

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

May 23, 2014

WELL WORK PERMIT

Horizontal 6A Well

This permit, API Well Number: 47-9502141, 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: GORBY 2

Farm Name: GORBY, JAMES I. & PAULETTE

API Well Number: 47-9502141

Permit Type: Horizontal 6A Well

Date Issued: 05/23/2014

API Number:	
-------------	--

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. <u>Failure to adhere to the specified permit conditions may result in enforcement action.</u>

CONDITIONS

- 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.



Applicant: JAY BEE OIL & GAS Reference ID: Gorby 2 (12/04/2013)

Status: New

Type: Horizontal 6A Well

Permit ID: 9502141

Printed: Mar. 24, 2014 11:31 AM

WW-6B: General and Location Information

API Number:	47-095-02141 (47)	
Operator's Well Number:	Gorby 2	
Filing Fee:	First Well on Pad Subsequent Well on Pad	10,150.00
Well Pad Name:	Gorby Pad	
Surface Owner:	James Ira & Paulette Gorby	
Public Road Access:	Big Run Rd	
Please attach each of the following	ng as seperate documents:	
Well Plat		
Wellbore Schematic		

County:	Tyler-xx	▼	District:	McElroy-xx ▼
Quadrangle:	SHIRLEY		•	
Top Hole(UTM NA	AD83):			
Easting: 5	17430.7	Northing:	4368667.9	Zone: 17 🔽 💋
Proposed Landing	Point(UTM):			
Easting: 5	17357.2	Northing:	4368485.8	Zone: 17 <u>▼</u>
Proposed Bottom	Hole(UTM):			
Easting: 5	18284.5	Northing:	4366953.3	Zone: 17 🔻 💋
Elevations (feet)	- Current Ground	1304		Proposed Post-Construction: 1275.96

Well Type:	Gas	O Oil
	C Underground Storage	Other
Will well be drilled	more than 100 feet into the Onondaga	Group? ○ Yes • No
Depth Type:	Shallow	С Deep
Existing Pad?	C Yes	• No

WW-6B: Target Formations

Complete the following table.			
Target Formation	Depth-Top (ft)	Anticipated Thickness (ft)	Associated Pressure (psi)
Marcellus	7176	40	3500

WW-6B: Depth Specifics

Proposed Post-Construction Elevation:	1275.96			
Proposed Total Vertical Depth:	7176	(ft.)		
Formation at Total Vertical Depth:	Marcellus			
Proposed Total Measured Depth:	14630	(ft.)		
Proposed Total Horizontal Leg Length:	7454	(ft.)		
Method to Determine Fresh Water Depth:				
TYL-161 for freshwater and sal creek level at a 751' elevatio	-	oths. Used the c	osest	

	Approximate Fresh Water Strata Depths	
525 (ft.)		

		Approximate Coal Seam Depths
N/A	(ft.)	Coal Seam Name, if known:

Approxin	nate Depth to Possible Void(coal mine, karst, other)	
(ft.) No	ot Anticipated:	

Approximate Saltwater Depths	
N/A (ft.)	

WW-6B: Well Work and Mine Details

s proposed well location directly overlying or tributary to an active mine?				
○ Yes • No				
If Yes, indicate name, depth, coal seam and owner of mine:				

Coal Seam:		Depth:	
Mine Name:		Owner:	
	vell work, including the drilling and plu		
rig, we will conductor, fre	nulate a new Horizontal W drill top hole to kick of eshwater and intermediate ig we will drill the prod	f point by holes. Usi	drilling the ing a
300-350' per s	timulating methods in detail, including stage 8,500bbls of water, a reducer, 1# per gallon,	150,000-40	
bacteria preve	ention 1/4# per gallon 20	00 gallons	15% vol acid.
Total area to be distu	ırbed, including roads, stockpile area	, pits, etc, (acres	9.5
Area to be disturbed	for well pad only, less access road (a	rcres): 7.6	

WW-6B: Casing and Cementing

Complete the following table, adding as many rows of each Type as needed.									
Туре	Size (in) New or Used		Grade		• .		age: For Frilling	Intervals: Left in Well	
Conductor	16 New		J55		40	30		30	
	Wellbore Dia	ameter (in)		Wall Ti	hickness (in)	ness (in) Burst Pressure (psi)			
	17.5			.495			3000		
	Cement Type			ield (cu. ft./sk) Fillup - Cubic F		Feet Top of Cement			
	Class A Cement		1.19		8.22		0	Y	
Type	Size (in)	n) New or Used		Grade	Weight per ft. For		age: For	Intervals: Left in	
31	0.20 ()	Used		Grade	(lb/ft)	D	rilling	Well	
Fresh Water 💌	11 3/4	Used New	J55		(lb/ft) 32	575	rilling	Well 575	
		New	J55	5					
	11 3/4	New	J55	5	32		Burst Pre	575	
	11 3/4 Wellbore Dia	New ameter (in)		Wall T	32	575 150	Burst Pre	575 ssure (psi) Circulated to	
	11 3/4 Wellbore Dia	New ameter (in)		Wall Ti	32 hickness (in)	575 150	Burst Pre	575 ssure (psi)	
	11 3/4 Wellbore Dia 15 Cement Type	New ameter (in)	Yiel	Wall Ti	hickness (in) Fillup - Cubic	575 150 Feet	Burst Pre	ssure (psi) Circulated to Surface?	

05/23/2014

Intermediate _	8 5/8	New	J55	i	24	2000		2000	
	Wellbore Diameter (in)			Wall Thickness (in)		Burst Pres		ssure (psi)	
	11			.264			2500		
	Cement Type			d (cu. ft./sk)	Fillup - Cubic Feet		Top of Cemen		
	Class A Cement				508.43		0	~	
Type	Size (in) New or Used		Grade		Weight per ft. (lb/ft)	I		Intervals: Left in Well	
Production -	5 1/2 New		P110		17	14630		14630	
	Wellbore Dia	Wall Thickness (in)			Burst Pressure (psi)				
	7 7/8		.304	15000					
	Cement Ty	Yield (cu. ft./sk)		Fillup - Cubic Fee		Top of Cemen			
	Type 1 Cement				2361.46		1000		

WW-6B: Centralizers, Cement, Borehole

Describe proposed borehole conditioning procedures.	
Air Hole: 15" hole for the 11 3/4 fresh water case - Circulate until clean with air. If soaping, slug then dry. Air Hole: 11" hole for the 8 5/8 intermediate base - Circulate until clean with air. If soaping, slug then dry. 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.	*
Centralizers Type and Placement.	
Vertical - Every 500' Bow Centralizer, and 50' from top of ground. Horizontal every 42' Spiral Centralizer, Curve - Every 84' Spiral Centralizer.	×
Cement Additives.	

	_
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	
	\overline{v}
	4

WW-6B: Packers

Packers be Used?	OY	Yes	No
If Yes, complete	e the foll	ollowing	g:

Kind	Sizes	Depths Set

WW-9: Fluids, Cuttings Disposal and Reclamation Plan

State: West Virginia	County: <u>Tyler-xx</u>				
District: 05	Quadrangle: SHIRLEY				
Zone: <u>17</u>					
Northing: 4368667.9	Easting: <u>517430.7</u>				
API Number: <u>47-095-02141</u>					
Operator Well Number: Gorby 2					
Do you anticipate drilling/redrilling well work?					
Yes No					
Will a pit be used for plugging activities?	No				
If so, please describe anticipated pit waste:					
Drill Cuttings - Air Drilling					
	▼				
Will a synthetic liner be used in the pit? • Yes	○ No				
This distribute interior se decent the pic.					
If so, what ml.? 60					
Proposed Disposal Method For Treated Pit Waste W	Water:				
Underground Injection (UIC Permit Nur	umber 47-085-09721)				
Reuse (at API Number					
	\$				
)				

Other (ex	explain)	
Using	Contract Haulers Norte/CES (API's 47-085-05151)	
Will closed loop syste	em be used? • Yes C No	
Centrifug	ge System (Boss, Newalta) Possible	
	cipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc.	
Brine Bas	se Drilling Mud	
If oil based, what type	e? Synthetic, petroleum, etc.	
Water Bus		
Additives to be used in Bentonite	in drilling medium?	
	T	
	I method from Plugging Activities: dicate medium used: cement, sawdust, lime, etc):	
Landfill (name/pe		
Removed Offsite Other: (please ex	e (name/permit number?) Meadowfill/Permit 101219WV explain)	
	December of December of Transfer and	
	Proposed Revegetation Treatment:	
	Prevegetation pH: 6.8	
Lime Tons/acre to corr Fertilizer (10-20-20 or		
_	Hay 2000 lbs/acre	
Comments:	ibo/dot c	*
Attach a Reclama	ation Plan/Drawing	
Area Type	Seed Mixtures Seed Type Ibs/acre	
Permanent ▼	KY-31 20	$\neg \neg$

05/23/2014

Permanent ▼	Creeping Red Fescue	30
Permanent -	Lathco Flat Pea/Perennial Ryegrass	30
Temporary 💌	Annual Ryegrass	40

JAY -BEE OIL & GAS INC 3570 SHIELDS HILL RD CAIRO, WV 26337 OFFICE (304) 628-3111 FAX (304) 628-3107

WELL SITE DRILLING PROCEDURES AND SITE SAFETY PLAN Per 35CSR8/§22-6A

(Any changes or modifications to previously approved plans must be approved by the West Virginia Department of Environmental Protection - Office of Oil and Gas)

A copy of this plan will be provided to the local emergency planning committee or county emergency services offices at least 7 days prior to land disturbance from well work.

SITING STANDARDS

Well Name	Gorby 2
Well Pad	Gorby Pad
Latitude/Longitude	NAD83- Lat. 39.467417 Long80.797359
Location of Access Road	From WV18 and Indian Creek Rd .9 miles, North on Big Run Rd 1.9 miles, lease road on left.
Detail of Actual Well Work	Drill and Stimulate a New Horizontal Well.
Detail of Completion and Production Activities	Fracturing/ Stimulating Methods 300-350' per stage 8,500bbls of water, 150,000 – 400,000lbs of sand, friction reducer, 1# per gallon, scale inhibitor, and bacteria prevention ¼# per gallon 2000 gallons 15% vol acid.
Directions to Well	Starting from West Union, WV travel west on State Route 18 for 18.8 miles, Turn right onto County Route 13, Indian Creek Road for .9 miles, turn left onto Big Run Rd, 1.9 miles to a Jay-Bee Oil & Gas Lease Road on the left of Big Run Rd.
Prevailing Wind Direction	South/ South East

Max.

west virginia department of environmental protection



Water Management Plan: Secondary Water Sources



WMP-01755

API/ID Number

047-095-02141

Operator:

Jay-Bee Oil & Gas, Inc.

Gorby 2

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: 34214 Source Name Indian Creek Freshwater Centralized Impoundment

Source start date:

4/1/2014

Source end date:

4/1/2015

Source Lat:

39.482507

Source Long:

-80.785834

County

Tyler

Max. Daily Purchase (gal)

Total Volume from Source (gal):

7,854,000

DEP Comments:

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-963

APPROVED FEB 0 3 2014

WMP 01755 API/ID Number 047-095-02141 Operator: Jay-Bee Oil & Gas, Inc.

Gorby 2

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.

Recycled Frac Water

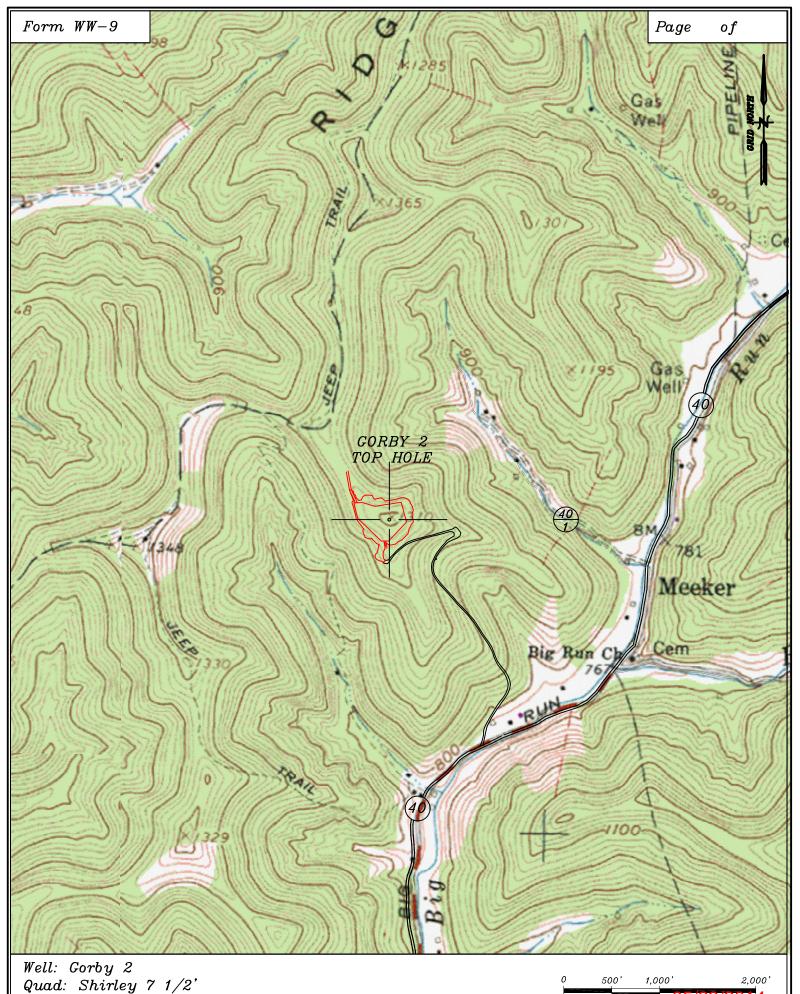
Source ID: 34215 Source Name Various 4/1/2014 Source start date:

Source end date: 4/1/2015

Source Lat: Source Long: County

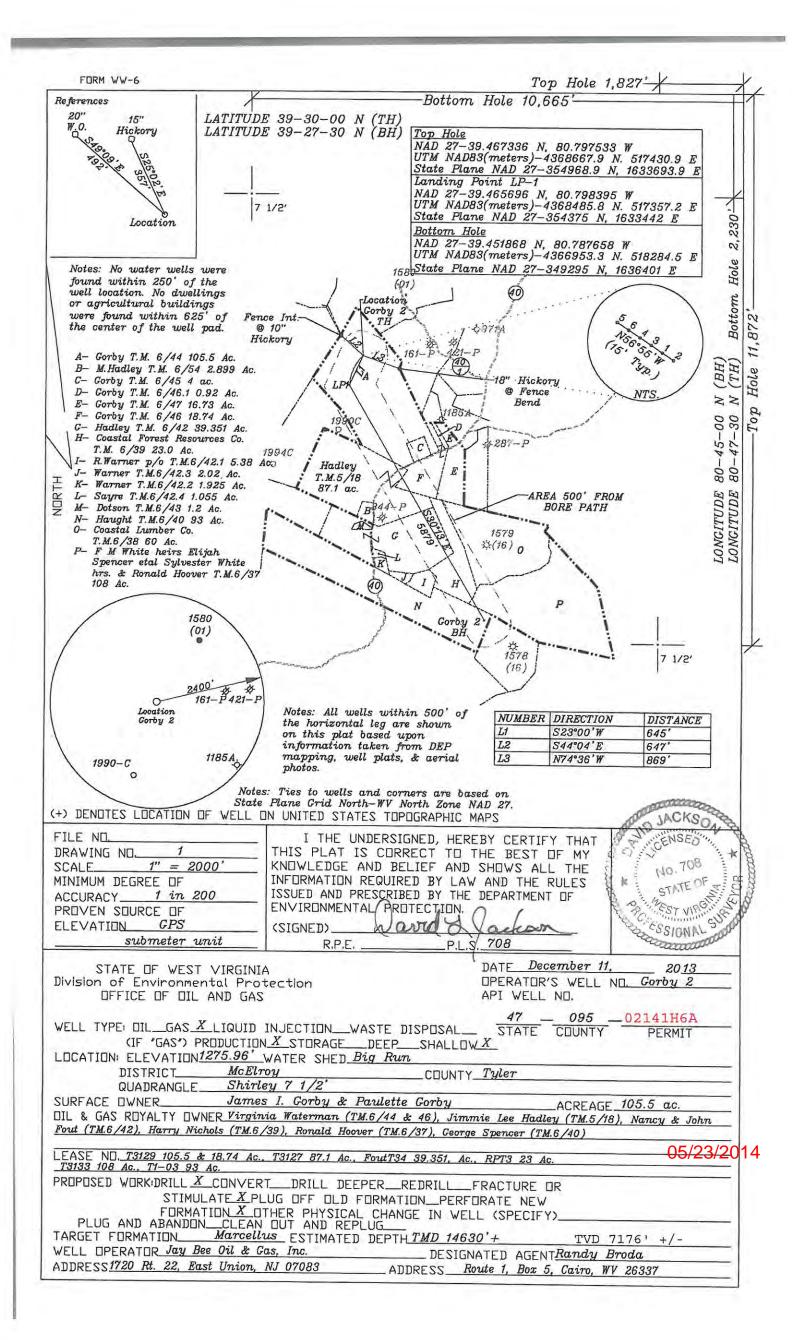
7,854,000 Max. Daily Purchase (gal) Total Volume from Source (gal):

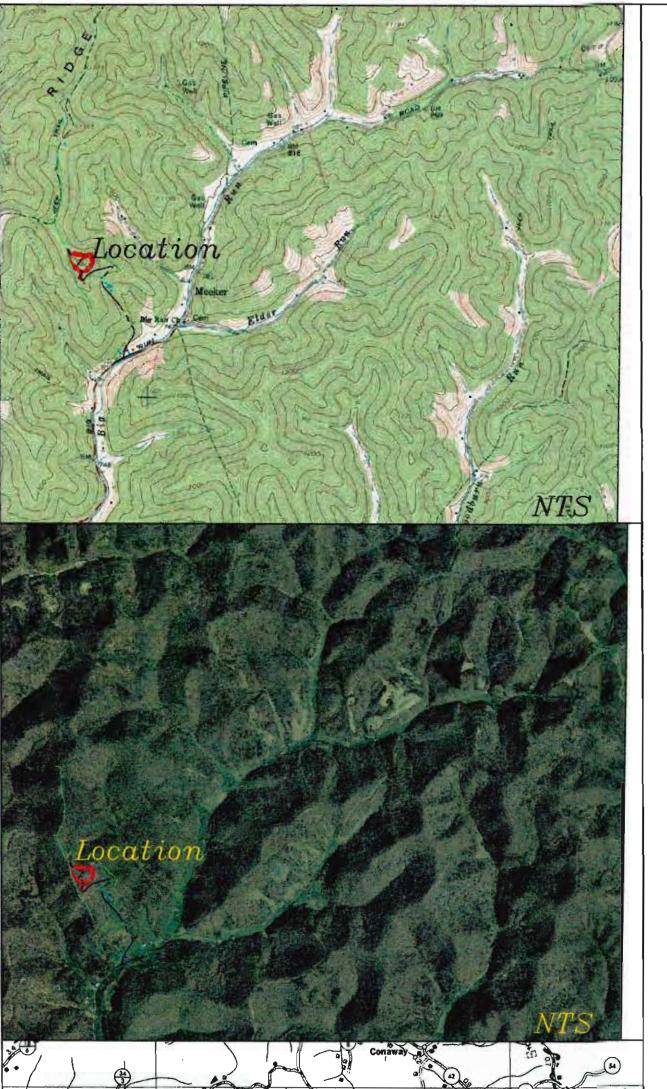
DEP Comments:

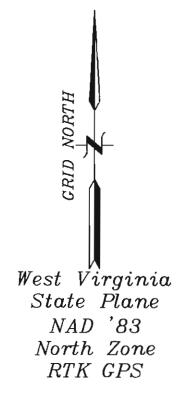


Quad: Shirley 7 1/2' District: McElroy County: Tyler

Scale: 1"=1,000/23/2014







API#9502141 API#9502142

Gorby Well Pad Site Plan

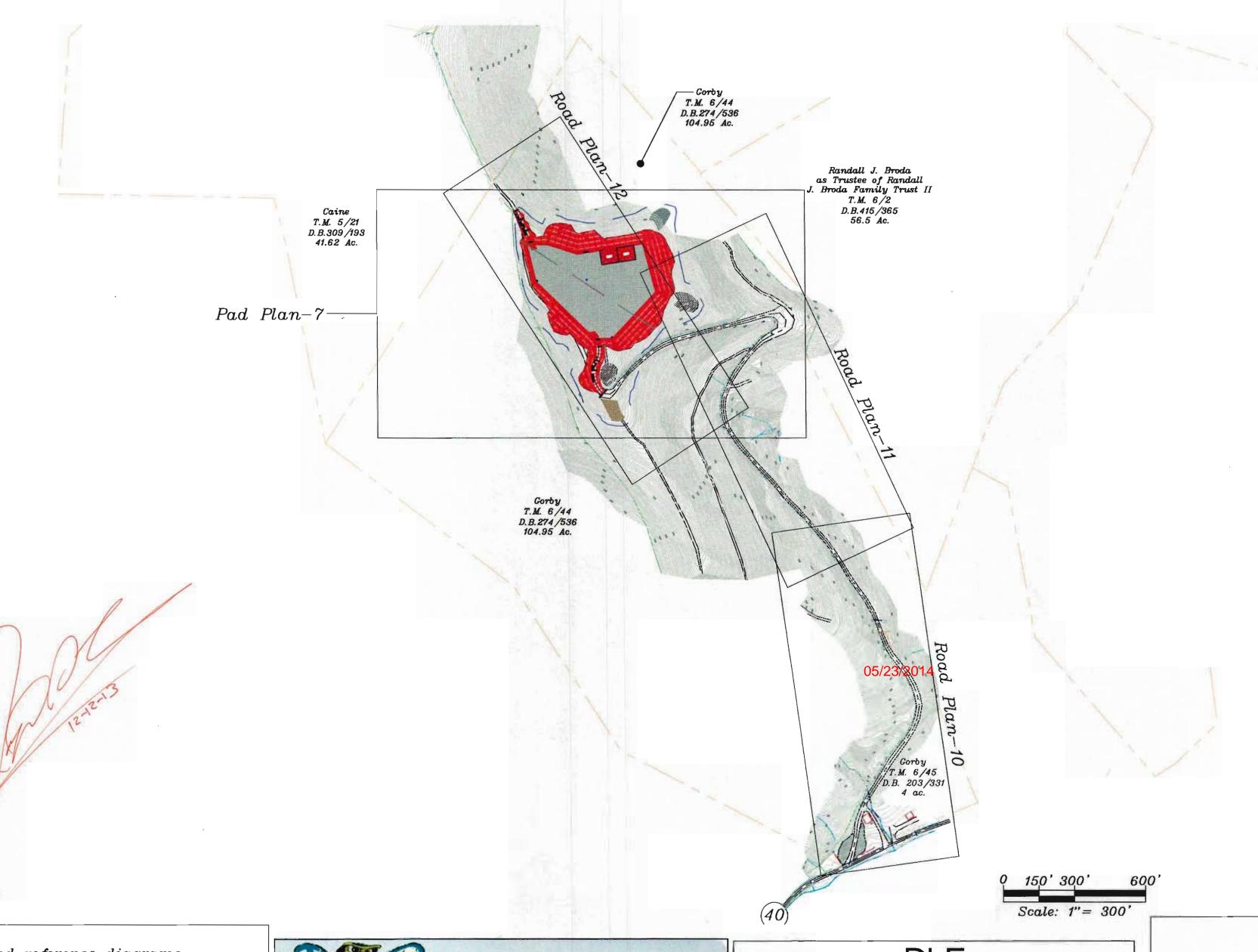


MCELROY DISTRICT, TYLER COUNTY, WV

Prepared for JAY BEE OIL & GAS

Date: October 30, 2013

Electronic Version of These Plans May Be Viewed at: Q\OIL GAS\SAY FILES\REVIEWS



TOTAL DISTURBED AREA: 9.5 ACRES ROAD A DISTURBED AREA: 1.6 ACRES ROAD B DISTURBED AREA: 0.3 ACRES PAD DISTURBED AREA: 7.6 ACRES

Revisions: Revised Pad & Access Road 11-12-13 12-04-13 District Revised Ownership on Tax Map 6 parcel 2 12-06-13

Sheet Description

- Cover
- Notes
- Details
- Details
- Details
- Existing Contour Plan
- Pad Plan & Profile
- Pad Cross Sections Reclamation Plan
 - Ex. Access Road Plan & Profile
- Ex. Access Road Plan & Profile
 Access Road A Plan & Profile
 Access Road A Cross Sections

- Access Road B Profile &
 - Cross Sections

CENTER PAD

Geographic NAD 83 Latitude: 39.467585 Longitude: 80.797607

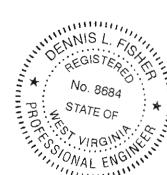
Geographic NAD 27 Latitude: 39.467505 Longitude: 80.797780

UTM, NAD 83 (METERS) North: 4368686.6 East: 517409.7

WELL ENTRANCE INT. Geographic NAD 83 Latitude: 39.461048 Longitude: 80.793685

Geographic NAD 27 Latitude: 39.460968 Longitude: 80.793859

UTM, NAD 83 (METERS) North: 4367961.9 East: 517748.6



YOU DIG! Dial 811 or 800.245.4848 www.WV811.com

THÉ JUG WILDLIFE MANAGEMENT

Design Certification
The drawings, construction notes and reference diagrams attached hereto have been prepared in accordance with the West Virginia Code of State Rules, Division of Environmental Protection, Office of Oil and Gas

The information reflects a gas well drilling pad.

Dennis L. Fisher RPE 8684:

Dennish Fisher 12/12/13



DLF.

Dennis L. Fisher, RPE PO Box 281 Philippi, WV 26416 Cell: 304-677-4129 E-Mail: Fisher.Engineering@gmx.com Jackson Surveying Inc.

677 W. Main St. Clarksburg, Wv 26301

304-623-5851

CoverSheet 1 of 14 Gorby Well Pad Site Plan