

AUG 12 2015

WR-35
Rev. 8/23/13

WV GEOLOGICAL SURVEY
MORGANTOWN, WV

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

API 47 - 061 - 01671 County Monongalia District Clay
Quad Blacksville, WV Pad Name Yost Field/Pool Name Blacksville
Farm name Yost Heritage Inc. Well Number 9H
Operator (as registered with the OOG) Northeast Natural Energy LLC
Address 707 Virginia St. 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 4388277.9 Easting 567098.5
Landing Point of Curve Northing 4388617.7 Easting 567436.6
Bottom Hole Northing 4390260.9 Easting 566281.4

Elevation (ft) 1,492' 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 for 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 5-16-2014 Date drilling commenced 9-29-2014 Date drilling ceased 12-23-2014
Date completion activities began 3/7/2015 Date completion activities ceased 3-28-2015
Verbal plugging (Y/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 1,378' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 2,410' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 320' ; 712' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by: _____

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API 47-061 - 01671 Farm name Yost Heritage Inc. Well number 9H

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	50'	N	N/A	N/A	Y to surface
Surface	17.5	13 3/8	1,377'	N	54.5	N/A	Y 35 BBL return
Coal							
Intermediate 1	12.25	9 5/8	2,550'	N	40	N/A	Y 25 BBL return
Intermediate 2							
Intermediate 3							
Production	8.5	5.5	15,777'	N	20	N/A	Y 5 BBL return
Tubing	4.771	2.875	8,970'	N	6.5	N/A	
Packer type and depth set		No packer set					

Comment Details All casing and cement jobs went with out issue.

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 ready mix	36.4		.75	27.27	CTS	48
Surface	Class A	1004	15.2	1.27	1,271	CTS	8
Coal							
Intermediate 1	Class A	858	15.2	1.26	1,074	CTS	8
Intermediate 2							
Intermediate 3							
Production	50/50 Premium NE -1.3% R-3.3% MPA170	3192	14.5	1.17	2,661	CTS	48
Tubing							

Drillers TD (ft) 15,777' Loggers TD (ft) 15,752'
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure

Kick off depth (ft) 6,050'

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 aprox 120'

Intermediate: bow spring centralizers every 3rd joint or aprox 120'

Production: Hard bodied spiral centralizers every other joint or aprox 80' from TD to KOP then bow spring from KOP to 9 5/8" every forth joint or aprox 140'

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS Completed in a multi-stage plug-and-perforate manner.
 (See Attached Details).

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS

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

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**WV GEOLOGICAL SURVEY
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API 47- 061 - 01671 Farm name Yost Heritage Inc. Well number 9H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
					*See Attached Documentation

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 insert additional pages as applicable.

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WV GEOLOGICAL SURVEY
MORGANTOWN, WV

API 47-061-01671 Farm name Yost Heritage Inc. Well number 9H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>
<u>Marcellus Shale</u>	<u>8,262'</u> TVD <u>16,233'</u> MD
_____	_____
_____	_____
_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 4750 psi Bottom Hole _____ psi DURATION OF TEST 48 hrs

OPEN FLOW Gas 6912 mcfpd Oil _____ bpd NGL _____ bpd Water _____ bpd GAS MEASURED BY Estimated Orifice Pilot

<u>LITHOLOGY/ FORMATION</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H₂S, ETC)</u>
	<u>DEPTH IN FT NAME TVD</u>	<u>DEPTH IN FT TVD</u>	<u>DEPTH IN FT MD</u>	<u>DEPTH IN FT MD</u>	
	<u>0</u>		<u>0</u>		<u>See Attachment</u>

Please insert additional pages as applicable.

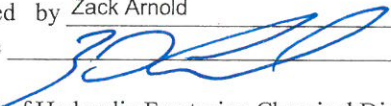
Drilling Contractor Pioneer 63
Address 1250 NE Loop 410 Suite 1000 City San Antonio State TX Zip 78209

Logging Company Baker Hughes
Address 837 Philippi Pike City Clarksburg State WV Zip 26301

Cementing Company Baker Hughes
Address 837 Philippi Pike City Clarksburg State WV Zip 26301

Stimulating Company Schlumberger
Address 1080 US-33 City Weston State WV Zip 26452

Please insert additional pages as applicable.

Completed by Zack Arnold Telephone 304-241-5752, ext. 7105
Signature  Title General Manager, Operations Date 8-3-2015

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CEMENT JOB REPORT



CUSTOMER NORTHEAST NATURAL ENER	DATE 02-OCT-14	F.R. # 10011104853	SERV. SUPV. Charles M Gray
LEASE & WELL NAME YOST 9H - API 47061016710000	LOCATION DAYBROOK		COUNTY-PARISH-BLOCK Monongalia West Virginia
DISTRICT Clarksburg	DRILLING CONTRACTOR RIG # PERFORMANCE # 1		TYPE OF JOB Surface

SIZE & TYPE OF PLUGS	LIST-CSG-HARDWARE	MECHANICAL BARRIERS	MD	TVD	HANGER TYPES	MD	TVD
BJ Cement Plug, Rubber, Top 13-3/8	Float Shoe 13-3/8 - 8rd						
	Float Collar, AI Flap, 13-3/8 - 8rd						

MATERIALS FURNISHED BY BJ	LAB REPORT NO.	PHYSICAL SLURRY PROPERTIES					
		SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT	WATER GPS	PUMP TIME HR:MIN	Bbl SLURRY
GELLED H2O			8.43				25
PREMIUM NE + 2% CACL	0	1,004	15.2	1.27	5.77		227 137.87
H2O			8.34				203
275 LB CELLOFLAKE (ON THE SIDE)			0				0
400 LB GRANULATED SUGAR (ON THE SIDE)			0				0
Available Mix Water	750 Bbl.	Available Displ. Fluid	750 Bbl.	TOTAL		455	137.87

HOLE			TBG-CSG-D.P.						COLLAR DEPTHS			
SIZE	% EXCESS	DEPTH	ID	OD	WGT.	TYPE	MD	TVD	GRADE	SHOE	FLOAT	STAGE
17.5		1399	12.62	13.38	54.5	CSG	1360	1360	J-55	1360	1315	

LAST CASING					PKR-CMT RET-BR PL-LINER				PERF. DEPTH			TOP CONN		WELL FLUID	
ID	OD	WGT	TYPE	MD	TVD	BRAND & TYPE		DEPTH	TOP	BTM	SIZE	THREAD	TYPE	WGT.	
23.	24	95.	CSG	50	50	NO PACKER		0	0	0	13.375	8RD	OTHER	0	

DISPL. VOLUME		DISPL. FLUID		CAL. PSI	CAL. MAX PSI	OP. MAX	MAX TBG PSI		MAX CSG PSI		MIX WATER
VOLUME	UOM	TYPE	WGT.	BUMP PLUG	TO REV.	SQ. PSI	RATED	Operator	RATED	Operator	
204.1	BBLs	H2O	8.34	495	0	0	0	0	2000	700	TANK

EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING:

PRESSURE/RATE DETAIL						EXPLANATION	
TIME HR:MIN.	PRESSURE - PSI		RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	SAFETY MEETING: BJ CREW <input checked="" type="checkbox"/> CO. REP. <input checked="" type="checkbox"/>	
	PIPE	ANNULUS				TEST LINES 2850 PSI	
						CIRCULATING WELL - RIG <input type="checkbox"/> BJ <input checked="" type="checkbox"/>	
11:30	0	0	0	0		ARRIVE ON LOCATION	
11:40	0	0	0	0		PRE RIG IN MEETING	
12:55	0	0	0	0		PRE JOB SAFETY MEETING	
13:01	140	0	5	5	H2O	LINE FILL	
13:04	2890	0	1	1	H2O	PRESSURE TEST LINES	
13:06	110	0	5.8	215	P/W	PROCESSED H2O AHEAD	
13:45	100	0	5.8	25	GEL H2O	6% PREFLUSH + 25 LB FLAKE	
13:48	110	0	5.8	10	H2O	WATER SPACER	
13:50	250	0	5.8	227	SLURRY	PREMIUM NE + 2% CACL @ 15.2	
14:34	0	0	0	0		SHUTDOWN, RELEASE PLUG	
14:36	105	0	6.5		H2O	START DISPLACEMENT	
15:20	610	0	0	204.1	H2O	PLUG DOWN	
15:23	0	0	0	0		CHECK FLOAT - FLOAT HELD (1/2 BBL BACK)	
15:25	0	0	0	0		PRE RIG OUT MEETING	

BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL.CMT RETURNS/ REVERSED	TOTAL BBL. PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT	SERVICE SUPERVISOR SIGNATURE:
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	500	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	35	681	0	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	

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CEMENT JOB REPORT



CUSTOMER NORTHEAST NATURAL ENER		DATE 05-OCT-14	F.R. # 10011105749	SERV. SUPV. Charles M Gray									
LEASE & WELL NAME YOST 9H - API 47061016710000		LOCATION CLAY		COUNTY-PARISH-BLOCK Monongalia West Virginia									
DISTRICT Clarksburg		DRILLING CONTRACTOR RIG # PERFORMANCE # 1		TYPE OF JOB Intermediate									
SIZE & TYPE OF PLUGS		LIST-CSG-HARDWARE		MECHANICAL BARRIERS		MD	TVD	HANGER TYPES		MD	TVD		
BJ Cement Plug, Rubber, Top 9-5/8		Float Shoe 9-5/8 - 8rd											
		Float Collar, Al Flap, 9-5/8 - 8rd											
PHYSICAL SLURRY PROPERTIES													
MATERIALS FURNISHED BY BJ		LAB REPORT NO.		SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT	WATER GPS	PUMP TIME HR:MIN	Bbl SLURRY	Bbl MIX WATER			
GELLED H2O					8.43				25				
PREMIUM NE + 2 % CACL		0		838	15.2	1.27	5.77		190	115.40			
H2O					8.34				192				
200 LB GRANULATED SUGAR (ON THE SIDE)					0				0				
Available Mix Water 1000 Bbl.		Available Displ. Fluid 500 Bbl.		TOTAL				407		115.40			
HOLE			TBG-CSG-D.P.						COLLAR DEPTHS				
SIZE	% EXCESS	DEPTH	ID	OD	WGT.	TYPE	MD	TVD	GRADE	SHOE	FLOAT	STAGE	
12.25		2653	8.835	9.625	40	CSG	2568	2568	J-55	2548	2528		
LAST CASING			PKR-CMT RET-BR PL-LINER			PERF. DEPTH		TOP CONN		WELL FLUID			
ID	OD	WGT	TYPE	MD	TVD	BRAND & TYPE	DEPTH	TOP	BTM	SIZE	THREAD	TYPE	WGT.
13.	13.38	55.	CSG	1310	1310	NO PACKER	0	0	0	9.625	8RD	OTHER	0
DISPL. VOLUME		DISPL. FLUID		CAL. PSI	CAL. MAX PSI	OP. MAX	MAX TBG PSI		MAX CSG PSI		MIX WATER		
VOLUME	UOM	TYPE	WGT.	BUMP PLUG	TO REV.	SQ. PSI	RATED	Operator	RATED	Operator			
192	BBSL	H2O	8.34	920	0	0	0	0	2800	1500	TANK		

EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING:

PRESSURE/RATE DETAIL						EXPLANATION	
TIME HR:MIN.	PRESSURE - PSI		RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	SAFETY MEETING: BJ CREW <input checked="" type="checkbox"/> CO. REP. <input checked="" type="checkbox"/>	
	PIPE	ANNULUS				TEST LINES 3000 PSI	
						CIRCULATING WELL - RIG <input type="checkbox"/> BJ <input checked="" type="checkbox"/>	
11:00	0	0	0	0		ARRIVE ON LOCATION	
15:30	0	0	0	0		PRE RIG IN MEETING	
16:25	0	0	0	0		PRE JOB SAFETY MEETING	
16:30	130	0	3.5	0	H2O	WASH DOWN CASING	
18:06	0	0	0	215	H2O	SHUTDOWN, RIG IN CEMENT HEAD	
18:35	140	0	5.5	40	H2O	WATER AHEAD	
18:44	150	0	5.5	25	GEL H2O	6% PREFLUSH	
18:49	145	0	5.5	10	H2O	WATER SPACER	
18:51	200	0	5.5	190	SLURRY	PREMIUM NE + 2 % CACL	
19:25	0	0	0	0		SHUTDOWN, RELEASE PLUG	
19:26	160	0	6.8	0	H2O	START DISPLACEMENT	
20:00	1210	0	0	192	H2O	PLUG DOWN	
20:02	0	0	0	0		CHECK FLOAT - FLOAT HELD (1 BBL BACK)	
	0	0	0	0		PRE RIG OUT MEETING	

BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL.CMT RETURNS/ REVERSED	TOTAL BBL. PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT	SERVICE SUPERVISOR SIGNATURE:
<input checked="" type="checkbox"/> Y	N 980	<input checked="" type="checkbox"/> Y	N 2	672	0	Y <input checked="" type="checkbox"/> N	

CEMENT JOB REPORT



CUSTOMER NORTHEAST NATURAL ENER	DATE 23-DEC-14	F.R. # 10011127950	SERV. SUPV. Jason H Matheny
LEASE & WELL NAME YOST 9H - API 47061016710000	LOCATION BLACKSVILLE		COUNTY-PARISH-BLOCK Monongalia West Virginia
DISTRICT Clarksburg	DRILLING CONTRACTOR RIG # PIONEER 63		TYPE OF JOB Long String

SIZE & TYPE OF PLUGS	LIST-CSG-HARDWARE	MECHANICAL BARRIERS	MD	TVD	HANGER TYPES	MD	TVD
Latch Down Plug & Assembly, 5-1/2	Guide Shoe, Cement Nose, 5-1/2 i						

MATERIALS FURNISHED BY BJ	LAB REPORT NO.	PHYSICAL SLURRY PROPERTIES						
		SACKS OF CEMENT	SLURRY WGT PPG	SLURRY YLD FT	WATER GPS	PUMP TIME HR:MIN	Bbl SLURRY	Bbl MIX WATER
ULTRAFUSH HV		0	13	0	0	00:00	100	
50/50 PNE-1.35% R-3 .2% MPA-170		3,042	14.5	1.18	5.18	06:07	639.3	375.18
H2O		0	8.34	0	0	00:00	349.4	
6 DRUMS S-5		0	0	0	0	00:00	0	
16 BUCKETS ULTRALFUSH		0	0	0	0	00:00	0	
50# SUGAR		0	0	0	0	00:00	0	
Available Mix Water <u>500</u> Bbl.		Available Displ. Fluid <u>500</u> Bbl.		TOTAL			1088.7	375.18

HOLE			TBG-CSG-D.P.							COLLAR DEPTHS		
SIZE	% EXCESS	DEPTH	ID	OD	WGT.	TYPE	MD	TVD	GRADE	SHOE	FLOAT	STAGE
8.5	10	15777	4.778	5.5	20	CSG	15767	8282	P-110	15767	15755.25	

LAST CASING				PKR-CMT RET-BR PL-LINER				PERF. DEPTH		TOP CONN		WELL FLUID	
ID	OD	WGT	TYPE	MD	TVD	BRAND & TYPE	DEPTH	TOP	BTM	SIZE	THREAD	TYPE	WGT.
8.8	9.625	40	CSG	2571	2571	NO-PACKER	0	0	0	5.5	BUTT	SYNTHETIC MUD	12.5

DISPL. VOLUME		DISPL. FLUID		CAL. PSI	CAL. MAX PSI	OP. MAX	MAX TBG PSI		MAX CSG PSI		MIX WATER
VOLUME	UOM	TYPE	WGT.	BUMP PLUG	TO REV.	SQ. PSI	RATED	Operator	RATED	Operator	TANKS
354	BBLs	H2O	8.34	3600	0	0	0	0	10112	4000	TANKS

EXPLANATION: TROUBLE SETTING TOOL, RUNNING CSG, ETC. PRIOR TO CEMENTING:

PRESSURE/RATE DETAIL						EXPLANATION	
TIME HR:MIN.	PRESSURE - PSI		RATE BPM	Bbl. FLUID PUMPED	FLUID TYPE	SAFETY MEETING: BJ CREW <input checked="" type="checkbox"/> CO. REP. <input checked="" type="checkbox"/>	
	PIPE	ANNULUS				TEST LINES	6700 PSI
						CIRCULATING WELL - RIG <input checked="" type="checkbox"/> BJ <input checked="" type="checkbox"/>	
08:30	0	0	0	0	0	ARRIVED ON LOCATION	
18:05	950	0	5.4	100	ULTRAFU	PRE-FLUSH	
18:26	950	0	6	626	SLURRY	PNE-1 + ADDITIVES	
20:05	0	0	0	0	H2O	WASH LINES RELEASE PLUG	
20:08	1000	0	7.5	0	H2O	START DISPLACEMENT	
21:00	4000	0	0	354.9	H2O	END DISPLACEMENT	
21:03	0	0	0	0	N/A	BLEED OFF/RIG OUT	

BUMPED PLUG	PSI TO BUMP PLUG	TEST FLOAT EQUIP.	BBL.CMT RETURNS/ REVERSED	TOTAL BBL. PUMPED	PSI LEFT ON CSG	SPOT TOP OUT CEMENT	SERVICE SUPERVISOR SIGNATURE:
<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	3600	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	0	1080.9	0	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	

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Perforation Record

Stage Number	Report Date	Perforated from MD ft	Perforated to MD ft	Number of Perforations	Formation
1	3/13/2015	15722	15570	40	Marcellus Shale
2	3/15/2015	15517	15365	40	Marcellus Shale
3	3/16/2015	15312	15160	40	Marcellus Shale
4	3/16/2015	15104	14955	40	Marcellus Shale
5	3/17/2015	14902	14750	40	Marcellus Shale
6	3/17/2015	14697	14545	40	Marcellus Shale
7	3/17/2015	14494	14340	40	Marcellus Shale
8	3/18/2015	14287	14135	40	Marcellus Shale
9	3/18/2015	14082	13930	40	Marcellus Shale
10	3/19/2015	13877	13725	40	Marcellus Shale
11	2/17/2015	13672	13519	40	Marcellus Shale
12	3/20/2015	13467	13320	40	Marcellus Shale
13	3/20/2015	13262	13110	40	Marcellus Shale
14	2/17/2015	13057	12905	40	Marcellus Shale
15	2/17/2015	12850	12700	40	Marcellus Shale
16	3/21/2015	12647	12495	40	Marcellus Shale
17	3/21/2015	12442	12290	40	Marcellus Shale
18	3/21/2015	12235	12085	40	Marcellus Shale
19	3/22/2015	12032	11880	40	Marcellus Shale
20	3/22/2015	11827	11675	40	Marcellus Shale
21	3/22/2015	11622	11470	40	Marcellus Shale
22	3/23/2015	11417	11265	40	Marcellus Shale
23	3/23/2015	11212	11060	40	Marcellus Shale
24	3/24/2015	11007	10855	40	Marcellus Shale
25	3/25/2015	10802	10655	40	Marcellus Shale
26	3/25/2015	10597	10445	40	Marcellus Shale
27	3/26/2015	10392	10240	40	Marcellus Shale
28	3/26/2015	10187	10037	40	Marcellus Shale
29	3/26/2015	9980	9830	40	Marcellus Shale
30	3/26/2015	9777	9625	40	Marcellus Shale
31	3/26/2015	9572	9420	40	Marcellus Shale
32	3/27/2015	9362	9215	40	Marcellus Shale
33	3/27/2015	9162	9010	40	Marcellus Shale

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Stimulation Record							
Stage Number	Report Date	Avg Treating Rate (BPM)	Avg Treating Pressure (psi)	Breakdown Pressure (psi)	ISIP (psi)	Total Proppant Amount (lbs)	Total Clean Fluid (Bbls)
1	3/13/2015	75	8,804	6,895	N/A	335,840	7,525
2	3/15/2015	75	9,051	8,198	5,005	403,500	9,533
3	3/16/2015	76	9,274	8,146	N/A	404,740	7,446
4	3/16/2015	81	8,878	9,174	6,865	399,440	7,351
5	3/17/2015	86	8,816	6,514	6,295	402,160	7,248
6	3/17/2015	85	8,891	7,420	6,055	400,020	7,121
7	3/17/2015	80	9,091	8,708	6,404	401,980	8,423
8	3/18/2015	69	8,976	8,099	5,927	399,220	8,649
9	3/18/2015	76	8,972	8,749	6,214	230,880	5,697
10	3/19/2015	78	8,685	8,857	6,372	399,730	7,248
11	3/19/2015	82	8,675	8,924	6,214	401,580	7,180
12	3/20/2015	80	8,514	7,555	6,691	400,900	7,262
13	3/20/2015	82	8,710	8,836	6,562	401,400	7,193
14	3/20/2015	81	8,745	8,924	6,308	399,780	7,079
15	3/20/2015	78	8,799	8,804	6,117	401,220	7,312
16	3/21/2015	75	8,393	8,535	6,498	400,640	7,017
17	3/21/2015	80	8,710	8,861	6,562	400,400	7,134
18	3/21/2015	88	8,608	8,303	6,023	401,320	7,102
19	3/22/2015	84	8,635	7,962	6,627	401,000	6,753
20	3/22/2015	90	8,692	7,845	6,721	399,040	6,818
21	3/22/2015	90	8,790	9,088	N/A	304,464	5,977
22	3/23/2015	85	8,654	9,198	6,594	365,998	6,675
23	3/23/2015	87	8,777	9,406	6,023	400,005	6,826
24	3/24/2015	91	8,633	8,118	6,289	401,382	6,899
25	3/25/2015	91	8,760	8,712	6,627	399,400	6,797
26	3/25/2015	92	8,522	7,677	5,927	348,600	6,747
27	3/26/2015	92	8,831	8,328	N/A	343,780	6,259
28	3/26/2015	83	8,776	7,835	N/A	397,720	6,571
29	3/26/2015	90	8,474	8,263	6,144	399,940	6,782
30	3/26/2015	87	8,801	8,065	N/A	350,435	7,211
31	3/26/2015	84	8,877	8,075	5,705	401,647	8,313
32	3/27/2015	94	8,689	8,163	6,584	399,420	7,123
33	3/27/2015	87	8,553	8,223	6,205	400,540	8,303

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WV GEOLOGICAL SURVEY
MORGANTOWN, WV

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WV GEOLOGICAL SURVEY
MORGANTOWN, WV

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	3/13/2015
Job End Date:	3/27/2015
State:	West Virginia
County:	Monongalia
API Number:	47-061-01671-00-00
Operator Name:	Northeast Natural Energy LLC
Well Name and Number:	Yost 9H
Longitude:	-80.21800600
Latitude:	39.64165400
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	8,335
Total Base Water Volume (gal):	10,461,948
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
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.							
Proppant Transport	Schlumberger	Corrosion Inhibitor, Bactericide (Myvacide GA25), Scale Inhibitor, AntiFoam Agent, Acid, Breaker, Gelling Agent, Friction Reducer, Crosslinker, Iron Co					
			Water (Including Mix Water Supplied by Client)*	NA		86.55290	
			Quartz, Crystalline silica	14808-60-7	66.53302	8.94676	
			Ceramic materials and wares, chemicals	66402-68-4	31.93891	4.29486	
			Hydrochloric acid	7647-01-0	0.63850	0.08586	
			Guar gum	9000-30-0	0.50086	0.06735	
			Ammonium sulfate	7783-20-2	0.13657	0.01836	
			Acrylamide, 2-acrylamido-2-methylpropanesulfonic acid, sodium salt polymer	38193-60-1	0.10080	0.01355	
			Glutaraldehyde	111-30-8	0.04475	0.00602	
			Diammonium peroxidisulphate	7727-54-0	0.02916	0.00392	
			Potassium borate	1332-77-0	0.01798	0.00242	

<p style="text-align: center; font-size: 2em; color: blue; font-weight: bold;">RECEIVED</p> <p style="text-align: center; font-size: 1.2em; color: blue;">AUG 12 2015</p> <p style="text-align: center; font-size: 1.2em; color: blue;">WV GEOLOGICAL SURVEY MORGANTOWN, WV</p>	Ethanol, 2,2',2''-nitrioltris-, 1,1',1''-tris(dihydrogen phosphate), sodium salt	68171-29-9	0.01130	0.00152
	Polymer of 2-acrylamido-2-methylpropanesulfonic acid sodium salt and methyl acrylate	136793-29-8	0.01080	0.00145
	Potassium hydroxide	1310-58-3	0.00664	0.00089
	Urea	57-13-6	0.00663	0.00089
	Glycerol	56-81-5	0.00586	0.00079
	Trisodium ortho phosphate	7601-54-9	0.00497	0.00067
	Sodium erythorbate	6381-77-7	0.00404	0.00054
	Vinylidene chloride/methylacrylate copolymer	25038-72-6	0.00369	0.00050
	Non-crystalline silica (impurity)	7631-86-9	0.00263	0.00035
	Methanol	67-56-1	0.00214	0.00028
	Sodium sulfate	7757-82-6	0.00155	0.00021
	Fatty acids, tall-oil	61790-12-3	0.00149	0.00020
	Ethylene Glycol	107-21-1	0.00141	0.00019
	Thiourea, polymer with formaldehyde and 1-phenylethanone	68527-49-1	0.00123	0.00017
	Alcohols, C14-15, ethoxylated (TEO)	68951-67-7	0.00058	0.00008
	Propargyl alcohol	107-19-7	0.00039	0.00005
	2-propanamid	79-06-1	0.00033	0.00004
	Polypropylene glycol	25322-69-4	0.00032	0.00004
	Hexadec-1-ene	629-73-2	0.00013	0.00002
	Magnesium silicate hydrate (taic)	14807-96-6	0.00011	0.00002
Tetrasodium ethylenediaminetetraacetate poly(tetrafluoroethylene)	64-02-8	0.00017	0.00002	
Dimethyl siloxanes and silicones	9002-84-0	0.00005	0.00001	
1-Octadecene (C18)	63148-62-9	0.00009	0.00001	
Dodecamethylcyclohexasiloxane	112-88-9	0.00006	0.00001	
Siloxanes and silicones, dimethyl, reaction products with silica	640-97-6			
Copper(II) sulfate	67762-90-7	0.00001		
Decamethyl cyclopentasiloxane	7758-98-7			
Octamethylcyclotetrasiloxane	541-02-6	0.00001		
Formaldehyde	556-67-2	0.00001		
	50-00-0	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)

SURFACE HOLE DEC. LONG: 80.218209
SURVEYED LONG: 80° 13' 05.6"
Latitude: 39° 40' 00" (NAD27)

Longitude: 80° 12' 30" (NAD27)

WELL (BOTTOM HOLE) YOST 9H
WV-N (NAD 83)
N: 423184.1
E: 1763734.3
UTM (NAD 83)
N: 4390260.9
E: 566281.4

WELL (BOTTOM HOLE) YOST 9H
WV-N (NAD 83)
N: 423169.0
E: 1763648.2
UTM (NAD 83)
N: 4390255.9
E: 566255.2

WELL (LANDING POINT) YOST 9H
WV-N (NAD 83)
N: 417728.9
E: 1767434.9
UTM (NAD 83)
N: 4388617.7
E: 567436.6

WELL (SURFACE) YOST 9H
WV-N (NAD 83)
N: 416632.2
E: 1766307.0
UTM (NAD 83)
N: 4388277.9
E: 567098.5

WELL (SURFACE) YOST 9H
WV-N (NAD 83)
N: 416631.5
E: 1766307.0
UTM (NAD 83)
N: 4388277.7
E: 567098.8

TOP HOLE (UTM NAD 83)
N) 4388277.7
E) 567098.8
BOTTOM HOLE (UTM NAD 83)
N) 4390255.9
E) 566255.2

WELL (LANDING POINT) YOST 9H
WV-N (NAD 83)
N: 417737.4
E: 1767451.4
UTM (NAD 83)
N: 4388620.4
E: 567441.6

REFERENCE NOTES
Boundaries as shown taken from deeds, tax maps and field locations. A full boundary survey is not expressed nor implied. All bearings are based on true north. Ownership taken from public records Monongalia County, West Virginia JUNE 2013
State Plane Coordinates & NAD 83 Lat/Long by differential submeter mapping grade GPS
Drafted by: EAM

- WELL REFERENCE (API#, DISTANCE TO LATERAL)**
- 061-00382 N 81°52'59" W 756'
 - 061-00352 N 44°34'22" W 1,257'
 - 061-061-00351 N 32°25'48" W 772'
 - 061-00349 N 17°31'05" W 1,304'
 - 061-00348
 - 061-00342
 - 061-01595
 - 061-00363
 - 061-00373
 - 061-00263
 - 061-00242
 - 061-01585
 - 061-71012
 - 061-01651

FILE #: NNE10
DRAWING #: 2300
SCALE: PLAT - 1" = 1200'
TICK MARK - 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: [Signature]
L.L.S. #2124 : Ernest J. Benchek III



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
WVDEP OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25304
Well Type: Oil Waste Disposal Production Deep
 Gas Liquid Injection Storage Shallow
WATERSHED: DUNKARD CREEK
COUNTY/DISTRICT: MONONGALIA / CLAY
SURFACE OWNER: YOST HERITAGE INC.
OIL & GAS ROYALTY OWNER: JOE POGUE ET AL
LEASE NUMBERS: _____

DATE: AUGUST 4, 2015
OPERATOR'S WELL #: YOST NO. 9H AS-DRILLED
API WELL #: 47 61 STATE COUNTY 01671
AS-BUILT ELEVATION: 1,492'
QUADRANGLE: BLACKSVILLE, WV
ACREAGE: 11.593 +/-
ACREAGE: 318.60 +/-

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
WELL OPERATOR: NORTHEAST NATURAL ENERGY LLC
ADDRESS: 707 VIRGINIA STREET, SUITE 1200
CITY: CHARLESTON STATE: WV ZIP CODE: 25301
ESTIMATED DEPTH: TVD: 8,262' TMD: 16,233'
DESIGNATED AGENT: JOHN ADAMS
ADDRESS: 707 VIRGINIA STREET SUITE 1200
CITY: CHARLESTON STATE: WV ZIP CODE: 25301