

~~CONFIDENTIAL~~

expired 2/21/18

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

API 47-079-01538 County Putnam District Pocatalico
Quad Bancroft Pad Name Cabot 50 Field/Pool Name _____
Farm name Amherst Industries, Inc. Well Number Cabot 50
Operator (as registered with the OOG) Cabot Oil & Gas Corporation
Address Five Penn Center West, Suite 401 City Pittsburgh State PA Zip 15276

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

Elevation (ft) 1004.23 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)
SEE ATTACHED PAGE 5 of 8

Date permit issued 6/6/2014 Date drilling commenced 08/09/2014 Date drilling ceased 10/27/2014
Date completion activities began 11/21/2014 Date completion activities ceased 1/19/2015
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 None Reported Open mine(s) (Y/N) depths N
Salt water depth(s) ft 2105-2150' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 405' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed

Reviewed by: 
7-25-15

WR-35 Rev. 8/23/13

API 47-079 - 01538 Farm name Amherst Industries, Inc. Well number Cabot 50

Table with 8 columns: CASING STRINGS, Hole Size, Casing Size, Depth, New or Used, Grade wt/ft, Basket Depth(s), Did cement circulate (Y/N). Rows include Conductor, FW, Surface, Intermediate 1, Liner, Production, and Packer type and depth set.

Comment Details

Table with 8 columns: CEMENT DATA, Class/Type of Cement, Number of Sacks, Slurry wt (ppg), Yield (ft³/sks), Volume (ft³), Cement Top (MD), WOC (hrs). Includes a row with 'SEE ATTACHED PAGE 6 of 8'.

Drillers TD (ft) 14,520' Loggers TD (ft) 14,520'
Deepest formation penetrated Rogersville Formation Plug back to (ft) 14,085'
Plug back procedure RIH and set CIBP @ 14085. Pressured up to 7000 psi and set BOT CIBP.

Kick off depth (ft) N/A

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

Well cored [X] Yes [] No Conventional Sidewall Were cuttings collected [X] Yes [] No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING FW String: No Centralizers
Surface String: Ran (1) 17" bowspring centralizer every joint from 2258' to 38' (56 total)
Intermediate String: Ran (1) 12" bowspring centralizer every joint from 7021' to 73' (156 total)
Liner String: Ran (1) 8" solid body centralizer every joint from 9961' to 6780' (78 total)
Production String: Ran (1) 5 5/8" solid body spiral centralizer every joint from 14,498' to 8052' (158 total)

WAS WELL COMPLETED AS SHOT HOLE [X] Yes [] No DETAILS 0.54" OD, 60° phasing, 4 SPF

WAS WELL COMPLETED OPEN HOLE? [] Yes [X] No DETAILS

WERE TRACERS USED [] Yes [X] No TYPE OF TRACER(S) USED

API 47-079-01538 Farm Name Amherst Industries, Inc. Well Number Cabot #50

Well Record Attachment - MUD TYPE(S) AND ADDITIVE(S)

Alluminum Stearate
Sodium Carboxymethyl
Barium Sulfate
Methyl Alcohol, Amine
Caustic Soda Anhydrous
Calcium Chloride
Calcium Carbonate
Wood Shavings
Citric Acid Anhydrous
Sulfomethlyated Tannin
Glutaraldehyde
Cellulose (2)
Biopolymer
Potassium Chloride
Calcium Hydroxide
Mineral Fiber, Mineral Oil
Isopropanol
Xanthan Gum
Barium Sulfate (2), Clay, Quartz, Calcite
Petroleum Distillate Hydrotreate Light
Bentonite
Crystalline Quartz, Silica
Mixed Alcohols
Defoamer
Ammonium Bisulfite Solution
Sodium Chloride
Sodium Carbonate
Sodium Bicarbonate
Zinc Carbonate

API 47-079-01538 Farm Name Amherst Industries, Inc. Well Number Cabot #50

Well Record Attachment - CEMENT DATA

Cement Data	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yeild (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	Drilled with Dual-Rotary Bit - No Cement Used						
Fresh Water	Halcem	370	15.6	1.198	443	0	8
Surface	Extendacem	760	12.5	2.28	1733	0	8
	Halcem	470	15.6	1.19	559		
Intermediate	Tuned Light	610	11.5	2.55	1556	0	8
	ExpandaCem	530	11.5	3.03	1606		
Liner	Econocem	50	13.1	1.74	70	6076	8
	Shalcem	400	15.2	1.2	480		
Production	Densecem	250	17.5	1.67	418	9599	8

Well Record Attachment - CEMENT ADDITIVES

Cement Data	Class/Type of Cement	Cement Blend / Additives
Fresh Water	Halcem	class a cement and 2% Calcium Chloride
Surface	Extendacem	75% Class A Cement, 25% Enhancer 923 (cement material), 8 to 12% Silicalite (light weight material), 0.2 to 0.6% Halad 567 (fluid loss material), 2 to 7% NaCl, 0.1 to 0.5% HR-7 (cement retarder), 2 to 7% Microbond (expansive additive), 1 to 5% econolite (light weight additive), 0.1 to 0.5% HR-5 (cement retarder), 4 to 11 lb/sk Kol-Seal (lost circulation material)
	Halcem	Class A with 1% Calcium Chloride
Intermediate	Tuned Light	Class G cement, 15 to 25% Light weight glass beads, 10 to 14% Silicalite, 0.3% Calcium Chloride, 0.1% D-air (defoamer), 12 to 18% NaCl, 0.2 to 0.6% HR-7
	ExpandaCem	75% Class A Cement, 25% Enhancer 923 (cement material), 8 to 12% Silicalite (light weight material), 0.2 to 0.6% Halad 567 (fluid loss material), 2 to 7% NaCl, 2 to 7% Microbond (expansive additive), 1 to 5% econolite (light weight additive), 0.1 to 0.5% HR-5 (cement retarder), 4 to 11 lb/sk Kol-Seal (lost circulation material)
Liner	Econocem	65% Class A 35% Pozmix, 2 to 8% Bentonite (suspending agent), 0.3% D-air, 0.1 to 1.5% HR-7
	Shalcem	75% Class A 25% Pozmix, 1 to 5% Silicalite, 0.2 to 0.8% Halad 567, 0.1 to 0.4% FWCA (suspending agent), 0.1 to 0.7% HR-7
Production	Densecem	Class A cement, 55 to 65 lb/sk Barite (weighting material), 0.2 to 0.6% Halad 567, 0.1 to 0.5% CFR-3 (dispersant), 6 to 16% NaCl, 0.4 to 1% Halad 322, 0.1 to 0.5% HR-5, 0.05% to 0.2% SA-1015 (suspending agent)

API 47-079-01538

Farm Name Amhers + Industries, Inc. Well number Cabot 50

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Formation tops for the Cabot 50

FORMATION TOP NAME	MD TOP	MD BOTTOM	LITHOLOGY	AGE	SOURCE	GAS/OIL/H2S/FW
SAND/SHALE	0	405	S.S./SHALE	PENN	MUD LOG	
COAL	405	407	COAL	PENN	MUD LOG	
SAND/SILTSTONE	407	1096	S.S./SILT.	PENN	MUD LOG	
SAND/CARB. SHALE	1096	1170	S.S./SHALE	PENN	MUD LOG	
SAND/SILTSTONE	1170	1866	S.S./SILT.	PENN	MUD LOG	GAS @ 1390', 1495, 1615
SHALE	1866	1880	SHALE	MISSISSIPPIAN	MUD LOG	
BIG LIME	1880	2105	LIMESTONE	MISSISSIPPIAN	ELOG	
BIG INJUN SANDSTONE	2105	2170	S.S.	MISSISSIPPIAN	ELOG	
WEIR	2170	2312	SILT.	MISSISSIPPIAN	ELOG	
WEIR SHALE	2312	2563	SHALE	MISSISSIPPIAN	ELOG	
SUNBURY	2563	2582	SHALE	MISSISSIPPIAN	ELOG	
BEREA	2582	2600	S.S.	MISSISSIPPIAN	ELOG	
UPPER DEV.	2600	3800	SHALE/SILT	DEVONIAN	ELOG	
HURON	3800	4238	SHALE	DEVONIAN	ELOG	
ELK SILTSTONE	4238	4330	SILT.	DEVONIAN	ELOG	
DEV. SHALE MIDDLE	4330	4625	SHALE	DEVONIAN	ELOG	
RHINESTREET SHALE	4625	4780	SHALE	DEVONIAN	ELOG	
TULLY	4780	4840	LIMESTONE	DEVONIAN	ELOG	
MARCELLUS	4840	4864	SHALE	DEVONIAN	ELOG	GAS @ 4845'
ONONDAGA	4864	4970	LIMESTONE	DEVONIAN	ELOG	
ORISKANY	4970	4992	S.S.	DEVONIAN	ELOG	
HELDERBERG LS	4992	5185	LIMESTONE	DEVONIAN	ELOG	
SALINA LS	5185	5554	DOL./LIMESTONE	SILURIAN	ELOG	
TONOLOWAY	5554	5666	DOLOMITE	SILURIAN	ELOG	H2S SHOW, TRACE
NEWBURG	5666	5678	S.S.	SILURIAN	ELOG	
BASS ISLAND	5678	5900	DOLOMITE	SILURIAN	ELOG	
LOCKPORT	5900	5940	DOLOMITE	SILURIAN	ELOG	
BIG SIX	5940	5948	S.S.	SILURIAN	ELOG	
ROSE HILL	5948	6275	RED SHALE	SILURIAN	ELOG	
TUSCARORA	6275	6440	S.S./SILT.	SILURIAN	ELOG	
JUNIATA SHALE	6440	6950	RED SHALE	ORDOVICIAN	ELOG	
MARTINSBURG SHALE	6950	7500	SHALE/LIMESTONE	ORDOVICIAN	ELOG	
UTICA SHALE	7500	7995	SHALE	ORDOVICIAN	ELOG	
TRENTON	7995	8280	LIMESTONE	ORDOVICIAN	ELOG	GAS @ 8162'
BLACK RIVER	8280	9056	LIMESTONE	ORDOVICIAN	ELOG	GAS @ 8670', 8955'
CHAZY/KNOX	9056	9657	DOLOMITE	ORDOVICIAN	ELOG	GAS @ 9330', 9385'
ST. PETER SANDSTONE	9657	9742	S.S.	ORDOVICIAN	ELOG	
BEEKMANTOWN	9742	10742	DOLOMITE	ORDOVICIAN	ELOG	GAS @ 10185'
ROSE RUN SS.	10742	11000	S.S./DOL.	ORDOVICIAN	ELOG	
COPPER RIDGE DOL	11000	11953	DOLOMITE	ORDOVICIAN	ELOG	GAS @ 11760'
CONASAUGA	11953	13570	LIMESTONE/DOL./S.S.	CAMBRIAN	ELOG	GAS @ 12300' - 13410'
ROGERSVILLE FORMATION	13570	14520	LIMESTONE/DOL./SHALE	CAMBRIAN	ELOG	GAS @ 14205' - 14320'

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API 47-079-01538 Farm Name Amherst Industries, Inc. Well Number Cabot #50

Well Record Attachment - WELL SERVICE COMPANIES

Conductor Drilling Contractor Minichi, Inc.
Address 453 Ziegler Street, Dupont, PA 18641

Drilling Contractor Sidewinder
Address 952 Echo Lane, Suite 460, Houston, TX, 77024

Logging Company Weatherford International, LTD.
Address 121 Hillpointe Drive, Suite 300, Canonsburg, PA 15317

Cementing Company Halliburton Energy Services
Address 121 Champion Way, Suite 110, Canonsburg, PA 15317

Perforating Company Halliburton Energy Services
Address 121 Champion Way, Suite 110, Canonsburg, PA 15317

Stimulating Company Halliburton Energy Services
Address 121 Champion Way, Suite 110, Canonsburg, PA 15317

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date:	12/17/2014
State:	
County:	
API Number:	47-079-01538
Operator Name:	Cabot Oil & Gas
Well Name and Number:	Cabot 50
Longitude:	0
Latitude:	0
Long/Lat Projection:	
Production Type:	
True Vertical Depth (TVD):	0
Total Water Volume (gal)*:	139,152

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
Fresh Water	Operator	Base Fluid	Fresh Water	7732-18-5	100.00%	86.19892%	
PREMIUM PROP PLUS	Halliburton	Proppant	Aluminum oxide	1344-28-1	100.00%	11.74791%	
			Crystalline silica, cristobalite	14464-46-1	5.00%	0.58747%	
BE-9W	Halliburton	Biocide	Tributyl tetradecyl phosphonium chloride	81741-28-8	10.00%	0.00504%	
CL-41	Halliburton	Crosslinker	Inorganic salt	Confidential	30.00%	0.00723%	Denise Tuck, Halliburton 3000 N. Sam Houston Pkwy E., Houston, TX 77032 281-871-6226
			Lactic acid	50-21-5	30.00%	0.00723%	
FDP-S1061-12	Halliburton	Friction Reducer	Inorganic salt	Confidential	30.00%	0.01076%	
Cla-Web™	Halliburton	Additive	Sodium chloride	7647-14-5	60.00%	0.04637%	
FE-1A ACIDIZING COMPOSITION	Halliburton	Additive	Acetic acid	64-19-7	60.00%	0.01626%	
			Acetic anhydride	108-24-7	100.00%	0.02702%	
FE-2A	Halliburton	Additive	Citric acid	77-92-9	60.00%	0.01867%	
GasPerm 1000™	Halliburton	Surfactant	Isopropanol	67-63-0	30.00%	0.00075%	
			Terpenes and Terpenoids, sweet orange-oil	68647-72-3	30.00%	0.00075%	
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor	Methanol	67-56-1	60.00%	0.00271%	
			Propargyl alcohol	107-19-7	10.00%	0.00045%	
LP-65 MC	Halliburton	Scale Inhibitor	Ammonium chloride	12125-02-9	10.00%	0.00572%	
Oilperm FMM-3	Halliburton	Surfactant	Terpenes and Terpenoids, sweet orange-oil	67-63-0	5.00%	0.00911%	
			isopropanol	67-63-0	30.00%	0.05457%	
WG-39 GELLING AGENT	Halliburton	Gelling Agent	Contains no hazardous substances	NA	100.00%	0.08445%	
PermVis VFR-10	Halliburton	Friction Reducer	Hydrotreated light petroleum distillate	64742-47-8	30.00%	0.03839%	
			Alcohols, C12-16, ethoxylated	68551-12-2	10.00%	0.01280%	
			Ammonium chloride	12125-02-9	10.00%	0.01280%	
			9-Octadecenamide, n,n-bis-2(hydroxy-ethyl)-(Z)	93-83-4	5.00%	0.00640%	
BA-40LM, TOTETANK	Halliburton	Buffer	Potassium carbonate	584-08-7	30.00%	0.01084%	
			Sodium carbonate	497-19-8	30.00%	0.01084%	
SP BREAKER	Halliburton	Breaker	Sodium persulfate	7775-27-1	100.00%	0.00151%	
OPTIFLO-III DELAYED RELEASE BREAKER	Halliburton	Breaker	Ammonium persulfate	7727-54-0	100.00%	0.00760%	
			Crystalline silica, quartz	14808-60-7	30.00%	0.00233%	
OptiKleen-WF™	Halliburton	Concentrate	Sodium perborate tetrahydrate	10486-00-7	100.00%	0.00414%	
Ingredients Listed Below This Line Are Part of the Fluid Composition Provided by Halliburton Which Do Not Appear On the Material Safety Data Sheets (MSDS)							
		Other Ingredient(s)	Alcohol alkoxy amine	Confidential			
		Other Ingredient(s)	Alcohols, C12-16, ethoxylated	61791-08-0			
		Other Ingredient(s)	Alcohols, C14-15, ethoxylated	68951-67-7			
		Other Ingredient(s)	Aluminum Silicate	1302-76-7			
		Other Ingredient(s)	Amine salts	Confidential			
		Other Ingredient(s)	Amine salts	Confidential			
		Other Ingredient(s)	Citrus, extract	Confidential			
		Other Ingredient(s)	Cured acrylic resin	Confidential			
		Other Ingredient(s)	Ethoxylated fatty acid	Confidential			
		Other Ingredient(s)	Ethoxylated fatty acid	Confidential			

	Other Ingredient(s)	Ethoxylated fatty acid	Confidential		
	Other Ingredient(s)	Fatty acid ester	Confidential		
	Other Ingredient(s)	Fatty acid fatty oil amide	Confidential		
	Other Ingredient(s)	Fatty acids, tall oil	Confidential		
	Other Ingredient(s)	Glycol	Confidential		
	Other Ingredient(s)	Glycol	Confidential		
	Other Ingredient(s)	Glycol	Confidential		
	Other Ingredient(s)	Hydrochloric acid	7647-01-0		
	Other Ingredient(s)	Inorganic salt	Confidential		
	Other Ingredient(s)	Olefins	Confidential		
	Other Ingredient(s)	Olefins	Confidential		
	Other Ingredient(s)	Olefins	Confidential		
	Other Ingredient(s)	Olefins	Confidential		
	Other Ingredient(s)	Organic phosphonate	Confidential		
	Other Ingredient(s)	Polyacrylate	Confidential		
	Other Ingredient(s)	Polyscharride	Confidential		
	Other Ingredient(s)	Propylene glycol	57-55-6		
	Other Ingredient(s)	Quaternary amine	Confidential		
	Other Ingredient(s)	Quaternary amine	Confidential		
	Other Ingredient(s)	Quaternary amine	Confidential		
	Other Ingredient(s)	Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	68527-49-1		
	Other Ingredient(s)	Sodium chloride	7647-14-5		
	Other Ingredient(s)	Sodium sulfate	7757-82-6		
	Other Ingredient(s)	Terpenes and Terpenoids	Confidential		
	Other Ingredient(s)	Water	7732-18-5		

* 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%

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All component information listed was obtained from the supplier's Material Safety Data Sheets (MSDS). As such, the Operator is not responsible for inaccurate and/or incomplete information. Any questions regarding the content of the MSDS should be directed to the supplier who provided it. The Occupational Safety and Health Administration's (OSHA) regulations govern the criteria for the disclosure of this information. Please note that Federal Law protects "proprietary", "trade secret", and "confidential business information" and the criteria for how this information is reported on an MSDS is subject to 29 CFR 1910.1200(i) and Appendix D.

Hydraulic Fracturing Fluid Product Component Information Disclosure

Fracture Date:	1/8/2015
State:	
County:	
API Number:	47-079-01538
Operator Name:	Cabot Oil & Gas
Well Name and Number:	Cabot 50
Longitude:	0
Latitude:	0
Long/Lat Projection:	
Production Type:	
True Vertical Depth (TVD):	0
Total Water Volume (gal)*:	492,372

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
Fresh Water	Operator	Base Fluid	Fresh Water	7732-18-5	100.00%	86.66232%	Density = 8.33
FE ACID - < 10% HCL	Halliburton	Solvent	Hydrochloric acid	7647-01-0	10.00%	0.11790%	
CARBOPROP 40/70, BULK	Halliburton	Proppant	Crystalline silica, cristobalite	14464-46-1	30.00%	1.90207%	
			Mullite	1302-93-8	100.00%	6.34020%	
			Silica, amorphous - fumed	7631-86-9	30.00%	1.90207%	
PROP - CERAMIC 30/50	Halliburton	Proppant	Crystalline silica, cristobalite	14464-46-1	30.00%	1.47075%	
			Mullite	1302-93-8	100.00%	4.90251%	
			Silica, amorphous - fumed	7631-86-9	30.00%	1.47075%	
BE-9W	Halliburton	Biocide	Tributyl tetradecyl phosphonium chloride	81741-28-8	10.00%	0.00556%	
CL-41	Halliburton	Crosslinker	Inorganic salt	Confidential	30.00%	0.00702%	Denise Tuck, Halliburton 3000 N. Sam Houston Pkwy E., Houston, TX 77032 281-871-6226
			Lactic acid	50-21-5	30.00%	0.00702%	
CL-42	Halliburton	Crosslinker	Aluminum chloride	7784-13-6	30.00%	0.00363%	
Cla-Web™	Halliburton	Additive	Sodium chloride	7647-14-5	60.00%	0.03543%	
FE-1A ACIDIZING COMPOSITION	Halliburton	Additive	Acetic acid	64-19-7	60.00%	0.01365%	
			Acetic anhydride	108-24-7	100.00%	0.02274%	
FE-2A	Halliburton	Additive	Citric acid	77-92-9	60.00%	0.01572%	
GasPerm 1000™	Halliburton	Surfactant	Isopropanol	67-63-0	30.00%	0.00017%	
			Terpenes and Terpenoids, sweet orange-oil	68647-72-3	30.00%	0.00017%	
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor	Methanol	67-56-1	60.00%	0.00226%	
			Propargyl alcohol	107-19-7	10.00%	0.00038%	
LP-65 MC	Halliburton	Scale Inhibitor	Ammonium chloride	12125-02-9	10.00%	0.00429%	
Oilperm FMM-3	Halliburton	Surfactant	Terpenes and Terpenoids, sweet orange-oil	67-63-0	5.00%	0.00835%	
			Isopropanol	67-63-0	30.00%	0.05006%	
FR-66	Halliburton	Friction Reducer	Hydrotreated light petroleum distillate	64742-47-8	30.00%	0.02390%	
BA-40L BUFFERING AGENT	Halliburton	Buffer	Potassium carbonate	584-08-7	60.00%	0.00759%	
SP BREAKER	Halliburton	Breaker	Sodium persulfate	7775-27-1	100.00%	0.00232%	
WG-39 GELLING AGENT	Halliburton	Gelling Agent	Contains no hazardous substances	NA	100.00%	0.12289%	
OPTIFLO-III DELAYED RELEASE BREAKER	Halliburton	Breaker	Ammonium persulfate	7727-54-0	100.00%	0.00634%	
			Crystalline silica, quartz	14808-60-7	30.00%	0.00190%	
CALCIUM CHLORIDE - HI-TEST PELLETS	Halliburton	Accelerator	Calcium chloride	10043-52-4	96.00%	0.26674%	
Ingredients Listed Below This Line Are Part of the Fluid Composition Provided by Halliburton Which Do Not Appear On the Material Safety Data Sheets (MSDS)							
		Other Ingredient(s)	Actic acid	64-19-7			
		Other Ingredient(s)	Acetic anhydride	108-24-7			
		Other Ingredient(s)	Alcohol alkoxy amine	Confidential			
		Other Ingredient(s)	Alcohols, C12-16, ethoxylated	61791-08-0			
		Other Ingredient(s)	Alcohols, C12-16, ethoxylated	68551-12-2			
		Other Ingredient(s)	Alcohols, C14-15, ethoxylated	68951-67-7			

	Other Ingredient(s)	Aluminum Silicate	1302-76-7			
	Other Ingredient(s)	Amine salts	Confidential			
	Other Ingredient(s)	Amine salts	Confidential			
	Other Ingredient(s)	Ammonium chloride	12125-02-9			
	Other Ingredient(s)	Bentonite, benzyl (hydrogenated tallow alkyl) dimethylammonium stearate complex	121888-68-4			
	Other Ingredient(s)	Citric acid	77-92-9			
	Other Ingredient(s)	Citrus, extract	Confidential			
	Other Ingredient(s)	Crystalline Silica, Quartz	14808-60-7			
	Other Ingredient(s)	Cured acrylic resin	Confidential			
	Other Ingredient(s)	Ethoxylated fatty acid	Confidential			
	Other Ingredient(s)	Ethoxylated fatty acid	Confidential			
	Other Ingredient(s)	Ethoxylated fatty acid	Confidential			
	Other Ingredient(s)	Fatty acid fatty oil amide	Confidential			
	Other Ingredient(s)	Fatty acids, tall oil	Confidential			
	Other Ingredient(s)	Glycol	Confidential			
	Other Ingredient(s)	Glycol	Confidential			
	Other Ingredient(s)	Hydrochloric acid	7647-01-0			
	Other Ingredient(s)	Olefins	Confidential			
	Other Ingredient(s)	Olefins	Confidential			
	Other Ingredient(s)	Olefins	Confidential			
	Other Ingredient(s)	Olefins	Confidential			
	Other Ingredient(s)	Organic phosphonate	Confidential			
	Other Ingredient(s)	Organic acid salt	Confidential			
	Other Ingredient(s)	Polyacrylamide copolymer	Confidential			
	Other Ingredient(s)	Polyscharride	Confidential			
	Other Ingredient(s)	Potassium chloride	7447-40-7			
	Other Ingredient(s)	Propylene glycol	57-55-6			
	Other Ingredient(s)	Quaternary amine	Confidential			
	Other Ingredient(s)	Quaternary amine	Confidential			
	Other Ingredient(s)	Quaternary amine	Confidential			
	Other Ingredient(s)	Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	68527-49-1			
	Other Ingredient(s)	Silica gel	112926-00-8			
	Other Ingredient(s)	Sodium chloride	7647-14-5			
	Other Ingredient(s)	Sodium sulfate	7757-82-6			
	Other Ingredient(s)	Sorbitan monooleate polyoxyethylene derivative	9005-65-6			
	Other Ingredient(s)	Sorbitan, mono-9-octadecenoate, (Z)	1338-43-8			
	Other Ingredient(s)	Strontium chloride	10476-85-4			
	Other Ingredient(s)	Surfactant mixture	Confidential			
	Other Ingredient(s)	Surfactant mixture	Confidential			
	Other Ingredient(s)	Terpenes and Terpenoids	Confidential			
	Other Ingredient(s)	Water	7732-18-5			

* 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%

All component information listed was obtained from the supplier's Material Safety Data Sheets (MSDS). As such, the Operator is not responsible for inaccurate and/or incomplete information. Any questions regarding the content of the MSDS should be directed to the supplier who provided it. The Occupational Safety and Health Administration's (OSHA) regulations govern the criteria for the disclosure of this information. Please note that Federal Law protects "proprietary", "trade secret", and "confidential business information" and the criteria for how this information is reported on an MSDS is subject to 29 CFR 1910.1200(i) and Appendix D.

CONFIDENTIAL

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Discharge Monitoring Report
Oil and Gas General Permit

Company Name: Cabot Oil & Gas Corporation
API No: 47-079-01538 County: Putnam
District: Pocatalico Well No: Cabot 50
Farm Name: Amherst Industries, Inc.
Discharge Date/s From:(MMDDYY) 12/19/14 To: (MMDDYY) 01/19/15
Discharge Times. From: 10:00 am To: 11:00 am
Total Volume to be Disposed from this facility (gallons): Please See Attached
Disposal Option(s) Utilized (write volumes in gallons):

- (1) Land Application: _____ (Include a topographical map of the Area.)
(2) UIC: Please See Attached Permit No. Please See Attached
(3) Offsite Disposal: _____ Site Location: _____
(4) Reuse: _____ Alternate Permit Number: _____
(5) Centralized Facility: _____ Permit No. _____
(6) Other method: _____ (Include an explanation)

Follow Instructions below to determine your treatment category:

- Optional Pretreatment test: _____ Cl- mg/l _____ DO mg/l
1. Do you have permission to use expedited treatment from the Director or his representative?
(Y/N) _____ If yes, who? _____ and place a four (4) on line 7.
If not go to line 2
 2. Was Frac Fluid or flowback put into the pit? (Y/N) N If yes, go to line 5. If not, go to line 3.
 3. Do you have a chloride value pretreatment (see above)? (Y/N) N If yes, go to line 4
If not, go to line 5.
 4. Is the Chloride level less than 5000 mg/l? (Y/N) N If yes, then enter a one (1) on line 7.
 5. Do you have a pretreatment value for DO? (See above) (Y/N) _____ If yes, go to line 6
If not, enter a three (3) in line 7.
 6. Is the DO level greater than 2.5 mg/l?(Y/N) _____ If yes, enter a two (2) on line 7. If not, enter a three (3) on line 7.
 7. _____ is the category of your pit. Use the Appropriate section.
 8. Comments on Pit condition: N/A

Name of Principal Exec. Officer: Kenneth L. Marcum
Title of Officer: Regulatory Supervisor
Date Completed: _____

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.



Signature of a Principal Exec. Officer or Authorized agent.

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State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Discharge Monitoring Report
Oil and Gas General Permit

Company Name: Cabot Oil & Gas Corporation
API No: 47-079-01538 County: Putnam
District: Pocatalico Well No: Cabot 50
Farm Name: Amherst Industries, Inc.

Total Volume to be Disposed from this facility (gallons): 11,832 bbls (496,944 gallons)
Disposal Option(s) Utilized (write volumes in gallons):

- (2) UIC Viking Energy
Wallace Well & Knight Well
Sissonville, WV
Permit # 47-03902210
Permit # 47-03902210
Approximately 9702 bbls (407,484 gallons)

- D.T. ATHA, Inc.
Frost #1 Well
Rome Township, Athens Co.
Albany, OH
Permit #3761
Approximately 290 bbls (12,180 gallons)

- Huffman-Bowers, Inc.
R.O.J. Disposal Well
Gallia County, Ohio
Permit #0968
Approximately 1840 bbls (77,280 gallons)