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**west virginia** department of environmental protection

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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

May 29, 2014

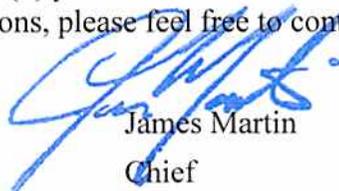
**WELL WORK PERMIT**  
**Horizontal 6A Well**

This permit, API Well Number: 47-1706438, issued to JAY-BEE OIL & GAS, 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.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

In addition to the applicable requirements of this permit, and the statutes and rules governing oil and gas activity in WV, this permit may contain specific conditions which must be followed. Permit conditions are attached to this cover letter.

Per 35CSR-4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0499 ext. 1654.



James Martin  
Chief

Operator's Well No: ROBERT M. ASH 1HC  
Farm Name: ASH, ROBERT M.  
**API Well Number: 47-1706438**  
**Permit Type: Horizontal 6A Well**  
Date Issued: 05/29/2014

**Promoting a healthy environment.**

## PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) 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.

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### CONDITIONS

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1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
8. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.
9. Operator shall provide the Office of Oil & Gas notification of the date that drilling commenced on this well. Such notice shall be provided by sending an email to DEPOOGNotify@wv.gov within 30 days of commencement of drilling.

WW-6B  
(9/13)

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

1) Well Operator: Jay-Bee Oil & Gas, Inc 24610 Doddridge McClellan Center Point 7.5'  
Operator ID County District Quadrangle

2) Operator's Well Number: Robert M. Ash 1HC Well Pad Name: Robert M. Ash Pad

3) Farm Name/Surface Owner: Robert M. Ash Public Road Access: McIntyre Fork Rd

4) Elevation, current ground: 1075.5 Elevation, proposed post-construction: 1075.5

5) Well Type (a) Gas  Oil  Underground Storage   
Other   
(b) If Gas Shallow  Deep   
Horizontal

4-25-2014  
DCA

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Associated Pressure(s):  
Marcellus, 6976' , 3500#

8) Proposed Total Vertical Depth: 6976'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 10,990'

11) Proposed Horizontal Leg Length: 4,014

12) Approximate Fresh Water Strata Depths: 249'

13) Method to Determine Fresh Water Depths: API 47-095-05968/Nearest Stream

14) Approximate Saltwater Depths: N/A

15) Approximate Coal Seam Depths: N/A

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: \_\_\_\_\_

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18)

CASING AND TUBING PROGRAM

TYPE	Size	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling	INTERVALS: Left in Well	CEMENT: Fill-up (Cu. Ft.)
Conductor	16	New	J55	40	30	30	8.22 (fill up)
Fresh Water	11 3/4	New	J55	32	300	300	142.26 (fill up)
Coal	N/A						
Intermediate	8 5/8	New	J55	23/24	2,000	2,000	508.43 (fill up)
Production	5 1/2	New	P110	17/20	10,990	10,990	1,904.07
Tubing	N/A						
Liners	N/A						

1000' from surface

DCN  
4-25-2014

TYPE	Size	Wellbore Diameter	Wall Thickness	Burst Pressure	Cement Type	Cement Yield (cu. ft./k)
Conductor	16	17 1/2	.495	3,000	Class A Cement	1.19
Fresh Water	11 3/4	15	.333	1,500	Class A Cement	1.26
Coal	N/A					
Intermediate	8 5/8	11	.264	2,500	Class A Cement	1.45
Production	5 1/2	7 7/8	.304	15,000	Type 1 Cement	1.34
Tubing	N/A					
Liners	N/A					

PACKERS

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

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

Drill and Stimulate a new Horizontal Well. Using a top hole rig, we will drill top hole to kick off point by drilling the conductor, freshwater and intermediate holes. Using a directional rig we will drill the production holes.

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

300-350' per stage 8,500bbls of water, 150,000-400,000lbs of sand, friction reducer, 1# per gallon, scale inhibitor and bacteria prevention 1/4# per gallon 2000 gallons 15% vol acid.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 3.7

22) Area to be disturbed for well pad only, less access road (acres): 2.8

23) Describe centralizer placement for each casing string:

Vertical - Every 500' Bow Centralizer, and 50' from top of ground. Horizontal every 42' Spiral Centralizer, Curve - Every 84' Spiral Centralizer.

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

Superior Well Services - 15" hole for the 11 3/4 fresh water case, Class A Cement, 2% Calcium Chloride, 1/4# flake.  
Superior Well Services - 11" hole for the 8 5/8 intermediate base, Class A Cement, 2% Calcium Chloride  
Baker Hughes - 7 7/8" hole for the 5 1/2 production case, Type 1 Cement, Fly Ash, Barite, Finetol 300L, R-3 Celio Flake, Sugar, CD-32, FL-62

25) Proposed borehole conditioning procedures:

Air Hole: 15" hole for the 11 3/4 fresh water case - Circulate until clean with air. If soaping, slug the hole with air.  
Air Hole: 11" hole for the 8 5/8 intermediate base - Circulate until clean with air. If soaping, slug the hole with air.  
7 7/8" hole for the 5 1/2 production case - Circulate with mud and sweeps for two times bottoms up.  
If needed weight up mud until no cuttings retrieved, then circulate with mud and sweeps for two times bottoms up.

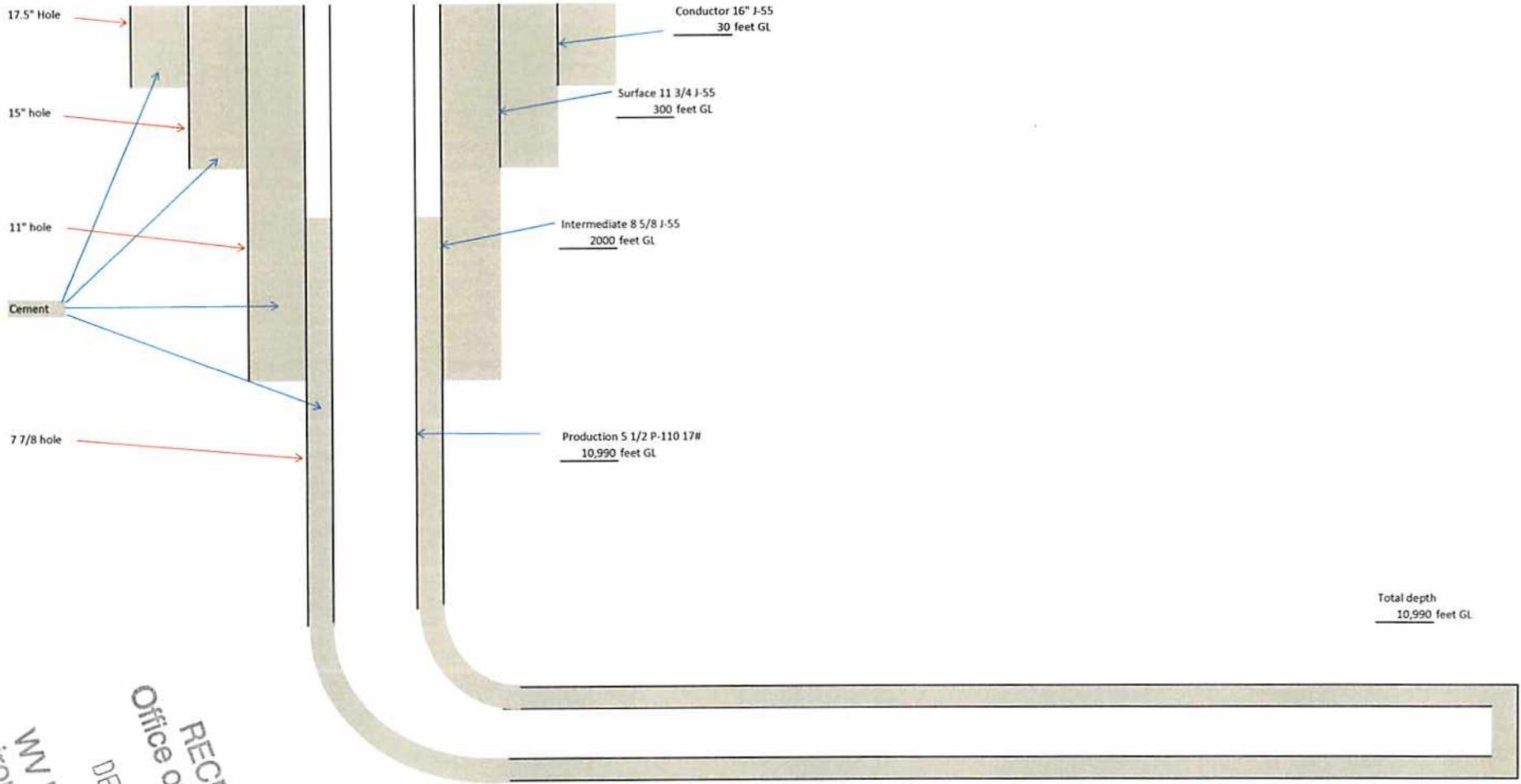
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\*Note: Attach additional sheets as needed.

Jay-Bee Oil & Gas Inc.  
Well Name Robert M Ash 1HC  
GL Elevation 1075.5  
KB 14 feet

Date 12/23/2013  
District McClellan  
County Doddridge  
State West Virginia

Input by: Shane Dowell



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17-06438



Form WW-9

Operator's Well No. Robert M. Ash 1HC

Jay-Bee Oil & Gas, Inc

Proposed Revegetation Treatment: Acres Disturbed 3.7 Prevegetation pH 6.8

Lime 3 Tons/acre or to correct to pH 6.8

Fertilizer type 10-20-20

Fertilizer amount 750 lbs/acre

Mulch Hay 2000 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual Ryegrass	40	KY-31	20
		Creeping Red Fescue	30
		Lathco Flat Pea/Perennial Ryegrass	30

Attach:

Drawing(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided)

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: Douglas Newlan Michael Saff

Comments: Proceed & Mulch install ETS to Wv Dep regulations

Title: Oil & Gas Inspector

Date: 12-26-2013

Field Reviewed?  Yes  No

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# Water Management Plan: Secondary Water Sources



WMP-01742

API/ID Number 047-017-06438

Operator: Jay-Bee Oil & Gas, Inc.

Robert M Ash 1HC

### Important:

For each proposed secondary water source identified in your water management plan (i.e., groundwater well, lake/reservoir, recycled frac water, multi-site impoundment, out-of-state source), DEP makes no estimation of the availability of water. These sources may prove to be unsuitable water supplies. Please review the following notes:

- For groundwater supply wells, DEP recommends that the operator contact the local health department prior to drilling any new well; and reminds the operator that all drinking water wells within 1,500 feet of a water supply well shall be flow- and quality-tested by the operator at the request of the drinking well owner prior to operation of the water supply well.
- For each proposed multi-site impoundment water source identified in your water management plan (if applicable), DEP will review the withdrawal limits established in the referenced Water Management Plan for current suitability and provide to the operator these limits for each identified intake. Note that withdrawal limits may be modified as necessary based on changing demands upon that water supply.

### Multi-site impoundment

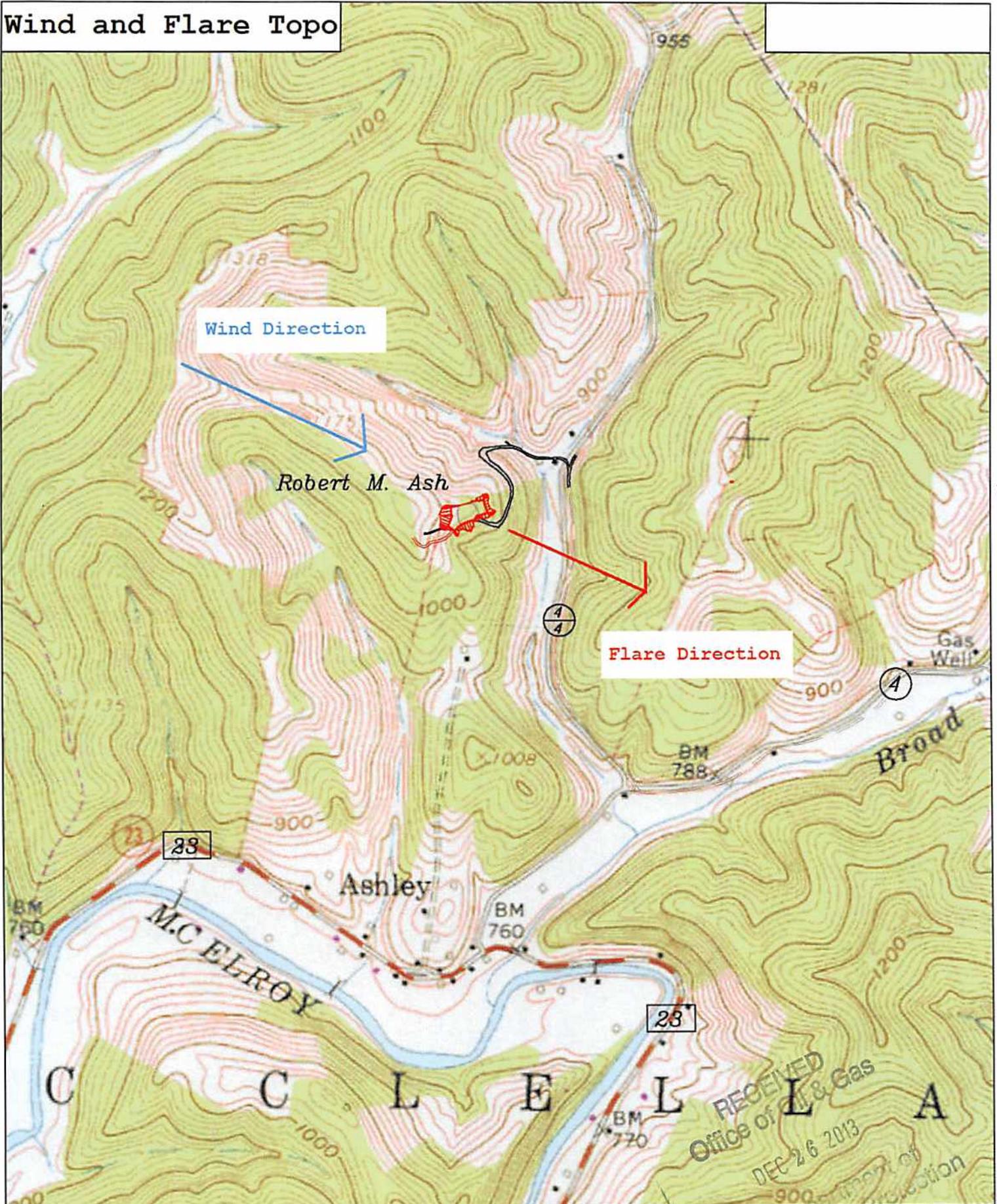
Source ID:	33211	Source Name	Ash Fresh Water Centralized Impoundment		Source start date:	4/1/2014
					Source end date:	4/1/2015
Source Lat:	39.414697	Source Long:	-80.676211	County	Doddridge	
Max. Daily Purchase (gal)		Total Volume from Source (gal):	7,854,000			
DEP Comments:	017-FWC-00014					

The intake identified above has been defined in a previous water management plan. The thresholds established in that plan govern this water management plan unless otherwise noted.

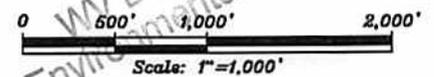
Reference: WMP-576

APPROVED DEC 3 0 2013

Wind and Flare Topo



Well: Robert M. Ash Well Pad  
 Quad: Center Point 7 1/2'  
 District: McClellan  
 County: Doddridge



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