

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

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APR 02 2020

WV Department of  
Environmental Protection

API 47-051-01996 County Marshall District Clay  
Quad Glen Easton Pad Name Hicks Pad A Field/Pool Name \_\_\_\_\_  
Farm name Thomas E. Hicks Well Number Hicks M20H  
Operator (as registered with the OOG) Chevron Appalachia, LLC (49449935)  
Address 700 Cherrington Parkway City Coraopolis State PA Zip 15108

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 501929.210 Easting 1626642.440  
Landing Point of Curve Northing 500158.640 Easting 1625983.900  
Bottom Hole Northing 489676.440 Easting 1634404.210

Elevation (ft) 1161' 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

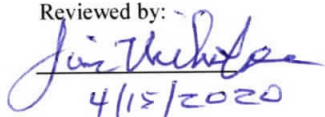
Drilling Media Surface hole  Air  Mud  Fresh Water Intermediate hole  Air  Mud  Fresh Water  Brine  
Production hole  Air  Mud  Fresh Water  Brine

Mud Type(s) and Additive(s)  
Synthetic  
barite, fluid loss, emulsifiers, rheological controls

Date permit issued 4/4/2018 Date drilling commenced 9/16/2018 Date drilling ceased 9/9/2019  
Date completion activities began 10/18/2019 Date completion activities ceased 3/20/2020  
Verbal plugging (Y/N) N Date permission granted \_\_\_\_\_ Granted by \_\_\_\_\_

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

Freshwater depth(s) ft n/a Open mine(s) (Y/N) depths N  
Salt water depth(s) ft n/a Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 698' & 1290' Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

Reviewed by:   
4/15/2020

API 47-051-01996

Farm name Thomas E. Hicks

Well number Hicks M20H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	26"	20"	84'	N	X-52 / 78.67		Y
Surface	17-1/2"	13-3/8"	516'	N	J-55 / 54.50		Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2787'	N	L-80 / 40		Y
Intermediate 2							
Intermediate 3							
Production	8-1/2"	5-1/2"	20717'	N	P-110EC / 20		Y
Tubing							
Packer type and depth set							

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Comment Details \_\_\_\_\_

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CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	Bulk Cement					Surface	9
Surface	Class A	419	15.6	1.20	503	Surface	8
Coal							
Intermediate 1	Class A	675	15.6	1.19	803	Surface	8
Intermediate 2							
Intermediate 3							
Production	Class A	3390	15.0	1.23	4162	Surface	8
Tubing							

Drillers TD (ft) 20743'

Loggers TD (ft) 20743'

Deepest formation penetrated Marcellus

Plug back to (ft) \_\_\_\_\_

Plug back procedure \_\_\_\_\_

Kick off depth (ft) 5857'

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) on shoe track with stop collar and (1) per joint over coupling to surface.

Intermediate: (1) on shoe track with stop collar and (1) per 3 joints over coupling.

Production: (1) centralizer every joint in the lateral and curve and (1) every other joint from KOP to surface.

WAS WELL COMPLETED AS SHOT HOLE  Yes  No

DETAILS See attached Perforation and Stimulation reports.

WAS WELL COMPLETED OPEN HOLE?  Yes  No

DETAILS \_\_\_\_\_

WERE TRACERS USED  Yes  No

TYPE OF TRACER(S) USED \_\_\_\_\_





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PERFORATION RECORD					
Stage No.	Perforation Date	Perforated From TMD Ft.	Perforated To TMD Ft.	Number of Perforations	Formation(s)
1	12/7/2019	20473	20575	47	Marcellus
2	12/8/2019	20270	20430	47	Marcellus
3	12/9/2019	20070	20230	47	Marcellus
4	12/9/2019	19870	20030	47	Marcellus
5	12/9/2019	19670	19830	47	Marcellus
6	12/10/2019	19470	19630	47	Marcellus
7	12/10/2019	19270	19430	47	Marcellus
8	12/10/2019	19070	19230	47	Marcellus
9	12/11/2019	18870	19030	47	Marcellus
10	12/11/2019	18670	18830	47	Marcellus
11	12/11/2019	18470	18630	47	Marcellus
12	12/12/2019	18270	18430	47	Marcellus
13	12/12/2019	18070	18230	47	Marcellus
14	12/13/2019	17870	18030	47	Marcellus
15	12/13/2019	17670	17830	47	Marcellus
16	12/13/2019	17470	17630	47	Marcellus
17	12/14/2019	17270	17430	47	Marcellus
18	12/14/2019	17070	17230	47	Marcellus
19	12/14/2019	16870	17030	47	Marcellus
20	12/15/2019	16670	16830	47	Marcellus
21	12/15/2019	16470	16630	47	Marcellus
22	12/15/2019	16270	16430	47	Marcellus
23	12/16/2019	16070	16230	47	Marcellus
24	12/17/2019	15870	16030	47	Marcellus
25	12/17/2019	15670	15830	47	Marcellus
26	12/17/2019	15470	15630	47	Marcellus
27	12/18/2019	15270	15430	47	Marcellus
28	12/19/2019	15070	15230	47	Marcellus
29	12/19/2019	14870	15030	47	Marcellus
30	12/20/2019	14670	14830	47	Marcellus
31	12/20/2019	14470	14630	47	Marcellus
32	12/20/2019	14270	14430	47	Marcellus
33	12/20/2019	14070	14230	47	Marcellus
34	12/21/2019	13870	14030	47	Marcellus
35	12/21/2019	13670	13830	47	Marcellus
36	12/21/2019	13470	13630	47	Marcellus
37	12/21/2019	13270	13430	47	Marcellus
38	12/21/2019	13070	13230	47	Marcellus
39	12/22/2019	12870	13030	47	Marcellus
40	12/22/2019	12670	12830	47	Marcellus

12/22/2019 Please insert additional copies of this page if additional rows/stages are needed.

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STIMULATION INFORMATION / STAGE								
Complete a separate record for each stimulation stage. (Please insert additional lines for additional stages or additional pages as applicable).								
Stg No.	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	12/7/2019	91.8	8904	6210	3986	400015	9509	n/a
2	12/8/2019	99.3	9159	5498	4812	400655	10263	n/a
3	12/9/2019	98	9221	3042	5414	401846	10078	n/a
4	12/9/2019	92.8	8878	4453	5647	399944	10024	n/a
5	12/9/2019	99.9	9187	5410	5165	401619	10037	n/a
6	12/10/2019	99.1	8839	4241	5170	400316	9989	n/a
7	12/10/2019	99.9	8823	6006	4869	400281	9889	n/a
8	12/10/2019	99.2	9086	5248	4796	400808	10061	n/a
9	12/11/2019	99.8	9020	5509	4721	401405	10006	n/a
10	12/11/2019	96.7	9037	4990	4821	401446	10075	n/a
11	12/11/2019	100.1	9123	5831	5023	400418	9904	n/a
12	12/12/2019	99.5	8961	5474	4894	400761	9882	n/a
13	12/12/2019	99.8	9053	4468	4889	401464	9805	n/a
14	12/13/2019	100.2	9126	5151	4886	400847	9857	n/a
15	12/13/2019	98.4	8958	5118	4708	400699	9962	n/a
16	12/13/2019	99.5	8888	4643	4958	400943	9793	n/a
17	12/14/2019	99.9	8875	4975	4580	401446	9900	n/a
18	12/14/2019	99.7	8662	5576	4917	401147	9829	n/a
19	12/14/2019	100.4	8703	5717	4878	401704	9873	n/a
20	12/15/2019	98.1	8740	5207	4764	400680	9858	n/a
21	12/15/2019	99.1	8705	3869	4819	400515	9894	n/a
22	12/15/2019	99.2	8479	6303	4778	400336	9865	n/a
23	12/16/2019	99.1	8758	4451	4767	400398	11488	n/a
24	12/17/2019	99.6	8505	5865	4814	400114	9710	n/a
25	12/17/2019	98.3	8757	5119	4909	400882	9857	n/a
26	12/17/2019	99.7	8499	4952	5017	400237	9646	n/a
27	12/18/2019	99.6	8269	4044	4897	400768	9703	n/a
28	12/19/2019	99.7	8870	5238	4849	400299	9723	n/a
29	12/19/2019	100.1	8642	4523	4557	400356	9662	n/a
30	12/20/2019	100.2	8495	4290	4845	401037	9660	n/a
31	12/20/2019	100.1	8937	5365	4511	402270	9681	n/a
32	12/20/2019	100.8	9022	5814	4676	401917	9664	n/a
33	12/20/2019	99.8	8533	5426	4597	400308	9559	n/a
34	12/21/2019	100.2	8586	4269	4845	400347	9627	n/a
35	12/21/2019	99.5	8465	4878	4884	402404	10738	n/a
36	12/21/2019	100.2	8698	5678	4673	401733	9546	n/a
37	12/21/2019	100.3	8806	5307	5155	400403	9521	n/a
38	12/21/2019	99.8	8468	5726	5279	400426	9572	n/a
39	12/22/2019	100.2	8652	6181	4987	400958	9556	n/a
40	12/22/2019	99.8	8661	5912	5068	400645	9514	n/a





API: 47-051-01996

Farm Name: Thomas E. Hicks

Well Number: Hicks M20H

Lithology/Tops	MD Top	MD Base	TVD Top	TVD Base	Describe rock type and record quantity and type of fluid (Freshwater, Brine, Oil, Gas, H2S, Etc.)
<b>Pittsburgh Coal</b>	698	704	676	682	coal
<b>Conemaugh</b>	704	1096	704	1096	shale & siltstone transitioning to shale & limestone at base; gas shows
<b>Allegheny</b>	1096	1304	1096	1304	limey siltstones and shales; oil show
<b>Clairion Coal</b>	1290	1,297	1290	1297	coal
<b>Salt Sands</b>	1,304	1,545	1304	1544	interbedded sands and shales; gas shows
<b>Mauch Chunk</b>	1,545	1,666	1544	1665	sandy/silty shales
<b>Big Lime</b>	1,666	1,733	1665	1731	siltstone transitioning to limestone base
<b>Burgoon</b>	1,733	1,952	1731	1947	sandstone
<b>Weir Shale</b>	1,952	2,070	1947	2070	shale; brine
<b>CHQA</b>	6347	6446	6061	6137	siltstone/shale, gas shows
<b>MDLX</b>	6446	6482	6137	6162	shale
<b>PYAN</b>	6482	6534	6162	6196	siltstone/shale, gas show
<b>BRKT</b>	6534	6575	6196	6220	shale
<b>BRKT.a</b>	6575	6598	6220	6233	shale
<b>TLLY</b>	6598	6682	6233	6272	limestone, gas shows
<b>S5</b>	6682	6962	6272	6345	shale, gas shows
<b>S3</b>	6962	7051	6345	6363	shale, gas shows
<b>STFD</b>	7051	7060	6363	6364	limestone
<b>S2.B</b>	7060	7147	6364	6373	shale, gas shows
<b>S2.A</b>	7147		6373		shale, gas shows
<b>TD</b>	20743				

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<b>DRILLING CONTRACTORS</b>		
<b>Driller</b>	<b>Driller</b>	<b>Driller</b>
Name Rocky Mountain Drilling	Name Highlands Drilling LLC	Name Precision Drilling Holdings Company
Address 185 North Vernal Avenue, Suite 2	Address 900 Virginia Street East	Address 10350 Richmond Avenue, Suite 700
City - State - Zip Vernal, UT 84078	City - State - Zip Charlestown, WV 25301	City - State - Zip Houston, TX 77042

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# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/7/2019
Job End Date:	12/30/2019
State:	West Virginia
County:	Marshall
API Number:	47-051-01996-00-00
Operator Name:	Chevron USA Inc.
Well Name and Number:	Hicks M20H
Latitude:	39.87168300
Longitude:	-80.85136400
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,512
Total Base Water Volume (gal):	27,607,356
Total Base Non Water Volume:	0

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## 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	Chevron	Carrier/Base Fluid	Water	7732-18-5	100.00000	88.37671	None
Sand	Upp	Proppant	Crystalline Silica in the form of Quartz	14808-60-7	99.90000	10.45154	None
FR-11	Upp	Friction reducer	Water	7732-18-5	55.00000	0.03379	None
			CHEMPLEX-Polymer_00019	Trade Secret	25.00000	0.01536	None
			Hydrotreated Petroleum Distillate	84742-47-8	25.00000	0.01536	None
			Sodium Chloride	7647-14-5	15.00000	0.00921	None
			Alcohol Ethoxyate Surfactants	68551-12-2	3.00000	0.00184	None
			Oleic Acid Diethanolamide	93-83-4	3.00000	0.00184	None
			Ammonium Chloride	12125-02-9	2.00000	0.00123	None
			Polyoxyethylene Sorbitan Monooleate	9005-65-6	1.00000	0.00061	None
HCL Acid (7.5%)	Upp	Acidizing	Hydrochloric Acid	7647-01-0	7.50000	0.07799	None
K-BAC 1020	Upp	Bioocide					

Submitted 1/27/20

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Scale Hib PE-18	Upp	Scale Inhibitor	Polyethylene glycol	25322-68-3	50.00000	0.01041	None
			Water	7732-18-5	30.00000	0.00625	None
			2,2-Dibromo-3-nitropropionamide	102222-01-2	21.00000	0.00437	None
			Ethylene glycol	107-21-1	40.00000	0.00707	None
			Proprietary Scale Inhibitor	Proprietary	30.00000	0.00530	None
ZL	Upp	Iron Control Agent	Ethylene Glycol	107-21-1	20.00000	0.00413	None
			Ammonium glycolate	35249-89-9	20.00000	0.00413	None
			Hydroxyacetic acid	79-14-1	5.00000	0.00103	None
Unitib G	Upp	Acid Inhibitor	Butyl diglycol	112-34-5	75.00000	0.00061	None
			Alcohol, C10-16, ethoxylated	88002-97-1	50.00000	0.00041	None
			Methanol	67-56-1	5.00000	0.00004	None
			Thiourea	62-56-6	1.00000	0.00001	None
			Formaldehyde	50-00-0	1.00000	0.00001	None
Unigel 5F	Upp	Viscosifier	Guar Gum	9000-30-0	99.00000	0.00003	None
AP Breaker	Upp	Gel Breaker	Ammonium Persulfate	7727-54-0	100.00000	0.00000	None
Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.							
Other Chemical(s)	Listed Above	See Trade Name(s) List	Water	7732-18-5	55.00000	0.03379	
			Hydrotreated Petroleum Distillate	64742-47-8	25.00000	0.01536	
			Polyethylene glycol	25322-68-3	50.00000	0.01041	
			Sodium Chloride	7647-14-5	15.00000	0.00921	
			Ethylene glycol	107-21-1	40.00000	0.00707	
			Water	7732-18-5	30.00000	0.00625	
			Ammonium glycolate	35249-89-9	20.00000	0.00413	
			Alcohol Ethoxylate Surfactants	88551-12-2	3.00000	0.00184	
			Oleic Acid Diethanolamide	93-83-4	3.00000	0.00184	
			Ammonium Chloride	12125-02-9	2.00000	0.00123	
			Hydroxyacetic acid	79-14-1	5.00000	0.00103	
			Polyoxyethylene Sorbitan Monoleate	9005-65-6	1.00000	0.00061	
			Alcohol, C10-16, ethoxylated	68002-97-1	50.00000	0.00041	
			Methanol	67-56-1	5.00000	0.00004	
			Formaldehyde	50-00-0	1.00000	0.00001	
			Thiourea	62-56-6	1.00000	0.00001	

\* Total Water Volume sources may include fresh water, produced water, and/or recycled water  
\*\* Information is based on the maximum potential for concentration and thus the total may be over 100%

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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REFERENCE WELLPATH IDENTIFICATION  
 Operator CHEVRON APPALACHIA, LLC  
 Area Marshall County, WV  
 Field Marshall County  
 Facility Hicks Pad  
 Slot Slot #20  
 Well Hicks M20H  
 Wellbore Hicks M20H AWB  
 Wellpath Hicks M20H AWP Proj: 20743  
 Sidetrack (none)

REPORT SETUP INFORMATION

Projection : NAD83 / Lambert West Virginia SP, Northern Zone (4701), US feet  
 North Refe TRUE  
 Scale 0.99995  
 Convergence: 0.78° West  
 Software S WellArchitect® 5.1  
 User Edsarvar  
 Report Ger 13/Sep/2019 at 10:40  
 Database/s: WA\_MPL\_EASTERNUS\_Defn/ev120.xml

WELLPATH Local	North	Local East	Easting	Northing	Latitude	Longitude
[ft]	[ft]	[US ft]	[US ft]	[US ft]		
Slot Locatic	-60.31	74.61	1626642	501929.2	39°52'18.0"	80°43'04.912"W
Facility Ref:			1626569	501990.5	39°52'18.6"	80°43'05.869"W
Field Refer:			1644569	516963.8	39°54'48.9"	80°39'17.476"W

WELLPATH DATUM

Calculation Minimum curvature  
 Horizontal Slot  
 Vertical Ref: Precision 560 (RKB)  
 MD Refere: Precision 560 (RKB)  
 Field Vertic Mean Sea Level  
 Precision 5.25.00ft  
 Precision 5.1165.00ft  
 Precision 5.25.00ft  
 Section Ori N 0.00, E 0.00 ft  
 Section Azi 140.43°

WELLPATH DATA † = interpolated/extrapolated station

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure	Dis Closure	Dir DLS	Build Rate	Turn Rate
[ft]	[°]	[°]	[ft]	[ft]	[ft]	[ft]	[US ft]	[US ft]			[ft]	[°]	[°/100ft]	[°/100ft]	[°/100ft]
†	0	0	346.93	0	0	0	0	1626642	501929.2	39°52'18.0"	80°43'04.9	0	0	0	0



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1568	6.7	167.72	1566.82	14.84	-24.47	-6.31	1626636	501904.8	39°52'17.8"	80°43'04.9"	25.27	194.464	1.29	-0.23	-10.81
1600	6.84	167.97	1598.6	18.19	-28.16	-5.52	1626637	501901.1	39°52'17.7"	80°43'04.9"	28.69	191.087	0.45	0.44	0.78
1631	6.77	168.09	1629.38	21.44	-31.75	-4.76	1626637	501897.5	39°52'17.7"	80°43'04.9"	32.1	188.518	0.23	-0.23	0.39
1662	6.39	170.33	1660.18	24.56	-35.24	-4.09	1626638	501894.3	39°52'17.7"	80°43'04.9"	35.47	186.618	1.48	-1.23	7.23
1693	5.94	171.01	1691	27.43	-38.52	-3.55	1626638	501890.7	39°52'17.6"	80°43'04.9"	38.69	185.262	1.47	-1.45	2.19
1724	6.26	174.14	1721.82	30.22	-41.79	-3.12	1626639	501887.5	39°52'17.6"	80°43'04.9"	41.9	184.277	1.49	1.03	10.1
1756	5.86	170.45	1753.64	33.09	-45.13	-2.68	1626639	501884.1	39°52'17.6"	80°43'04.9"	45.21	183.393	1.74	-1.25	-11.53
1787	6.11	175.04	1784.47	35.82	-48.34	-2.27	1626640	501880.9	39°52'17.5"	80°43'04.9"	48.39	182.689	1.74	0.81	14.81
1818	6.58	173.8	1815.28	38.66	-51.75	-1.94	1626640	501877.5	39°52'17.5"	80°43'04.9"	51.78	182.143	1.58	1.52	-4
1849	6.44	174.21	1846.08	41.58	-55.24	-1.57	1626640	501874.3	39°52'17.5"	80°43'04.9"	55.27	181.627	0.48	-0.45	1.32
1881	6.76	176.59	1877.87	44.6	-58.91	-1.28	1626640	501870.3	39°52'17.4"	80°43'04.9"	58.92	181.241	1.32	1	7.44
1912	6.88	177.08	1908.65	47.56	-62.58	-1.07	1626641	501866.7	39°52'17.4"	80°43'04.9"	62.59	180.982	0.43	0.39	1.58
1943	7.02	180.66	1939.42	50.5	-66.33	-1	1626641	501862.9	39°52'17.4"	80°43'04.9"	66.34	180.864	1.47	0.45	11.55
1974	7.08	182.78	1970.19	53.35	-70.14	-1.11	1626640	501859.1	39°52'17.3"	80°43'04.9"	70.14	180.91	0.86	0.19	6.84
2005	7.24	178.68	2000.95	56.3	-74	-1.16	1626640	501855.2	39°52'17.3"	80°43'04.9"	74.01	180.9	1.73	0.52	-13.23
2036	7.23	178.11	2031.7	59.38	-77.9	-1.05	1626640	501851.3	39°52'17.2"	80°43'04.9"	77.91	180.774	0.23	-0.03	-1.84
2095	7.09	176.05	2090.24	65.28	-85.24	-0.68	1626641	501844.3	39°52'17.2"	80°43'04.9"	85.24	180.457	0.5	-0.24	-3.49
2185	9.52	201.89	2179.32	73.35	-97.7	-3.07	1626638	501831.6	39°52'17.0"	80°43'05.0"	97.74	181.801	4.88	2.7	28.71
2274	12.05	217.93	2266.76	78.88	-111.86	-11.53	1626629	501817.5	39°52'16.9"	80°43'05.0"	112.45	185.885	4.39	2.84	18.02
2364	11.61	220.56	2354.85	82.47	-126.15	-23.19	1626618	501803.4	39°52'16.8"	80°43'05.2"	128.26	190.418	0.77	-0.49	2.92
2453	12.12	223.25	2441.95	85.17	-139.76	-35.42	1626605	501790.3	39°52'16.6"	80°43'05.3"	144.18	194.221	0.85	0.57	3.02
2543	13.16	226.23	2529.77	87.1	-153.73	-49.29	1626591	501776.2	39°52'16.5"	80°43'05.5"	161.44	197.778	1.36	1.16	3.31
2633	15.85	231.21	2616.89	87.68	-168.52	-66.27	1626574	501761.6	39°52'16.3"	80°43'05.7"	181.08	201.469	3.29	2.99	5.53
2722	18.02	237.98	2702.04	85.71	-183.43	-87.42	1626553	501731.9	39°52'16.2"	80°43'06.0"	203.2	205.482	3.29	2.44	7.61
2812	20.15	238.89	2787.09	81.6	-198.83	-112.5	1626527	501715.8	39°52'15.9"	80°43'06.3"	228.45	209.502	2.39	2.37	1.01
2901	21.25	238.04	2870.34	77.21	-215.28	-139.31	1626500	501715.8	39°52'15.9"	80°43'06.6"	256.43	212.907	1.28	1.24	-0.96
2990	21.45	235.25	2953.23	73.7	-233.1	-166.37	1626473	501698.4	39°52'15.7"	80°43'07.0"	286.38	215.516	1.16	0.22	-3.13
3080	21.48	232.24	3037	71.8	-252.57	-192.91	1626446	501679.3	39°52'15.5"	80°43'07.3"	317.82	217.373	1.22	0.03	-3.34
3170	21.4	229.2	3120.77	71.63	-273.39	-218.37	1626420	501658.8	39°52'15.3"	80°43'07.7"	349.9	218.617	1.24	-0.09	-3.38
3259	21.12	230.95	3203.71	71.84	-294.1	-243.12	1626395	501638.5	39°52'15.1"	80°43'08.0"	381.58	219.579	0.78	-0.31	1.97
3348	21.59	235.14	3286.61	70.35	-313.56	-269.01	1626369	501619.3	39°52'14.9"	80°43'08.3"	413.14	220.626	1.79	0.53	4.71
3438	21.57	233.6	3370.3	68.07	-332.84	-295.91	1626342	501600.4	39°52'14.7"	80°43'08.7"	445.36	221.638	0.63	-0.02	-1.71
3527	21.06	231.6	3453.21	66.84	-352.48	-321.61	1626316	501581.1	39°52'14.5"	80°43'09.0"	477.16	222.378	1	-0.57	-2.25
3706	21.41	234.19	3620.06	64.04	-391.58	-373.31	1626264	501542.8	39°52'14.1"	80°43'09.7"	541.01	223.632	0.56	0.2	1.45
3796	21.58	233.78	3703.8	62	-410.97	-399.98	1626237	501523.7	39°52'13.9"	80°43'10.0"	573.48	224.224	0.25	0.19	-0.46
3886	21.12	232.9	3787.63	60.33	-430.53	-426.27	1626210	501504.5	39°52'13.8"	80°43'10.3"	605.86	224.715	0.62	-0.51	-0.98
3976	20.02	232.75	3871.89	59.01	-449.64	-451.47	1626185	501485.8	39°52'13.6"	80°43'10.7"	637.18	225.116	1.22	-1.22	-0.17
4065	19.26	232.11	3955.71	57.96	-467.87	-475.18	1626161	501467.8	39°52'13.4"	80°43'11.0"	666.86	225.444	0.89	-0.85	-0.72
4155	21.65	232.44	4040.03	56.94	-487.11	-500.06	1626136	501448.9	39°52'13.2"	80°43'11.3"	698.09	225.751	2.66	2.66	0.37
4245	21.48	232.26	4123.73	55.83	-507.32	-526.25	1626109	501429.1	39°52'13.0"	80°43'11.6"	730.96	226.049	0.2	-0.19	-0.2
4334	21.11	231.57	4206.65	55	-527.25	-551.69	1626084	501409.5	39°52'12.8"	80°43'11.9"	763.12	226.297	0.5	-0.42	-0.78
4513	22.16	233.98	4373.04	52.26	-567.14	-604.25	1626031	501370.3	39°52'12.4"	80°43'12.6"	828.71	226.814	0.77	0.59	1.35
4692	21.62	234.56	4539.14	47.8	-606.12	-658.42	1625976	501332.1	39°52'12.0"	80°43'13.3"	894.93	227.368	0.32	-0.3	0.32
4782	21.38	237.96	4622.88	44.45	-624.44	-685.83	1625948	501314.2	39°52'11.8"	80°43'13.7"	927.52	227.683	1.41	-0.27	3.78
4871	21.64	237.83	4705.68	40.21	-641.78	-713.48	1625920	501297.2	39°52'11.7"	80°43'14.0"	959.65	228.028	0.3	0.29	-0.15
4961	21.6	237.27	4789.35	36.1	-659.57	-741.46	1625892	501279.8	39°52'11.5"	80°43'14.4"	992.37	228.345	0.23	-0.04	-0.62
5051	21.02	236.82	4873.19	32.33	-677.36	-768.9	1625864	501262.4	39°52'11.3"	80°43'14.7"	1024.71	228.622	0.67	-0.64	-0.5
5140	22.31	237.4	4955.9	28.51	-695.2	-796.5	1625837	501244.9	39°52'11.1"	80°43'15.1"	1057.22	228.885	1.47	1.45	0.65

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5230	22.54	237.88	5039.1	24.2	-713.58	-825.5	1625807	501226.9	39°52'11.0	80°43'15.4	1091.16	229.159	0.33	0.26	0.53
5319	22.68	236.78	5121.26	20.09	-732.05	-854.3	1625778	501208.9	39°52'10.8	80°43'15.8	1125.04	229.407	0.5	0.16	-1.24
5408	22.96	233.41	5203.3	17.29	-751.79	-882.59	1625750	501189.5	39°52'10.6	80°43'16.2	1159.38	229.576	1.5	0.31	-3.79
5498	23.1	230.38	5286.13	16.39	-773.52	-910.29	1625722	501168.1	39°52'10.4	80°43'16.5	1194.55	229.644	1.33	0.16	-3.37
5587	23.11	229.95	5367.99	16.55	-795.89	-937.11	1625695	501146.1	39°52'10.1	80°43'16.9	1229.47	229.659	0.19	0.01	-0.48
5677	22.33	230.53	5451	16.67	-818.12	-963.82	1625668	501124.3	39°52'09.9	80°43'17.2	1264.23	229.674	0.9	-0.87	0.64
5766	22.1	234.24	5533.4	15.53	-838.66	-990.46	1625641	501104.1	39°52'09.7	80°43'17.6	1297.83	229.744	1.6	-0.26	4.17
5856	23.13	235.97	5616.48	12.7	-858.44	-1018.85	1625612	501084.7	39°52'09.5	80°43'17.9	1332.29	229.884	1.36	1.14	1.92
5945	18.46	208.9	5699.85	16.19	-880.62	-1040.21	1625590	501062.8	39°52'09.3	80°43'18.2	1362.91	229.749	11.87	-5.25	-30.42
6035	19.91	193.62	5784.9	30.61	-908.01	-1050.71	1625580	501035.6	39°52'09.0	80°43'18.3	1388.7	229.167	5.79	1.61	-16.98
6124	22.72	184.5	5867.83	52.05	-939.89	-1055.63	1625574	501003.8	39°52'08.7	80°43'18.4	1413.42	228.32	4.87	3.16	-10.25
6214	28.19	182.69	5949.06	80.29	-978.48	-1057.99	1625571	500965.2	39°52'08.3	80°43'18.4	1441.1	227.236	6.14	6.08	-2.01
6303	33.66	174.9	6025.41	116.23	-1024.1	-1056.79	1625572	500919.6	39°52'07.9	80°43'18.4	1471.59	225.9	7.61	6.15	-8.75
6393	39.93	162.94	6097.54	163.58	-1076.67	-1046.07	1625582	500866.9	39°52'07.4	80°43'18.3	1501.16	224.174	10.55	6.97	-13.29
6482	46.52	156.68	6162.39	221.06	-1133.72	-1024.88	1625602	500809.5	39°52'06.8	80°43'18.0	1528.3	222.113	8.83	7.4	-7.03
6572	55.46	156.4	6218.98	288.18	-1197.8	-997.05	1625629	500745.1	39°52'06.2	80°43'17.6	1558.48	219.774	9.94	9.93	-0.31
6661	64.38	157.68	6263.54	361.89	-1268.66	-967.08	1625658	500673.8	39°52'05.5	80°43'17.3	1595.22	217.318	10.1	10.02	1.44
6750	74.93	154.1	6294.45	442.21	-1344.67	-932.96	1625691	500597.4	39°52'04.7	80°43'16.8	1636.63	214.754	12.44	11.85	-4.02
6840	75.91	147.97	6317.13	527.78	-1420.83	-890.8	1625733	500520.7	39°52'04.0	80°43'16.3	1676.98	212.086	6.68	1.09	-6.81
6929	77.06	144.4	6337.93	613.87	-1492.71	-842.64	1625780	500448.1	39°52'03.3	80°43'15.7	1714.12	209.445	4.11	1.29	-4.01
7018	78.66	144	6356.65	700.68	-1563.27	-791.75	1625830	500376.9	39°52'02.6	80°43'15.0	1752.34	206.861	1.85	1.8	-0.45
7108	84.82	144.13	6369.57	789.53	-1635.35	-739.5	1625881	500304.1	39°52'01.8	80°43'14.3	1794.78	204.332	6.85	6.84	0.14
7197	87.75	144.7	6375.34	878.12	-1707.57	-687.83	1625932	500231.2	39°52'01.1	80°43'13.7	1840.9	201.94	3.35	3.29	0.64
7287	89.45	142.59	6377.54	967.94	-1780.03	-634.5	1625984	500158.3	39°52'00.4	80°43'13.0	1889.73	199.619	3.01	1.89	-2.34
7376	88.83	144.7	6378.87	1056.78	-1851.69	-581.75	1626036	500085.7	39°51'59.7	80°43'12.3	1940.93	197.441	2.47	2.47	2.37
7466	89.29	148.21	6380.35	1146.26	-1926.68	-532.03	1626084	500010.3	39°51'59.0	80°43'11.7	1998.79	195.437	3.93	3.93	3.9
7555	90.8	146.63	6380.28	1234.59	-2001.67	-484.11	1626131	499934.4	39°51'58.2	80°43'11.1	2059.38	193.596	2.46	1.7	-1.78
7645	88.92	142.76	6380.5	1324.32	-2075.1	-432.11	1626182	499860.3	39°51'57.5	80°43'10.4	2119.61	191.763	4.78	-2.09	-4.3
7734	89.66	139.26	6381.6	1413.3	-2144.26	-376.12	1626237	499790.4	39°51'56.8	80°43'09.7	2177	189.949	4.02	0.83	-3.93
7823	88.92	138.66	6382.71	1502.26	-2211.38	-317.69	1626295	499722.5	39°51'56.2	80°43'08.9	2234.09	188.175	1.07	-0.83	-0.67
7913	90.31	136.53	6383.31	1592.14	-2277.83	-257.01	1626355	499655.2	39°51'55.5	80°43'08.2	2292.28	186.437	2.83	1.54	-2.37
8002	88.55	138.8	6384.2	1681.02	-2343.61	-197.08	1626414	499588.6	39°51'54.8	80°43'07.4	2351.88	184.807	3.23	-1.98	2.55
8092	90.49	137.03	6384.95	1770.93	-2410.4	-136.76	1626473	499521.3	39°51'54.2	80°43'06.6	2414.27	183.247	2.92	2.16	-1.97
8181	87.23	136.05	6386.72	1859.69	-2474.98	-75.57	1626533	499455.6	39°51'53.5	80°43'05.8	2476.13	181.749	3.82	-3.66	-1.1
8271	89.51	138.44	6389.28	1949.5	-2541.02	-14.5	1626593	499388.7	39°51'52.9	80°43'05.0	2541.07	180.327	3.67	2.53	2.66
8360	90.37	136.08	6389.38	2038.36	-2606.38	45.89	1626653	499322.6	39°51'52.3	80°43'04.3	2606.79	178.991	2.82	0.97	-2.65
8449	89.66	137.77	6389.35	2127.19	-2671.39	106.68	1626713	499256.8	39°51'51.6	80°43'03.5	2673.52	177.713	2.06	-0.8	1.9
8539	87.91	136.11	6391.26	2217	-2737.13	168.11	1626773	499190.2	39°51'51.0	80°43'02.7	2742.29	176.486	2.68	1.94	-1.84
8628	89.88	139.52	6392.98	2305.87	-2803.05	227.85	1626832	499123.5	39°51'50.3	80°43'01.9	2812.3	175.353	4.42	2.21	3.83
8718	89.97	133.64	6393.1	2395.63	-2868.4	289.68	1626893	499057.3	39°51'49.7	80°43'01.1	2882.99	174.233	6.53	0.1	-6.53
8807	91.17	138.89	6392.21	2484.35	-2932.67	351.18	1626954	498992.2	39°51'49.0	80°43'00.4	2953.63	173.171	6.05	1.35	5.9
8897	88.95	137.26	6392.12	2574.27	-2999.63	411.31	1627013	498924.4	39°51'48.4	80°42'59.6	3027.7	172.192	3.06	-2.47	-1.81
8986	89.2	137.32	6393.55	2663.12	-3065.02	471.67	1627072	498858.2	39°51'47.7	80°42'58.8	3101.1	171.251	0.29	0.28	0.07
9076	88.98	136.75	6394.98	2752.95	-3130.87	533	1627133	498791.6	39°51'47.1	80°42'58.0	3175.91	170.339	0.68	-0.24	-0.63
9165	88.61	138.31	6396.85	2841.82	-3196.5	593.08	1627192	498725.1	39°51'46.4	80°42'57.3	3251.06	169.489	1.8	-0.42	1.75
9255	89.91	141.49	6398.02	2931.79	-3265.33	651.04	1627249	498655.5	39°51'45.7	80°42'56.5	3329.6	168.724	3.82	1.44	3.53
9344	88.8	139.81	6399.02	3020.78	-3334.14	707.46	1627305	498586.3	39°51'45.1	80°42'55.8	3408.37	168.02	2.26	-1.25	-1.89
9433	88.65	139.82	6401	3109.75	-3402.12	764.88	1627361	498517.2	39°51'44.4	80°42'55.1	3487.04	167.329	0.17	-0.17	0.01



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9523	89.32	141.76	6402.59	3199.73	-3471.84	821.76	1627417	498446.7	39°51'43.7.80°42'54.3	3567.77	166.684	2.28	0.74	2.16
9612	88.86	142.73	6404.01	3288.68	-3542.2	876.24	1627471	498375.6	39°51'43.0.80°42'53.6	3648.97	166.105	1.21	-0.52	1.09
9701	89.6	144.95	6405.2	3377.51	-3614.04	928.75	1627522	498303.1	39°51'42.3.80°42'53.0	3731.47	165.588	2.63	0.83	2.49
9791	89.6	148.13	6405.83	3466.98	-3689.11	978.36	1627571	498227.4	39°51'41.6.80°42'52.3	3816.64	165.147	3.53	0	3.53
9880	90.34	146.54	6405.88	3555.33	-3764.03	1026.4	1627618	498151.8	39°51'40.8.80°42'51.7	3901.47	164.747	1.97	0.83	-1.79
9970	86.83	143.22	6408.1	3645.01	-3837.61	1078.14	1627668	498077.5	39°51'40.1.80°42'51.0	3986.18	164.308	5.37	-3.9	-3.69
10059	89.91	148.01	6410.63	3733.57	-3911	1128.36	1627718	498003.5	39°51'39.4.80°42'50.4	4070.52	163.907	6.4	3.46	5.38
10149	90.37	145.89	6410.41	3822.98	-3986.43	1177.44	1627766	497927.4	39°51'38.6.80°42'49.8	4156.68	163.545	2.41	0.51	-2.36
10238	87.29	142.1	6412.23	3911.76	-4058.39	1229.73	1627817	497854.7	39°51'37.9.80°42'49.1	4240.61	163.143	5.49	-3.46	-4.26
10327	83.87	138.9	6419.09	4000.47	-4126.85	1286.15	1627872	497785.5	39°51'37.2.80°42'48.4	4322.62	162.69	5.25	-3.84	-3.6
10417	88.71	139.13	6424.91	4090.23	-4194.62	1345.04	1627930	497717	39°51'36.6.80°42'47.6	4405	162.221	5.38	5.38	0.26
10506	89.2	138.61	6426.54	4179.18	-4261.65	1403.57	1627988	497649.1	39°51'35.9.80°42'46.9	4486.83	161.771	0.8	0.55	-0.58
10596	89.05	138.95	6427.91	4269.13	-4329.34	1462.87	1628046	497580.7	39°51'35.2.80°42'46.1	4569.81	161.33	0.41	-0.17	0.38
10685	89.23	138.77	6429.25	4358.09	-4396.36	1521.42	1628104	497512.9	39°51'34.6.80°42'45.4	4652.17	160.911	0.29	0.2	-0.2
10774	90.4	139.08	6429.53	4447.06	-4463.45	1579.89	1628162	497445	39°51'33.9.80°42'44.6	4734.81	160.508	1.36	1.31	0.35
10864	89.69	139.29	6429.46	4537.04	-4531.56	1638.72	1628219	497376.1	39°51'33.2.80°42'43.8	4818.76	160.119	0.82	-0.79	0.23
10953	89.2	139.21	6430.32	4626.01	-4598.98	1696.81	1628277	497307.9	39°51'32.6.80°42'43.1	4902.02	159.748	0.56	-0.55	-0.09
11043	89.45	139.2	6431.38	4715.99	-4667.11	1755.61	1628335	497239	39°51'31.9.80°42'42.3	4986.39	159.385	0.28	0.28	-0.01
11132	91.02	138.89	6431.02	4804.96	-4734.32	1813.94	1628392	497171	39°51'31.2.80°42'41.6	5069.93	159.036	1.8	1.76	-0.35
11222	89.57	138.75	6430.56	4894.92	-4802.06	1873.2	1628450	497102.5	39°51'30.6.80°42'40.8	5154.48	158.69	1.62	-1.61	-0.16
11311	89.23	138.67	6431.49	4983.87	-4868.93	1931.92	1628508	497034.8	39°51'29.9.80°42'40.1	5238.2	158.357	0.39	-0.38	-0.09
11400	89.51	138.82	6432.47	5072.83	-4935.83	1990.61	1628566	496967.1	39°51'29.2.80°42'39.3	5322.12	158.036	0.36	0.31	0.17
11489	89.69	139.26	6433.09	5161.8	-5003.04	2048.95	1628623	496899.1	39°51'28.6.80°42'38.6	5406.35	157.729	0.53	0.2	0.49
11579	89.08	138.5	6434.05	5251.76	-5070.84	2108.13	1628682	496830.5	39°51'27.9.80°42'37.8	5491.59	157.426	1.08	-0.68	-0.84
11668	89.29	138.83	6435.32	5340.71	-5137.65	2166.91	1628739	496762.9	39°51'27.2.80°42'37.1	5575.93	157.131	0.44	0.24	0.37
11757	89.51	139.03	6436.25	5429.67	-5204.75	2225.38	1628797	496695	39°51'26.6.80°42'36.3	5660.54	156.85	0.33	0.25	0.22
11847	90.03	138.43	6436.61	5519.63	-5272.39	2284.74	1628855	496626.6	39°51'25.9.80°42'35.6	5746.14	156.571	0.88	0.58	-0.67
11936	89.32	138.38	6437.12	5608.58	-5338.95	2343.82	1628914	496559.3	39°51'25.2.80°42'34.8	5830.77	156.298	0.8	-0.8	-0.06
12026	89.26	138.82	6438.23	5698.52	-5406.45	2403.33	1628972	496491	39°51'24.6.80°42'34.0	5916.57	156.033	0.49	-0.07	0.49
12115	89.45	141.96	6439.24	5787.51	-5475.01	2460.07	1629028	496421.6	39°51'23.9.80°42'33.3	6002.3	155.804	3.53	0.21	3.53
12204	90.15	141.83	6439.55	5876.48	-5545.04	2514.99	1629082	496350.9	39°51'23.2.80°42'32.6	6088.73	155.603	0.8	0.79	-0.15
12294	90.09	142.77	6439.36	5966.43	-5616.25	2570.02	1629136	496278.9	39°51'22.5.80°42'31.9	6176.35	155.411	1.05	-0.07	1.04
12383	90.18	142.04	6439.15	6055.37	-5686.77	2624.32	1629189	496207.7	39°51'21.8.80°42'31.2	6263.1	155.228	0.83	0.1	-0.82
12473	89.66	141.2	6439.27	6145.35	-5757.32	2680.2	1629244	496136.4	39°51'21.1.80°42'30.5	6350.6	155.037	1.1	-0.58	-0.93
12562	90.03	141.57	6439.51	6234.34	-5826.86	2735.74	1629299	496066.1	39°51'20.4.80°42'29.8	6437.12	154.85	0.59	0.42	0.42
12652	90.18	142.34	6439.35	6324.31	-5897.73	2791.21	1629353	495994.5	39°51'19.7.80°42'29.1	6524.88	154.673	0.87	0.17	0.86
12741	90.37	142.56	6438.92	6413.25	-5968.29	2845.45	1629407	495923.2	39°51'19.0.80°42'28.4	6611.89	154.51	0.33	0.21	0.25
12830	90.34	142.09	6438.37	6502.2	-6038.74	2899.84	1629460	495852	39°51'18.3.80°42'27.7	6698.91	154.349	0.53	-0.03	-0.53
12919	89.78	141.6	6438.28	6591.17	-6108.72	2954.82	1629514	495781.3	39°51'17.6.80°42'27.0	6785.83	154.187	0.84	-0.63	-0.55
13009	90.15	142.67	6438.33	6681.13	-6179.77	3010.07	1629568	495709.5	39°51'16.9.80°42'26.3	6873.87	154.03	1.26	0.41	1.19
13098	90.18	141.76	6438.08	6770.09	-6250.11	3064.6	1629622	495638.5	39°51'16.2.80°42'25.6	6961	153.88	1.02	0.03	-1.02
13188	89.38	141.57	6438.42	6860.06	-6320.7	3120.42	1629677	495567.1	39°51'15.5.80°42'24.9	7048.99	153.725	0.91	-0.89	-0.21
13277	88.8	141.95	6439.84	6949.03	-6390.6	3175.5	1629731	495496.5	39°51'14.9.80°42'24.1	7136.07	153.577	0.78	-0.65	0.43
13367	88.55	141.85	6441.92	7038.97	-6461.4	3231.02	1629785	495424.9	39°51'14.2.80°42'23.4	7224.21	153.433	0.3	-0.28	-0.11
13456	88.92	142.22	6443.88	7127.92	-6531.55	3285.75	1629839	495354.1	39°51'13.5.80°42'22.7	7311.45	153.295	0.59	0.42	0.42
13545	88.98	142.16	6445.51	7216.86	-6601.85	3340.31	1629893	495283	39°51'12.8.80°42'22.0	7398.79	153.162	0.1	0.07	-0.07
13635	88.49	141.89	6447.5	7306.8	-6672.78	3395.67	1629947	495211.4	39°51'12.1.80°42'21.3	7487.09	153.029	0.62	-0.54	-0.3
13724	88.12	142.11	6450.13	7395.73	-6742.88	3450.44	1630001	495140.5	39°51'11.4.80°42'20.6	7574.43	152.9	0.48	-0.42	0.25

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13814	88.52	141.91	6452.77	7485.66	-6813.78	3505.81	1630055	495068.9	39°51'10.7"	80°42'19.9"	7662.79	152.773	0.5	0.44	-0.22
13903	89.01	141.75	6454.69	7574.61	-6883.73	3560.8	1630109	494998.2	39°51'10.0"	80°42'19.2"	7750.17	152.648	0.58	0.55	-0.18
13993	89.42	142	6455.92	7664.57	-6954.53	3616.36	1630164	494926.7	39°51'09.3"	80°42'18.5"	7838.59	152.526	0.53	0.46	0.28
14082	89.26	142.26	6456.95	7753.53	-7024.78	3670.99	1630218	494855.7	39°51'08.6"	80°42'17.8"	7926.14	152.409	0.34	-0.18	0.29
14172	89.57	142.1	6457.87	7843.48	-7095.87	3726.18	1630272	494783.8	39°51'07.9"	80°42'17.1"	8014.72	152.295	0.39	0.34	-0.18
14261	89.38	141.46	6458.68	7932.45	-7165.79	3781.24	1630326	494713.2	39°51'07.2"	80°42'16.4"	8102.24	152.18	0.75	-0.21	-0.72
14351	89.29	141.77	6459.73	8022.43	-7236.33	3837.12	1630381	494641.9	39°51'06.5"	80°42'15.7"	8190.72	152.065	0.36	-0.1	0.34
14440	90.34	141.08	6460.01	8111.41	-7305.91	3892.61	1630435	494571.6	39°51'05.8"	80°42'15.0"	8278.21	151.951	1.41	1.18	-0.78
14530	89.35	139.05	6460.26	8201.4	-7374.91	3950.38	1630492	494501.8	39°51'05.1"	80°42'14.2"	8366.29	151.824	2.51	-1.1	-2.26
14620	89.72	139.43	6460.99	8291.38	-7443.08	4009.14	1630550	494432.8	39°51'04.4"	80°42'13.5"	8454.15	151.691	0.59	0.41	0.42
14709	89.26	138.93	6461.78	8380.35	-7510.43	4067.31	1630607	494364.7	39°51'03.8"	80°42'12.7"	8541.05	151.562	0.76	-0.52	-0.56
14798	89.75	138.69	6462.55	8469.31	-7577.4	4125.92	1630665	494297	39°51'03.1"	80°42'12.0"	8627.88	151.432	0.61	0.55	-0.27
14888	89.72	139.13	6462.96	8559.28	-7645.23	4185.07	1630723	494228.3	39°51'02.5"	80°42'11.2"	8715.76	151.303	0.49	-0.03	0.49
14977	89.35	138.55	6463.69	8648.24	-7712.24	4243.65	1630781	494160.6	39°51'01.8"	80°42'10.5"	8802.68	151.178	0.77	-0.42	-0.65
15067	89.63	139.1	6464.49	8738.2	-7779.98	4302.9	1630839	494092	39°51'01.1"	80°42'09.7"	8890.61	151.054	0.69	0.31	0.61
15157	89.48	138.73	6465.19	8828.17	-7847.81	4362.04	1630897	494023.4	39°51'00.4"	80°42'08.9"	8978.62	150.933	0.44	-0.17	-0.41
15246	89.85	139.5	6465.71	8917.14	-7915.1	4420.29	1630955	493955.3	39°50'59.8"	80°42'08.2"	9065.75	150.818	0.96	0.42	0.87
15336	89.85	139.44	6465.94	9007.13	-7983.5	4478.78	1631012	493886.1	39°50'59.1"	80°42'07.4"	9154	150.707	0.07	0	-0.07
15426	89.66	138.88	6466.33	9097.11	-8051.59	4537.63	1631070	493817.3	39°50'58.4"	80°42'06.7"	9242.2	150.596	0.66	-0.21	-0.62
15515	89.29	138.83	6467.14	9186.07	-8118.61	4596.19	1631128	493749.5	39°50'57.8"	80°42'05.9"	9329.35	150.484	0.42	-0.42	-0.06
15605	89.85	139.38	6467.82	9276.04	-8186.64	4655.11	1631186	493680.6	39°50'57.1"	80°42'05.2"	9417.59	150.376	0.87	0.62	0.61
15695	89.66	139.36	6468.2	9366.03	-8254.94	4713.71	1631244	493611.6	39°50'56.4"	80°42'04.4"	9505.95	150.273	0.21	-0.21	-0.02
15784	89.78	139.42	6468.64	9455.01	-8322.5	4771.64	1631301	493543.2	39°50'55.8"	80°42'03.7"	9593.37	150.173	0.15	0.13	0.07
15874	89.45	140.15	6469.24	9545	-8391.23	4829.75	1631358	493473.7	39°50'55.1"	80°42'02.9"	9681.9	150.077	0.89	-0.37	0.81
15964	89.54	140.44	6470.04	9635	-8460.47	4887.24	1631414	493403.7	39°50'54.4"	80°42'02.2"	9770.6	149.987	0.34	0.1	0.32
16053	89.45	140.2	6470.82	9724	-8528.96	4944.07	1631470	493334.5	39°50'53.7"	80°42'01.5"	9858.35	149.9	0.29	-0.1	-0.27
16143	89.72	140.7	6471.47	9813.99	-8598.36	5001.37	1631527	493264.3	39°50'53.0"	80°42'00.7"	9947.13	149.815	0.63	0.3	0.56
16233	89.75	140.16	6471.89	9903.99	-8667.73	5058.71	1631583	493194.1	39°50'52.3"	80°42'00.0"	10035.94	149.731	0.6	0.03	-0.6
16322	89.75	140.54	6472.28	9992.99	-8736.26	5115.5	1631639	493124.9	39°50'51.7"	80°41'59.3"	10123.76	149.649	0.43	0	0.43
16412	89.51	139.99	6472.86	10082.99	-8805.46	5173.02	1631695	493054.9	39°50'51.0"	80°41'58.5"	10212.56	149.567	0.67	-0.27	-0.61
16501	89.6	139.81	6473.55	10171.98	-8873.54	5230.35	1631752	492986	39°50'50.3"	80°41'57.8"	10300.31	149.484	0.23	0.1	-0.2
16590	89.51	140.35	6474.24	10260.98	-8941.8	5287.46	1631808	492917	39°50'49.6"	80°41'57.1"	10388.12	149.403	0.62	-0.1	0.61
16680	90	140.11	6474.63	10350.97	-9010.97	5345.03	1631865	492847.1	39°50'49.0"	80°41'56.3"	10476.97	149.325	0.61	0.54	-0.27
16769	89.85	139.58	6474.74	10439.97	-9078.99	5402.43	1631921	492778.3	39°50'48.3"	80°41'55.6"	10564.77	149.245	0.62	-0.17	-0.6
16859	89.69	139.69	6475.1	10529.96	-9147.57	5460.71	1631978	492708.9	39°50'47.6"	80°41'54.9"	10653.52	149.165	0.22	-0.18	0.12
16948	89.72	140.32	6475.56	10618.96	-9215.75	5517.92	1632035	492640	39°50'46.9"	80°41'54.1"	10741.39	149.089	0.71	0.03	0.71
17038	89.54	140	6476.14	10708.95	-9284.85	5575.57	1632091	492570.1	39°50'46.2"	80°41'53.4"	10830.3	149.015	0.41	-0.2	-0.36
17127	89.57	139.96	6476.83	10797.95	-9353.01	5632.8	1632148	492501.2	39°50'45.6"	80°41'52.6"	10918.21	148.942	0.06	0.03	-0.04
17216	89.82	140.85	6477.31	10886.95	-9421.59	5689.53	1632203	492431.8	39°50'44.9"	80°41'51.9"	11006.23	148.873	1.04	0.28	1
17306	89.26	139.91	6478.03	10976.94	-9490.91	5746.92	1632260	492361.8	39°50'44.2"	80°41'51.2"	11095.24	148.804	1.22	-0.62	-1.04
17396	89.51	139.82	6479.91	11066.93	-9559.71	5804.93	1632317	492292.2	39°50'43.5"	80°41'50.4"	11184.15	148.733	0.3	0.28	-0.1
17485	89.32	139.83	6479.91	11155.92	-9627.71	5862.34	1632373	492223.4	39°50'42.9"	80°41'49.7"	11272.08	148.663	0.21	-0.21	0.01
17574	89.35	139.82	6480.94	11244.91	-9695.71	5919.75	1632430	492154.6	39°50'42.2"	80°41'49.0"	11360.03	148.594	0.04	0.03	-0.01
17664	89.26	139.77	6482.03	11334.9	-9764.44	5977.84	1632487	492085.1	39°50'41.5"	80°41'48.2"	11448.97	148.525	0.11	-0.1	-0.06
17753	89.51	140.55	6482.99	11423.89	-9832.78	6034.86	1632543	492016	39°50'40.8"	80°41'47.5"	11537.03	148.461	0.92	0.28	0.88
17842	89.42	140.05	6483.82	11512.89	-9901.25	6091.7	1632599	491946.8	39°50'40.2"	80°41'46.8"	11625.13	148.398	0.57	-0.1	-0.56
17932	89.32	139.77	6484.81	11602.88	-9970.1	6149.66	1632656	491877.2	39°50'39.5"	80°41'46.0"	11714.14	148.333	0.33	-0.11	-0.31
18021	89.29	140.04	6485.89	11691.87	-10038.2	6206.98	1632712	491808.3	39°50'38.8"	80°41'45.3"	11802.18	148.27	0.31	-0.03	0.3

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String/Dian Start MD	End MD	Interval	Start TVD	End TVD	Start N/S	Start E/W	End N/S	End E/W	Ref Wellbore: Hicks M20H AWB	Ref Wellpath: Hicks M20H AWP Proj: 20743					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)							
18111	89.42	139.92	6486.9	11781.86	-10107.1	6264.85	1632769	491738.6	39°50'38.1	80°41'44.5	11891.24	148.207	0.2	0.14	-0.13
18200	89.42	139.98	6487.8	11870.85	-10175.2	6322.11	1632826	491669.7	39°50'37.4	80°41'43.8	11979.32	148.146	0.07	0	0.07
18290	89.54	139.66	6488.62	11960.84	-10244	6380.18	1632883	491600.2	39°50'36.8	80°41'43.1	12068.38	148.084	0.38	0.13	-0.36
18379	89.2	139.95	6489.59	12049.83	-10312	6437.61	1632939	491531.5	39°50'36.1	80°41'42.3	12156.45	148.024	0.5	-0.38	0.33
18468	89.26	140.14	6490.79	12138.82	-10380.2	6494.76	1632996	491462.5	39°50'35.4	80°41'41.6	12244.59	147.966	0.22	0.07	0.21
18558	89.08	140.21	6492.09	12228.81	-10449.3	6552.4	1633052	491392.6	39°50'34.7	80°41'40.9	12333.75	147.91	0.21	-0.2	0.08
18647	89.26	140	6493.38	12317.8	-10517.6	6609.47	1633108	491323.3	39°50'34.1	80°41'40.1	12421.93	147.854	0.31	0.2	-0.24
18736	89.08	140.23	6494.67	12406.79	-10585.9	6666.54	1633165	491254.5	39°50'33.4	80°41'39.4	12510.11	147.799	0.33	-0.2	0.26
18825	89.35	140.1	6495.89	12495.78	-10654.2	6723.55	1633221	491185.4	39°50'32.7	80°41'38.7	12598.32	147.745	0.34	0.3	-0.15
18915	89.54	141.26	6496.76	12585.77	-10723.8	6780.57	1633277	491115	39°50'32.0	80°41'37.9	12687.64	147.695	1.31	0.21	1.29
19004	89.48	141.13	6497.53	12674.76	-10793.2	6836.34	1633331	491044.9	39°50'31.3	80°41'37.2	12776.07	147.65	0.16	-0.07	-0.15
19093	89.35	140.81	6498.43	12763.75	-10862.3	6892.38	1633387	490975	39°50'30.7	80°41'36.5	12864.46	147.604	0.39	-0.15	-0.36
19183	89.42	140.89	6499.4	12853.75	-10932.1	6949.2	1633442	490904.5	39°50'30.0	80°41'35.8	12953.84	147.557	0.12	0.08	0.09
19273	89.45	141.04	6500.29	12943.74	-11002	7005.88	1633498	490833.8	39°50'29.3	80°41'35.0	13043.24	147.512	0.17	0.03	0.17
19362	89.57	141.15	6501.05	13032.73	-11071.2	7061.77	1633553	490763.8	39°50'28.6	80°41'34.3	13131.68	147.468	0.18	0.13	0.12
19451	89.29	141.06	6501.93	13121.72	-11140.5	7117.65	1633608	490693.8	39°50'27.9	80°41'33.6	13220.13	147.426	0.33	-0.31	-0.1
19540	89.35	141.22	6502.99	13210.7	-11209.8	7173.49	1633663	490623.8	39°50'27.2	80°41'32.9	13308.6	147.384	0.19	0.07	0.18
19630	89.45	140.97	6503.93	13300.69	-11279.8	7230.01	1633718	490553	39°50'26.5	80°41'32.2	13398.05	147.341	0.3	0.11	-0.28
19719	89.38	141.22	6504.84	13389.68	-11349.1	7285.9	1633773	490483	39°50'25.8	80°41'31.5	13486.52	147.3	0.29	-0.08	0.28
19809	89.63	140.77	6505.62	13479.68	-11419	7342.55	1633829	490412.3	39°50'25.1	80°41'30.7	13575.98	147.259	0.57	0.28	-0.5
19899	89.45	141.3	6506.34	13569.67	-11489	7399.14	1633885	490341.6	39°50'24.5	80°41'30.0	13665.45	147.218	0.62	-0.2	0.59
19988	89.45	141.09	6507.2	13658.65	-11558.4	7454.91	1633940	490271.5	39°50'23.8	80°41'29.3	13753.96	147.179	0.24	0	-0.24
20078	89.45	141.03	6508.06	13748.65	-11628.4	7511.47	1633995	490200.7	39°50'23.1	80°41'28.6	13843.44	147.139	0.07	0	-0.07
20168	89.48	141.08	6508.9	13838.64	-11698.4	7568.04	1634051	490129.9	39°50'22.4	80°41'27.8	13932.94	147.1	0.06	0.03	0.06
20257	89.45	141.1	6509.73	13927.63	-11767.6	7623.94	1634106	490059.9	39°50'21.7	80°41'27.1	14021.45	147.062	0.04	-0.03	0.02
20347	89.45	141.48	6510.6	14017.61	-11837.8	7680.22	1634161	489989	39°50'21.0	80°41'26.4	14110.99	147.025	0.42	0	0.42
20437	89.38	141.3	6511.51	14107.59	-11908.2	7736.38	1634216	489917.9	39°50'20.3	80°41'25.7	14200.55	146.989	0.21	-0.08	-0.2
20526	89.45	141.5	6512.42	14196.58	-11977.7	7791.9	1634271	489847.6	39°50'19.6	80°41'25.0	14289.13	146.955	0.24	0.08	0.22
20616	89.45	141.28	6513.29	14286.56	-12048	7848.06	1634326	489776.5	39°50'18.9	80°41'24.3	14378.7	146.92	0.24	0	-0.24
20705	89.45	141.2	6514.14	14375.55	-12117.4	7903.78	1634381	489706.4	39°50'18.2	80°41'23.5	14467.26	146.885	0.09	0	-0.09
20743	89.45	141.2	6514.51	14413.54	-12147	7927.59	1634404	489676.4	39°50'18.0	80°41'23.2	14505.07	146.87	0	0	0

Name	TVD	North	East	Grid East	Grid North	Latitude	Longitude	Shape	Comment
(ft)	(ft)	(ft)	(ft)	(ft)	(US ft)	(US ft)			
TARGETS									
Hicks M20H	6370.85	-1595.02	-794.79	1625826	500345.2	39°52'02.2	80°43'15.1	point	

Hicks Pad L	6385	-7607.46	6649.75	1633188	494232.7	39°51'02.8"80°41'39.6"	polygon
Hicks Pad L	6385	-2761.24	1421.21	1628026	499149.1	39°51'50.7"80°42'46.6"	polygon
Hicks Pad -	6500	-11073.1	5878.52	1632370	490778	39°50'28.6"80°41'49.5"	polygon
Hicks M201	6504.84	-12152.5	7929.34	1634406	489671	39°50'17.9"80°41'23.2"	point

WELLPATH COMPOSITION Ref Wellbore: Hicks M20H AWB Ref Wellpath: Hicks M20H AWP Proj: 20743'  
 Log Name/ Start MD End MD Pos Unc Model

	[ft]	[ft]	
01_SDI Kee	25	442.78	SDI Keeper v1.04
03_APS EM	442.78	2036	OWSG MWD rev2 + IFR1 + Multi-Station Correction
04_BH AT C	2036	20705	OWSG MWD rev2 + IFR1 + Multi-Station Correction
Projection	20705	20743	Blind Drilling (std)

COMMENTS

Wellpath general comments

API: 47-051-01996-0000  
 BH Job #: 109910108-A  
 Rig: Precision 560  
 Duration: 9/1/2019-9/10/2019  
 SDI Keeper <17-1/2> (100'-441.78')"  
 APS EM+MagVar MSA <12-1/4> (442.78')(570'-2036')"  
 BH AT Curve+MagVar MSA <8-1/2> (2036')(2095'-20705')"  
 Projected MD at TD: 20743'

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 Office of Oil and Gas  
 APR 02 2020  
 WV Department of  
 Environmental Protection



**Jackie M. Scholar**  
Regulatory Reporting Coordinator

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Office of Oil and Gas

APR 02 2020

WV Department of  
Environmental Protection

March 27, 2020

**CERTIFIED MAIL: 7018 1830 0000 6083 3585**

WV DEP  
Office of Oil and Gas  
601 – 57<sup>th</sup> Street  
Charleston, WV 25304


RE: Well Operator's Report of Well Work WR-35  
**Hickd M20H**

Dear Sir/Madam,

Enclosed here within please find one (1) Well Operator's Report of Well Work WR-35, one (1) copy of the Plat on Mylar, one (1) copy of the FracFocus report, and one (1) copy of the Directional Survey for **Hicks M20H, (API 47-051-01996)**.

If you have any questions, please contact me at (412) 865-3422. Thank you.

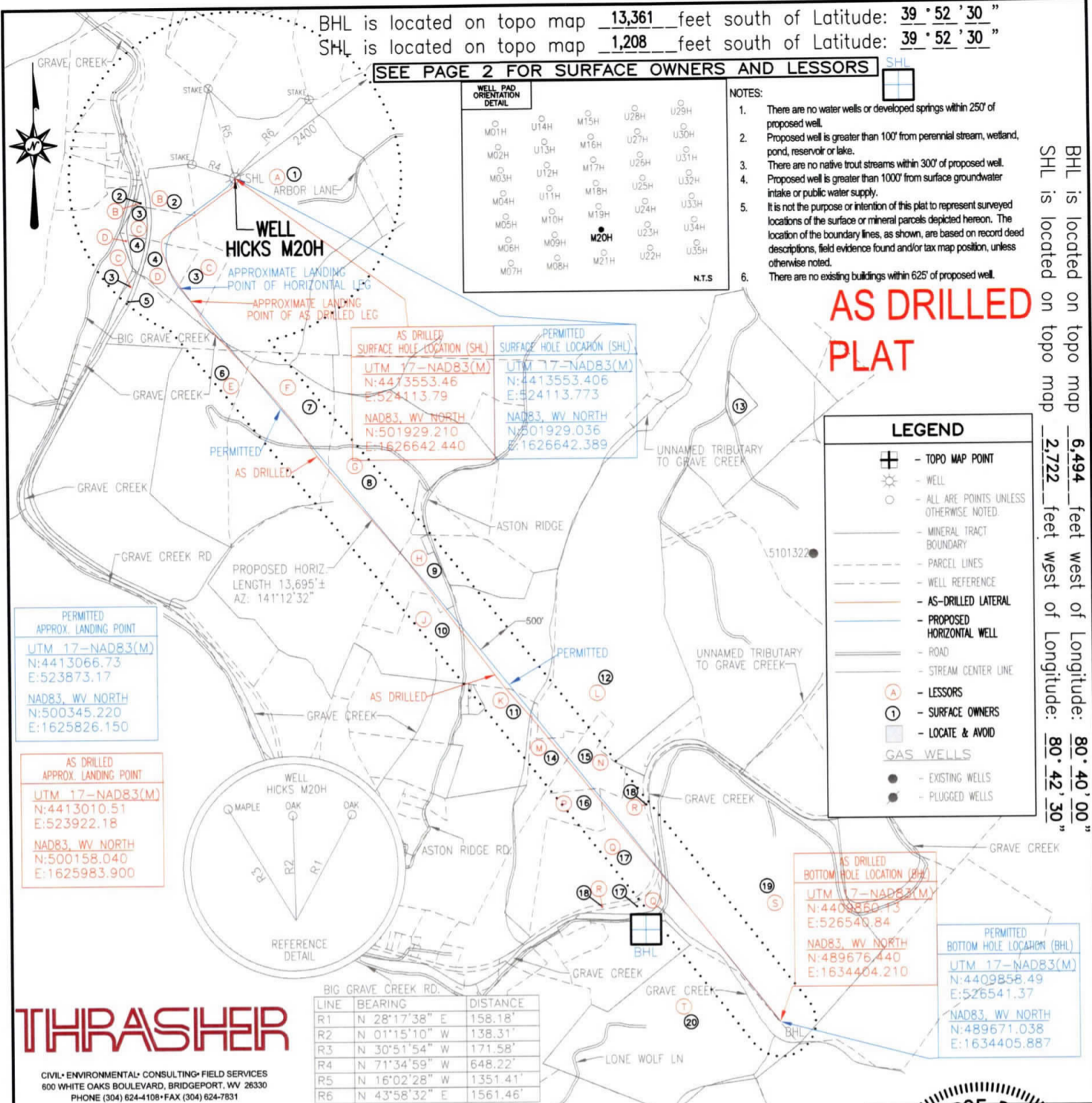
Sincerely,  
Chevron Appalachia, LLC

  
Jackie M. Scholar

Enclosures

BHL is located on topo map 13,361 feet south of Latitude: 39° 52' 30"  
 SHL is located on topo map 1,208 feet south of Latitude: 39° 52' 30"

SEE PAGE 2 FOR SURFACE OWNERS AND LESSORS



BHL is located on topo map 6,494 feet west of Longitude: 80° 40' 00"  
 SHL is located on topo map 2,722 feet west of Longitude: 80° 42' 30"

**AS DRILLED PLAT**

**THRASHER**  
 CIVIL • ENVIRONMENTAL • CONSULTING • FIELD SERVICES  
 800 WHITE OAKS BOULEVARD, BRIDGEPORT, WV 26330  
 PHONE (304) 624-4108 • FAX (304) 624-7831

FILE #: HICKS M20H-AS DRILLED  
 DRAWING #: HICKS M20H-AS DRILLED  
 SCALE: 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY: 1/2500  
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

Signed: George D. Six  
 R.P.E.: \_\_\_\_\_ L.L.S.: P.S. No. 2000



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS  
 WVDEP OFFICE OF OIL & GAS  
 601 57TH STREET  
 CHARLESTON, WV 25304

DATE: JANUARY 31, 2020  
 OPERATOR'S WELL #: HICKS M20H-AS DRILLED  
 API WELL #: 47 51 01996  
 STATE COUNTY PERMIT

Well Type:  Oil  Waste Disposal  Production  Deep  Gas  Liquid Injection  Storage  Shallow

WATERSHED: MIDDLE GRAVE CREEK-GRAVE CREEK ELEVATION: 1161.57'

COUNTY/DISTRICT: MARSHALL / CLAY QUADRANGLE: GLEN EASTON, WV 7.5'

SURFACE OWNER: THOMAS E. HICKS ACREAGE: 172.100±

OIL & GAS ROYALTY OWNER: CHRISTA DAWN HICKS ET AL ACREAGE: 1344.582±

DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION

PERFORATE NEW FORMATION  PLUG & ABANDON  CLEAN OUT & REPLUG  OTHER CHANGE

(SPECIFY): AS DRILLED

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,320'± TMD: 21,148.62'±

WELL OPERATOR CHEVRON APPALACHIA, LLC DESIGNATED AGENT KENNETH E. TAWNEY  
 Address 700 CHERRINGTON PARKWAY Address 500 LEE STREET, EAST SUITE 1600  
 City CORAOPOLIS State PA Zip Code 15108 City CHARLESTON State WV Zip Code 25301-3202

AS DRILLED PLAT

# HICKS M20H PAGE 2 OF 2

	LESSOR	DIST-TM/PAR
A	CHRISTA DAWN HICKS ET AL	4-8/37
B	SIDNEY P. POND ET UX	4-8/36.1
C	LILLIE LAVERN GAREY	4-8/36
D	SIDNEY P. POND ET UX	4-8/36.2
E	JAMES L. COSTER ET AL	4-10/2
	FLOYD G. GREATHOUSE ET UX	
	PAUL R. BLAZER ET UX	
	ROBERT A. HOWARD EDGE JR. ET UX	
	THOMAS A. MONTI ET UX	
	G. JEANETTE SOUTH	
	RONALD L. LANCH ET UX	
	MICHAEL E. RHODEHAMEL ET UX	
	EDWARD D. YEATER	
	ROBERT A. EDGE ET UX	
	KENNETH R. RUNYAN ET UX	
	KENNETH R. RUNYAN ET UX	
	DANIEL G. MAY ET UX	
	KEVIN R. DURBIN ET UX	
	GARY D. HINERMAN ET UX	
F	JAMES L. COSTER ET AL	4-10/3
	FLOYD G. GREATHOUSE ET UX	
	PAUL R. BLAZER ET UX	
	ROBERT A. HOWARD EDGE JR. ET UX	
	THOMAS A. MONTI ET UX	
	G. JEANETTE SOUTH	
	RONALD L. LANCH ET UX	
	MICHAEL E. RHODEHAMEL ET UX	
	EDWARD D. YEATER	
	ROBERT A. EDGE ET UX	
	KENNETH R. RUNYAN ET UX	
	KENNETH R. RUNYAN ET UX	
	DANIEL G. MAY ET UX	
	KEVIN R. DURBIN ET UX	
	GARY D. HINERMAN ET UX	
G	ELAIN A. FONTES	4-10/4
	THE DAKAN FAMILY REVOCABLE LIVING TRUST	
	RONALD W. DAKAN	
	DAVID H. DAKAN	
	SUZANNE SWIFT	
	BARBARA D. FURFARI	
	DIANE WILLIS ET VIR	
	LESLIE MARIE BUTTS	
H	CHARLES EMERY ET UX	4-10/7.3
J	JOSEPH W. GOULDSBERRY ET UX	4-10/7
K	DEVRON LEE WEST ET UX	4-10/13
L	LEE TAYLOR ET UX	4-10/21
M	ROBERT M. SULLIVAN	4-10/14
N	ROBERT M. SULLIVAN	4-10/15
P	ROBERT M. SULLIVAN	4-11/9
Q	ROBERT M. SULLIVAN	4-11/10
R	CNX GAS COMPANY LLC	4-11/59
S	OKEY BURTON ET UX	9-2/3
T	*GEORGE BARNARD CROW, JR. ET UX	9-2/1
	*CLARA I. CROW	
	*DIOCESE OF WHEELING - CHARLESTON	
	*MARK K. WUERTHELE	
	*JEFFREY A. WUERTHELE	
	*MICHAEL D. WUERTHELE	
	*ROBERT S. WUERTHELE	
	*SISTERS OF ST. FRANCIS OF THE PROVIDENCE OF GOD	
	*MARY ANN BAKER	
	*ULMAN TRUST MARY ANN BAKER TRSTE	
	*SUSAN M. & BERNARD LUKE ZIDAR	
	*LAUREN M. TEKELY IRREVOCABLE TRUST	

PERMITTED  
SURFACE HOLE LOCATION (SHL)  
UTM 17-NAD83(M)  
N:4413553.406  
E:524113.773  
NAD83, WV NORTH  
N:501929.036  
E:1626642.389

PERMITTED  
APPROX. LANDING POINT  
UTM 17-NAD83(M)  
N:4413066.73  
E:523873.17  
NAD83, WV NORTH  
N:500345.220  
E:1625826.150

PERMITTED  
BOTTOM HOLE LOCATION (BHL)  
UTM 17-NAD83(M)  
N:4409858.49  
E:526541.37  
NAD83, WV NORTH  
N:489671.038  
E:1634405.887

AS DRILLED  
SURFACE HOLE LOCATION (SHL)  
UTM 17-NAD83(M)  
N:4413553.46  
E:524113.79  
NAD83, WV NORTH  
N:501929.210  
E:1626642.440

AS DRILLED  
APPROX. LANDING POINT  
UTM 17-NAD83(M)  
N:4413010.51  
E:523922.18  
NAD83, WV NORTH  
N:500158.040  
E:1625983.900

AS DRILLED  
BOTTOM HOLE LOCATION (BHL)  
UTM 17-NAD83(M)  
N:4409860.13  
E:526540.84  
NAD83, WV NORTH  
N:489676.440  
E:1634404.210

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	SURFACE OWNER	DIST-TM/PAR
1	THOMAS E. HICKS	4-8/37
2	VICKIE L. & SIDNEY P. POND	4-8/36.1
3	LILLIE LAVERN GAREY	4-8/36
4	SIDNEY P. POND ET UX	4-8/36.2
5	*CONSOLIDATION COAL COMPANY/MURRAY ENERGY C/O LAND DEPT	4-12/25
6	JAMES L. COSTER	4-10/2
7	JAMES L. COSTER	4-10/3
8	DENNIS D. WINGROVE ET UX	4-10/4
9	CHARLES E. & DEBBY R. EMERY - TODD	4-10/7.3
10	JOSEPH W. GOULDSBERRY ET UX	4-10/7
11	DEVRON LEE & TRACI JANE WEST	4-10/13
12	LEE R. TAYLOR ET UX	4-10/21
13	LEE R. TAYLOR ET UX	4-9/27
14	ROBERT MORRIS SULLIVAN - ROBERT W. SULLIVAN	4-10/14
15	ROBERT MORRIS SULLIVAN - ROBERT W. SULLIVAN	4-10/15
16	ROBERT MORRIS SULLIVAN - ROBERT W. SULLIVAN	4-11/9
17	ROBERT MORRIS SULLIVAN - ROBERT W. SULLIVAN	4-11/10
18	CNX GAS COMPANY LLC	4-11/59
19	CNX LAND RESOURCES INC	9-2/3
20	*GEORGE J. & SHIRLEY CROW	9-2/1

JANUARY 31, 2020

**THRASHER**

CIVIL • ENVIRONMENTAL • CONSULTING • FIELD SERVICES  
600 WHITE OAKS BOULEVARD, BRIDGEPORT, WV 26330  
PHONE (304) 624-4108 • FAX (304) 624-7831

\* - DENOTES PARCEL WITHIN 30 FEET OF PLANNED WELL BORE