

GREAT WESTERN OPERATING COMPANY

**WELD COUNTY
SEC 8-T3N-R67W
BERRY IC 11-162HN**

OWB

Plan: PROPOSAL 1

Standard Planning Report

03 September, 2021

Project: WELD COUNTY
Site: SEC 8-T3N-R67W
Well: BERRY IC 11-162HN
Wellbore: OWB
Design: PROPOSAL 1



Azimuths to True North
Magnetic North: 7.90°

Magnetic Field
Strength: 51832.6nT
Dip Angle: 66.50°
Date: 9/3/2021
Model: IGRF2020

WELL DETAILS: BERRY IC 11-162HN

+N/-S	+E/-W	Northing	Easting	4843.00	Latitude	Longitude	Slot
0.00	0.00	1332217.25	3161759.73		40.243884°N	104.920527°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	3266.00	0.00	0.00	3266.00	0.00	0.00	0.00	0.00	0.00	
3	4266.04	30.00	181.25	4220.96	-255.83	-5.60	3.00	181.25	43.29	
4	6824.29	30.00	181.25	6436.45	-1534.70	-33.57	0.00	0.00	259.69	
5	7955.40	90.00	272.23	7062.00	-1867.67	-763.26	8.00	90.85	1030.53	BERRY 162HN-LP
6	13120.61	90.00	272.23	7062.00	-1666.62	-5924.56	0.00	0.00	6105.64	BERRY 162HN-MID PNT
7	13223.39	90.00	269.15	7062.00	-1665.38	-6027.31	3.00	-90.00	6207.09	BERRY 162HN-BTM PERF
8	18826.14	90.00	269.15	7062.00	-1748.75	-11629.45	0.00	0.00	11760.18	BERRY 162HN-BTM PERF
9	18827.63	90.00	269.19	7062.00	-1748.77	-11630.93	3.00	90.00	11761.66	BERRY 162HN-PBHL
10	18926.09	90.00	269.19	7062.00	-1750.16	-11729.39	0.00	0.00	11859.24	BERRY 162HN-PBHL

FORMATION TOP DETAILS

Formation data is available

PROJECT DETAILS: WELD COUNTY

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

System Datum: Mean Sea Level

SHL:
1405' FNL, 765' FWL
Sec 8-T3N-R67W

LP:
2035' FSL, 1' FEL
Sec 7-T3N-R67W

MID POINT:
2035' FSL, 0' FWL
Sec 7-T3N-R67W

BTM PERF:
2036' FSL, 370' FEL
Sec 11-T3N-R68W

BHL:
2035' FSL, 470' FEL
Sec 11-T3N-R68W

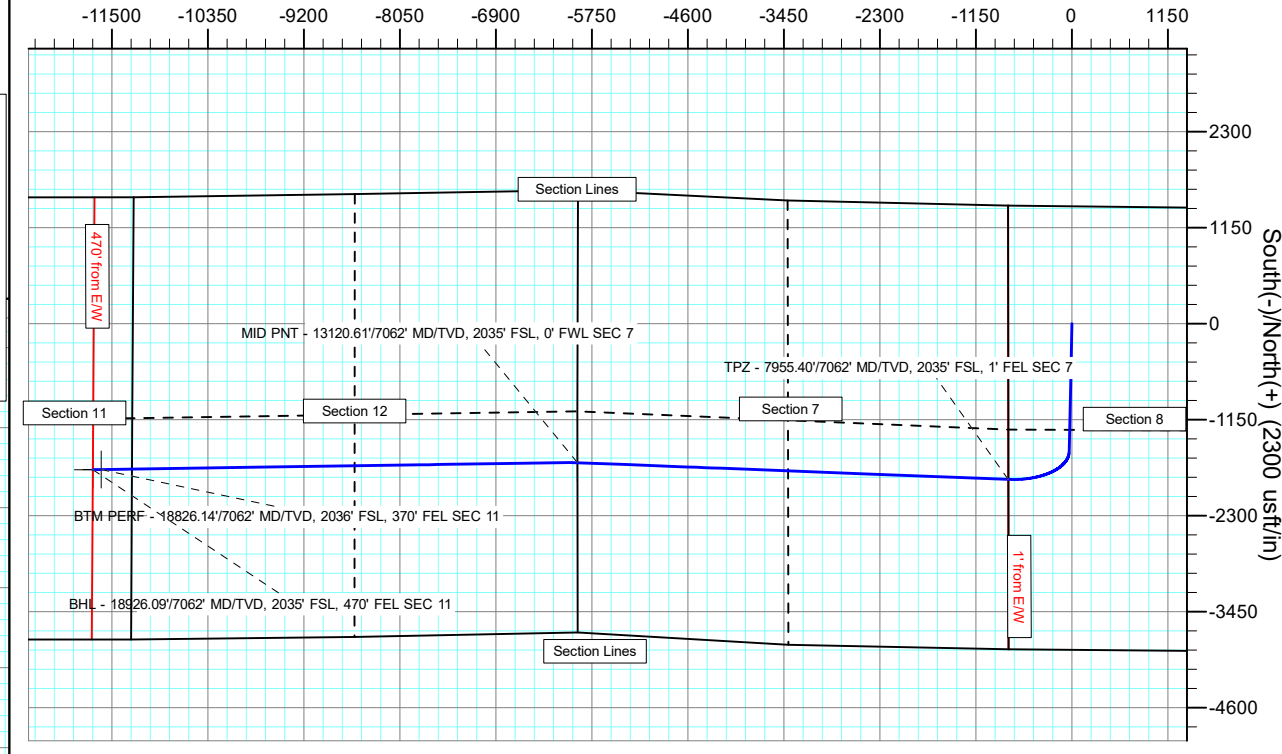
ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
3266.00	0.00	0.00	3266.00	0.00	0.00	0.00	0.00	Start Build 3.00
4266.04	30.00	181.25	4220.96	-255.83	-5.60	43.29	255.89	Start 2558.26 hold at 4266.04 MD
6824.29	30.00	181.25	6436.45	-1534.70	-33.57	259.69	1535.06	Start DLS 8.00 TFO 90.85
7955.40	90.00	272.23	7062.00	-1867.67	-763.26	1030.53	2405.64	TPZ - 7955.40/7062' MD/TVD, 2035' FSL, 1' FEL SEC 7
13120.61	90.00	272.23	7062.00	-1666.62	-5924.56	6105.64	7570.86	MID PNT - 13120.61/7062' MD/TVD, 2035' FSL, 0' FWL SEC 7
13223.39	90.00	269.15	7062.00	-1665.38	-6027.31	6207.09	7673.63	Start 5602.75 hold at 13223.39 MD
18826.14	90.00	269.15	7062.00	-1748.75	-11629.45	11760.18	13276.38	BTM PERF - 18826.14/7062' MD/TVD, 2036' FSL, 370' FEL SEC 11
18827.63	90.00	269.19	7062.00	-1748.77	-11630.93	11761.66	13277.87	Start 98.47 hold at 18827.63 MD
18926.09	90.00	269.19	7062.00	-1750.16	-11729.39	11859.24	13376.34	BHL - 18926.09/7062' MD/TVD, 2035' FSL, 470' FEL SEC 11

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
BERRY 162HN-BTM PERF	7062.00	-1748.75	-11629.45	1330392.54	3150141.96	40.239076°N	104.962184°W	Point
- plan hits target center								
BERRY 162HN-LP	7062.00	-1867.67	-763.26	1330344.63	3161008.69	40.238757°N	104.923261°W	Point
- plan hits target center								
BERRY 162HN-MID PNT	7062.00	-1666.62	-5924.56	1330511.95	3155846.19	40.239307°N	104.941749°W	Point
- plan hits target center								
BERRY 162HN-PBHL	7062.00	-1750.16	-11729.39	1330390.48	3150042.02	40.239072°N	104.962542°W	Point
- plan hits target center								

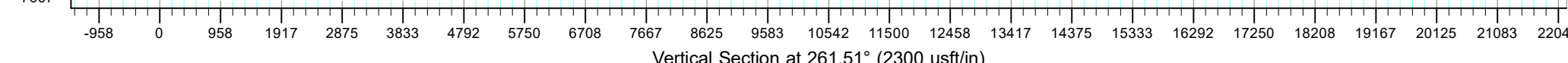
West(-)/East(+) (2300 usft/in)



South(-)/North(+) (2300 usft/in)

True Vertical Depth (2300 usft/in)

Vertical Section at 261.51° (2300 usft/in)



Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BERRY IC 11-162HN
Company:	GREAT WESTERN OPERATING COMPANY	TVD Reference:	KB 20' @ 4863.00usft
Project:	WELD COUNTY	MD Reference:	KB 20' @ 4863.00usft
Site:	SEC 8-T3N-R67W	North Reference:	True
Well:	BERRY IC 11-162HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Project	WELD COUNTY		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		SEC 8-T3N-R67W			
Site Position:		Northing:	1,333,626.02 usft	Latitude:	40.247765°N
From:	Lat/Long	Easting:	3,160,984.00 usft	Longitude:	104.923273°W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in		

Well		BERRY IC 11-162HN				
Well Position	+N/-S	0.00 usft	Northing:	1,332,217.25 usft	Latitude:	40.243884°N
	+E/-W	0.00 usft	Easting:	3,161,759.73 usft	Longitude:	104.920527°W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,843.00 usft
Grid Convergence:		0.37 °				

Wellbore	OWB				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	9/3/2021	7.90	66.50	51,832.64268681

Design	PROPOSAL 1				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	261.51	

Plan Survey Tool Program	Date	9/3/2021			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	18,925.96 PROPOSAL 1 (OWB)	MWD		
			OWSG MWD - Standard		

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Company:	GREAT WESTERN OPERATING COMPANY	TVD Reference:	KB 20' @ 4863.00usft
Project:	WELD COUNTY	MD Reference:	KB 20' @ 4863.00usft
Site:	SEC 8-T3N-R67W	North Reference:	True
Well:	BERRY IC 11-162HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,266.00	0.00	0.00	3,266.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,266.04	30.00	181.25	4,220.96	-255.83	-5.60	3.00	3.00	0.00	181.25	
6,824.29	30.00	181.25	6,436.45	-1,534.70	-33.57	0.00	0.00	0.00	0.00	
7,955.40	90.00	272.23	7,062.00	-1,867.67	-763.26	8.00	5.30	8.04	90.85	BERRY 162HN-LP
13,120.61	90.00	272.23	7,062.00	-1,666.62	-5,924.56	0.00	0.00	0.00	0.00	BERRY 162HN-MID F
13,223.39	90.00	269.15	7,062.00	-1,665.38	-6,027.31	3.00	0.00	-3.00	-90.00	BERRY 162HN-BTM
18,826.14	90.00	269.15	7,062.00	-1,748.75	-11,629.45	0.00	0.00	0.00	0.00	BERRY 162HN-BTM
18,827.63	90.00	269.19	7,062.00	-1,748.77	-11,630.93	3.00	0.00	3.00	90.00	BERRY 162HN-PBHL
18,926.10	90.00	269.19	7,062.00	-1,750.16	-11,729.39	0.00	0.00	0.00	0.00	BERRY 162HN-PBHL

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Project:	WELD COUNTY	MD Reference:	KB 20' @ 4863.00usft
Site:	SEC 8-T3N-R67W	North Reference:	True
Well:	BERRY IC 11-162HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,266.00	0.00	0.00	3,266.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 3.00									
3,300.00	1.02	181.25	3,300.00	-0.30	-0.01	0.05	3.00	3.00	0.00
3,400.00	4.02	181.25	3,399.89	-4.70	-0.10	0.79	3.00	3.00	0.00
3,500.00	7.02	181.25	3,499.42	-14.31	-0.31	2.42	3.00	3.00	0.00
3,600.00	10.02	181.25	3,598.30	-29.12	-0.64	4.93	3.00	3.00	0.00
3,700.00	13.02	181.25	3,696.27	-49.09	-1.07	8.31	3.00	3.00	0.00
3,800.00	16.02	181.25	3,793.07	-74.15	-1.62	12.55	3.00	3.00	0.00
3,900.00	19.02	181.25	3,888.42	-104.24	-2.28	17.64	3.00	3.00	0.00
4,000.00	22.02	181.25	3,982.06	-139.29	-3.05	23.57	3.00	3.00	0.00
4,100.00	25.02	181.25	4,073.75	-179.18	-3.92	30.32	3.00	3.00	0.00
4,200.00	28.02	181.25	4,163.21	-223.81	-4.90	37.87	3.00	3.00	0.00
4,266.04	30.00	181.25	4,220.96	-255.83	-5.60	43.29	3.00	3.00	0.00
Start 2558.26 hold at 4266.04 MD									
4,300.00	30.00	181.25	4,250.37	-272.81	-5.97	46.16	0.00	0.00	0.00
4,400.00	30.00	181.25	4,336.98	-322.80	-7.06	54.62	0.00	0.00	0.00
4,500.00	30.00	181.25	4,423.58	-372.79	-8.16	63.08	0.00	0.00	0.00
4,600.00	30.00	181.25	4,510.18	-422.78	-9.25	71.54	0.00	0.00	0.00
4,700.00	30.00	181.25	4,596.78	-472.77	-10.34	80.00	0.00	0.00	0.00
4,800.00	30.00	181.25	4,683.38	-522.76	-11.44	88.46	0.00	0.00	0.00
4,900.00	30.00	181.25	4,769.98	-572.75	-12.53	96.92	0.00	0.00	0.00
5,000.00	30.00	181.25	4,856.58	-622.74	-13.62	105.38	0.00	0.00	0.00
5,100.00	30.00	181.25	4,943.19	-672.73	-14.72	113.84	0.00	0.00	0.00
5,200.00	30.00	181.25	5,029.79	-722.72	-15.81	122.29	0.00	0.00	0.00
5,300.00	30.00	181.25	5,116.39	-772.71	-16.90	130.75	0.00	0.00	0.00
5,400.00	30.00	181.25	5,202.99	-822.70	-18.00	139.21	0.00	0.00	0.00
5,500.00	30.00	181.25	5,289.59	-872.69	-19.09	147.67	0.00	0.00	0.00
5,600.00	30.00	181.25	5,376.19	-922.68	-20.19	156.13	0.00	0.00	0.00
5,700.00	30.00	181.25	5,462.80	-972.67	-21.28	164.59	0.00	0.00	0.00
5,800.00	30.00	181.25	5,549.40	-1,022.66	-22.37	173.05	0.00	0.00	0.00
5,900.00	30.00	181.25	5,636.00	-1,072.65	-23.47	181.51	0.00	0.00	0.00
6,000.00	30.00	181.25	5,722.60	-1,122.63	-24.56	189.97	0.00	0.00	0.00
6,100.00	30.00	181.25	5,809.20	-1,172.62	-25.65	198.43	0.00	0.00	0.00
6,200.00	30.00	181.25	5,895.80	-1,222.61	-26.75	206.88	0.00	0.00	0.00
6,300.00	30.00	181.25	5,982.40	-1,272.60	-27.84	215.34	0.00	0.00	0.00
6,400.00	30.00	181.25	6,069.01	-1,322.59	-28.93	223.80	0.00	0.00	0.00
6,500.00	30.00	181.25	6,155.61	-1,372.58	-30.03	232.26	0.00	0.00	0.00
6,600.00	30.00	181.25	6,242.21	-1,422.57	-31.12	240.72	0.00	0.00	0.00
6,700.00	30.00	181.25	6,328.81	-1,472.56	-32.22	249.18	0.00	0.00	0.00
6,800.00	30.00	181.25	6,415.41	-1,522.55	-33.31	257.64	0.00	0.00	0.00
6,824.29	30.00	181.25	6,436.45	-1,534.70	-33.57	259.69	0.00	0.00	0.00
Start DLS 8.00 TFO 90.85									
6,850.00	30.03	185.36	6,458.71	-1,547.53	-34.32	262.32	8.00	0.13	15.99
6,900.00	30.46	193.26	6,501.92	-1,572.33	-38.40	270.02	8.00	0.86	15.80
6,950.00	31.35	200.86	6,544.84	-1,596.83	-45.94	281.09	8.00	1.78	15.20
7,000.00	32.66	208.00	6,587.25	-1,620.91	-56.91	295.50	8.00	2.62	14.27
7,050.00	34.35	214.57	6,628.96	-1,644.45	-71.25	313.16	8.00	3.37	13.15
7,100.00	36.35	220.56	6,669.75	-1,667.33	-88.90	333.99	8.00	4.01	11.97
7,150.00	38.63	225.97	6,709.43	-1,689.44	-109.76	357.88	8.00	4.55	10.82
7,200.00	41.13	230.84	6,747.81	-1,710.68	-133.74	384.74	8.00	5.00	9.75
7,250.00	43.81	235.24	6,784.70	-1,730.94	-160.72	414.41	8.00	5.37	8.79
7,300.00	46.65	239.21	6,819.91	-1,750.12	-190.57	446.76	8.00	5.68	7.95

Planning Report

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Project:	WELD COUNTY	MD Reference:	KB 20' @ 4863.00usft
Site:	SEC 8-T3N-R67W	North Reference:	True
Well:	BERRY IC 11-162HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,350.00	49.61	242.82	6,853.29	-1,768.13	-223.14	481.63	8.00	5.93	7.22
7,400.00	52.68	246.12	6,884.66	-1,784.89	-258.27	518.85	8.00	6.13	6.60
7,450.00	55.83	249.16	6,913.87	-1,800.30	-295.80	558.24	8.00	6.30	6.08
7,500.00	59.05	251.97	6,940.78	-1,814.30	-335.53	599.61	8.00	6.44	5.63
7,550.00	62.32	254.61	6,965.26	-1,826.82	-377.28	642.75	8.00	6.55	5.26
7,600.00	65.65	257.08	6,987.19	-1,837.79	-420.84	687.45	8.00	6.65	4.95
7,650.00	69.01	259.43	7,006.46	-1,847.16	-466.01	733.50	8.00	6.72	4.70
7,700.00	72.40	261.68	7,022.98	-1,854.89	-512.55	780.68	8.00	6.78	4.49
7,750.00	75.82	263.84	7,036.67	-1,860.94	-560.25	828.75	8.00	6.83	4.33
7,800.00	79.25	265.94	7,047.46	-1,865.28	-608.87	877.47	8.00	6.87	4.20
7,850.00	82.70	267.99	7,055.30	-1,867.89	-658.17	926.62	8.00	6.90	4.10
7,900.00	86.16	270.01	7,060.15	-1,868.76	-707.91	975.95	8.00	6.92	4.04
7,950.00	89.63	272.01	7,061.98	-1,867.87	-757.86	1,025.22	8.00	6.93	4.01
7,955.40	90.00	272.23	7,062.00	-1,867.67	-763.26	1,030.53	8.00	6.93	4.00
Start 5165.21 hold at 7955.40 MD									
8,000.00	90.00	272.23	7,062.00	-1,865.94	-807.82	1,074.35	0.00	0.00	0.00
8,100.00	90.00	272.23	7,062.00	-1,862.04	-907.75	1,172.61	0.00	0.00	0.00
8,200.00	90.00	272.23	7,062.00	-1,858.15	-1,007.67	1,270.86	0.00	0.00	0.00
8,300.00	90.00	272.23	7,062.00	-1,854.26	-1,107.60	1,369.12	0.00	0.00	0.00
8,400.00	90.00	272.23	7,062.00	-1,850.37	-1,207.52	1,467.37	0.00	0.00	0.00
8,500.00	90.00	272.23	7,062.00	-1,846.47	-1,307.45	1,565.63	0.00	0.00	0.00
8,600.00	90.00	272.23	7,062.00	-1,842.58	-1,407.37	1,663.88	0.00	0.00	0.00
8,700.00	90.00	272.23	7,062.00	-1,838.69	-1,507.29	1,762.14	0.00	0.00	0.00
8,800.00	90.00	272.23	7,062.00	-1,834.80	-1,607.22	1,860.39	0.00	0.00	0.00
8,900.00	90.00	272.23	7,062.00	-1,830.90	-1,707.14	1,958.65	0.00	0.00	0.00
9,000.00	90.00	272.23	7,062.00	-1,827.01	-1,807.07	2,056.91	0.00	0.00	0.00
9,100.00	90.00	272.23	7,062.00	-1,823.12	-1,906.99	2,155.16	0.00	0.00	0.00
9,200.00	90.00	272.23	7,062.00	-1,819.23	-2,006.92	2,253.42	0.00	0.00	0.00
9,300.00	90.00	272.23	7,062.00	-1,815.33	-2,106.84	2,351.67	0.00	0.00	0.00
9,400.00	90.00	272.23	7,062.00	-1,811.44	-2,206.76	2,449.93	0.00	0.00	0.00
9,500.00	90.00	272.23	7,062.00	-1,807.55	-2,306.69	2,548.18	0.00	0.00	0.00
9,600.00	90.00	272.23	7,062.00	-1,803.66	-2,406.61	2,646.44	0.00	0.00	0.00
9,700.00	90.00	272.23	7,062.00	-1,799.76	-2,506.54	2,744.70	0.00	0.00	0.00
9,800.00	90.00	272.23	7,062.00	-1,795.87	-2,606.46	2,842.95	0.00	0.00	0.00
9,900.00	90.00	272.23	7,062.00	-1,791.98	-2,706.38	2,941.21	0.00	0.00	0.00
10,000.00	90.00	272.23	7,062.00	-1,788.09	-2,806.31	3,039.46	0.00	0.00	0.00
10,100.00	90.00	272.23	7,062.00	-1,784.19	-2,906.23	3,137.72	0.00	0.00	0.00
10,200.00	90.00	272.23	7,062.00	-1,780.30	-3,006.16	3,235.97	0.00	0.00	0.00
10,300.00	90.00	272.23	7,062.00	-1,776.41	-3,106.08	3,334.23	0.00	0.00	0.00
10,400.00	90.00	272.23	7,062.00	-1,772.52	-3,206.01	3,432.49	0.00	0.00	0.00
10,500.00	90.00	272.23	7,062.00	-1,768.62	-3,305.93	3,530.74	0.00	0.00	0.00
10,600.00	90.00	272.23	7,062.00	-1,764.73	-3,405.85	3,629.00	0.00	0.00	0.00
10,700.00	90.00	272.23	7,062.00	-1,760.84	-3,505.78	3,727.25	0.00	0.00	0.00
10,800.00	90.00	272.23	7,062.00	-1,756.95	-3,605.70	3,825.51	0.00	0.00	0.00
10,900.00	90.00	272.23	7,062.00	-1,753.05	-3,705.63	3,923.76	0.00	0.00	0.00
11,000.00	90.00	272.23	7,062.00	-1,749.16	-3,805.55	4,022.02	0.00	0.00	0.00
11,100.00	90.00	272.23	7,062.00	-1,745.27	-3,905.48	4,120.27	0.00	0.00	0.00
11,200.00	90.00	272.23	7,062.00	-1,741.38	-4,005.40	4,218.53	0.00	0.00	0.00
11,300.00	90.00	272.23	7,062.00	-1,737.48	-4,105.32	4,316.79	0.00	0.00	0.00
11,400.00	90.00	272.23	7,062.00	-1,733.59	-4,205.25	4,415.04	0.00	0.00	0.00
11,500.00	90.00	272.23	7,062.00	-1,729.70	-4,305.17	4,513.30	0.00	0.00	0.00
11,600.00	90.00	272.23	7,062.00	-1,725.81	-4,405.10	4,611.55	0.00	0.00	0.00
11,700.00	90.00	272.23	7,062.00	-1,721.92	-4,505.02	4,709.81	0.00	0.00	0.00
11,800.00	90.00	272.23	7,062.00	-1,718.02	-4,604.95	4,808.06	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BERRY IC 11-162HN
Company:	GREAT WESTERN OPERATING COMPANY	TVD Reference:	KB 20' @ 4863.00usft
Project:	WELD COUNTY	MD Reference:	KB 20' @ 4863.00usft
Site:	SEC 8-T3N-R67W	North Reference:	True
Well:	BERRY IC 11-162HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
11,900.00	90.00	272.23	7,062.00	-1,714.13	-4,704.87	4,906.32	0.00	0.00	0.00
12,000.00	90.00	272.23	7,062.00	-1,710.24	-4,804.79	5,004.58	0.00	0.00	0.00
12,100.00	90.00	272.23	7,062.00	-1,706.35	-4,904.72	5,102.83	0.00	0.00	0.00
12,200.00	90.00	272.23	7,062.00	-1,702.45	-5,004.64	5,201.09	0.00	0.00	0.00
12,300.00	90.00	272.23	7,062.00	-1,698.56	-5,104.57	5,299.34	0.00	0.00	0.00
12,400.00	90.00	272.23	7,062.00	-1,694.67	-5,204.49	5,397.60	0.00	0.00	0.00
12,500.00	90.00	272.23	7,062.00	-1,690.78	-5,304.41	5,495.85	0.00	0.00	0.00
12,600.00	90.00	272.23	7,062.00	-1,686.88	-5,404.34	5,594.11	0.00	0.00	0.00
12,700.00	90.00	272.23	7,062.00	-1,682.99	-5,504.26	5,692.37	0.00	0.00	0.00
12,800.00	90.00	272.23	7,062.00	-1,679.10	-5,604.19	5,790.62	0.00	0.00	0.00
12,900.00	90.00	272.23	7,062.00	-1,675.21	-5,704.11	5,888.88	0.00	0.00	0.00
13,000.00	90.00	272.23	7,062.00	-1,671.31	-5,804.04	5,987.13	0.00	0.00	0.00
13,100.00	90.00	272.23	7,062.00	-1,667.42	-5,903.96	6,085.39	0.00	0.00	0.00
13,120.61	90.00	272.23	7,062.00	-1,666.62	-5,924.56	6,105.64	0.00	0.00	0.00
Start DLS 3.00 TFO -90.00									
13,200.00	90.00	269.85	7,062.00	-1,665.18	-6,003.93	6,183.93	3.00	0.00	-3.00
13,223.39	90.00	269.15	7,062.00	-1,665.38	-6,027.31	6,207.09	3.00	0.00	-3.00
Start 5602.75 hold at 13223.39 MD									
13,300.00	90.00	269.15	7,062.00	-1,666.52	-6,103.92	6,283.02	0.00	0.00	0.00
13,400.00	90.00	269.15	7,062.00	-1,668.01	-6,203.90	6,382.14	0.00	0.00	0.00
13,500.00	90.00	269.15	7,062.00	-1,669.50	-6,303.89	6,481.25	0.00	0.00	0.00
13,600.00	90.00	269.15	7,062.00	-1,670.99	-6,403.88	6,580.36	0.00	0.00	0.00
13,700.00	90.00	269.15	7,062.00	-1,672.47	-6,503.87	6,679.48	0.00	0.00	0.00
13,800.00	90.00	269.15	7,062.00	-1,673.96	-6,603.86	6,778.59	0.00	0.00	0.00
13,900.00	90.00	269.15	7,062.00	-1,675.45	-6,703.85	6,877.70	0.00	0.00	0.00
14,000.00	90.00	269.15	7,062.00	-1,676.94	-6,803.84	6,976.82	0.00	0.00	0.00
14,100.00	90.00	269.15	7,062.00	-1,678.43	-6,903.83	7,075.93	0.00	0.00	0.00
14,200.00	90.00	269.15	7,062.00	-1,679.91	-7,003.82	7,175.05	0.00	0.00	0.00
14,300.00	90.00	269.15	7,062.00	-1,681.40	-7,103.81	7,274.16	0.00	0.00	0.00
14,400.00	90.00	269.15	7,062.00	-1,682.89	-7,203.79	7,373.27	0.00	0.00	0.00
14,500.00	90.00	269.15	7,062.00	-1,684.38	-7,303.78	7,472.39	0.00	0.00	0.00
14,600.00	90.00	269.15	7,062.00	-1,685.86	-7,403.77	7,571.50	0.00	0.00	0.00
14,700.00	90.00	269.15	7,062.00	-1,687.35	-7,503.76	7,670.61	0.00	0.00	0.00
14,800.00	90.00	269.15	7,062.00	-1,688.84	-7,603.75	7,769.73	0.00	0.00	0.00
14,900.00	90.00	269.15	7,062.00	-1,690.33	-7,703.74	7,868.84	0.00	0.00	0.00
15,000.00	90.00	269.15	7,062.00	-1,691.82	-7,803.73	7,967.95	0.00	0.00	0.00
15,100.00	90.00	269.15	7,062.00	-1,693.30	-7,903.72	8,067.07	0.00	0.00	0.00
15,200.00	90.00	269.15	7,062.00	-1,694.79	-8,003.71	8,166.18	0.00	0.00	0.00
15,300.00	90.00	269.15	7,062.00	-1,696.28	-8,103.69	8,265.30	0.00	0.00	0.00
15,400.00	90.00	269.15	7,062.00	-1,697.77	-8,203.68	8,364.41	0.00	0.00	0.00
15,500.00	90.00	269.15	7,062.00	-1,699.26	-8,303.67	8,463.52	0.00	0.00	0.00
15,600.00	90.00	269.15	7,062.00	-1,700.74	-8,403.66	8,562.64	0.00	0.00	0.00
15,700.00	90.00	269.15	7,062.00	-1,702.23	-8,503.65	8,661.75	0.00	0.00	0.00
15,800.00	90.00	269.15	7,062.00	-1,703.72	-8,603.64	8,760.86	0.00	0.00	0.00
15,900.00	90.00	269.15	7,062.00	-1,705.21	-8,703.63	8,859.98	0.00	0.00	0.00
16,000.00	90.00	269.15	7,062.00	-1,706.70	-8,803.62	8,959.09	0.00	0.00	0.00
16,100.00	90.00	269.15	7,062.00	-1,708.18	-8,903.61	9,058.21	0.00	0.00	0.00
16,200.00	90.00	269.15	7,062.00	-1,709.67	-9,003.60	9,157.32	0.00	0.00	0.00
16,300.00	90.00	269.15	7,062.00	-1,711.16	-9,103.58	9,256.43	0.00	0.00	0.00
16,400.00	90.00	269.15	7,062.00	-1,712.65	-9,203.57	9,355.55	0.00	0.00	0.00
16,500.00	90.00	269.15	7,062.00	-1,714.13	-9,303.56	9,454.66	0.00	0.00	0.00
16,600.00	90.00	269.15	7,062.00	-1,715.62	-9,403.55	9,553.77	0.00	0.00	0.00
16,700.00	90.00	269.15	7,062.00	-1,717.11	-9,503.54	9,652.89	0.00	0.00	0.00
16,800.00	90.00	269.15	7,062.00	-1,718.60	-9,603.53	9,752.00	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BERRY IC 11-162HN
Company:	GREAT WESTERN OPERATING COMPANY	TVD Reference:	KB 20' @ 4863.00usft
Project:	WELD COUNTY	MD Reference:	KB 20' @ 4863.00usft
Site:	SEC 8-T3N-R67W	North Reference:	True
Well:	BERRY IC 11-162HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
16,900.00	90.00	269.15	7,062.00	-1,720.09	-9,703.52	9,851.11	0.00	0.00	0.00
17,000.00	90.00	269.15	7,062.00	-1,721.57	-9,803.51	9,950.23	0.00	0.00	0.00
17,100.00	90.00	269.15	7,062.00	-1,723.06	-9,903.50	10,049.34	0.00	0.00	0.00
17,200.00	90.00	269.15	7,062.00	-1,724.55	-10,003.48	10,148.46	0.00	0.00	0.00
17,300.00	90.00	269.15	7,062.00	-1,726.04	-10,103.47	10,247.57	0.00	0.00	0.00
17,400.00	90.00	269.15	7,062.00	-1,727.53	-10,203.46	10,346.68	0.00	0.00	0.00
17,500.00	90.00	269.15	7,062.00	-1,729.01	-10,303.45	10,445.80	0.00	0.00	0.00
17,600.00	90.00	269.15	7,062.00	-1,730.50	-10,403.44	10,544.91	0.00	0.00	0.00
17,700.00	90.00	269.15	7,062.00	-1,731.99	-10,503.43	10,644.02	0.00	0.00	0.00
17,800.00	90.00	269.15	7,062.00	-1,733.48	-10,603.42	10,743.14	0.00	0.00	0.00
17,900.00	90.00	269.15	7,062.00	-1,734.97	-10,703.41	10,842.25	0.00	0.00	0.00
18,000.00	90.00	269.15	7,062.00	-1,736.45	-10,803.40	10,941.37	0.00	0.00	0.00
18,100.00	90.00	269.15	7,062.00	-1,737.94	-10,903.38	11,040.48	0.00	0.00	0.00
18,200.00	90.00	269.15	7,062.00	-1,739.43	-11,003.37	11,139.59	0.00	0.00	0.00
18,300.00	90.00	269.15	7,062.00	-1,740.92	-11,103.36	11,238.71	0.00	0.00	0.00
18,400.00	90.00	269.15	7,062.00	-1,742.40	-11,203.35	11,337.82	0.00	0.00	0.00
18,500.00	90.00	269.15	7,062.00	-1,743.89	-11,303.34	11,436.93	0.00	0.00	0.00
18,600.00	90.00	269.15	7,062.00	-1,745.38	-11,403.33	11,536.05	0.00	0.00	0.00
18,700.00	90.00	269.15	7,062.00	-1,746.87	-11,503.32	11,635.16	0.00	0.00	0.00
18,800.00	90.00	269.15	7,062.00	-1,748.36	-11,603.31	11,734.27	0.00	0.00	0.00
18,826.14	90.00	269.15	7,062.00	-1,748.75	-11,629.45	11,760.18	0.00	0.00	0.00
Start Turn 3.00									
18,827.63	90.00	269.19	7,062.00	-1,748.77	-11,630.93	11,761.66	3.00	0.00	3.00
Start 98.47 hold at 18827.63 MD									
18,900.00	90.00	269.19	7,062.00	-1,749.79	-11,703.30	11,833.38	0.00	0.00	0.00
18,926.10	90.00	269.19	7,062.00	-1,750.16	-11,729.39	11,859.24	0.00	0.00	0.00
TD at 18926.09									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BERRY 162HN-PBHL - plan hits target center - Point	0.00	0.00	7,062.00	-1,750.16	-11,729.39	1,330,390.48	3,150,042.02	40.239072°N	104.962542°W
BERRY 162HN-LP - plan hits target center - Point	0.00	0.00	7,062.00	-1,867.67	-763.26	1,330,344.63	3,161,008.69	40.238757°N	104.923261°W
BERRY 162HN-BTM PE - plan hits target center - Point	0.00	0.00	7,062.00	-1,748.75	-11,629.45	1,330,392.54	3,150,141.96	40.239076°N	104.962184°W
BERRY 162HN-MID PN - plan hits target center - Point	0.00	0.00	7,062.00	-1,666.62	-5,924.56	1,330,511.95	3,155,846.19	40.239307°N	104.941749°W

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well BERRY IC 11-162HN
Company:	GREAT WESTERN OPERATING COMPANY	TVD Reference:	KB 20' @ 4863.00usft
Project:	WELD COUNTY	MD Reference:	KB 20' @ 4863.00usft
Site:	SEC 8-T3N-R67W	North Reference:	True
Well:	BERRY IC 11-162HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	PROPOSAL 1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,266.00	3,266.00	0.00	0.00	Start Build 3.00
4,266.04	4,220.96	-255.83	-5.60	Start 2558.26 hold at 4266.04 MD
6,824.29	6,436.45	-1,534.70	-33.57	Start DLS 8.00 TFO 90.85
7,955.40	7,062.00	-1,867.67	-763.26	Start 5165.21 hold at 7955.40 MD
13,120.61	7,062.00	-1,666.62	-5,924.56	Start DLS 3.00 TFO -90.00
13,223.39	7,062.00	-1,665.38	-6,027.31	Start 5602.75 hold at 13223.39 MD
18,826.14	7,062.00	-1,748.75	-11,629.45	Start Turn 3.00
18,827.63	7,062.00	-1,748.77	-11,630.93	Start 98.47 hold at 18827.63 MD
18,926.10	7,062.00	-1,750.16	-11,729.39	TD at 18926.09