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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](http://www.dep.wv.gov)

September 28, 2015

**WELL WORK PLUGGING PERMIT**

**Plugging**

This permit, API Well Number: 47-6100989, issued to NNE RESOURCES LLC, 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.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalties being imposed upon the operator.

This permit will expire in two (2) years from date of issue. If there are any questions, please free to contact me at (304) 926-0499 ext. 1654.

James Martin  
Chief

Operator's Well No: BARRACKMAN 4  
Farm Name: EDDY, MARK & HARRY  
**API Well Number: 47-6100989**  
**Permit Type: Plugging**  
Date Issued: 09/28/2015

## PERMIT CONDITIONS

West Virginia Code §22-6-11 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.

### CONDITIONS

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1. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
2. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
3. Well work activities shall not constitute a hazard to the safety of persons.
4. This well is under a consent order and must be plugged under the terms of that agreement.

WW-4B  
Rev. 2/01

1) Date 8/3, 2015  
2) Operator's  
Well No. Barrackman 4  
3) API Well No. 47-041 - 0099

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

4) Well Type: Oil X / Gas X / Liquid injection      / Waste disposal      /  
(If "Gas, Production X or Underground storage     ) Deep      / Shallow X

5) Location: Elevation 1,188 ft Watershed Dunkard Creek  
District Clay County Monongalia Quadrangle Blacksville

6) Well Operator NNE Resources LLC 7) Designated Agent Zack Arnold  
Address 707 Virginia Street E., Suite 1200 Address 48 Donley Street, Ste 601  
Charleston, WV 25301 Morgantown, West Virginia 26501

8) Oil and Gas Inspector to be notified 9) Plugging Contractor  
Name Gayne Knitowski Name TBD  
Address P.O. Box 2 Address       
Moundsville, WV 26041

10) Work Order: The work order for the manner of plugging this well is as follows:

- Perform Necessary earth work to establish access and work area for rig
- Ensure all necessary E&S controls are installed
- RIH with open ended tubing to determine PBTD
- Attempt to remove all casing by pulling a minimum of 150% of casing string weight
- If casing will not pull out, cut and remove as much casing as possible
- Log well to determine casing and coal*
- Spot expandable cement from PBTD to 100' below coal to set a solid cement plug
- 7. Set a solid cement plug <sup>to</sup> 100' above coal
- 8. WOC expandable cement to harden
- Top off well to surface with class A cement with no more than 3% CaCl<sub>2</sub> and no other additives
- Place a well monument with API number
- Reclaim site

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Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

Work order approved by inspector *Gayne Knitowski* Date 8/10/2015

10/02/2015





# northeast

## NATURAL ENERGY

**Barrackman 4**  
**Monongalia County, WV**  
**API Number: 4706100989**  
**AFE Number: TBD**  
**Plugging Procedure**

August 3, 2015

### Discussion

Approval is requested to perform the initial plugging on the Barrackman 4 Well. The Barrackman 4 is a vertical well located in Monongalia County, WV. For this procedure, the TD of the Barrackman 4 has been estimated to be approximately 2,594' based off of averages from nearby wells whose TD values were known. Production from this well has been very low for numerous years. The Barrackman 4 is recommended to be plugged and abandoned.

### Plug and abandonment procedure:

1. Perform necessary earth work to establish access and work area for rig
2. Ensure all necessary E&S controls are installed
3. RIH with open ended tubing to determine PBTD
4. Attempt to remove all casing by pulling a minimum of 150% of casing string weight
5. If casing will not pull out, cut and remove as much casing as possible
6. Spot expandable cement from PBTD to 100' below coal to set a solid cement plug
7. Set a solid cement plug 100' above coal
8. WOC expandable cement to harden
9. Top off well to surface with class A cement with no more than 3% CaCl<sub>2</sub> and no other additives
10. Place a well monument with API number
11. Reclaim site

### Well Record Procedure

NNE Resources LLC researched the proposed well for plug and abandonment using the following information centers:

- The DEP office at 601 - 57th Street, Charleston, WV 25304.
- The DEP online database for Oil and Gas Wells for production and well data.
- Titlemaps.com for lease information.
- Research well files provided by previous operator

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WELL DATA

Location (Surface)	Lat. 39° 38.7939	Long. -80° 08.2281
TD*		2,594'
PBTD		NA
Packer		NA
Marker Joint		NA

The actual TD of this well is unknown, so it has been estimated to be approximately 2,594' based off known TD values for nearby wells.

CASING AND TUBULAR DATA

STRING	SIZE	WEIGHT/GRADE	DEPTH*	THREAD	TOC
Surface	10"	N/A	572'	N/A	N/A
Intermediate	8 1/4"	N/A	828'	N/A	N/A
Intermediate	6 5/8"	N/A	1,580'	N/A	N/A
Production	5 3/16"	N/A	1,868'	N/A	N/A

The casing depths used in this procedure are estimated values obtain from averaging the depths from the other plugging procedures which contained known depth values for wells close to this one. 150' cement plugs at the estimated depths where casing size changes to increase the likelihood of covering the actual depths. The 8 1/4" casing setting depth remained fairly consistent between wells so a 100' plug will be used as it was for the wells that had known setting depths.

CAPACITIES

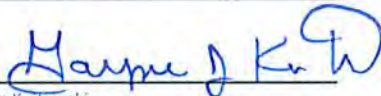
SIZE	WEIGHT	CAPACITY (GAL/FT.)	CAPACITY (BBL/FT.)
10**	N/A	4.192	0.0998
8 1/4**	N/A	2.738	0.0652
6 5/8**	N/A	1.536	0.0365
5 3/16**	N/A	1.038	0.0247
2 3/8"	4.7#	0.16239	0.00387

SIZE	WEIGHT	CAPACITY (CU FT/FT.)	CAPACITY (BBL/FT.)
10**	N/A	0.5603	0.0998
8 1/4**	N/A	0.3659	0.0652
6 5/8**	N/A	0.2052	0.0365
5 3/16**	N/A	0.1387	0.0247
2 3/8"	4.7#	0.02171	0.00387

\* The asterisks represent sizes where estimates were used to produce the capacity data. For the 10" casing the capacity of a 35.75#/ft 10 3/4" casing was used. For the 8 1/4" casing capacities a 20#/ft 8 5/8" casing was used. For the 5 3/16" casing capacities a 13#/ft 5 1/2" casing was used.

DRIVING DIRECTIONS**From Morgantown:**

Travel on US-19 N to Star City  
 Continue on US-19 N for 3-4 miles  
 Turn Left onto Route 7  
 Travel down Route 7 for approximately 5 miles  
 Pass the small town of Core and turn left on Pedlar Run  
 Stay left on that road  
 At the bottom of Behler Hill there is a tank on the left  
 Go down that way and the well will be straight ahead

X   
 Gayne Knitowski  
 Inspectors Signature

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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

1900 Kanawha Boulevard East • Building Five • Room 110  
Charleston, West Virginia 25305-0430 • (304) 558-3505

Earl Ray Tomblin  
Governor

Paul A. Mattox, Jr., P. E.  
Secretary of Transportation/  
Commissioner of Highways

August 21, 2015

James A. Martin, Chief  
Office of Oil and Gas  
Department of Environmental Protection  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304

Subject: DOH Permit for the Barrackman No. 4&5 Well Sites, Monongalia County

Dear Mr. Martin,

Northeast Natural Energy LLC has been issued permit #04-2015-0837 to access the State Road for a well site located off of Monongalia County Route 37 SLS.

The operator has signed a DISTRICT WIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated January 3, 2012.

Very Truly Yours,

Gary K. Clayton, P.E.  
Regional Maintenance Engineer  
Central Office O&G Coordinator

Cc: Dave McDougal  
Northeast Natural Energy Corporation  
CH, OM, D-4  
File

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Office of Oil and Gas

AUG 24 2015

WV Department of  
Environmental Protection



WW-4A  
Revised 6-07

1) Date: 8/3/15  
2) Operator's Well Number  
Barrackman 4  
3) API Well No.: 47 - 061 - 00989

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE OF APPLICATION TO PLUG AND ABANDON A WELL

4) Surface Owner(s) to be served: ✓	5) (a) Coal Operator
(a) Name <u>Eddy Mark V &amp; Betty</u> ✓	Name <u>Consolidation Coal Company Attn:Analyst</u> ✓
Address <u>537 Pedlar Run Rd</u>	Address <u>CNX Center, Engineering and Operations Support-Coal</u>
<u>Core WV, 26541</u>	<u>1000 CONSOL Energy Drive. Canonsburg, PA 15317-6506</u>
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name _____
_____	Address _____
(c) Name _____	Name _____
Address _____	Address _____
_____	_____
6) Inspector <u>Gayne Knitowski</u>	(c) Coal Lessee with Declaration
Address <u>P.O. Box 2</u>	Name _____
<u>Moundsville, WV 26041</u>	Address _____
Telephone <u>304-546-8171</u>	_____

TO THE PERSONS NAMED ABOVE: You should have received this Form and the following documents:

- (1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
- (2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverse side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.

Received  
Office of Oil & Gas

AUG 19 2015

Well Operator	<u>NNE Resources LLC</u>
By:	<u>Zack Arnold</u>
Its:	<u>General Manager-Operations</u>
Address	<u>707 Virginia Street E., Suite 1200</u>
	<u>Charleston, WV 25301</u>
Telephone	<u>304-241-5752</u>

Subscribed and sworn before me this 6<sup>th</sup> day of August 2015  
Kristen M. Verron Notary Public

My Commission Expires January 28, 2020



Oil and Gas Privacy Notice

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

10/02/2015



WW-9  
(2/15)

API Number 47 - 061 - 00989  
Operator's Well No. Barrackman 4

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name NNE Resources LLC OP Code 494511469

Watershed (HUC 10) Dunkard Creek Quadrangle Blacksville

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes  No

Will a pit be used? Yes  No

If so, please describe anticipated pit waste: \_\_\_\_\_

Will a synthetic liner be used in the pit? Yes  No  If so, what ml.? \_\_\_\_\_

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number See Attachment )
- Reuse (at API Number See Attachment )
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain \_\_\_\_\_)

Will closed loop system be used? If so, describe: N/A Yes, see Attachment

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Freshwater/gel

-If oil based, what type? Synthetic, petroleum, etc. N/A

Additives to be used in drilling medium? Bentonite

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Removed offsite

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) \_\_\_\_\_

-Landfill or offsite name/permit number? See Attachment

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

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AUG 20 2015

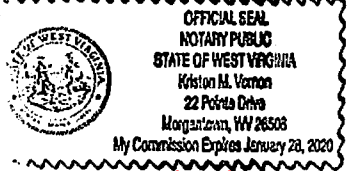
Company Official Signature [Signature]  
Company Official (Typed Name) Zack Arnold  
Company Official Title General Manager-Operations

WV Department of Environmental Protection

Subscribed and sworn before me this 19th day of August, 2015

[Signature] Notary Public

My commission expires January 28, 2020



10/02/2015

Form WW-9

Operator's Well No. Barrackman 4

Proposed Revegetation Treatment: Acres Disturbed .4 Prevegetation pH TBD

Lime 2 Tons/acre or to correct to pH 7

Fertilizer type 19-19-19

Fertilizer amount 500 lbs/acre

Mulch 2 Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Orchard Grass	46	Orchard Grass	46
Red Clover	8	Red Clover	8
Tertraploid Perennial Rye	16	Tertraploid Perennial Rye	16
Timothy 15 Annual Rye	15	Timothy 15 Annual Rye	15

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: [Signature]

Comments: \_\_\_\_\_

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AUG 20 2015

Title: Inspection

Date: 8/10/2015

WV Department of  
Environmental Protection

Field Reviewed?  Yes  No

10/02/2015

Attachment A to WW-9

Northeast Natural Energy LLC ("NNE") plans to utilize a closed loop process for its drilling of the Barrackman 4 well. Return flow from the well will be separated into its liquid and solid form. Liquids will be held in steel tanks and reused in the drilling and completion process or disposed of at an approved facility listed below. Solids removed from the stream will be diverted to steel half-round tanks where they will be solidified on site and taken to disposal as they are accumulated.

Barrackman 4 Drill Cuttings will be taken to disposal at one or more of the following disposal/approved waste facilities, unless listed facilities are no longer approved to accept waste at time of disposal:

- Westmoreland Landfill (Tervita) – Belle Vernon, PA (Permit # 100277)
- Meadowfill Landfill (Waste Management) – Bridgeport, WV (Permit # SWF 103298)
- Max Environmental – Yukon, PA (PAD004835146 and 301071)
- Max Environmental – Bulger, PA (PAD059087072 and 301359)
- Chestnut Valley Landfill (Advanced Disposal) – Export, PA (Permit # 101421)

NNE plans to reuse and recycle all flowback fluid and/or reach out to other operators in the area who may be able to reuse and recycle such fluid. However, in the event that reuse is not obtainable the fluid will be disposed of at one, or multiple, of the following disposal/approved waste facilities unless listed facilities are no longer approved to accept waste at time of disposal:

- Fairmont Brine Processing (WV NPDES #0116408)
- Green Hunter M. E. Elder 1 Disposal Well (Permit # 47-085-05151)
- Green Hunter Mason 1 Disposal Well (Permit #47-085-09721)
- Green Hunter Warren Disposal Well (Permit #34-121-2-3995)
- Green Hunter Travis Unit Disposal Well (Permit #34-121-2-4086)
- Viking Energy Corporation 20320 Disposal Well (Permit#47-039-02210)
- Ohio Oil Gathering Killbuck Disposal Well (Permit #34-075-24527)
- Ohio Oil Gathering Moran Disposal Well (Permit #34-089-24792)
- Ohio Oil Gathering Bells Run Disposal Well (Permit #34-167-29395)
- Ohio Oil Gathering Long Run Disposal Well (Permit #34-167-29658)
- Ohio Oil Gathering Newell Run Disposal Well (Permit #34-167-29685)
- Appalachian Oil Purchaser Greens Run Disposal Well (Permit #2D0732540)
- Appalachian Oil Purchaser BW#4 Disposal Well (Permit # 2D0732523)

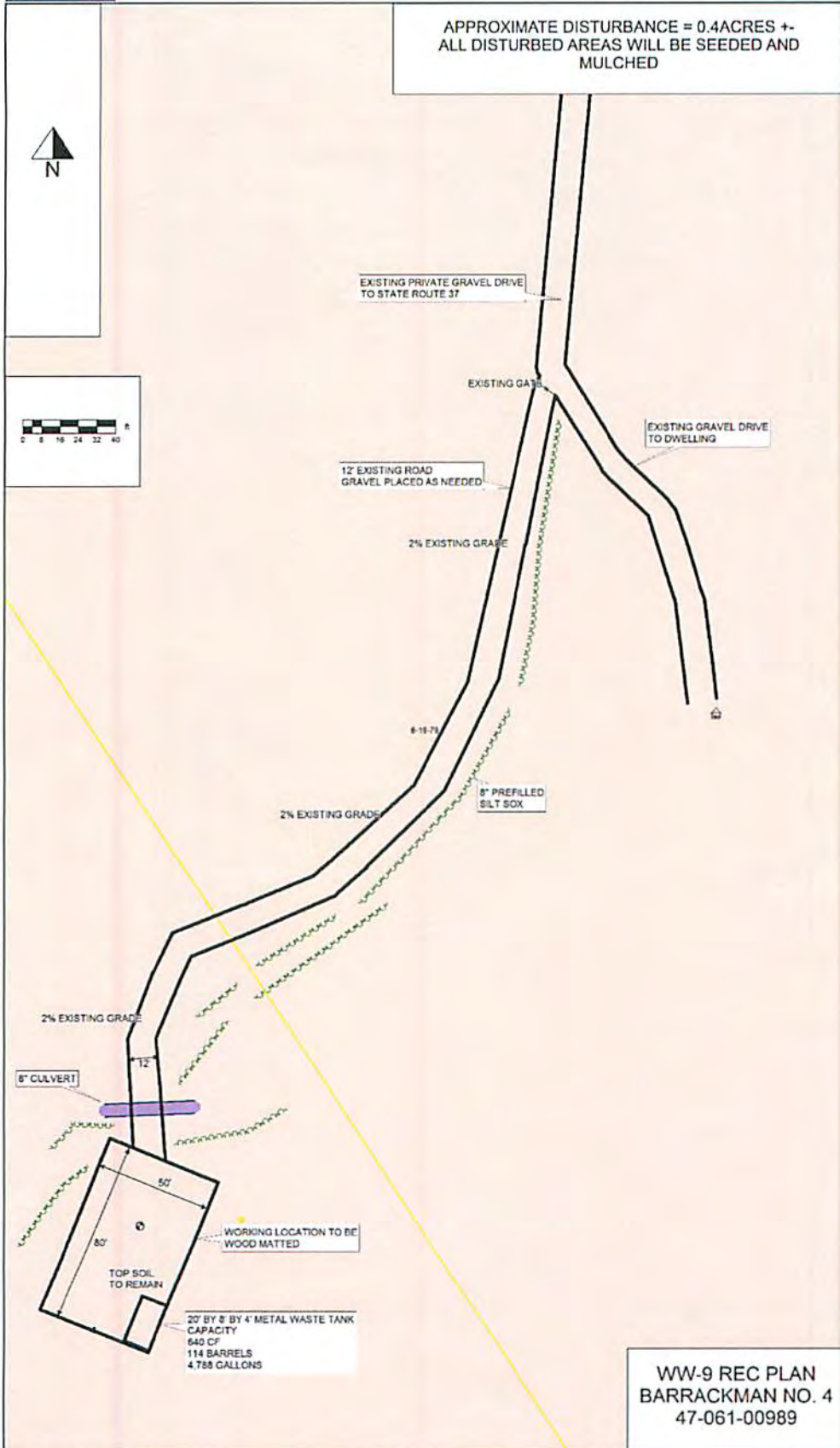
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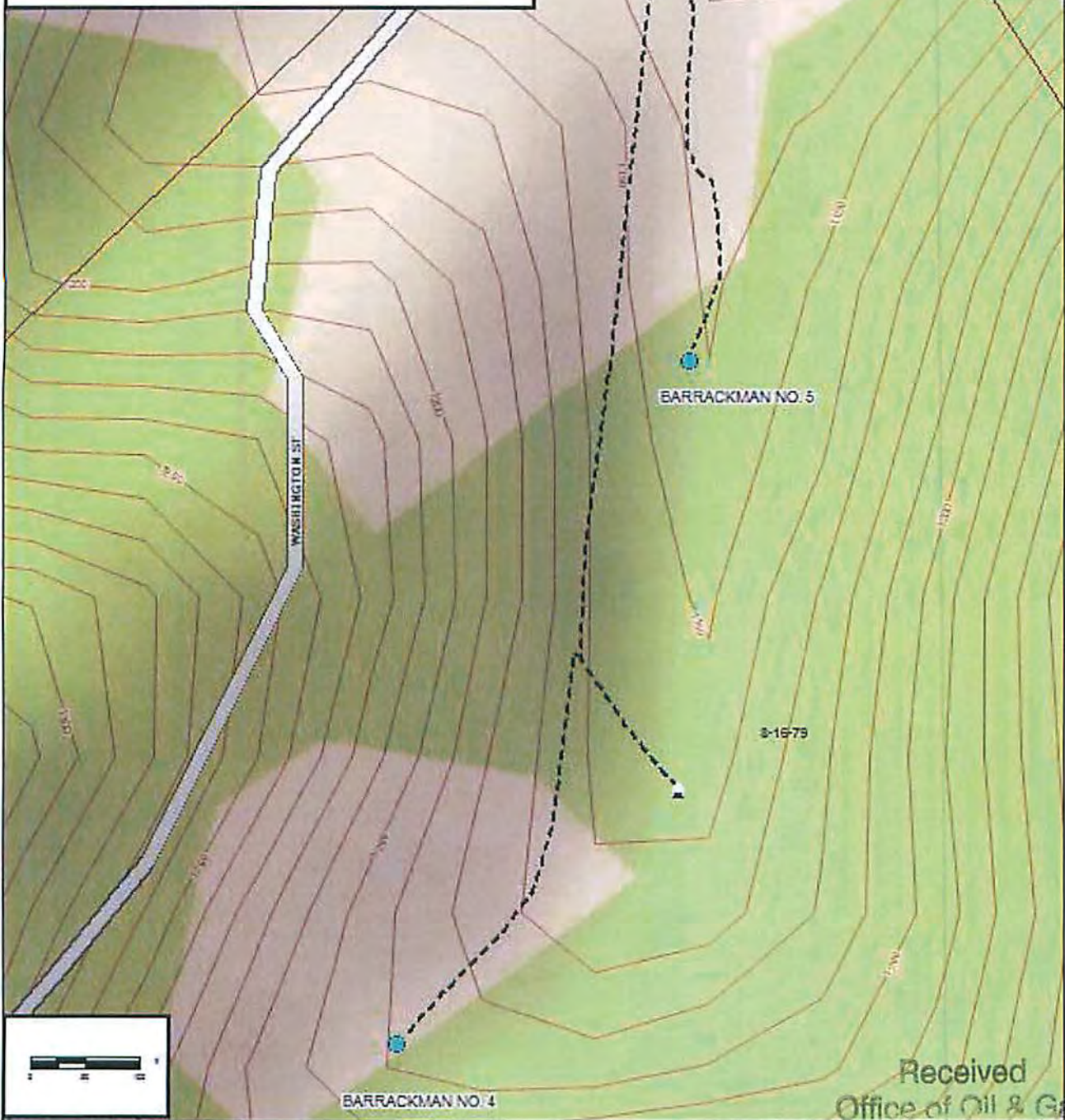
WW-9 REC PLAN  
BARRACKMAN NO. 4  
47-061-00989

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Office of Oil & Gas  
AUG 19 2015

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10/02/2015

BARRACKMAN NO. 4  
 UTM Nad 83:  
 Easting: 574033.8  
 Northing: 4388887.9  
 Blacksville 7.5' USGS Quad



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 Office of Oil & Gas

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WW-7  
8-30-06



West Virginia Department of Environmental Protection  
Office of Oil and Gas

**WELL LOCATION FORM: GPS**

API: 47-061-00989 WELL NO.: 4

FARM NAME: Barrackman

RESPONSIBLE PARTY NAME: NNE Resources LLC

COUNTY: Monongalia DISTRICT: Clay

QUADRANGLE: Blacksville, WV

SURFACE OWNER: Mark V. and Betty Eddy

ROYALTY OWNER: Martha E. Barrickman

UTM GPS NORTHING: 4388887.9

UTM GPS EASTING: 574033.8 GPS ELEVATION: 1,188'

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

1. Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.
2. Accuracy to Datum – 3.05 meters
3. Data Collection Method:  
Survey grade GPS  : Post Processed Differential

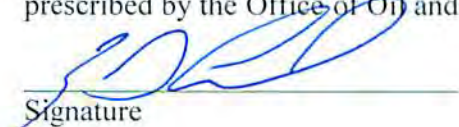
Real-Time Differential

Mapping Grade GPS  : Post Processed Differential

Real-Time Differential

4. Letter size copy of the topography map showing the well location.

I the undersigned, hereby certify this data 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 Office of Oil and Gas.

  
Signature

General Manager-Operations  
Title

7 AUG 15  
Date

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