

west virginia department of environmental protection

Office of Oil and Gas 601 57th Street SE Charleston, WV 25304 (304) 926-0450 (304) 926-0452 fax Earl Ray Tomblin, Governor Randy C. Huffman, Cabinet Secretary www.dep.wv.gov

December 04, 2013

WELL WORK PLUGGING PERMIT

Plugging

This permit, API Well Number: 47-2103198, issued to CHESAPEAKE APPALACHIA, L.L.C., is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalities being imposed upon the operator.

This permit will expire in two (2) years from date of issue. If there are any questions,

please free to contact me at (304) 926-0499 ext. 1654.

Chief

James Martin

Operator's Well No: (FD MCELWEE 1)803761

Farm Name: TAMULITIS, MARY

API Well Number: 47-2103198

Permit Type: Plugging
Date Issued: 12/04/2013

Promoting a healthy environment.

PERMIT CONDITIONS

West Virginia Code § 22-6-11 allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

- 1. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
- 2. Well work activities shall not constitute a hazard to the safety of persons.

WW-4B Rev. 2/01

1) Date October 18	,	20 13
2) Operator's		
Well No. 803761		
3) API Well No.	47-021	- 03198

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

	7201	Lloner Ohio South
5)	Location: Elevation 732	Watershed Upper Ohio South
	District Center	County Gilmer 21 Quadrangle Normantown 514
6)	Well Operator Chesapeake Appalachia, LLC	7) Designated Agent Eric B. Gillespie
,	Address P.O. Box 1300	Address P.O. Box 6070
	Jane Lew, WV 26378	Charleston, WV 25301
3)	Oil and Gas Inspector to be notification. Name Bryan Harris	Name_ R & J Well Service
	Address PO Box 2657	Address P.O. Box 37
	Volga, WV 26238	Hueysville, KY 41640
	MIRU construction equipment to BR&L (remove any tanks, separators, well line TIH strapping 2 3/8" tubing to an estimated TD of 1,854 +/ NOTE: If PBTD is i Pump 15 sks of Class A cement (200' cement plug), flush tubing with 8 bbls 6%	ne manner of plugging this well is as follows: s, meter runs, exc.). MIRU service rig & needed BOP equipment. NOTE: Blow down well to pit or tank. ncorrect, SD and contact Engineer. Load hole with 29 bbls of 6% gelled water or break surface with circulation. gelled water. TOOH with 2 3/8" tubing to surface. SD & WOC for 8 hours. RIH w/ sandline tools & tag plug
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1	MIRU construction equipment to BR&L (remove any tanks, separators, well line TIH strapping 2 3/8" tubing to an estimated TD of 1,854 +/ NOTE: If PBTD is i Pump 15 sks of Class A cement (200' cement plug), flush tubing with 8 bbls 6% @ 1,654' +/ If plug is not at 1,654', SD and contact the Chesapeake engineer TIH strapping 2 3/8" tubing to an estimated TD of 1,375 +/ Pump 34 sks of Class A cement (200' cement plug), flush tubing with 8 bbls 6% and 1,654' +/ If plug is not at 1,654', SD and contact the Chesapeake engineer	s, meter runs, exc.). MIRU service rig & needed BOP equipment. NOTE: Blow down well to pit or tank. Incorrect, SD and contact Engineer. Load hole with 29 bbls of 6% gelled water or break surface with circulation. gelled water. TOOH with 2 3/8" tubing to surface. SD & WOC for 8 hours. RIH w/ sandline tools & tag plug for recalculation. RU Wireline and Shoot 4 1/2" casing at 1,325" +/ Pull and laydown casing.
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SCOPE OF OPERATION

- 1. Safety is the highest priority. Control costs and avoid unnecessary expenditures.
- 2. TIH with 2-3/8" tubing to estimated TD of 1,865'
- 3. Pump required cement and gel plugs per WV DEP state requirements
- 4. Plant a well monument with WV State API number

PROCEDURE

- 1. Contact the WV State Inspector 48 hours prior to operations.
- 2. **Safety is the highest priority**. Hold wellsite safety meetings prior to each significant operation. Review critical parameters and objectives as well as emergency action plans.
- 3. MIRU construction equipment to BR&L (remove any tanks, separators, well lines, meter runs, exc.)
- 4. MIRU service rig & needed BOP equipment. NOTE: Blow down well to pit or tank.
- 5. TIH strapping 2 3/8" tubing to an estimated TD of 1,854 +/-. **NOTE: If PBTD is incorrect, SD and contact Engineer.**
- 6. Load hole with 29 bbls of 6% gelled water or break surface with circulation.
- 7. Pump 15 sks of Class A cement (200' cement plug), flush tubing with 8 bbls 6% gelled water
- 8. TOOH with 2 3/8" tubing to surface. SD & WOC for 8 hours.
- 9. RIH w/ sandline tools & tag plug @ 1,654' +/-. If plug is not at 1,654', SD and contact the Chesapeake engineer for recalculation.
- 10. RU Wireline and Shoot 4 1/2" casing at 1,325' +/-. Pull and laydown casing.
- 11. TIH strapping 2 3/8" tubing to an estimated TD of 1,375 +/-.
- 12. Pump 34 sks of Class A cement (200' cement plug), flush tubing with 6 bbls 6% gelled water
- 13. TOOH with 2 3/8" tubing to surface. SD & WOC for 8 hours.
- 14. RIH w/ sandline tools & tag plug @ 1,175'+/-. If plug is not at 1,175', SD and contrective Chesapeake engineer for recalculation.

 Office of Oil and Gas
- 15. TIH strapping 2 3/8" tubing to an estimated TD of 330' +/-.

16. Pump 41 bbl of 6% gelled water or break circulation.

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WV Department of

- 17. Pump 17 sks of Class A cement (100' cement plug). Flush tubing with 1.5 bbls of 6 %gelled water.
- 18. TOOH with 2 3/8" tubing to surface. SD & WOC for 8 hours.
- 19. RIH w/ sandline tools & tag plug @ 230' +/-. If plug is not at 230', SD and contact the Chesapeake engineer for recalculation.
- 20. TOOH with 2 3/8" tubing to 100'.
- 21. Pump 17 sks of Class A cement (100' cement plug). TOOH w/ tubing.
- 22. Top off well with required Class A cement as needed.
- 23. Install a 36 inch casing monument w/ 2" vent. Install a Aluminum plat monument with ALL required WV dates and WV API number.
- 24. RDMO all service equipment providers and reclaim location to WV State requirements.

RECEIVED
Office of Citi and Gas
NOV 1 8 2013

Department of State Protection

Current Wellbore Schematic

WELL (PN): F D MCELWEE 1 (803761)
FIELD OFFICE:
FIELD:
STATE / COUNTY: WEST VIRGINIA / GILMER
LOCATION: T/D CENTER, Q-NORMANTOWN
ROUTE: CE-JLN-RT 326 - JIM ADAMS
ELEVATION: GL: KB: KB Height:
DEPTHS: TD: 1,865.0



API #: 4702103198 Serial #: 3198 SPUD DATE: 4/21/1925 RIG RELEASE: 5/25/1925 FIRST SALES: 8/3/1925

Vertical schematic (actual) Zones Set Tension (kips) Mud Weight Cut Pull Date Depth Cut Pull (ftKB)	Len (ft) 80.00 Len (ft) 280.00
Item Des OD (in) ID (in) Wt (lb/ft) Grade Thread Top (ftKB) Btm (ftKB)	80.00 Len (ft)
Set Tension (kips) Mud Weight Cut Pull Date Depth Cut Pull (ftKB) Item Des OD (in) ID (in) Vit (lb/ft) Grade Thread Top (ftKB) Btm (ftKB) Casing Joints 8 1/4 Production Casing; Set @ 1,723.0 ftKB; Original Hole Set Tension (kips) Mud Weight Cut Pull Date Depth Cut Pull (ftKB) Casing Joints 8 1/4 Cut Pull Date Depth Cut Pull (ftKB) Top (ftKB) Btm (ftKB) Casing Joints 8 1/4 Production Casing; Set @ 1,723.0 ftKB; Original Hole Set Tension (kips) Mud Weight Cut Pull Date Depth Cut Pull (ftKB) Top (ftKB) Btm (ftKB)	
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Set Tension (kips) Set Ten	
Set Tension (kips) Set Ten	
280.0 ftKB Set Tension (kips) Mud Weight Cut Pull Date Depth Cut Pull (ftKB) Item Des OD (in) ID (in) Wt (lb/ft) Grade Top (ftKB) Btm (ftKB)	
Item Des OD (in) ID (in) Wt (lb/ft) Grade Top (ftKB) Btm (ftKB)	
Item Des OD (in) ID (in) Wt (lb/ft) Grade Thread Top (ftKB) Btm (ftKB)	
	Len (ft) 1,723.00
Production Casing; Set @ 1,854.0 ftKB; Original Hole	
Set Tension (kips) Mud Weight Cut Pull Date Depth Cut Pull (ftKB)	
6 5/8 in; 0.00 lb/ft; 1,723.0 ftKB	
Item Des OD (in) ID (in) Wt (lb/ft) Grade Thread Top (ftKB) Btm (ftKB)	Len (ft)
Casing Joints 4 1/2 0.0 1,854.0	1,854.0
Descriptions Production Cosine Compat	
Description: Production Casing Cement	
1,840.0-1,854.0 Top of Cement (ftKB): 1,840.0 Top Measurement Method:	
Pump Start Amount Vol Pumped	Yield
	t³/sack)
3/11/1960 25 Standard	
Perforations	-
BIG Shot Dens	
INJUN, (shots/f	al vivo
Original Hole Date Zone Top (ftKB) Btm (ftKB) t) Curren 4/14/1960 BIG INJUN, Original Hole 1,844.0 1,844.0	Status
Stimulations & Treatments	
BIG INJUN, Stage 1, Frac, 4/14/1960 Min Top Dep Max Btm De Total Clean Avg Treat Pr Q Treat Avg Post ISIP (psi) Comment	
10110 10110 1000	
Sand Size Type Amount Conc (lb.	gal)
20/40 100 Mesh Sand 20,000.0	
1,844.0 1,844.0 463.00 Sand Size Type Amount Conc (lb/20/40 100 Mesh Sand 20,000.0 4 1/2 in; 0.00 lb/ft;	
4 1/2 in; 0.00 lb/ft; 1,854.0 ftKB	200
4 1/2 in; 0.00 lb/ft; 1,854.0 ftKB	SIST
1,854.0 ftKB	Che
Office of Oil and O	
1,854.0 flKB Office of Oil and O	
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1,854.0 ftKB	

54-48-57

OHIO FUEL OIL COMPANY

Lease No.4674.....

UFG. 2767 Serial Well No....1341......

FORM 1 L C 6 98760

REC	ORD of Well No.	1 on the	F. D. McElwee	Farm of	90 Acres
in Cente	Precince District	Hilme	County.	W. Va. Gilmer County	Field
Located	19 Rig	Commenced	19	and Completed	19
Drilling Commen	cedApril 21st,	25 and Con	npicted May 21st,	. 25 Depth of Hole was	1857 feet
Contractor was	Pratt Drilli	ng Company	Address Ch	erleston, W. Va.	
Drillers names	J. S. Yeater and	W. W. Wilso	n	Drilling cost	per foot
Drilled deeper to	feet and com	pleted	19	Drilling deeper cost	per foot
Contractor was		_	Address		:
			1.		•

	CASING	-1	•	TUE	BING		ę.		_PACKER	
Size	Used in Drilling	Left in Hole	Date Put in	Siza	Foot Used	Oate Pulled		Blzo :	Kind	Feet from Bottom
lO ¹¹	80	80		1857	- 3 ^{tt} , .			5 5/8 ^{tr}	Steel Shoe	•
浸巾	575	280		`		6	5 5/8	" x 3" x	16" Heeter Spec	40
5 5/8 ⁿ	1723	1723		-						•
•			1	·			Pe	erforati	. .	Դ 5 ⁵
	:		•		:		+ 1	11.	•	
Well first	produced	25/10 w	ater th	ru 6 5/8°	orifice				16 feet of wood cor	nductor used

Well shot Production changed to .07 1.77.2 ©33Size of Torpedo result: Well cleaned out " Started Pumping oil 77:5 7° . 7 Well cleaned out result: V : " F Size of rods Kind of rods Well abandoned and plugged

OIL WELL GAS WELL -

REFERENCE DATA

Production Press. Calculated Flow

SUNDRY REPORTS

Production Press.

Barrels Pounds

Cu. Feet Dated

Noted conditions that might effect calculated production

195

Connections used-

1 - 6 5/8" x 3" Moser Head

2 ~ 3" H P Gates

2: - 3" Nipples

 $1 - 3^n \times \frac{1}{8}^n$ Elind Union

1 - 5" Tee

1 - 2" Bronze Stop

1 = ½º Nipple

1 - Set 6 5/8" Anchor Clamps and Bolts

1 - Set 3"

11

ON.

DRILLERS RECORD Map Sar 98-87

Formation	Тор	Bottom	Thickness	REMARKS
Red Rock & Slate		535	535	•
- Big Dünkard	535	620	85	
Slate and Shells	620	710	90	•
-Gas Sand	` 710	750	40	•
Slate	750	815	65	• •
_1st Salt Sand	815	900	85	
Slate	900	920	20	
Sand	920	983	63	
Slate	983	1075	92	
-2nd Salt Sand .	1075	1130	55 ., .	, ,
Slate and Shells	.1130	1270	140	
- 3rd Salt Sand	1270	1350	80	
, Slate and Red Rock	. 1350	1520	170	
- Maxon Sand	1520	1580	60	Water 1542*
Slate and Idme	1580	1620	40	
- Little Lime	, 1 620	1665	35	
Pencil Cave	1655	1680	25	;
- Big Lime	1680	1752	72	
- Injun Sand	1752	1857	105	·
Total Depth		1857		

Gas from 1830-1854

WELL DATA

Location (Surface)	Lat. 38.7703 Long. 80.952
TD	1,865'

CASING AND TUBULAR DATA

STRING	SIZE	WEIGHT/GRADE	DEPTH
Surface	10"	NA	80'
Intermediate	8 1/4"	NA	280'
Intermediate	6 5/8"	NA	1,723'
Production	4 1/2"	11.6#/J	1,854'

PRESSURE AND DIMENSIONAL DATA

SIZE	WEIGHT	GRADE	BURST	COLLAPSE	DRIFT
10"	NA	NA	NA	NA	NA
8 1/4"	NA	NA	NA	NA	NA
6 5/8"	NA	NA	NA	NA	NA
4 1/2"	11.6#	J	5,350	4,960	3.875"
2 3/8"	4.7#	N-80	11,200	11,780	1.901"

CAPACITIES

SIZE	WEIGHT	CAPACITY (GAL/FT.)	CAPACITY (BBL/FT.)
10"	NA	3.59283	0.0855
8 1/4"	NA	2.62231	0.0624
6 5/8"	NA	1.61268	0.0384
4 1/2"	11.6#	0.65280	0.0155
2 3/8"	4.7#	0.16239	0.00387

WELLHEAD EQUIPMENT

COMPONENT	SIZE & RATING
Manufacturer	?
Tubing Spool	
Casing Spool	
Bradenhead	

DRIVING DIRECTIONS

Office of Oil and Gas

If traveling from Jane Lew travel on 1-79 S to exit 51 Frametown. Take exit 51 to WV 4 toward Frametown (0.3 mi) and turn left onto WV 4 N (1.7 mi). Turn left onto CR 9 (Rosedale Rd). Continue on Rosedale Rd for approximately 14.7 miles. Well will be on right of road.

WV Department of Environmental Protection WW-4A Revised 6-07

1)	Date:	November 11, 2013	
2)	Operator	r's Well Number	
8037	61		

STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS NOTICE OF APPLICATION TO PLUG AND ABANDON A WELL

3) API Well No.: 47 -

perator
e
ress
10 (1) D. L. (1)
oal Owner(s) with Declaration
e
ress
e
ress
oal Lessee with Declaration
e
ess
3, which sets out the parties involved in the work and describes the WW-6. the application which are summarized in the instructions on the reverses side. and well operator proposes to file or has filed this Notice and Application and Chief of the Office of Oil and Gas, West Virginia Department of Environmental Application and depicted on the attached Form WW-6. Copies of this Notice, nail or delivered by hand to the person(s) named above (or by publication in f.
Analyst O0 vv 26378 16 EXT. 86024
Wember RECEIVED Notary Public Office of Oil and Gas
Notary Public Office of Oil and Gas

regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the hormal course of 11 business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests Our ection office will appropriately secure your personal information. If you have any questions about our use of your personal information.

information, please contact DEP's Chief Privacy Officer at depprivacyoffier@wv.gov.

WW-9 Rev. 5/08

I	Page	of	
API Number 47 -	021	 03198	
Operator's Well No	803761		

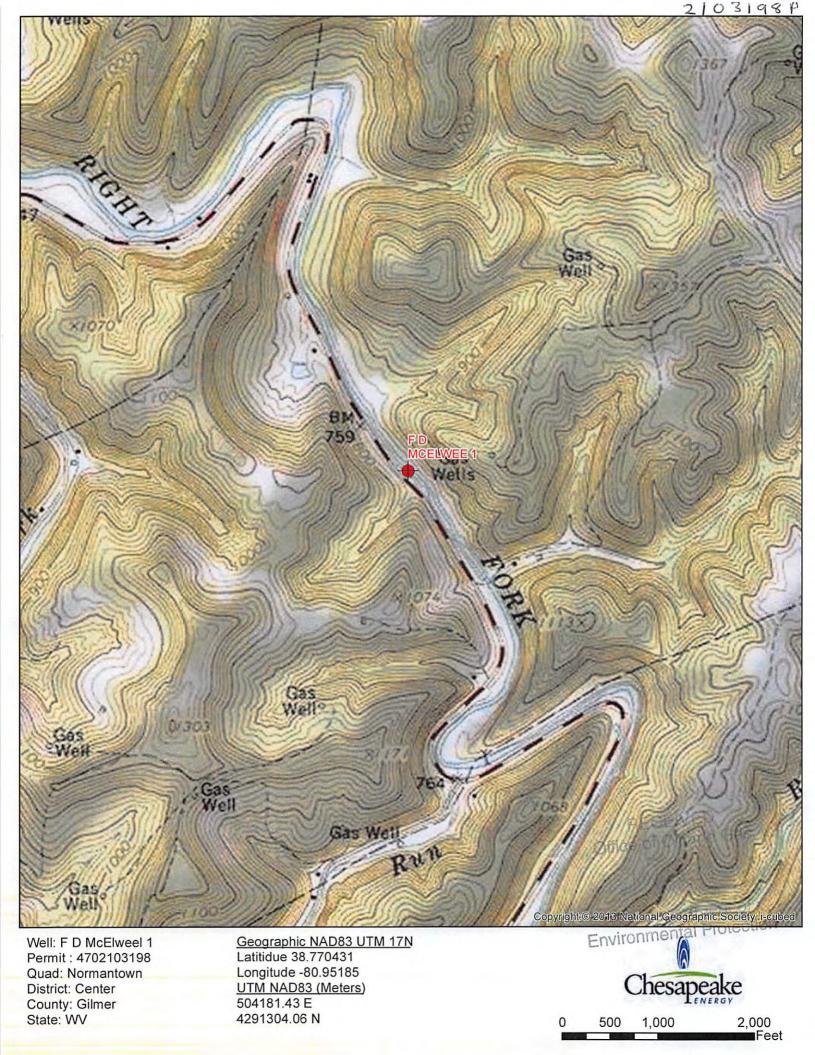
STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION OFFICE OF OIL AND GAS

CONSTRUCTION AND RECLAMATION PLAN AND SITE REGISTRATION APPLICATION FORM GENERAL PERMIT FOR OIL AND GAS PIT WASTE DISCHARGE

Operator Na	me_Chesapeake	Appalachia, LLC				OP Code 4944	477557		_
Watershed_U	pper Ohio South			Q	uadrangle Norm	antown			
Elevation _	Elevation 732' County Gilmer			ner		_ District_Cent	ler		
Description	of anticipated	Pit Waste: Wate	er from plugging	g process					
Will a synth	etic liner be us	ed in the pit? y	es	20MIL.					
Proposed Di		For Treated Pit Land Application							
	XX	Underground Ir	niection (UIC	Permit Nun	nber 2D0072539/20	D0413175/2D06	10306/2D0	610317)
	-	Reuse (at API)	Number at next	t anticipated we	ell, API# will be inclu	uded on the WR	34/∨ perm	it addendum	
					or disposal locat				
	XX	Off Site Disppo	flowback will I	be put in stee	el tanks and reuse	ed or taken to	permitted	disposal faci	ility
		Other (Explain		201-1000-000					
Proposed W	ork For Which	Pit Will Be Use	ed:						
rroposed w		Drilling	-		Swabbing				
		Workover		XX	Plugging				
		Other (Explain			_ 00 0				
law or regul: I consplication obtaining the penalties for Company O	ation can lead a criffy under perform and all e information, submitting fall fficial Signature of the ficial (Typed)	to enforcement enalty of law the attachments the I believe that se information, re	action. nat I have perereto and that the informati	rsonally exan t, based on ion is true, a	term or condition mined and am farmy inquiry of accurate, and confine or imprison	amiliar with the those individual omplete. I an	the inform	nation submi ediately resp	itted on this ponsible for
Company O	fficial Title	gulatory Analyst							
							F	RECEIVE	ED
Subscribed a	and sworn befo	re me this	ath da	ay of Nov	ember	, 20_1	Office 3	of Oil ar	nd Gas
D.	i.	1111		C			IV	OV 1 8 201	13
Dilli	tomus	Umoly	_			Notory P	ubligy		~~~
		1				The William	ST DO	OFFICIAL	SEAL
My commiss	cion evnires	וווארווו					No.	BRITTANY 3302 Old EI	e of West Virgini R WOODY kins Road
wry commis	sion expires	11/1/10				A Partie	My	Buckhannon, commission expires	WV 26201

Property Boundary	Diversion William 111111111111111111111111111111111111					
Road = = = = = = = = = = = =	Spring O					
Existing Fence — X — X — X —	Wet Spot					
Planned Fence / / /	Drain Pipe with size in inches					
Stream	Waterway Ch Ch Ch Ch					
Open Ditch	Cross Drain					
Rock #35886	Artificial Filter Strip XXXXXXXXXXXXXXXXXXXXX					
North N	Pit: cut walls					
	Pit: compacted fill walls					
Buildings	Area for Land Application of Pit Waste					
Water wells	Area for Canter Application of the Canter Control of the Canter Co					
Drill site	Care					
Proposed Revegetation Treatment: Acres Disturbed	Prevegetation pH					
as determined by pH test min. 2						
Fertilizer (10-20-20 or equivalent)	_lbs/acre (500 lbs minimum)					
MulchTo	ons/acre					
Mulch10	ns/ acte					
2	Seed Mixtures					
Area I	Area II					
Seed Type lbs/acre	Seed Type lbs/acre					
Orchard Grass 20	Orchard Grass 20					
Red Top 15	Red Top 15					
White Clover 15	White Clover 15					
Attach: Drawing(s) of road, location,pit and proposed area for land	application.					
Photocopied section of involved 7.5' topographic sheet.						
Distribution of A.M.						
Plan Approved by: Dyn O Han	RECEIVED					
Comments:	Office of Oil and Gas					
	NOV 1 8 2013					
Oil and Gas Inspector	Date: 11-15-13 WV Department of					
A CANADA TANADA	Environmental Protectio					
Field Reviewed? () Yes (X)No					

LEGEND



API:47-021-03198



West Virginia Department of Environmental Protection Office of Oil and Gas WELL LOCATION FORM: GPS

WELL NO.: 803761

FARM NAME: FD McElwee 1
RESPONSIBLE PARTY NAME: Chesapeake Appalachia, LLC
COUNTY: Gilmer DISTRICT: Center
QUADRANGLE: Normantown
SURFACE OWNER: Mary Tamulitis
ROYALTY OWNER: ***see attachment #1
UTM GPS NORTHING: 4291304.06
UTM GPS EASTING: 504181.43
GPS ELEVATION: 732'
The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements: 1. Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters. 2. Accuracy to Datum – 3.05 meters 3. Data Collection Method: Survey grade GPS: Post Processed Differential

PERSONNEL / PHONE LIST

Central District Team

Production Engineer Shawn Jackson Office: (405) 935-6276

Mobile (405) 365-9974

Operations Manager Zack Arnold Office: (304) 517-1416 ext 86028

Mobile: (304) 203-8059

Completion Superintendent Chad Satterfield Office: (304) 517-1416 ext 86062

Mobile: (304) 203-8059

Office: (740) 695-1623 ext 87804 **Production Superintendent** Manny Johnson

Mobile: (304) 641-0085

Land Man Randy Orsburn Office: (304) 517-1416 ext 86020

WV State Inspector **David Cowan** Cell: (304) 389-3509

BRYAN HARMS CELL 304-553-6087 WY STATE JUSPECTOR

GILMEN COUNTY.

RECEIVED Office of Oil and Gas

NOV 1 8 2813

WV Department of Endronmental Protection