



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

February 12, 2014

CHESAPEAKE APPALACHIA, L.L.C.
POST OFFICE BOX 6070
CHARLESTON, WV 25362

Re: Permit Modification Approval for API Number 5101690 , Well #: VAN ASTON MSH 10H
Freshwater Casing Extended

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,

for

Gene Smith

Regulatory/Compliance Manager
Office of Oil and Gas



Danielle Southall
Regulatory Analyst II

February 12, 2014

VIA UPS

Ms. Laura Cooper
Office of Oil & Gas
601 57th Street
Charleston, WV 25304

Re: Modification to Van Aston MSH 10H. API# 47-051-01690

Dear Ms. Cooper:

Enclosed please find a revised WW-6B for the above captioned well. We would like to modify the 13 3/8" casing in order to stay consistent with our other Van Aston wells. This well is situated on the Van Aston property, in Cameron District, Marshall County, West Virginia.

If you have any questions or require additional information, please contact me at 304-517-1416 ext 86024.

Sincerely,

Chesapeake Appalachia, LLC


Dee Southall

Enclosure(s)

Received

FEB 12 2014

Office of Oil and Gas
WV Dept. of Environmental Protection

MOD
51-01690

WW - 6B
(1/12)

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
W.VA. CODE §22-6A - WELL WORK PERMIT APPLICATION

1) Well Operator: Chesapeake Appalachia, LLC 494477557 51- Marshall 1- Cameron 370- Glen Easton
47-051-01690 Operator ID County District Quadrangle

2) Operator's Well Number: Van Aston MSH 10 H Well Pad Name: Van Aston MSH Pad

3 Elevation, current ground: 1,152' Elevation, proposed post-construction: 1,152'

4) Well Type: (a) Gas Oil _____
Other _____
(b) If Gas: Shallow _____ Deep _____
Horizontal

5) Existing Pad? Yes or No: Yes GJK 2/11/2014
JIN 2/11/14

6) Proposed Target Formation(s), Depth(s), Anticipated Thicknesses and Associated Pressure(s):
Target formation-Marcellus, Target top TVD- 6535', Target base TVD- 6595', Anticipated thickness- 59', Associated Pressure 4248

7) Proposed Total Vertical Depth: 6,572'

8) Formation at Total Vertical Depth: Marcellus

9) Proposed Total Measured Depth: 14,100

10) Approximate Fresh Water Strata Depths: 307'

11) Method to Determine Fresh Water Depth: From water wells within 1 mile and also the elevation of nearby creek.

12) Approximate Saltwater Depths: 1,060'

13) Approximate Coal Seam Depths: 770'

14) Approximate Depth to Possible Void (coal mine, karst, other): None that we are aware of.

15) Does land contain coal seams tributary or adjacent to, active mine? Yes

16) Describe proposed well work:
Drill and stimulate any potential zones between and including the Benson to the Marcellus. **If we should encounter a void, place basket above and below
void area - balance cement to bottom of void and grout from basket to surface. Run casing not less than 20' below void nor more than 50' below void.
(*If freshwater is encountered deeper than anticipated it must be protected, set casing 50' below and cts)

17) Describe fracturing/stimulating methods in detail:
Well will be perforated within the target formation and stimulated with a slurry of water, sand, and chemical additives at a high rate. This will be performed in stages with the plug and perf method along
the wellbore until the entire lateral has been stimulated within the target formation. All stage plugs are then drilled out and the well is flowed back to surface.
The well is produced through surface facilities consisting of high pressure production units, vertical separation units, water and oil storage tanks.

18) Total area to be disturbed, including roads, stockpile area, pits, etc, (acres): 9.50

19) Area to be disturbed for well pad only, less access road (acres): 5.48

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FEB 12 2014
Office of Oil and Gas
WV Dept. of Environmental Protection
02/14/2014

MOD
51-01690

WW - 6B
(1/12)

20)

CASING AND TUBING PROGRAM

TYPE	Size	New or Used	Grade	Weight per ft.	FOOTAGE: For Drilling	INTERVALS: Left in Well	CEMENT: Fill -up (Cu. Ft.)
Conductor	20"	New	J-55	94#	100'	100'	CTS
Fresh Water	13 3/8"	New	J-55	54.5#	820'	820'	390 sx/CTS
Coal	9 5/8"	New	J-55	40#	2,220'	2,220'	850 sx/CTS
Intermediate	7"	New	P-110	20#	If Needed	If Needed	If Needed/As Needed
Production	5 1/2"	New	P-110	20#	14,100'	14,100'	Lead 1,160 sx 1,290 Tail sx/100' inside Intermediate
Tubing	2 3/8"	New	N-80	4.7#	Approx. 7,369'	Approx. 7,369'	
Liners							

GJK 2/11/2014

JIN 2/11/14

TYPE	Size	Wellbore Diameter	Wall Thickness	Burst Pressure	Cement Type	Cement Yield
Conductor	20"	30"	0.25	2120	15.6 ppg	1.19/50% Excess
Fresh Water	13 3/8"	17.5"	0.380	2740	15.6 ppg	1.19/50% Excess
Coal	9 5/8"	12 1/4"	0.395	3950	15.6 ppg	1.19/50% Excess
Intermediate	7"	8 3/4"	.0317	4360	15.6 ppg	1.20/15% Excess
Production	5 1/2"	8 3/4"	0.361	12360	15.6 ppg	1.20/15% Excess
Tubing	2 3/8"	4.778"	0.190			
Liners						

PACKERS

Kind:	10K Arrowset AS1-X			
Sizes:	5 1/2"			
Depths Set:	Approx. 6,197'			

Received

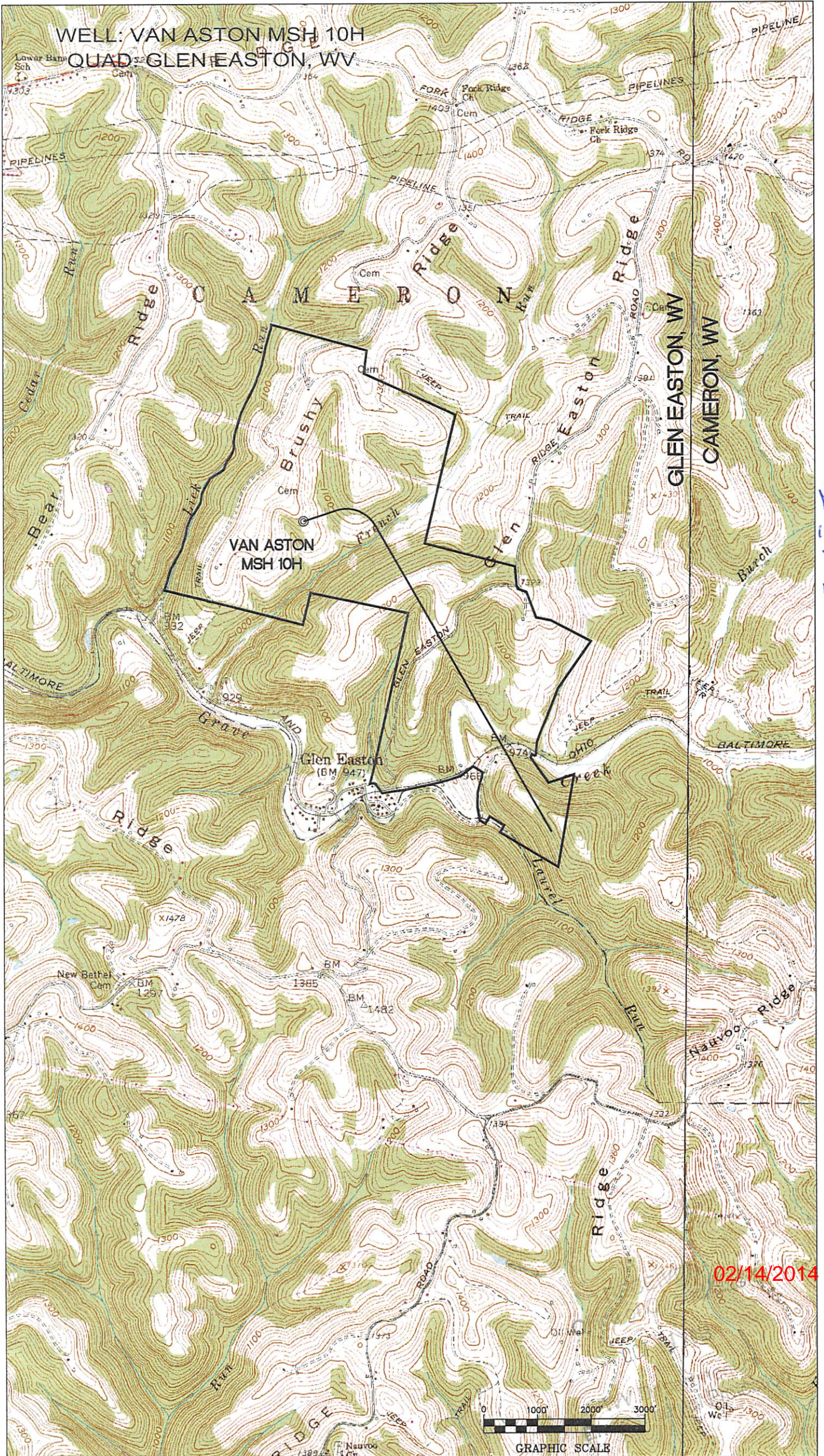
FEB 12 2014

Office of Oil and Gas
WW Dept. of Environmental Protection

02/14/2014

WELL: VAN ASTON MSH 10H

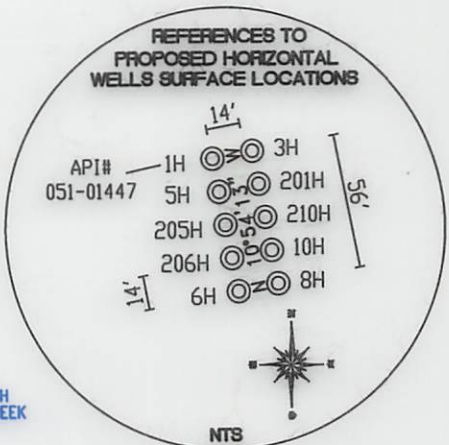
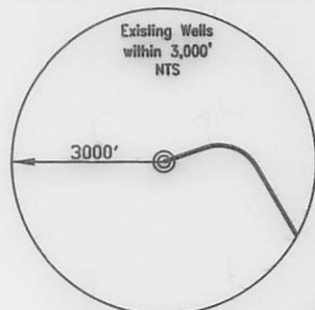
QUAD GLEN EASTON, WV



*150k
1000' x
1000'*

02/14/2014

GRAPHIC SCALE



VAN L. ASTON
75.32 TOTAL ACRES
LEASE NUMBER
1-324659-000
TAX MAP AND PARCEL
3-12-13

VAN L. ASTON
159.58 TOTAL ACRES
LEASE NUMBER
1-324659-000
TAX MAP AND PARCEL
3-12-12

DALE E. HALL
10 TOTAL ACRES
TAX MAP AND PARCEL
3-13-03

TH (UTM-NAD 83)	N) 4410947.9
	E) 529913.2
BOTTOM HOLE (UTM-NAD 83)	N) 4409233.4
	E) 531341.1

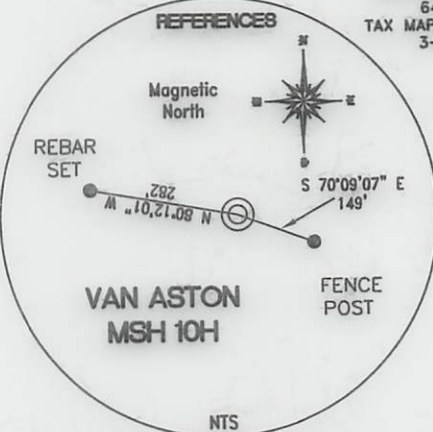
DAVID R. HALL
116.62 TOTAL ACRES
LEASE NUMBER
WV0000089-000
WV0000264-000
TAX MAP AND PARCEL
3-12-14

DALE E. HALL
60 TOTAL ACRES
LEASE NUMBER
1-303142-001
TAX MAP AND PARCEL
3-13-04

CHRIS AND DEBRA
RICHARDSON
252.6 TOTAL ACRES
DEED BOOK / PAGE
648/362
TAX MAP AND PARCEL
3-13-06

CONSOLIDATION COAL CO.
12.9 TOTAL ACRES
DEED BOOK / PAGE
646/493
TAX MAP AND PARCEL
3-19-85

JOHN W. BARNES
57 TOTAL ACRES
DEED BOOK / PAGE
681/438
TAX MAP AND PARCEL
3-19-72

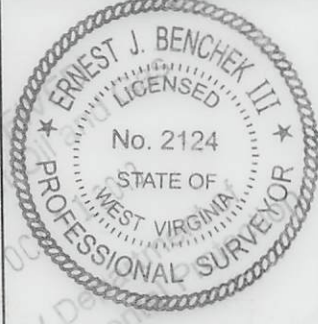


REFERENCE NOTES
Boundaries as shown taken from deeds, tax maps and field locations. A full boundary survey is not expressed nor implied. All bearings are based on true north. Ownership taken from public records Marshall County, West Virginia DECEMBER 2012
State Plane Coordinates & NAD 83 Lat/Long by differential submeter mapping grade GPS
Drafted by: E.A.H.

FILE #: CHE 032
DRAWING #: 2187
SCALE: PLAT - 1" = 1600'
TICK MARK - 1" = 2000'
MINIMUM DEGREE OF ACCURACY: 1/200
PROVEN SOURCE OF ELEVATION: SUBMETER MAPPING GRADE GPS

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:
L.L.S. #2124: Ernest J. Benchek III



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25304

Well Type: Oil Waste Diposal Production Deep
 Gas Liquid Injection Storage Shallow

WATERSHED: MIDDLE GRAVE CREEK / GRAVE CREEK ELEVATION: 1,152'
COUNTY/DISTRICT: MARSHALL / CAMERON QUADRANGLE: GLEN EASTON, WV.
SURFACE OWNER: VAN L. ASTON ACREAGE: 75.32 +/-
OIL & GAS ROYALTY OWNER: VAN L. ASTON ACREAGE: 617.4 +/- **02/14/2014**
LEASE NUMBERS:

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
PLUG OFF FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY):

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6,572' TMD: 13,510'
WELL OPERATOR: CHESAPEAKE APPALACHIA, LLC. DESIGNATED AGENT: ERIC GILLESPIE
ADDRESS: PO BOX 18496 ADDRESS: PO BOX 6070
CITY: OKLAHOMA CITY STATE: OK ZIP CODE: 73154-0496 CITY: CHARLESTON STATE: WV ZIP CODE: 25362

DATE: SEPTEMBER 05, 2013
OPERATOR'S WELL #: VAN ASTON MSH 10H
API WELL #: 47 51 0169DH6A
STATE COUNTY PERMIT