

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

API 47-061-01919 County Monongalia District Clay
Quad Grant Town Pad Name Sullivan Field/Pool Name _____
Farm name Alan Sullivan Well Number 7H
Operator (as registered with the OOG) Northeast Natural Energy LLC
Address 707 Virginia St. E., Suite 1200 City Charleston State WV Zip 25301

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4385303.3 Easting 566698.7
Landing Point of Curve Northing 4385741.4 Easting 567383.5
Bottom Hole Northing 4388876.6 Easting 565223.9

Elevation (ft) 1,476' 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 Based Mud - Horizontal Section: BIO-BASE 365, CALCIUM CHLORIDE POWDER, G-SEAL PLUS, HRP, LIME, M-I WATE (BARITE),
M-I-X II MEDIUM, MEGADRIL P SYSTEM, MEGADRIL P SYSTEM RENTAL, MEGAMUL, SAFE-CARB 250, VERSATHIN HF, VERSAWET, VG-PLUS, VINSEAL MEDIUM, WALNUT NUT PLUG MEDIUM

Date permit issued 12/19/2022 Date drilling commenced 3/30/2023 Date drilling ceased 4/13/2023
Date completion activities began 8/26/2023 Date completion activities ceased 10/2/2023
Verbal plugging (Y/N) NA 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 914' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 2,402' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 894' - 914' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:
02/23/2024

API 47-061 - 01919 Farm name Alan Sullivan Well number 7H

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	30"	24"	128'	N		NA	
Surface	17-1/2"	13-3/8"	1,000'	N	54.5	NA	Y, 5 bbl
Coal							
Intermediate 1	12-1/4"	9-5/8"	2,498'	N	36	NA	Y, 50 bbl
Intermediate 2							
Intermediate 3							
Production	8-3/4"	5-1/2"	21,620'	N	20	NA	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	4,500 PSI Grout						48
Surface	Class A + 2%	1,110	15.6	1.14	1,260	CTS	8
Coal							
Intermediate 1	Class A + 1%	1,585	15.6	1.12	1,781	CTS	8
Intermediate 2							
Intermediate 3							
Production	50:50 Class A + Additives	4,215	14.5	1.13	4,743	1,490'	48
Tubing							

Drillers TD (ft) 21,613' Loggers TD (ft) 21,583'
 Deepest formation penetrated Marcellus Plug back to (ft) NA
 Plug back procedure _____

Kick off depth (ft) 6,661'

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: Bow spring centralizers every 3rd joint or approximately 120'
 Intermediate: Bow spring centralizers every 3rd joint or approximately 120'
 Production: Rigid body centralizers placed at a minimum of every other joint (~80') from TD to surface

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 _____

Sullivan Completion Lithology

Lithology/Formation	Top Depth in FT TVD	Bottom Depth in FT TVD	Describe rock type and record quantity and type of fluid (freshwater, brine, oil, gas, H2S, etc)
Sand/silt	0	175	Sand/silt
Sand/red shale	175	280	sand with reddish shale
sandstone/shale	280	620	sandstone/shale
Washington coal	530	534	coal
siltstone/sandstone	534	607	
Waynesburg coal	607	614	Waynesburg coal
sandstone/limestone	614	680	sandstone/limestone
siltstone/sandstone	680	715	siltstone/sandstone
sandstone/siltstone	715	750	sandstone/siltstone
Limestone/sandstone/shale	750	767	Limestone/sandstone/shale
Sewickley coal	767	774	Sewickley coal
Limestone	774	893	Limestone
Pittsburgh coal	894	914	Pittsburgh coal
Limestone/siltstone	915	1220	Limestone/siltstone
sandstone/siltstone	1450	1960	sandstone/siltstone
Red Rock/siltstone/limestone	1960	2100	Red Rock/siltstone/limestone
Little Lime	2100	2156	Little Lime
Big Lime	2156	2280	Big Lime
Big Injun	2280	2410	Big Injun
Sand/silt	2410	2790	Sand/silt
Gantz	2790	2800	Gantz
Sand/shale	2800	3040	Sand/shale
Red Rock/siltstone	3040	3135	Red Rock/siltstone
siltstone/sandstone	3135	7393	siltstone/sandstone
Middlesex	7393	7610	Middlesex
Burkett	7610	7793	Burkett
Geneseo	7793	7846	Geneseo
Tully	7846	7905	Tully
Hamilton	7905	8035	Hamilton
Marcellus	8035	TD	Marcellus

Sullivan 7H Stimulation Report

Stage Number	Report Date	ISIP (psi)	Breakdown Pressure (psi)	Avg Treating Pressure (psi)	Avg Treating Rate (BPM)	Pad Volume (bbls)	Total Clean Fluid (Bbls)	Total Proppant Amount (lbs)	Flush Volume (bbls)
1	8/27/2023	4,266	8,318	8,379	90	522	7,521	302,947	561
2	8/27/2023	5,440	7,146	9,299	94	457	10,236	456,200	476
3	8/27/2023	5,220	7,195	9,174	94	484	10,142	455,000	472
4	8/27/2023	5,364	7,616	9,043	95	20	9,788	456,464	609
5	8/28/2023	5,018	6,828	9,373	93	17	9,742	455,645	516
6	8/28/2023	4,896	6,192	9,289	95	66	9,864	453,000	535
7	8/28/2023	5,660	6,725	9,291	93	49	9,664	454,000	589
8	8/28/2023	5,590	5,979	9,269	94	20	9,460	456,779	421
9	8/29/2023	5,630	6,586	9,201	93	432	9,431	456,000	559
10	8/30/2023	5,611	7,498	9,327	92	50	10,174	456,900	487
11	8/30/2023	5,547	6,127	9,526	93	225	9,938	457,600	458
12	8/31/2023	5,829	6,586	9,444	93	46	9,650	458,000	467
13	9/1/2023	5,886	7,537	9,586	93	28	9,581	452,500	420
14	9/2/2023	5,986	7,028	9,787	94	28	9,482	456,300	433
15	9/2/2023	5,685	6,966	9,600	94	23	9,422	455,700	415
16	9/3/2023	5,880	4,662	9,482	93	29	9,435	455,400	405
17	9/4/2023	5,705	5,314	9,319	94	13	9,391	455,600	406
18	9/4/2023	5,591	6,977	9,530	94	24	9,458	455,600	410
19	9/5/2023	5,709	6,690	9,510	94	29	9,238	455,900	397
20	9/6/2023	5,330	7,469	9,374	94	5	9,383	455,800	396
21	9/6/2023	5,211	6,959	9,316	94	6	9,443	456,300	393
22	9/7/2023	5,657	6,637	9,110	92	41	10,299	459,800	449
23	9/8/2023	5,204	6,710	9,129	93	41	8,995	455,700	375
24	9/8/2023	6,061	6,027	9,247	94	36	9,065	455,500	384
25	9/9/2023	5,889	5,504	8,951	93	40	8,296	455,400	379
26	9/10/2023	5,482	6,966	9,161	96	16	7,847	455,600	352
27	9/10/2023	6,482	6,379	9,310	94	30	8,737	454,700	370
28	9/11/2023	5,380	6,419	9,161	93	29	8,562	455,600	351
29	9/12/2023	4,710	6,534	9,027	94	12	8,643	454,500	360
30	9/12/2023	5,250	6,458	9,169	94	27	8,651	455,700	347
31	9/13/2023	6,031	6,339	9,150	94	12	8,565	455,700	404
32	9/13/2023	5,258	6,351	9,149	95	29	8,974	455,900	340
33	9/14/2023	5,449	6,290	9,200	94	6	7,597	455,324	374
34	9/14/2023	6,105	6,450	9,201	94	29	9,307	454,900	339
35	9/15/2023	5,384	5,613	8,898	94	10	8,225	456,651	377
36	9/16/2023	5,847	6,689	9,085	94	18	8,277	455,500	369
37	9/16/2023	5,437	5,828	8,988	94	9	8,647	455,700	360
38	9/17/2023	5,326	6,528	8,903	94	14	8,618	455,200	321
39	9/17/2023	5,346	5,367	8,662	94	18	8,601	456,100	316
40	9/18/2023	5,128	6,936	8,763	95	3	8,389	455,500	326
41	9/18/2023	5,063	6,097	8,567	94	6	8,219	455,100	408
42	9/19/2023	5,111	5,703	8,523	94	15	8,572	455,700	305
43	9/19/2023	5,256	5,991	8,362	94	27	8,597	455,000	298
44	9/20/2023	5,263	5,899	8,694	94	9	8,141	455,999	2816
45	9/21/2023	5,013	6,512	8,534	95	10	8,716	454,900	291

Stage Number	Report Date	ISIP (psi)	Breakdown Pressure (psi)	Avg Treating Pressure (psi)	Avg Treating Rate (BPM)	Pad Volume (bbls)	Total Clean Fluid (Bbls)	Total Proppant Amount (lbs)	Flush Volume (bbls)
46	9/21/2023	5,436	6,161	8,144	94	13	8,503	455,500	290
47	9/22/2023	5,132	6,827	7,873	94	61	8,149	455,800	302
48	9/22/2023	5,087	6,060	8,075	94	28	8,323	456,700	261
49	9/23/2023	5,387	6,625	7,883	94	18	8,109	455,300	274
50	9/24/2023	5,250	5,315	7,773	95	35	8,315	457,000	258
51	9/24/2023	5,185	6,791	7,836	94	26	8,282	456,600	252
52	9/25/2023	4,840	4,249	7,997	94	17	8,076	455,700	257
53	9/25/2023	5,084	6,472	8,180	95	47	8,378	456,800	250
54	9/26/2023	4,937	4,291	7,768	94	11	8,060	456,700	251
55	9/27/2023	4,734	6,769	7,797	94	39	8,494	455,500	225
56	9/27/2023	4,859	6,066	7,768	95	157	7,883	456,400	230
57	9/28/2023	5,120	6,372	7,752	95	97	8,206	455,000	292
58	9/28/2023	5,446	6,778	7,761	95	20	8,990	456,500	220
59	9/29/2023	4,960	6,407	7,758	94	17	8,018	453,800	268
60	9/29/2023	5,159	6,515	7,665	94	46	8,237	458,400	205
61	9/30/2023	4,580	6,713	7,639	94	48	8,103	455,000	276
62	9/30/2023	5,403	6,231	7,644	95	44	8,140	456,600	202
63	10/1/2023	5,164	6,335	7,689	94	25	8,024	455,500	270
64	10/2/2023	5,427	7,519	7,575	94	28	8,097	456,300	199

02/23/2024

Sullivan 7H
Perforation Report

Stage Number	Report Date	Total Shots	Cluster 1 Top TD	Cluster 5 Bottom TD
1	8/27/2023	36		21,511
2	8/27/2023	40	21,267	21,309
3	8/27/2023	40	21,267	21,108
4	8/27/2023	40	21,066	20,908
5	8/28/2023	40	20,866	20,707
6	8/28/2023	40	20,665	20,507
7	8/28/2023	40	20,465	20,306
8	8/28/2023	40	20,264	20,106
9	8/29/2023	40	20,064	19,905
10	8/30/2023	40	19,863	19,705
11	8/30/2023	40	19,663	19,504
12	8/31/2023	40	19,462	19,304
13	9/1/2023	40	19,262	19,103
14	9/2/2023	40	19,061	18,903
15	9/2/2023	40	18,861	18,702
16	9/3/2023	40	18,660	18,502
17	9/4/2023	40	18,460	18,301
18	9/4/2023	40	18,259	18,101
19	9/5/2023	40	18,059	17,900
20	9/6/2023	40	17,858	17,700
21	9/6/2023	40	17,658	17,499
22	9/7/2023	40	17,457	17,299
23	9/8/2023	40	17,257	17,098
24	9/8/2023	40	17,056	16,898
25	9/9/2023	40	16,856	16,697
26	9/10/2023	40	16,655	16,497
27	9/10/2023	40	16,455	16,296
28	9/11/2023	40	16,254	16,096
29	9/12/2023	40	16,054	15,895
30	9/12/2023	40	15,853	15,695
31	9/13/2023	40	15,653	15,494
32	9/13/2023	40	15,452	15,294
33	9/14/2023	40	15,251	15,093
34	9/14/2023	40	15,051	14,893
35	9/15/2023	40	14,850	14,692
36	9/16/2023	40	14,650	14,492
37	9/16/2023	40	14,449	14,291
38	9/17/2023	40	14,249	14,091
39	9/17/2023	40	14,048	13,890
40	9/18/2023	40	13,848	13,690
41	9/18/2023	40	13,647	13,489
42	9/19/2023	40	13,447	13,288
43	9/19/2023	40	13,246	13,088
44	9/20/2023	40	13,046	12,887
45	9/21/2023	40	12,845	12,687
46	9/21/2023	40	12,645	12,486
47	9/22/2023	40	12,444	12,286

02/23/2024

Stage Number	Report Date	Total Shots	Cluster 1 Top TD	Cluster 5 Bottom TD
48	9/22/2023	40	12,244	12,085
49	9/23/2023	40	12,043	11,885
50	9/24/2023	40	11,843	11,684
51	9/24/2023	40	11,642	11,484
52	9/25/2023	40	11,442	11,283
53	9/25/2023	40	11,241	11,083
54	9/26/2023	40	11,041	10,882
55	9/27/2023	40	10,840	10,682
56	9/27/2023	40	10,640	10,481
57	9/28/2023	40	10,439	10,281
58	9/28/2023	40	10,239	10,080
59	9/29/2023	40	10,038	9,880
60	9/29/2023	40	9,838	9,679
61	9/30/2023	40	9,637	9,479
62	9/30/2023	40	9,437	9,278
63	10/1/2023	40	9,236	9,078
64	10/2/2023	40	9,036	8,877

02/23/2024

Hydraulic Fracturing Fluid Product Component Information Disclosure



Job Start Date:	08/26/2023
Job End Date:	10/02/2023
State:	West Virginia
County:	Monongalia
API Number:	47-061-01919-00-00
Operator Name:	Northeast Natural Energy LLC
Well Name and Number:	Sullivan 7H
Latitude:	39.614887
Longitude:	-80.222968
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	8245.43857142858
Total Base Water Volume (gal)*:	24679578
Total Base Non Water Volume:	0

Water Source	Percent
Groundwater, < 1000TDS	100.00%

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
CIA-12	Universal Pressure Pumping	Acid corrosion inhibitor					
Clearal 268	Chemstream	Biocide					
Hydrochloric Acid (7.5%)	Universal Pressure Pumping	Acidizing					
Other Chemical(s)	Listed Above	See Trade Name(s)					
Sand (100 Mesh Proppant)	Universal Pressure Pumping	Proppant					
Sand (40/70 White Proppant)	Universal Pressure Pumping	Proppant					
StimStream FR 9800	Chemstream	Friction Reducer					
StimStream SC 405	Chemstream	Scale Control					

02/23/2024

Water	Operator	Carrier Fluid					
Items above are Trade Names. Items below are the individual ingredients.							
			Water	7732-18-5	100.00000	87.42120	None
			Crystalline silica, quartz	14808-60-7	100.00000	11.11378	None
			Crystalline silica, quartz	14808-60-7	100.00000	1.20375	None
			Hydrochloric acid	7647-01-0	15.00000	0.02526	None
			Water	7732-18-5	80.00000	0.01708	
			Water	7732-18-5	70.00000	0.01433	
			Butene Homopolymer	9003-29-6	25.00000	0.01272	
			Alkanes, C16-20-iso-	90622-59-6	25.00000	0.01272	None
			Glutaraldehyde	111-30-8	20.00000	0.00427	None
			Diethylenetriamine penta (methylene phosphonic acid) (DTPMP)	15827-60-8	10.00000	0.00205	
			2 Phosphobutane 1,2,4 tricarboxylic acid	37971-36-1	10.00000	0.00205	None
			Citric Acid	77-92-9	10.00000	0.00205	
			alcohols, C12-18, ethoxylated	68213-23-0	3.00000	0.00153	
			Quaternary Ammonium Compounds	68424-85-1	3.00000	0.00064	
			Didecyl dimethyl ammonium chloride	7173-51-5	3.00000	0.00064	
			Ethanol	64-17-5	1.50000	0.00032	
			Ethylene glycol	107-21-1	45.00000	0.00008	None
			Glycol Ether EB	111-76-2	45.00000	0.00008	
			N,N-Dimethylformamide	68-12-2	20.00000	0.00003	
			Tar bases,quinoline derivs.,benzyl chloride-quaternized	72480-70-7	20.00000	0.00003	
			Water	7732-18-5	15.00000	0.00003	
			Cinnamaldehyde	104-55-2	10.00000	0.00002	
			Nonylphenol ethoxylated	127087-87-0	10.00000	0.00002	
			Alcohols, C6-12	68603-15-6	10.00000	0.00002	

* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

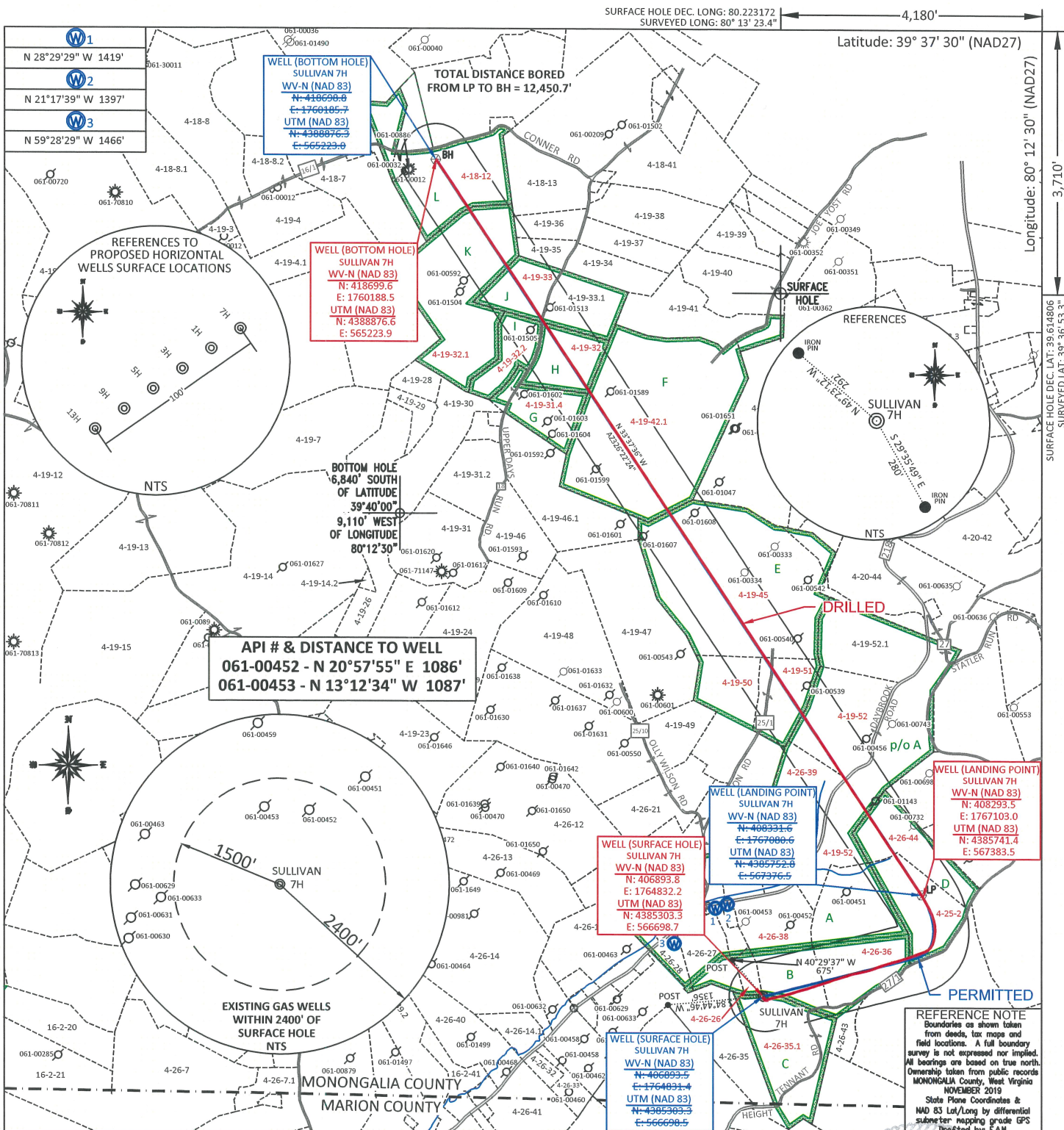
** Information is based on the maximum potential for concentration and thus the total may be over 100%

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

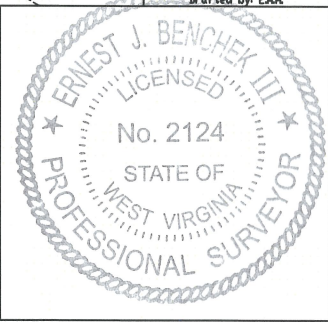
(MSDS)

02/23/2024



FILE #: NNE20
 DRAWING #: 3051
 SCALE: PLAT: 1" = 2000'
 TICK: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/200
 PROVEN SOURCE OF ELEVATION: SUBMETER MAPPING GRADE GPS

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: 
 L.L.S. #2124 : Ernest J. Benchek III



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

DATE: FEBRUARY 6, 2024
 OPERATOR'S WELL #: SULLIVAN 7H AS-DRILLED
 API WELL #: 47 61 01919
 STATE COUNTY PERMIT

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

WATERSHED: UPPER MONONGAHELA RIVER AS-BUILT ELEVATION: 1,476'
 COUNTY/DISTRICT: MONONGALIA / CLAY QUADRANGLE: GRANT TOWN
 SURFACE OWNER: ALAN SULLIVAN ACREAGE: 843.32 +/-
 OIL & GAS ROYALTY OWNER: ALAN SULLIVAN ACREAGE: 25.870 02/23/2024
 LEASE NUMBERS: _____

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
 CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY): _____

TARGET FORMATION: MARCELLUS DRILLED DEPTH: TVD: 8,220' TMD: 21,613'
 WELL OPERATOR: NORTHEAST NATURAL ENERGY LLC DESIGNATED AGENT: JOHN ADAMS
 ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200 ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200
 CITY: CHARLESTON STATE: WV ZIP CODE: 25301 CITY: CHARLESTON STATE: WV ZIP CODE: 25301

4-18-12	LEE ANN SHUMILOFF
4-19-33	BRYAN D TENNANT
4-19-32	SHERI K CORDER
4-19-45	ROCKY & CATHY J BARR
4-19-51	AMANDA PAULETTE; LINDA JANE; TERESA DARLENE POLANSKY
4-26-44	RODNEY EDWARD & HEATHER ANNE ROBINSON
4-25-2	ORVILLE W BELL JR & RENEE D LOAR
4-26-36	LARRY NOLAN & LINDA MAE PAYTON
4-26-38	ADAM CLAY DARRAH
4-26-35.1	ALAN SULLIVAN
4-26-26	NNE MIDSTREAM LLC
4-19-32.1	JIMMY R & PAMELA K TENNANT; BILLY RAY & ROXANA CAHILL
4-19-32.2	JIMMY RANDALL TENNANT
4-19-31.4	PAMELA K TENNANT
4-19-42.1	THOMAS J & DIANN M ZYRA
4-19-50	ROCKY & CATHY J BARR
4-26-39	ADAM CLAY DARRAH
4-19-52	LARRY F & BRENDA KAY KUHN

LEASE INDEX			
A	WV-061-000160-001-ACT	H	WV-061-004588-002
B	WV-061-000160-001-ACT	I	WV-061-006016-001
C	WV-061-005448-002	J	WV-061-005475-001
D	WV-061-005961-002	K	WV-061-006016-001
E	WV-061-004442-001	L	WV-061-004519-000
F	WV-061-000171-002		
G	WV-061-003931-010		

02/23/2024

FILE #: NEE20

DRAWING #: 3051

SCALE: N/A

DATE: FEBRUARY 5, 2024

OPERATOR'S WELL #: SULLIVAN 7H AS-DRILLED

API WELL #: 47 61 01919
STATE COUNTY PERMIT