

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

AUG 08 2024

Department of Environmental Protection

API 47-095-02822 County Tyler District Ellsworth
Quad Porter Falls 7.5' Pad Name Heintzman Field/Pool Name ----
Farm name Dennis & Clista Heintzman Well Number Nomad Unit 1H
Operator (as registered with the OOG) Antero Resources Corporation
Address 1615 Wynkoop Street City Denver State CO Zip 80202

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4377039.813m Easting 512409.366m
Landing Point of Curve Northing 4377629.33m Easting 512700.49m
Bottom Hole Northing 4382210.401m Easting 511133.213m

Elevation (ft) 1193' 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)

Air - Foam & 4% KCL

Mud - Polymer

Date permit issued 9/20/2022 Date drilling commenced 10/31/2022 Date drilling ceased 1/29/2023
Date completion activities began 3/11/2023 Date completion activities ceased 4/19/2023
Verbal plugging (Y/N) N/A 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 479' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1774' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 412' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed by:

APPROVED

02/16/2024

[Handwritten signature]
12-6-23

API 47- 095 - 02822 Farm name Dennis & Clista Heintzman Well number Nomad Unit 1H

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	28"	20"	130'	New	78.67#, X-60	N/A	Y
Surface	17-1/2"	13-3/8"	583'	New	54.5#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	3477'	New	36#, K-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	23274'	New	23#, P-110/ICY	N/A	Y
Tubing		2-3/8"	6875'		4.7#, P-110		
Packer type and depth set		N/A					

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	266 sx	15.6	1.18	313	0'	8 Hrs.
Surface	Class C	650 sx	15.8	1.17	760	0'	8 Hrs.
Coal							
Intermediate 1	Class C	1270 sx	15.8	1.16	1473	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	3730 sx (Tail)	13.5 (Lead), 15.2(Tail)	1.25 (Tail)	4662	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 23274' MD, 6632' TVD (BHL), 6665' TVD (Deepest Point Drilled) Loggers TD (ft) 23274' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 6324'

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 _____

Conductor - 0
 Surface - 1 above guide shoe, 1 above insert float, 1 every 4th joint to surface
 Intermediate - 1 above float joint, 1 above float collar, 1 every 4th joint to surface
 Production - 1 above float joint, 1 below float collar, 1 every 3rd joint to top of cement

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 N/A

02/16/2024 

API 47-095 - 02822 Farm name Dennis & Clista Heintzman Well number Nomad Unit 1H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
*PLEASE SEE ATTACHED EXHIBIT 1					


Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations 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)
*PLEASE SEE ATTACHED EXHIBIT 2								

Please insert additional pages as applicable.

02/16/2024 

API 47- 095 - 02822 Farm name Dennis & Clista Heintzman Well number Nomad Unit 1H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
	TVD	TOP	MD
Marcellus	6606'	7151'	

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface _____ psi Bottom Hole --- _____ psi DURATION OF TEST --- _____ hrs

OPEN FLOW Gas 13477.05 mcfpd Oil 712.38 bpd NGL --- bpd Water 948.78 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP		BOTTOM		DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	

***PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

Drilling Contractor H & P Drilling
Address 912 N Eagle Valley Rd City Howard State PA Zip 16841

Logging Company Nine Energy Services
Address 6500 West Fwy City Fort Worth State TX Zip 76116

Cementing Company Halliburton Energy Services
Address 3000 W. Sam Houston Pkwy City Houston State TX Zip 76114

Stimulating Company Halliburton
Address 3000 W. Sam Houston Pkwy City Houston State TX Zip 76114

Please insert additional pages as applicable.

Completed by Stefan Gaspar Telephone 303-357-6959
Signature *S Gaspar* Title Permitting Agent Date 8/7/23

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry


02/16/2024 

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	3/11/2023	23144	23102	60	Marcellus
2	3/24/2023	23063.23684	22896.4211	60	Marcellus
3	3/24/2023	22860.65789	22693.8421	60	Marcellus
4	3/24/2023	22658.07895	22491.2632	60	Marcellus
5	3/24/2023	22455.5	22288.6842	60	Marcellus
6	3/25/2023	22252.92105	22086.1053	60	Marcellus
7	3/25/2023	22050.34211	21883.5263	60	Marcellus
8	3/25/2023	21847.76316	21680.9474	60	Marcellus
9	3/25/2023	21645.18421	21478.3684	60	Marcellus
10	3/25/2023	21442.60526	21275.7895	60	Marcellus
11	3/26/2023	21240.02632	21073.2105	60	Marcellus
12	3/26/2023	21037.44737	20870.6316	60	Marcellus
13	3/26/2023	20834.86842	20668.0526	60	Marcellus
14	3/26/2023	20632.28947	20465.4737	60	Marcellus
15	3/26/2023	20429.71053	20262.8947	60	Marcellus
16	3/26/2023	20227.13158	20060.3158	60	Marcellus
17	3/27/2023	20024.55263	19857.7368	60	Marcellus
18	3/27/2023	19821.97368	19655.1579	60	Marcellus
19	3/27/2023	19619.39474	19452.5789	60	Marcellus
20	3/27/2023	19416.81579	19250	60	Marcellus
21	3/27/2023	19214.23684	19047.4211	60	Marcellus
22	3/27/2023	19011.65789	18844.8421	60	Marcellus
23	3/28/2023	18809.07895	18642.2632	60	Marcellus
24	3/28/2023	18606.5	18439.6842	60	Marcellus
25	3/28/2023	18403.92105	18237.1053	60	Marcellus
26	3/28/2023	18201.34211	18034.5263	60	Marcellus
27	3/28/2023	17998.76316	17831.9474	60	Marcellus
28	3/28/2023	17796.18421	17629.3684	60	Marcellus
29	3/28/2023	17593.60526	17426.7895	60	Marcellus
30	3/29/2023	17391.02632	17224.2105	60	Marcellus
31	3/29/2023	17188.44737	17021.6316	60	Marcellus
32	3/29/2023	16985.86842	16819.0526	60	Marcellus
33	3/29/2023	16783.28947	16616.4737	60	Marcellus
34	3/29/2023	16580.71053	16413.8947	60	Marcellus
35	3/29/2023	16378.13158	16211.3158	60	Marcellus
36	3/30/2023	16175.55263	16008.7368	60	Marcellus
37	3/30/2023	15972.97368	15806.1579	60	Marcellus
38	3/30/2023	15770.39474	15603.5789	60	Marcellus
39	3/30/2023	15567.81579	15401	60	Marcellus
40	3/30/2023	15365.23684	15198.4211	60	Marcellus
41	3/30/2023	15162.65789	14995.8421	60	Marcellus
42	3/30/2023	14960.07895	14793.2632	60	Marcellus
43	3/31/2023	14757.5	14590.6842	60	Marcellus
44	3/31/2023	14554.92105	14388.1053	60	Marcellus
45	3/31/2023	14352.34211	14185.5263	60	Marcellus
46	3/31/2023	14149.76316	13982.9474	60	Marcellus
47	3/31/2023	13947.18421	13780.3684	60	Marcellus
48	3/31/2023	13744.60526	13577.7895	60	Marcellus
49	3/31/2023	13542.02632	13375.2105	60	Marcellus
50	4/1/2023	13339.44737	13172.6316	60	Marcellus
51	4/1/2023	13136.86842	12970.0526	60	Marcellus
52	4/1/2023	12934.28947	12767.4737	60	Marcellus
53	4/1/2023	12731.71053	12564.8947	60	Marcellus
54	4/1/2023	12529.13158	12362.3158	60	Marcellus
55	4/2/2023	12326.55263	12159.7368	60	Marcellus
56	4/2/2023	12123.97368	11957.1579	60	Marcellus
57	4/2/2023	11921.39474	11754.5789	60	Marcellus
58	4/2/2023	11718.81579	11552	60	Marcellus
59	4/2/2023	11516.23684	11349.4211	60	Marcellus
60	4/2/2023	11313.65789	11146.8421	60	Marcellus
61	4/2/2023	11111.07895	10944.2632	60	Marcellus
62	4/2/2023	10908.5	10741.6842	60	Marcellus
63	4/3/2023	10705.92105	10539.1053	60	Marcellus
64	4/3/2023	10503.34211	10336.5263	60	Marcellus
65	4/3/2023	10300.76316	10133.9474	60	Marcellus
66	4/3/2023	10098.18421	9931.36842	60	Marcellus
67	4/4/2023	9895.605263	9728.78947	60	Marcellus
68	4/4/2023	9693.026316	9526.21053	60	Marcellus
69	4/4/2023	9490.447368	9323.63158	60	Marcellus
70	4/4/2023	9287.868421	9121.05263	60	Marcellus
71	4/4/2023	9085.289474	8918.47368	60	Marcellus
72	4/5/2023	8882.710526	8715.89474	60	Marcellus
73	4/5/2023	8680.131579	8513.31579	60	Marcellus
74	4/5/2023	8477.552632	8310.73684	60	Marcellus
75	4/5/2023	8274.973684	8108.15789	60	Marcellus
76	4/5/2023	8072.394737	7905.57895	60	Marcellus
77	4/5/2023	7869.815789	7703	60	Marcellus

EXHIBIT 2

Stage No.	Stimulations Date	Avg Pump Rate	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/ other (units)
1	3/11/2023	86.01144	9383.732	7342.87	4209.946	179000	6853.3195	N/A
2	3/24/2023	90.9	10033	5424	4050	401350	7909.7855	N/A
3	3/24/2023	90.27555	10003.65	5581.6	4267.715	397880	7981.4255	N/A
4	3/24/2023	89.55138	10143.18	6045.77	3621.404	411400	8275.3429	N/A
5	3/24/2023	88.29034	10073.48	5908.46	4180.756	414970	7714.9457	N/A
6	3/25/2023	90.48838	10544.86	5922.27	4125.622	395730	7273.2333	N/A
7	3/25/2023	93.74006	10360.61	5724.91	3936.141	413640	7679.4793	N/A
8	3/25/2023	89.16	10302	5381	4082	396520	7175.7264	N/A
9	3/25/2023	90.49	10333	5680	3770	408630	7394.746	N/A
10	3/25/2023	91.02521	10319.73	5944.6	4134.967	409820	7551.1388	N/A
11	3/26/2023	89.16931	10366.68	6184.38	4024.178	407460	7337.5424	N/A
12	3/26/2023	96.59	10539	5910	4138	407960	7659.4921	N/A
13	3/26/2023	89.74	10490	6028	4077	412330	7407.245	N/A
14	3/26/2023	95.84885	10484.76	5884.54	3869.64	395350	7110.3176	N/A
15	3/26/2023	81.14836	10427.35	5886.17	4082.775	413580	7591.0729	N/A
16	3/26/2023	91.94457	10075.68	6049.02	3908.564	408570	7195.1024	N/A
17	3/27/2023	93.96	9851	6087	4065	399920	7223.886	N/A
18	3/27/2023	96.97	9989	6016	3799	407630	7248.8636	N/A
19	3/27/2023	97.32	9961	5757	3894	418810	7434.445	N/A
20	3/27/2023	96.82	10026	5342	4212	408480	7433.7731	N/A
21	3/27/2023	97.06157	10025.4	5285.24	3868.765	407570	7268.8057	N/A
22	3/27/2023	95.67849	9873.412	4653.53	3805.433	411150	7327.4079	N/A
23	3/28/2023	96.51414	10016.36	3873.37	4248.634	405740	7123.4269	N/A
24	3/28/2023	96.24357	9892.327	5643.29	4147.502	403570	7353.5386	N/A
25	3/28/2023	97.00929	9911.355	5954.67	4200.216	397360	7047.3248	N/A
26	3/28/2023	94.98	9917	5406	3803	410040	7226.544	N/A
27	3/28/2023	97.68	9973	5486	3964	410880	7272.2593	N/A
28	3/28/2023	97.52306	10000.64	5204.44	3932.726	395810	6923.7833	N/A
29	3/28/2023	97.78423	9801.083	4913.7	3822.054	396168	7023.8986	N/A
30	3/29/2023	97.75733	9781.675	5274.28	3985.113	413340	7051.2181	N/A
31	3/29/2023	96.85	9894	5821	3898	413060	7395.3479	N/A
32	3/29/2023	96.71	9662	5715	4114	410430	7026.55	N/A
33	3/29/2023	96.91	9852	5677	3803	397340	6949.6567	N/A
34	3/29/2023	96.84202	9574.877	5688.17	3792.459	409930	7167.909	N/A
35	3/29/2023	98.29974	9555.413	5596.4	3857.519	411970	7194.8529	N/A
36	3/30/2023	97.59	9053	3771	4245	399320	7032.5388	N/A
37	3/30/2023	97.09705	9031.959	5793.01	4031.583	416190	7156.3207	N/A
38	3/30/2023	97.7	9061	5842	3882	398350	6919.9633	N/A
39	3/30/2023	96.64	9071	5953	4177	405260	7075.0555	N/A
40	3/30/2023	98.19	9041	5942	4064	414580	9046.0081	N/A
41	3/30/2023	97.13	9087	4765	4149	417630	7081.6826	N/A
42	3/30/2023	97.99	9198	6114	4237	414500	7176.641	N/A
43	3/31/2023	97.58	9093	5728	4028	397870	6889.4381	N/A
44	3/31/2023	95.86	9091	5513	3994	407540	7047.3162	N/A
45	3/31/2023	97.21	9070	6090	4035	416110	7256.0938	N/A
46	3/31/2023	97.14	9002	5753	3706	412160	7153.6264	N/A
47	3/31/2023	96.51	8947	6250	4260	411330	6772.2405	N/A
48	3/31/2023	97.45	9093	5715	4020	403150	6887.3769	N/A
49	3/31/2023	98.41304	9080.625	6107.5	4032.058	399520	6822.146	N/A
50	4/1/2023	98.03084	8964.495	6174.47	4295.419	401920	6848.9671	N/A
51	4/1/2023	97.74	9078	6005	3862	400350	7022.6531	N/A
52	4/1/2023	97.84	9073	5833	3979	402990	7018.1302	N/A
53	4/1/2023	98.23	9011	4898	3696	409080	7229.4524	N/A
54	4/1/2023	87.07	9057	5838	4073	399580	7767.826	N/A
55	4/2/2023	98.49	9039	5305	4119	409510	6996.3707	N/A
56	4/2/2023	98.8004	8890.47	5596.68	3724.064	414420	7063.5317	N/A
57	4/2/2023	98.95	9013	6033	3660	416720	7123.0257	N/A
58	4/2/2023	99.54	8883	5796	3853	397020	6877.3552	N/A
59	4/2/2023	98.8	8989	5324	3746	404740	6922.0817	N/A
60	4/2/2023	99.58	8766	5460	3783	402650	6739.8364	N/A
61	4/2/2023	98.65191	8718.162	5519.62	4163.012	400830	6781.2845	N/A
62	4/2/2023	98.38013	8698.749	5333.21	3954.735	406310	7060.1371	N/A
63	4/3/2023	98.84938	8816.71	5777.19	4002.055	404940	6810.5676	N/A
64	4/3/2023	98.84585	8719.985	5329.88	3778.573	410130	7027.8367	N/A
65	4/3/2023	41.87	8634	5879	4062	405040	9440.1362	N/A
66	4/3/2023	98.75	8406	6238	3908	410641	7052.4724	N/A
67	4/4/2023	98.72395	8516.167	6324.01	3924.073	400590	6665.5805	N/A
68	4/4/2023	97.40321	8451.668	6701.15	3734.19	414380	6912.5693	N/A
69	4/4/2023	96.83678	8445.023	6480.41	3823.028	413260	7028.6771	N/A
70	4/4/2023	97.95	8345	6197	3776	410160	7041.9121	N/A
71	4/4/2023	97.79	8220	5528	4043	405220	6885.405	N/A
72	4/5/2023	98.17	8120	6224	3877	403630	6762.2579	N/A
73	4/5/2023	97.96004	7780.266	5860.74	3765.243	407330	6805.1874	N/A
74	4/5/2023	96.20727	7962.724	6740.82	3631.053	413260	6881.4014	N/A
75	4/5/2023	89.72539	7463.705	5861.37	3551.063	413374	7999.779	N/A
76	4/5/2023	97.45	7872	6222	3711	412380	7494.2533	N/A
77	4/5/2023	98.25	7818	5463	3516	417580	7158.0595	N/A
AVERAGE		95.1	9,326	5,735	3,956	31,124,933	556,537	0

EXHIBIT 3

LITHOLOGY/ FORMATION	TOP DEPTH (TVD) From Surface	BOTTOM DEPTH (TVD) From Surface	TOP DEPTH (MD) From Surface	BOTTOM DEPTH (MD) From Surface
Shaley Siltstone	70	190	70	190
Shaley Sandstone	190	280	190	280
Shaley Siltstone	280	360	280	360
Limestone, Tr Shale	360	490	360	490
Sandstone	490	580	490	580
Limestone, Tr Shale	580	790	580	790
Shaley Sandstone	790	880	790	880
Shale, Tr Sandstone	880	1,130	880	1,130
Sandy Shale, Limestone	1,130	1,240	1,130	1,240
Sandy Shale	1,240	1,480	1,240	1,480
Sandstone, Tr Shale	1,480	1,660	1,480	1,660
Silty Shale, tr SS	1,660	1,750	1,660	1,750
Shale, Tr Sst	1,750	2,005	1,750	2,051
Big Lime	2,035	2,832	2,051	2,931
Fifty Foot Sandstone	2,832	2,895	2,901	2,996
Gordon	2,895	3,126	2,966	3,238
Fifth Sandstone	3,126	3,212	3,208	3,327
Bayard	3,212	4,037	3,297	4,205
Speechley	4,037	4,306	4,175	4,492
Balltown	4,306	4,771	4,462	4,980
Bradford	4,771	5,188	4,950	5,419
Benson	5,188	5,402	5,389	5,646
Alexander	5,402	6,474	5,616	6,830
Sycamore	6,334	6,444	6,650	6,800
Middlesex	6,444	6,533	6,800	6,960
Burkett	6,533	6,551	6,960	7,000
Tully	6,551	6,606	7,000	7,151
Marcellus	6,606	NA	7,151	NA

02/16/2024

**Antero Resources
Well No. Nomad 1H
As-Drilled**
Antero Resources Corporation



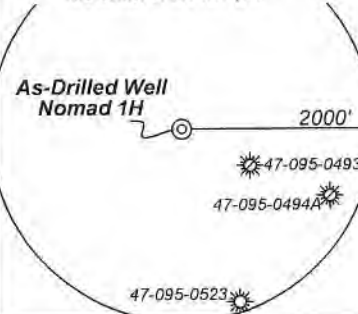
Top Hole Coordinates, As-drilled data, and information was provided by Antero Resources Corporation. Allegheny Surveys Inc. (ASI) is not certifying the data and information provided. ASI is not responsible for any errors or inaccuracies with the data and information that has been provided.

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 rules issued and prescribed by the Department of Environmental Protection.

Bradley D. Miller
Bradley D. Miller, P.S. 2167

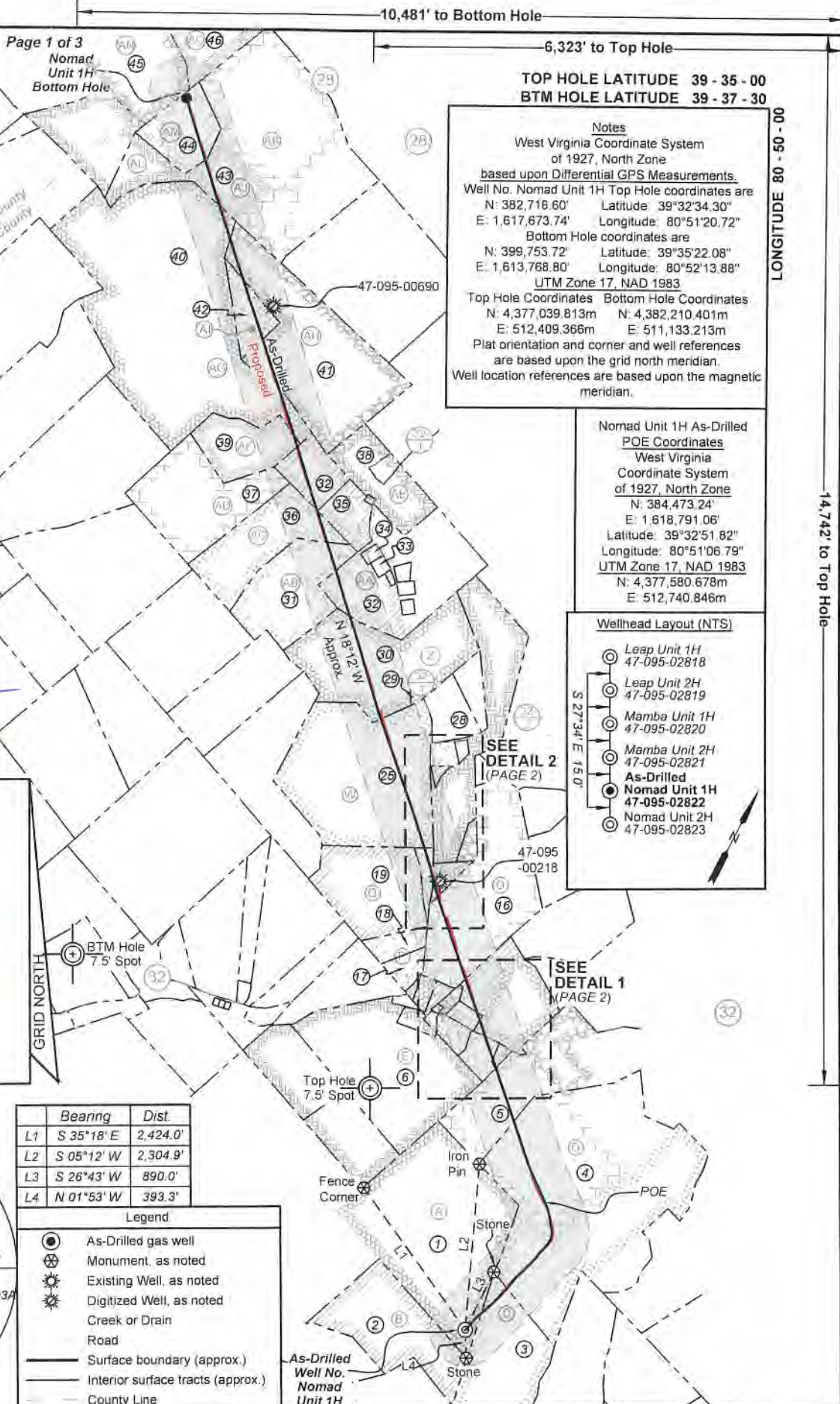


Note: 0 water wells or springs were found within 2000' of proposed well. No occupied dwellings or buildings 2,500 square feet or larger used to house or shelter dairy cattle or poultry husbandry are located within 625' of the center of the well pad



	Bearing	Dist.
L1	S 35°18' E	2,424.0'
L2	S 05°12' W	2,304.9'
L3	S 26°43' W	890.0'
L4	N 01°53' W	393.3'

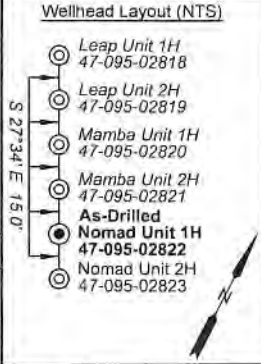
- Legend**
- As-Drilled gas well
 - Monument, as noted
 - Existing Well, as noted
 - Digitized Well, as noted
 - Creek or Drain
 - Road
 - Surface boundary (approx.)
 - Interior surface tracts (approx.)
 - County Line



TOP HOLE LATITUDE 39 - 35 - 00
BTM HOLE LATITUDE 39 - 37 - 30

Notes
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
Well No. Nomad Unit 1H Top Hole coordinates are
N: 382,716.60' Latitude: 39°32'34.30"
E: 1,617,673.74' Longitude: 80°51'20.72"
Bottom Hole coordinates are
N: 399,753.72' Latitude: 39°35'22.08"
E: 1,613,768.80' Longitude: 80°52'13.88"
UTM Zone 17, NAD 1983
Top Hole Coordinates: Bottom Hole Coordinates
N: 4,377,039.813m N: 4,382,210.401m
E: 512,409.366m E: 511,133.213m
Plat orientation and corner and well references are based upon the grid north meridian.
Well location references are based upon the magnetic meridian.

Nomad Unit 1H As-Drilled POE Coordinates
West Virginia Coordinate System of 1927, North Zone
N: 384,473.24'
E: 1,618,791.06'
Latitude: 39°32'51.82"
Longitude: 80°51'06.79"
UTM Zone 17, NAD 1983
N: 4,377,580.678m
E: 512,740.846m



FILE NO: 48-54-E-19
DRAWING NO: Nomad Unit 1H As-Drilled
SCALE: 1" = 2000'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: WVDOT, Harrisville, WV

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION

DATE: July 28 2023
OPERATOR'S WELL NO. Nomad Unit 1H
API WELL NO
47 - 095 - 02822
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW

LOCATION: ELEVATION: As-Built: 1,193' WATERSHED: Outlet Middle Island Creek QUADRANGLE: TH:Porter Falls 2.28; 16.875; 1.06; 20.94375; ???; 68.7188; BH:Paden City 33.48125; 79.75; 46.795; 43.3125; 33.48125; 79.75; 46.795; 43.3125; 134; 33.25; 10; 20; 67; 79.7375; 5.149;

DISTRICT: Ellsworth COUNTY: Boone

SURFACE OWNER: Dennis & Clista Heintzman ACREAGE: 417.6

ROYALTY OWNER: BRC Appalachian Minerals I, LLC (4); TMP Properties, LLC, Laura A. Richeson(2); LEASE NO: ACREAGE: 67.79.7375; 5.149;

PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled 6.632' TVD

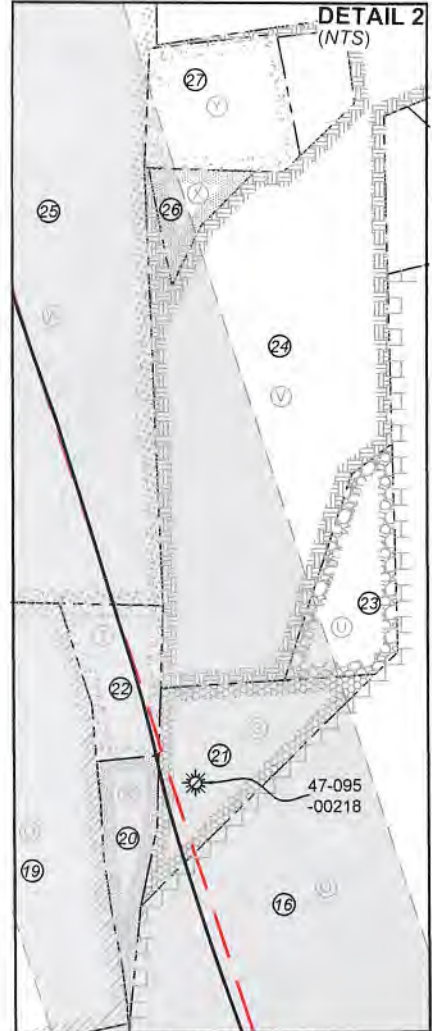
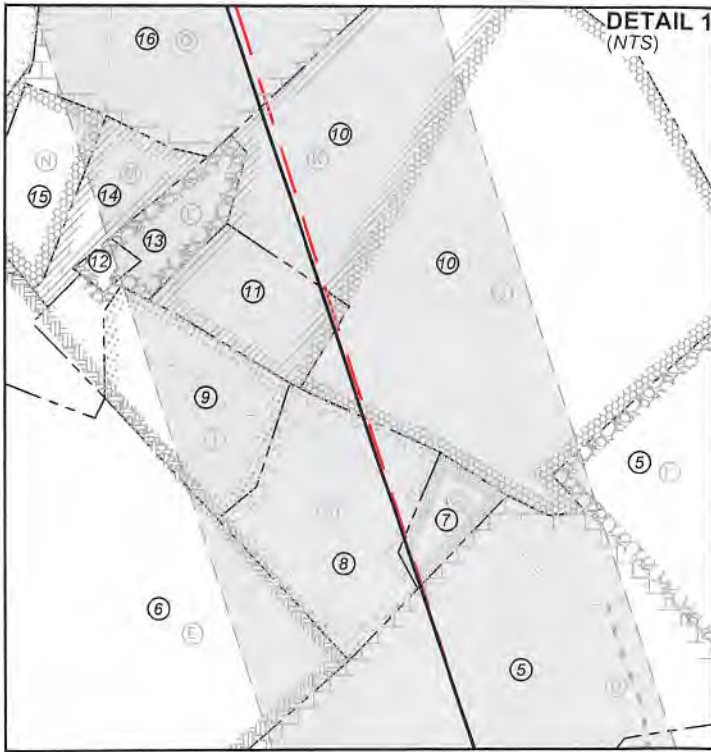
PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 23,274' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Kevin Ellis
ADDRESS: 1615 Wynkoop Street ADDRESS: 535 White Oaks Blvd.
Denver, CO 80202 Charleston, WV 25313

12,942' to Bottom Hole
14,742' to Top Hole

02/16/2024

AM



FILE NO: 48-54-E-19
 DRAWING NO: Nomad Unit 1H As-Drilled
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY:
 Submeter
 PROVEN SOURCE OF ELEVATION:
 WVDOT, Harrisville, WV

STATE OF WEST VIRGINIA
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION

DATE: July 28 20 23
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API WELL NO
 47 — 095 — 02822
 STATE COUNTY PERMIT

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 DISTRICT: Ellsworth SURFACE OWNER: Dennis & Clista Heintzman James D. VanCamp, et ux; Mary F. Mutschelknaus; Map 2012-OK; Larry G. Rice; ACREAGE: 417.6 10.16; 164.28125
 ROYALTY OWNER: BRC Appalachian Minerals I, LLC (4); TMP Properties, LLC; Laura A. Richeson(2); LEASE NO: ACREAGE: 67; 79.7375; 5.149;

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 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 6,632' TVD 23,274' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Kevin Ellis
 ADDRESS: 1615 Wynkoop Street ADDRESS: 535 White Oaks Blvd.
 Denver, CO 80202 Charleston, WV 25313



Leases			
A	BRC Appalachian Minerals I, LLC	U	Martha Elizabeth Matthews
B	Dennis R. & Clista A. Heintzman	V	Gary Willey, et ux
C	Rose Enterprises, LLC	W	Christina L. Ebert
D	TMP Properties, LLC	X	Sandra V. Smith
E	Judy P. Meyers	Y	Linda K. Hudson
F	BRC Appalachian Minerals I, LLC	Z	Lee Morgan
G	Laura Ann Richeson	AA	MAP2012-OK
H	Laura A. Richeson	AB	BRC Appalachian Minerals I, LLC
I	Bobby J. Dennis	AC	James D. VanCamp, et ux
J	BRC Appalachian Minerals I, LLC	AD	William G. Baker
K	BRC Appalachian Minerals I, LLC	AE	Cynthia K. Guthrie
L	Antero Minerals, LLC	AF	Gary A. Midcap, et ux
M	Martha Elizabeth Matthews	AG	Beverly Kay Campbell
N	David Wayne Vancamp, et ux	AH	Mary F. Mutschelknaus
O	Jon Keith Irvin	AI	Steven D. Higgins, et ux
P	James D. VanCamp	AJ	Cider Run Minerals Holdings, LLC
Q	David E. Bowyer	AK	Cider Run Minerals Holdings, LLC
R	Lary G. Rice	AL	Michael Stillwagner
S	Martha Elizabeth Matthews	AM	Don A. Stertzbach, et ux
T	Gary Willey, et ux	AN	Ridgetop Royalties, LLC
		AO	Ronald L. VanCamp, et al

ID	TM/Par	Owner	Bk/Pg	Acres	ID	TM/Par	Owner	Bk/Pg	Acres
1	6-36	Dennis & Clista Heintzman	297/640	417.60	24	3-36	Gary J. & Tammie S. Willey	290/503	43.26
2	6-49	Dennis & Clista A. Heintzman	297/637	45.00	25	6-8	Matthew T. Ebert	361/219	98.50
3	10-4	Stefan L. & Alberta B. Smolski	356/467	56.08	26	6-10	Linda K. Hudson	WB32/447	0.83
4	6-30.1	Larry M. & Amy B. Adams	369/344	150.33	27	6-9	Linda K. Hudson	WB32/447	2.28
5	6-30	Larry G. Rice	333/682	64.61	28	3-35	Harold W. & Sandra L. Schaeffer	341/730	9.98
6	6-27	Ronnie L. VanCamp, et al	568/32	69.88	29	3-34.1	Gary J. Jr. & Tammie S. Willey	515/823	1.20
7	6-27.1	Larry G. Rice	333/682	0.81	30	3-34	Charlotte Terry, et al	WB76/367	57.19
8	6-27.3	Laura A. Richeson	365/34	5.14	31	3-27	Herbert & Phyllis Glendenning	349/827	33.25
9	6-27.4	Joseph M. & Tammy A. Rice	634/778	3.79	32	3-28	Rhoda & Lawrence Morgan Est	317/413	61.33
10	6-21	Larry G. Rice	333/682	30.15	33	3-28.7	Thomas & Sally Ash	308/008	1.09
11	6-21.2	Richard E. Leek	OR147/27	3.15	34	3-28.6	Thomas & Sally Ash	308/69	1.06
12	6-21.3	Richard E. Leek	OR147/27	0.28	35	3-28.5	Lori D. Staley	330/53	10.00
13	6-21.1	Richard E. Leek	391/533	2.74	36	3-25.1	Gary A. & Penny K. Midcap	304/230	33.48
14	6-29	Richard Leek	402/216	1.00	37	3-25	Gary A. & Penny K. Midcap	301/265	42.47
15	6-28	David Wayne & Virginia VanCamp	395/557	2.00	38	3-20	Tonya Shuler & Beth Simpkins	OR5/371	21.70
16	6-11	Jeffrey A. & Joann E. Seckman	343/153-A	68.72	39	3-19	Gary A. & Penny K. Midcap	301/265	20.94
17	6-20.2	Hiram Groves	98/195	7.50	40	3-9	Steven D. & Brenda M. Higgins	313/623	163.34
18	6-20.1	Jeffrey Seckman	545/70	2.52	41	3-10	Steven D. & Brenda M. Higgins	313/623	79.75
19	6-20	Jeffrey Seckman	545/70	36.15	42	3-10.1	Steven D. & Brenda M. Higgins	313/623	10.16
20	6-20.3	Jeffrey A. & Joann E. Seckman	343/153-A	2.28	43	1-11	Daniel A. Witschey	541/326	122.81
21	6-11.4	Jeffrey A. & Joann E. Seckman	343/153-A	2.05	44	1-16	Daniel A. & Amy J. Witschey	602/421	20.00
22	6-11.5	Gary & Tammy Willey	407/608	36.15	45	17-15	Don A. Stertzbach	367/623	37.90
23	6-11.2	Jeffrey A. & Joann E. Seckman	343/153-A	2.39	46	17-13	MB Investments	334/56	40.26

FILE NO: 48-54-E-19
 DRAWING NO: Nomad Unit 1H As-Drilled
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 Submeter
 PROVEN SOURCE OF ELEVATION:
 WVDOT, Harrisville, WV

STATE OF WEST VIRGINIA
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION

DATE: July 28 2023
 OPERATOR'S WELL NO. Nomad Unit 1H
 API WELL NO
 47 - 095 - 02822
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 Rose Enterprises, LLC; Gary A. Midcap, et ux; Jon Keith Irvin; Don A. Stertzbach, et ux; 134; 33.25; 10; 20;

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 ADDRESS: 1615 Wynkoop Street ADDRESS: 535 White Oaks Blvd.
 Denver, CO 80202 Charleston, WV 25313

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	3/11/2023
Job End Date:	4/6/2023
State:	West Virginia
County:	Tyler
API Number:	47-095-02822-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Nomad Unit 1H
Latitude:	39.54286000
Longitude:	-80.85576000
Datum:	WGS84
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,665
Total Base Water Volume (gal):	24,488,011
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
Produced Water	Halliburton	Base Fluid					
			Water	7732-18-5	100.00000	86.81728	Density = 8.50
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.14236	

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WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
Chemstream StimSTREAM FR 2800	Chemstream, Inc.	Friction Reducer					
				Listed Below			
FDP-S1464-22	Halliburton	Friction Reducer					
				Listed Below			
Sand-Common White-100 Mesh, SSA-2	Halliburton	Proppant					
				Listed Below			
HYDROCHLORIC ACID, 22 BAUME	Halliburton	Solvent					
				Listed Below			
MC B-8614A	MultiChem	Biocide					
				Listed Below			
OPTIFLO-II DELAYED RELEASE BREAKER	Halliburton	Breaker					
				Listed Below			
HAI-501	Halliburton	Acid Corrosion Inhibitor					
				Listed Below			

Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.

		Crystalline silica, quartz	14808-60-7	100.00000	12.98203
		Hydrochloric acid	7647-01-0	30.00000	0.03875
		Distillates, (petroleum), hydrotreated light	64742-47-8	25.00000	0.01251
		Complex amine compound	Proprietary	60.00000	0.00497
		Guar gum	9000-30-0	100.00000	0.00466
		Alcohols, C11-14-iso, C-13-rich, ethoxylated	78330-21-9	5.00000	0.00250
		Hydrotreated distillate	Proprietary	30.00000	0.00249
		Glutaraldehyde	111-30-8	30.00000	0.00246
		Ethoxylated alcohol	Proprietary	5.00000	0.00041
		Fatty nitrogen derived amides	Proprietary	5.00000	0.00041
		Ammonium chloride	12125-02-9	5.00000	0.00041
		Alkyl (C12-16) dimethylbenzyl ammonium chloride	68424-85-1	5.00000	0.00041
		Methanol	67-56-1	100.00000	0.00024
		Ammonium persulfate	7727-54-0	100.00000	0.00009
		Sorbitan monooleate polyoxyethylene derivative	9005-65-6	1.00000	0.00008
		Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8	1.00000	0.00008
		Ethanol	64-17-5	1.00000	0.00008
		Modified thiourea polymer	Proprietary	30.00000	0.00007
		Mixture of dimer and trimer fatty acids of indefinite composition derived from tall oil	61790-12-3	30.00000	0.00007
		Oxylated phenolic resin	Proprietary	30.00000	0.00003
		Hexadecene	629-73-2	5.00000	0.00001
		Propargyl alcohol	107-19-7	5.00000	0.00001
		Ethoxylated alcohols	Proprietary	5.00000	0.00001

			C.I. pigment Orange 5	3468-63-1	1.00000	0.00000	
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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)