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west virginia department of environmental protection

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Office of Oil and Gas  
601 57<sup>th</sup> Street, S.E.  
Charleston, WV 25304  
(304) 926-0450  
fax: (304) 926-0452

Austin Caperton, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Friday, August 30, 2019  
WELL WORK PLUGGING PERMIT  
Vertical Plugging

NNE RESOURCES LLC  
707 VIRGINIA STREET EAST, SUITE 1200

CHARLESTON, WV 25301

Re: Permit approval for 2  
47-061-00530-00-00

This well work permit 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 any additional specific 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. Please be advised that form WR-38, Affidavit of Plugging and Filling Well, is to be submitted to this office within 90 days of 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.

Per 35 CSR 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- 0450.

James A. Martin  
Chief

Operator's Well Number: 2  
Farm Name: TENNANT, NANCY  
U.S. WELL NUMBER: 47-061-00530-00-00  
Vertical Plugging  
Date Issued: 8/30/2019

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## 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.

1) Date June 7, 2019  
2) Operator's  
Well No. Nancy Tennant No 2  
3) API Well No. 47-061 - 00530

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

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

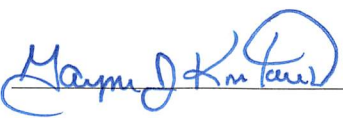
- 4) Well Type: Oil \_\_\_ / Gas X / Liquid injection \_\_\_ / Waste disposal \_\_\_ /  
(If "Gas, Production \_\_\_ or Underground storage \_\_\_) Deep \_\_\_ / Shallow X
- 5) Location: Elevation 1,086 Watershed Dunkard Creek  
District Clay County Monongalia Quadrangle Blacksville
- 6) Well Operator NNE Resources LLC 7) Designated Agent John Adams, Sr VP of Operations  
Address 707 Virginia St E., Suite 1200 Address 707 Virginia St. E., Suite 1200  
Charleston, WV 25301 Charleston, WV 25301
- 8) Oil and Gas Inspector to be notified 9) Plugging Contractor  
Name Gayne Knitowski Name CONSERV Inc.  
Address P.O. Box 108 Address 929 Charleston Road  
Gormanian, WV 26720 Spencer, WV 25276

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

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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  Date 6/13/2019



# northeast

## NATURAL ENERGY

**Nancy Tennant 2**  
**Monongalia County, WV**  
**API Number: 4706100530**  
**AFE Number: TBD**  
**Plugging Procedure**

### DISCUSSION

Approval is requested to perform the initial plugging on the Nancy Tennant 2 Well. The Nancy Tennant 2 is a vertical well located in Monongalia County, WV. For this procedure, the TD of the Nancy Tennant 2 has been estimated to be approximately 2000' based off of averages from nearby wells whose TD values were known. Production from this well has been very low for numerous years. The Nancy Tennant 2 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 PBTB
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 PBTB 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 *ASAP*

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*MDK 6/13/2019*

**WELL RECORD PROCEDURE**

Northeast Natural Energy 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

**WELL DATA**

Location (Surface)	Lat. 39* 6607383	Long. -80* 1572163
TD*		2,000'
PBTD		NA
Packer		NA
Marker Joint		NA

The actual TD of this well is unknown, so it has been estimated to be approximately 2,000' based off known TD values for nearby wells.

**CASING AND TUBULAR DATA**

Surface	10"	N/A	610'	N/A	N/A
Intermediate	8 1/4"	N/A	825'	N/A	N/A
Production	6-5/8"	N/A	1650'	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.

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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.

PERSONNEL / PHONE LIST

General Manager, Operations      Diane Corwin      Office: (304) 212-0437  
 Mobile (304) 216-9959

Production Manager      John Landis      Office: (304) 212-0434  
 Mobile: (304) 216-6854

WV State Inspector      Gayne Knitowski      Office: (304) 241-7112  
 Cell (304) 546-8771

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 Environmental Protection

WW-4A  
Revised 6-07

1) Date: 6-7-2019  
2) Operator's Well Number  
Nancy Tennant No 2  
3) API Well No.: 47 - 061 - 00530

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: (a) Name Michael A. Keith, Gregory G, and Jane Ann Reynolds Address 1176 Sands Dr. Fairmont, WV 26554 (b) Name Address (c) Name Address  
5) (a) Coal Operator Name Address (b) Coal Owner(s) with Declaration Name Murray American Energy Inc Address 46226 National Road St. Clairsville, OH 43950 (c) Coal Lessee with Declaration Name Address

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 reverses 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.



Well Operator NNE Resources LLC  
By: Hollie Medley  
Its: Regulatory Manager  
Address 48 Donley St., Suite 601 Morgantown, WV 26501  
Telephone 304-212-0422

Subscribed and sworn before me this 12th day of June, 2019  
Kristen Brooks Notary Public  
My Commission Expires Aug 10, 2023



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 [depprivacyoffier@wv.gov](mailto:depprivacyoffier@wv.gov).

47-061-00530d

WW-9  
(5/16)

API Number 47 - 061 - 00530  
Operator's Well No. Nancy Tennant No. 2

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 (if selected provide a completed form WW-9-GPP)
- 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: NA

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

-If oil based, what type? Synthetic, petroleum, etc. NA

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 April 1, 2016, 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.

Company Official Signature Hollie Medley

Company Official (Typed Name) Hollie Medley

Company Official Title Regulatory Manager

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OFFICIAL SEAL  
NOTARY PUBLIC  
STATE OF WEST VIRGINIA  
Kristen Brooks  
Northeast Natural Energy LLC  
48 Donley St., Suite 601  
Morgantown, WV 26501  
My Commission Expires Aug. 10, 2023

Subscribed and sworn before me this 12th day of June, 2019, 20

Kristen Brooks

Notary Public

My commission expires Aug. 10, 2023



Proposed Revegetation Treatment: Acres Disturbed 0.5 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:

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, provide water volume, include dimensions (L, W, D) of the pit, and dimensions (L, W), and area in acres, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: *Maureen J. Kintan*

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

Title: *Inspector*

Date: *6/13/2019*

Field Reviewed? (  ) Yes (  ) No

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

Operator Name: NNE Resources LLC  
Watershed (HUC 10): Dunkard Creek Quad: Blacksville  
Farm Name: Nancy Tennant No. 2

- 1. List the procedures used for the treatment and discharge of fluids. Include a list of all operations that could contaminate the groundwater.

NA

- 2. Describe procedures and equipment used to protect groundwater quality from the list of potential contaminant sources above.

- 3. List the closest water body, distance to closest water body, and distance from closest Well Head Protection Area to the discharge area.

- 4. Summarize all activities at your facility that are already regulated for groundwater protection.

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- 5. Discuss any existing groundwater quality data for your facility or an adjacent property.

6. Provide a statement that no waste material will be used for deicing or fill material on the property.

7. Describe the groundwater protection instruction and training to be provided to the employees. Job procedures shall provide direction on how to prevent groundwater contamination.

8. Provide provisions and frequency for inspections of all GPP elements and equipment.

Signature: Hollimedy

Date: 6-12-19

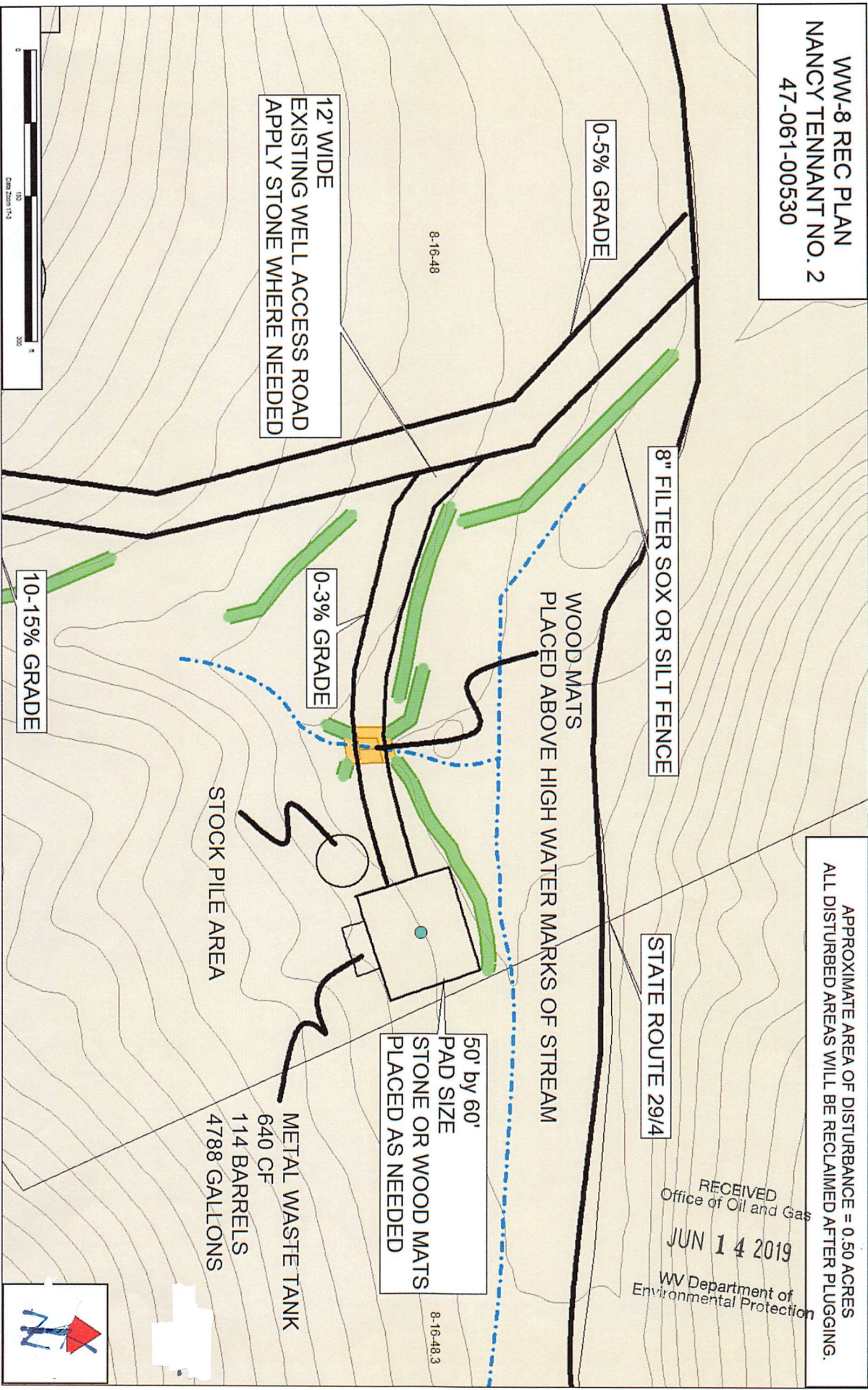
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DELORME

WW-8 REC PLAN  
NANCY TENNANT NO. 2  
47-061-00530

APPROXIMATE AREA OF DISTURBANCE = 0.50 ACRES  
ALL DISTURBED AREAS WILL BE RECLAIMED AFTER PLUGGING.

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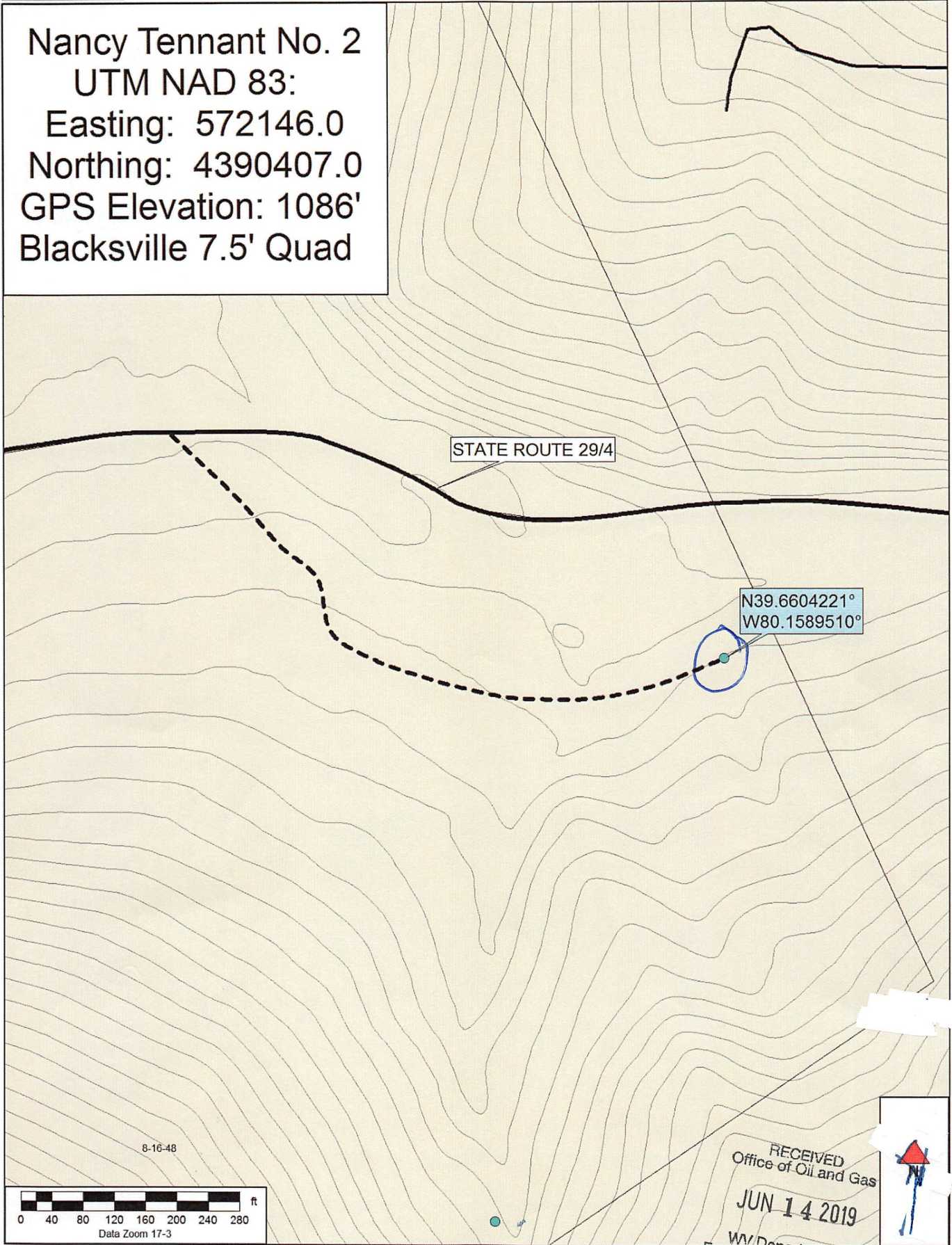


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Nancy Tennant No. 2  
 UTM NAD 83:  
 Easting: 572146.0  
 Northing: 4390407.0  
 GPS Elevation: 1086'  
 Blacksville 7.5' Quad



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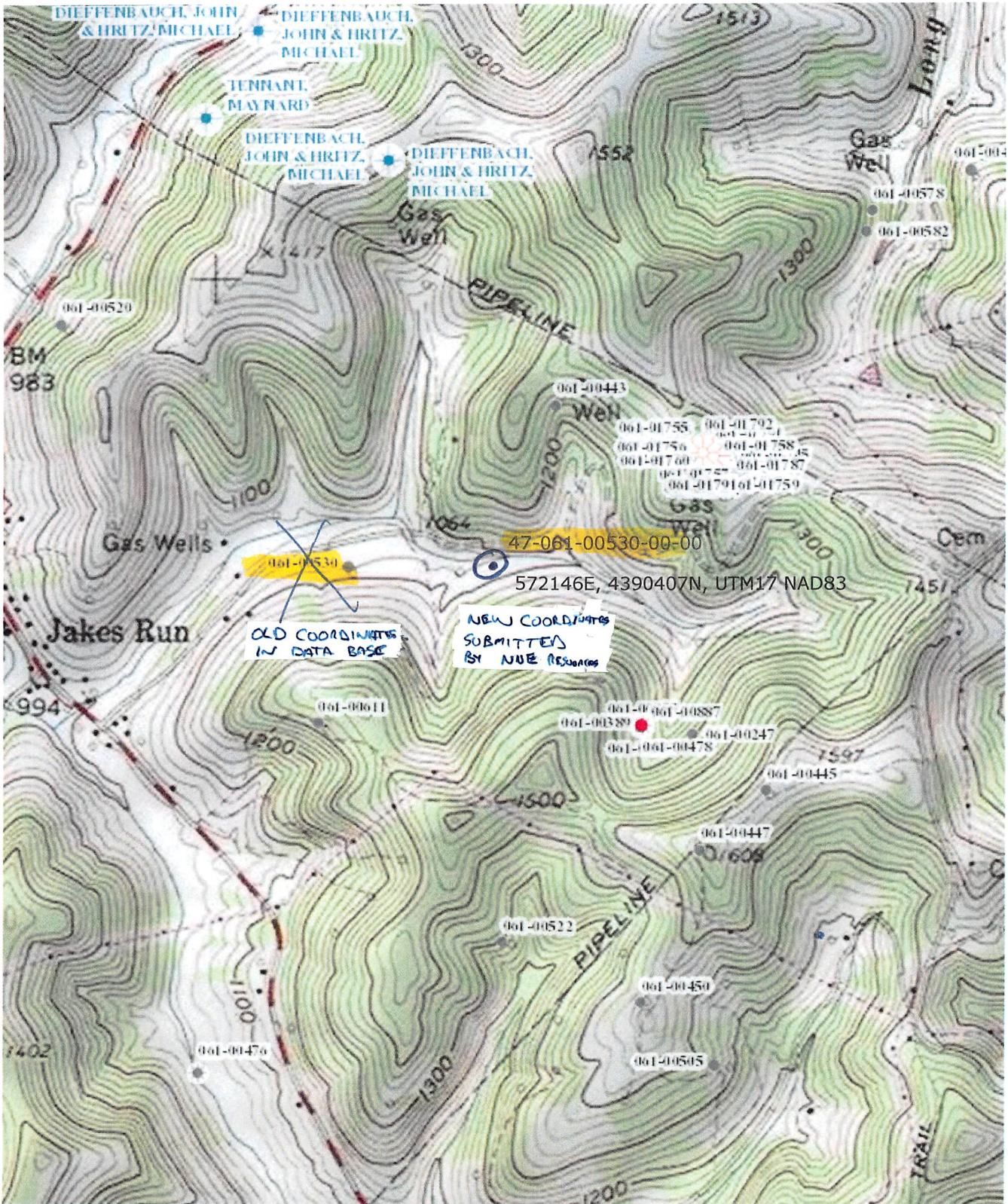
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47-061-00530P

47-061-00530P









WW-7  
8-30-06



West Virginia Department of Environmental Protection  
Office of Oil and Gas

**WELL LOCATION FORM: GPS**

API: 47-061-00530 WELL NO.: No 2

FARM NAME: Nancy Tennant

RESPONSIBLE PARTY NAME: NNE Resources LLC

COUNTY: Monongalia DISTRICT: Clay

QUADRANGLE: Blacksville

SURFACE OWNER: Michael A. Keith, Gregory G, and Jane Ann Reynolds

ROYALTY OWNER: Michael A. Keith, Gregory G, and Jane Ann Reynolds

UTM GPS NORTHING: 4390407.0

UTM GPS EASTING: 572146.0 GPS ELEVATION: 1,086'

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 X: Post Processed Differential \_\_\_\_

Real-Time Differential X

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.

Hollie Mealy  
Signature

Regulatory Manager  
Title

8-26-19  
Date