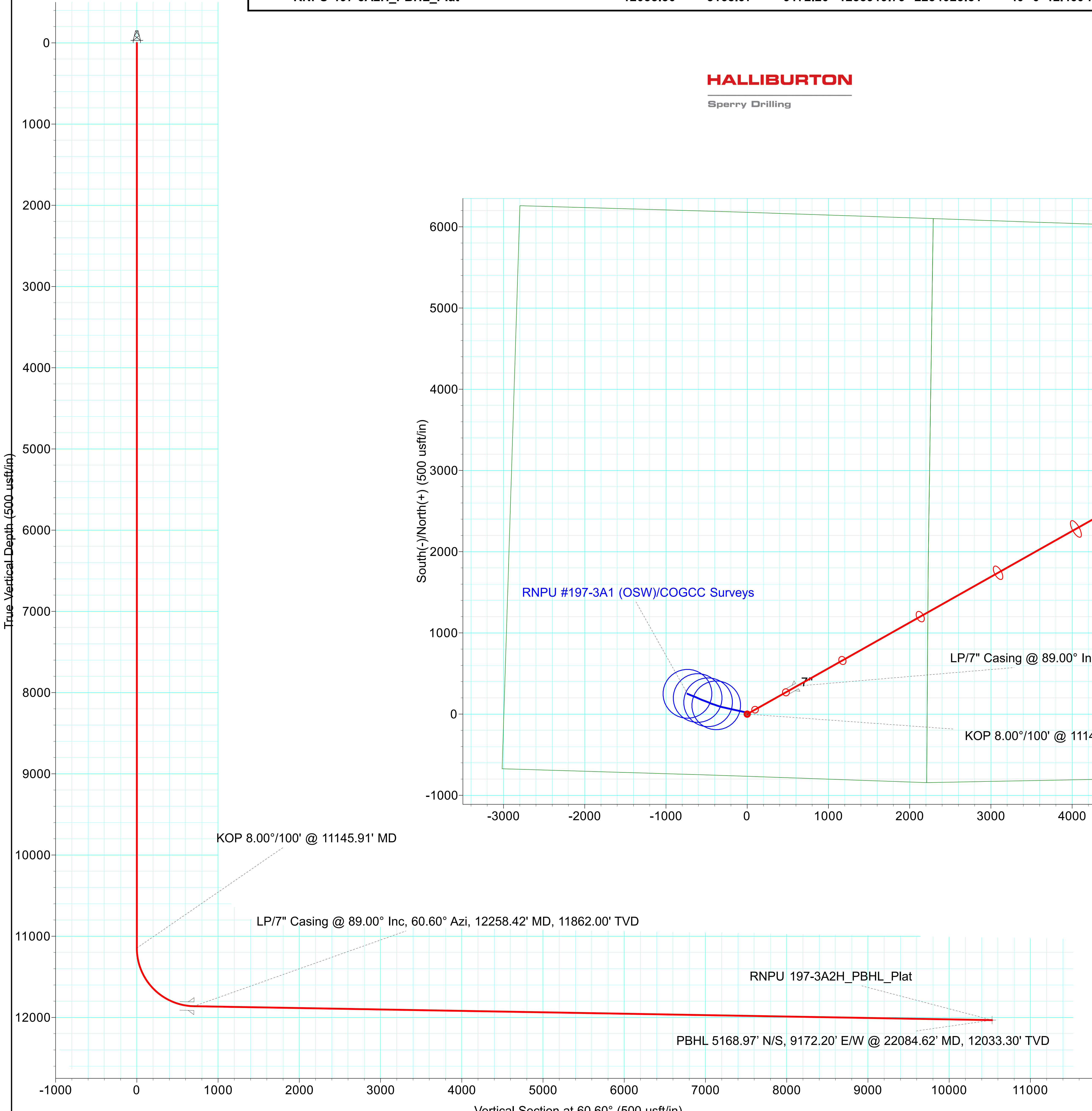
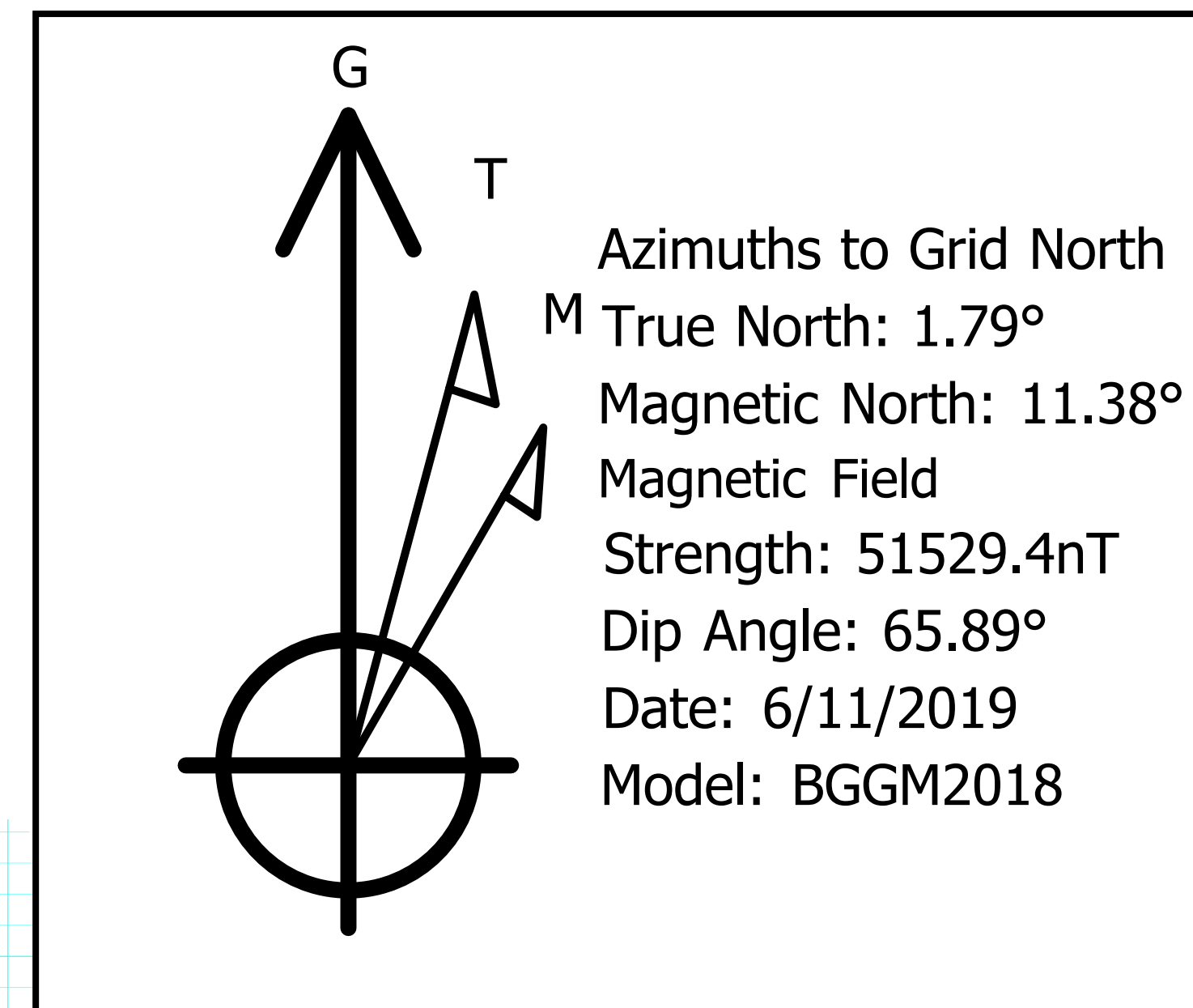
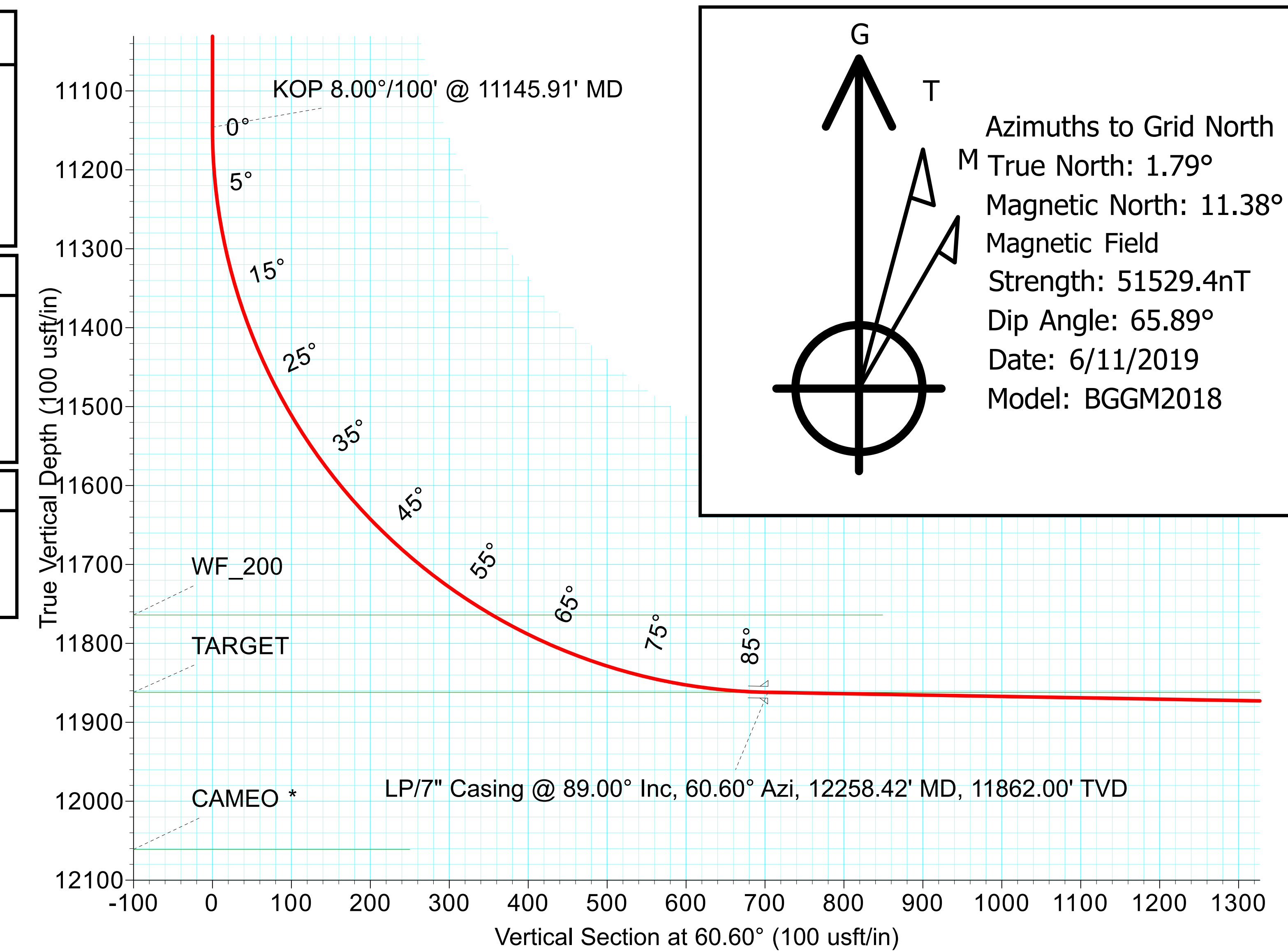
KB = 28' @ 6478.00usft (Permit) 6450.00
 +N/-S +E/-W Northing Easting Latitude Longitude
 0.00 0.00 1250750.82 2224851.31 39° 59' 18.590 N 108° 16' 0.670 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL: 766' FSL 2216' FEL
2	11145.91	0.00	0.00	11145.91	0.00	0.00	0.00	0.00	0.00	KOP 8.00°/100' @ 11145.91' MD
3	12258.42	89.00	60.60	11862.00	345.49	613.06	8.00	60.60	703.71	LP/7" Casing @ 89.00° Inc, 60.60° Azi, 12258.42' MD, 11862.00' TVD
4	22084.62	89.00	60.60	12033.30	5168.97	9172.20	0.00	0.00	10528.41	PBHL 5168.97' N/S, 9172.20' E/W @ 22084.62' MD, 12033.30' TVD

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
RNPU 197-3A2H_PBHL_Plat	12033.30	5168.97	9172.20	1255919.79	2234023.51	40° 0' 12.460 N	108° 14' 4.930 W



FORMATION TOP DETAILS

Formation	MDPath	TVDPath
R6	1496.00	1496.00
R4	2143.00	2143.00
GARDEN_GULCH	2684.00	2684.00
WASATCH_A	3262.00	3262.00
WASATCH_C	4485.00	4485.00
WASATCH_G	6151.00	6151.00
FT_UNION	6529.00	6529.00
OHIO_CREEK *	8054.00	8054.00
WF_700	8785.00	8785.00
WF_500	9407.00	9407.00
WF_400	10065.00	10065.00
WF_300	10715.00	10715.00
WF_200	11891.62	11764.00
TARGET	12258.51	11862.00

Plan Report for RNPU 197-3A2H - Rev A0

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
				Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)				
0.00	0.00	0.00	0.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	SHL: 766' FSL 2216' FEL
100.00	0.00	0.00	100.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
700.00	0.00	0.00	700.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
900.00	0.00	0.00	900.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
1,000.00	0.00	0.00	1,000.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
1,100.00	0.00	0.00	1,100.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
1,200.00	0.00	0.00	1,200.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
1,300.00	0.00	0.00	1,300.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
1,400.00	0.00	0.00	1,400.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
1,496.00	0.00	0.00	1,496.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	R6
1,500.00	0.00	0.00	1,500.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
1,600.00	0.00	0.00	1,600.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
1,700.00	0.00	0.00	1,700.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
1,800.00	0.00	0.00	1,800.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
1,900.00	0.00	0.00	1,900.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
2,100.00	0.00	0.00	2,100.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
2,143.00	0.00	0.00	2,143.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	R4
2,200.00	0.00	0.00	2,200.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
2,300.00	0.00	0.00	2,300.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
2,400.00	0.00	0.00	2,400.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
2,500.00	0.00	0.00	2,500.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
2,600.00	0.00	0.00	2,600.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
2,684.00	0.00	0.00	2,684.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	GARDEN_GULCH
2,700.00	0.00	0.00	2,700.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
2,800.00	0.00	0.00	2,800.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
2,900.00	0.00	0.00	2,900.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
3,000.00	0.00	0.00	3,000.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
3,100.00	0.00	0.00	3,100.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
3,200.00	0.00	0.00	3,200.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	

Plan Report for RNPU 197-3A2H - Rev A0

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
				Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)				
3,262.00	0.00	0.00	3,262.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	WASATCH_A
3,300.00	0.00	0.00	3,300.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
3,400.00	0.00	0.00	3,400.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
3,500.00	0.00	0.00	3,500.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
3,600.00	0.00	0.00	3,600.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
3,700.00	0.00	0.00	3,700.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
3,800.00	0.00	0.00	3,800.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
3,900.00	0.00	0.00	3,900.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
4,000.00	0.00	0.00	4,000.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
4,100.00	0.00	0.00	4,100.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
4,200.00	0.00	0.00	4,200.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
4,300.00	0.00	0.00	4,300.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
4,400.00	0.00	0.00	4,400.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
4,485.00	0.00	0.00	4,485.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	WASATCH_C
4,500.00	0.00	0.00	4,500.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
4,600.00	0.00	0.00	4,600.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
4,700.00	0.00	0.00	4,700.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
4,800.00	0.00	0.00	4,800.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,900.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
5,000.00	0.00	0.00	5,000.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
5,100.00	0.00	0.00	5,100.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,200.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,300.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,400.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,500.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,600.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,700.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,800.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,900.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
6,000.00	0.00	0.00	6,000.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
6,100.00	0.00	0.00	6,100.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
6,151.00	0.00	0.00	6,151.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	WASATCH_G
6,200.00	0.00	0.00	6,200.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,300.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,400.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,500.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
6,529.00	0.00	0.00	6,529.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	FT_UNION

Plan Report for RNPU 197-3A2H - Rev A0

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
				Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)				
6,600.00	0.00	0.00	6,600.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,700.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,800.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,900.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
7,000.00	0.00	0.00	7,000.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
7,100.00	0.00	0.00	7,100.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
7,200.00	0.00	0.00	7,200.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
7,300.00	0.00	0.00	7,300.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
7,400.00	0.00	0.00	7,400.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
7,500.00	0.00	0.00	7,500.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,600.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,700.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
7,800.00	0.00	0.00	7,800.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,900.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
8,000.00	0.00	0.00	8,000.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
8,054.00	0.00	0.00	8,054.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	OHIO_CREEK *
8,100.00	0.00	0.00	8,100.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
8,200.00	0.00	0.00	8,200.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
8,300.00	0.00	0.00	8,300.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
8,400.00	0.00	0.00	8,400.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
8,500.00	0.00	0.00	8,500.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
8,600.00	0.00	0.00	8,600.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
8,700.00	0.00	0.00	8,700.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
8,785.00	0.00	0.00	8,785.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	WF_700
8,800.00	0.00	0.00	8,800.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
8,900.00	0.00	0.00	8,900.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
9,000.00	0.00	0.00	9,000.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
9,100.00	0.00	0.00	9,100.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
9,200.00	0.00	0.00	9,200.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
9,300.00	0.00	0.00	9,300.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
9,400.00	0.00	0.00	9,400.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
9,407.00	0.00	0.00	9,407.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	WF_500
9,500.00	0.00	0.00	9,500.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
9,600.00	0.00	0.00	9,600.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
9,700.00	0.00	0.00	9,700.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
9,800.00	0.00	0.00	9,800.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
9,900.00	0.00	0.00	9,900.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	

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Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
				Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)				
10,000.00	0.00	0.00	10,000.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
10,065.00	0.00	0.00	10,065.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	WF_400
10,100.00	0.00	0.00	10,100.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
10,200.00	0.00	0.00	10,200.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
10,300.00	0.00	0.00	10,300.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
10,400.00	0.00	0.00	10,400.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
10,500.00	0.00	0.00	10,500.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
10,600.00	0.00	0.00	10,600.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
10,700.00	0.00	0.00	10,700.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
10,715.00	0.00	0.00	10,715.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	WF_300
10,800.00	0.00	0.00	10,800.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
10,900.00	0.00	0.00	10,900.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
11,000.00	0.00	0.00	11,000.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
11,100.00	0.00	0.00	11,100.00	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	
11,145.91	0.00	0.00	11,145.91	0.00 N	0.00 E	1,250,750.82	2,224,851.31	0.00	0.00	0.00	KOP 8.00°/100' @ 11145.91' MD
11,200.00	4.33	60.60	11,199.95	1.00 N	1.78 E	1,250,751.83	2,224,853.09	8.00	2.04	60.60	
11,300.00	12.33	60.60	11,298.81	8.11 N	14.39 E	1,250,758.93	2,224,865.70	8.00	16.51	0.00	
11,400.00	20.33	60.60	11,394.70	21.90 N	38.86 E	1,250,772.72	2,224,890.17	8.00	44.60	0.00	
11,500.00	28.33	60.60	11,485.75	42.11 N	74.72 E	1,250,792.93	2,224,926.03	8.00	85.76	0.00	
11,600.00	36.33	60.60	11,570.18	68.34 N	121.26 E	1,250,819.16	2,224,972.57	8.00	139.19	0.00	
11,700.00	44.33	60.60	11,646.36	100.08 N	177.60 E	1,250,850.91	2,225,028.91	8.00	203.86	0.00	
11,800.00	52.33	60.60	11,712.79	136.73 N	242.62 E	1,250,887.55	2,225,093.93	8.00	278.49	0.00	
11,891.62	59.66	60.60	11,764.00	173.99 N	308.74 E	1,250,924.81	2,225,160.05	8.00	354.39	0.00	WF_200
11,900.00	60.33	60.60	11,768.19	177.55 N	315.06 E	1,250,928.38	2,225,166.37	8.00	361.65	0.00	
12,000.00	68.33	60.60	11,811.48	221.76 N	393.52 E	1,250,972.59	2,225,244.83	8.00	451.70	0.00	
12,100.00	76.33	60.60	11,841.81	268.51 N	476.46 E	1,251,019.33	2,225,327.77	8.00	546.90	0.00	
12,200.00	84.33	60.60	11,858.60	316.86 N	562.27 E	1,251,067.69	2,225,413.58	8.00	645.40	0.00	
12,258.42	89.00	60.60	11,862.00	345.49 N	613.06 E	1,251,096.31	2,225,464.37	8.00	703.71	0.00	LP/7" Casing @ 89.00° Inc, 60.60° Azi, 12258.42' MD, 11862.00' TVD - 7"
12,258.51	89.00	60.60	11,862.00	345.53 N	613.14 E	1,251,096.36	2,225,464.45	0.32	703.80	0.00	TARGET
12,300.00	89.00	60.60	11,862.72	365.90 N	649.28 E	1,251,116.72	2,225,500.59	0.00	745.28	0.00	
12,400.00	89.00	60.60	11,864.47	414.99 N	736.38 E	1,251,165.81	2,225,587.69	0.00	845.27	0.00	
12,500.00	89.00	60.60	11,866.21	464.07 N	823.49 E	1,251,214.90	2,225,674.80	0.00	945.25	0.00	
12,600.00	89.00	60.60	11,867.95	513.16 N	910.59 E	1,251,263.99	2,225,761.90	0.00	1,045.24	0.00	
12,700.00	89.00	60.60	11,869.70	562.25 N	997.70 E	1,251,313.08	2,225,849.01	0.00	1,145.22	0.00	
12,800.00	89.00	60.60	11,871.44	611.34 N	1,084.81 E	1,251,362.16	2,225,936.12	0.00	1,245.21	0.00	
12,900.00	89.00	60.60	11,873.18	660.43 N	1,171.91 E	1,251,411.25	2,226,023.22	0.00	1,345.19	0.00	

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Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
				Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)				
13,000.00	89.00	60.60	11,874.93	709.51 N	1,259.02 E	1,251,460.34	2,226,110.33	0.00	1,445.18	0.00	
13,100.00	89.00	60.60	11,876.67	758.60 N	1,346.12 E	1,251,509.43	2,226,197.43	0.00	1,545.16	0.00	
13,200.00	89.00	60.60	11,878.41	807.69 N	1,433.23 E	1,251,558.51	2,226,284.54	0.00	1,645.14	0.00	
13,300.00	89.00	60.60	11,880.16	856.78 N	1,520.33 E	1,251,607.60	2,226,371.64	0.00	1,745.13	0.00	
13,400.00	89.00	60.60	11,881.90	905.87 N	1,607.44 E	1,251,656.69	2,226,458.75	0.00	1,845.11	0.00	
13,500.00	89.00	60.60	11,883.64	954.95 N	1,694.54 E	1,251,705.78	2,226,545.85	0.00	1,945.10	0.00	
13,600.00	89.00	60.60	11,885.39	1,004.04 N	1,781.65 E	1,251,754.87	2,226,632.96	0.00	2,045.08	0.00	
13,700.00	89.00	60.60	11,887.13	1,053.13 N	1,868.75 E	1,251,803.95	2,226,720.06	0.00	2,145.07	0.00	
13,800.00	89.00	60.60	11,888.87	1,102.22 N	1,955.86 E	1,251,853.04	2,226,807.17	0.00	2,245.05	0.00	
13,900.00	89.00	60.60	11,890.62	1,151.31 N	2,042.96 E	1,251,902.13	2,226,894.27	0.00	2,345.04	0.00	
14,000.00	89.00	60.60	11,892.36	1,200.39 N	2,130.07 E	1,251,951.22	2,226,981.38	0.00	2,445.02	0.00	
14,100.00	89.00	60.60	11,894.10	1,249.48 N	2,217.17 E	1,252,000.31	2,227,068.48	0.00	2,545.01	0.00	
14,200.00	89.00	60.60	11,895.85	1,298.57 N	2,304.28 E	1,252,049.39	2,227,155.59	0.00	2,644.99	0.00	
14,300.00	89.00	60.60	11,897.59	1,347.66 N	2,391.38 E	1,252,098.48	2,227,242.70	0.00	2,744.98	0.00	
14,400.00	89.00	60.60	11,899.33	1,396.75 N	2,478.49 E	1,252,147.57	2,227,329.80	0.00	2,844.96	0.00	
14,500.00	89.00	60.60	11,901.08	1,445.83 N	2,565.60 E	1,252,196.66	2,227,416.91	0.00	2,944.95	0.00	
14,600.00	89.00	60.60	11,902.82	1,494.92 N	2,652.70 E	1,252,245.75	2,227,504.01	0.00	3,044.93	0.00	
14,700.00	89.00	60.60	11,904.56	1,544.01 N	2,739.81 E	1,252,294.83	2,227,591.12	0.00	3,144.92	0.00	
14,800.00	89.00	60.60	11,906.31	1,593.10 N	2,826.91 E	1,252,343.92	2,227,678.22	0.00	3,244.90	0.00	
14,900.00	89.00	60.60	11,908.05	1,642.19 N	2,914.02 E	1,252,393.01	2,227,765.33	0.00	3,344.89	0.00	
15,000.00	89.00	60.60	11,909.79	1,691.27 N	3,001.12 E	1,252,442.10	2,227,852.43	0.00	3,444.87	0.00	
15,100.00	89.00	60.60	11,911.54	1,740.36 N	3,088.23 E	1,252,491.19	2,227,939.54	0.00	3,544.86	0.00	
15,200.00	89.00	60.60	11,913.28	1,789.45 N	3,175.33 E	1,252,540.27	2,228,026.64	0.00	3,644.84	0.00	
15,300.00	89.00	60.60	11,915.02	1,838.54 N	3,262.44 E	1,252,589.36	2,228,113.75	0.00	3,744.83	0.00	
15,400.00	89.00	60.60	11,916.77	1,887.62 N	3,349.54 E	1,252,638.45	2,228,200.85	0.00	3,844.81	0.00	
15,500.00	89.00	60.60	11,918.51	1,936.71 N	3,436.65 E	1,252,687.54	2,228,287.96	0.00	3,944.80	0.00	
15,600.00	89.00	60.60	11,920.25	1,985.80 N	3,523.75 E	1,252,736.63	2,228,375.06	0.00	4,044.78	0.00	
15,700.00	89.00	60.60	11,922.00	2,034.89 N	3,610.86 E	1,252,785.71	2,228,462.17	0.00	4,144.76	0.00	
15,800.00	89.00	60.60	11,923.74	2,083.98 N	3,697.96 E	1,252,834.80	2,228,549.27	0.00	4,244.75	0.00	
15,900.00	89.00	60.60	11,925.48	2,133.06 N	3,785.07 E	1,252,883.89	2,228,636.38	0.00	4,344.73	0.00	
16,000.00	89.00	60.60	11,927.23	2,182.15 N	3,872.18 E	1,252,932.98	2,228,723.49	0.00	4,444.72	0.00	
16,100.00	89.00	60.60	11,928.97	2,231.24 N	3,959.28 E	1,252,982.06	2,228,810.59	0.00	4,544.70	0.00	
16,200.00	89.00	60.60	11,930.71	2,280.33 N	4,046.39 E	1,253,031.15	2,228,897.70	0.00	4,644.69	0.00	
16,300.00	89.00	60.60	11,932.46	2,329.42 N	4,133.49 E	1,253,080.24	2,228,984.80	0.00	4,744.67	0.00	
16,400.00	89.00	60.60	11,934.20	2,378.50 N	4,220.60 E	1,253,129.33	2,229,071.91	0.00	4,844.66	0.00	
16,500.00	89.00	60.60	11,935.94	2,427.59 N	4,307.70 E	1,253,178.42	2,229,159.01	0.00	4,944.64	0.00	
16,600.00	89.00	60.60	11,937.69	2,476.68 N	4,394.81 E	1,253,227.50	2,229,246.12	0.00	5,044.63	0.00	

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Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
				Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)				
16,700.00	89.00	60.60	11,939.43	2,525.77 N	4,481.91 E	1,253,276.59	2,229,333.22	0.00	5,144.61	0.00	
16,800.00	89.00	60.60	11,941.17	2,574.86 N	4,569.02 E	1,253,325.68	2,229,420.33	0.00	5,244.60	0.00	
16,900.00	89.00	60.60	11,942.92	2,623.94 N	4,656.12 E	1,253,374.77	2,229,507.43	0.00	5,344.58	0.00	
17,000.00	89.00	60.60	11,944.66	2,673.03 N	4,743.23 E	1,253,423.86	2,229,594.54	0.00	5,444.57	0.00	
17,100.00	89.00	60.60	11,946.40	2,722.12 N	4,830.33 E	1,253,472.94	2,229,681.64	0.00	5,544.55	0.00	
17,200.00	89.00	60.60	11,948.15	2,771.21 N	4,917.44 E	1,253,522.03	2,229,768.75	0.00	5,644.54	0.00	
17,300.00	89.00	60.60	11,949.89	2,820.30 N	5,004.54 E	1,253,571.12	2,229,855.85	0.00	5,744.52	0.00	
17,400.00	89.00	60.60	11,951.63	2,869.38 N	5,091.65 E	1,253,620.21	2,229,942.96	0.00	5,844.51	0.00	
17,500.00	89.00	60.60	11,953.38	2,918.47 N	5,178.75 E	1,253,669.30	2,230,030.07	0.00	5,944.49	0.00	
17,600.00	89.00	60.60	11,955.12	2,967.56 N	5,265.86 E	1,253,718.38	2,230,117.17	0.00	6,044.48	0.00	
17,700.00	89.00	60.60	11,956.86	3,016.65 N	5,352.97 E	1,253,767.47	2,230,204.28	0.00	6,144.46	0.00	
17,800.00	89.00	60.60	11,958.61	3,065.74 N	5,440.07 E	1,253,816.56	2,230,291.38	0.00	6,244.45	0.00	
17,900.00	89.00	60.60	11,960.35	3,114.82 N	5,527.18 E	1,253,865.65	2,230,378.49	0.00	6,344.43	0.00	
18,000.00	89.00	60.60	11,962.09	3,163.91 N	5,614.28 E	1,253,914.74	2,230,465.59	0.00	6,444.42	0.00	
18,100.00	89.00	60.60	11,963.84	3,213.00 N	5,701.39 E	1,253,963.82	2,230,552.70	0.00	6,544.40	0.00	
18,200.00	89.00	60.60	11,965.58	3,262.09 N	5,788.49 E	1,254,012.91	2,230,639.80	0.00	6,644.38	0.00	
18,300.00	89.00	60.60	11,967.32	3,311.17 N	5,875.60 E	1,254,062.00	2,230,726.91	0.00	6,744.37	0.00	
18,400.00	89.00	60.60	11,969.07	3,360.26 N	5,962.70 E	1,254,111.09	2,230,814.01	0.00	6,844.35	0.00	
18,500.00	89.00	60.60	11,970.81	3,409.35 N	6,049.81 E	1,254,160.18	2,230,901.12	0.00	6,944.34	0.00	
18,600.00	89.00	60.60	11,972.55	3,458.44 N	6,136.91 E	1,254,209.26	2,230,988.22	0.00	7,044.32	0.00	
18,700.00	89.00	60.60	11,974.30	3,507.53 N	6,224.02 E	1,254,258.35	2,231,075.33	0.00	7,144.31	0.00	
18,800.00	89.00	60.60	11,976.04	3,556.61 N	6,311.12 E	1,254,307.44	2,231,162.43	0.00	7,244.29	0.00	
18,900.00	89.00	60.60	11,977.78	3,605.70 N	6,398.23 E	1,254,356.53	2,231,249.54	0.00	7,344.28	0.00	
19,000.00	89.00	60.60	11,979.53	3,654.79 N	6,485.33 E	1,254,405.61	2,231,336.64	0.00	7,444.26	0.00	
19,100.00	89.00	60.60	11,981.27	3,703.88 N	6,572.44 E	1,254,454.70	2,231,423.75	0.00	7,544.25	0.00	
19,200.00	89.00	60.60	11,983.01	3,752.97 N	6,659.55 E	1,254,503.79	2,231,510.86	0.00	7,644.23	0.00	
19,300.00	89.00	60.60	11,984.76	3,802.05 N	6,746.65 E	1,254,552.88	2,231,597.96	0.00	7,744.22	0.00	
19,400.00	89.00	60.60	11,986.50	3,851.14 N	6,833.76 E	1,254,601.97	2,231,685.07	0.00	7,844.20	0.00	
19,500.00	89.00	60.60	11,988.24	3,900.23 N	6,920.86 E	1,254,651.05	2,231,772.17	0.00	7,944.19	0.00	
19,600.00	89.00	60.60	11,989.99	3,949.32 N	7,007.97 E	1,254,700.14	2,231,859.28	0.00	8,044.17	0.00	
19,700.00	89.00	60.60	11,991.73	3,998.41 N	7,095.07 E	1,254,749.23	2,231,946.38	0.00	8,144.16	0.00	
19,800.00	89.00	60.60	11,993.47	4,047.49 N	7,182.18 E	1,254,798.32	2,232,033.49	0.00	8,244.14	0.00	
19,900.00	89.00	60.60	11,995.22	4,096.58 N	7,269.28 E	1,254,847.41	2,232,120.59	0.00	8,344.13	0.00	
20,000.00	89.00	60.60	11,996.96	4,145.67 N	7,356.39 E	1,254,896.49	2,232,207.70	0.00	8,444.11	0.00	
20,100.00	89.00	60.60	11,998.70	4,194.76 N	7,443.49 E	1,254,945.58	2,232,294.80	0.00	8,544.10	0.00	
20,200.00	89.00	60.60	12,000.45	4,243.85 N	7,530.60 E	1,254,994.67	2,232,381.91	0.00	8,644.08	0.00	
20,300.00	89.00	60.60	12,002.19	4,292.93 N	7,617.70 E	1,255,043.76	2,232,469.01	0.00	8,744.07	0.00	

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Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates (usft)		Map Coordinates (usft)		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
				Northing	Easting	Northing	Easting				
20,400.00	89.00	60.60	12,003.93	4,342.02 N	7,704.81 E	1,255,092.85	2,232,556.12	0.00	8,844.05	0.00	
20,500.00	89.00	60.60	12,005.68	4,391.11 N	7,791.91 E	1,255,141.93	2,232,643.22	0.00	8,944.04	0.00	
20,600.00	89.00	60.60	12,007.42	4,440.20 N	7,879.02 E	1,255,191.02	2,232,730.33	0.00	9,044.02	0.00	
20,700.00	89.00	60.60	12,009.16	4,489.29 N	7,966.12 E	1,255,240.11	2,232,817.44	0.00	9,144.01	0.00	
20,800.00	89.00	60.60	12,010.91	4,538.37 N	8,053.23 E	1,255,289.20	2,232,904.54	0.00	9,243.99	0.00	
20,900.00	89.00	60.60	12,012.65	4,587.46 N	8,140.34 E	1,255,338.29	2,232,991.65	0.00	9,343.97	0.00	
21,000.00	89.00	60.60	12,014.39	4,636.55 N	8,227.44 E	1,255,387.37	2,233,078.75	0.00	9,443.96	0.00	
21,100.00	89.00	60.60	12,016.13	4,685.64 N	8,314.55 E	1,255,436.46	2,233,165.86	0.00	9,543.94	0.00	
21,200.00	89.00	60.60	12,017.88	4,734.72 N	8,401.65 E	1,255,485.55	2,233,252.96	0.00	9,643.93	0.00	
21,300.00	89.00	60.60	12,019.62	4,783.81 N	8,488.76 E	1,255,534.64	2,233,340.07	0.00	9,743.91	0.00	
21,400.00	89.00	60.60	12,021.36	4,832.90 N	8,575.86 E	1,255,583.73	2,233,427.17	0.00	9,843.90	0.00	
21,500.00	89.00	60.60	12,023.11	4,881.99 N	8,662.97 E	1,255,632.81	2,233,514.28	0.00	9,943.88	0.00	
21,600.00	89.00	60.60	12,024.85	4,931.08 N	8,750.07 E	1,255,681.90	2,233,601.38	0.00	10,043.87	0.00	
21,700.00	89.00	60.60	12,026.59	4,980.16 N	8,837.18 E	1,255,730.99	2,233,688.49	0.00	10,143.85	0.00	
21,800.00	89.00	60.60	12,028.34	5,029.25 N	8,924.28 E	1,255,780.08	2,233,775.59	0.00	10,243.84	0.00	
21,900.00	89.00	60.60	12,030.08	5,078.34 N	9,011.39 E	1,255,829.16	2,233,862.70	0.00	10,343.82	0.00	
22,000.00	89.00	60.60	12,031.82	5,127.43 N	9,098.49 E	1,255,878.25	2,233,949.80	0.00	10,443.81	0.00	
22,084.62	89.00	60.60	12,033.30	5,168.97 N	9,172.20 E	1,255,919.79	2,234,023.51	0.00	10,528.41	0.00	PBHL 5168.97' N/S, 9172.20' E/W @ 22084.62' MD, 12033.30' TVD

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates (usft)		Comment
		+N/-S	+E/-W	
0.00	0.00	0.00	0.00	SHL: 766' FSL 2216' FEL
11,145.91	11,145.91	0.00	0.00	KOP 8.00°/100' @ 11145.91' MD
12,258.42	11,862.00	345.49	613.06	LP/7" Casing @ 89.00° Inc, 60.60° Azi, 12258.42' MD, 11862.00' TVD
22,084.62	12,033.30	5,168.97	9,172.20	PBHL 5168.97' N/S, 9172.20' E/W @ 22084.62' MD, 12033.30' TVD

Vertical Section Information

Target	Angle Type	Target	Azimuth (°)	Origin Type	Origin (usft)		Start TVD (usft)
					+N/_S	+E/-W	
Target		RNPU 197-3A2H_PBHL_Plat	60.60	Slot	0.00	0.00	0.00

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Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	22,084.62	Rev A0	2_MWD

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
12,258.42	11,862.00	7"	7	8-3/4

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	TVDSS (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,496.00	1,496.00	-4,982.00	R6			
2,143.00	2,143.00	-4,335.00	R4			
2,684.00	2,684.00	-3,794.00	GARDEN_GULCH			
3,262.00	3,262.00	-3,216.00	WASATCH_A			
4,485.00	4,485.00	-1,993.00	WASATCH_C			
6,151.00	6,151.00	-327.00	WASATCH_G			
6,529.00	6,529.00	51.00	FT_UNION			
8,054.00	8,054.00	1,576.00	OHIO_CREEK *			
8,785.00	8,785.00	2,307.00	WF_700			
9,407.00	9,407.00	2,929.00	WF_500			
10,065.00	10,065.00	3,587.00	WF_400			
10,715.00	10,715.00	4,237.00	WF_300			
11,891.62	11,764.00	5,286.00	WF_200			
12,258.51	11,862.00	5,384.00	TARGET			

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
RNPU 197-3A2H_PBHL_Plat ()	0.00	0.00	12,033.30	5,168.97	9,172.20	1,255,919.79	2,234,023.51	40° 0' 12.460 N	108° 14' 4.930 W
- hit/miss target									
- Shape									
- plan hits target center									
- Point									

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Directional Difficulty Index

Average Dogleg over Survey:	0.40 °/100usft	Maximum Dogleg over Survey:	8.00 °/100usft at 12,258.31 usft
Net Tortosity applicable to Plans:	0.40 °/100usft	Directional Difficulty Index:	6.574

Audit Info

North Reference Sheet for Sec. 03-T01S-R97W (RNPU 197-3A2H) - RNPU 197-3A2H - OWB_Permit

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to KB = 28' @ 6478.00usft (Permit). Northing and Easting are relative to RNPU 197-3A2H

Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is 105° 30' 0.000 W°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:40° 47' 0.000 N°

False Easting: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 0.99996726

Grid Coordinates of Well: 1,250,750.82 usft N, 2,224,851.31 usft E

Geographical Coordinates of Well: 39° 59' 18.59" N, 108° 16' 00.67" W

Grid Convergence at Surface is: -1.79°

Based upon Minimum Curvature type calculations, at a Measured Depth of 22,084.62usft

the Bottom Hole Displacement is 10,528.41usft in the Direction of 60.60° (Grid).

Magnetic Convergence at surface is: -11.38° (11 June 2019, , BGGM2018)

