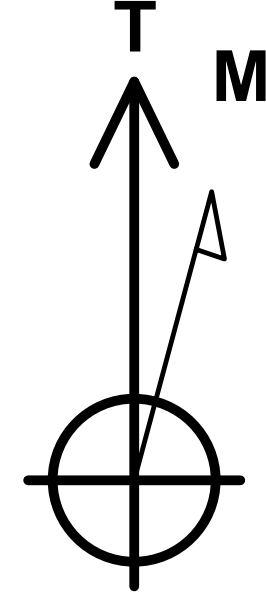




Project: Weld County, CO (NAD83)  
Site: Sec.19-T7N-R65W  
Well: WAAG 4  
Wellbore: Wellbore #1 / #1422518  
Design: Plan #3 01-17-15  
Rig: Xtreme #7

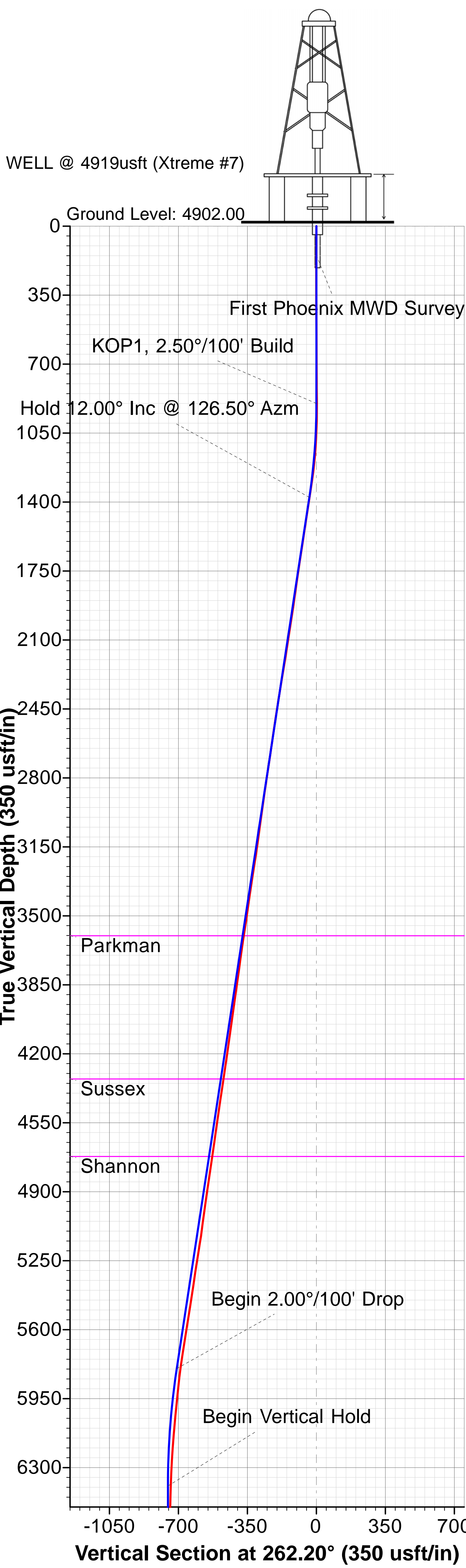


ENIX  
LOGY SERVICES



Azimuths to True North  
Magnetic North: 8.45°

Magnetic Field  
Strength: 52760.5snT  
Dip Angle: 67.06°  
Date: 1/17/2015  
Model: IGRF2015



WELL DETAILS										
	+N/-S	+E/-W	Northing	Ground Level:	4902.00					
	0.00	0.00	1450716.75	Easting	3219687.04	Latitude	40° 34' 4.540 N	Longitude	104° 42' 33.256 W	

SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	
3	1380.00	12.00	126.50	1376.50	-29.79	40.26	2.50	126.50	-35.85	
4	5900.00	12.00	126.50	5797.73	-588.78	795.69	0.00	0.00	-708.47	
5	6500.00	0.00	0.00	6393.35	-626.02	846.02	2.00	180.00	-753.28	
6	6945.19	0.00	0.00	6838.54	-626.02	846.02	0.00	0.00	-753.28	
7	7695.19	90.00	270.78	7316.00	-619.51	368.59	12.00	270.78	-281.15	
8	12145.64	90.00	270.78	7316.00	-558.82	-4081.44	0.00	0.00	4119.51	PBHL_WAAG 4

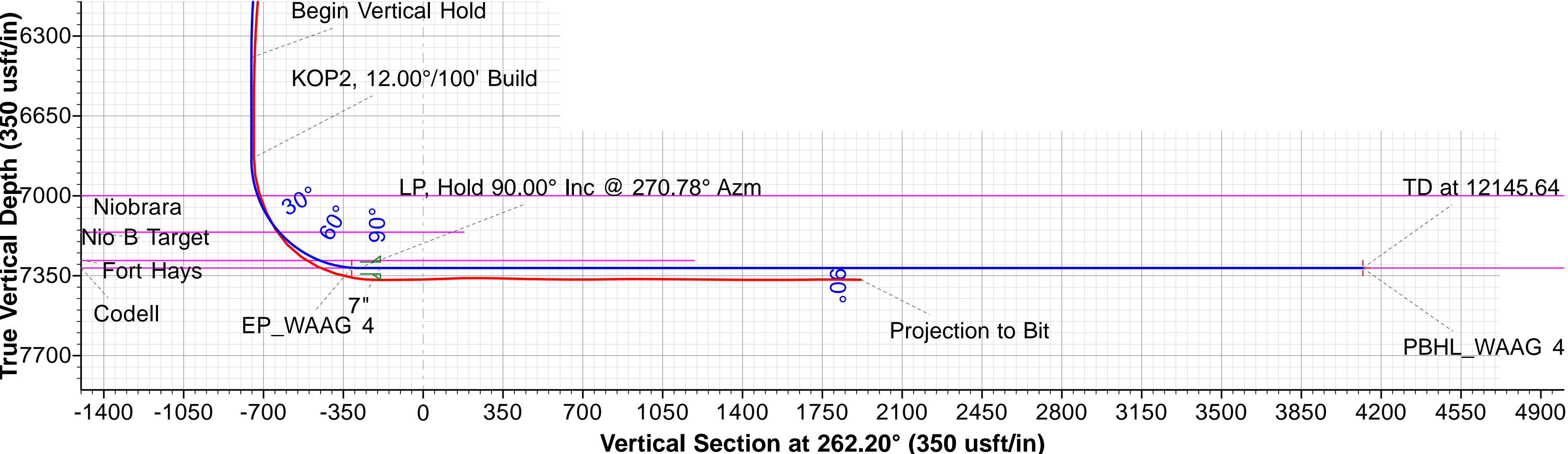
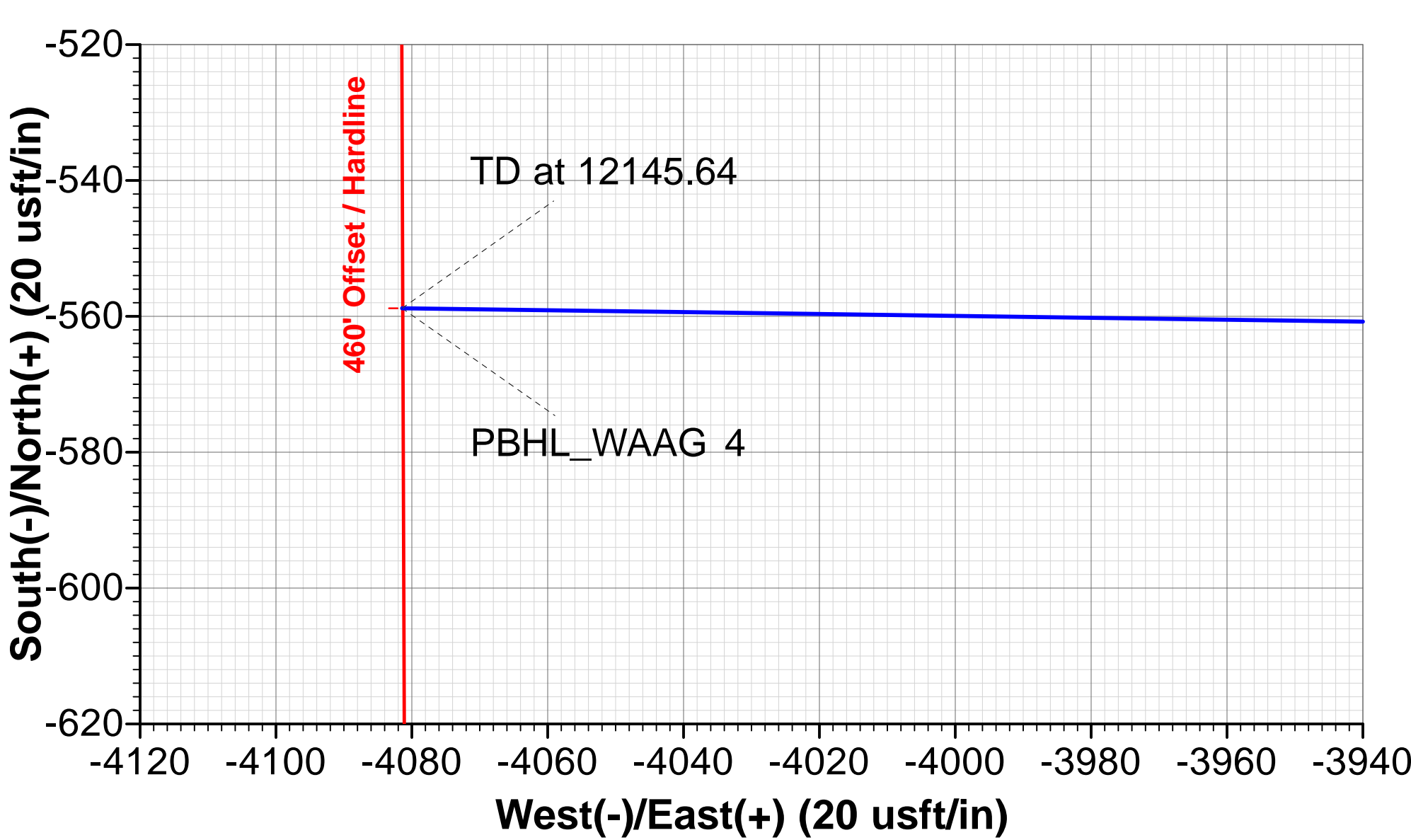
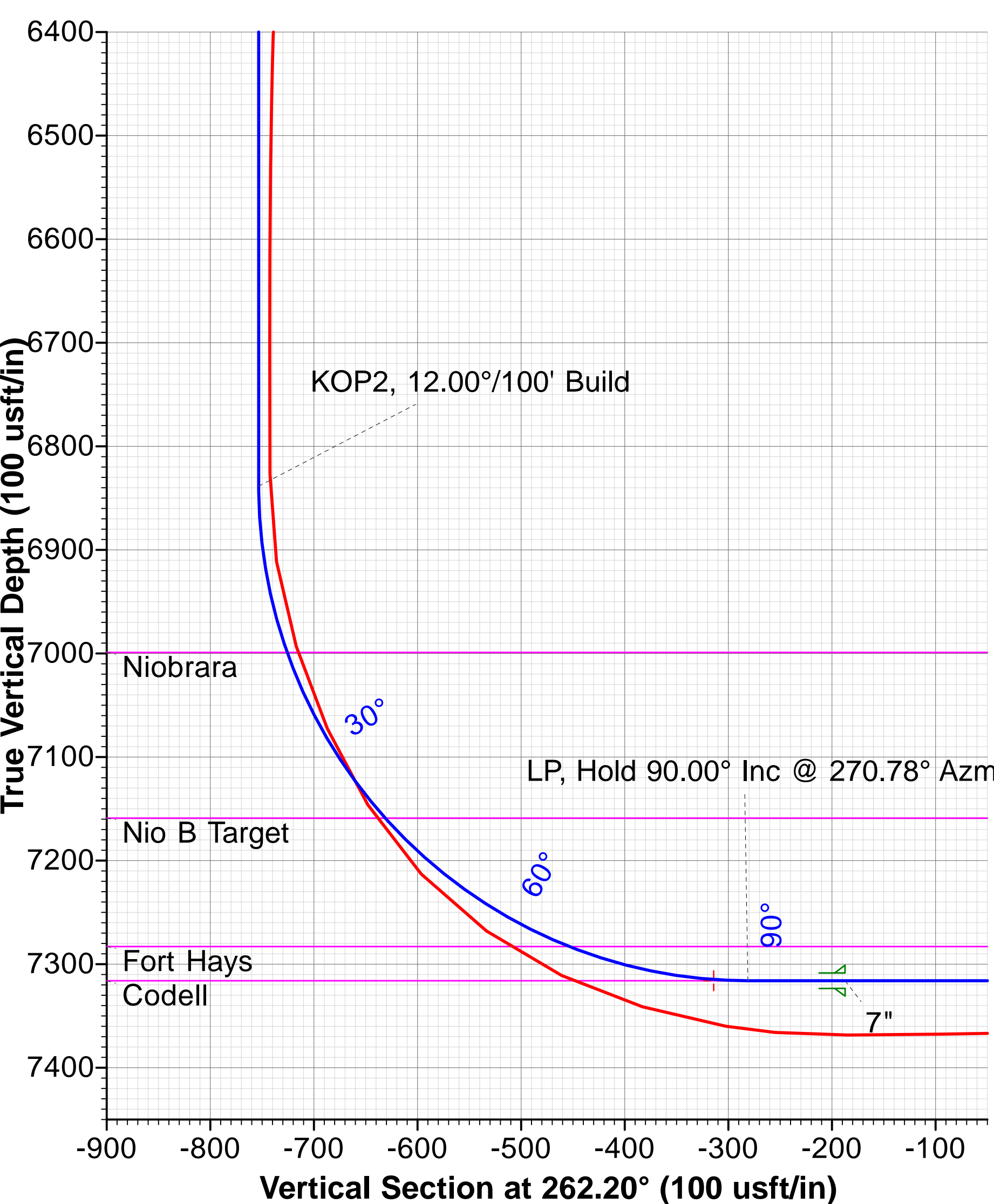
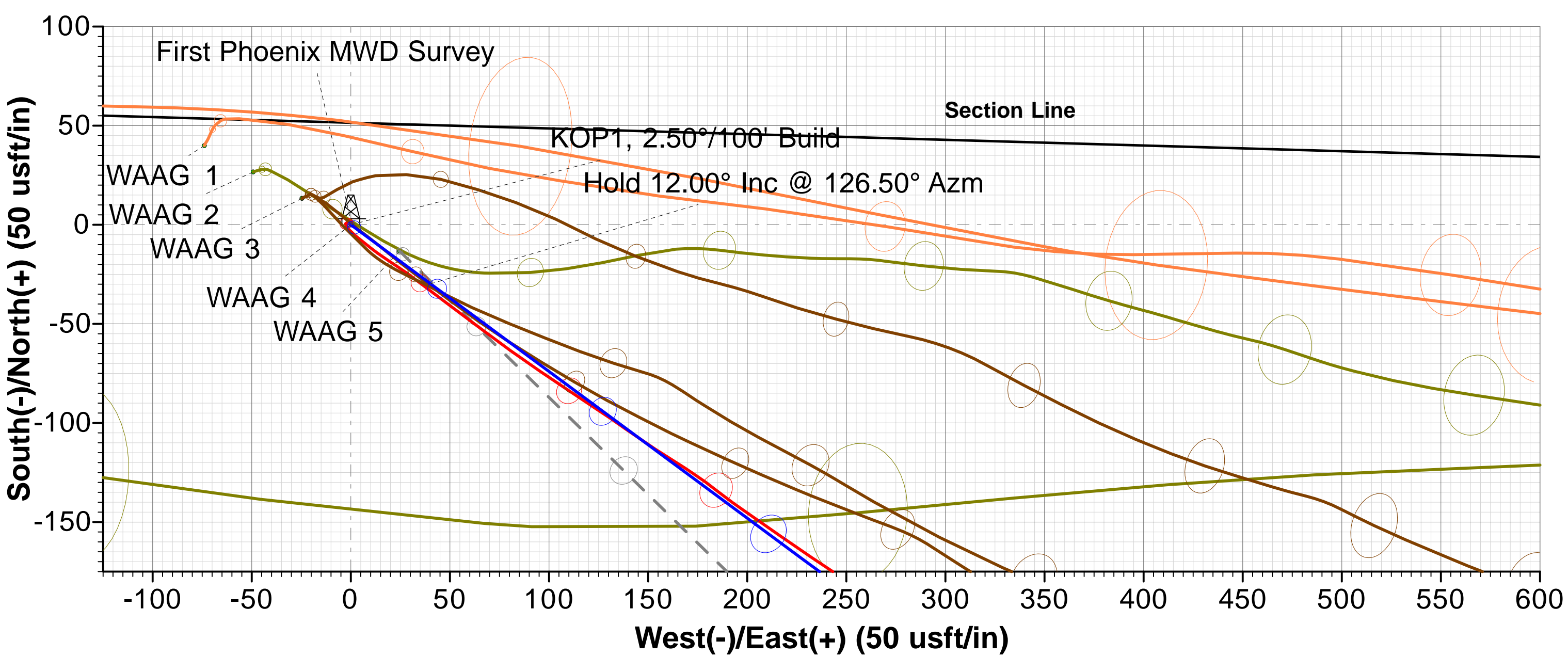
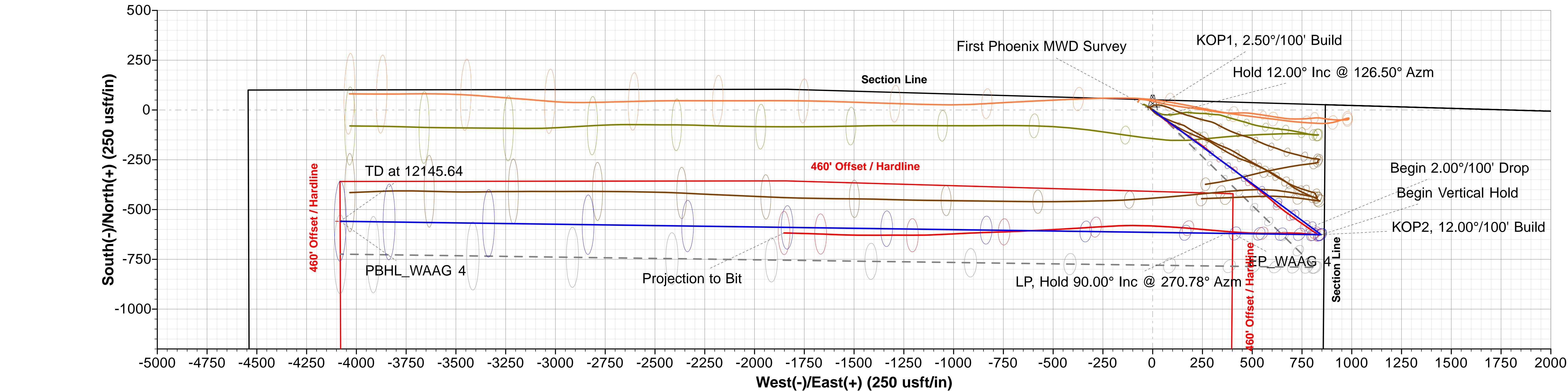
DESIGN TARGET DETAILS										
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape		
EP_WAAG 4	7316.00	-620.05	401.93	1450100.31	3220094.48	40° 33' 58.413 N	104° 42' 28.048 W	Point		
PBHL_WAAG 4	7316.00	-558.82	-4081.44	1450121.56	3215610.75	40° 33' 59.015 N	104° 43' 26.142 W	Point		

PROJECT DETAILS: Weld County, CO (NAD83)  
Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone  
System Datum: Mean Sea Level

SITE DETAILS: Sec.19-T7N-R65W  
Site Centre Northing: 1450756.06  
Easting: 3219612.83  
Positional Uncertainty: 0.00  
Convergence: 0.51  
Local North: True

Map System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone Name: Colorado Northern Zone  
Local Origin: Well WAAG 4, True North  
Latitude: 40° 34' 4.540 N  
Longitude: 104° 42' 33.256 W  
Grid East: 3219687.04  
Grid North: 1450716.75  
Scale Factor: 1.000  
Geomagnetic Model: IGRF2015  
Sample Date: 17-Jan-15  
Magnetic Declination: 8.45°  
Dip Angle from Horizontal: 67.06°  
Magnetic Field Strength: 52761  
To convert a Magnetic Direction to a Grid Direction, Add 7.94°  
To convert a Magnetic Direction to a True Direction, Add 8.45° East  
To convert a True Direction to a Grid Direction, Subtract 0.51°

FORMATION TOP DETAILS				
TVDPath	MDPath	Formation	DipAngle	DipDir
3601.00	3654.20	Parkman	0.00	262.20
4328.00	4397.44	Sussex	0.00	262.20
4721.00	4799.22	Shannon	0.00	262.20
6999.00	7108.84	Niobrara	0.00	262.20
7159.00	7296.50	Nio B Target	0.00	262.20
7283.00	7516.62	Fort Hays	0.00	262.20
7316.00	7693.05	Codell	0.00	262.20



LEGEND	
—	WAAG 1, Wellbore #1 / #1422515, Surveys (Xtreme #7) V0
—	WAAG 2, Wellbore #1 / #1422516, Surveys (Xtreme #7) V0
---	WAAG 5, Wellbore #1 / #1422519, Plan #2 01-17-15 V0
—	WAAG 4, Wellbore #1 / #1422518, Surveys (Xtreme 7) V0
—	WAAG 3, Wellbore #2 / #1422517, Surveys (Xtreme 7) V0
—	WAAG 3, Wellbore #1 / #1422517, Surveys (Xtreme 7) V0
—	WAAG 3, Wellbore #3 / #1422517, Surveys (Xtreme 7) V0
—	Plan #3 01-17-15