

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

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WV Department of
Environmental Protection

API 47 - 103 - 03069 County Wetzel District Center
Quad Littleton Pad Name North Henderson Field/Pool Name Marcellus
Farm name Howard Henderson Well Number 516127
Operator (as registered with the OOG) Statoil USA Onshore Properties, INC (A Subsidiary of EQT Corp.)
Address 625 Liberty Ave, Suite 1700 City Pittsburgh State PA Zip 15222

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,393,825.55 Easting 536,216.67
Landing Point of Curve Northing 4,394,356.68 Easting 536,458.67
Bottom Hole Northing 4,395,896.31 Easting 534,878.85

Elevation (ft) 1342 GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine

Mud Type(s) and Additive(s)
Production - 12.9 ppg synthetic based - Cyberdrill

Date permit issued 2/27/15 Date drilling commenced 5/5/2015 Date drilling ceased 7/11/2015
Date completion activities began 4/08/2018 Date completion activities ceased 4/22/2018
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 622 Open mine(s) (Y/N) depths N
Salt water depth(s) ft 2077 Void(s) encountered (Y/N) depths N
Coal depth(s) ft 822, 1102, 1222 Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed

Reviewed by:

DmH

API 47-103 - 03069 Farm name Howard Henderson Well number 516127

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade w/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	24	20	63	NEW	A-500	N/A	Y
Surface	17 1/2	13 3/8	672	NEW	J-55	N/A	Y
Coal							
Intermediate 1	12 1/4	9 5/8	2718	NEW	J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8 1/2	5 1/2	15957	NEW	P-110EC	N/A	Y
Tubing							
Packer type and depth set							

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	CLASS A	75	15.6	1.18	89	0	72+
Surface	CLASS A	209	15.8	2.3	481	0	72+
Coal							
Intermediate 1	CLASS A	490	15.8	2.31	1127	0	72+
Intermediate 2							
Intermediate 3							
Production	CLASS H	3110	14.8	1.16	3608	709	72+
Tubing							

Drillers TD (ft) 15991 Loggers TD (ft) N/A
 Deepest formation penetrated MARCELLUS Plug back to (ft) N/A
 Plug back procedure _____

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Kick off depth (ft) 9426

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Check all wireline logs run
 caliper density deviated/directional induction
 neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____

SURFACE = 1 centralizer w/ stop collar 10 ft above float shoe. One Single Bow every joint to 100ft below surface.
 INTERMEDIATE = 1 centek centralizer w/ stop collar 10 ft above float shoe. 1 centek centralizer w/ stop collar 10 ft above float collar. 1 centralizer every joint for the first 15 joints. One centralizer every 3 jnts to 100ft below surface.
 PRODUCTION = 1 centek centralizer w/ stop collar 10ft above shoe. 1 centek centralizer 10ft above float collar. 1 centek centralizer every joint (floating) until KDP. 1 centek centralizer every 3 joints (floating) until 200ft inside intermediate shoe. 1 centek centralizer 50ft below mandrel hanger.

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT NAME TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H2S, ETC)
FRESH WATER ZONE	1	622	1	622	FRESH WATER
SAND/SHALE	1	884.9	1	885	
WAYNESBURG COAL	881.9	884.9	882	885	
SAND/SHALE	884.9	1,099.80	885	1,100.00	
SEWICKLEY COAL	1,099.80	1,104.80	1,100.00	1,105.00	
SAND/SHALE	1,104.80	1,218.50	1,105.00	1,219.00	
PITTSBURGH COAL	1,218.50	1,224.50	1,219.00	1,225.00	
SAND/SHALE	1,224.50	2,387.70	1,225.00	2,408.00	BRINE
BIG LIME	2,387.70	2,425.80	2,408.00	2,447.00	
SAND/SHALE	2,425.80	2,456.10	2,447.00	2,478.00	
BIG INJUN	2,456.10	2,663.80	2,478.00	2,690.00	
SAND/SHALE	2,663.80	2,776.50	2,690.00	2,804.00	
WEIR	2,776.50	2,796.40	2,804.00	2,824.00	
SAND/SHALE	2,796.40	2,990.40	2,824.00	3,019.00	
GANTZ	2,990.40	3,020.40	3,019.00	3,049.00	
SAND/SHALE	3,020.40	3,134.10	3,049.00	3,163.00	
50F	3,134.10	3,151.10	3,163.00	3,180.00	
SAND/SHALE	3,151.10	3,171.10	3,180.00	3,200.00	
30F	3,171.10	3,183.10	3,200.00	3,212.00	
SAND/SHALE	3,183.10	3,231.00	3,212.00	3,260.00	
GORDON	3,231.00	3,261.00	3,260.00	3,290.00	
SAND/SHALE	3,261.00	3,300.00	3,290.00	3,329.00	
BAYARD	3,300.00	3,310.00	3,329.00	3,339.00	
SAND/SHALE	3,310.00	3,886.90	3,339.00	3,916.00	
WARREN	3,886.90	3,921.90	3,916.00	3,951.00	
SAND/SHALE	3,921.90	3,977.90	3,951.00	4,007.00	
SPEECHLEY	3,977.90	4,170.90	4,007.00	4,200.00	
SAND/SHALE	4,170.90	4,850.80	4,200.00	4,880.00	
RILEY	4,850.80	4,900.80	4,880.00	4,930.00	
SAND/SHALE	4,900.80	5,391.10	4,930.00	5,421.00	
BENSON	5,391.10	5,551.00	5,421.00	5,581.00	
SAND/SHALE	5,551.00	5,846.90	5,581.00	5,877.00	
ALEXANDER	5,846.90	5,864.90	5,877.00	5,895.00	
SAND/SHALE	5,864.90	6,169.60	5,895.00	6,200.00	
ELK	6,169.60	6,992.40	6,200.00	7,033.00	
SONYEA	6,992.40	7,130.30	7,033.00	7,206.00	
MIDDLESEX	7,130.30	7,155.40	7,206.00	7,244.00	
GENESSEE	7,155.40	7,199.30	7,244.00	7,317.00	
GENESE0	7,199.30	7,211.50	7,317.00	7,339.00	
TULLY	7,211.50	7,223.50	7,339.00	7,361.00	
HAMILTON	7,223.50	7,273.60	7,361.00	7,453.00	
MARCELLUS	7,273.60	7,273.60	7,453.00	7,453.00	

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516127 47-103-03069-00-00 - Stimulated Stages

Stage Number	Stimulation Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
1	4/1/2018	12	8,966	9,633	5,460.00	0	1,557	0
1	4/2/2018	21	9,309	9,566	6,291.00	0	2,877	0
1	4/2/2018	7	7,859	9,031	6,268.00	0	991	0
1	4/3/2018	79	9,251	9,401	4,265.00	502,179	9,466	0
2	4/3/2018	28	7,632	9,022	6,175.00	0	1,098	0
2	4/9/2018	37	8,764	8,943	6,027.00	0	2,702	0
2	4/9/2018	18	7,893	8,092	6,722.00	0	921	0
2	4/10/2018	87	9,145	9,470	4,515.00	498,200	9,735	0
3	4/10/2018	88	9,118	9,402	4,708.00	499,100	8,736	0
4	4/10/2018	91	9,201	9,491	5,037.00	500,220	8,550	0
5	4/11/2018	85	9,213	9,567	4,956.00	500,190	9,078	0
6	4/11/2018	89	9,055	9,216	4,705.00	502,690	8,509	0
7	4/11/2018	92	9,071	9,222	4,575.00	500,450	8,461	0
8	4/11/2018	95	9,239	9,487	4,801.00	501,410	8,582	0
9	4/12/2018	94	9,184	9,470	5,287.00	500,430	8,539	0
10	4/12/2018	91	9,098	9,444	5,084.00	500,140	9,465	0
11	4/13/2018	86	9,155	9,537	4,676.00	500,360	8,502	0
12	4/13/2018	81	8,498	9,434	4,690.00	497,590	8,381	0
13	4/13/2018	88	9,236	9,527	5,585.00	500,230	8,377	0
14	4/14/2018	93	8,855	9,572	4,702.00	500,020	8,414	0
15	4/14/2018	94	8,398	9,321	4,761.00	501,041	8,378	0
16	4/14/2018	91	8,627	9,224	5,041.00	502,120	8,358	0
17	4/14/2018	94	8,690	9,462	5,465.00	500,190	8,326	0
18	4/15/2018	92	8,902	9,460	5,165.00	500,830	8,256	0
19	4/15/2018	93	8,901	9,363	4,851.00	500,840	8,249	0
20	4/15/2018	92	8,851	9,263	5,282.00	499,550	8,242	0
21	4/17/2018	91	9,128	9,533	5,653.00	500,760	8,123	0
22	4/17/2018	92	8,750	9,242	4,866.00	500,220	8,217	0
23	4/17/2018	89	8,151	8,774	4,451.00	500,680	8,041	0
24	4/18/2018	94	8,917	9,319	4,397.00	500,480	7,844	0
25	4/19/2018	86	8,551	9,149	6,942.00	500,560	8,058	0
26	4/19/2018	93	9,047	9,412	4,937.00	504,170	7,877	0
27	4/19/2018	85	8,341	8,799	5,293.00	500,090	7,914	0
28	4/20/2018	91	8,708	9,551	4,545.00	498,950	7,845	0
29	4/20/2018	93	8,614	9,363	4,895.00	500,040	7,721	0
30	4/21/2018	84	8,502	8,885	5,370.00	500,230	7,973	0
31	4/21/2018	77	8,657	9,187	4,961.00	500,610	7,923	0
32	4/22/2018	85	8,315	8,554	4,646.00	500,380	7,616	0

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516127 47-103-03069-00-00 - Perforations

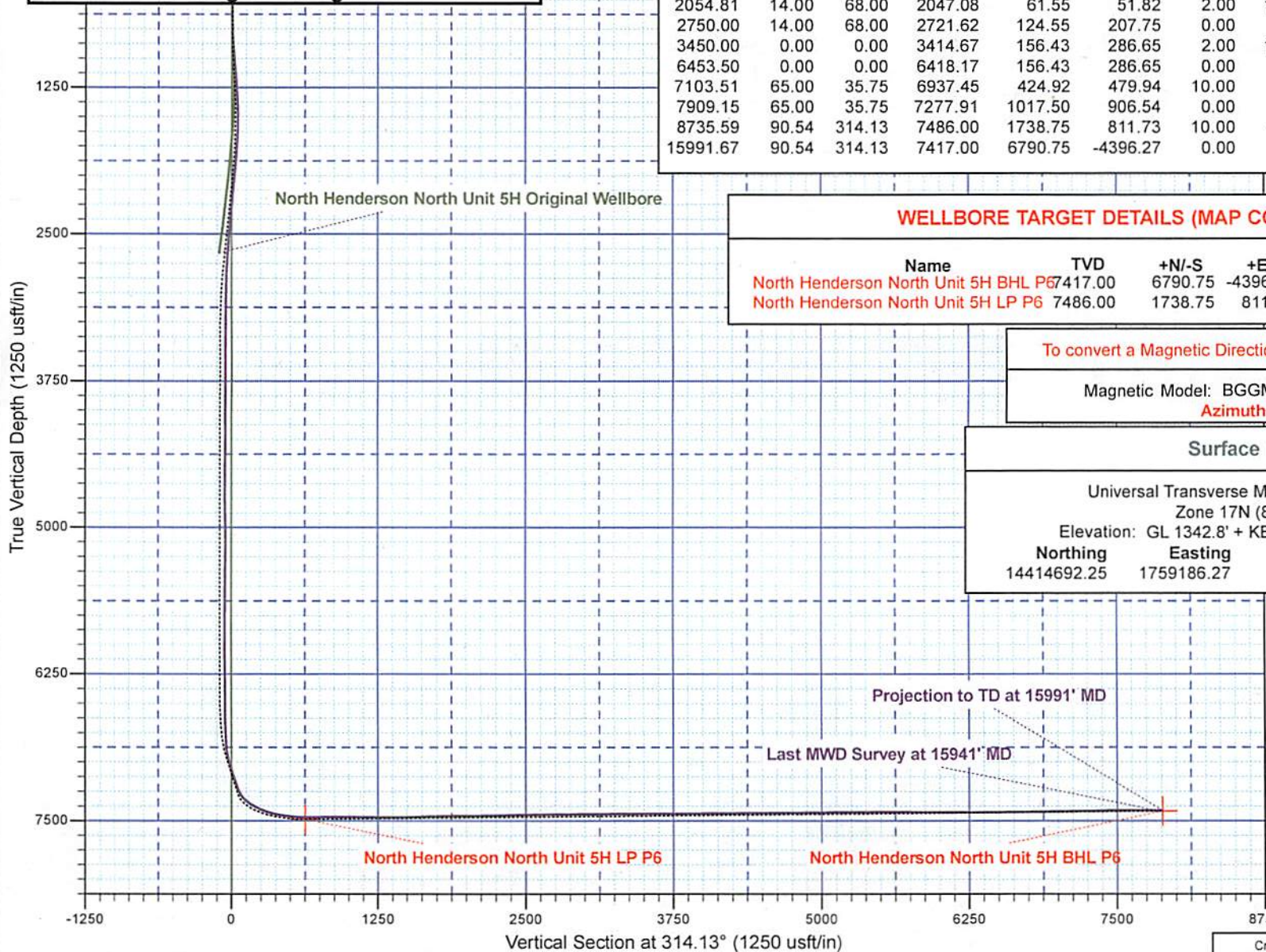
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Stage Number	Perforation Date	Top Perf Depth (ftKB)	Bottom Perf Depth (ftKB)	Number of Shots	Formation
Initiation Sleeve	10/29/2017	15,751	15,956	10	MARCELLUS
1	4/2/2018	15,578	15,709	32	MARCELLUS
2	4/10/2018	15,364	15,538	40	MARCELLUS
3	4/10/2018	15,149	15,323	40	MARCELLUS
4	4/10/2018	14,934	15,108	40	MARCELLUS
5	4/9/2018	14,719	14,893	40	MARCELLUS
6	4/11/2018	14,504	14,678	40	MARCELLUS
7	4/11/2018	14,289	14,463	40	MARCELLUS
8	4/11/2018	14,074	14,248	40	MARCELLUS
9	4/11/2018	13,859	14,033	40	MARCELLUS
10	4/12/2018	13,644	13,818	40	MARCELLUS
11	4/13/2018	13,429	13,603	40	MARCELLUS
12	4/13/2018	13,214	13,388	40	MARCELLUS
13	4/13/2018	13,001	13,175	40	MARCELLUS
14	4/13/2018	12,784	12,958	40	MARCELLUS
15	4/14/2018	12,414	12,743	40	MARCELLUS
16	4/14/2018	12,200	12,374	40	MARCELLUS
17	4/14/2018	11,985	12,159	40	MARCELLUS
18	4/14/2018	11,770	11,944	40	MARCELLUS
19	4/15/2018	11,555	11,729	40	MARCELLUS
20	4/15/2018	11,340	11,514	40	MARCELLUS
21	4/15/2018	11,125	11,299	40	MARCELLUS
22	4/17/2018	10,738	11,084	40	MARCELLUS
23	4/17/2018	10,523	10,697	40	MARCELLUS
24	4/17/2018	10,308	10,482	40	MARCELLUS
25	4/18/2018	10,093	10,267	40	MARCELLUS
26	4/19/2018	9,878	10,052	40	MARCELLUS
27	4/19/2018	9,663	9,837	40	MARCELLUS
28	4/19/2018	9,448	9,622	40	MARCELLUS
29	4/20/2018	9,233	9,407	40	MARCELLUS
30	4/20/2018	9,018	9,192	40	MARCELLUS
31	4/21/2018	8,803	8,977	40	MARCELLUS
32	4/21/2018	8,588	8,762	40	MARCELLUS

Wetzel County WV
 Site: North Henderson North Unit Pad
 Well: North Henderson North Unit 5H
 Wellbore: Sidetrack
 Design: Design #8

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Annotation
1000.00	2.30	324.88	999.79	14.68	-8.39	0.00	0.00	16.24	Start ST
1100.00	3.53	280.00	1099.67	16.85	-12.58	2.50	-85.30	20.76	End Build
1200.00	3.53	280.00	1199.48	17.92	-18.64	0.00	0.00	25.86	Start Build/Turn
2054.81	14.00	68.00	2047.08	61.55	51.82	2.00	154.15	5.67	End Build/Turn
2750.00	14.00	68.00	2721.62	124.55	207.75	0.00	0.00	-62.39	Start Drop
3450.00	0.00	0.00	3414.67	156.43	286.65	2.00	180.00	-96.83	End Drop
6453.50	0.00	0.00	6418.17	156.43	286.65	0.00	0.00	-96.83	Start Build
7103.51	65.00	35.75	6937.45	424.92	479.94	10.00	35.75	-48.61	End Build
7909.15	65.00	35.75	7277.91	1017.50	906.54	0.00	0.00	57.79	Start Build/Turn
8735.59	90.54	314.13	7486.00	1738.75	811.73	10.00	-85.94	628.05	End Build/Turn
15991.67	90.54	314.13	7417.00	6790.75	-4396.27	0.00	0.00	7883.80	TD



WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
North Henderson North Unit 5H BHL P6	7417.00	6790.75	-4396.27	14421483.00	1754790.00
North Henderson North Unit 5H LP P6	7486.00	1738.75	811.73	14416431.00	1759998.00

To convert a Magnetic Direction to a Grid Direction, Subtract 8.99°

Magnetic Model: BGGM2015 Date: 22-Jun-15
 Azimuths to Grid North

Surface Location:

Universal Transverse Mercator (US Survey Feet)
 Zone 17N (84 W to 78 W)
 Elevation: GL 1342.8' + KB 22' @ 1364.80usft (Orion Polaris)

Northing	Easting	Latitude	Longitude
14414692.25	1759186.27	39.693424	-80.577794

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HALLIBURTON

Sperry Drilling

Statoil

Wetzel County WV (NAD 27 UTM 17N us ft)

North Henderson North Unit Pad

North Henderson North Unit 5H - Slot North Henderson 5H

Sidetrack

Design: Sidetrack Surveys

Standard Survey Report

09 July, 2015

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Survey Report

WV Department of
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Company:	Statoil	Local Co-ordinate Reference:	Well North Henderson North Unit 5H - Slot North Henderson 5H
Project:	Wetzel County WV (NAD 27 UTM 17N us ft)	TVD Reference:	GL 1342.8' + KB 22' @ 1364.80usft (Orion Polaris)
Site:	North Henderson North Unit Pad	MD Reference:	GL 1342.8' + KB 22' @ 1364.80usft (Orion Polaris)
Well:	North Henderson North Unit 5H	North Reference:	Grid
Wellbore:	Sidetrack	Survey Calculation Method:	Minimum Curvature
Design:	Sidetrack Surveys	Database:	EDM 5000.1 Single User Db

Project	Wetzel County WV (NAD 27 UTM 17N us ft)		
Map System:	Universal Transverse Mercator (US Survey Fee	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Zone 17N (84 W to 78 W)		

Site	North Henderson North Unit Pad				
Site Position:		Northing:	14,414,677.53 usft	Latitude:	39.693384
From:	Map	Easting:	1,759,189.60 usft	Longitude:	-80.577782
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.27 °

Well	North Henderson North Unit 5H - Slot North Henderson 5H					
Well Position	+N/-S	0.00 usft	Northing:	14,414,692.25 usft	Latitude:	39.693424
	+E/-W	0.00 usft	Easting:	1,759,186.27 usft	Longitude:	-80.577794
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	1,342.80 usft

Wellbore	Sidetrack				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2015	6/22/2015	-8.72	67.04	52,344

Design	Sidetrack Surveys				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	640.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	314.13	

Survey Program	Date	7/9/2015			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
86.34	640.00	MS Gyro 17-1/2" Hole (Wellbore #1)	NSG-CT_csg+cent	Continuous gyro in casing + centrollers	
670.00	1,472.00	Gyros (Sidetrack)	NSG-CT_WL	Continuous north-seeking gyro on wireline	
1,513.00	15,991.00	Sperry MWD (Sidetrack)	MWD	Fixed:v2:standard declination	

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	0.00
86.34	0.45	335.53	86.34	0.31	-0.14	0.32	0.52	0.52	0.00	
179.00	0.55	332.63	179.00	1.03	-0.50	1.08	0.11	0.11	-3.13	
271.00	0.68	335.03	270.99	1.92	-0.93	2.00	0.14	0.14	2.61	
363.00	0.76	334.02	362.98	2.97	-1.43	3.09	0.09	0.09	-1.10	
455.00	0.65	334.76	454.98	3.99	-1.92	4.15	0.12	-0.12	0.80	

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Site:	North Henderson North Unit Pad	MD Reference:	GL 1342.8' + KB 22' @ 1364.80usft (Orion Polaris)
Well:	North Henderson North Unit 5H	North Reference:	Grid
Wellbore:	Sidetrack	Survey Calculation Method:	Minimum Curvature
Design:	Sidetrack Surveys	Database:	EDM 5000.1 Single User Db

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)	
547.00	0.58	333.40	546.97	4.87	-2.35	5.08	0.08	-0.08	-1.48	
640.00	0.57	338.26	639.97	5.72	-2.73	5.95	0.05	-0.01	5.23	
670.00	0.52	308.40	669.96	5.95	-2.89	6.22	0.95	-0.17	-99.53	
700.00	0.49	323.08	699.96	6.13	-3.08	6.48	0.44	-0.10	48.93	
728.00	0.70	335.74	727.96	6.39	-3.22	6.76	0.88	0.75	45.21	
760.00	0.98	315.90	759.96	6.76	-3.49	7.21	1.25	0.87	-62.00	
790.00	2.25	310.07	789.95	7.32	-4.12	8.06	4.26	4.23	-19.43	
820.00	3.98	292.52	819.90	8.10	-5.53	9.61	6.52	5.77	-58.50	
852.00	4.85	288.22	851.81	8.95	-7.84	11.86	2.91	2.72	-13.44	
883.00	5.04	285.14	882.69	9.72	-10.40	14.23	1.05	0.61	-9.94	
911.00	5.03	284.64	910.58	10.35	-12.78	16.37	0.16	-0.04	-1.79	
940.00	5.17	283.38	939.47	10.97	-15.28	18.60	0.62	0.48	-4.34	
972.00	5.35	280.14	971.33	11.57	-18.15	21.08	1.09	0.56	-10.12	
1,003.00	5.32	281.95	1,002.20	12.12	-20.98	23.49	0.55	-0.10	5.84	
1,094.00	4.69	286.74	1,092.85	14.06	-28.67	30.37	0.83	-0.69	5.26	
1,187.00	4.56	303.89	1,185.55	17.22	-35.38	37.38	1.49	-0.14	18.44	
1,280.00	4.12	331.12	1,278.30	22.21	-40.06	44.22	2.24	-0.47	29.28	
1,377.00	5.13	4.73	1,375.00	29.58	-41.38	50.30	2.93	1.04	34.65	
1,472.00	5.92	30.70	1,469.57	38.03	-38.53	54.14	2.73	0.83	27.34	
1,513.00	6.37	43.04	1,510.34	41.51	-35.90	54.67	3.40	1.10	30.10	
1,607.00	7.90	56.35	1,603.61	48.90	-26.96	53.40	2.39	1.63	14.16	
1,702.00	9.61	69.17	1,697.51	55.34	-14.11	48.66	2.72	1.80	13.49	
1,798.00	9.38	68.58	1,792.19	61.05	0.66	42.03	0.26	-0.24	-0.61	
1,893.00	10.97	68.29	1,885.70	67.22	16.26	35.13	1.67	1.67	-0.31	
1,988.00	11.91	69.03	1,978.81	74.07	33.81	27.30	1.00	0.99	0.78	
2,083.00	13.44	68.75	2,071.49	81.58	53.26	18.58	1.61	1.61	-0.29	
2,179.00	13.83	69.08	2,164.79	89.72	74.37	9.09	0.41	0.41	0.34	
2,273.00	12.04	65.47	2,256.40	97.80	93.79	0.78	2.09	-1.90	-3.84	
2,368.00	13.15	66.87	2,349.11	106.16	112.74	-7.00	1.21	1.17	1.47	
2,463.00	13.41	66.29	2,441.57	114.84	132.77	-15.33	0.31	0.27	-0.61	
2,557.00	13.58	64.27	2,532.98	124.01	152.69	-23.25	0.53	0.18	-2.15	
2,653.00	13.40	62.45	2,626.33	134.05	172.70	-30.62	0.48	-0.19	-1.90	
2,727.00	12.00	60.97	2,698.52	141.75	187.03	-35.55	1.94	-1.89	-2.00	
2,814.00	10.44	59.09	2,783.85	150.19	201.71	-40.20	1.84	-1.79	-2.16	
2,845.00	9.89	58.23	2,814.36	153.03	206.38	-41.58	1.84	-1.77	-2.77	
2,941.00	7.93	54.73	2,909.20	161.20	218.80	-44.80	2.12	-2.04	-3.65	
3,036.00	6.49	51.97	3,003.45	168.29	228.38	-46.74	1.56	-1.52	-2.91	
3,131.00	5.30	50.23	3,097.94	174.40	235.98	-47.94	1.27	-1.25	-1.83	
3,227.00	4.08	59.49	3,193.62	178.97	242.33	-49.32	1.49	-1.27	9.65	
3,323.00	3.67	55.83	3,289.40	182.43	247.81	-50.84	0.50	-0.43	-3.81	
3,419.00	2.81	50.60	3,385.25	185.65	252.17	-51.73	0.95	-0.90	-5.45	
3,514.00	1.46	75.19	3,480.18	187.44	255.14	-52.62	1.69	-1.42	25.88	

JUL 19 2018



Survey Report

WV Department of
Environmental Protection

Company:	Statoil	Local Co-ordinate Reference:	Well North Henderson North Unit 5H - Slot North Henderson 5H
Project:	Wetzel County WV (NAD 27 UTM 17N us ft)	TVD Reference:	GL 1342.8' + KB 22' @ 1364.80usft (Orion Polaris)
Site:	North Henderson North Unit Pad	MD Reference:	GL 1342.8' + KB 22' @ 1364.80usft (Orion Polaris)
Well:	North Henderson North Unit 5H	North Reference:	Grid
Wellbore:	Sidetrack	Survey Calculation Method:	Minimum Curvature
Design:	Sidetrack Surveys	Database:	EDM 5000.1 Single User Db

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)	
3,609.00	0.81	64.83	3,575.16	188.04	256.92	-53.48	0.71	-0.68	-10.91	
3,704.00	0.42	28.46	3,670.16	188.63	257.69	-53.62	0.56	-0.41	-38.28	
3,800.00	0.51	347.31	3,766.15	189.35	257.77	-53.17	0.35	0.09	-42.86	
3,894.00	0.45	312.24	3,860.15	190.01	257.40	-52.45	0.31	-0.06	-37.31	
3,989.00	0.50	304.31	3,955.15	190.49	256.78	-51.67	0.09	0.05	-8.35	
4,085.00	0.50	304.81	4,051.14	190.97	256.09	-50.84	0.00	0.00	0.52	
4,179.00	0.51	298.03	4,145.14	191.40	255.39	-50.04	0.06	0.01	-7.21	
4,273.00	1.26	160.67	4,239.13	190.62	255.36	-50.56	1.78	0.80	-146.13	
4,368.00	1.20	165.15	4,334.11	188.67	255.96	-52.35	0.12	-0.06	4.72	
4,463.00	0.88	159.92	4,429.10	187.03	256.47	-53.86	0.35	-0.34	-5.51	
4,558.00	0.71	187.66	4,524.09	185.76	256.64	-54.86	0.44	-0.18	29.20	
4,653.00	1.05	214.09	4,619.08	184.45	256.07	-55.36	0.55	0.36	27.82	
4,747.00	1.33	225.57	4,713.06	182.98	254.81	-55.49	0.39	0.30	12.21	
4,842.00	1.60	253.41	4,808.03	181.83	252.75	-54.81	0.79	0.28	29.31	
4,938.00	2.47	253.30	4,903.97	180.85	249.49	-53.15	0.91	0.91	-0.11	
5,033.00	3.56	246.25	4,998.83	179.07	244.83	-51.04	1.21	1.15	-7.42	
5,130.00	4.35	236.01	5,095.60	175.80	239.02	-49.15	1.09	0.81	-10.56	
5,235.00	5.41	212.81	5,200.23	169.42	233.03	-49.30	2.11	1.01	-22.10	
5,330.00	6.61	220.71	5,294.71	161.51	227.04	-50.50	1.53	1.26	8.32	
5,424.00	5.66	212.48	5,388.17	153.50	221.02	-51.76	1.37	-1.01	-8.76	
5,519.00	2.52	207.55	5,482.92	147.69	217.54	-53.31	3.32	-3.31	-5.19	
5,615.00	2.63	212.98	5,578.82	143.97	215.37	-54.33	0.28	0.11	5.66	
5,711.00	2.01	217.48	5,674.74	140.79	213.14	-54.96	0.67	-0.65	4.69	
5,807.00	0.72	234.24	5,770.71	139.10	211.63	-55.04	1.39	-1.34	17.46	
5,901.00	1.62	64.88	5,864.70	139.32	212.35	-55.41	2.48	0.96	-180.17	
5,996.00	2.55	51.64	5,959.64	141.20	215.22	-56.16	1.10	0.98	-13.94	
6,091.00	2.03	42.44	6,054.56	143.75	218.02	-56.39	0.67	-0.55	-9.68	
6,187.00	1.63	31.88	6,150.51	146.17	219.89	-56.05	0.54	-0.42	-11.00	
6,281.00	1.14	17.59	6,244.49	148.20	220.87	-55.35	0.63	-0.52	-15.20	
6,376.00	1.15	3.28	6,339.47	150.05	221.21	-54.30	0.30	0.01	-15.06	
6,471.00	5.83	39.72	6,434.27	154.71	224.35	-53.31	5.21	4.93	38.36	
6,567.00	12.04	45.57	6,529.06	165.48	234.63	-53.18	6.53	6.47	6.09	
6,660.00	18.28	41.33	6,618.78	183.24	251.21	-52.72	6.81	6.71	-4.56	
6,754.00	27.06	41.43	6,705.44	210.40	275.14	-50.98	9.34	9.34	0.11	
6,850.00	36.15	40.22	6,787.11	248.47	307.94	-48.02	9.49	9.47	-1.26	
6,945.00	46.69	41.06	6,858.25	296.06	348.85	-44.25	11.11	11.09	0.88	
7,040.00	58.56	38.98	6,915.82	353.84	397.22	-38.74	12.61	12.49	-2.19	
7,135.00	67.11	37.44	6,959.15	420.21	449.42	-29.98	9.11	9.00	-1.62	
7,231.00	67.04	37.04	6,996.55	490.60	502.93	-19.38	0.39	-0.07	-0.42	
7,325.00	66.60	36.40	7,033.55	559.87	554.59	-8.23	0.78	-0.47	-0.68	
7,420.00	67.04	36.83	7,070.94	629.96	606.68	3.19	0.62	0.46	0.45	
7,515.00	67.45	35.99	7,107.69	700.47	658.68	14.96	0.92	0.43	-0.88	

Company:	Statoil	Local Co-ordinate Reference:	Well North Henderson North Unit 5H - Slot North Henderson 5H
Project:	Wetzel County WV (NAD 27 UTM 17N us ft)	TVD Reference:	GL 1342.8' + KB 22' @ 1364.80usft (Orion Polaris)
Site:	North Henderson North Unit Pad	MD Reference:	GL 1342.8' + KB 22' @ 1364.80usft (Orion Polaris)
Well:	North Henderson North Unit 5H	North Reference:	Grid
Wellbore:	Sidetrack	Survey Calculation Method:	Minimum Curvature
Design:	Sidetrack Surveys	Database:	EDM 5000.1 Single User Db

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)
7,610.00	68.09	35.95	7,143.63	771.64	710.33	27.44	0.67	0.67	-0.04
7,705.00	66.85	36.26	7,180.03	842.53	762.03	39.69	1.34	-1.31	0.33
7,801.00	67.43	36.25	7,217.32	913.87	814.35	51.81	0.60	0.60	-0.01
7,895.00	67.55	33.90	7,253.32	984.93	864.24	65.47	2.31	0.13	-2.50
7,991.00	67.44	25.93	7,290.11	1,061.72	908.43	87.23	7.67	-0.11	-8.30
8,087.00	68.10	16.22	7,326.51	1,144.52	940.32	121.99	9.39	0.69	-10.11
8,182.00	69.59	7.99	7,360.84	1,231.06	958.85	168.95	8.23	1.57	-8.66
8,278.00	71.12	359.33	7,393.17	1,321.18	964.58	227.59	8.64	1.59	-9.02
8,373.00	74.64	351.73	7,421.17	1,411.60	957.45	295.66	8.49	3.71	-8.00
8,467.00	79.42	341.48	7,442.31	1,500.53	936.19	372.84	11.78	5.09	-10.90
8,562.00	83.77	332.48	7,456.22	1,586.90	899.45	459.35	10.43	4.58	-9.47
8,656.00	84.08	324.33	7,466.19	1,666.45	850.52	549.86	8.63	0.33	-8.67
8,751.00	91.64	322.31	7,469.73	1,742.52	793.85	643.50	8.24	7.96	-2.13
8,845.00	90.60	315.88	7,467.89	1,813.51	732.35	737.08	6.93	-1.11	-6.84
8,940.00	90.20	312.58	7,467.23	1,879.77	664.29	832.06	3.50	-0.42	-3.47
9,035.00	89.97	314.86	7,467.09	1,945.42	595.63	927.05	2.41	-0.24	2.40
9,130.00	89.06	314.92	7,467.89	2,012.46	528.33	1,022.04	0.96	-0.96	0.06
9,225.00	89.16	315.27	7,469.37	2,079.74	461.27	1,117.02	0.38	0.11	0.37
9,320.00	90.27	315.09	7,469.84	2,147.13	394.31	1,212.00	1.18	1.17	-0.19
9,415.00	89.40	313.73	7,470.12	2,213.60	326.45	1,306.99	1.70	-0.92	-1.43
9,507.00	89.13	312.42	7,471.30	2,276.43	259.26	1,398.97	1.45	-0.29	-1.42
9,599.00	91.78	313.60	7,470.57	2,339.18	191.99	1,490.94	3.15	2.88	1.28
9,692.00	92.79	312.78	7,466.86	2,402.78	124.24	1,583.85	1.40	1.09	-0.88
9,784.00	91.81	313.64	7,463.17	2,465.71	57.24	1,675.76	1.42	-1.07	0.93
9,876.00	90.84	314.45	7,461.04	2,529.66	-8.87	1,767.73	1.37	-1.05	0.88
9,968.00	91.24	313.87	7,459.37	2,593.74	-74.86	1,859.72	0.77	0.43	-0.63
10,061.00	89.90	314.73	7,458.44	2,658.69	-141.41	1,952.71	1.71	-1.44	0.92
10,153.00	89.87	313.44	7,458.63	2,722.69	-207.49	2,044.71	1.40	-0.03	-1.40
10,245.00	90.87	314.50	7,458.03	2,786.56	-273.70	2,136.70	1.58	1.09	1.15
10,337.00	91.84	315.54	7,455.86	2,851.62	-338.71	2,228.66	1.55	1.05	1.13
10,429.00	91.17	313.98	7,453.44	2,916.37	-404.01	2,320.62	1.84	-0.73	-1.70
10,522.00	91.92	315.30	7,450.93	2,981.69	-470.16	2,413.58	1.63	0.81	1.42
10,614.00	90.60	314.32	7,448.91	3,046.51	-535.41	2,505.55	1.79	-1.43	-1.07
10,706.00	91.01	316.22	7,447.62	3,111.86	-600.15	2,597.52	2.11	0.45	2.07
10,801.00	90.60	314.96	7,446.28	3,179.72	-666.62	2,692.48	1.39	-0.43	-1.33
10,897.00	90.77	313.17	7,445.14	3,246.48	-735.59	2,788.47	1.87	0.18	-1.86
10,993.00	89.36	315.08	7,445.03	3,313.31	-804.50	2,884.46	2.47	-1.47	1.99
11,088.00	90.57	314.94	7,445.08	3,380.50	-871.66	2,979.45	1.28	1.27	-0.15
11,183.00	91.61	316.05	7,443.28	3,448.23	-938.24	3,074.40	1.60	1.09	1.17
11,279.00	91.04	314.60	7,441.06	3,516.48	-1,005.72	3,170.35	1.62	-0.59	-1.51
11,374.00	89.76	312.87	7,440.39	3,582.15	-1,074.35	3,265.34	2.27	-1.35	-1.82

JUL 19 2018

Survey Report

WV Department of
Environmental Protection

Company:	Statoil	Local Co-ordinate Reference:	Well North Henderson North Unit 5H - Slot North Henderson 5H
Project:	Wetzel County WV (NAD 27 UTM 17N us ft)	TVD Reference:	GL 1342.8' + KB 22' @ 1364.80usft (Orion Polaris)
Site:	North Henderson North Unit Pad	MD Reference:	GL 1342.8' + KB 22' @ 1364.80usft (Orion Polaris)
Well:	North Henderson North Unit 5H	North Reference:	Grid
Wellbore:	Sidetrack	Survey Calculation Method:	Minimum Curvature
Design:	Sidetrack Surveys	Database:	EDM 5000.1 Single User Db

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)
11,470.00	90.37	311.99	7,440.29	3,646.92	-1,145.21	3,361.30	1.12	0.64	-0.92
11,565.00	89.70	313.96	7,440.23	3,711.68	-1,214.71	3,456.27	2.19	-0.71	2.07
11,660.00	90.87	315.20	7,439.75	3,778.35	-1,282.38	3,551.26	1.79	1.23	1.31
11,754.00	90.77	314.44	7,438.41	3,844.60	-1,349.04	3,645.25	0.82	-0.11	-0.81
11,848.00	90.13	313.32	7,437.67	3,909.76	-1,416.80	3,739.24	1.37	-0.68	-1.19
11,943.00	90.23	313.15	7,437.37	3,974.83	-1,486.01	3,834.23	0.21	0.11	-0.18
12,037.00	90.87	312.77	7,436.47	4,038.89	-1,554.80	3,928.20	0.79	0.68	-0.40
12,132.00	89.33	311.72	7,436.30	4,102.75	-1,625.12	4,023.15	1.96	-1.62	-1.11
12,227.00	90.54	311.88	7,436.41	4,166.07	-1,695.94	4,118.07	1.28	1.27	0.17
12,323.00	89.09	313.43	7,436.72	4,231.12	-1,766.54	4,214.03	2.21	-1.51	1.61
12,419.00	90.30	314.19	7,437.23	4,297.57	-1,835.81	4,310.03	1.49	1.26	0.79
12,514.00	91.58	314.78	7,435.68	4,364.13	-1,903.58	4,405.01	1.48	1.35	0.62
12,609.00	90.27	313.12	7,434.14	4,430.05	-1,971.96	4,499.99	2.23	-1.38	-1.75
12,705.00	91.21	313.19	7,432.90	4,495.71	-2,041.98	4,595.97	0.98	0.98	0.07
12,800.00	89.60	314.78	7,432.23	4,561.67	-2,110.33	4,690.96	2.38	-1.69	1.67
12,895.00	90.60	315.63	7,432.06	4,629.09	-2,177.27	4,785.94	1.38	1.05	0.89
12,991.00	90.97	314.21	7,430.75	4,696.87	-2,245.23	4,881.92	1.53	0.39	-1.48
13,086.00	90.17	315.56	7,429.80	4,763.90	-2,312.54	4,976.90	1.65	-0.84	1.42
13,181.00	90.94	317.00	7,428.88	4,832.56	-2,378.19	5,071.83	1.72	0.81	1.52
13,277.00	89.43	314.46	7,428.57	4,901.29	-2,445.20	5,167.78	3.08	-1.57	-2.65
13,374.00	90.81	314.89	7,428.37	4,969.49	-2,514.17	5,264.77	1.49	1.42	0.44
13,469.00	90.84	315.99	7,427.00	5,037.17	-2,580.82	5,359.74	1.16	0.03	1.16
13,565.00	91.04	314.29	7,425.43	5,105.20	-2,648.52	5,455.71	1.78	0.21	-1.77
13,659.00	88.96	315.14	7,425.43	5,171.34	-2,715.32	5,549.69	2.39	-2.21	0.90
13,755.00	89.36	314.36	7,426.83	5,238.91	-2,783.49	5,645.68	0.91	0.42	-0.81
13,850.00	90.77	314.15	7,426.73	5,305.21	-2,851.53	5,740.67	1.50	1.48	-0.22
13,945.00	89.06	313.77	7,426.87	5,371.15	-2,919.91	5,835.67	1.84	-1.80	-0.40
14,041.00	89.16	312.99	7,428.36	5,437.08	-2,989.67	5,931.65	0.82	0.10	-0.81
14,137.00	90.10	313.00	7,428.98	5,502.54	-3,059.89	6,027.63	0.98	0.98	0.01
14,232.00	90.84	312.41	7,428.20	5,566.97	-3,129.70	6,122.59	1.00	0.78	-0.62
14,325.00	89.16	314.58	7,428.20	5,630.97	-3,197.16	6,215.58	2.95	-1.81	2.33
14,419.00	90.00	313.78	7,428.89	5,696.48	-3,264.56	6,309.58	1.23	0.89	-0.85
14,514.00	91.28	315.51	7,427.83	5,763.23	-3,332.15	6,404.56	2.27	1.35	1.82
14,608.00	89.93	315.30	7,426.84	5,830.16	-3,398.14	6,498.53	1.45	-1.44	-0.22
14,703.00	90.67	313.93	7,426.34	5,896.88	-3,465.76	6,593.52	1.64	0.78	-1.44
14,799.00	90.27	315.73	7,425.55	5,964.56	-3,533.84	6,689.51	1.92	-0.42	1.87
14,894.00	91.48	316.22	7,424.10	6,032.86	-3,599.85	6,784.44	1.37	1.27	0.52
14,989.00	90.17	313.28	7,422.73	6,099.72	-3,667.30	6,879.42	3.39	-1.38	-3.09
15,083.00	91.11	312.70	7,421.68	6,163.81	-3,736.06	6,973.39	1.18	1.00	-0.62
15,179.00	90.30	313.20	7,420.50	6,229.22	-3,806.32	7,069.36	0.99	-0.84	0.52
15,273.00	91.58	311.70	7,418.96	6,292.65	-3,875.66	7,163.30	2.10	1.36	-1.60
15,369.00	90.67	312.90	7,417.07	6,357.24	-3,946.65	7,259.23	1.57	-0.95	1.25

Survey Report

Company:	Statoil	Local Co-ordinate Reference:	Well North Henderson North Unit 5H - Slot North Henderson 5H
Project:	Wetzel County WV (NAD 27 UTM 17N us ft)	TVD Reference:	GL 1342.8' + KB 22' @ 1364.80usft (Orion Polaris)
Site:	North Henderson North Unit Pad	MD Reference:	GL 1342.8' + KB 22' @ 1364.80usft (Orion Polaris)
Well:	North Henderson North Unit 5H	North Reference:	Grid
Wellbore:	Sidetrack	Survey Calculation Method:	Minimum Curvature
Design:	Sidetrack Surveys	Database:	EDM 5000.1 Single User Db

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)	
15,464.00	91.92	314.46	7,414.93	6,422.83	-4,015.34	7,354.20	2.10	1.32	1.64	
15,560.00	90.03	313.19	7,413.29	6,489.30	-4,084.58	7,450.18	2.37	-1.97	-1.32	
15,655.00	91.01	314.16	7,412.43	6,554.90	-4,153.29	7,545.17	1.45	1.03	1.02	
15,751.00	89.26	316.02	7,412.20	6,622.88	-4,221.06	7,641.15	2.66	-1.82	1.94	
15,845.00	89.80	314.88	7,412.98	6,689.86	-4,287.00	7,735.12	1.34	0.57	-1.21	
15,941.00	91.55	315.64	7,411.84	6,758.04	-4,354.56	7,831.09	1.99	1.82	0.79	
Last MWD Survey at 15941' MD										
15,991.00	92.46	316.03	7,410.09	6,793.89	-4,389.38	7,881.04	1.98	1.82	0.78	
Projection to TD at 15991' MD										

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
15,941.00	7,411.84	6,758.04	-4,354.56	Last MWD Survey at 15941' MD	
15,991.00	7,410.09	6,793.89	-4,389.38	Projection to TD at 15991' MD	

Checked By: _____ Approved By: _____ Date: _____

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Hydraulic Fracturing Fluid Product Component Information Disclosure

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Job Start Date:	4/8/2018
Job End Date:	4/22/2018
State:	West Virginia
County:	Wetzel
API Number:	47-103-03069-00-00
Operator Name:	EQT Production
Well Name and Number:	516127
Latitude:	39.69338400
Longitude:	-80.57779400
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,274
Total Base Water Volume (gal):	11,671,884
Total Base Non Water Volume:	0



Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	U.S. Well Services	Carrier/Base Fluid					
			Water	7732-18-5	100.00000	85.61450	None
AI-303	U.S. Well Services	Acid Corrosion Inhibitor					
				Listed Below			

Hydrochloric Acid (15%)	U.S. Well Services	Acidizing					
				Listed Below			
SI 1200s	U.S. Well Services	Scale Inhibitor					
				Listed Below			
Sand (Proppant)	U.S. Well Services	Proppant					
				Listed Below			
LT Flush System I	U.S. Well Services	Flush Oil					
				Listed Below			
Other Chemical (s)	Listed Above	See Trade Name (s) List					
				Listed Below			
DireCT	Newpark Drilling Fluids	Lubricant					
				Listed Below			
WFRA-405	U.S. Well Services	Friction Reducer					
				Listed Below			
BioClear 5000	U.S. Well Services	Biocide					
				Listed Below			
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Items above are Trade Names with the exception of Base Water. Items below are the individual ingredients.							
			Silica Substrate	14808-60-7	100.00000	14.07685	None
			Hydrochloric Acid	7647-01-0	15.00000	0.02824	None

			Hydrotreated Light Distillate (Petroleum)	64742-47-8	30.00000	0.02104	None
			2-Propenoic Acid, Polymer With 2-Propenamide	9003-06-9	30.00000	0.02104	None
			Hydrotreated Light Distillate (Petroleum)	64742-47-8	30.00000	0.02104	
			2-Propenoic Acid, Polymer With 2-Propenamide	9003-06-9	30.00000	0.02104	
			Hydrotreated Light Distillate (Petroleum)	64742-47-8	100.00000	0.00457	
			Hydrotreated Light Distillate (Petroleum)	64742-47-8	100.00000	0.00457	None
			2,2-Dibromo-3-Nitrilopropionamide	10222-01-2	10.00000	0.00184	None
			2,2-Dibromo-3-Nitrilopropionamide	10222-01-2	10.00000	0.00184	
			Alkyl Phosphonic Acid	Proprietary	5.00000	0.00114	
			Alkyl Phosphonic Acid	Proprietary	5.00000	0.00114	None
			Benzensulfonic Acid, Dodecyl-, Compound With 2-Aminoethanol (1:1)	26836-07-7	7.00000	0.00031	
			Benzensulfonic Acid, Dodecyl-, Compound With 2-Aminoethanol (1:1)	26836-07-7	7.00000	0.00031	None
			2,2,4-Trimethylpentane-1,3-Diol Monoisobutyrate	25265-77-4	7.00000	0.00031	None
			2,2,4-Trimethylpentane-1,3-Diol Monoisobutyrate	25265-77-4	7.00000	0.00031	
			Ammonia	7664-41-7	0.50000	0.00011	None
			Ammonia	7664-41-7	0.50000	0.00011	
			Ethylene Glycol	107-21-1	40.00000	0.00004	None
			Butyl Cellosolve	111-76-2	20.00000	0.00002	None
			Formic Acid	64-18-6	20.00000	0.00002	None
			Cinnamaldehyde	104-55-2	20.00000	0.00002	None
			Polyether	Proprietary	10.00000	0.00001	None

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			Acetophenone, Thiourea, Formaldehyde Polymer	68527-49-1	5.00000	0.00000	None
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* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

*** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided. Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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Well Operator's Report of Well Work



Well Number: 516127

API: 47 - 103 - 03069

Submission: Initial Amended

Notes: Please note that 3 Injection Tests each were performed for Stimulation stages 1 and 2.

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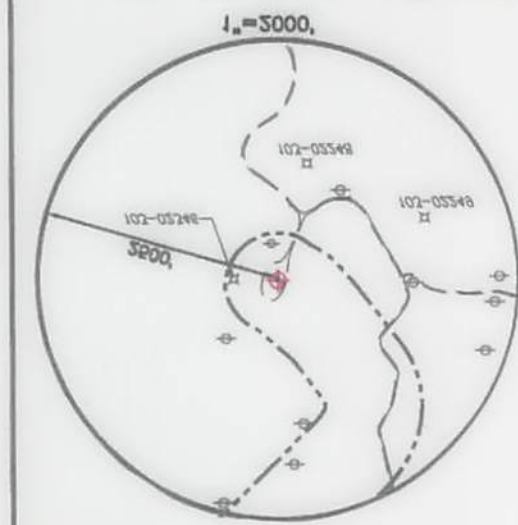
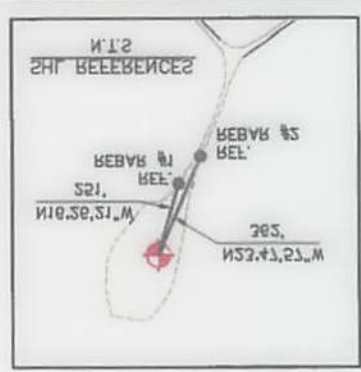
CITY: BRIDGEPORT STATE: MS ZIP CODE: 38220 CITY: BRIDGEPORT STATE: MS ZIP CODE: 38220
 ADDRESS: 112 PROFESSIONAL BL BOX 580 ADDRESS: 112 PROFESSIONAL BL BOX 580
 MET OPERATOR: EDI PRODUCTION COMPANY DESIGNATED AGENT: BEX C BVA

LABOR FORMATION: MASCETT ESTIMATED DEPTH: 1'411,
 COMPLETE BONE & ABANDON STEEL OUT & BERGE OTHER CHANGE (SPECIAL) V2-DWIGT
 DRIFT DRIFT DEEPER BEDROCK FRACTURE OR STIMULATE BONE OFF OLD FORMATION BEFORE/NEW FORMATION
 OIL & GAS BOUQUA OWNER: MAXINE HENDERSON VOLUME: SEE MINERAL INTEREST TABLE
 SURFACE OWNER: HOWARD HENDERSON VOLUME: 1527
 DISTRICT: CENTER COUNTY: METZEL QUADRANGLE: TULLOCH
 MAPPED: TOMER WEST LIVING FORK ESH CREEK ELEVATION: 1245.80 (V2-DWIGT)
 MET TYPE: OIL WATER DISCHARGE PRODUCTION DEEP GAS FLUID INJECTION STORAGE SHALLOM

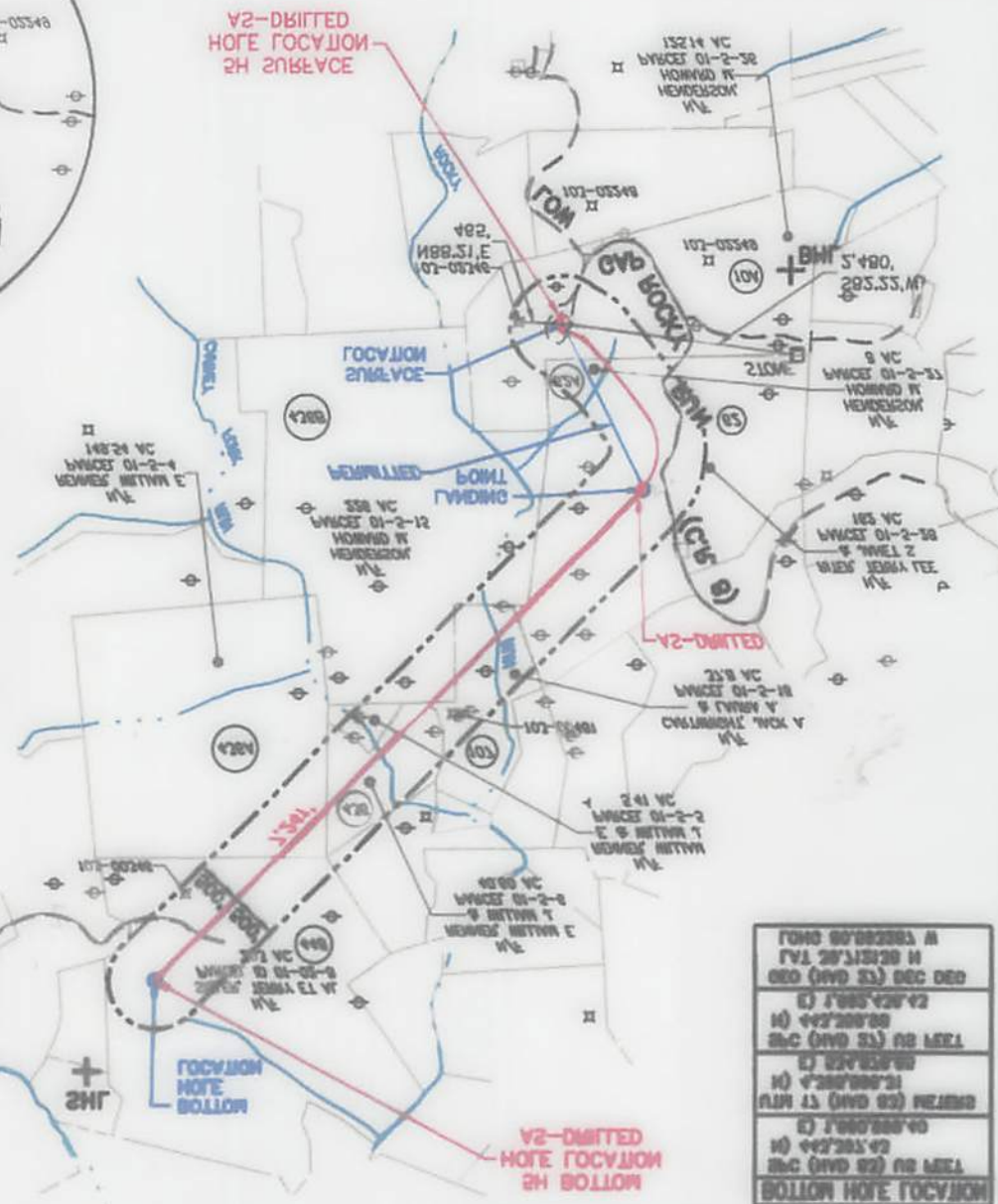
CHARGE/STATION: M1 52034 ELEVATION: (MAD 88' N2 E1) STATE COUNTY PERMIT
 801 21TH STREET SOURCE OF SURVEY GRADE CBS V2 74 103 0300
 OFFICE OF OIL & GAS ACCURACY: 1/500 OPERATOR'S MET #: 2H V2-DWIGT
 MADEB MIN. DEGREE OF SCALE: 1"=5000, DATE: JUL 2 2017 NORTH HENDERSON NORTH UNIT

DEPARTMENT OF ENVIRONMENTAL PROTECTION
 REGULATIONS ISSUED AND PRESCRIBED BY THE
 THE INFORMATION RECEIVED BY LAW AND
 MY KNOWLEDGE AND BELIEF AND SHOWS AT
 THAT THIS PLAN IS CORRECT TO THE BEST OF
 THE UNDERSIGNED HEREBY CERTIFY

448	01-5-8	122'02	SHREVE ESTATE INC
428A	01-2-4	148'24	WILL RYAN HOME #4 #
428	01-2-8	40'00	MITCHEL E BOWEN #4 #
428B	01-2-12	338'00	CHAMBER E HOMER #4 #
101	01-2-18	213'32	SHREVE ESTATE INC #4 #
83	01-2-38	130'00	JERRY WILES #4 #
83A	01-2-38	8'00	MAXINE HENDERSON
104	01-2-38	152'14	MAXINE HENDERSON
HENDERSON	HENDERSON	VOLUME	MINERAL OWNERSHIP
TRACT	PARCEL	CROSS	TAX
MINERAL	TAX	MAP	TAX



- GENERAL NOTES:
1. THE BOUNDARY LINES SHOWN HEREON ARE BASED ON RECORD DEED PLATS AND TAX MAPS BEST FIT TO FOUND FIELD EVIDENCE AND SURVEY PHOTOS.
 2. THERE ARE NO WATER METS OR INDIVIDUAL PARCELS VCLUTG BOUNDARY SURVEY OF THE THIS PLAN DOES NOT REPRESENT AN
 3. DELEGATED SURVEY WITHIN 320. OF
 4. THERE ARE NO EXISTING OCCUPIED PROPOSED MET
 5. THERE ARE NO EXISTING OCCUPIED PROPOSED MET
 6. THERE ARE NO INVALE ABOUT MET/IND BOND BEBEVANCE OR LAKE THAN 100, FROM PERENNIAL STREAM



- LEGEND
- ROAD
 - SURFACE TRACT BOUNDARY
 - SURFACE LINE
 - 800, 810MM
 - V2-DWIGT
 - WATERED OIL METS
 - LAC-38 METS
 - EXISTING OIL METS
 - PROPOSED OIL MET

FORM 80724842 A
 PLAT 287131320 N
 DEC (MAD 33) DEC DEC
 (C) 1987/1972
 (M) 442720700
 (S)C (MAD 33) NO MET
 (C) 287131320
 (M) 442720700
 (S)C (MAD 33) NO MET
 (C) 1987/1972
 (M) 442720700
 (S)C (MAD 33) NO MET
 (C) 1987/1972
 (M) 442720700
 (S)C (MAD 33) NO MET

FORM 80723334 A
 PLAT 287131320 N
 DEC (MAD 33) DEC DEC
 (C) 1987/1972
 (M) 442720700
 (S)C (MAD 33) NO MET
 (C) 287131320
 (M) 442720700
 (S)C (MAD 33) NO MET
 (C) 1987/1972
 (M) 442720700
 (S)C (MAD 33) NO MET

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 (M) 442720700
 (S)C (MAD 33) NO MET
 (C) 287131320
 (M) 442720700
 (S)C (MAD 33) NO MET
 (C) 1987/1972
 (M) 442720700
 (S)C (MAD 33) NO MET

EDI PRODUCTION COMPANY
 NORTH HENDERSON
 NORTH HENDERSON NORTH 2H

2H Griding: 28.45.20

2H Griding: 28.42.00

10'111

2H Griding: 80.32.00

12'45

2H Griding: 80.35.30

2'401

2'412