



west virginia department of environmental protection

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

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
www.dep.wv.gov

December 8, 2016
PERMIT MODIFICATION APPROVAL
Horizontal 6A / Horizontal 6A Well - 1

NORTHEAST NATURAL ENERGY LLC
707 VIRGINIA STREET EAST
STE 1200
CHARLESTON, WV 25301

Re: Permit Modification Approval for KASSAY 13H
47-061-01689-00-00

Lateral Adjustment and Extension

NORTHEAST NATURAL ENERGY LLC

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.

If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin
Chief

Operator's Well Number: KASSAY 13H
Farm Name: KASSAY, NEHEMIAH & PATTY A.
U.S. WELL NUMBER: 47-061-01689-00-00
Horizontal 6A / Horizontal 6A Well - 1
Date Issued: December 8, 2016

Promoting a healthy environment.

12/09/2016

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

1) Well Operator: Northeast Natural Energy LLC 494498281 Monongalia Clay Blacksville
Operator ID County District Quadrangle

2) Operator's Well Number: Kassay 13H Well Pad Name: Kassay

3) Farm Name/Surface Owner: Nehemiah and Patty A. Kassay Public Road Access: County Route 25/3 (Yank Hollow Road)

4) Elevation, current ground: 1534.5' Elevation, proposed post-construction: 1534.5'

5) Well Type (a) Gas Oil _____ Underground Storage _____

Other _____

(b) If Gas Shallow Deep _____

Horizontal

6) Existing Pad: Yes or No Yes

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):
Marcellus, 8,288.50' , 103' , 3,600 psi

8) Proposed Total Vertical Depth: 8,288.50'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 17,274.74'

11) Proposed Horizontal Leg Length: 7,669'

12) Approximate Fresh Water Strata Depths: 50' , 1,248'

13) Method to Determine Fresh Water Depths: Driller's Log from Offset Wells

14) Approximate Saltwater Depths: 1,946' , 2,696'

15) Approximate Coal Seam Depths: 316' , 1,246'

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: _____

RECEIVED
Office of Oil and Gas

DEC 07 2016

WV Department of
Environmental Protection

HJK 12/05/2016

SITE NAME Kassay 13H

COUNTY Monongalia

ACCESS ROAD ENTRANCE N39° 39' 23.7" , W-80° 11' 54.49 (NAD 83)

N 4389949.4, E 568760.3 (NAD 83 UTM)

DIRECTIONS TO SITE:

From I-79, take exit 155. Merge onto Chaplin Hill Road/CR-19/24N toward US-19/WV-7/Star City. If traveling from the south, this will be a right off the exit. If traveling from the north, this will be a left off the exit. After approximately 0.8 miles, turn left at light onto US-19/WV-7. Continue on US-19/WV-7 for approximately 1.7 miles. Turn left on WV-7 and continue on route for approximately 8.3 miles, then turn left on Pedlar Run Road for approximately 0.6 miles. Take a right onto CR-37/1/Jessel Tennes Hill/Pedlar Run Road for approximately 2.1 miles, continue onto Long Drain Road for approximately 0.1 mile and turn left onto Mooresville Road for approximately 0.3 Miles. Turn Left onto Jakes Run Road for approximately 6.2 miles, then turn right onto Statler Run Road for approximately 0.6 miles. Turn right onto Country Road for approximately 1.2 miles. The Kassay Pad Access Road Entrance will be on the right.

Or, take exit 155. Merge onto Chaplin Hill Road/CR-19/24N toward US-19/WV-7/Star City. If traveling from the south, this will be a right off the exit. If traveling from the north, this will be a left off the exit. After approximately 0.8 miles, turn left at light onto US-19/WV-7. Continue on US-19/WV-7 for approximately 1.7 miles. Turn left on WV-7 and continue on route for approximately 13.9 miles, then take a slight left onto WV-218 S/Daybrook Run Road for approximately 5.9 miles. Turn left onto Yank Hollow Road for approximately 1 mile and the Kassay Pad Access Entrance will be on the left.

From Blacksville, take WV-218 S/Daybrook Run Road for approximately 5.9 miles, then turn left onto Yank Hollow Road for approximately 1 mile. The Kassay Pad Access Road Entrance will be on the left.

*See Attached Maps

RECEIVED
Office of Oil and Gas
DEC 07 2016
WV Department of
Environmental Protection

12/09/2016

Introduction

Northeast Natural Energy LLC ("NNE") is an oil and gas exploration and production company with company headquarters located at the following address:

Northeast Natural Energy LLC
707 Virginia Street East, Suite 1200
Charleston, WV 25301

And a Field Operations Office located at the following address:

Northeast Natural Energy LLC
48 Donley Street, Suite 601
Morgantown, WV 26501

NNE is committed to protecting the people, property, and resources of the company and of the communities in which it works by establishing a safe and healthy work environment that is free from recognized hazards and complies with all local, state and federal regulations.

This Plan will be reviewed annually and may be subject to revision and/or update whenever any of the following occur:

- An incident occurs.
- A new chemical or process is utilized onsite.
- Existing processes are modified significantly.
- Regulations are revised significantly.
- The current Plan fails in an emergency situation.
- Changes in emergency response equipment occur.
- Changes in internal and external emergency resources occur.

TABLE OF CONTENTS

- 1 – Contacts, Schedules and Meetings**
- 2 – Maps and Diagrams**
- 3 – Well Work**
- 4 – Chemical Inventory & MSDS**
- 5 – BOP and Well Control**
- 6 – Hydrogen Sulfide (H₂S)**
- 7 – Flaring**
- 8 – Collision Avoidance Safeguards, Practices and Standards**

1

Contacts, Schedules and Meetings

RECEIVED
Office of Oil and Gas
DEC 07 2016
WV Department of
Environmental Protection

12/09/2016

A. NORTHEAST NATURAL ENERGY LLC CONTACTS:
 24 hour emergency number 1-866-207-1846

Construction/Reclamation

- Mike Shreve – Construction Coordinator 304.918.3050
- Dave McDougal – Manager of Civil Engineering 304.941.5033
- Brett Loflin – VP of Regulatory Affairs 304.414.7063

Drilling/Completion

- Jay Hewitt – Drilling Manager 304.382.1825
- Ian Costello – Completions Engineer 304.610.9764
- Zack Arnold – Manager of Operations 304.203.8059

Production

- Ryan Warner - Production Engineer 304.777.3287
- Zack Arnold – Manager of Operations 304.203.8059

B. EMERGENCY CONTACTS :

In the case of an emergency call 911

1. OPERATOR CONTACTS

- 24 hour emergency number 1-866-207-1846

2. DRILLING CONTRACTORS

- Performance Drilling –Vertical Drilling 304.553.2180
- Pioneer Drilling – Horizontal Drilling 570.465.2151

KEY CONTRACTORS AND VENDORS

- Baker Hughes – Cement/Pumping 724.743.9208
- Halliburton – Cement/Pumping 888.223.4255
- Schlumberger – Logging/Cement 724.820.3360

3. WV DEP/ OFFICE OF OIL AND GAS

Pollution and Emergency Spills 1-800-642-3074

- James Martin – Chief 304.926.0499 Ext. 1654
- Gayne Knitoswski – Inspector 304.546.8171
- Joe McCourt– WV DEP Northern Inspector Supervisor 304.380.2467

18)

CASING AND TUBING PROGRAM

| TYPE | Size (in) | New or Used | Grade | Weight per ft. (lb/ft) | FOOTAGE: For Drilling (ft) | INTERVALS: Left in Well (ft) | CEMENT: Fill-up (Cu. Ft.)/CTS |
|--------------|------------------|--------------------|--------------|-------------------------------|-----------------------------------|-------------------------------------|--------------------------------------|
| Conductor | 24" | New | NA | 94.71 | 40' | 40' | GTS |
| Fresh Water | 13-3/8" | New | J-55 | 54.5 | 1,330' | 1,300' | CTS |
| Coal | | | | | | | |
| Intermediate | 9-5/8" | New | J-55 | 40 | 2,780' | 2,750' | CTS |
| Production | 5-1/2" | New | P-110 | 20 | 17,274.74' | 17,244.74' | 4,047Cu. Ft. |
| Tubing | 2-7/8" | New | N-80 | 6.5 | NA | 8,500' | NA |
| Liners | | | | | | | |

DK 12/05/2016

| TYPE | Size (in) | Wellbore Diameter (in) | Wall Thickness (in) | Burst Pressure (psi) | Anticipated Max. Internal Pressure (psi) | Cement Type | Cement Yield (cu. ft./k) |
|--------------|------------------|-------------------------------|----------------------------|-----------------------------|---|--------------------|---------------------------------|
| Conductor | 24" | 30" | .375 | 415 | | 4,500 psi Grout | NA |
| Fresh Water | 13-3/8" | 17 1/2" | .38" | 2,760 | 2,000 | Class A | 1.23 |
| Coal | | | | | | | |
| Intermediate | 9-5/8" | 12 1/4" | .395" | 3,950 | 3,000 | Class A | 1.3 |
| Production | 5-1/2" | 8 3/4" | .361" | 12,530 | 9,700 | 50:50 Poz | 1.21 |
| Tubing | 2-7/8" | NA | .217" | 10,570 | 3,600 | NA | NA |
| Liners | | | | | | | |

PACKERS

| | | | | |
|-------------|--|--|--|--|
| Kind: | | | | |
| Sizes: | | | | |
| Depths Set: | | | | |

RECEIVED
 Office of Oil and Gas
 DEC 07 2016

WV Department of
 Environmental Protection

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

Drilling and completion of a horizontal Marcellus well. The well will be drilled on air to an approximate depth of 6,557.39' TVD/MD. The well will then be horizontally drilled on synthetic based mud from the KOP to approximately 8,288.50' TVD / 17,274.74' MD along multiple azimuths.

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

Multi-stage / high-rate slickwater fracture treatment using various size sands as proppant. First stage will be initiated via pressurization against a burst disc ran in the production casing string or perforated with coiled tubing. Subsequent stages will be perforated with pumped down guns ran on wireline. Individual stages will be isolated with composite frac plugs. Maximum pump rate during any stage will be 110 BPM with a maximum allowable surface pressure of 9,500 PSI. Composite bridge plugs will be set at the end of the last stage to isolate the treated formation.

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

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

23) Describe centralizer placement for each casing string:

Surface and intermediate casing strings will have bow spring centralizers placed every third joint (~120') from the shoe joint to surface. Production casing will have rigid body centralizers placed at a minimum of every fourth joint (~160') from TD to surface.

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

Surface string cement will be a Class A + Max 3% bwoc Calcium Chloride Fresh Water blend. Intermediate string cement will be a Class A Cement + Max 3% bwoc Calcium Chloride + Fresh Water. Production string cement will be (50:50) Poz (Fly Ash):Type I Cement with a gas migration additive.

25) Proposed borehole conditioning procedures:

Surface string will use a 25.0 bbls Gel Pill + LCM + 25 lbs Cello Flake + 20 lbs/bbl Bentonite @ 8.4 ppg & 10 bbls fresh water spacer prior to cement. Intermediate string will use a 25.0 bbls Gel Pill + LCM + 25 lbs Cello Flake + 20 lbs/bbl Bentonite @ 8.4 ppg & 10 bbls fresh water spacer prior to cement. Production string will use a 50.0 bbls SealBond 25 + 1 gal/bbl WS-46 + 275 lbs/bbl Barite + 1 gal/bbl SS-2 Spacer @ 13.5 ppg prior to cement.

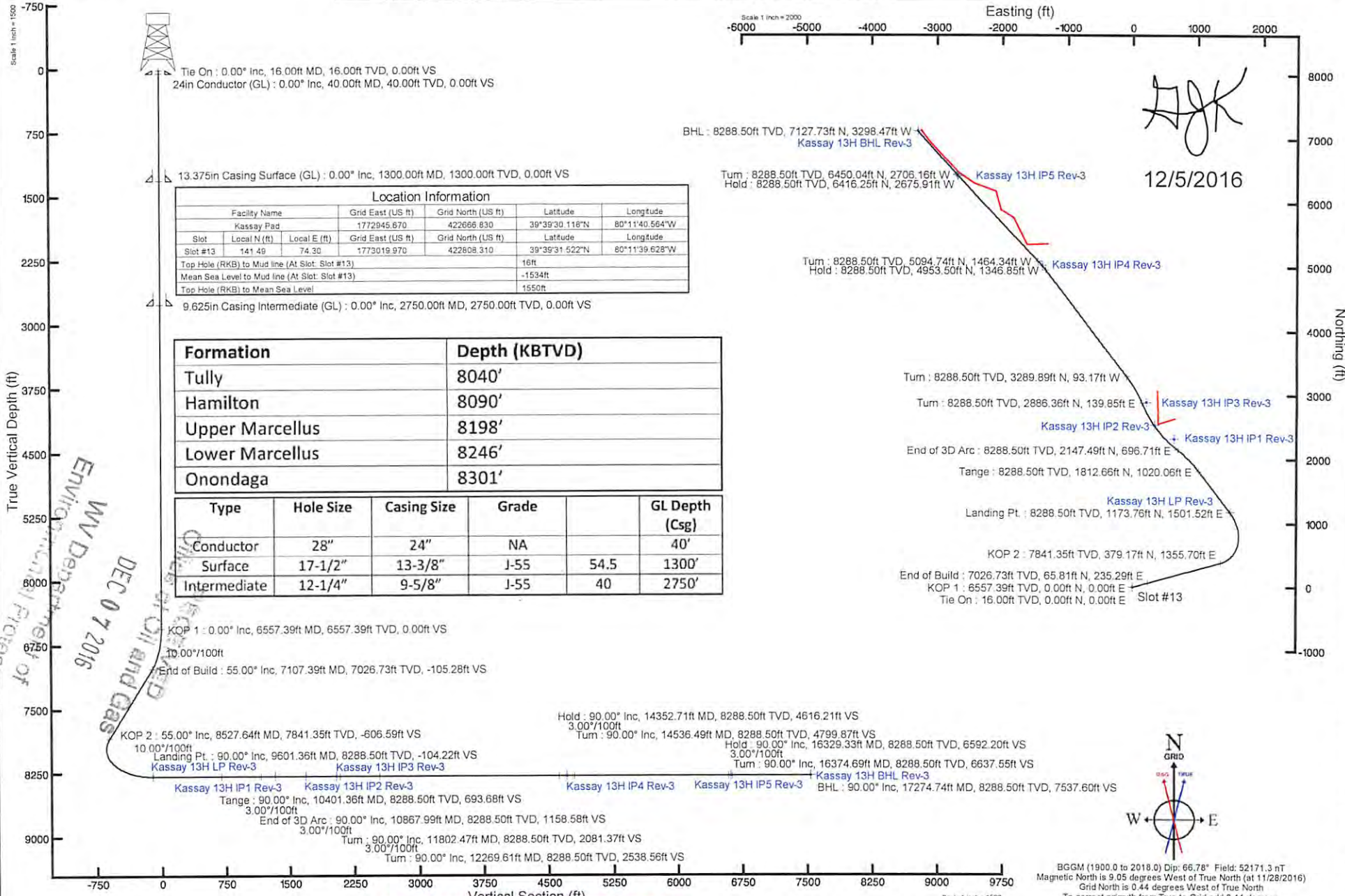
*Note: Attach additional sheets as needed.

Office of Oil and Gas
DEC 07 2016
WV Department of
Environmental Protection

NORTHEAST NATURAL ENERGY, LLC

Location: Monongalia County, WV
 Field: Monongalia
 Facility: Kassay Pad

Slot: Slot #13
 Well: Kassay 13H
 Wellbore: Kassay 13H PWB



Location Information

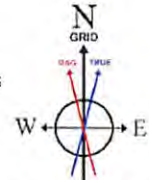
| Facility Name | Grid East (US ft) | Grid North (US ft) | Latitude | Longitude | | |
|--|-------------------|--------------------|-------------------|--------------------|----------------|----------------|
| Kassay Pad | 1772945.870 | 422666.830 | 39°39'30.118"N | 80°11'40.564"W | | |
| Slot | Local N (ft) | Local E (ft) | Grid East (US ft) | Grid North (US ft) | Latitude | Longitude |
| Slot #13 | 141.49 | 74.30 | 1773019.970 | 422608.310 | 39°39'31.522"N | 80°11'39.628"W |
| Top Hole (RKB) to Mud line (At Slot: Slot #13) | | | | 16ft | | |
| Mean Sea Level to Mud line (At Slot: Slot #13) | | | | -1534ft | | |
| Top Hole (RKB) to Mean Sea Level | | | | 1550ft | | |

| Formation | Depth (KBTVD) |
|-----------------|---------------|
| Tully | 8040' |
| Hamilton | 8090' |
| Upper Marcellus | 8198' |
| Lower Marcellus | 8246' |
| Onondaga | 8301' |

| Type | Hole Size | Casing Size | Grade | GL Depth (Csg) |
|--------------|-----------|-------------|-------|----------------|
| Conductor | 28" | 24" | NA | 40' |
| Surface | 17-1/2" | 13-3/8" | J-55 | 54.5 |
| Intermediate | 12-1/4" | 9-5/8" | J-55 | 40 |

Environmental Protection
 WV Department of
 Oil and Gas
 DEC 07 2016
 DIVISION OF OIL AND GAS

[Signature]
 12/5/2016



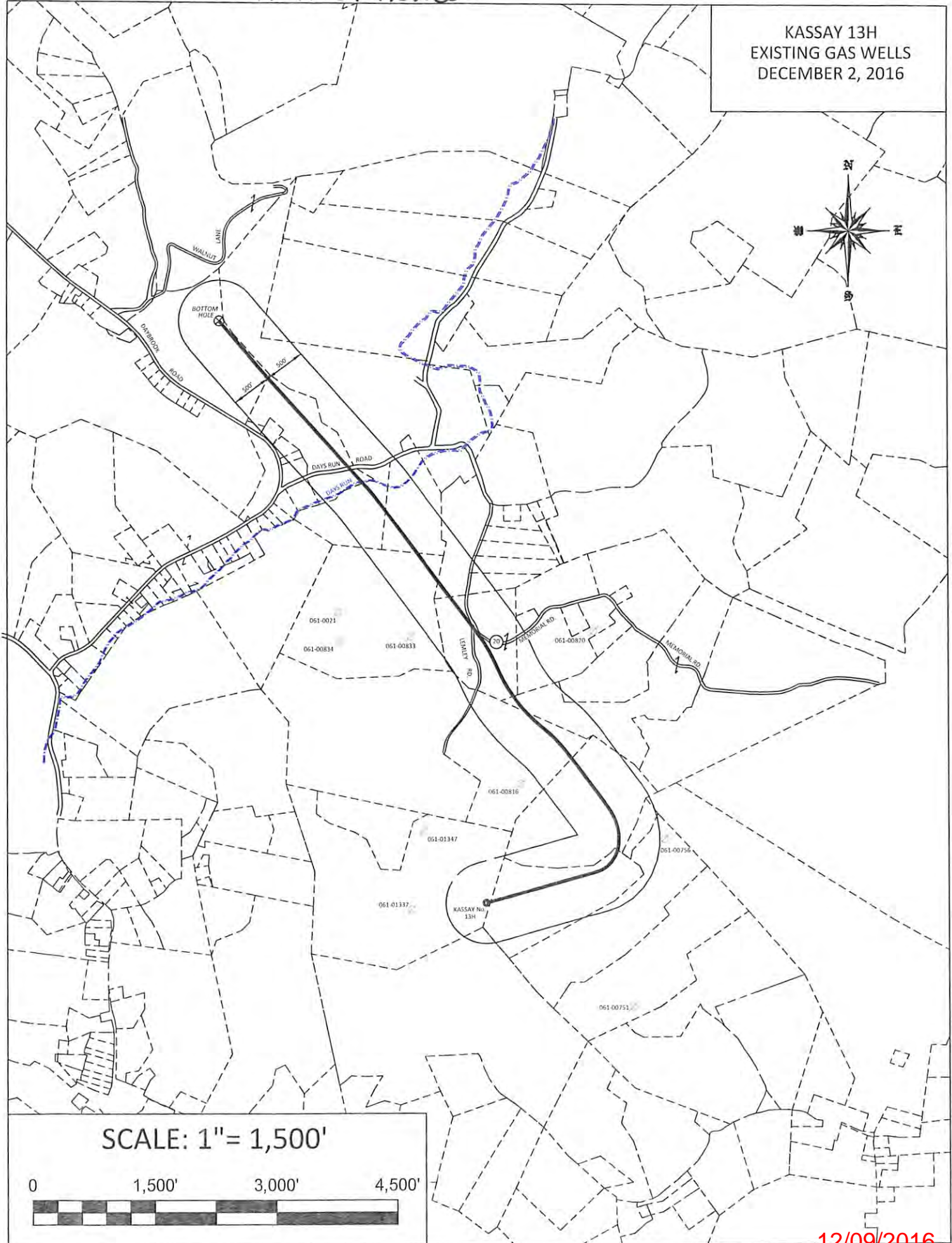
BGGM (1900.0 to 2018.0) Dip: 66.78° Field: 52171.3 nT
 Magnetic North is 9.05 degrees West of True North (at 11/28/2016)
 Grid North is 0.44 degrees West of True North
 To correct azimuth from True to Grid add 0.44 degrees
 To correct azimuth from Magnetic to Grid subtract 9.61 degrees

Azimuth 318.85° with reference 0.00 N, 0.00 E

61-61689-000

AREA of Review

KASSAY 13H
EXISTING GAS WELLS
DECEMBER 2, 2016



SCALE: 1" = 1,500'



12/09/2016



Kassay 13H

SITE SAFETY PLAN

December 2, 2016

12/5/2016

RECEIVED
Office of Oil and Gas
DEC 07 2016
WV Department of
Environmental Protection

12/09/2016

4. LOCAL EMERGENCY RESPONSE UNITS**MONONGALIA COUNTY OFFICE OF EMERGENCY MANAGEMENT**

- Mike Wolfe – Director 304.598.0301
- James Smith – Deputy Director

FIRE DEPARTMENTS

- Blacksville Volunteer 304.432.8282

AMBULANCE / EMS

- MON EMS 304.599.0650
- JAN-CARE 304.296.9700

LIFE FLIGHT AMBULANCE SERVICE (HELICOPTER)

- Angel MedFlight 866.604.8307

STATE POLICE

- Morgantown Detachment 304.285.3200

COUNTY POLICE

- Monongalia Sheriff 304.291.7290

5. LOCAL ER PERSONNEL**HOSPITAL**

- Ruby Memorial (trauma 1) 304.598.4000
- Monongalia General (trauma 4) 304.598.1200

C. NOTIFICATION OF H₂S GAS PRESENCE

Detection of H₂S shall sound an alarm which notifies personnel to shut in the well(s) and evacuate to the predetermined safe zone immediately.

A wind sock and/or flags will be utilized on location to identify wind direction. A safe zone upwind and away from the well will be established at the beginning of each tour. Personnel are trained to evacuate the well and gather at this safe zone immediately at the first sound of an H₂S explosive gas alarm.

When in a historically known area, or after H₂S is first detected, operations will halt, evacuation procedures will be followed, and all personnel will be trained for detailed H₂S protocols before operations begin or resume.

After personnel are located in a safe area, the onsite supervisor will take a head count, and make the proper offsite notifications. The DEP Office of Oil and Gas will be notified by a phone call to both the local inspector and the emergency number. The local emergency responders may also be notified of the detection.

In the event that H₂S has been detected, the onsite supervisor shall use his discretion as to the severity of the event and whether the local community should be notified. NNE will make a diligent effort to identify local residents and businesses within a ½ mile radius of its unconventional well sites (*see attached). Notification of such residence may be done in the form of a phone call or a door to door visit. NNE also recognizes that in most emergency situations the local emergency responders will coordinate any notification or evacuation procedures for the community and NNE will work closely with such emergency responders in their efforts.

RECEIVED
Office of Oil and Gas
DEC 07 2016
WV Department of
Environmental Protection

12/09/2016

D. PRE-SPUD MEETINGS

Prior to drilling operations, an onsite "Pre-Spud" meeting will be held to address operations and the site safety plan. This meeting shall include the overseeing NNE Drilling/Completions Engineer, the staff or contracted site supervisor(s) ("Company Man"), any staff or contracted safety personnel, key contractors to the drilling process, the contracted rig's superintendent/tool pusher, and the local oil and gas inspector if available. Local emergency response personnel may also be invited to the pre-spud meeting. The regional DEP inspector will be notified 48-hours in advance of the meeting. All attending personnel will be documented. Contractors will be provided copy of and instructed to go over the site safety plan with their respective individual employees.

E. WELL SITE SAFETY MEETINGS

Safety Meetings will be held on-site, at a minimum, on a weekly basis and prior to the beginning of drilling, completion and work-over operations. Attendance at each safety meeting will be logged.

Additionally, as a means of safety and maintaining a head count in case of an incident, a check-in and check-out list of both personnel and visitors will be kept during all drilling, completion, and work over phases of operation. The rig/frac supervisor will be responsible for the checking in and out of all personnel on location. A sign will be posted at the entrance to the location directing all visitors to the company trailer.

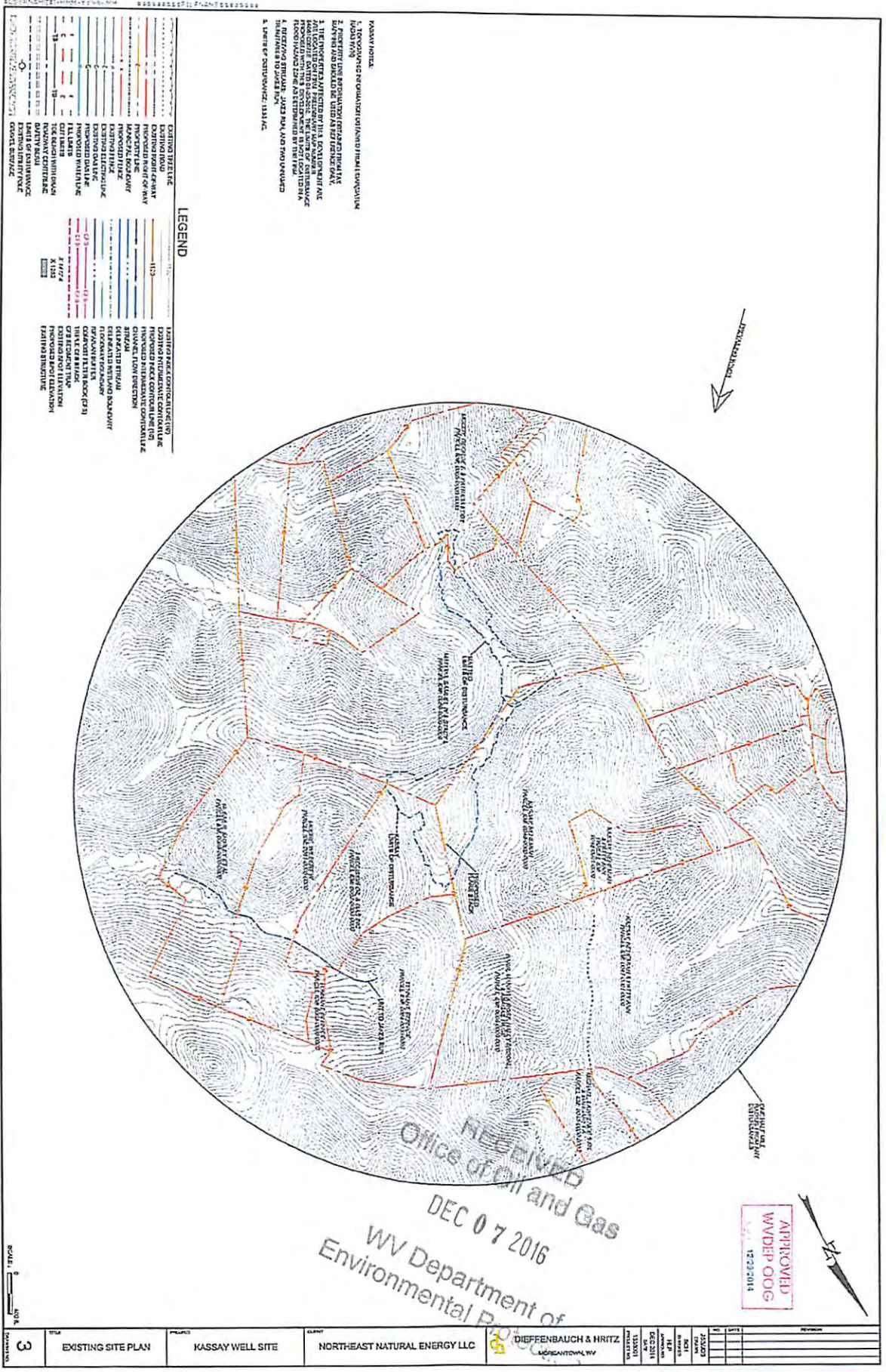
RECEIVED
Office of Oil and Gas
DEC 07 2016
WV Department of
Environmental Protection

12/09/2016

2

Maps and Diagrams

RECEIVED
Office of Oil and Gas
DEC 07 2016
WV Department of
Environmental Protection

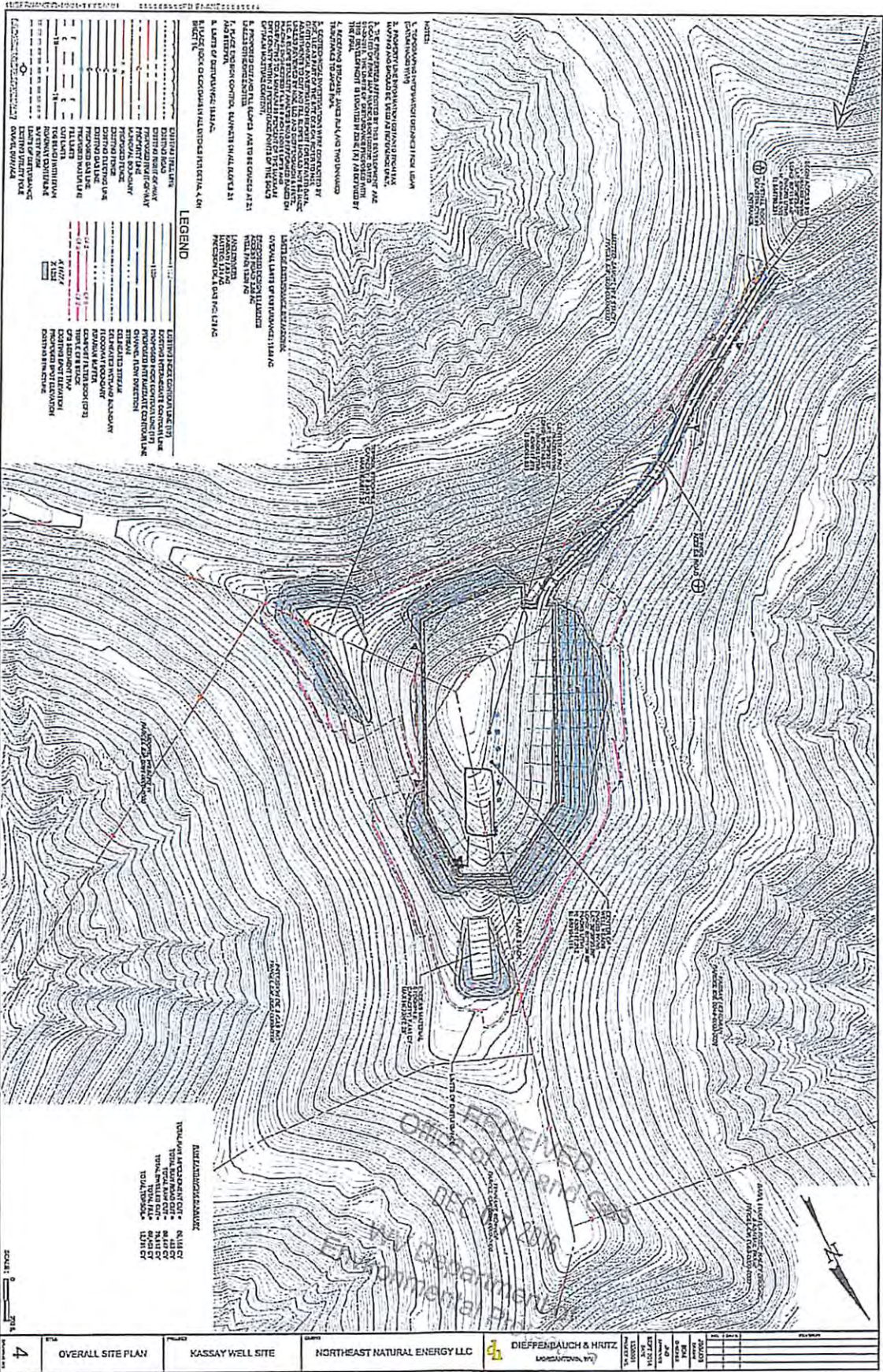


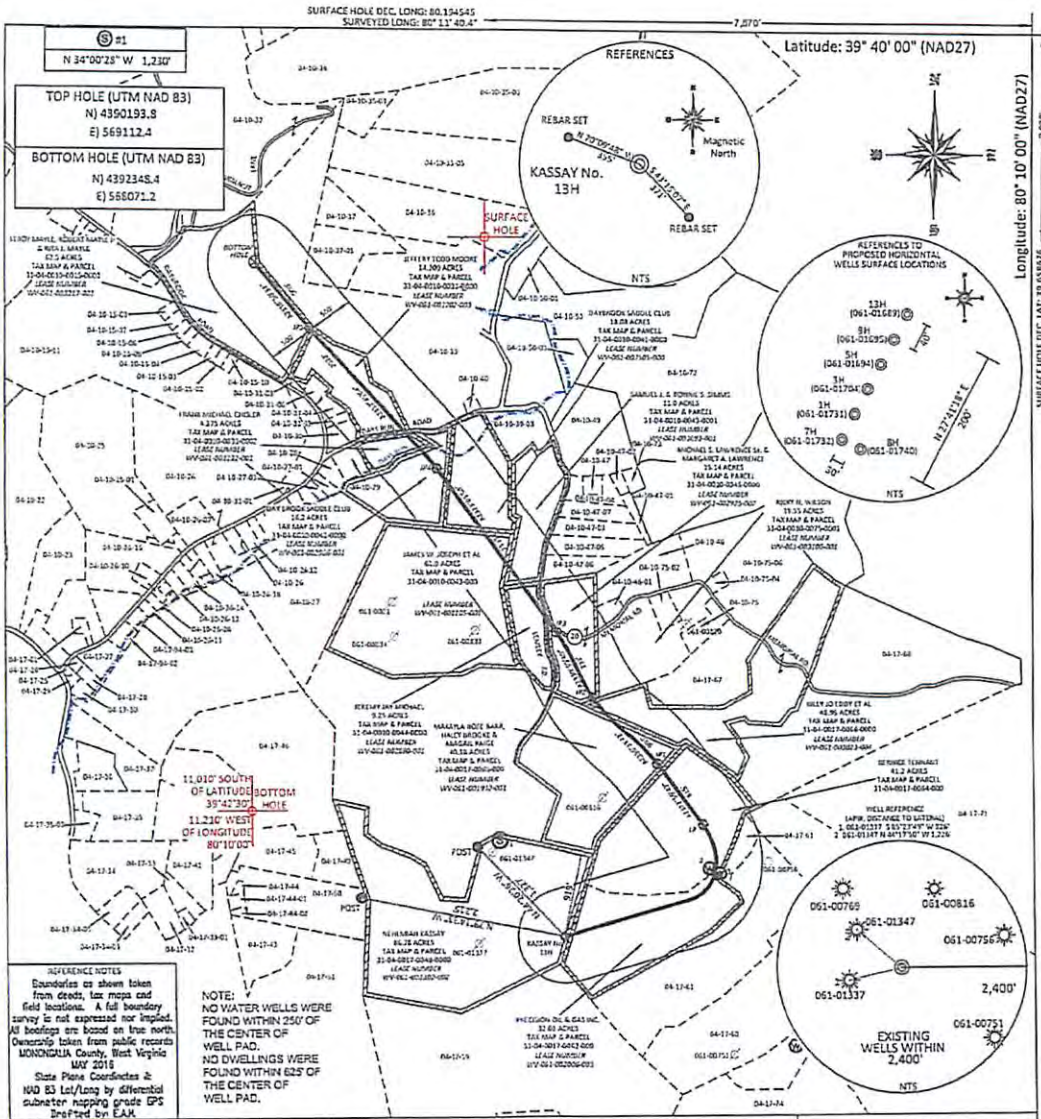
1. TOPOGRAPHIC MAP QUANTIFIED BY THE SURVEYING
 2. PROPERTY LINES ARE SHOWN BY RED LINES
 3. THE PROPOSED WELL LOCATIONS ARE SHOWN BY
 4. THE PROPOSED WELL PATTERNS ARE SHOWN BY
 5. THE PROPOSED WELL PATTERNS ARE SHOWN BY
 6. THE PROPOSED WELL PATTERNS ARE SHOWN BY
 7. THE PROPOSED WELL PATTERNS ARE SHOWN BY
 8. THE PROPOSED WELL PATTERNS ARE SHOWN BY
 9. THE PROPOSED WELL PATTERNS ARE SHOWN BY
 10. THE PROPOSED WELL PATTERNS ARE SHOWN BY

LEGEND

| EXISTING | PROPOSED | DESCRIPTION |
|----------|----------|--------------------|
| (Symbol) | (Symbol) | EXISTING ROAD |
| (Symbol) | (Symbol) | PROPOSED ROAD |
| (Symbol) | (Symbol) | EXISTING LINE |
| (Symbol) | (Symbol) | PROPOSED LINE |
| (Symbol) | (Symbol) | EXISTING STRUCTURE |
| (Symbol) | (Symbol) | PROPOSED STRUCTURE |
| (Symbol) | (Symbol) | EXISTING FENCE |
| (Symbol) | (Symbol) | PROPOSED FENCE |
| (Symbol) | (Symbol) | EXISTING UTILITY |
| (Symbol) | (Symbol) | PROPOSED UTILITY |
| (Symbol) | (Symbol) | EXISTING DRAINAGE |
| (Symbol) | (Symbol) | PROPOSED DRAINAGE |
| (Symbol) | (Symbol) | EXISTING ELEVATION |
| (Symbol) | (Symbol) | PROPOSED ELEVATION |
| (Symbol) | (Symbol) | EXISTING BOUNDARY |
| (Symbol) | (Symbol) | PROPOSED BOUNDARY |
| (Symbol) | (Symbol) | EXISTING PROPERTY |
| (Symbol) | (Symbol) | PROPOSED PROPERTY |
| (Symbol) | (Symbol) | EXISTING CONTOUR |
| (Symbol) | (Symbol) | PROPOSED CONTOUR |

| | | | | | |
|---|--------------------|------------------|------------------------------|----------------------|------------|
| 3 | EXISTING SITE PLAN | KASSAY WELL SITE | NORTHEAST NATURAL ENERGY LLC | DIEFFENBAUGH & HRITZ | 12/07/2016 |
|---|--------------------|------------------|------------------------------|----------------------|------------|





FILE #: NNE15
 DRAWING #: 2538
 SCALE: PLAT: 1" = 1500'
TICK: 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: [Signature]
 L.L.S. #2124 : Ernest J. Benchek III



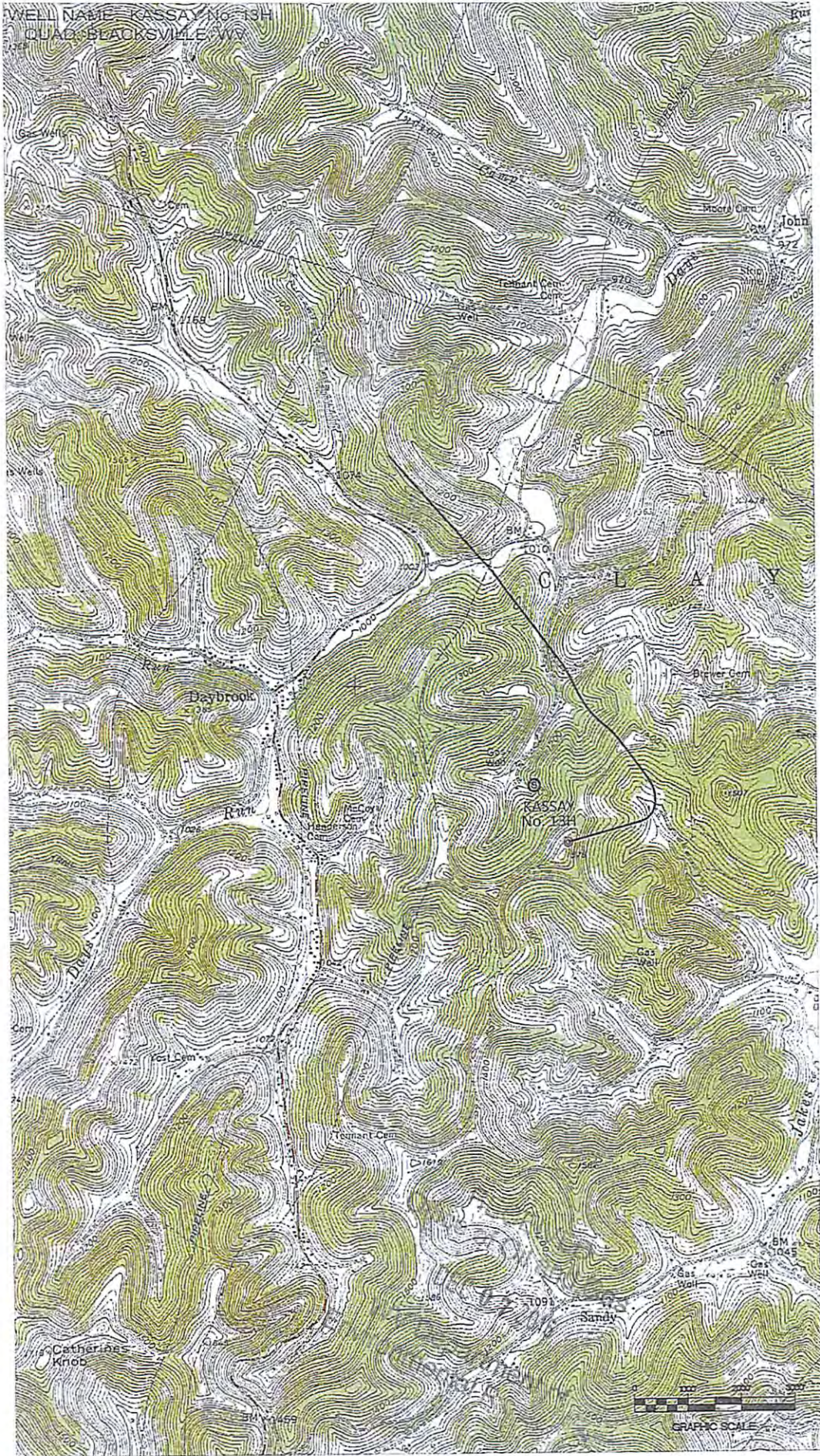
(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS WVDEP

OFFICE OF OIL & GAS
 601 57TH STREET
 CHARLESTON, WV 25304

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

WATERSHED: DUNKARD CREEK AS-BUILT ELEVATION: 1,534.5'
 COUNTY/DISTRICT: MONONGALIA / CLAY QUADRANGLE: BLACKSVILLE
 SURFACE OWNER: NEHEMIAH KASSAY ACREAGE: 86.78 +/-
 OIL & GAS ROYALTY OWNER: _____ ACREAGE: 457.419 +/-
 LEASE NUMBERS: _____

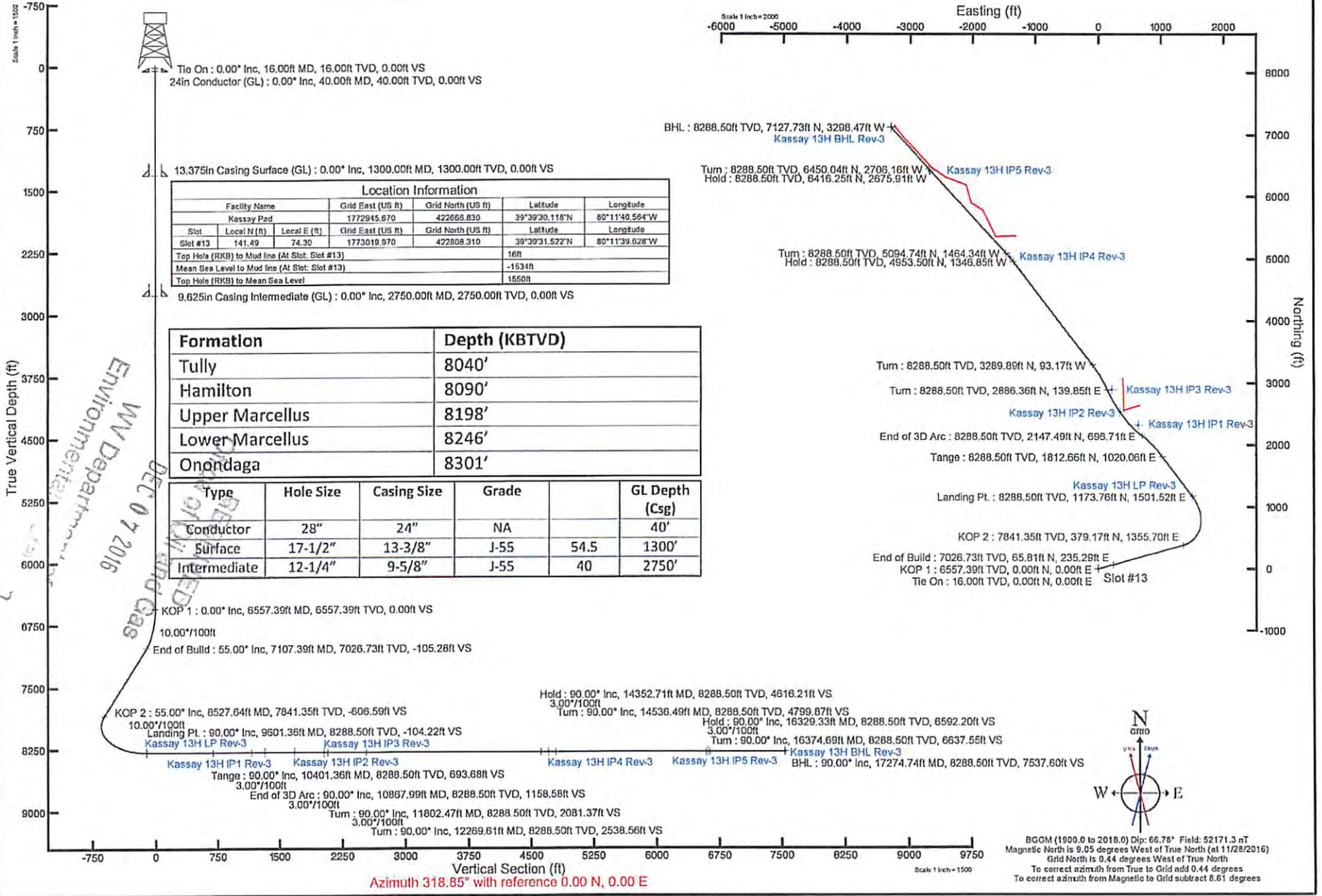
DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF FORMATION PERFORATE CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY): _____
 TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 8,288.5' TMD: 17,274.74'
 WELL OPERATOR: NORTHEAST NATURAL ENERGY LLC DESIGNATED AGENT: JOHN ADAMS
 ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200 ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200
 CITY: CHARLESTON STATE: WV ZIP CODE: 25301 CITY: CHARLESTON STATE: WV ZIP CODE: 25301



NORTHEAST NATURAL ENERGY, LLC

Location: Monongalia County, WV
Field: Monongalia
Facility: Kassay Pad

Slot: Slot #13
Well: Kassay 13H
Wellbore: Kassay 13H PWB



L21-01689400

3

Well Work

RECEIVED
Office of Oil and Gas
DEC 07 2016
WV Department of
Environmental Protection

A(1.0) Description of Drilling Operations

The Kassay 13H well will be drilled on air to an approximate depth of 6,557.39' TVD/MD. The well will then be horizontally drilled on synthetic based mud from the KOP of approximately 8,288.50' TVD and 17,274.74' MD along a multiple azimuths.

A(1.1) Anticipated Equipment/Materials

During the drilling of a horizontal Marcellus gas well the following equipment and materials could be on the drilling location:

| Equipment / Materials | Potential Hazard |
|------------------------------------|--|
| Double Stand Drilling Rig | Medical, Fire/Explosion, Spill/Release |
| Mud Pumps | Medical, Fire/Explosion, Spill/Release |
| Mud Tanks | Medical, Fire/Explosion, Spill/Release |
| Fork Lift | Medical, Fire/Explosion, Spill/Release |
| Excavator | Medical, Fire/Explosion, Spill/Release |
| Diesel Tank | Medical, Fire/Explosion, Spill/Release |
| Diesel Fuel | Medical, Fire/Explosion, Spill/Release |
| Generators | Medical, Fire/Explosion, Spill/Release |
| Air Compressor | Medical, Fire/Explosion |
| Light Tower | Medical, Fire/Explosion, Spill/Release |
| Frac Tanks (mud, cement additives, | Medical, Fire/Explosion, Spill/Release |
| Drilling Mud Additives | Medical, Fire/Explosion, Spill/Release |

A(2.0) Description of Completions Operations

The Kassay 13H well will be completed using a multi-stage / high-rate slickwater fracture treatment using sand as a proppant. The First Stage will be initiated via pressurization against a burst disc ran in the production casing string and perforated by pumping down guns on wireline. Subsequent stages will also be perforated with pumped down guns ran on wireline. Individual stages will be isolated with composite frac plugs. Maximum pump rate during any stage will be 110 BPM with a maximum allowable surface pressure of 9,500 PSI. Composite bridge plugs will be set at the end of the last stage to isolate the treated formation. After the fracture treatment, composite frac plugs will be drilled out using a service rig and/or snubbing unit.

A(2.1) Anticipated Equipment/Materials

During the completion of a horizontal Marcellus gas well the following equipment and materials could be on the drilling location:

| Equipment / Materials | Potential Hazard |
|-----------------------------------|--|
| Approximately 10 - 15 Pump Trucks | Medical, Fire/Explosion, Spill/Release |
| 2 Blender Trucks | Medical, Fire/Explosion, Spill/Release |
| Belt Truck | Medical, Fire/Explosion, Spill/Release |
| Perforation Truck | Medical, Fire/Explosion, Spill/Release |
| Crane | Medical, Fire/Explosion, Spill/Release |
| Sand Tanks | Medical, Fire/Explosion, Spill/Release |
| Frac Tanks | Medical, Fire/Explosion, Spill/Release |
| Man Lift | Medical, Fire/Explosion, Spill/Release |
| Acid Truck | Medical, Fire/Explosion, Spill/Release |
| Fork Lift | Medical, Fire/Explosion, Spill/Release |

RECEIVED
 Dept. of Oil and Gas
 Dec 7 2016
 WV Dept. of Environmental Protection

| | |
|-------------------------|--|
| Gel Truck | Medical, Fire/Explosion, Spill/Release |
| Communications Truck | Medical, Fire/Explosion, Spill/Release |
| Diesel Truck | Medical, Fire/Explosion, Spill/Release |
| Diesel Fuel | |
| 80/90 wt gear oil | Medical, Fire/Explosion, Spill/Release |
| 5/40 motor oil | Medical, Fire/Explosion, Spill/Release |
| Antifreeze | Medical, Fire/Explosion, Spill/Release |
| Ethylene Glycol | Medical, Fire/Explosion, Spill/Release |
| Tri-Ethylene Glycol | Medical, Fire/Explosion, Spill/Release |
| Frac Sand | Medical, Fire/Explosion, Spill/Release |
| Hydrochloric Acid (HCl) | Medical, Fire/Explosion, Spill/Release |
| Friction Reducer | Medical, Fire/Explosion, Spill/Release |
| Gelling Agents | Medical, Fire/Explosion, Spill/Release |
| Biocide | Medical, Fire/Explosion, Spill/Release |
| Scale Inhibitor | Medical, Fire/Explosion, Spill/Release |
| Iron Control | Medical, Fire/Explosion, Spill/Release |
| Gel Breaker Agent | Medical, Fire/Explosion, Spill/Release |
| Corrosion Inhibitor | Medical, Fire/Explosion, Spill/Release |

RECEIVED
Office of Oil and Gas
DEC 07 2016
WV Department of
Environmental Protection

A(3.0) Description of Production Operations

During the production phase, the well stream will flow through buried, welded piping to Gas Production Units. At this point, the gas will be separated from the water and sent through a meter to a sales pipeline. The water will be piped and stored in above ground tanks on the well site. Well pressures and flow rates will be monitored and recorded to ensure proper facility operation. All facilities will be installed according to industry standards and will have appropriate safety systems in place.

A(3.1) Anticipated Equipment/Materials**Production**

| Equipment / Materials | Potential Hazard |
|---|--|
| Well Head | Medical, Fire/Explosion, Spill/Release |
| Buried Flow Line | Medical, Fire/Explosion, Spill/Release |
| Sand Separator | Medical, Fire/Explosion, Spill/Release |
| Gas Processing Unit | Medical, Fire/Explosion, Spill/Release |
| Water Tanks | Medical, Fire/Explosion, Spill/Release |
| Condensate Tank | Medical, Fire/Explosion, Spill/Release |
| Water Truck Hauling & Hook Up Equipment | Medical, Fire/Explosion, Spill/Release |
| Pig Launcher | Medical, Fire/Explosion, Spill/Release |

RECEIVED
Office of Oil and Gas
DEC 07 2016
WV Department of
Environmental Protection

12/09/2016

M & R Station

| Equipment / Materials | Potential Hazard |
|------------------------------|--|
| Flowline | Medical, Fire/Explosion, Spill/Release |
| Pig Receiver | Medical, Fire/Explosion, Spill/Release |
| Two Phase Separator | Medical, Fire/Explosion, Spill/Release |
| Filter Units | Medical, Fire/Explosion, Spill/Release |
| Heater Unit | Medical, Fire/Explosion, Spill/Release |
| Dehydration Tower | Medical, Fire/Explosion, Spill/Release |
| 50 – 100 Barrel Water Tank | Medical, Fire/Explosion, Spill/Release |
| Meter House | Medical, Fire/Explosion, Spill/Release |
| Meter Skid | Medical, Fire/Explosion, Spill/Release |

B DISTRIBUTION OF THE SITE SAFETY PLAN

Copies of this Plan will be located at NNE's corporate office building in Charleston, West Virginia, its field office in Morgantown, West Virginia, with the Designated Response Coordinators and field operation sites when applicable. This Plan may be accessed electronically by all NNE employees on the company's shared drive/share point. All NNE employees are to abide by the provisions of this Plan and are required to participate in its implementation. This Plan will also be shared with external entities such as the Monongalia County Office of Emergency Management within at least seven (7) days prior to earth disturbance and/or well work.

Efforts will be made to familiarize police, fire departments, emergency response teams and the County Emergency Management Coordinator with the layout of the well site, the properties and dangers associated with the equipment and materials that are on site, places where personnel would normally be working, and the possible evacuation routes should an emergency occur.

RECEIVED
Office of Oil and Gas
DEC 07 2016
WV Department of
Environmental Protection

12/09/2016

4

Chemical Inventory & Material Safety Data Sheets ("MSDS")

RECEIVED
Office of Oil and Gas
DEC 07 2016
WV Department of
Environmental Protection

A Material Safety Data Sheets ("MSDS")

MSDS Sheets will be provided upon request on a CD or USB drive.

B Location of MSDS

MSDS sheets will be kept in the company trailer during the drilling and completion phases of operation. Any Contractors that bring hazardous materials on site will provide MSDS for such. The onsite supervisor will be responsible for ensuring that all MSDS sheets are obtained and are easily accessible in case of an emergency.

C DRILLING MUD

1,500 bbl of 12.9 ppg synthetic drilling mud will be used along with the below listed chemicals. The mud will be kept in an open top above ground mud pit and circulated by nozzles and paddles.

| Material | Unit | Amount |
|-------------------------|--------|--------|
| Barite | 4000lb | 9 |
| Calcium Chloride Powder | 50lb | 200 |
| Carbo Gel | 50lb | 60 |
| Base Oil | 1 gal | 1440 |
| Lime | 50lb | 69 |
| Mil Sorb | 50lb | 87 |

RECEIVED
Office of Oil and Gas
DEC 07 2016
WV Department of
Environmental Protection

12/09/2016

5

Blow Out Preventer ("BOP") and Well Control

A BOP EQUIPMENT – DRILLING PHASE

From the shoe of the intermediate casing string (9-5/8") to KOP, the well will continue to be drilled on air. For this section, at a minimum, an 11" 3,000 PSI annular-type BOP will be utilized as a means of well control. Installation of this equipment will be dependent upon two different conditions...

- Should the top-hole drilling rig have a substructure large enough to sit upon a cellar, an 11" 5,000 PSI API flanged casing head will be welded onto the top of the intermediate casing string (9-5/8") below grade after it has been set and cement has cured for a minimum of 8 hours. It is upon this casing head that the annular-type BOP will be bolted and torqued to specification as a means of well control for the section.
- Should the top-hole drilling rig have a substructure too small to sit upon a cellar, the intermediate casing string (9-5/8") will be landed at surface and a screw-on or weld flange annular-type BOP will be used as a means of well control for the section. Under this scenario, a cellar will be installed around the wellbore after the top-hole rig is released from the pad. Once installed, an 11" 5,000 PSI API flanged casing head will then be welded onto the top of the intermediate casing string (9-5/8") below grade.

For the remainder of the drilling of the well on fluid; at a minimum and from bottom to top; an 11" 5,000 PSI kill spool, an 11" 5,000 PSI blind ram-type BOP, an 11" 5,000 PSI pipe ram-type BOP, and an 11" 5,000 PSI annular-type BOP will be bolted and torqued to specification upon the 11" 5,000 PSI casing head.

B PROCEDURE AND SCHEDULE FOR TESTING BOP

For the bottom and horizontal wellbore drilling phase, function testing of BOP equipment shall occur upon initial installation, weekly, and after each trip. Pressure testing of all BOP equipment shall occur upon initial installation and every twenty-one (21) days thereafter, should the well not be completed within that time. Annular preventers are to be tested to seventy percent (70%) of the rated capacity and ram preventers should be tested to eighty percent (80%) of the rated capacity according to the following procedure;

- The WV DEP Regional Oil and Gas Inspector will be notified 24 hrs. in advance of the pressure testing of all BOP equipment.
- For the testing of the 3,000 PSI annular-type BOP, before drilling through the shoe of the intermediate casing string to KOP, a plug-type tester will be lowered into the intermediate casing (9-5/8") or a plug-type tester will be inserted into the

RECEIVED
Office of Oil and Gas
DEC 07 2016
WV DEP
Environmental Protection

casing head if installed. After a successful function test, the annular BOP will be closed around drill pipe and the void between the cup or plug will be pressurized using fluid as a medium. This shall consist of a minimum five minute low pressure (300 PSI maximum) test, and a thirty minute high pressure (2,100 PSI minimum) test. Annular preventer and valves shall be tested from the direction they are exposed to wellbore pressure. A successful test shall consist of less than a 10% bleed off after buildup over the entire duration of the low/high test period.

- For the testing of the BOP stack from KOP to TD of the well, a plug-type tester will be placed into the bowl of the 11" 5M x 9-5/8" casing head. After a successful functional test, all rams, valves, TIW valves, chokes, and annular preventers will be pressure tested from the direction they are subjected to wellbore pressure. The annular preventer will be tested by pressurization around drill pipe using water as a medium and subject to a minimum five minute low pressure (300 PSI maximum) test, and a minimum thirty minute high pressure (2,100 PSI minimum for 3M equipment, 3,500 PSI minimum for 5M equipment) test. Rams, valves, TIW, and choke components shall be tested using water as a medium and subject to a minimum five minute low pressure (300 PSI maximum) test, and a minimum thirty minute high pressure (2,400 PSI minimum for 3M equipment, 4,000 PSI minimum for 5M equipment) test. Each individual component must pass its respective test before drilling may commence. A successful test shall consist of less than a 10% bleed off after buildup over the entire duration of the low/high test period.

C ASSEMBLY INSTALLATION SCHEDULE

- During top hole operations a 11" 5,000 PSI API flanged casing head will be welded onto the top of the intermediate casing string (9-5/8") below grade and an 11" 3,000 PSI annular-type BOP will be used to KOP
- From curve to TD the following will be added to the flanged casing; 11" 5,000 PSI kill spool, 11" 5,000 PSI blind ram-type BOP, 11" 5,000 PSI pipe ram-type BOP, and 11" 5,000 PSI annular-type BOP 11" 5,000 PSI casing head.

RECEIVED
Office of Oil and Gas
DEC 07 2016
WV Department of
Environmental Protection

D PERSONNEL WITH WELL CONTROL TRAINING

Throughout operations, the following Northeast Natural Energy representatives shall have and maintain IADC well control certification:

- Jay Hewitt – Drilling Manager
- Ian Costello – Completions Engineer
- Ryan Warner – Production Engineer
- Any onsite consultant hired to oversee drilling or completions operations

E SYSTEM OF MAINTAINING DETAILED RECORDS

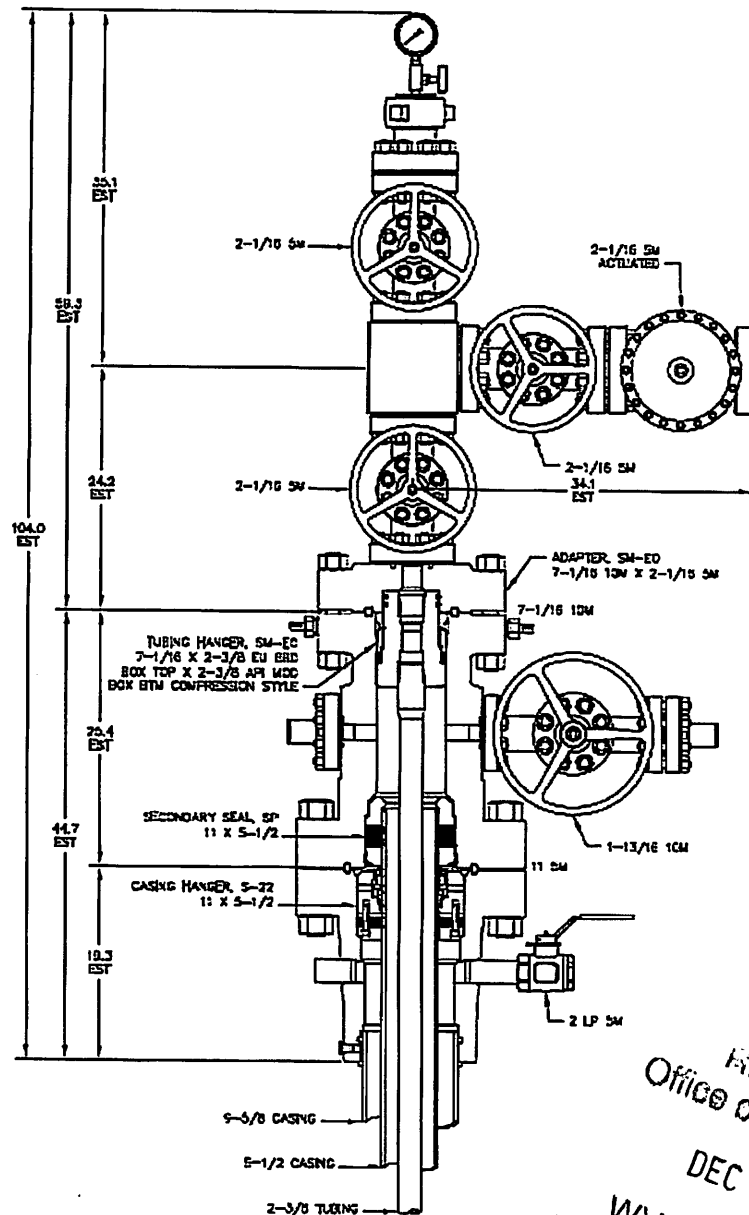
A detailed Driller's Log shall be maintained, including but not limited to, lost circulation, the presence of hydrogen sulfide gas, fluid entry, kicks, and abnormal pressures.

F NOTIFICATION OF THE OFFICE OF OIL AND GAS

The WV DEP Office of Oil and Gas will be immediately notified of the presence of hydrogen sulfide gas above 10 ppm, significant kicks, or blow-out events.

G WELL HEAD ASSEMBLY

A 5,000 PSI production tree will be placed upon the tubing spool after the drill out process. This unit will consist of, at a minimum and from bottom to top; one flanged 2-1/16" 5,000 PSI gated master valve, a studed three-way tee, a flanged 2-1/16" 5,000 PSI gated swab valve, and a 5,000 PSI flanged tree cap. The side outlet of the studed three-way tee shall include a flanged 2-1/16" 5,000 PSI gated wing valve. A schematic of the proposed wellhead and tree assembly is attached for reference.



RECEIVED
Office of Oil and Gas
DEC 07 2016
WV Department of
Environmental Protection

H WELL KILLING PROCEDURE

An oil-based synthetic drilling fluid will be utilized for the bottom and horizontal sections of the well. A total onsite volume of 1,600 Bbls (1.5 times the hole volume) will be maintained at 12.5 ppg. Enough weighting material, in the form of barite, will be kept onsite to increase the density of the entire volume of drilling mud by 1.0 ppg. This constitutes enough weighting material to initiate a 16 ppg slug, should a kick be encountered.

Dual-purpose paddle style mixing/reserve tanks will be used for the blending of mud additives and weighting material. A minimum of two units will be employed, with the final number based upon the drilling contractor selected.

The well will be drilled in an overbalanced manner to maintain control over formation fluids. Should a kick be detected, the well will be killed by either the IADC approved "Driller's Method" or "Wait and Weight" method. Bottomhole pressure will be calculated from SIDPP obtained post-kick, and the drilling fluid density will be increased by adding barite to the system and circulated throughout the wellbore when using the "Wait and Weight" method. After circulation with either method, the well will then be checked for flow, and if none is detected, then drilling operations will resume.

RECEIVED
Office of Oil and Gas
DEC 07 2016
WV Department of
Environmental Protection

12/09/2016

6

Hydrogen Sulfide ("H₂S")

A DETECTION, MONITORING AND WARNING EQUIPMENT

Based upon previous experience and history in the area, no H₂S is expected to be encountered during the drilling or completion activities of the Kassay 13H. As a means of additional protection, mud loggers will be utilized during the drilling process to monitor any gas stream from the well through the flowline during the bottom and horizontal sections. Additional portable detection equipment shall be available on or near potential sources of explosive or hydrogen sulfide gases on the pad throughout all operations. Monitoring equipment shall be calibrated by and in accordance with the supplying contractor's guidelines. Detection of either shall sound an alarm which notifies personnel to shut in the well(s) and evacuate to the predetermined safe zone immediately.

B H₂S TRAINING

A safe zone upwind and away from the well will be established at the beginning of each tour. Personnel are trained to evacuate the well and gather at this safe zone immediately at the first sound of an H₂S explosive gas alarm.

When in a historically known area, or after H₂S is first detected, operations will halt, evacuation procedures will be followed, and all personnel will be trained for detailed H₂S protocols before operations begin or resume.

C NOTIFYING THE OFFICE OF OIL AND GAS

In the event that H₂S is encountered, after all personnel have gathered in the safe zone, the onsite supervisor will take a head count, and then proper offsite notifications shall be made. The DEP Office of Oil and Gas will be notified by a phone call to both the local inspector and the emergency number.

D PROTECTION ZONES

A wind sock and/or flags will be utilized on location to identify wind direction, and a safe zone upwind and away from the well will be established at the beginning of each tour. Personnel are trained to evacuate the well and gather at this safe zone immediately at the first sound of an H₂S explosive gas alarm.

RECEIVED
Office of Oil and Gas
DEC 07 2016
WV Department of
Environmental Protection

E LIST OF PERSONAL PROTECTIVE EQUIPMENT ("PPE")

Since drilling in a historically known area to not contain H₂S through the intervals drilled, H₂S specific PPE will not be kept on site. Centralized H₂S alarms, and supplemental personal alarms, will be maintained and used throughout the drilling and completion process. Personnel on site will be notified to cease the current operation safely, shut-in all wells on the pad, and evacuate all personnel to the pre-determined safe zone at the first signal of H₂S from these alarms. It is at this time that NNE personnel would assess the hazards, and bring in H₂S specialists and PPE to mitigate the situation. Normal work would return to the pad after all personnel passed a specific H₂S training and were equipped with the proper PPE.

7

Flaring

A FLARING PLAN

Post frac, a system of 2" and 3" Figure 1502 integrated-hammer pup joints will be assembled from the wellhead to a 5,000 PSI plug catcher and choke manifold. The choke manifold shall consist of two parallel adjustable chokes to control the initial flow of the well. Using the same construction iron, from the choke manifold, flow will enter a high capacity temporary production unit. The liquid fraction from the well will be diverted to gas buster equipped frac- tanks on location. All or part of the gas fraction from the well will be diverted to a thirty foot flare stack approximately 150' downwind of the wellhead. Any gas not diverted to a flare line shall be diverted to sales.

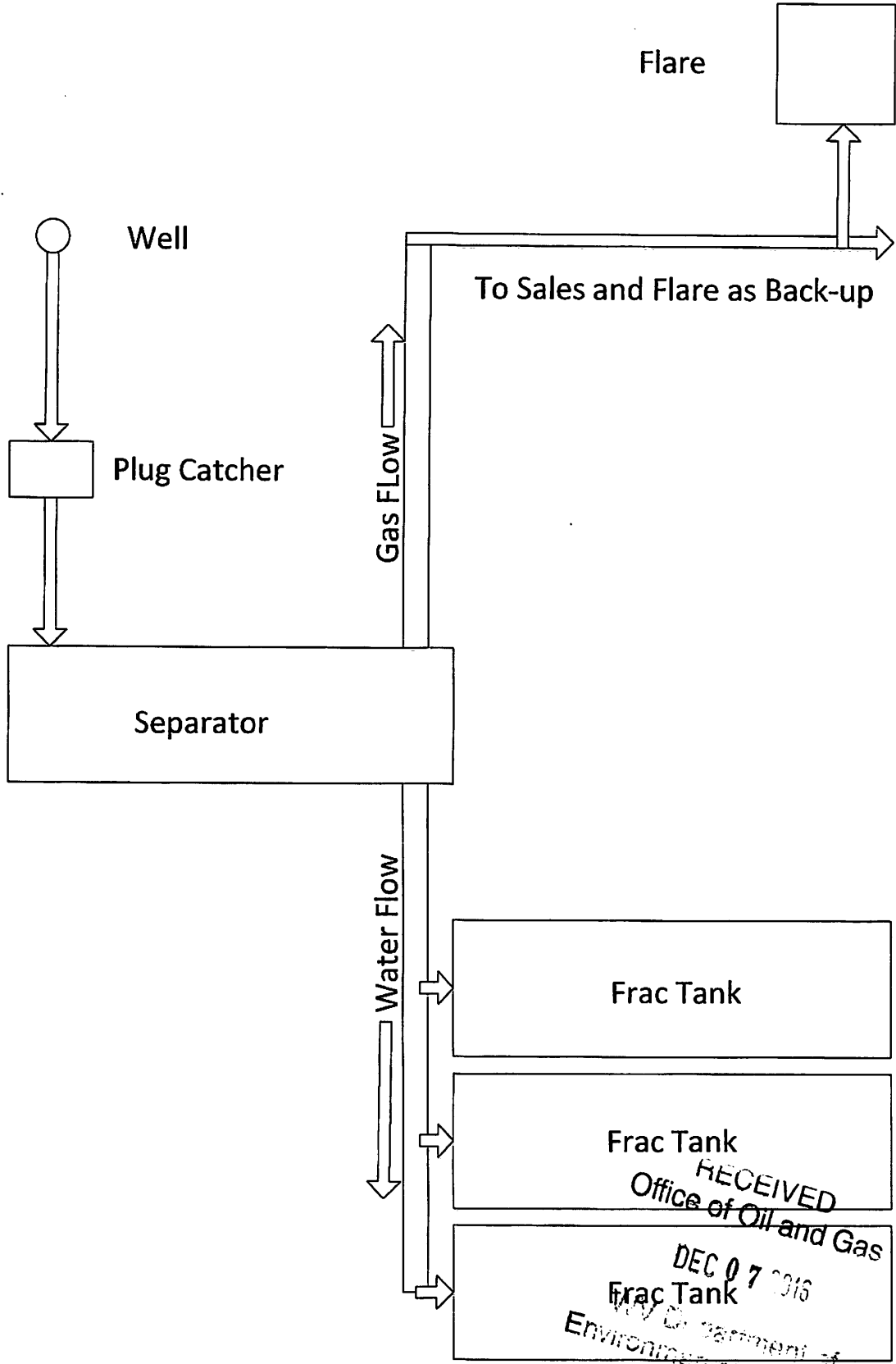
Iron pipe used in the flow/flare line assembly shall be banded at the joints with chain or steel cable. The flow/flare assembly shall be anchored in place by attachment to concrete blocks at vendor recommended intervals.

The flare stack will be equipped with an electronic ignition system, and a minimum of two backup ignition sticks will be kept on location at all times.

All gas diverted through the choke manifold shall either be burned through the flare stack or sent to sales. The local fire department will be given prior notice of the window in which gas flaring is to occur. They will also be notified immediately prior to lighting the flare, if possible, otherwise, as soon after lighting the flare as possible.

A 50' circumference shall be maintained around the flare stack which is to be kept free of flammable materials at all times prior to and during the flaring of any gas.

It is expected to flare the gas fraction of the well stream for a one week period.



8

Collision Avoidance Safeguards, Practices and Standards

Scope of Work:

To ensure that wells are drilled in a safe manner that mitigates the risk of underground collisions on multi-well pads. Key portions of work will be described including roles, responsibilities and steps taken when returning to pads with existing producing or stimulated wells.

Definitions:

- 1) Proposed Wellbore- Involves sections of the vertical top-hole, the KOP, the lateral landing, and the lateral drilling to the total measured depth (TMD).
- 2) Nudge- Technique generally used in the vertical top-hole section. The well path is nudged from vertical to pass areas of possible magnetic interferences and to reduce the risk of collision by maintaining separation with other wellbores.
- 3) KOP- Kick off Point. Diverting a well path from one trajectory to another
- 4) MWD- Measurement While Drilling
- 5) LWD- Logging While Drilling
- 6) EM - Electromagnetic Telemetry
- 7) SF- Separation Factor or Clearance Factor:

$$SF^* = CC \div [UR_{ref} + UR_{off}]$$

CC - Well separation distance (center to center of wellbores)
 UR_{ref} – radius ellipse of uncertainty on reference well
 UR_{off} – radius ellipse of uncertainty on offset well
 Note: ellipses are half-axes or radii.

*Calculation options may be considered
- 8) TMD- Total Measured Depth
- 9) Gyro – High accuracy well bore survey instrument unaffected by magnetic interference.
- 10) QC / QA – Quality Control and Quality Assurance
- 11) HSE – Health Safety and the Environment
- 12) UBHO Sub – Universal Bottom Hole Orientation Sub

Established descriptions of risk:

- | | | |
|--------------------|---------|--------------------------|
| 1) SF ≤ 1.0 | Level 1 | Extreme collision risk |
| 2) SF = 1.0 to 1.5 | Level 2 | High collision risk |
| 3) SF = 1.5 to 2.0 | Level 3 | Moderate collision risk |
| 4) SF > 2.0 | Level 4 | Low to no collision risk |

Well Planning:

Prior to drilling any well, a directional plan will be developed to ensure that the well is properly placed with consideration to permits, lease limitations and future drilling plans. The well will be planned to maintain a SF of ≥ 2.0 whenever possible. If a SF of <2.0 is encountered, additional risk mitigation steps may be required such as increased survey frequency, wellbore steering or installing downhole mechanical barriers.

Survey Protocol:

When drilling wells on a pad without producing or stimulated wells, surveys will be taken every 30' - 500' in the vertical portion of the wellbore depending on wellbore trajectory, hole walk and risk of collision.

When drilling wells on a pad with producing or stimulated wells, surveys will be taken every 30' - 250' in the vertical portion of the wellbore depending on wellbore trajectory, hole walk and risk of collision.

Tool Alignment Procedure:

Tool alignment is critical in eliminating wellbore collision risks. In all wells, north seeking gyro tools, MWD/EM tools and anti-collision processes are utilized to mitigate the risk of downhole collisions. All work groups responsible for the placement of the wellbore share responsibility in ensuring accuracy. The Company Representative, Directional Drilling Supervisor and Gyro Supervisor are all responsible for the alignment of the UBHO Sub and the motor to ensure that azimuthal directional is correct. All parties should visually verify the orientation of the shoe and agree upon a coordinate system and reference point. When possible, MWD tools will be used to minimize risk of incorrect orientation.

Directional Planning and Controls – Vertical Wellbore:**Drilling Without Stimulated Wellbores:**

When drilling on pads without producing or stimulated wells, all wells will be planned with a minimum SF ≥ 1.5 . Surveys will be taken at intervals of 500' to record the well path as it is drilled, but the frequency can be increased if needed. Drilling parameters should be held constant for the vertical portions of all wells to ensure the natural drilling path is similar for all wells on the pad. If two wells come within 10' of each other or a SF

of ≤ 1.5 is reached, each survey is monitored closely and anti-collision is run after each survey until the wells are clear of a collision risk.

Following the drilling of the vertical section of the wellbore, a gyro survey will be taken. Anti-collision software will be used to analyze this data to ensure safe wellbore spacing. Internally, the directional company will utilize their own software to monitor and model wellbores for collision risks; but, as a redundancy, NNE will utilize Hawkeye software to validate their results.

Drilling With Stimulated Wellbores:

If a rig is returning to a pad with producing or stimulated wellbores, additional steps are required to mitigate risks. Prior to commencing drilling, gyro data from existing wells is analyzed to determine normal hole walk. If a well does not have gyro data, a gyro survey will be run. Once all gyro data is gathered, a preliminary well path is planned to identify collision risks. That plan will be used to identify points of concern where additional risk mitigation steps are needed

NNE may choose to drill wells on a pad with active production; however, additional well path management practices will be employed. During this scenario, if two wells come within 14' or a SF ≤ 2.0 , each survey is monitored closely and anti-collision re-run after reach survey until the wells are clear of a potential collision. The Survey frequency can vary from 30'-250' depending on wellbore trajectory, hole walk and risk of collision.

Directional Planning and Controls – Curve and Lateral Wellbore:

While drilling the curve and lateral portions of the wellbores, MWD technology will be used to ensure the well path is drilled according to the drilling plan and the state permit. Azimuth, gamma ray and other data will be collected and transmitted to surface. The information will be analyzed by the Directional Drilling Contractor, Company Representative, Drilling Manager and Geologist to ensure the quality of the data and proper interpretation.

Gyro data and/or MWD/EM data will be evaluated in anti-collision software to monitor the path of the well being drilled in relationship to all adjacent wells to ensure an adequate SF is maintained during the vertical, curve and horizontal portions of the wellbore. Survey frequency is to be a minimum of 100' while MWD/EM tools are being utilized. Each survey is analyzed and certified as accurate by the directional company before it can be used for any modeling or directional planning.

Other Data:

Prior to drilling new wells on a pad, a site overview with the wellhead arrangement will be developed. Among the information that will be included is API number, surface footage separation and wellbore status. Additionally, all survey data for each existing well will be compiled for use in well planning.

Contingency Plans:

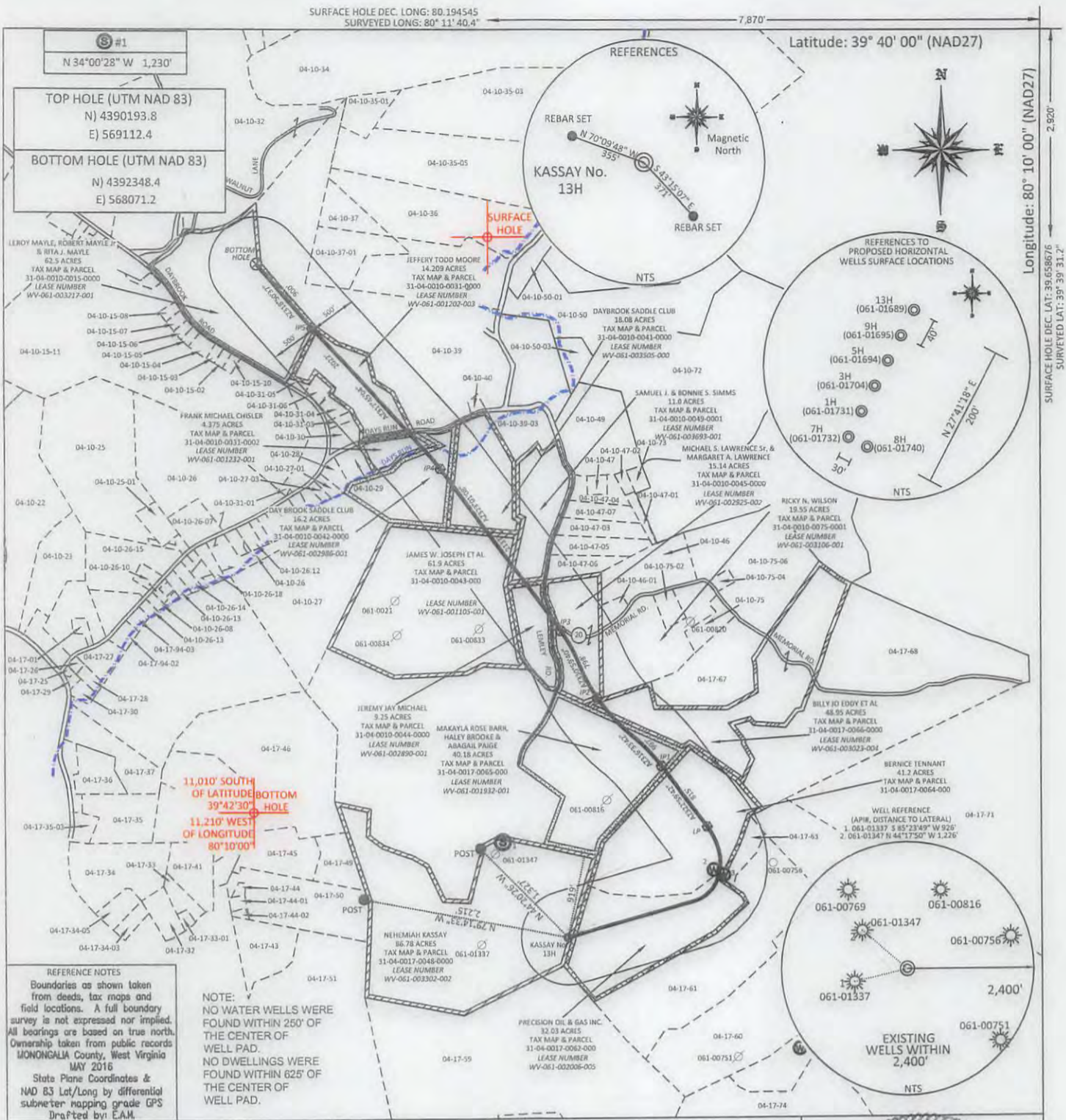
The wellbore being drilled will be monitored in relation to existing wellbores. Should the active well approach an existing well and the SF be < 1.5 , drilling will be suspended until risks are mitigated by adjusting the directional plan, increasing survey frequency and verifying any necessary mechanical barriers are present in the adjacent wells. If a SF ≤ 1 is experienced or two wellbores are within 5' of one another, the WV DEP Office of Oil and Gas Regional Inspector will be immediately contacted.

If the wellbore trajectories reach a point where a collision is unavoidable, NNE will properly secure each well and evaluate the most prudent path forward while openly communicating with the WV DEP Oil and Gas Regional Inspector.

Should a collision occur, the WV DEP Office of Oil and Gas Regional Inspector will be immediately contacted, drilling will be suspended and all existing wells will be monitored for integrity. If a loss of pressure control in any well is experienced, Wild Well Control, or another professional well control company, will be contracted for technical support and services. If there is not a loss of pressure control, a separate well work procedure will be developed to repair or plug and abandon the affected wells.

RECEIVED
Office of Oil and Gas
DEC 07 2016
WV Department of
Environmental Protection

12/09/2016



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 MONONGALIA County, West Virginia MAY 2016
 State Plane Coordinates & NAD 83 Lat/Long by differential submeter mapping grade GPS
 Drafted by: E.A.M.

NOTE:
 NO WATER WELLS WERE FOUND WITHIN 250' OF THE CENTER OF WELL PAD.
 NO DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF WELL PAD.

FILE #: NNE15
 DRAWING #: 2538
 SCALE: PLAT: 1" = 1500'
TICK: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/200
 PROVEN SOURCE SUBMETER MAPPING OF ELEVATION: 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: [Signature]
 L.L.S. #2124 : Ernest J. Benchek III



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

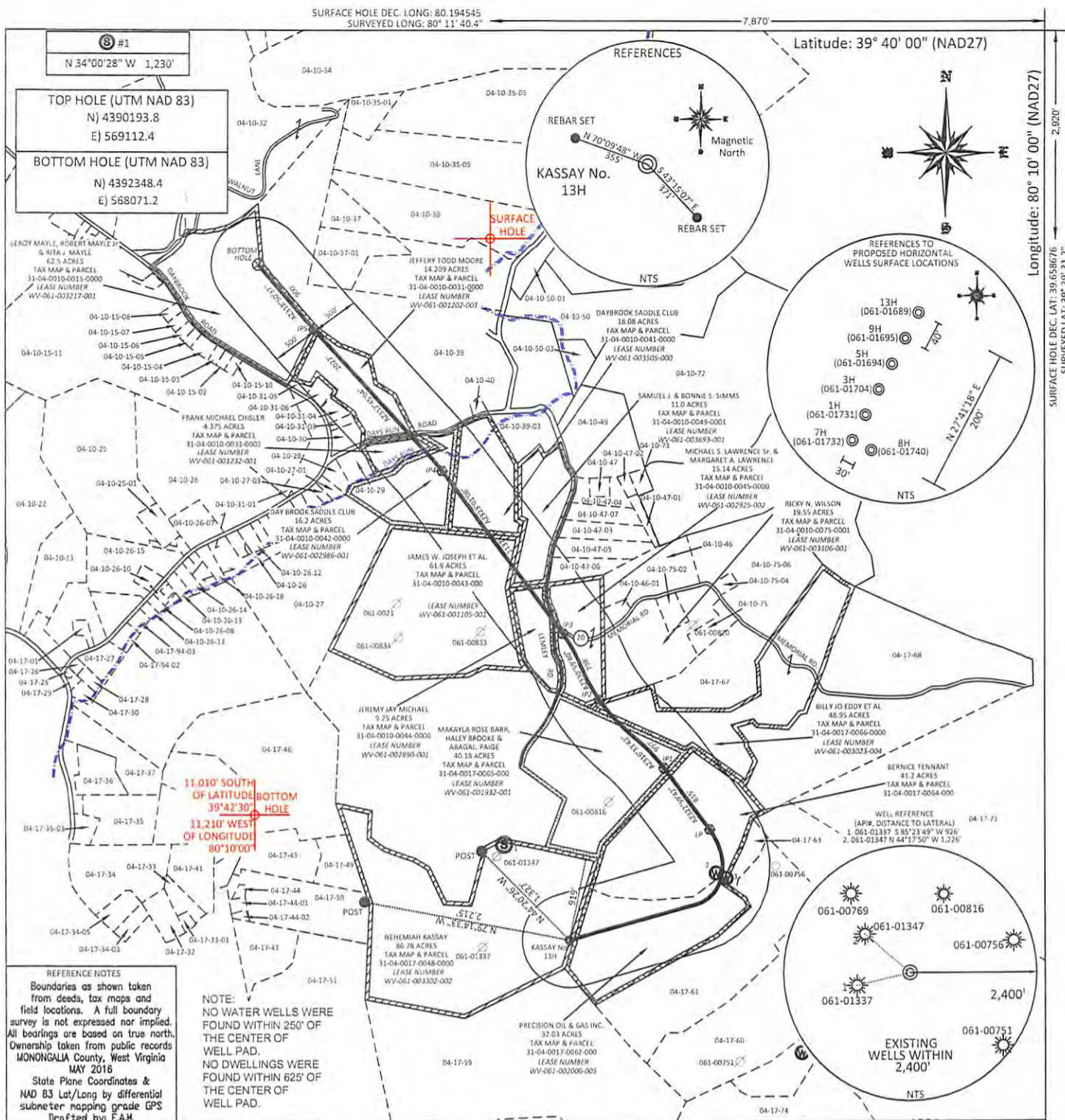
Well Type: Oil Waste Diposal Production Deep
 Gas Liquid Injection Storage Shallow

WATERSHED: DUNKARD CREEK AS-BUILT ELEVATION: 1,534.5'
 COUNTY/DISTRICT: MONONGALIA / CLAY QUADRANGLE: BLACKSVILLE
 SURFACE OWNER: NEHEMIAH KASSAY ACREAGE: 86.78 +/-
 OIL & GAS ROYALTY OWNER: _____ ACREAGE: 457.419 +/- **12/09/2016**
 LEASE NUMBERS: _____

DATE: DECEMBER 2, 2016
 OPERATOR'S WELL #: KASSAY NO. 13H
 API WELL #: 47 61 01689 H6A
 STATE COUNTY PERMIT MDP.

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: 8,288.5' TMD: 17,274.74'
 WELL OPERATOR: NORTHEAST NATURAL ENERGY LLC DESIGNATED AGENT: JOHN ADAMS
 ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200 ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200
 CITY: CHARLESTON STATE: WV ZIP CODE: 25301 CITY: CHARLESTON STATE: WV ZIP CODE: 25301



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 MONONGALIA County, West Virginia MAY 2016
 State Plane Coordinates & NAD 83 Lat/Long by differential submeter mapping grade GPS
 Drafted by: E.A.M.

NOTE:
 NO WATER WELLS WERE FOUND WITHIN 250' OF THE CENTER OF WELL PAD.
 NO DWELLINGS WERE FOUND WITHIN 625' OF THE CENTER OF WELL PAD.

FILE #: NNE15
 DRAWING #: 2538
 SCALE: PLAT: 1" = 1500'
 TICK: 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: [Signature]
 L.L.S. #2124 : Ernest J. Benchek III



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

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

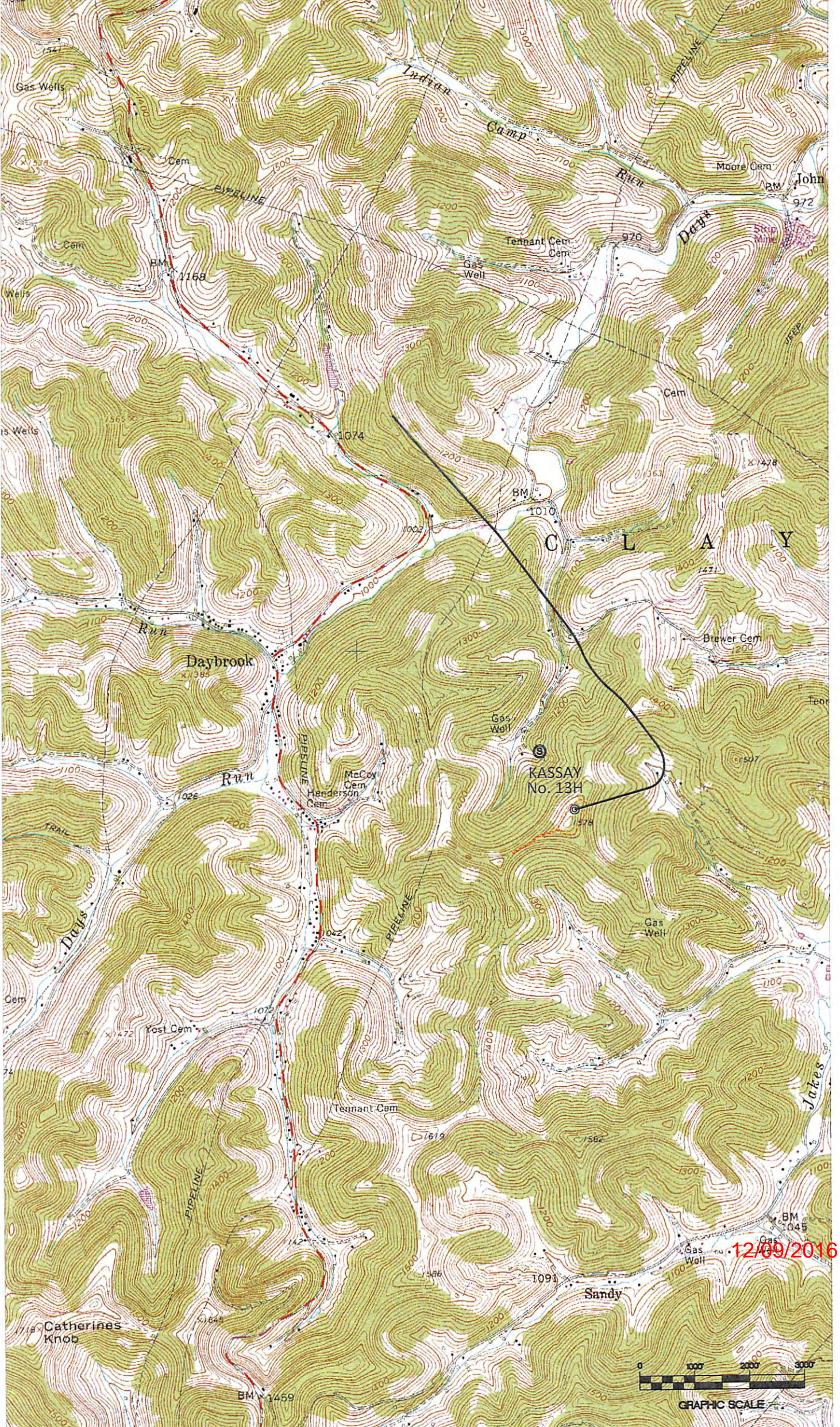
WATERSHED: DUNKARD CREEK AS-BUILT ELEVATION: 1,534.5'
 COUNTY/DISTRICT: MONONGALIA / CLAY QUADRANGLE: BLACKSVILLE
 SURFACE OWNER: NEHEMIAH KASSAY ACREAGE: 86.78 +/-
 OIL & GAS ROYALTY OWNER: _____ ACREAGE: 457.419 +/- 12/09/2016
 LEASE NUMBERS: _____

DATE: DECEMBER 2, 2016
 OPERATOR'S WELL #: KASSAY NO. 13H
 API WELL #: 47 61 01689 H6A
 STATE COUNTY PERMIT WV

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: 8,288.5' TMD: 17,274.74'
 WELL OPERATOR: NORTHEAST NATURAL ENERGY LLC DESIGNATED AGENT: JOHN ADAMS
 ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200 ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200
 CITY: CHARLESTON STATE: WV ZIP CODE: 25301 CITY: CHARLESTON STATE: WV ZIP CODE: 25301

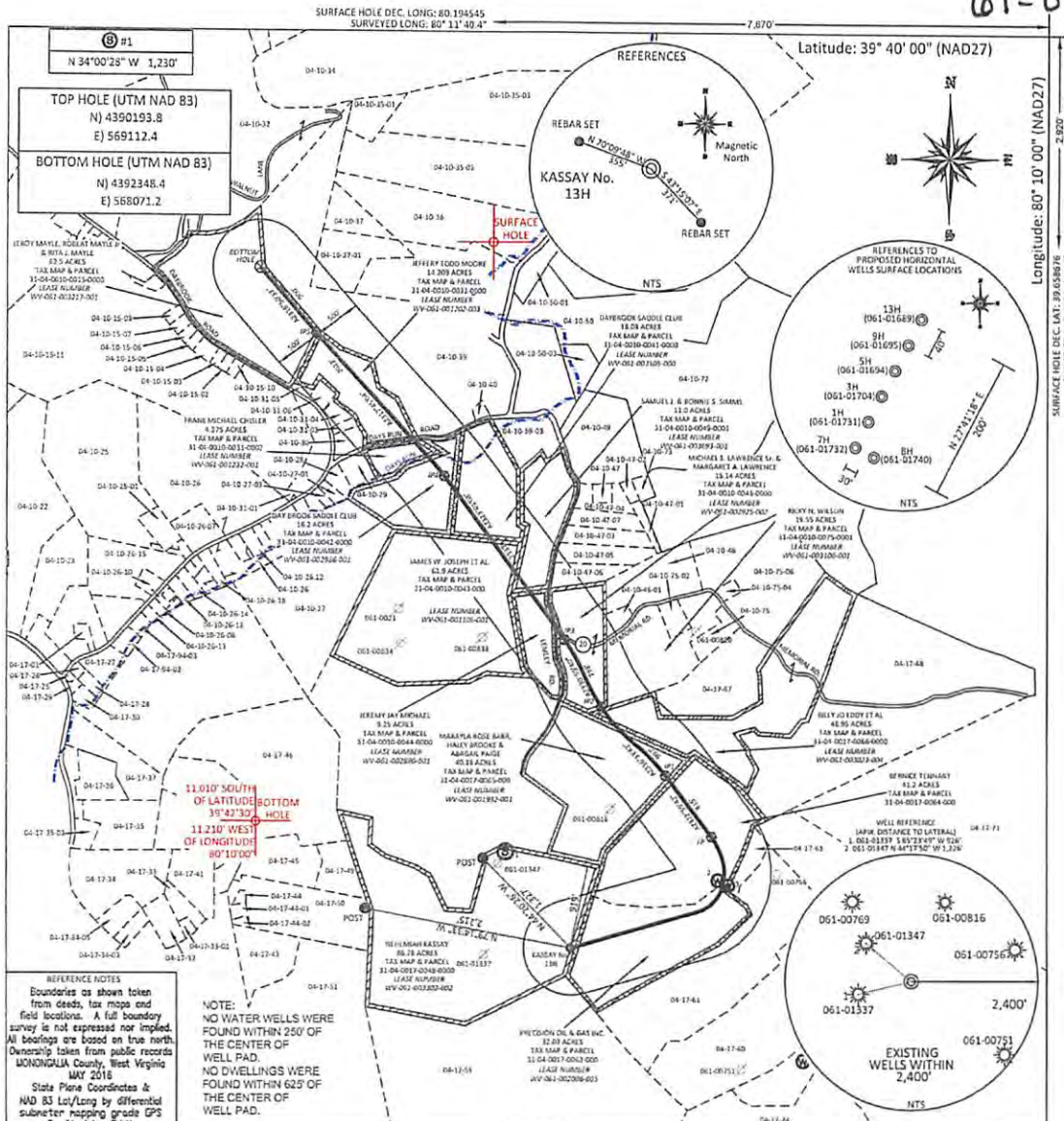
WELL NAME: KASSAY No. 13H
QUAD: BLACKSVILLE, WV



12/09/2016

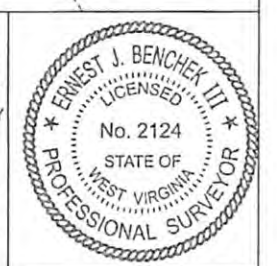


61-01689 MDD



FILE #: NNE15
 DRAWING #: 2538
 SCALE: PLAT: 1" = 1500'
 TIE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/200
 PROVEN SOURCE OF ELEVATION: SUBMETER MAPPING GRADE GPS

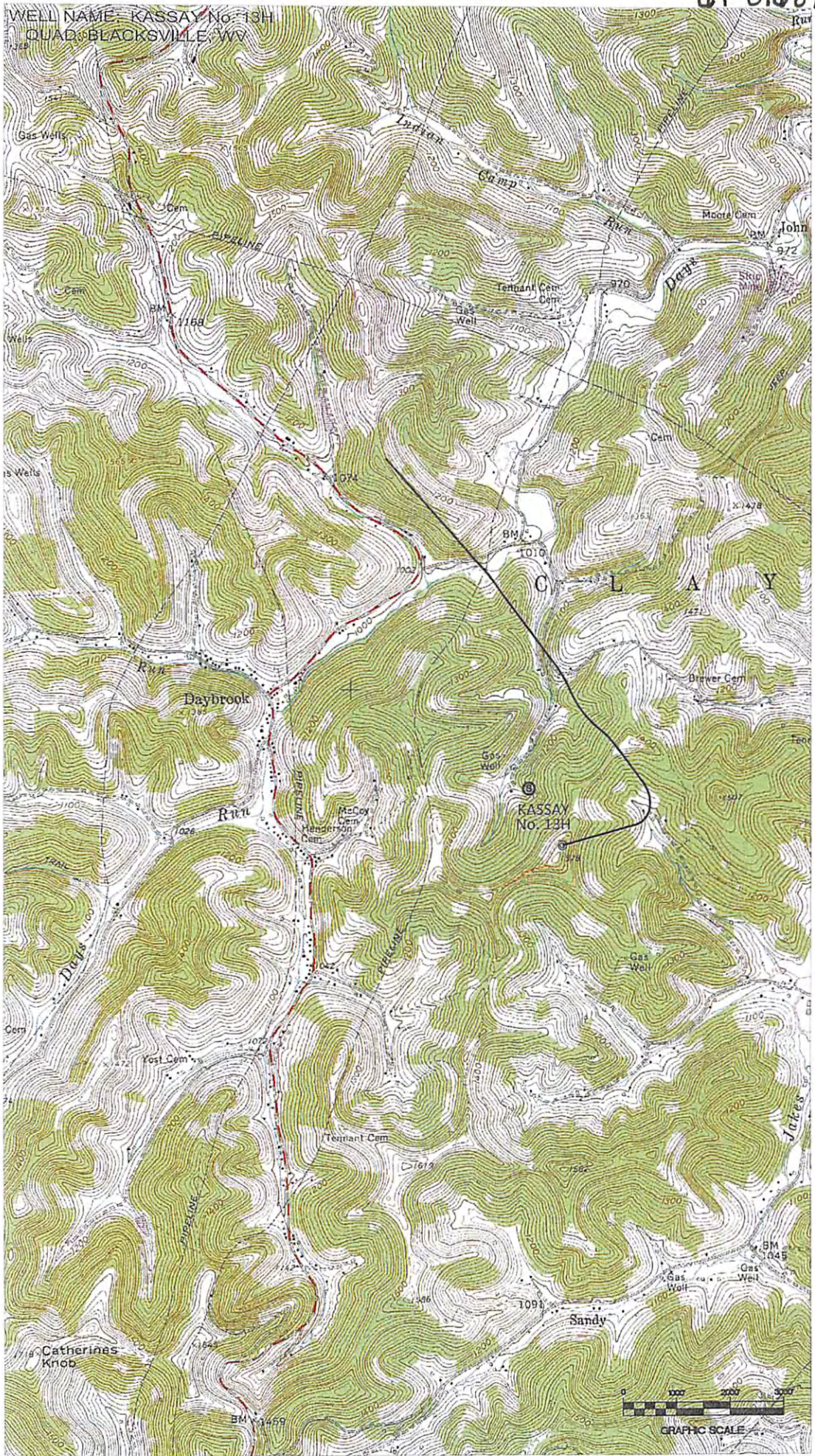
I, THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.
 Signed: [Signature]
 L.L.S. #2124: Ernest J. Benchek III



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 WVDEP
 OFFICE OF OIL & GAS
 601 57TH STREET
 CHARLESTON, WV 25304
 Well Type: Oil Waste Dipsal Production Deep
 Gas Liquid Injection Storage Shallow
 WATERSHED: DUNKARD CREEK AS-BUILT ELEVATION: 1,534.5'
 COUNTY/DISTRICT: MONONGALIA / CLAY QUADRANGLE: BLACKSVILLE
 SURFACE OWNER: NEHEMIAH KASSAY ACREAGE: 86.78 +/-
 OIL & GAS ROYALTY OWNER: _____ ACREAGE: 457.419 +/-
 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: 8,288.5' TMD: 17,274.74'
 WELL OPERATOR: NORTHEAST NATURAL ENERGY LLC DESIGNATED AGENT: JOHN ADAMS
 ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200 ADDRESS: 707 VIRGINIA STREET EAST, SUITE 1200
 CITY: CHARLESTON STATE: WV ZIP CODE: 25301 CITY: CHARLESTON STATE: WV ZIP CODE: 25301

12/09/2016

WELL NAME: KASSAY No. 13H
QUAD: BLACKSVILLE, WV



WW-6A1
(5/13)

Operator's Well No. Kassay 13H

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE
Chapter 22, Article 6A, Section 5(a)(5)
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

| Lease Name or Number | Grantor, Lessor, etc. | Grantee, Lessee, etc. | Royalty | Book/Page |
|----------------------|-----------------------|-----------------------|----------------|----------------|
| See Attachment | See Attachment | See Attachment | See Attachment | See Attachment |

**Acknowledgement of Possible Permitting/Approval
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: Northeast Natural Energy LLC
 By: Hollie Medley *Hollie Medley*
 Its: Regulatory Coordinator

WW-6A1

Operator's Well No.

Kassay 13H

| NNE Lease No. | Grantor, Lessor, etc. | Grantee, Lessee, etc. | Royalty | Book/Page | Tax Map & Parcel |
|-------------------|-------------------------------|------------------------------|-----------------|-----------|------------------|
| WV-061-003302-002 | KASSAY, NEHEMIAH AND PATTY A. | Northeast Natural Energy LLC | .125 or greater | 1506/143 | 17-48 |
| WV-061-001109-000 | SHUMAN, INC. | *Chesapeake Appalachia, LLC | .125 or greater | 1439/243 | 17-48 |
| WV-061-002006-005 | TENNANT, RAYMER | *Chesapeake Appalachia, LLC | .125 or greater | 1396/635 | 17-62,64 |
| WV-061-002006-006 | WILLIAMS, FREDDY W. | *Chesapeake Appalachia, LLC | .125 or greater | 1398/282 | 17-62,64 |
| WV-061-002006-007 | SINE, JR., EVERETT A | *Chesapeake Appalachia, LLC | .125 or greater | 1398/285 | 17-62,64 |
| WV-061-002006-008 | SINE, LYALL A. | *Chesapeake Appalachia, LLC | .125 or greater | 1399/599 | 17-62,64 |
| WV-061-002006-009 | WILLIAMS, NOLA M. | *Chesapeake Appalachia, LLC | .125 or greater | 1399/602 | 17-62,64 |
| WV-061-002006-010 | GALLAGHER, CHERYL LISABETH | *Chesapeake Appalachia, LLC | .125 or greater | 1398/519 | 17-62,64 |
| WV-061-002006-011 | WILLIAMS, W. RICHARD | *Chesapeake Appalachia, LLC | .125 or greater | 1398/522 | 17-62,64 |
| WV-061-002006-012 | SINE, BETTY L | *Chesapeake Appalachia, LLC | .125 or greater | 1399/605 | 17-62,64 |
| WV-061-002006-013 | BRUMMAGE, KIMBERLY SUE | *Chesapeake Appalachia, LLC | .125 or greater | 1399/608 | 17-62,64 |
| WV-061-002006-014 | SINE, DORIS L. | *Chesapeake Appalachia, LLC | .125 or greater | 1404/286 | 17-62,64 |
| WV-061-002006-015 | MCAFFEE, MABEL L | *Chesapeake Appalachia, LLC | .125 or greater | 1399/611 | 17-62,64 |
| WV-061-002006-016 | VAN TASSELL, PATRICIA | *Chesapeake Appalachia, LLC | .125 or greater | 1418/729 | 17-62,64 |
| WV-061-002006-017 | FRICKLETON, CELESTE M. | *Chesapeake Appalachia, LLC | .125 or greater | 1399/614 | 17-62,64 |
| WV-061-002006-018 | MOORE, VARNER L | *Chesapeake Appalachia, LLC | .125 or greater | 1401/082 | 17-62,64 |
| WV-061-002006-019 | TANNER, RITA J. | *Chesapeake Appalachia, LLC | .125 or greater | 1404/289 | 17-62,64 |
| WV-061-002006-020 | WILSON, DELILAH M. | *Chesapeake Appalachia, LLC | .125 or greater | 1404/292 | 17-62,64 |
| WV-061-002006-021 | WOODRUFF, ELLEN J. | *Chesapeake Appalachia, LLC | .125 or greater | 1404/295 | 17-62,64 |
| WV-061-002006-022 | CHURCH, GAIL | *Chesapeake Appalachia, LLC | .125 or greater | 1401/085 | 17-62,64 |
| WV-061-002006-023 | SINE, LARRY K. | *Chesapeake Appalachia, LLC | .125 or greater | 1404/298 | 17-62,64 |
| WV-061-002006-024 | STRICKLAND, SUE ANN | *Chesapeake Appalachia, LLC | .125 or greater | 1404/301 | 17-62,64 |
| WV-061-002006-025 | WILLIAMS, DONALD REX | *Chesapeake Appalachia, LLC | .125 or greater | 1401/090 | 17-62,64 |
| WV-061-002006-026 | WISE, CAROL I. | *Chesapeake Appalachia, LLC | .125 or greater | 1403/127 | 17-62,64 |
| WV-061-002006-027 | MOORE, LEONARD D. | *Chesapeake Appalachia, LLC | .125 or greater | 1403/130 | 17-62,64 |
| WV-061-002006-028 | WILSON, SANDRA FAYE | *Chesapeake Appalachia, LLC | .125 or greater | 1405/232 | 17-62,64 |
| WV-061-002006-029 | HOSTUTLER, PATRICIA ANN | *Chesapeake Appalachia, LLC | .125 or greater | 1404/304 | 17-62,64 |
| WV-061-002006-030 | HALL, PAMELA RENA | *Chesapeake Appalachia, LLC | .125 or greater | 1405/877 | 17-62,64 |
| WV-061-002006-031 | TENNANT, LEONARD L | *Chesapeake Appalachia, LLC | .125 or greater | 1405/880 | 17-62,64 |
| WV-061-002006-032 | SINE, DONALD R. | *Chesapeake Appalachia, LLC | .125 or greater | 1410/572 | 17-62,64 |
| WV-061-002038-001 | MORRIS, PEGGY A. | *Chesapeake Appalachia, LLC | .125 or greater | 1410/569 | 17-62,64 |
| WV-061-002371-001 | MCCULLOUGH, MARY R. | *Chesapeake Appalachia, LLC | .125 or greater | 1421/402 | 17-62,64 |
| WV-061-002371-002 | LIMING, MARY | *Chesapeake Appalachia, LLC | .125 or greater | 1421/373 | 17-62,64 |
| WV-061-002371-003 | BUCHANAN, RICKEY JANE | *Chesapeake Appalachia, LLC | .125 or greater | 1425/367 | 17-62,64 |
| WV-061-002371-004 | VEDIS, KRISTIE VIRGIE | *Chesapeake Appalachia, LLC | .125 or greater | 1425/327 | 17-62,64 |
| WV-061-002371-005 | CAIN, KAREN M. | *Chesapeake Appalachia, LLC | .125 or greater | 1425/283 | 17-62,64 |
| WV-061-002371-006 | CHASE, DONNA LYNN | *Chesapeake Appalachia, LLC | .125 or greater | 1425/200 | 17-62,64 |
| WV-061-002371-007 | TENNANT, RICHARD | *Chesapeake Appalachia, LLC | .125 or greater | 1425/462 | 17-62,64 |
| WV-061-002371-008 | TENNANT, LARRY | *Chesapeake Appalachia, LLC | .125 or greater | 1425/432 | 17-62,64 |
| WV-061-002371-009 | FLUHARTY, LORETTA | *Chesapeake Appalachia, LLC | .125 or greater | 1425/408 | 17-62,64 |
| WV-061-002371-010 | PARSONS, EMZA M. | *Chesapeake Appalachia, LLC | .125 or greater | 1426/130 | 17-62,64 |
| WV-061-002371-011 | YURISKO, PAMELA J. | *Chesapeake Appalachia, LLC | .125 or greater | 1427/121 | 17-62,64 |

WW-6A1

Operator's Well No.

Kassay 13H

| NNE Lease No. | Grantor, Lessor, etc. | Grantee, Lessee, etc. | Royalty | Book/Page | Tax Map & Parcel |
|-------------------|------------------------------------|------------------------------|-----------------|-----------|-----------------------|
| WV-061-002371-012 | SINE, MYRTLE L. | *Chesapeake Appalachia, LLC | .125 or greater | 1426/122 | 17-62,64 |
| WV-061-002371-013 | COOK, JR., WALDEN J. | *Chesapeake Appalachia, LLC | .125 or greater | 1427/591 | 17-62,64 |
| WV-061-002371-014 | WISE, ALICE | *Chesapeake Appalachia, LLC | .125 or greater | 1427/171 | 17-62,64 |
| WV-061-002371-015 | HINDS SNOPPS, TWYLA | *Chesapeake Appalachia, LLC | .125 or greater | 1428/185 | 17-62,64 |
| WV-061-002371-016 | FOLEY, REBECCA GAIL | *Chesapeake Appalachia, LLC | .125 or greater | 1427/186 | 17-62,64 |
| WV-061-002371-017 | SINE, C.W. | *Chesapeake Appalachia, LLC | .125 or greater | 1427/369 | 17-62,64 |
| WV-061-002371-018 | WILSON, SANDRA FAYE AND WILSON L. | *Chesapeake Appalachia, LLC | .125 or greater | 1428/740 | 17-62,64 |
| WV-061-002371-019 | ESTLE, GINGER K. | *Chesapeake Appalachia, LLC | .125 or greater | 1438/661 | 17-62,64 |
| WV-061-002371-020 | FLUHARTY, TINA L. AND RICHARD A. | *Chesapeake Appalachia, LLC | .125 or greater | 1438/627 | 17-62,64 |
| WV-061-002371-021 | TROUTMAN, LYDIA L. | *Chesapeake Appalachia, LLC | .125 or greater | 1438/643 | 17-62,64 |
| WV-061-002371-022 | JOHNSON, MICHELLE DAWN AND ERIC B. | *Chesapeake Appalachia, LLC | .125 or greater | 1439/180 | 17-62,64 |
| WV-061-002371-023 | SINE, DONALD R. AND IRMA | *Chesapeake Appalachia, LLC | .125 or greater | 1438/671 | 17-62,64 |
| WV-061-002371-024 | THOMAS, DIANE BETH AND CURTIS L. | *Chesapeake Appalachia, LLC | .125 or greater | 1442/573 | 17-62,64 |
| WV-061-002371-025 | TENNANT, TROY L. AND ANNA L. | *Chesapeake Appalachia, LLC | .125 or greater | 1442/541 | 17-62,64 |
| WV-061-002371-026 | EDDY, DARLENE S. | *Chesapeake Appalachia, LLC | .125 or greater | 1445/158 | 17-62,64 |
| WV-061-002371-027 | VARNER, PAUL | *Chesapeake Appalachia, LLC | .125 or greater | 1454/100 | 17-62,64 |
| WV-061-002371-028 | VARNER, SR., STEVE AND TINA | *Chesapeake Appalachia, LLC | .125 or greater | 1454/285 | 17-62,64 |
| WV-061-002371-029 | VARNER, LOUISE | *Chesapeake Appalachia, LLC | .125 or greater | 1454/095 | 17-62,64 |
| WV-061-002371-030 | VARNER, MARK | *Chesapeake Appalachia, LLC | .125 or greater | 1454/090 | 17-62,64 |
| WV-061-002371-031 | BARBER, ALMEADA J. | *Chesapeake Appalachia, LLC | .125 or greater | 1454/085 | 17-62,64 |
| WV-061-002371-032 | VARNER, JODY L. | *Chesapeake Appalachia, LLC | .125 or greater | 1454/338 | 17-62,64 |
| WV-061-002371-033 | VAN FOSSEN, RUBY E. | *Chesapeake Appalachia, LLC | .125 or greater | 1454/080 | 17-62,64 |
| WV-061-002371-034 | BROWN, PAMELA AND CARL | *Chesapeake Appalachia, LLC | .125 or greater | 1454/075 | 17-62,64 |
| WV-061-002371-035 | SIMERAL, TAMELA R. AND JERRY | *Chesapeake Appalachia, LLC | .125 or greater | 1454/070 | 17-62,64 |
| WV-061-002371-036 | WILLIAMS, JAROD TYLER | *Chesapeake Appalachia, LLC | .125 or greater | 1454/066 | 17-62,64 |
| WV-061-002371-037 | SUDDUTH, DEBORA AND SAMUEL | *Chesapeake Appalachia, LLC | .125 or greater | 1454/343 | 17-62,64 |
| WV-061-002371-038 | VARNER, JAMES | *Chesapeake Appalachia, LLC | .125 or greater | 1454/370 | 17-62,64 |
| WV-061-002371-039 | VARNER, JANET | *Chesapeake Appalachia, LLC | .125 or greater | 1454/365 | 17-62,64 |
| WV-061-002371-040 | VARNER, CONNIE | *Chesapeake Appalachia, LLC | .125 or greater | 1454/784 | 17-62,64 |
| WV-061-002371-041 | VARNER, ROBERT | *Chesapeake Appalachia, LLC | .125 or greater | 1454/779 | 17-62,64 |
| WV-061-002371-042 | MCCAMMON, LISA AND WILLIAM | *Chesapeake Appalachia, LLC | .125 or greater | 1454/821 | 17-62,64 |
| WV-061-002371-043 | LYONS, BETTY C. | *Chesapeake Appalachia, LLC | .125 or greater | 1462/541 | 17-62,64 |
| WV-061-002371-044 | EDDY, TOMMY J. AND CAROL A. | Northeast Natural Energy LLC | .125 or greater | 1517/96 | 17-62,64 |
| WV-061-002371-045 | YURISKO, PAMELA J. | Northeast Natural Energy LLC | .125 or greater | 1521/732 | 17-62,64 |
| WV-061-002371-046 | TENNANT, RICHARD DEE AND ONEIDA P. | Northeast Natural Energy LLC | .125 or greater | 1524/265 | 17-62,64 |
| WV-061-002371-047 | LARRY BLAINE TENNANT ESTATE | Northeast Natural Energy LLC | .125 or greater | 1524/774 | 17-62,64 |
| WV-061-002371-048 | FLUHARTY, LORETTA | Northeast Natural Energy LLC | .125 or greater | 1524/780 | 17-62,64 |
| WV-061-002371-049 | BUCHANAN, RICKEY JANE | Northeast Natural Energy LLC | .125 or greater | 1526/132 | 17-62,64 |
| WV-061-002371-050 | WISE, ALICE | Northeast Natural Energy LLC | .125 or greater | 1526/134 | 17-62,64 |
| WV-061-002371-051 | PARSONS, EMZA | Northeast Natural Energy LLC | .125 or greater | 1530/21 | 17-62,64 |
| WV-061-002389-001 | JOSEPH, ALMA M. | *Chesapeake Appalachia, LLC | .125 or greater | 1435/165 | 17-62,64; 10-43,44 |
| WV-061-002392-001 | CLEVENGER, ARDELLA J. | *Chesapeake Appalachia, LLC | .125 or greater | 1435/178 | 17-62,64; 10-44 |

WW-6A1

Operator's Well No.

Kassay 13H

| NNE Lease No. | Grantor, Lessor, etc. | Grantee, Lessee, etc. | Royalty | Book/Page | Tax Map & Parcel |
|-------------------|------------------------------------|------------------------------|-----------------|-----------|--------------------|
| WV-061-002392-002 | CUMMINGS, HELEN | *Chesapeake Appalachia, LLC | .125 or greater | 1435/156 | 17-62,64; 10-44 |
| WV-061-002401-001 | PEMBERTON, MARY J. | *Chesapeake Appalachia, LLC | .125 or greater | 1441/724 | 17-62,64 |
| WV-061-002401-003 | STRAHLER, REBECCA LYNNE | *Chesapeake Appalachia, LLC | .125 or greater | 1441/008 | 17-62,64 |
| WV-061-002401-004 | WILLIAMS, JAMES EVERETT AND LISA | *Chesapeake Appalachia, LLC | .125 or greater | 1441/020 | 17-62,64 |
| WV-061-002401-005 | TAYLOR, KAREN J | *Chesapeake Appalachia, LLC | .125 or greater | 1440/691 | 17-62,64 |
| WV-061-002401-006 | BERGA, JOYCE ANN AND RONAL | *Chesapeake Appalachia, LLC | .125 or greater | 1440/686 | 17-62,64 |
| WV-061-002401-007 | WILLIAMS, DENNIS KEITH | *Chesapeake Appalachia, LLC | .125 or greater | 1443/436 | 17-62,64 |
| WV-061-002401-008 | MICHAEL, SUSAN L. AND CHESTER L. | *Chesapeake Appalachia, LLC | .125 or greater | 1440/680 | 17-62,64 |
| WV-061-003542-001 | MOORE, VELDA E. | Northeast Natural Energy LLC | .125 or greater | 1526/104 | 17-62,64 |
| WV-061-003542-002 | BAILEY, REBECCA H. | Northeast Natural Energy LLC | .125 or greater | 1523/694 | 17-62,64 |
| WV-061-003542-003 | ROBERTSON, LOIS R. AND KENNETH A. | Northeast Natural Energy LLC | .125 or greater | 1530/224 | 17-62,64 |
| WV-061-003542-004 | EARL, SHARON G. AND MICHAEL P. | Northeast Natural Energy LLC | .125 or greater | 1530/756 | 17-62,64 |
| WV-061-003023-001 | EDDY, ORA C. | *Chesapeake Appalachia, LLC | .125 or greater | 1427/622 | 17-66 |
| WV-061-003023-002 | ROUPE, LARRY L. | *Chesapeake Appalachia, LLC | .125 or greater | 1428/895 | 17-66 |
| WV-061-003023-003 | WOOD, NINA J. | *Chesapeake Appalachia, LLC | .125 or greater | 1431/415 | 17-66 |
| WV-061-003023-004 | EDDY, BILLY JOE AND JANET | *Chesapeake Appalachia, LLC | .125 or greater | 1428/845 | 17-66 |
| WV-061-003023-005 | EDDY, DENZIL FAYE AND ROSE MARY | *Chesapeake Appalachia, LLC | .125 or greater | 1429/323 | 17-66 |
| WV-061-003023-006 | HARRIS, JULIA MARCIA | *Chesapeake Appalachia, LLC | .125 or greater | 1430/357 | 17-66 |
| WV-061-003023-007 | PHILLIPS, REBECCA AND ED | *Chesapeake Appalachia, LLC | .125 or greater | 1430/321 | 17-66 |
| WV-061-003023-008 | POLANSKY, EMELIA B. | *Chesapeake Appalachia, LLC | .125 or greater | 1430/337 | 17-66 |
| WV-061-003023-009 | WHITE, TERRY D. AND SHIRLEY | *Chesapeake Appalachia, LLC | .125 or greater | 1430/367 | 17-66 |
| WV-061-003023-010 | WRIGHT, LENA ANN | *Chesapeake Appalachia, LLC | .125 or greater | 1434/133 | 17-66 |
| WV-061-003023-011 | EDDY, MELVIN LUTHER AND VADA DAY | *Chesapeake Appalachia, LLC | .125 or greater | 1436/446 | 17-66 |
| WV-061-003023-012 | LIPSCOMB, JUDY AND LARRY | *Chesapeake Appalachia, LLC | .125 or greater | 1431/267 | 17-66 |
| WV-061-003023-013 | LEMMON, DONNA EILEEN AND WILLIAM | *Chesapeake Appalachia, LLC | .125 or greater | 1439/316 | 17-66 |
| WV-061-003023-014 | EDDY, BILLY JOE AND JANET | Northeast Natural Energy LLC | .125 or greater | 1518/25 | 17-66 |
| WV-061-003023-015 | EDDY, DENZIL FAYE AND ROSE MARY | Northeast Natural Energy LLC | .125 or greater | 1517/374 | 17-66 |
| WV-061-003023-016 | EDDY, ORA C. AND VANESSA | Northeast Natural Energy LLC | .125 or greater | 1517/0387 | 17-66 |
| WV-061-003023-017 | WRIGHT, LENA ANN | Northeast Natural Energy LLC | .125 or greater | 1521/728 | 17-66 |
| WV-061-003023-018 | POLANSKY, EMELIA B. | Northeast Natural Energy LLC | .125 or greater | 1521/692 | 17-66 |
| WV-061-003023-019 | EDDY, MELVIN LUTHER AND KAY | Northeast Natural Energy LLC | .125 or greater | 1534/118 | 17-66 |
| WV-061-002925-002 | MICHAEL, JR., LAWRENCE C. | Northeast Natural Energy LLC | .125 or greater | 1535/845 | 10-45 |
| WV-061-003693-001 | BROOKOVER, CARMEL G. | Northeast Natural Energy LLC | .125 or greater | 1535/847 | 10-49.1 |
| WV-061-003505-000 | THE DAYBROOK SADDLE CLUB | Northeast Natural Energy LLC | .125 or greater | 1523/492 | 10-41 |
| WV-061-003211-001 | THE CHARLES LEE THOMAS TRUST | *Chesapeake Appalachia, LLC | .125 or greater | 1451/82 | 10-32 |
| WV-061-002915-001 | CHISLER, MARK T. AND RITA | *West Augusta Resources, LLC | .125 or greater | 1506/414 | 10-32 |
| WV-061-003247-001 | THOMAS, JAMES H. | *Chesapeake Appalachia, LLC | .125 or greater | 1451/087 | 10-32 |
| WV-061-003247-005 | HAWKINS, DONALD L. AND BONNIE K. | Northeast Natural Energy LLC | .125 or greater | 1532/612 | 10-32 |
| WV-061-003208-001 | KUNKLE, CHARLES | *Chesapeake Appalachia, LLC | .125 or greater | 1445/202 | 10-3.3 |
| WV-061-003577-001 | TENNANT, JACOB W. AND ELIZABETH B. | Northeast Natural Energy LLC | .125 or greater | 1533/826 | 10-3.3 |
| WV-061-003707-000 | SHUMAN, INC. | Northeast Natural Energy LLC | .125 or greater | 1534/330 | 10-5 |
| WV-061-003536-001 | THE CHARLES LEE THOMAS TRUST | Northeast Natural Energy LLC | .125 or greater | 1524/457 | 10-6,5 |

WW-6A1

Operator's Well No.

Kassay 13H

| NNE Lease No. | Grantor, Lessor, etc. | Grantee, Lessee, etc. | Royalty | Book/Page | Tax Map & Parcel |
|-------------------|--|------------------------------|-----------------|-----------|------------------|
| WV-061-003537-001 | THE CHARLES LEE THOMAS TRUST | Northeast Natural Energy LLC | .125 or greater | 1524/246 | 10-6 |
| WV-061-003558-001 | KNISELY, JAMES G. | Northeast Natural Energy LLC | .125 or greater | 1525/236 | 10-6 |
| WV-061-003558-002 | SWIGER, JAMES DWIGHT | Northeast Natural Energy LLC | .125 or greater | 1528/109 | 10-6 |
| WV-061-003558-003 | SWIGER, JOHN AVERIL | Northeast Natural Energy LLC | .125 or greater | 1529/560 | 10-6 |
| WV-061-003558-004 | SUMMERS, JANET K. | Northeast Natural Energy LLC | .125 or greater | 1529/118 | 10-6 |
| WV-061-003558-005 | MULLENAX, PRISCILLA R. | Northeast Natural Energy LLC | .125 or greater | 1532/561 | 10-6 |
| WV-061-003378-001 | STRICKLER, PAUL T. AND SHARON | Northeast Natural Energy LLC | .125 or greater | 1530/128 | 10-15,31.2 |
| WV-061-003378-002 | JOHN, LOIS MARIE AND ERNEST | Northeast Natural Energy LLC | .125 or greater | 1487/383 | 10-15,31.2 |
| WV-061-003378-003 | BUTLER, MARY ROSE | Northeast Natural Energy LLC | .125 or greater | 1530/132 | 10-15,31.2 |
| WV-061-003378-004 | STRICKLER, WILBUR RANDOLPH AND DEBORAH | Northeast Natural Energy LLC | .125 or greater | 1530/140 | 10-15,31.2 |
| WV-061-003378-005 | STRICKLER, DORSEY NEIL AND NANCY E. | Northeast Natural Energy LLC | .125 or greater | 1530/136 | 10-15,31.2 |
| WV-061-001334-001 | THOMAS, CHARLES L. | *Chesapeake Appalachia, LLC | .125 or greater | 1378/404 | 10-15 |
| WV-061-001372-001 | JOHN, LOIS MARIE | *Chesapeake Appalachia, LLC | .125 or greater | 1375/898 | 10-15 |
| WV-061-001372-002 | STRICKLER, DORSEY NEIL | *Chesapeake Appalachia, LLC | .125 or greater | 1375/868 | 10-15 |
| WV-061-001372-003 | BUTLER, MARY ROSE | *Chesapeake Appalachia, LLC | .125 or greater | 1376/19 | 10-15 |
| WV-061-001372-004 | STRICKLER, PAUL T. | *Chesapeake Appalachia, LLC | .125 or greater | 1376/43 | 10-15 |
| WV-061-001372-005 | STRICKLER, WILBUR RANDOLPH | *Chesapeake Appalachia, LLC | .125 or greater | 1375/838 | 10-15 |
| WV-061-003219-001 | MICHAEL, EMMA REGINA | *Chesapeake Appalachia, LLC | .125 or greater | 1445/121 | 10-15 |
| WV-061-003217-001 | MAYLE, JR., LEROY ROBERT AND RITA J. | *Chesapeake Appalachia, LLC | .125 or greater | 1447/702 | 10-15 |
| WV-061-003510-001 | THE CHARLES LEE THOMAS TRUST | Northeast Natural Energy LLC | .125 or greater | 1525/222 | 10-15 |
| WV-061-001202-003 | MOORE, L. GAYLE | *Chesapeake Appalachia, LLC | .125 or greater | 1370/493 | 10-31 |
| WV-061-001202-004 | JOHN, LOIS MARIE | *Chesapeake Appalachia, LLC | .125 or greater | 1376/007 | 10-31 |
| WV-061-001202-007 | STRICKLER, PAUL T. | *Chesapeake Appalachia, LLC | .125 or greater | 1376/055 | 10-31 |
| WV-061-001202-009 | MICHAEL, EMMA | *Chesapeake Appalachia, LLC | .125 or greater | 1485/672 | 10-31 |
| WV-061-001232-001 | JOHN, LOIS MARIE | *Chesapeake Appalachia, LLC | .125 or greater | 1375/895 | 10-31.2 |
| WV-061-001232-006 | STRICKLER, PAUL T. | *Chesapeake Appalachia, LLC | .125 or greater | 1376/046 | 10-31.2 |
| WV-061-001232-009 | MICHAEL, EMMA REGINA | Northeast Natural Energy LLC | .125 or greater | 1526/66 | 10-31.2 |
| WV-061-001333-001 | MOORE, L. GAYLE | *Chesapeake Appalachia, LLC | .125 or greater | 1370/544 | 10-31.2 |
| WV-061-002621-001 | REVOCABLE TRUST OF ROBERT M. SPRAGG | *Chesapeake Appalachia, LLC | .125 or greater | 1441/411 | 10-42 |
| WV-061-002986-001 | THE DAYBROOK SADDLE CLUB | *Chesapeake Appalachia, LLC | .125 or greater | 1429/504 | 10-42 |
| WV-061-002986-002 | DAWSON, MARY ANN SPRAGG | *Chesapeake Appalachia, LLC | .125 or greater | 1433/564 | 10-42 |
| WV-061-002986-003 | TENNANT, TERESA LEIGH | *Chesapeake Appalachia, LLC | .125 or greater | 1454/375 | 10-42 |
| WV-061-002986-004 | TENNANT, NELLIE G. | *Chesapeake Appalachia, LLC | .125 or greater | 1454/826 | 10-42 |
| WV-061-002986-005 | TENNANT, KENT S. | Northeast Natural Energy LLC | .125 or greater | 1514/081 | 10-42 |
| WV-061-002986-006 | SIMS, DANIEL T. | Northeast Natural Energy LLC | .125 or greater | 1515/835 | 10-42 |
| WV-061-002986-008 | SIMS, JERRY E. AND JOYCE | Northeast Natural Energy LLC | .125 or greater | 1516/0625 | 10-42 |
| WV-061-002986-009 | BOHM, JEAN-CLARE BOHM | Northeast Natural Energy LLC | .125 or greater | 1515/837 | 10-42 |
| WV-061-002986-010 | TENNANT, D. RAY AND BARBARA | Northeast Natural Energy LLC | .125 or greater | 1516/0627 | 10-42 |
| WV-061-002986-011 | WATKINS, JO ANN | Northeast Natural Energy LLC | .125 or greater | 1515/843 | 10-42 |
| WV-061-002986-012 | WATKINS, DOUG D. AND JEAN | Northeast Natural Energy LLC | .125 or greater | 1514/061 | 10-42 |

61-01689100

WW-6A1

Operator's Well No.

Kassay 13H

| NNE Lease No. | Grantor, Lessor, etc. | Grantee, Lessee, etc. | Royalty | Book/Page | Tax Map & Parcel |
|-------------------|--------------------------------------|------------------------------|-----------------|-----------|------------------|
| WV-061-002986-013 | WILSON, JUDY E. AND ROBERT | Northeast Natural Energy LLC | .125 or greater | 1514/088 | 10-42 |
| WV-061-002986-014 | WATKINS, DAVID | Northeast Natural Energy LLC | .125 or greater | 1515/849 | 10-42 |
| WV-061-002986-015 | WATKINS, MACK | Northeast Natural Energy LLC | .125 or greater | 1514/075 | 10-42 |
| WV-061-002986-016 | FRITZ, KIM DAVID AND NANCY | Northeast Natural Energy LLC | .125 or greater | 1515/839 | 10-42 |
| WV-061-002986-017 | GEISSINGER, CONNIE AND WAYNE | Northeast Natural Energy LLC | .125 or greater | 1514/063 | 10-42 |
| WV-061-002986-018 | WATKINS, ROBERT D. AND JANICE | Northeast Natural Energy LLC | .125 or greater | 1516/0623 | 10-42 |
| WV-061-002986-019 | WATKINS, TOMMY D. | Northeast Natural Energy LLC | .125 or greater | 1516/223 | 10-42 |
| WV-061-002986-020 | ELLIS, EVA L. AND ROBERT | Northeast Natural Energy LLC | .125 or greater | 1516/1 | 10-42 |
| WV-061-002986-021 | SELL, JOYCE | Northeast Natural Energy LLC | .125 or greater | 1514/071 | 10-42 |
| WV-061-002986-022 | LARRY, RUTH ELLEN | Northeast Natural Energy LLC | .125 or greater | 1513/846 | 10-42 |
| WV-061-002986-023 | TENNANT, STEPHEN A. AND MARCIA | Northeast Natural Energy LLC | .125 or greater | 1514/079 | 10-42 |
| WV-061-002986-024 | COLEMAN, JANET | Northeast Natural Energy LLC | .125 or greater | 1514/073 | 10-42 |
| WV-061-002986-026 | TENNANT, JOE S. AND KAREN | Northeast Natural Energy LLC | .125 or greater | 1516/0548 | 10-42 |
| WV-061-002986-030 | LUCKEY, CAROL A. AND DAVID M. | Northeast Natural Energy LLC | .125 or greater | 1518/21 | 10-42 |
| WV-061-002986-035 | TENNANT, JR., JOSEPH B. | Northeast Natural Energy LLC | .125 or greater | 1518/5 | 10-42 |
| WV-061-002986-036 | HARRISON, SHERRY L. | Northeast Natural Energy LLC | .125 or greater | 1521/574 | 10-42 |
| WV-061-002986-037 | HALBROOK, JACQUELYN M. AND DONALD R. | Northeast Natural Energy LLC | .125 or greater | 1520/686 | 10-42 |
| WV-061-002986-039 | THE DAYBROOK SADDLE CLUB | Northeast Natural Energy LLC | .125 or greater | 1521/647 | 10-42 |
| WV-061-002986-040 | MAIN, DONLEY CARR | Northeast Natural Energy LLC | .125 or greater | 1524/271 | 10-42 |
| WV-061-002986-041 | TENNANT, SUE | Northeast Natural Energy LLC | .125 or greater | 1524/349 | 10-42 |
| WV-061-002986-042 | TENNANT, MARION LAVERN AND GINGER J. | Northeast Natural Energy LLC | .125 or greater | 1521/180 | 10-42 |
| WV-061-002986-043 | KRIDER, SANDRA K. AND WILLIAM S. | Northeast Natural Energy LLC | .125 or greater | 1524/784 | 10-42 |
| WV-061-002986-044 | WILSON, JANET AND BRIAN | Northeast Natural Energy LLC | .125 or greater | 1528/148 | 10-42 |
| WV-061-002986-045 | SWARTZ, CARL E. AND CHEVELLE L. | Northeast Natural Energy LLC | .125 or greater | 1524/342 | 10-42 |
| WV-061-002986-047 | CARROLL, CHANNING CARROLL | Northeast Natural Energy LLC | .125 or greater | 1529/53 | 10-42 |
| WV-061-002986-048 | LAW, MARY JOYCE | Northeast Natural Energy LLC | .125 or greater | 1526/116 | 10-42 |
| WV-061-002986-049 | GRAVES, LORA ANN | Northeast Natural Energy LLC | .125 or greater | 1529/24 | 10-42 |
| WV-061-002986-050 | MOORE, JUANITA | Northeast Natural Energy LLC | .125 or greater | 1530/754 | 10-42 |
| WV-061-003271-001 | CHESAPEAKE APPALACHIA, LLC. | *Chesapeake Appalachia, LLC | .125 or greater | 1491/334 | 10-42 |
| WV-061-003492-001 | TENNANT, JAN L. AND RICHARD COOPER | Northeast Natural Energy LLC | .125 or greater | 1522/337 | 10-42 |
| WV-061-003503-001 | MOORE, LORETTA GAYLE | Northeast Natural Energy LLC | .125 or greater | 1525/220 | 10-42 |
| WV-061-003535-001 | WATKINS, ROBERT D. AND JANICE | Northeast Natural Energy LLC | .125 or greater | 1532/384 | 10-42 |
| WV-061-001105-001 | LEMLEY, LAURA E. | *Chesapeake Appalachia, LLC | .125 or greater | 1382/818 | 10-43 |
| WV-061-001105-002 | MCCORD, KENNETH JAS | *Chesapeake Appalachia, LLC | .125 or greater | 1379/162 | 10-43 |
| WV-061-001105-003 | MINOR, JUNE LEMLEY | *Chesapeake Appalachia, LLC | .125 or greater | 1379/159 | 10-43 |
| WV-061-001105-004 | SANDERS, BETTY JANE | Northeast Natural Energy LLC | .125 or greater | 1490/751 | 10-43 |
| WV-061-001105-005 | HOWARD, WILLA R. & DAVID N. | Northeast Natural Energy LLC | .125 or greater | 1524/250 | 10-43 |
| WV-061-001105-006 | MCCORD, RONNIE L. & SHARON | Northeast Natural Energy LLC | .125 or greater | 1524/293 | 10-43 |
| WV-061-001105-007 | MCCORD, LAWERENCE L. & JANET | Northeast Natural Energy LLC | .125 or greater | 1523/494 | 10-43 |
| WV-061-001105-008 | FLUHARTY, TINA L. AND RICHARD A. | Northeast Natural Energy LLC | .125 or greater | 1524/267 | 10-43 |
| WV-061-001105-009 | ESTLE, GINGER K. | Northeast Natural Energy LLC | .125 or greater | 1524/236 | 10-43 |
| WV-061-001105-010 | TENNANT, RICHARD DEE AND ONEIDA P. | Northeast Natural Energy LLC | .125 or greater | 1524/273 | 10-43 |

12/09/2016

WW-6A1

Operator's Well No.

Kassay 13H

| NNE Lease No. | Grantor, Lessor, etc. | Grantee, Lessee, etc. | Royalty | Book/Page | Tax Map & Parcel |
|-------------------|-------------------------------------|------------------------------|-----------------|-----------|------------------|
| WV-061-001105-012 | LARRY BLAINE TENNANT ESTATE | Northeast Natural Energy LLC | .125 or greater | 1524/772 | 10-43 |
| WV-061-001105-013 | BONNELL, DIANA LYNN AND ORVAL | Northeast Natural Energy LLC | .125 or greater | 1530/752 | 10-43 |
| WV-061-001105-014 | BRUMMAGE, E. JACK AND JANET D. | Northeast Natural Energy LLC | .125 or greater | 1533/681 | 10-43 |
| WV-061-001105-015 | BRUMMAGE, TIMOTHY L. | Northeast Natural Energy LLC | .125 or greater | 1533/677 | 10-43 |
| WV-061-001105-016 | SILVA, MARY A. | Northeast Natural Energy LLC | .125 or greater | 1530/178 | 10-43 |
| WV-061-001105-017 | MOORE, BONNIE JEAN | Northeast Natural Energy LLC | .125 or greater | 1531/63 | 10-43 |
| WV-061-001105-019 | BROOKOVER, SR., CARMEL G. | Northeast Natural Energy LLC | .125 or greater | 1530/230 | 10-43 |
| WV-061-001105-022 | ROGERS, ALBERT LEE AND KRISTEN | Northeast Natural Energy LLC | .125 or greater | 1531/47 | 10-43 |
| WV-061-001105-023 | ALLEN, APRIL | Northeast Natural Energy LLC | .125 or greater | 1529/849 | 10-43 |
| WV-061-001105-025 | ROGERS, ALAN J. AND MELISSA | Northeast Natural Energy LLC | .125 or greater | 1531/45 | 10-43 |
| WV-061-001105-026 | NICHOLS, PATRICIA AND BILLY F. | Northeast Natural Energy LLC | .125 or greater | 1532/86 | 10-43 |
| WV-061-001105-027 | JOHNSON, GLENDORA F. | Northeast Natural Energy LLC | .125 or greater | 1530/355 | 10-43 |
| WV-061-001105-028 | ASKEW, CELIA P. AND ROBERT L. | Northeast Natural Energy LLC | .125 or greater | 1532/52 | 10-43 |
| WV-061-001105-029 | PRICE, SR., GARY MICHAEL | Northeast Natural Energy LLC | .125 or greater | 1530/146 | 10-43 |
| WV-061-001105-030 | BRUMMAGE, JAMIE A. | Northeast Natural Energy LLC | .125 or greater | 1532/96 | 10-43 |
| WV-061-001105-031 | RUSH, RUBY AND RONALD | Northeast Natural Energy LLC | .125 or greater | 1532/68 | 10-43 |
| WV-061-001105-032 | TENNANT, BRENDA K. AND BILLY RAY | Northeast Natural Energy LLC | .125 or greater | 1530/148 | 10-43 |
| WV-061-001105-033 | MILLIRON, ETTA L. | Northeast Natural Energy LLC | .125 or greater | 1530/353 | 10-43 |
| WV-061-001105-034 | LEWIS, PEARL G. AND CLYDE H. | Northeast Natural Energy LLC | .125 or greater | 1530/357 | 10-43 |
| WV-061-001105-035 | TENNANT, JUDY | Northeast Natural Energy LLC | .125 or greater | 1533/105 | 10-43 |
| WV-061-001105-036 | BRUMMAGE, BRITTANY M. | Northeast Natural Energy LLC | .125 or greater | 1533/195 | 10-43 |
| WV-061-001105-040 | CHILTON, J. MICHELLE AND CHARLES J. | Northeast Natural Energy LLC | .125 or greater | 1534/80 | 10-43 |
| WV-061-001458-002 | SIMPSON, VERNON L. | *Chesapeake Appalachia, LLC | .125 or greater | 1379/168 | 10-43 |
| WV-061-001458-003 | SIMPSON, DAVID C. | *Chesapeake Appalachia, LLC | .125 or greater | 1379/171 | 10-43 |
| WV-061-001458-004 | SIMPSON, ALLEN L. | *Chesapeake Appalachia, LLC | .125 or greater | 1383/491 | 10-43 |
| WV-061-001458-005 | SIMPSON, JR. IRA J. | *Chesapeake Appalachia, LLC | .125 or greater | 1383/494 | 10-43 |
| WV-061-001458-006 | TENNANT, TROY | *Chesapeake Appalachia, LLC | .125 or greater | 1407/201 | 10-43 |
| WV-061-002800-001 | WHARTON, JOSEPH THOMAS | *Chesapeake Appalachia, LLC | .125 or greater | 1434/228 | 10-43 |
| WV-061-002800-002 | LEMLEY, KYLE AND PAULA | *Chesapeake Appalachia, LLC | .125 or greater | 1431/436 | 10-43 |
| WV-061-002800-003 | CALVERT, CHARLES W. | *Chesapeake Appalachia, LLC | .125 or greater | 1431/800 | 10-43 |
| WV-061-002840-001 | VEDIS, KRISTIE VIRGIE | *Chesapeake Appalachia, LLC | .125 or greater | 1425/359 | 10-43 |
| WV-061-002840-002 | CAIN, KAREN | *Chesapeake Appalachia, LLC | .125 or greater | 1425/215 | 10-43 |
| WV-061-002840-005 | LEMLEY, DENZIL | *Chesapeake Appalachia, LLC | .125 or greater | 1425/399 | 10-43 |
| WV-061-002840-007 | CHASE, DONNA LYNN | *Chesapeake Appalachia, LLC | .125 or greater | 1425/303 | 10-43 |
| WV-061-002840-011 | TROUTMAN, LYDIA L. | *Chesapeake Appalachia, LLC | .125 or greater | 1437/071 | 10-43 |
| WV-061-002840-012 | SNOPPS, TWYLA HINDS | *Chesapeake Appalachia, LLC | .125 or greater | 1427/587 | 10-43 |
| WV-061-002840-013 | GEE, PAULINE | *Chesapeake Appalachia, LLC | .125 or greater | 1426/126 | 10-43 |
| WV-061-002840-014 | MERRIFIELD, ALBERTA | *Chesapeake Appalachia, LLC | .125 or greater | 1427/625 | 10-43 |
| WV-061-002840-015 | FLUHARTY, LORETTA | Northeast Natural Energy LLC | .125 or greater | 1524/295 | 10-43 |
| WV-061-002890-001 | HOSTUTLER, PATRICIA ANN | *Chesapeake Appalachia, LLC | .125 or greater | 1425/246 | 10-44 |
| WV-061-002890-002 | WILSON, SANDRA FAYE | *Chesapeake Appalachia, LLC | .125 or greater | 1425/346 | 10-44 |
| WV-061-002890-003 | TENNANT, LEONARD L. | *Chesapeake Appalachia, LLC | .125 or greater | 1425/254 | 10-44 |

WW-6A1

Operator's Well No.

Kassay 13H

| NNE Lease No. | Grantor, Lessor, etc. | Grantee, Lessee, etc. | Royalty | Book/Page | Tax Map & Parcel |
|-------------------|--|------------------------------|-----------------|-----------|------------------|
| WV-061-002890-004 | HALL, PAMELA RENA | *Chesapeake Appalachia, LLC | .125 or greater | 1425/258 | 10-44 |
| WV-061-002890-005 | TENNANT, RAYMER F. | *Chesapeake Appalachia, LLC | .125 or greater | 1434/125 | 10-44 |
| WV-061-002890-006 | WISE, ALICE | *Chesapeake Appalachia, LLC | .125 or greater | 1433/557 | 10-44 |
| WV-061-002890-007 | TENNANT, HAZEL MARIE | *Chesapeake Appalachia, LLC | .125 or greater | 1433/530 | 10-44 |
| WV-061-002890-008 | PIERCEFIELD, TERRY LYNN | *Chesapeake Appalachia, LLC | .125 or greater | 1443/205 | 10-44 |
| WV-061-002890-009 | PIERCEFIELD, GENE LEE AND LANA L. | *Chesapeake Appalachia, LLC | .125 or greater | 1443/197 | 10-44 |
| WV-061-002890-010 | CLARK, JANICE A. AND JOHN R. | *Chesapeake Appalachia, LLC | .125 or greater | 1443/193 | 10-44 |
| WV-061-002890-011 | PRATT, JIM ARVIN AND BRENDA SUE | *Chesapeake Appalachia, LLC | .125 or greater | 1443/201 | 10-44 |
| WV-061-002890-012 | BRUTTO, DONNA M. AND ANTHONY | *Chesapeake Appalachia, LLC | .125 or greater | 1443/180 | 10-44 |
| WV-061-002890-013 | MONTGOMERY, MELVIN DOUG AND PATRICIA MAY | *Chesapeake Appalachia, LLC | .125 or greater | 1444/284 | 10-44 |
| WV-061-002890-014 | FERGUSON, TAMMY LYNN | *Chesapeake Appalachia, LLC | .125 or greater | 1444/276 | 10-44 |
| WV-061-002890-015 | SMITH, CYNTHIA K. AND PHILLIP W. | *Chesapeake Appalachia, LLC | .125 or greater | 1444/355 | 10-44 |
| WV-061-002890-016 | MONTGOMERY, LEROY THOMAS AND VIOLET RACHEL | *Chesapeake Appalachia, LLC | .125 or greater | 1445/459 | 10-44 |
| WV-061-002890-017 | PRATT, CHRISTOPHER AND AMANDA | *Chesapeake Appalachia, LLC | .125 or greater | 1446/247 | 10-44 |
| WV-061-002890-018 | AHLHEIM, RONALD WILLIAM | *Chesapeake Appalachia, LLC | .125 or greater | 1446/251 | 10-44 |
| WV-061-002890-019 | PRATT, BRANDY NICOLE | *Chesapeake Appalachia, LLC | .125 or greater | 1446/646 | 10-44 |
| WV-061-002890-020 | HERRING, BETTY LOU STILES | *Chesapeake Appalachia, LLC | .125 or greater | 1447/791 | 10-44 |
| WV-061-002890-021 | STILES, KIMBERLY | *Chesapeake Appalachia, LLC | .125 or greater | 1449/363 | 10-44 |
| WV-061-002890-022 | STILES, TEDDY AND GLORIA | *Chesapeake Appalachia, LLC | .125 or greater | 1451/462 | 10-44 |
| WV-061-002890-023 | STILES, ALLEN | *Chesapeake Appalachia, LLC | .125 or greater | 1453/568 | 10-44 |
| WV-061-002890-024 | STILES, KATINA LIMING | *Chesapeake Appalachia, LLC | .125 or greater | 1453/580 | 10-44 |
| WV-061-002890-025 | STILES, DUSTIN | *Chesapeake Appalachia, LLC | .125 or greater | 1453/633 | 10-44 |
| WV-061-002890-026 | DAVIS, SONYA & MIKE | Northeast Natural Energy LLC | .125 or greater | 1524/279 | 10-44 |
| WV-061-002890-027 | FLUHARTY, LORETTA | Northeast Natural Energy LLC | .125 or greater | 1524/281 | 10-44 |
| WV-061-002890-028 | VEDIS, KRISTIE VIRGIE | Northeast Natural Energy LLC | .125 or greater | 1524/789 | 10-44 |
| WV-061-002890-029 | TENNANT, TROY & ANA | Northeast Natural Energy LLC | .125 or greater | 1524/776 | 10-44 |
| WV-061-002890-030 | FLUHARTY, TINA L. AND RICHARD A. | Northeast Natural Energy LLC | .125 or greater | 1524/311 | 10-44 |
| WV-061-002890-031 | LARRY BLAINE TENNANT ESTATE | Northeast Natural Energy LLC | .125 or greater | 1524/778 | 10-44 |
| WV-061-002890-032 | TENNANT, RICHARD AND ONEIDA P. | Northeast Natural Energy LLC | .125 or greater | 1524/287 | 10-44 |
| WV-061-002890-033 | ESTLE, GINGER K. | Northeast Natural Energy LLC | .125 or greater | 1523/816 | 10-44 |
| WV-061-002890-034 | ROBINSON, LYDIA | Northeast Natural Energy LLC | .125 or greater | 1528/157 | 10-44 |
| WV-061-002890-035 | CAIN, KAREN MARIE AND RICHARD L. | Northeast Natural Energy LLC | .125 or greater | 1524/453 | 10-44 |
| WV-061-002890-036 | CHASE, DONNA LYNN AND BRIAN D. | Northeast Natural Energy LLC | .125 or greater | 1532/72 | 10-44 |
| WV-061-002389-001 | JOSEPH, ALMA M. | *Chesapeake Appalachia, LLC | .125 or greater | 1435/165 | 10-44 |
| WV-061-001932-001 | EDDY-BARR, BARBARA | *Chesapeake Appalachia, LLC | .125 or greater | 1393/729 | 17-65 |

*See Attachment

61-6168940D

Chesapeake Appalachia, LLC.



Northeast Natural Energy
Assignment
BK 120/769

12/09/2016