



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, S.E.
Charleston, WV 25304
(304) 926-0450
fax: (304) 926-0452

Jim Justice, Governor
Austin Caperton, Cabinet Secretary
www.dep.wv.gov

PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

EQT PRODUCTION COMPANY
120 PROFESSIONAL PLACE
BUILDING II
BRIDGEPORT, WV 26330

Re: Permit Modification Approval for 515109
47-103-03162-00-00

Changing conductor casing from 20" to 26"


EQT PRODUCTION COMPANY

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.

If there are any questions, please feel free to contact me at (304) 926- 0450.



James A. Martin
Chief

Operator's Well Number: 515109
Farm Name: COASTAL FOREST RESOURCES COMPANY D/B/A COASTAL 
U.S. WELL NUMBER: 47-103-03162-00-00
Horizontal 6A / New Drill
Date Issued: 6/13/2017

Promoting a healthy environment.

06/16/2017

18)

CASING AND TUBING PROGRAM

<u>TYPE</u>	<u>Size (in)</u>	<u>New or Used</u>	<u>Grade</u>	<u>Weight per ft. (lb/ft)</u>	<u>FOOTAGE: For Drilling (ft)</u>	<u>INTERVALS: Left in Well (ft)</u>	<u>CEMENT: Fill-up (Cu. Ft.)/CTS</u>
Conductor	26	New	A-500	85.6	40	40	60 ft ³ / CTS
Fresh Water	13 3/8	New	J-55	54.5	856	856	757 ft ³ / CTS
Coal							
Intermediate	9 5/8	New	A-500	40	2480	2480	971 ft ³ / CTS
Production	5 1/2	New	P-110	20	12771	12771	500' above top producing zone
Tubing	2 3/8		J-55	4.7		May not be run, if run set 40' above top perf or 80' inclination	
Liners							

DMAH 6/7/17

<u>TYPE</u>	<u>Size (in)</u>	<u>Wellbore Diameter (in)</u>	<u>Wall Thickness (in)</u>	<u>Burst Pressure (psi)</u>	<u>Anticipated Max. Internal Pressure (psi)</u>	<u>Cement Type</u>	<u>Cement Yield (cu. ft./k)</u>
Conductor	26	30	.375	1378	18	Class A	1.18
Fresh Water	13 3/8	17 1/2	.38	2700	2160	See Variance	1.19
Coal							
Intermediate	9 5/8	12 3/8	.395	3950	3160	See Variance	1.19
Production	5 1/2	8 1/2	.361	12640	10112	Class A/H	1.123/2.098
Tubing	2 3/8	NA	.19	7700			
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

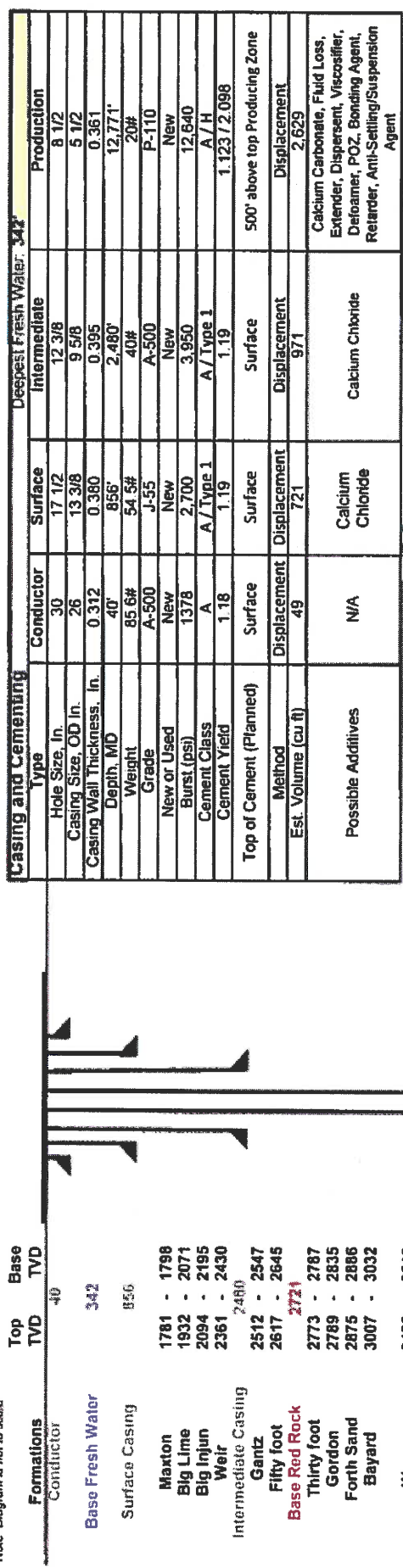
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Office of Oil and Gas

JUN 8 2017

Well
EQT Production
Big Run Quad
Wetzel County, WV

AJmush 347
 Vertical Section 5487

Note Diagram is not to scale



Casing and Cementing		Deepest Fresh Water: 342'		Production	
Type	Conductor	Surface	Intermediate	Displacement	Displacement
Hole Size, In.	30	17 1/2	12 3/8		8 1/2
Casing Size, OD In.	26	13 3/8	9 5/8		5 1/2
Casing Wall Thickness, In.	0.312	0.380	0.395		0.361
Depth, MD	40'	856'	2,480'		12,771'
Weight	85.6#	54.5#	40#		20#
Grade	A-500	J-55	A-500		P-110
New or Used	New	New	New		New
Burst (psi)	1378	2,700	3,950		12,640
Cement Class	A	A / Type 1	A / Type 1		A / H
Cement Yield	1.18	1.19	1.19		1.123 / 2.098
Top of Cement (Planned)	Surface	Surface	Surface		500' above top Producing Zone
Method	Displacement	Displacement	Displacement		Displacement
Est. Volume (cu ft)	49	721	971		2,629
Possible Additives	N/A	Calcium Chloride	Calcium Chloride		Calcium Chloride, Fluid Loss, Extender, Dispersant, Viscosifier, Defoamer, POZ, Bonding Agent, Retarder, Anti-Settling/Suspension Agent

KOP @ 5,650'

Land curve @ 7,085' TVD
 7,570' MD

Est. TD @ 7,085'
 12,771' MD

DMAH 6/7/17

5.201' Lateral

Proposed Well Work.
 Drill and complete a new horizontal well in the Marcellus formation.
 Drill the vertical to an approximate depth of 5650'.
 Kick off and drill curve. Drill lateral in the Marcellus Cement casing.

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 JUN 8 2017
 WV Department of
 Environmental Protection

103-03162



June 7, 2017

Laura Adkins
West Virginia Department of Environmental Protection
601 57th Street SE
Charleston, WV 25304

Re: Modification 47-10303159, 03162, 03163, 03164, 03165

Dear Ms. Adkins,

Attached are modifications for the above API numbers. The conductor casing has been changed from 20" to 26". The inspector Derek Haught approved this change.

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

Sincerely,

A handwritten signature in blue ink, appearing to read 'Vicki Roark'.

Vicki Roark
Permitting Supervisor-WV

Enc.

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Office of Oil and Gas

JUN 8 2017

WV Department of
Environmental Protection