



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

Austin Caperton, Cabinet Secretary
www.dep.wv.gov

January 29, 2018
PERMIT MODIFICATION APPROVAL
Horizontal 6A / New Drill

CHEVRON APPALACHIA, LLC
700 CHERRINGTON PARKWAY

CORAOPOLIS, PA 15108

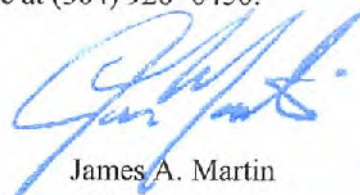
Re: Permit Modification Approval for M06H
47-051-01916-00-00

Modified Lateral for Extension into Additional Leases

CHEVRON APPALACHIA, LLC

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: M06H
Farm Name: LONGWORTH, GRAHAM H. JR
U.S. WELL NUMBER: 47-051-01916-00-00
Horizontal 6A / New Drill
Date Issued: January 29, 2018

Promoting a healthy environment.

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

1) Well Operator: Chevron Appalachia, LLC

<u>49449935</u>	<u>Marshall</u>	<u>Clay</u>	<u>Glen Easton, WV</u>
-----------------	-----------------	-------------	------------------------

Operator ID County District Quadrangle

2) Operator's Well Number: M06H Well Pad Name: Longworth

3) Farm Name/Surface Owner: Graham H. Longworth, Jr Public Road Access: Roberts Ridge Road/WV-21

4) Elevation, current ground: 1292' Elevation, proposed post-construction: 1270'

5) Well Type (a) Gas Oil Underground Storage

Other _____

(b) If Gas Shallow Deep

Horizontal

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus, 6531, 61' thick, 0.64 psi/ft gradient

8) Proposed Total Vertical Depth: 6,535

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 18,309

11) Proposed Horizontal Leg Length: 10,190

12) Approximate Fresh Water Strata Depths: 568'

13) Method to Determine Fresh Water Depths: 1' mile radius search around pad location

14) Approximate Saltwater Depths: 1279', 1883', 2281'

15) Approximate Coal Seam Depths: 520', 836'

16) Approximate Depth to Possible Void (coal mine, karst, other): N/A

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine? Yes _____ No

(a) If Yes, provide Mine Info: Name: _____
Depth: _____
Seam: _____
Owner: _____

18) CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	20	New			42	42	CTS
Fresh Water	13.375	New	J-55	54.5	618	618	CTS
Coal							
Intermediate	9.625	New	L-80	40	2206	2206	CTS
Production	5.50	New	P-110	20	18309	18309	2,706
Tubing							
Liners							

JN 10/3/17

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20	26					
Fresh Water	13.375	17.5	0.38	2730	1911	Class A	1.2
Coal							
Intermediate	9.625	12.375 & 12.25	0.395	5750	2768	Class A	1.19
Production	5.5	8.75 & 8.5	0.361	14360	9975	Class A, G or H	1.25
Tubing							
Liners							

PACKERS

Kind:				
Sizes:				
Depths Set:				

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill vertical depth to the Marcellus at an estimated total vertical depth of approximately 6,535 feet, Drill horizontal leg.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

18,762 bbl fluid - 1,000,000 lbm sand/stage - 9400 anticipated max psi - 100 bpm anticipated max rate

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 38.9

22) Area to be disturbed for well pad only, less access road (acres): 19.3

23) Describe centralizer placement for each casing string:

Surface: bow spring - (1) on shoe track w/stop collar & (1) per joint over coupling to surface;
Intermediate: bow spring - (1) on shoe track with stop collar & (1) per 3 joints over coupling; Vertical
Production: bow spring - (1) per every other joint over coupling; Curve and Lateral: solid composite (1) per joint of casing to KOP.

24) Describe all cement additives associated with each cement type:

For the Water String the blend will contain class A cement 3% CaC12, and flake. The intermediate will contain class a cement 3% CaC12, and flake. The Production cement will have a lead and tail cement. The lead will contain class A, G or H cement, KCl dispersant, suspension agent, and retarder. The tail will contain class A, G or H cement, Calcium Carbonate, KCl, dispersant, de-foamer, suspension agent, and friction reducer.

25) Proposed borehole conditioning procedures:

Air sections ensured to be clean via circulation once TD is reached. Fluid sections will be circulated a minimum of 2 bottoms up once casing point has been reached and until uniform mud properties are achieved.

*Note: Attach additional sheets as needed.

Longworth Cement Additives

The Water String the blend will contain Class A cement, 3% CaC12, and flake.

The intermediate will contain Class A cement, 3% CaC12, salt and flake.

The Production cement will have a lead and tail cement.

The lead will contain Class A, G or H cement, KCl dispersant, suspension agent, and retarder.

The tail will contain Class A, G or H cement, Calcium Carbonate, KCl, dispersant, de-foamer, suspension agent, and friction reducer.

RECEIVED
Office of Oil and Gas
OCT 13 2017
WV Department of
Environmental Protection

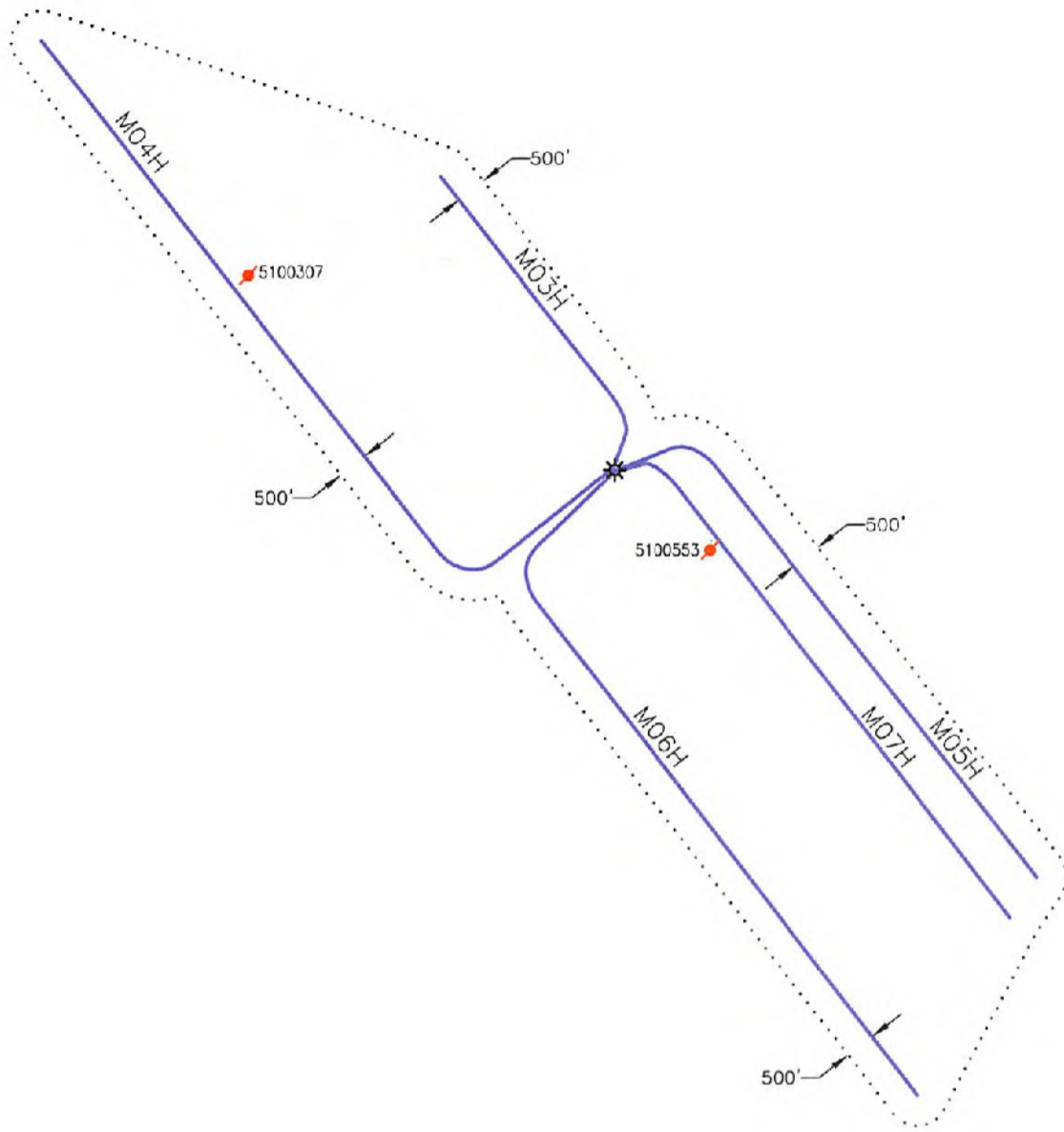
SI-01914MOD

Longworth M06H

Clay Twp, Marshall Co, WV		Ground Level Elev. [ft above SL]:		1270				
DRILLING FLUID / BIT TYPE / TRA	CENTRALIZER PROGRAM	CASING SIZE / FORMATION	DEPTH		WELLHEAD DESIGN	HOPE SIZE BNI	CASING SPECS	CEMENT PROGRAM
			MD [FT]	TVD [FT]				
Case Barrel/ Auger	2 Bawtling per ft	20" Conductor	42	42	INC. AZM	30	CONDUCTOR 20" 78.678 8.52 Minimum 40 ft from GLE or at least 10 ft into bedrock	Grout to Surface
	Flow Spring: (1) on shoe track w/ stop collar 8.5 (1) per ft over coupling to surface	13-3/8" Casing	618	618		17.5	Surface Casing 13-3/8" 54.58 7.55 BTC 0.38" Wall Coupling OD (in) 14.375 ID (in) 12.615 Drift ID (in) 12.459 Burst (psi) 2730 Collapse (psi) 1,130 Yield (ft Strength 1,000 lbs) 853	Surface Blank (Class A) Cement to Surface
	Flow Spring: (1) on shoe track w/ stop collar 8.5 (1) per ft over coupling	9-5/8" Casing	2,184	2,184		12.575 - 12.25	Intermediate Casing 9-5/8" 408 7.55 BTC 0.35" Wall Coupling OD (in) 10.025 ID (in) 8.835 Drift ID (in) 8.679 Burst (psi) 3,650 Collapse (psi) 2,570 Yield (ft Strength 1,000 lbs) 630	Intermediate II Blank (Class A) Cement to Surface
	Vertical Flow Spring: (1) per every other ft over coupling Curve and Lateral Solid Composite (1) per ft of log to EOP	5-1/2" Casing	18,309	8,535		8.5 - 8.75	Production Casing 5-1/2" 208 P-110 EC 0.361" Wall Coupling OD (in) 6.300 ID (in) 4.778 Drift ID (in) 4.652 Burst (psi) 14360 Collapse (psi) 12090 Yield (ft Strength 1,000 lbs) 720	Production Lead Slurry Cement to Surface
Non-Conservation	Flow Equip.	5-1/2" Casing	18,309	8,535		8.5 - 8.75		Production Tail Slurry TOC minimum 200' above Marcellus

Jan 10/3/17

RECEIVED
Office of Oil and Gas
OCT 13 2017
WV Department of
Environmental Protection



Blue Mountain Inc.
 10125 MASON DIXON HIGHWAY
 BURTON, WV 26562
 PHONE: (304) 662-6486

PREPARED FOR:
 CHEVRON APPALACHIA, LLC
 700 CHERRINGTON PARKWAY
 CORAOPOLIS, PA 15108

LEGEND
 ☼ - WELL LOCATION
 ● - PLUGGED WELL

LONGWORTH
 AREA OF REVIEW MAP
 MARSHALL COUNTY
 CLAY DISTRICT
 WEST VIRGINIA

TOPO QUAD: GLEN EASTON, WV
 SCALE: 1" = 3000'
 DATE: SEPTEMBER 26, 2017

RECEIVED
 Office of Oil and Gas
 OCT 13 2017
 WV Department of
 Environmental Protection

Well ID	Prior Operator On Record	Operator - DEP	Status	Latitude	Longitude	Vertical TD	Producing Formation	Producing Zones NOT Perforated
47-051-00307	Arrowhead Exploration Co.	Operator Unknown	Plugged	39.855780	-80.748193	3,000	Fourth	None
47-051-00553	Kentucky Central & Co.	Operator Unknown	Plugged	39.843735	-80.720930	1,168	Salt Sands	None

RECEIVED
 Office of Oil and Gas
 OCT 18
 WV Dept of
 Environmental

51-01916 Map

**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 or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
See Attached				

**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: Chevron Appalachia, LLC
 By: Jenny Hayes
 Its: Permitting Team Lead

RECEIVED
Office of Oil and Gas
OCT 13 2017
WV Department of
Environmental Protection

Longworth Unit #6H

Plat ID	Lessor	Lessee	Royalty	Book/Page	Assignment #1	Assignment #2	Assignment #3
4-11-1.0	LONGWORTH GRAHAM H JR ET AL	Chevron U.S.A. Inc.	0.14	BK 790 - PG 129	n/a	n/a	
4-11-55.0	HOLMES CWC LEGACY LLC	Chevron U.S.A. Inc.	0.14	BK 790 - PG 120	n/a	n/a	
4-11-56.0	FLOWERS CLINT E ET AL	Chesapeake Appalachia, LLC	0.15	BK 700 - PG 408	BK 30 - PG 392 Chesapeake Appalachia, LLC to Chevron U.S.A. Inc.	n/a	
4-11-56.1	RICHMOND THOMAS O ET UX	TriEnergy Holdings, LLC	0.16	BK 722 - PG 515	TriEnergy Holdings, LLC to NPAR, LLC BK 28 - PG 348	BK 026 - PG 269 NPAR, LLC to Chevron U.S.A. Inc.	
4-11-58.0	GATTS STEPHANIE L	TriEnergy Holdings, LLC	0.16	BK 763 - PG 213	TriEnergy Holdings, LLC to Chevron U.S.A. Inc. BK 21 - PG 288	n/a	
9-1-19.0	KERNAN CHARLES R ET UX	Central Michigan Exploration LLC	0.125	BK 668 - PG 149	Central Michigan Exploration LLC to Stone Energy Corporation	BK 33 - PG 276 Stone Energy Corporation to Chevron U.S.A. Inc.	
9-1-21.0	HUBBS SHANNON ROGER ET UX	Chevron U.S.A. Inc.	0.16	BK 798 - PG 535	n/a	n/a	
9-1-22.2	COLVIN DEAN B	TriEnergy Holdings, LLC	0.18	BK 726 - PG 593	TriEnergy Holdings, LLC to NPAR, LLC BK 25 - 463	BK 026 - PG 269 NPAR, LLC to Chevron U.S.A. Inc.	
	KINNEY MARGARET	TriEnergy Holdings, LLC	0.18	BK 726 - PG 598	TriEnergy Holdings, LLC to NPAR, LLC BK 25 - 463	BK 026 - PG 269 NPAR, LLC to Chevron U.S.A. Inc.	
	GRANDSTAFF PATRICIA COLVIN	TriEnergy Holdings, LLC	0.18	BK 726 - PG 612	TriEnergy Holdings, LLC to NPAR, LLC BK 25 - 463	BK 026 - PG 269 NPAR, LLC to Chevron U.S.A. Inc.	
	SNYDER MARILYN PYLES	TriEnergy Holdings, LLC	0.18	BK 726 - PG 607	TriEnergy Holdings, LLC to NPAR, LLC BK 25 - 463	BK 026 - PG 269 NPAR, LLC to Chevron U.S.A. Inc.	
	PYLES JAMES E	TriEnergy Holdings, LLC	0.18	BK 726 - PG 601	TriEnergy Holdings, LLC to NPAR, LLC BK 25 - 463	BK 026 - PG 269 NPAR, LLC to Chevron U.S.A. Inc.	
	ASTON SUSAN	TriEnergy Holdings, LLC	0.18	BK 727 - PG 215	TriEnergy Holdings, LLC to NPAR, LLC BK 25 - 463	BK 026 - PG 269 NPAR, LLC to Chevron U.S.A. Inc.	
	HULL CAROL	TriEnergy Holdings, LLC	0.18	BK 727 - PG 220	TriEnergy Holdings, LLC to NPAR, LLC	BK 026 - PG 269 NPAR, LLC to Chevron U.S.A. Inc.	

WV Department of
Environmental Protection

OCT 13 2017

RECEIVED
Office of Oil and Gas

51-01916RAD

MOORE DAVID GEORGE	TriEnergy Holdings, LLC	0.18	BK 727 - PG 223	BK 25 - 463 TriEnergy Holdings, LLC to NPAR, LLC	BK 026 - PG 269 NPAR, LLC to Chevron U.S.A. Inc.
KERNS BETTY LOU DELLGET	TriEnergy Holdings, LLC	0.18	BK 728 - PG 393	BK 25 - 463 TriEnergy Holdings, LLC to NPAR, LLC	BK 026 - PG 269 NPAR, LLC to Chevron U.S.A. Inc.
SOUTH MARILYN	TriEnergy Holdings, LLC	0.18	BK 728 - PG 398	BK 25 - 463 TriEnergy Holdings, LLC to NPAR, LLC	BK 026 - PG 269 NPAR, LLC to Chevron U.S.A. Inc.
GUMP HOWARD ET UX	TriEnergy Holdings, LLC	0.18	BK 729 - PG 338	BK 25 - 463 TriEnergy Holdings, LLC to NPAR, LLC	BK 026 - PG 269 NPAR, LLC to Chevron U.S.A. Inc.
FEIERSTEIN JUDY REILLEY	TriEnergy Holdings, LLC	0.18	BK 728 - PG 414	BK 25 - 463 TriEnergy Holdings, LLC to NPAR, LLC	BK 756 - PG 307 NPAR, LLC to Chevron U.S.A. Inc.
O'HARA RICHARD	TriEnergy Holdings, LLC	0.18	BK 730 - PG 615	BK 25 - 463 TriEnergy Holdings, LLC to NPAR, LLC	BK 756 - PG 332 NPAR, LLC to Chevron U.S.A. Inc.
COLVIN CATHY J	TriEnergy Holdings, LLC	0.18	BK 730 - PG 613	BK 25 - 463 TriEnergy Holdings, LLC to NPAR, LLC	BK 756 - PG 332 NPAR, LLC to Chevron U.S.A. Inc.
VAN DINE ALICE FAYE	TriEnergy Holdings, LLC	0.18	BK 734 - PG 179	BK 25 - 463 TriEnergy Holdings, LLC to NPAR, LLC	BK 756 - PG 332 NPAR, LLC to Chevron U.S.A. Inc.
FORSHELL LORA	TriEnergy Holdings, LLC	0.18	BK 735 - PG 208	BK 25 - 463 TriEnergy Holdings, LLC to NPAR, LLC	BK 756 - PG 332 NPAR, LLC to Chevron U.S.A. Inc.
PYLES KEITH	TriEnergy Holdings, LLC	0.18	BK 735 - PG 211	BK 25 - 463 TriEnergy Holdings, LLC to NPAR, LLC	BK 756 - PG 332 NPAR, LLC to Chevron U.S.A. Inc.
PYLES WANDA L	TriEnergy Holdings, LLC	0.18	BK 735 - PG 205	BK 25 - 463 TriEnergy Holdings, LLC to NPAR, LLC	BK 756 - PG 332 NPAR, LLC to Chevron U.S.A. Inc.
WHITE SHERLEY M FKA VAN DINE SHERLEY M	TriEnergy Holdings, LLC	0.18	BK 735 - PG 411	BK 25 - 463 TriEnergy Holdings, LLC to NPAR, LLC	BK 756 - PG 332 NPAR, LLC to Chevron U.S.A. Inc.
STOKES VERENDA	TriEnergy Holdings, LLC	0.18	BK 735 - PG 414	BK 25 - 463 TriEnergy Holdings, LLC to NPAR, LLC	BK 756 - PG 332 NPAR, LLC to Chevron U.S.A. Inc.

WV Department of
 Environmental Protection

OCT 13 2017

RECEIVED
 Office of Oil and Gas

51-01916 JLR

VESICO-RAMIREZ DOMINAE	TriEnergy Holdings, LLC	0.18	BK 735 - PG 421	BK 25 - 463 TriEnergy Holdings, LLC to NPAR, LLC	BK 756 - PG 332 NPAR, LLC to Chevron U.S.A. Inc.
VAN DINE KRISTA L	TriEnergy Holdings, LLC	0.18	BK 738 - PG 532	BK 25 - 463 TriEnergy Holdings, LLC to NPAR, LLC	BK 26 - PG 201 NPAR, LLC to Chevron U.S.A. Inc.
COLVIN ROBERT P	TriEnergy Holdings, LLC	0.18	BK 726 - PG 595	BK 25 - 463 TriEnergy Holdings, LLC to NPAR, LLC	BK 026 - PG 269 NPAR, LLC to Chevron U.S.A. Inc.
PYLES RONALD	TriEnergy Holdings, LLC	0.18	BK 726 - PG 604	BK 25 - 463 TriEnergy Holdings, LLC to NPAR, LLC	BK 026 - PG 269 NPAR, LLC to Chevron U.S.A. Inc.
COOK DONALD POA CAROL HULL	TriEnergy Holdings, LLC	0.18	BK 727 - PG 217	BK 25 - 463 TriEnergy Holdings, LLC to NPAR, LLC	BK 026 - PG 269 NPAR, LLC to Chevron U.S.A. Inc.
O'HARA KEVIN	TriEnergy Holdings, LLC	0.18	BK 730 - PG 618	BK 25 - 463 TriEnergy Holdings, LLC to NPAR, LLC	BK 756 - PG 332 NPAR, LLC to Chevron U.S.A. Inc.
GARRETT CATHY LUDWIG	TriEnergy Holdings, LLC	0.18	BK 730 - PG 637	BK 25 - 463 TriEnergy Holdings, LLC to NPAR, LLC	BK 756 - PG 332 NPAR, LLC to Chevron U.S.A. Inc.
D'ERAMO ROBERT R JR ET AL	TriEnergy Holdings, LLC	0.18	BK 734 - PG 166	BK 25 - 463 TriEnergy Holdings, LLC to NPAR, LLC	BK 756 - PG 332 NPAR, LLC to Chevron U.S.A. Inc.
FORDYCE DEBRA	TriEnergy Holdings, LLC	0.18	BK 734 - PG 317	BK 25 - 463 TriEnergy Holdings, LLC to NPAR, LLC	BK 756 - PG 332 NPAR, LLC to Chevron U.S.A. Inc.
VAN DINE KEITH JOEL	TriEnergy Holdings, LLC	0.18	BK 738 - PG 529	BK 25 - 463 TriEnergy Holdings, LLC to NPAR, LLC	BK 26 - PG 201 NPAR, LLC to Chevron U.S.A. Inc.
PETRELLE GLADYS BY AIF BUFFONE SHIRLEY	TriEnergy Holdings, LLC	0.16	BK 767 - PG 610	BK 28 - PG 348 TriEnergy Holdings, LLC to Chevron U.S.A. Inc.	n/a
COLVIN RODNEY	Chevron U.S.A. Inc.	0.15	BK 885 - PG 632	n/a	n/a
REILLEY PAULA	Chevron U.S.A. Inc.	0.16	BK 885 - PG 629	n/a	n/a
EISENHauer VICKIE	Chevron U.S.A. Inc.	0.15	BK 885 - PG 470	n/a	n/a
YOHO KIM	Chevron U.S.A. Inc.	0.15	BK 885 - PG 467	n/a	n/a
COLVIN JASON	Chevron U.S.A. Inc.	0.15	BK 885 - PG 515	n/a	n/a
WILLINGHAM BRENDA	Chevron U.S.A. Inc.	0.15	BK 885 - PG 512	n/a	n/a

WV Department of
 Environmental Protection
 RECEIVED
 Office of Oil and Gas
 OCT 13 2017

SI-019146m00

	COLVIN DONALD	Chevron U.S.A. Inc.	0.15	BK 885 - PG 509	n/a	n/a	
	COLVIN MICHAEL	Chevron U.S.A. Inc.	0.15	BK 885 - PG 506	n/a	n/a	
	PANYKO STACY	Chevron U.S.A. Inc.	0.18	BK 885 - PG 620	n/a	n/a	
	VAN DINE HAROLD E	Chevron U.S.A. Inc.	0.18	BK 885 - PG 623	n/a	n/a	
	VAN DINE JOHN E	Chevron U.S.A. Inc.	0.18	BK 885 - PG 626	n/a	n/a	
9-4-9.1	CLARK THOMAS B ET UX	Fossil Creek Ohio, LLC	0.20	BK 838 - PG 521	BK 33 - PG 09 Fossil Creek Ohio LLC to Gulfport Energy Corp.	BK 036 - PG 588 Fossil Creek Ohio LLC & Gulfport Energy Corp. to American Petroleum Partners Operating LLC BK 036 - PG 588	BK 040 - PG 267 American Petroleum Partners Operating LLC to Chevron U.S.A. Inc.
9-5-2.0	CLARK THOMAS B ET UX	Fossil Creek Ohio, LLC	0.20	BK 838 - PG 521	BK 33 - PG 09 Fossil Creek Ohio LLC to Gulfport Energy Corp.	BK 036 - PG 588 Fossil Creek Ohio LLC & Gulfport Energy Corp. to American Petroleum Partners Operating LLC	BK 040 - PG 267 American Petroleum Partners Operating LLC to Chevron U.S.A. Inc.

RECEIVED
Office of Oil and Gas
OCT 13 2017
WV Department of
Environmental Protection

51-01916100

SURFACE HOLE LOCATION (SHL)
UTM 17-NAD83(M)
 N:4410832.905
 E:523393.419
 NAD83, WV NORTH
 N:493041.227
 E:1624129.342
 LAT/LON-NAD83
 LAT:39°50'49.888"
 LON:80°43'35.586"

BHL is located on topo map 5,098 feet south of Latitude: 39°50'00"
 SHL is located on topo map 10,158 feet south of Latitude: 39°52'30"

SEE PAGE 2 FOR SURFACE OWNERS AND LESSORS

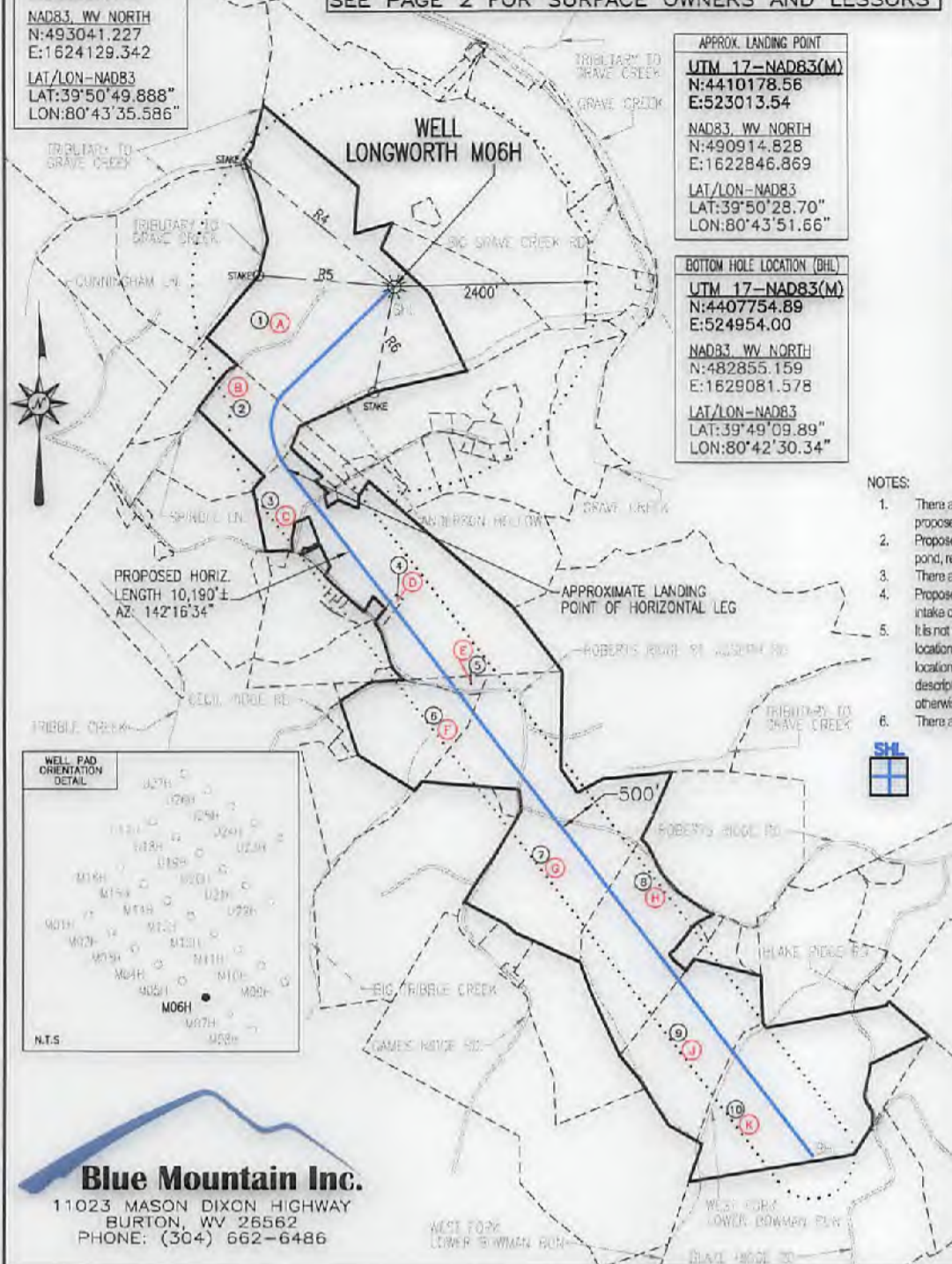
APPROX. LANDING POINT
UTM 17-NAD83(M)
 N:4410178.56
 E:523013.54
 NAD83, WV NORTH
 N:490914.828
 E:1622846.869
 LAT/LON-NAD83
 LAT:39°50'28.70"
 LON:80°43'51.66"

BOTTOM HOLE LOCATION (BHL)
UTM 17-NAD83(M)
 N:4407754.89
 E:524954.00
 NAD83, WV NORTH
 N:482855.159
 E:1629081.578
 LAT/LON-NAD83
 LAT:39°49'09.89"
 LON:80°42'30.34"

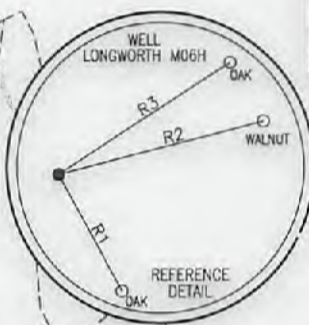
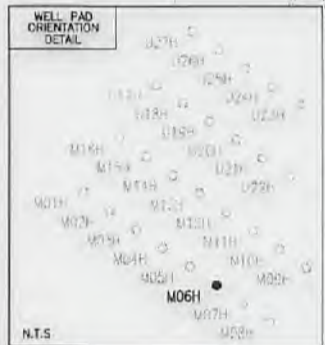
LEGEND

- TOPO MAP POINT
- WELL
- ALL ARE POINTS UNLESS OTHERWISE NOTED.
- MINERAL TRACT
- BOUNDARY
- PARCEL LINES
- WELL REFERENCE
- PROPOSED HORIZONTAL WELL
- ROAD
- STREAM CENTER LINE
- LESSORS
- SURFACE OWNERS
- GAS WELLS**
- EXISTING WELLS
- PLUGGED WELLS

BHL is located on topo map 5,169 feet west of Longitude: 80°42'30"
 SHL is located on topo map 5,169 feet west of Longitude: 80°42'30"



- NOTES:**
- There are no water wells or developed springs within 250' of proposed well.
 - Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
 - There are no native trout streams within 300' of proposed well.
 - Proposed well is greater than 1000' from surface groundwater intake or public water supply.
 - It is not the purpose or intention of this plat to represent surveyed locations of the surface or mineral parcels depicted hereon. The location of the boundary lines, as shown, are based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.
 - There are no existing buildings within 625' of proposed well.



LINE	BEARING	DISTANCE
R1	S 29°05'54" E	157.73'
R2	N 75°44'50" E	254.24'
R3	N 57°15'07" E	245.03'
R4	N 50°39'46" W	2273.03'
R5	N 85°26'11" W	1814.72'
R6	S 11°07'49" W	1266.01'

Blue Mountain Inc.
 11023 MASON DIXON HIGHWAY
 BURTON, WV 26562
 PHONE: (304) 662-6486

FILE #: LONGWORTH M06H - REV1.1
 DRAWING #: LONGWORTH M06H - REV1.1
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/2500
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

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: George D. Six
 R.P.E.: _____ L.L.S.: P.S. No. 2000

GEORGE D. SIX
 LICENSED
 No. 2000
 STATE OF
 WEST VIRGINIA
 PROFESSIONAL SURVEYOR

PLACE SEAL HERE

(+) 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: MIDDLE GRAVE CREEK-GRAVE CREEK ELEVATION: 1292.47'

COUNTY/DISTRICT: MARSHALL / CLAY QUADRANGLE: GLEN EASTON, WV 7.5'

SURFACE OWNER: GRAHAM H. LONGWORTH, JR. ACREAGE: 423.589±

OIL & GAS ROYALTY OWNER: GRAHAM H. LONGWORTH, JR. ACREAGE: 541.818±

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION

PERFORATE NEW FORMATION PLUG & ABANDON CLEAN OUT & REPLUG OTHER CHANGE

(SPECIFY): _____

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,600'± TMD: 18,309.46'±

WELL OPERATOR CHEVRON APPALACHIA, LLC DESIGNATED AGENT KENNETH E. TAWNEY
 Address 700 CHERRINGTON PARKWAY Address 500 LEE STREET, EAST SUITE 1600
 City CORAOPOLIS State PA Zip Code 15108 City CHARLESTON State WV Zip Code 25301-3202

DATE: SEPTEMBER 26, 2017

OPERATOR'S WELL #: LONGWORTH M06H

API WELL #: 47 51 0191640D
 STATE COUNTY PERMIT H6A



LONGWORTH

M06H

PAGE 2 OF 2

	LESSOR	DIST-TM/PAR
A	GRAHAM H. LONGWORTH, JR. ET AL	4-11/1
B	HOLMES OWC LEGACY LLC	4-11/55
C	CLINT E. FLOWERS ET AL	4-11/56
D	THOMAS O. RICHMOND ET UX	4-11/56.1
E	STEPHANIE L. GATTS	4-11/58
F	CHARLES R. KERNAN ET UX	9-1/19
G	SHANNON ROGER HUBBS ET UX	9-1/21
H	DEAN B. COLVIN	9-1/22.2
	MARGARET KINNEY	
	PATRICIA COLVIN GRANDSTAFF	
	MARILYN PYLES SNYDER	
	JAMES E. PYLES	
	SUSAN ASTON	
	CAROL HULL	
	DAVID GEORGE MOORE	
	BETTY LOU DELLGET KERNS	
	MARILYN SOUTH	
	HOWARD GUMP ET UX	
	JUDY REILLEY FEIERSTEIN	
	RICHARD O'HARA	
	CATHY J. COLVIN	
	ALICE FAYE VAN DINE	
	LORA FORNSHELL	
	KEITH PYLES	
	WANDA L. PYLES	
	SHERLEY M. WHITE, FKA SHERLEY M. VAN DINE	
	VERENDA STOKES	
	DOMINAE VESICO-RAMIREZ	
	KRISTA L. VAN DINE	
	ROBERT P. COLVIN	
	RONALD PYLES	
	DONALD COOK - POA CAROL HULL	
	KEVIN O'HARA	
	CATHY LUDWIG GARRETT	
	ROBERT R. D'ERAMO, JR. ET AL	
	DEBRA FORDYCE	
	KEITH JOEL VAN DINE	
	GLADYS PETRELLE BY AIF SHIRLEY BUFFONE	
	RODNEY COLVIN	
	PAULA REILLEY	
	VICKIE EISENHAUER	
	KIM YOHO	
	JASON COLVIN	
	BRENDA WILLINGHAM	
	DONALD COLVIN	
	MICHAEL COLVIN	
	STACY PANYKO	
	HAROLD E. VAN DINE	
	JOHN E. VAN DINE	
J	THOMAS B. CLARK ET UX	9-4/9.1
K	THOMAS B. CLARK ET UX	9-5/2

	SURFACE OWNER	DIST-TM/PAR
1	GRAHAM H. LONGWORTH, JR.	4-11/1
2	HOLMES-CWC-LEGACY LLC	4-11/55
3	CLINT E. & BRENT B. FLOWERS	4-11/56
4	THOMAS O. RICHMOND, ET UX.	4-11/56.1
5	KENNETH A. MAYHUGH, II & SHELBY E. HARRIS	4-11/58
6	CHAS R. & EDITH V. KERNAN	9-1/19
7	CNX LAND RESOURCES INC.	9-1/21
8	GEORGE CHRIS LAGOS, ET UX.	9-1/22.2
9	THOMAS B. CLARK, ET UX.	9-4/9.1
10	THOMAS B. CLARK, ET UX.	9-5/2

SURFACE HOLE LOCATION (SHL)
UTM 17-NAD83(M)
 N:4410832.905
 E:523393.419
 NAD83, WV NORTH
 N:493041.227
 E:1624129.342
 LAT/LON-NAD83
 LAT:39°50'49.888"
 LON:80°43'35.586"

APPROX. LANDING POINT
UTM 17-NAD83(M)
 N:4410178.56
 E:523013.54
 NAD83, WV NORTH
 N:490914.828
 E:1622846.869
 LAT/LON-NAD83
 LAT:39°50'28.70"
 LON:80°43'51.66"

BOTTOM HOLE LOCATION (BHL)
UTM 17-NAD83(M)
 N:4407754.89
 E:524954.00
 NAD83, WV NORTH
 N:482855.159
 E:1629081.578
 LAT/LON-NAD83
 LAT:39°49'09.89"
 LON:80°42'30.34"

47-051-01916 MOD
 HLA



Regina Logue
Permitting Coordinator

October 6, 2017

WV DEP Office of Oil & Gas
60-1 57th Street, SE
Charleston, WV 25304

Dear Mr. Brewer:

On behalf of Chevron Appalachia, LLC, enclosed please find the information requested for the Modification Permits for Longworth M05H, M06H and M07H. Chevron has obtained additional lease holders and wish to extend the horizontal lateral lengths, from previously issued well permits.

If you have any questions or need additional information, please do not hesitate to contact Regina Logue at 412-865-1462 or via email rele@chevron.com.

Sincerely,

Jenny Hayes
Permitting Team Lead

JH/rl

enclosures

Appalachian Mountain Business Unit
Chevron North America Exploration and Production Company
700 Cherrington Parkway
Coraopolis, PA 15108
Tel 412-865-1462
rele@chevron.com

Adkins, Laura L

From: Adkins, Laura L
Sent: Friday, January 19, 2018 10:16 AM
To: 'Laird, Susan'
Cc: Hayes, Jenny
Subject: Longworth Mods

Susan,

I have reviewed the Longworth modifications requesting lateral extensions due to additional lease acquisition and have the following comments to be addressed so that the modifications may be granted:

6B Horizontal lengths do not match the horizontal lengths on plats. We request to have the horizontal length from landing point to TD on the 6B as well as the plat.

6B Centralizer placement- The centralizer placement on the intermediate string of casing doesn't make sense.

Once these are corrected you can just email them to me and I can issue.

Thanks and have a wonderful weekend!

p.s.

The Taylor C mods should issue today

Laura L. Adkins

Environmental Resource Specialist III
Permit Review
WVDEP Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
304-926-0499 ext. 1495

THE ITEMS REQUESTED IN THIS EMAIL WILL NEED TO BE RECEIVED BY THE OFFICE OF OIL AND GAS WITHIN 20 DAYS TO AVOID THE PERMIT APPLICATION BEING RETURNED. IF AN OPERATOR WISHES TO RESUBMIT AN APPLICATION THAT HAS BEEN RETURNED, THE OPERATOR IS REQUIRED TO COMPLETE AND SUBMIT NEW FORMS, MYLAR PLAT AND ASSOCIATED FEES.