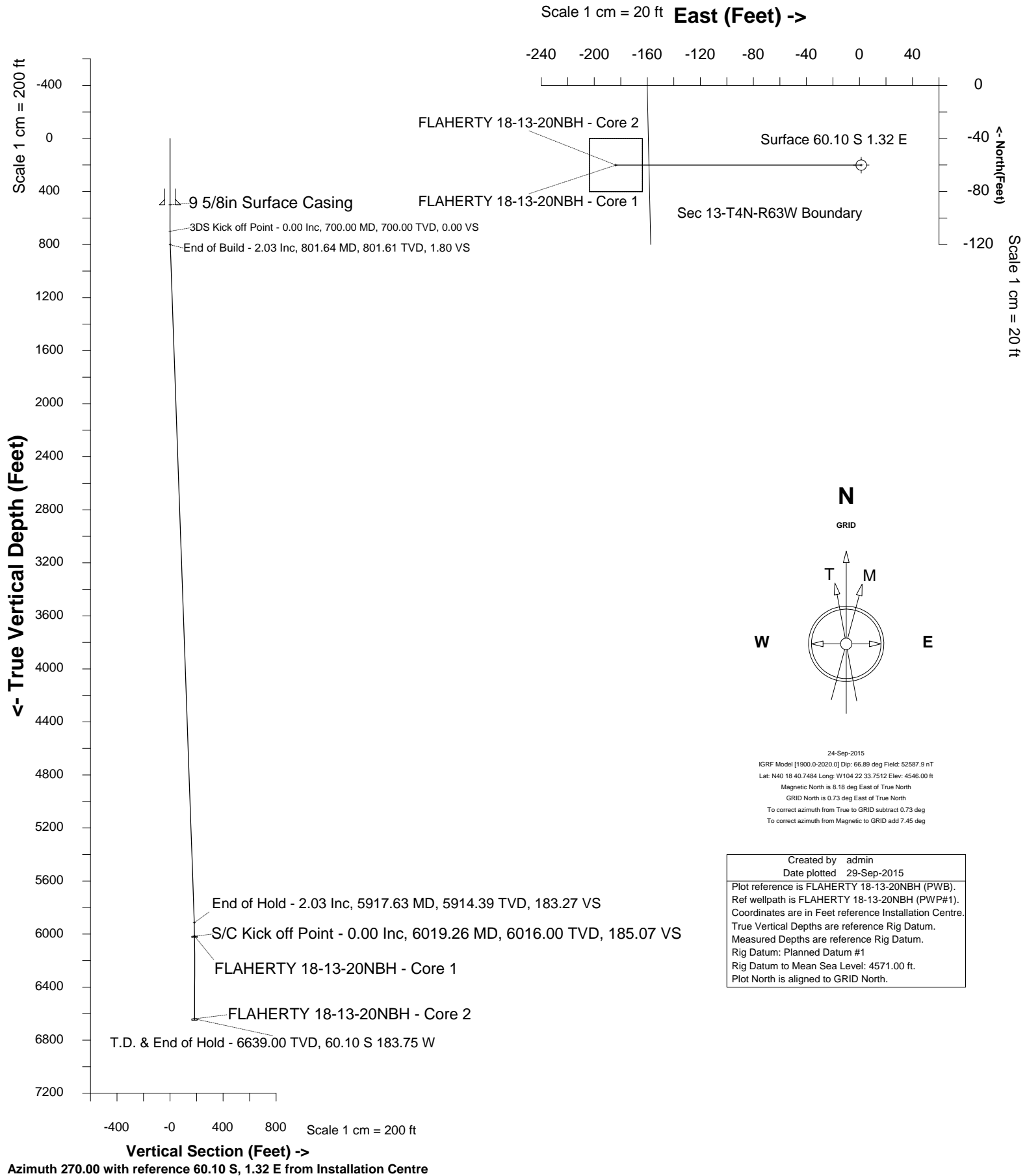


# Edge Energy LLC

Location	DJ Basin	Slot	FLAHERTY 18-13-20NBH
Field	Wattenberg	Well	FLAHERTY 18-13-20NBH
Installation	Flaherty 18-I	Wellbore	FLAHERTY 18-13-20NBH (PWB)





SYSDRILL  
Well Design Combined Report  
Wellbore: FLAHERTY 18-13-20NBH (PWB)

Wellhead Details							
Name	Latitude	Longitude	Northing	Easting	North	East	Slot Elevation Above Ground
FLAHERTY 18-13-20NBH	40.31115400	-104.37604000	1358180.8116	3313436.3487	60.10S	1.32E	0.00

Declination		
Date	Source	Time
24-Sep-2015	IGRF Model [1900.0-2020.0]	15:38

Installation Details						
Name	Installation Position (Latitude)	Installation Position (Longitude)	Northing	Easting	Coord System Name	North Alignment
Flaherty 18-I	40.31131900	-104.37604200	1358240.9076	3313435.0292	CO83-NF on NORTH AMERICAN DATUM 1983 datum	Grid

Summary Wellpath									
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	Northing	Easting
25.00	0.00	0.000	25.00	0.00N	0.00E		0.00	1358180.81	3313436.35
700.00	0.00	270.000	700.00	0.00N	0.00E	==>	0.00	1358180.81	3313436.35
6642.26	0.00	0.000	6639.00	0.00N	185.07W	==>	185.07	1358180.81	3313251.29

Interpolated Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
0.00	0.00	0.000	0.00	0.00N	0.00E		0.00	Rig Datum Slot Datum
25.00	0.00	0.000	25.00	0.00N	0.00E	==>	0.00	
100.00	0.00	0.000	100.00	0.00N	0.00E	==>	0.00	
200.00	0.00	0.000	200.00	0.00N	0.00E	==>	0.00	
300.00	0.00	0.000	300.00	0.00N	0.00E	==>	0.00	
400.00	0.00	0.000	400.00	0.00N	0.00E	==>	0.00	9 5/8in Surface Casing
500.00	0.00	0.000	500.00	0.00N	0.00E	==>	0.00	
600.00	0.00	0.000	600.00	0.00N	0.00E	==>	0.00	
700.00	0.00	270.000	700.00	0.00N	0.00E	==>	0.00	
800.00	2.00	270.000	799.98	0.00N	1.75W	2.00	1.75	
900.00	2.03	270.000	899.92	0.00N	5.29W	==>	5.29	
1000.00	2.03	270.000	999.85	0.00N	8.84W	==>	8.84	
1100.00	2.03	270.000	1099.79	0.00N	12.39W	==>	12.39	
1200.00	2.03	270.000	1199.73	0.00N	15.93W	==>	15.93	
1300.00	2.03	270.000	1299.67	0.00N	19.48W	==>	19.48	
1400.00	2.03	270.000	1399.60	0.00N	23.03W	==>	23.03	
1500.00	2.03	270.000	1499.54	0.00N	26.57W	==>	26.57	
1600.00	2.03	270.000	1599.48	0.00N	30.12W	==>	30.12	
1700.00	2.03	270.000	1699.41	0.00N	33.67W	==>	33.67	
1800.00	2.03	270.000	1799.35	0.00N	37.21W	==>	37.21	
1900.00	2.03	270.000	1899.29	0.00N	40.76W	==>	40.76	
2000.00	2.03	270.000	1999.22	0.00N	44.31W	==>	44.31	
2100.00	2.03	270.000	2099.16	0.00N	47.86W	==>	47.86	
2200.00	2.03	270.000	2199.10	0.00N	51.40W	==>	51.40	
2300.00	2.03	270.000	2299.04	0.00N	54.95W	==>	54.95	
2400.00	2.03	270.000	2398.97	0.00N	58.50W	==>	58.50	
2500.00	2.03	270.000	2498.91	0.00N	62.04W	==>	62.04	
2600.00	2.03	270.000	2598.85	0.00N	65.59W	==>	65.59	
2700.00	2.03	270.000	2698.78	0.00N	69.14W	==>	69.14	
2800.00	2.03	270.000	2798.72	0.00N	72.68W	==>	72.68	
2900.00	2.03	270.000	2898.66	0.00N	76.23W	==>	76.23	
3000.00	2.03	270.000	2998.60	0.00N	79.78W	==>	79.78	
3100.00	2.03	270.000	3098.53	0.00N	83.33W	==>	83.33	
3200.00	2.03	270.000	3198.47	0.00N	86.87W	==>	86.87	
3300.00	2.03	270.000	3298.41	0.00N	90.42W	==>	90.42	
3400.00	2.03	270.000	3398.34	0.00N	93.97W	==>	93.97	
3500.00	2.03	270.000	3498.28	0.00N	97.51W	==>	97.51	
3600.00	2.03	270.000	3598.22	0.00N	101.06W	==>	101.06	
3700.00	2.03	270.000	3698.15	0.00N	104.61W	==>	104.61	

All data is in Feet unless otherwise stated  
Coordinates are from Slot MD's are from Rig and TVD's are from Rig ( Planned Datum #1 4571.0ft above Mean Sea Level )  
Vertical Section is from 0.00N 0.00E on azimuth 270.000 degrees  
Bottom hole distance is 185.07 Feet on azimuth 270.00 degrees from Wellhead  
Calculation method uses Minimum Curvature method  
Prepared by Integrated Petroleum Technologies, Inc.  
Date Printed: 29-Sep-2015



SYSDRILL  
Well Design Combined Report  
Wellbore: FLAHERTY 18-13-20NBH (PWB)

Interpolated Wellpath								
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]	All Station Comments
3800.00	2.03	270.000	3798.09	0.00N	108.15W	==>	108.15	
3900.00	2.03	270.000	3898.03	0.00N	111.70W	==>	111.70	
4000.00	2.03	270.000	3997.97	0.00N	115.25W	==>	115.25	
4100.00	2.03	270.000	4097.90	0.00N	118.80W	==>	118.80	
4200.00	2.03	270.000	4197.84	0.00N	122.34W	==>	122.34	
4300.00	2.03	270.000	4297.78	0.00N	125.89W	==>	125.89	
4400.00	2.03	270.000	4397.71	0.00N	129.44W	==>	129.44	
4500.00	2.03	270.000	4497.65	0.00N	132.98W	==>	132.98	
4600.00	2.03	270.000	4597.59	0.00N	136.53W	==>	136.53	
4700.00	2.03	270.000	4697.53	0.00N	140.08W	==>	140.08	
4800.00	2.03	270.000	4797.46	0.00N	143.63W	==>	143.63	
4900.00	2.03	270.000	4897.40	0.00N	147.17W	==>	147.17	
5000.00	2.03	270.000	4997.34	0.00N	150.72W	==>	150.72	
5100.00	2.03	270.000	5097.27	0.00N	154.27W	==>	154.27	
5200.00	2.03	270.000	5197.21	0.00N	157.81W	==>	157.81	
5300.00	2.03	270.000	5297.15	0.00N	161.36W	==>	161.36	
5400.00	2.03	270.000	5397.09	0.00N	164.91W	==>	164.91	
5500.00	2.03	270.000	5497.02	0.00N	168.45W	==>	168.45	
5600.00	2.03	270.000	5596.96	0.00N	172.00W	==>	172.00	
5700.00	2.03	270.000	5696.90	0.00N	175.55W	==>	175.55	
5800.00	2.03	270.000	5796.83	0.00N	179.10W	==>	179.10	
5900.00	2.03	270.000	5896.77	0.00N	182.64W	==>	182.64	
6000.00	0.39	270.000	5996.74	0.00N	185.01W	2.00	185.01	
6100.00	0.00	270.000	6096.74	0.00N	185.07W	==>	185.07	
6200.00	0.00	270.000	6196.74	0.00N	185.07W	==>	185.07	
6300.00	0.00	270.000	6296.74	0.00N	185.07W	==>	185.07	
6400.00	0.00	270.000	6396.74	0.00N	185.07W	==>	185.07	
6500.00	0.00	270.000	6496.74	0.00N	185.07W	==>	185.07	
6600.00	0.00	270.000	6596.74	0.00N	185.07W	==>	185.07	
6642.26	0.00	0.000	6639.00	0.00N	185.07W	==>	185.07	

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## Hole Sections

Diameter [in]	Start MD[ft]	Start TVD[ft]	Start North[ft]	Start East[ft]	End MD[ft]	End TVD[ft]	End North[ft]	End East[ft]
12 1/4	25.00	25.00	0.00N	0.00E	500.00	500.00	0.00N	0.00E
7 7/8	500.00	500.00	0.00N	0.00E	6019.00	6015.74	0.00N	185.07W
6 1/8	6019.00	6015.74	0.00N	185.07W	6642.00	6638.74	0.00N	185.07W

## Casings

Name	Top MD[ft]	Top TVD[ft]	Top North[ft]	Top East[ft]	Shoe MD[ft]	Shoe TVD[ft]	Shoe North[ft]	Shoe East[ft]
9 5/8in Surface Casing	25.00	25.00	0.00N	0.00E	500.00	500.00	0.00N	0.00E

## Targets

Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Northing	Easting
FLAHERTY 18-13-20NBH - Core 1	0.00N	185.07W	6016.00	40.31116044	-104.37670355	1358180.81	3313251.29
FLAHERTY 18-13-20NBH - Core 2	0.00N	185.07W	6639.00	40.31116044	-104.37670355	1358180.81	3313251.29

## Survey Tool Program

Reference	Survey Name	MD[ft]	TVD[ft]	Survey Tool	Error Model
415690	Planned	6642.26	6639.00	WdW Rate Gyro	Standard

## Notes