

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

PERMIT MODIFICATION APPROVAL

January 27, 2016

EQT PRODUCTION COMPANY 120 PROFESSIONAL PLACE BRIDGEPORI, W\ 26330

Re: Permit Modification Approval for API Number 10303034, Well #: 515112

Changed Target Formation, Extend Lateral, Sub-surface Easement

Oil and Gas Operator:

The Office of Oil and Gas has reviewed the attached permit modification for the above referenced permit. The attached modification has been approved and well work may begin. Please be reminded that the oil and gas inspector is to be notified twenty-four (24) hours before permitted well work is commenced.

Please call James Martin at 304-926-0499, extension 1654 if you have any questions.

Sincerely, lugh B_

Gene Smith

Assistant Chief of Permitting

Office of Oil and Gas



January 26, 2016

Mr. Gene Smith West Virginia Department of Environmental Protection Office of Oil and Gas 601 57th Street SE Charleston, WV 25304

Re: Modification of 47-103-03034

Dear Mr. Smith,

Enclosed is an updated WW-6B, schematics, WW-6A1, rec plan, Site Safety plan and mylar plat. EQT would like to revise the length of the lateral and the formation from Geneseo to Marcellus. The top hole has not changed.

If you have any questions, please do not hesitate to contact me at (304) 848-0076.

Sincerely,

Vicki Roark

Permitting Supervisor-WV

Enc.

4701030334 MEV

API NO.	47		103	 03034
OPERATO	R WE	LL NO		515112
Well Pag	d Nar	ne:	-	BIG360

STATE OF WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS WELL WORK PERMIT APPLICATION

1) Well Operator: EQT Production	Company		306686	103	4	254
			Operator ID	County	District	Quadrangle
2) Operator's Well Number:		515112		_ Well Pad Nar	me	BIG360
3) Farm Name/Surface Owner :	Coast	tal Forest Res	sources	_ Public Road /	Access:	Rt 76
4) Elevation, current ground:1	,008.0	_ Eleva	tion, proposed p	ost-construction	n:998.0)
5) Well Type: (a) Gas	Oil	Ur	derground Stora	age		
Other						
(b) If Gas: SI	nallow	4.00	Deep			
Hor	izontal					
N.E. I.	No				I	12-10-15
	110					12-10-15
7) Proposed Target Formation(s), De	oth(s), Antic	ipated Thickr	esses and Asso	ciated Pressure)(e)·	10 1-
Target formation is Marcellus at a de	pth of 708	with the anticip	ated thickness to be	51 feet and anti	cinated target proce	ours of good Dou
		Top of	Marcellus: 7064		cipated larget press	sure of 2620 PSI
Proposed Total Vertical Depth:				7087		
9) Formation at Total Vertical Depth:				Marcellus		
Proposed Total Measured Depth:				13355		
11) Proposed Horizontal Leg Length:				5251		
12) Approximate Fresh Water Strata [No shows fou	ınd in completio	n reports within	4000'
13) Method to Determine Fresh Water	Depth:					
14) Approximate Saltwater Depths: _				1,961		
15) Approximate Coal Seam Depths:			26	9, 429, 650, 752	2	
Approximate Depth to Possible Vo	id (coal min	e, karst, othe	r):		None repo	orted
17)Does proposed well location contai	n coal seam	s directly over	erlying or			
adjacent to an active mine?			Yes		_ No	
(a) If Yes, provide Mine Info:	lame:					
	epth:					
S	eam:					
C	wner:					

Page 1 of 3

470107033Office of Oil and Gas

API NO.	47		103	03034
OPERATO	R WE	LL NO		515112
Well Pag	d Nar	ne:	_	BIG360

CASING AND TUBING PROGRAM

18)

TYPE	Size	New	Grade	Weight per ft.	FOOTAGE:	INTERVALS:	CEMENT:
	<u>(in)</u>	<u>or</u> <u>Used</u>		(lb/ft)	for Drilling	<u>Left in Well</u>	Fill- up (Cu.Ft.)
Conductor	20	New	A-500	78.6	40	40	60 C.T.S.
Fresh Water	13 3/8	New	J-55	54.5	856	856	790 C.T.S.
Coal	-	1	-	_	-	— ·	
Intermediate	9 5/8	New	A-500	40	2,480	2,480	971 C.T.S.
Production	5 1/2	New	P-110	20	13,355	13,355	See Note 1
Tubing	2 3/8		J-55	4.6			May not be run, if run will be set 100' less than TD
Liners							

DAD 12-10-15

					19-10	17	
TYPE	<u>Size (in)</u>	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	<u>Cement</u> <u>Type</u>	Cement Yield (cu. ft./k)
Conductor	20	26	0.375	4	18	Construction	1.18
Fresh Water	13 3/8	17 1/2	0.38	2,730	2,184	* See Note 2	1.19
Coal							
Intermediate	9 5/8	12 3/8	0.395	3,950	3,160	* See Note 2	1.19
Production	5 1/2	8 1/2	0.361	12,640	10,112		1.07/1.86
Tubing							
Liners							

Packers

Kind:	N/A			
Sizes:	N/A			
Depths Set:	N/A			

Note 1: EQT plans to bring the TOC on the production casing cement job 500' above the top producing zone.

Note 2: Reference Variance 2014-17. (Attached)

Page 2 of 3

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WW - 6B	API NO. <u>47</u> - <u>103</u> - <u>03034</u>
(10/14)	OPERATOR WELL NO. 515112 Well Pad Name: BIG360
40 Barriera	
 Describe proposed well work, including the drilling and plugging back of any pi 	liot noie:
Drill and complete a new horizontal well in the Marcellus formation.	
Drill the vertical to an approximate depth of 4496'.	
Kick off and drill curve. Drill lateral in the Marcellus. Cement casing. 20) Describe fracturing/stimulating methods in detail, including anticipated max pre	essure and max rate:
Hydraulic fracturing is completed in accordance with state regulations using water recycled from previo	ously fractured wells and obtained from
freshwater sources. This water is mixed with sand and a small percentage (less than 0.3%) of chemica gelling agent, gel breaker, friction reducer, biocide, and scale inhibitor), referred to in the industry as a '	
gaining agent, gerbreaker, motion reducer, blocide, and scale infibitory, referred to in the industry as a anticipated internal casing pressure is expected to average approximately 8500 psi, maximum anticipal	
approximately 100 bpm. Stage lengths vary from 150 to 300 feet. Average approximately 200,000 bar	rrels of water per stage. Sand sizes
vary from 100 mesh to 20/40 mesh. Average approximately 200,000 pounds of sand per stage.	
21) Total area to be disturbed, including roads, stockpile area, pits, etc, (acres):	± 16.03
22) Area to be disturbed for well pad only, less access road (acres):	± 5.02
23) Describe centralizer placement for each casing string. Surface: Bow spring centralizers – One at the shoe and one spaced every 500'.	
Intermediate: Bow spring centralizers—One cent at the shoe and one spaced every 300.	ery 500'.
Production: One spaced every joint from production casing shoe to KOP	
24) Describe all cement additives associated with each cement type. Surface	e (Type 1 Cement): 0-3% Calcium Chloride
Used to speed the setting of cement slurries.	
0.25% flake. Loss Circulation Material (LCM) is used to combat the loss of the cement slurn ntermediate (Type 1 Cement): 0-3% Calcium Chloride. Salt is used in shallow, low temperature	
slurries. 0.25% flake. Loss Circulation Material (LCM) is used to combat the loss of whole d	drilling fluid or cement slurry (not filtrate)
to a thief zone.	
Production:	
.ead (Type H Cement): 0.2% CD-20 (dispersant makes cement easier to mix)15% SuperFL-300	(fluid loss/lengthens thickening time)
15% SEC-10 (fluid loss) 50:50 POZ (extender)	
Tail (Type H Cement): 0.2% Super CR-1 (Retarder). Lengthens thickening time3% Super FL-20	0 (fluid loss)
2% SEC-10 (Fluid loss)2% SuperFL-350 (fluid loss) Reduces amount of water lost to fo	0 (fluid loss)
60 % Calcuim Carbonate. Acid solubility.	. 0303
	Daill 10
	DMH4.7
5) Proposed borehole conditioning procedures. <u>Surface</u> : Circulate hole clean (Approxi	imately 30-45 minutes) rotating & reciprocating
ne full joint until cuttings diminish at surface. When cuttings returning to surface diminish,	
minutes. A constant rate of higher than expected cuttings volume likely indicates washouts	
y and the same and	s that will not oldan up.
ntermediate: Circulate hole clean (Approximately 30-45 minutes) rotating & reciprocating one full	l joint until cuttings diminish at
urface. When cuttings returning to surface diminish, continue to circulate an additional 5 n	_
ole cleaning use a soap sweep or increase injection rate & foam concentration.	
roduction: Pump marker sweep with nut plug to determine actual hole washout. Calculate a gaug	ge holes bottoms up voluntion of O'll and I
erform a cleanup cycle by pumping 3-5 bottoms up or until the shakers are clean. Check v	on and das
the shakers every 15 minutes.	DEC 1 4 2015
and the state of t	
Note: Attach additional sheets as needed.	WV Department of
riole, Aliaen auditional Sheets as needed.	-DIMPONDO I D

Environmental Protection



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 dep.wv.gov

March 18, 2014

Nabors Completion & Production Services Company 1380 Route 286 Hwy E #121 Indiana PA 15701

Re: Cement Variance Request

Dear Sir or Madam,

This agency is approving a variance request for the cement blend listed below to be used on surface and coal protection strings for the drilling of oil and gas wells in the state of West Virginia. The variance cannot be used without requesting its use on a permit application and approval by this agency:

Type 1 (2% Calcium Chloride-Accelerator, 0.25% Super Flake-Lost Circulation, 5.2% Water, 94% Type "1" Cement)

If you have any questions regarding this matter feel free to contact me at 304-926-0499, ext. 1653.

anso x

Environmental Resources Specialist / Permitting

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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 dep.wv.gov

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

IN THE MATTER OF A VARIANCE FROM)	ORDER NO.	2014 - 17
REGULATION 35 CSR § 4-11.4/11.5/14.1)		
AND 35 CSR § 8-9.2.h. 4/5/6/8 OF THE)		
THE OPERATIONAL)		
REGULATIONS OF CEMENTING OIL)		
AND GAS WELLS)		

REPORT OF THE OFFICE

Nabors Completion & Production Services Co. requests approval of a different cement blend for use in cementing surface and coal protection casing of oil and gas wells.

FINDINGS OF FACT

- 1.) Nabors Completion & Production Services Co. proposes the following cement blend:
 - 2% Calcium Chloride (Accelerator)
 - 0.25 % Super Flake (Lost Circulation)
 - 94% Type "1" Cement
 - 5.20 % Water
- Laboratory testing results indicate that the blend listed in Fact No.1 will achieve a 500
 psi compressive strength within 6 hours and a 2,435 psi compressive strength within 24
 hours.

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CONCLUSIONS OF LAW

Pursuant to Articles 6 and 6A, Chapter 22 of the Code of West Virginia, the Office of Oil and Gas has jurisdiction over the subject matter embraced in said notice, and the persons interested therein, and jurisdiction to promulgate the hereinafter prescribed Order.

Pursuant to 35 CSR § 4-11.5 and 35 CSR § 8-9.2.h.8 the Chief of the Office of Oil and Gas may approve different cement blends upon the well operator providing satisfactory proof that different cement types are adequate.

ORDER

It is ordered that Nabors Completion & Production Services Co. may use the cement blend listed in Findings of Fact No. I for the cementing of surface and coal protection casing of oil and gas wells in the State as may be requested by oil and gas operators. The waiting time on the cement blend shall be 8 hours. The cement blend shall be mixed in strict accordance with the specifications for each blend and weight measurements made on-site to assure the cement slurries meet the minimum weight specifications. A sample shall be collected and, if after 8 hours the cement is not set up, additional time will be required. Nabors Completion & Production Services Co. shall keep a record of cement blend jobs in which the cement blend approved under this order is to be used and made available to the Office of Oil and Gas upon request.

Dated this, the 18th day of March, 2014.

IN THE NAME OF THE STATE OF WEST VIRGINIA

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

James Martin, Chief Office of Oil and Gas

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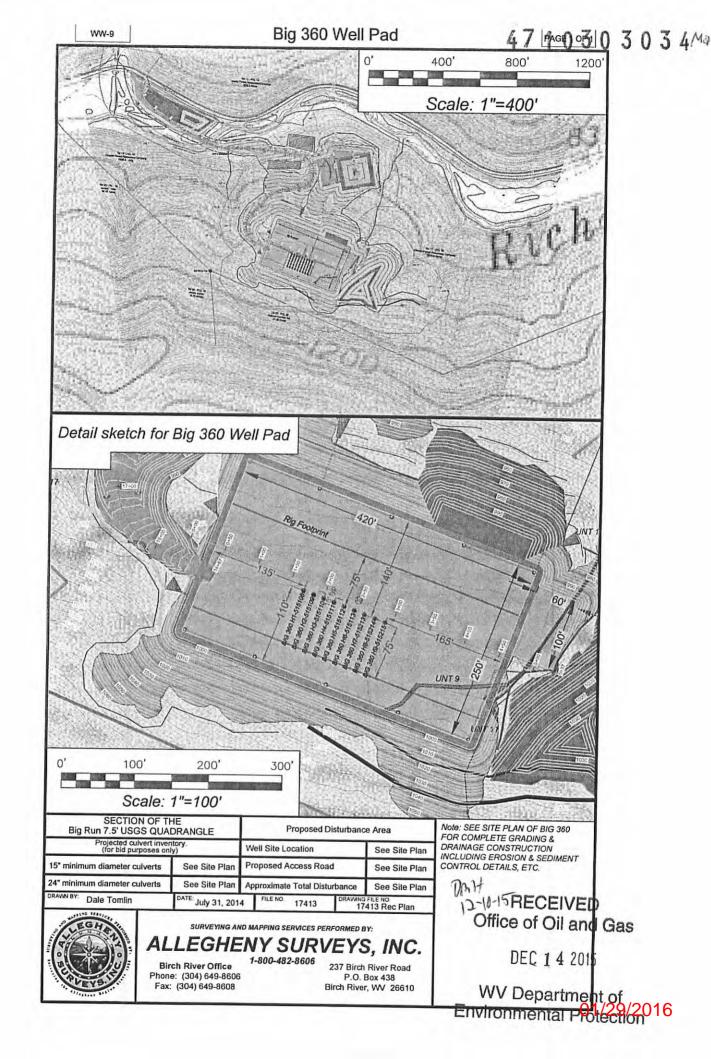
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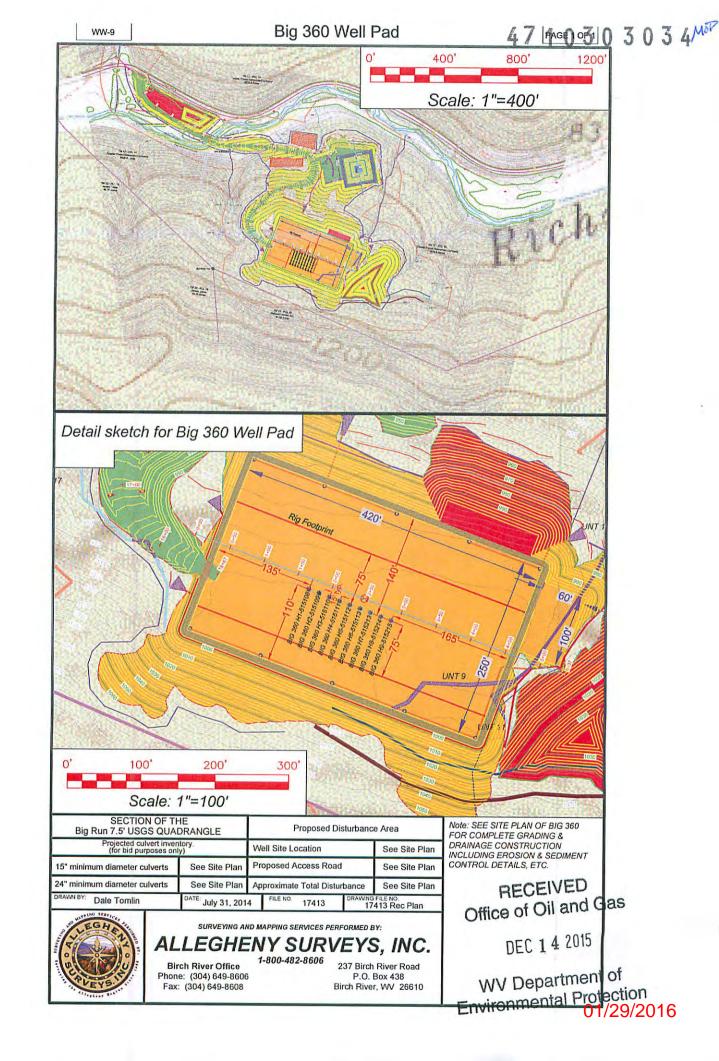
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TVD Depth (feet)	Formatio Tops (TVI	n D)					Hole Size	Туре	Size	Wt (ppf)	Grade	Casing Wall Thickness	0		
250			4				(inches) 26	Conductor	(inches)	78.6	A-500	0.312	Depth (feet)		Method
500	Base Freult Water	None reported	- 11	1314									40	Surface	Displacement
750															
1,000			(1000)		Section 1		1415	3.5							
1,250*					-1		17 1/2	Surface	13 3/8	54.5	J-55	0.38	856	Surface	Displacement
1,500					0										
1.750	Maxton	1781 1798	- 11												
2,000	Dig Lime Hig Injun	1932 - 2071 2094 2195	(2000')	11	-										
2.250	Weir	2361 - 2430	(2000)		0										
2,500	ini, cag pt Gantz	2480 2512 2547	4		4-1	/	12 3/9	Intermediate	9 5/8	40	A-500	0.395	0.400	400	all control
2.750	Fifty foot Base Red Rock	2617 - 2645		100								0.000	2480	Surface	Displacement
3,000	Thirty took Gordon	2775 2787 2789 - 2835	(3000')			20									
3,250	Forth Sand Bayard	2875 2886	[3000]	16	0	-1									
3,500	Warren Speechley	3007 3032 3455 - 3512 3606 - 3643				Pr.									
3,750*	Speeciney	3609 3643		1		_									
4.000'	Baltown A	3962 4328		1		100									
4,250						7									
4,500	Filley	4450 4400		KOP @ 4,496'		NOW !									
4.750						1									
5,000															
5.250'	Benson	5105 5157													
5,500	Alexander	5445 5484		25-		DA17 12-10-15									
5.750'						17-10	/								
6,000				V		19-10-1-)								
5.250°	Sonyea	6650 6801	1												
	Middlesex Genesee	6801 - 6849 5849 - 6932													
6,500	Geneseo	6902 6960 6960 - 6984													
6,750'	Hamilton Marcellus top	6984 7064 7064	1												
7,000	erget Inside Marcellus Marcellus Bottom	7087 /115	Delica the same	A Commission of the		Control Control Control	8.1/2	Production Casing	5 1/2	20	P-110	0.361	13355	500' above top Producing Zone	Displacement
7,000' To	773														
750 0	RE			ve & 7,087' ft TVD B:104' ft MD		Est. TD @ 7,087 h	TVD								
- 0	new ponzontal well in the appearant to depth of 4				and the water of										
Proposed Wei Work	111	Harris a franchis			5,251 ft Lateral										
Drill the verticate an	appeaximate depth of 4	496'	n												
	e lateral in the Mar	cellus. Cement ca:	sing.												

CI







Site Specific Safety Plan

EQT BIG 360 Pad

Jacksonburg

Wetzel County, WV

For Wells:

515111

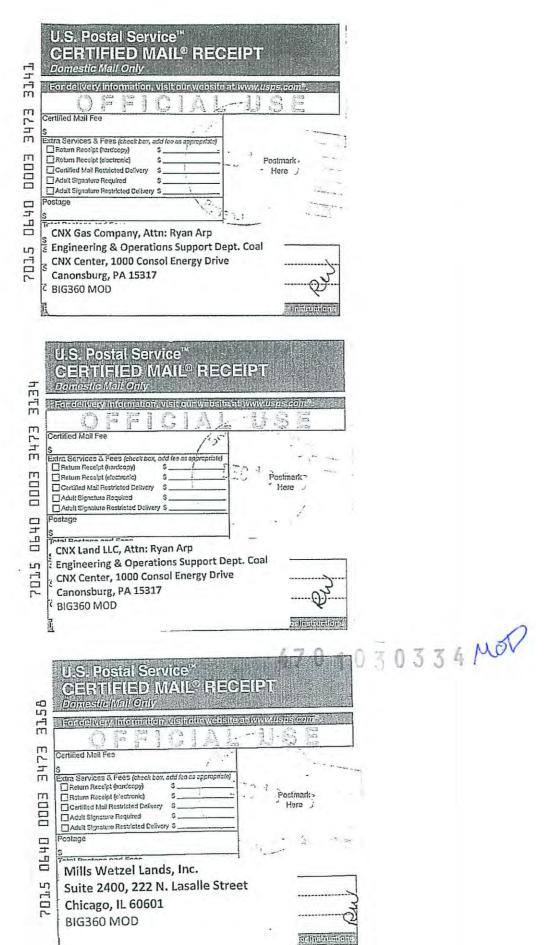
515110

515108

515109

5151085151095151108	515111515112
Date Prepared: August 7, 2014 EQT Production Interpretation Period Title 12 - 8-15 Date	Date Reviewed: December 3, 2015 WV Oil and Gas Inspector Oil 160 Togeth Title 13-10-17 RECEIVED
Date	Date Office of Oil and Gas
	DEC 1 4 2015

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
Complete items 1, 2, and 3.	A. Signature //
Print your name and address on the reverse	X Abb Ceulice Addressee
so that we can return the card to you. Attach this card to the back of the mailpiece,	B. Received by (Printed Name) C. Date of Delivery
or on the front if space permits.	Vartate Caparele
1. Article Addressed to:	□. Is delivery address different from item 1? □ Yes If YES, enter delivery address below: □ No
INX Gas Company, Attn: Ryan Arp Ingineering & Operations Support Dept. Coal	If YES, enter delivery address below:
NX Center, 1000 Consol Energy Drive	No. of the second secon
Canonsburg, PA 15317	Anappe
IG360 MOD	
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	☐ Adult Signature ☐ Registered Mail™ ☐ Adult Signature Restricted Delivery ☐ Registered Mail Restricted
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Article Number (Transfer from service label)	☐ Collect on Delivery Restricted Delivery ☐ Signature Confirmation™
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Form 3811, April 2015 PSN 7530-02-000-9053	Domestic Return Receipt
Testi III	
SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY A. Signature X T
	A. Signature
Complete items 1, 2, and 3. Print your name and address on the reverse	Agent Agent
so that we can return the card to you.	B. received by (Printed Name) C. Date of Delivery
Attach this card to the back of the mailpiece, or on the front if space permits.	A state Coder. by
1. Article Addressed to:	D. Is delivery address different from item 125 Yes
CNX Land LLC, Attn: Ryan Arp Engineering & Operations Support Dept. Coal	If YES, enter delivery address below:
NX Center, 1000 Consol Energy Drive	n
anonsburg, PA 15317	
G360 MOD	
	3. Service Type
	☐ Adult Signature ☐ Registered Mail™ ☐ Adult Signature ☐ Registered Mail™ ☐ Restricted ☐ Registered Mail Restricted
9590 9403 0752 5196 3274 22	☐ Certified Mail® Delivery ☐ Return Receipt for
	☐ Collect on Delivery
Article Number (Transfer from service label)	ured Mall ured Mall Restricted Delivery Signature Confirmation Restricted Delivery
Form 3811, April 2015 PSN 7530-02-000-9053	er S500) Domestic Return Receipt
Pontroo 11, April 2010 For 1002 02 000 0000	and the second s
· ·	A STATE OF THE STA
SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
Complete items 1, 2, and 3.	A. Signature
Print your name and address on the reverse	X Addressee
so that we can return the card to you. Attach this card to the back of the mailpiece,	BReceived by (Printed Name) C. Date of Delivery
or on the front if space permits.	Minta
Mills Wetzel Lands, Inc.	 D. Is delivery address different from item 1? ☐ Yes If YES, enter delivery address below: ☐ No
Suite 2400, 222 N. Lasalle Street	
Chicago, IL 60601	
BIG360 MOD	
	3. Service Type ☐ Priority Mail Express® ☐ Adult Signature ☐ Registered Mail™
9590 9403 0673 5196 9830 97	☐ Adult Signature Restricted Delivery ☐ Registered Mail Restricted ☐ Registered Mail Restricted ☐ Delivery
3330 3400 3370 3783 3333 37	☐ Certified Mail Restricted Delivery ☐ Return Receipt for
Articla Number (Transfer from service label)	☐ Collect on Delivery Restricted Delivery ☐ Signature Confirmation ☐ Signature Confirmation
7075 0640 0003 3473 3758	Isured Mail Restricted Delivery Restricted Delivery



WW-6A1 (5/13) Operator's Well No.

515112

INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE Chapter 22, Article 6A, Section 5(a)(5) IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Lease Name o	г						
Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page			
<u>.ease 988530</u>			Min 1/8 pd				
	Mills Wetzel Lands, Inc.	EQT Production Company		O&G 126A/288			
			N/A				
<u>4-23-01</u>	Billy Dewayne Arnolds, Jr.	EQT Production Company	Subsurface Eas	ement			
-	•		(see attached)	O&G 115/906			
.1187216222			Min 1/8 pd				
	Georgia H. Jones, et al.	H.S. Grayson	•	DB 53/169			
	H.S. Grayson (50% assigned)	South Penn Oil Company		DB 49/154			
	South Penn Oil Company	South Penn Natural Gas Compar	ny	O&G 33A/455			
	South Penn Natural Gas Company	South Penn Oil Company		DB 215/478			
	South Penn Oil Company	Pennzoil Company		Unrecorded Merger - Se attached			
	Pennzoil Company	Pennzoil United Inc.		DB 246/491			
	Pennzoil United Inc.	Pennzoil Company		Unrecorded Name Char See attached			
	Pennzoil Company	Pennzoil Products Company		DB 319/397			
	Pennzoil Products Company	Pennzoil Exploration and Product	ion Company	DB 363/384			
	Pennzoil Exploration and Production Company	CB 12/178					
	Pennzenergy Exploration and Production Company	CB 12/278					
	Devon Energy Production Company L.P.	East Resources, Inc.	CB 370/580				
	East Resources, Inc.	HG Energy, LLC	LB 118A/253				
	HG Energy, LLC	American Energy - Marcellus, LLC	DB 153/238				
	American Energy - Marcellus, LLC	Ascent Resources - Marcellus, LL	MB 114/619				
	Ascent Resources - Marcellus, LLC	EQT Production Company		O&G 166A/663			
	Georgia H. Jones, et al.	H.S. Grayson		DB 53/169			
	H.S. Grayson (25% assigned)	Woodland Oil Company	DB 53/257				
	Woodland Oil Company	South Penn Oil Company	DB 53/259				
	South Penn Oil Company	Pennzoil Company		Unrecorded Merger - Se attached			
	Pennzoil Company	Pennzoil United Inc.	Pennzoil United Inc.				
	Pennzoil United Inc.	Pennzoil Company	Unrecorded Name Chan See attached				
	Pennzoil Company	Pennzoil Products Company	CEIVED				
	Pennzoil Products Company	Pennzoil Exploration and Product	. WIVWHIT LIEU				
	Pennzoil Exploration and Production Company						
	Pennzenergy Exploration and Production Company	L Devon Energy Production Compa	iny L.P.	= CB 1€/27815			



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Devon Energy Production Company L.P.	East Resources, Inc.	CB 370/580
East Resources, Inc.	HG Energy, LLC	LB 118A/253
HG Energy, LLC	American Energy - Marcellus, LLC	DB 153/238
American Energy - Marcellus, LLC	Ascent Resources - Marcellus, LLC	MB 114/619
Ascent Resources - Marcellus, LLC	EQT Production Company	O&G 166A/663
Georgia H. Jones, et al.	H.S. Grayson	DB 53/169
H.S. Grayson (25% assigned)	W. H. Hearne	DB 48/86 & 49/185
W. H. Hearne	Pennzoil Products Company	LB 71A/584
Pennzoil Products Company	Pennzoil Exploration and Production Company	DB 363/384
Pennzoil Exploration and Production Company	Pennzenergy Exploration and Production Company LLC	CB 12/178
Pennzenergy Exploration and Production Company	LI Devon Energy Production Company L.P.	CB 12/278
Devon Energy Production Company L.P.	East Resources, Inc.	CB 370/580
East Resources, Inc.	HG Energy, LLC	LB 118A/253
HG Energy, LLC	American Energy - Marcellus, LLC	DB 153/238
American Energy - Marcellus, LLC	Ascent Resources - Marcellus, LLC	MB 114/619
Ascent Resources - Marcellus, LLC	EQT Production Company	O&G 166A/663

Upon information and belief, Operator's lease and/or other real property rights permit it to conduct drilling operations for the subject well in the location shown on the plat, including under any public roads that the well lateral crosses.

Acknowledgement of Possible Permitting/Approval In Addition to the Office of Oil and Gas

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: EQT Production Company

By: Permitting Supervisor

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7 1 0 3 0 3 0 3 4 MôP

2400 Zenith Ridge Rd. Suite 200 Canonsburg, PA 15317 www.eqt.com

Todd Klaner Manager, Permitting tklaner@eqt.com

December 8, 2015

WV DEP Reviewer

RE: EQT Production Company

PAD ID - BIG360 Well# - 515112 Wetzel County

Dear Reviewer,

This well indicated by this permit application contains a Subsurface Easement Agreement for non-productive portions of the well bore. Attached is a Memorandum of Subsurface Use Agreement which gives EQT the right to drill below the surface of the tract 23/1, shown on the well plat.

EQT Production understands that the WVDEP will issue the permit in the normal process subject to the completeness of the requirements of the Office of Oil and Gas and does not take a position with regards to the property rights under this agreement.

EQT Production agrees that the WVDEP's issuance of the permit is in no way an affirmance or validation of EQT Production's claimed rights.

Regards,

Todd Klaner

Manager, Permitting

EQT Production Company

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WV Department of Environmental Protection

01/29/2016

47 1 0 3 0 3 0 3 4 LETZEL County 1 Instrument to 1

Carol S Hausht
WETZEL County 11:24:13 AM
Instrument No 192164
Date Recorded 12/07/2015
Document Type R/N
Pages Recorded 3
Book-Page 115-906

MEMORANDUM OF Book-Page 115-90. SUBSURFACE RIGHT-OF-WAY AND EASEMENT AGREEME REpriling Fee \$5.00 in ansier Tax \$89.00

County Clerk please also index under the following: Shiben Estates, Inc.

Additional \$26.00

1. NAME AND ADDRESS OF GRANTOR:

Billy Dewayne Arnolds Jr. 312 Richwood Run Rd. Jacksonburg, WV 26377

2. NAME AND ADDRESS OF GRANTEE:

EQT Production Company 625 Liberty Avenue Suite 1700 Pittsburgh, PA 15222

- 3. SUBSURFACE RIGHT-OF-WAY AND EASEMENT AGREEMENT REFERENCE: A SUBSURFACE RIGHT-OF-WAY AND EASEMENT AGREEMENT ("Agreement") dated the 23rd day of September, 2015, was entered into for good and valuable consideration by and between Billy Dewayne Arnolds Jr. ("Grantor", whether one or more) and EQT Production Company ("Grantee"). Upon completion of any wellbore within the subsurface area underlying the Property (as defined in Section 4), this subsurface easement in the area of the wellbore and the one hundred (100') feet on each side of the wellbore that parallels it shall become an exclusive right of way and easement in that area. The final wellbore locations are as described in a final, as-built map(s) to be filed as a part of an affidavit in the aforesaid Clerk's Office following the completion of the following well(s) located on Grantee's BIG 360 well pad. If an as-built map is not available for a wellbore within the subsurface area underlying the Property, any third-party with the right to operate within such area may contact Grantee's land department for a copy of such as-built map. Grantee shall provide notice of additional wellbores located within the subsurface area underlying the Property by filing an amendment, affidavit or other appropriate document.
- 4. <u>DESCRIPTION OF PREMISES</u>: That certain tract or parcel of land containing 16.5 acres, more or less, located in Grant District in Wetzel County, West Virginia, being the same lands conveyed to Grantor by Deed dated the 11th day of December, 2002, of record in the Office of the Clerk of the County Commission of Wetzel County, West Virginia in Deed Book 384, at Page 627 ("the Property").
- 5. <u>TERM</u>: The Agreement shall run with the land and shall remain in full force and effect until released and relinquished by the Grantee back to the Grantor, in writing.

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IN WITNESS WHEREOF, the parties have signed their names hereto as of the date of the Agreement referenced in Section 3 above.

GRANTOR:

GRANTEE:

EQT Production Company

By: John W. Damato Its: Attorney in fact

STATE OF WEST VIRGINIA

COUNTY OF WETZEL

I, BRYSON, T MRIP , a Notary Public, in and for said State and County, do hereby certify that Billy Dewayne Arnolds Jr., personally known to be the same persons whose names are subscribed to the foregoing instrument, appeared before me this day in person in the State and County aforesaid, and acknowledged and delivered the said instrument to be their free act and deeds for uses and purposes therein set forth.

Given under my hand this 23 day of SEPTEMBER, 2015.

My Commission expires: Jan 12021

OFFICIAL SEAL COMMISSIONER FOR WEST VIRGINIA Bryson J. Karp Weston, WV My Commission Expires January 1, 2021

STATE OF WEST VIRGINIA;

COUNTY OF HARRISON:

I, Kotelyn L. Coten, a Notary Public, in and for said State and County, do hereby certify that John W. Damato, personally known to be the same person whose name is subscribed to the foregoing instrument and the Attorney in fact of EQT Production Company, appeared before me this day in person in the State and County aforesaid, and acknowledged and delivered the said instrument to be his free act and deed for uses and purposes therein set forth on behalf of said company.

Given under my hand this Hth day of September , 2015.

My Commission expires: May 16, 2024

KATELYN L LISTON

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Declaration of Consideration of Value

The Grantee hereby declares that the consideration being paid to Grantor for the transfer of real estate is \$
Given under my hand this LHh day of Deregraphy, 2015.

EQT PRODUCTION COMPANY John W. Damato Attorney-In-Fact

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3-1-63.18 120

ARTICLES OF MERGER

OF

ZAPATA PETROLEUM CORPORATION

AND

STETCO PETROLEUM CORPORATION

INTO

SOUTH PENN OIL COMPANY

In compliance with the requirements of Afficie IX of the Act of the General Assembly of the Commonwealth of Pennsylvania, known as the Business Corporation Law, approved May 5, 1913, P. L. 361, and amendments thereto, providing for the merger and consolidational corporations, SOUTH PENN OIL COMPANY, a Pennsylvania corporation, ZAPATA PETROLEUM CORPORATION, a Delaware corporation, hereby certify finder their respective corporate scalar

1. That it is proposed that Zapata Petroleum Corporation and Sieteo Petroleum Corporation be merged into South Pean Oil Company in accordance Willi the provisions of a Joint plan of merger callied "Joint Plan and Africament of Merger" and dated May 7, 1963, a copy of which is attached hereto and made a part hereot.

2. That the surviving exporation is South Penn Oil Company, that the name of the surviving corporation to changed to Pennzoil Company and that the location of its registered office is Drake Building, 100 Dimeomb Street, Oil City, Pennsylvania.

3. That a special meeting of shareholders of South Penn Oil Company to take action upon the proposed merger was held at 10.00 o'clock A.M. on July 2, 1903, at the registered office off sald corporation. Drake Bullding, 106 Duncomb Street, Oil City, Pennsylvania; that written molice, stailing the place, day, hour and purposes of the meeting together with a copy of, sald joint plan of merger and a copy of subsection A of section 208 and of subsections A, B, C and D of section 515 (rights of dissections state of the sald Pennsylvania Business Corporation Law, was mailed on June 11, 1963, to all shareholders of sald corporation of record on May 28, 1963, which was fixed as the second date for determining the shareholders entitled to vote at sald meeting.

That at the time of the special meeting of shareholders of South Penn Oil Company on July 2, 1963, the authorized hilmber of all shares of the capital stock of said corporation was 1,715,000 shares of common stock of the par value of \$12.50 cach, of which 1,589,750 shares were outstanding and were cultiled to be voted at the meeting and 112,850 shares were likely in the treasurer of said corporation and were not could to be voted at the hierary and that at said incepting said plant plan of merger was adopted and dipproved by the affinative vote of the holders of 1,67,6 AZ-shares of common stock, there having been voted against the same 24,680 shares of common stock.

5. That the Joint Plan and Agreement of Merger was duly additionized, adopted and approved by Japath Petroleum Corporation and Stetco Petroleum Corporation in accordance with the laws of the State of Delaware, the jurisdiction in which they were formed.

6. That, as provided in Section 5 of said Joint plan of dierger, the Articles of Incorporation of South Penn Oil Company, as herefolore amended, shall be amended and restained in their callecty by revising same to read in full as set forth in Exhibit A to said Joint plan of merger.

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Henceforth the "Articles" as defined in Article I of the Business Corporation Law of the Commonirealth of Pennsylvania shall not include any prior documents.

7. That the following are the names and addresses of the sixteen persons who shall constitute the first Hoard of Directors of the Surviving Corporation:

Name	Address
D. D. Hovnint	P. O. Hox 2500 Tulia, Oklahoma
Edward P. Böyle	205 Maple Avenue Oli City, Peinsylvania
George I., Coleman	1137 (Yest Jackson Houlevard Chicago, Illinois
James G. S. Gammell	"Innerwick" Ellersly Road Edithurgh 12, Scotland
R. B. Glipatrick, Jr.	Mellon National Bank and Trust Company Filth Avenue Pittsburgh 19, Penhayivania
R.W. Grunert	Drake Hailflig 106 Düncömb Street Oll City, Pennsylvanla
L. F. Johnson	210514 AV. 10th
J. Hugh Liedtke	Room 410, Four Galeway Center Pittsburgh, Pennsylvania
Willam C. Liedtke, Jr.	Pleat National Bank Building Midland, Texas
T. I. McDowell	McDowell, McDowell, Wick & Daly 50 Hoylaton Street Bradford, Pennsylvania
John'B. Affichell	12 South Kentall Avenue Bradfurd, Pennsylvania
Thomas O'D, Murray	Room 110, Pour Gataway Center Pittsburgh, Pennsylvania
A. J. Saxe	Drike Bulldlig 20 Parkway Lane Headford, Pennsylvada
Charles I., Suhr	P. O. Box (O) Oli City, Pennsylvania
J. Z. Váhrlite	50 Barliour Street Brailford, Pennsylvania
W. S. Zehrung	115 Wylls . Oll City, Pennsylvania

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IN TESTIMONY WITHIEOF, South Penn Oil Company, Zapain Petroleum Corporation and Steleo Petroleum Corporation have caused these Articles of Merger to be executed under the seal of each corporation and to be signed by two duly authorized officers of each corporation, this 2nd day of July, 1963.

south PENH of COMPANY

Aifest:

J. H. Young

Secretary

Altest:

W. M. BRUBLEY, JR.

Secretary

Affeats

MARINE MITCHELL

Sciretary

By J. Huan Liebtus

Precident

(Corplante Seal)

ZAPATA PETROLEUM CORPORATION

By W. A. Hover

President (Corpounte Sent)

STETCO PETROLEUM CORPORATION

By WHILIAM C. LIEBTER, JR.

Persident

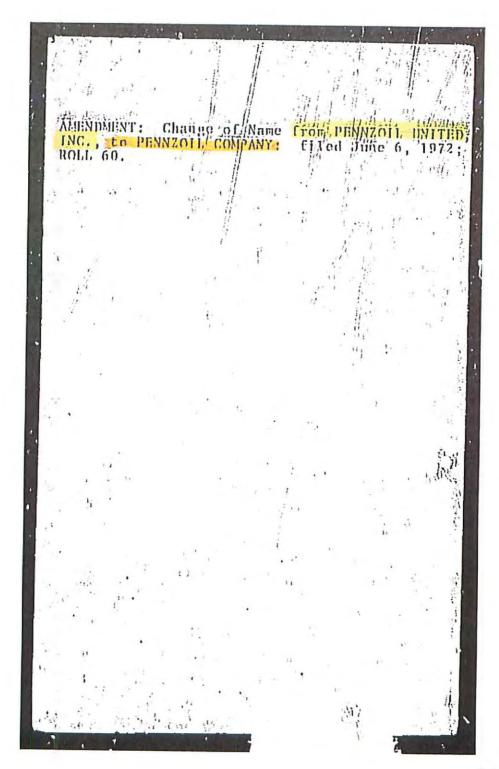
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