



west virginia department of environmental protection

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

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

January 28, 2014

WELL WORK PERMIT

Vertical Well

This permit, API Well Number: 47-3305808, issued to HG ENERGY, LLC, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

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

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

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



James Martin
Chief

Operator's Well No: S.E. ADAMS NO. 249
Farm Name: NARDELLA, MICHAEL & MARIA
API Well Number: 47-3305808
Permit Type: Vertical Well
Date Issued: 01/28/2014

Promoting a healthy environment.

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

- 1) Well Operator: HG Energy, LLC
- 2) Operator's Well Number: Sarah E. Adams No. 249 3) Elevation 1176'
- 4) Well Type: (a) Oil X or Gas _____
 (b) If Gas: Production _____ Underground Storage _____
- 5) Proposed Target Formation(s): Fifth Sand
- 6) Proposed Total Depth: 3200' MD ft.
- 7) Approximate fresh water strata depths: 160'
- 8) Approximate salt water depths: 1289'
- 9) Approximate coal seam depths: 575'
- 10) Does land contain coal seams tributary to active mine? Yes _____ No X
- 11) Proposed Well Work: Drill and stimulate production well in Fifth Sand, well to be drilled directionally N 41° E 440'

*SDW
12/23/20B
M.A.C.*

CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS			FOOTAGE INTERVALS		CEMENT
	Size	Grade	Weight Per Ft.	For Drilling	Left in Well	Fill-up (Cu. Ft.)
Conductor						
Fresh Water	7"	LS	17#	660'	660'	Cement to surface
Coal						
Intermediate						
Production	4 1/2"	J-55	10.5#	3200'	3200'	150 Sacks
Tubing						
Liners						

Packers: Kind _____
 Sizes _____
 Depths set _____

For Office of Oil and Gas Use Only

Fee(s) Paid
 Well Work Permit
 Reclamation Fund
 WPCP
 Plat
 WW-9
 WW-2B
 Bond _____
 Agent
 (Type) JAN 03 2014

RECEIVED
 Office of Oil and Gas
 WV Department of
 Environmental Protection

1) Date: December 17, 2013
2) Operator's Well Number Sarah E. Adams No. 249
3) API Well No: 47 - 033 -
State County Permit

3305808

STATE OF WEST VIRGINIA - BUREAU OF ENVIRONMENT
DIVISION OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

NOTICE AND APPLICATION FOR A WELL WORK PERMIT

CK 2488
650

4) Surface Owner(s) to be served: MIRIAM ✓
(a) Name Michael & Lori Nardella ✓
Address 309 John Street
Clarksburg, WV 26301
(b) Name _____
Address _____
(c) Name _____
Address _____
6) Inspector Sam Ward
Address P. O. Box 2327
Buckhannon, WV 26201
Telephone (304) - 389-7583

5) (a) Coal Operator:
Name NA
Address _____
(b) Coal Owner(s) with Declaration
Name NA
Address _____
Name _____
Address _____
(c) Coal Lessee with Declaration ✓
Name Wolf Run Mining
Address 2708 Cranberry Square
Morgantown, WV 26505

TO THE PERSON(S) NAMED ABOVE TAKE NOTICE THAT:

_____ Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas OR
X _____ Included is the information required by Chapter 22, Article 6, Section 8(d) of the Code of West Virginia (see page 2)

I certify that as required under Chapter 22 of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through 4 on the above-named parties, by:

_____ Personal Service (Affidavit attached)
X _____ Certified Mail (Postmarked postal receipt attached)
_____ Publication (Notice of Publication attached)

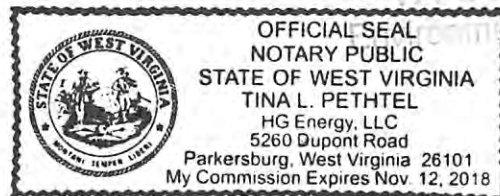
I have read and understand Chapter 22-6 and 38 CSR 11-18, and I agree to the terms and conditions of any permit issued under this application.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator HG Energy, LLC
By: Diane C White Diane C White
Its: Accountant
Address 5260 Dupont Road
Parkersburg, WV 26101
Telephone (304) 420-1119

Subscribed and sworn before me this 17 day of December 2013
Tina L. Pethel Notary Public
My commission expires Nov. 12, 2018



RECEIVED
Office of Oil and Gas
JAN 03 2014

WV Department of Environmental Protection

3305808

7013 2630 0001 9028 7573

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
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Postage	\$ 1.52	0777
Certified Fee	3.10	11
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Restricted Delivery Fee (Endorsement Required)	0.00	
Total Postage & Fees	\$ 7.17	12/26/2013 SEA 249

Sent To
 Street, Apt. No.;
 or PO Box No. Michael & Tori Nardella ✓
 309 John Street
 City, State, ZIP+4 Clarksburg WV 26301

PS Form 3800, August 2006 See Reverse for Instructions

5991 9208 7665

U.S. Postal Service™
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Certified Fee	3.10	11
Return Receipt Fee (Endorsement Required)	2.55	Postmark Here
Restricted Delivery Fee (Endorsement Required)	0.00	
Total Postage & Fees	\$ 7.17	12/26/2013 SEA 249

Sent To
 Street, Apt. No.;
 or PO Box No. Wolf Run Mining Company ✓
 2708 Cranberry Square
 City, State, ZIP+4 Morgantown WV 26505

PS Form 3800, August 2006 See Reverse for Instructions



3 305808

West Virginia Division of Environmental Protection
Office of Oil and Gas

NOTICE TO SURFACE OWNERS

The well operator named below is preparing to file for a permit from the state to drill a new well. Before a well work permit can be filed with the Chief of the Office of Oil and Gas, the well operator is required to have given notice of the right to request water well or spring analytical testing. This notice shall be given to the owners or occupants of land which have a water well or spring being utilized for human consumption, domestic animals, or other general use and which is located within 1000 feet of the proposed well site.

With this form, the operator is giving you notice of your right to request analytical testing, The operator is required to sample and analyze the water wells or springs of all owners or occupants who request it. Therefore if you wish to have your water well or spring tested, contact the operator named below.

All sampling shall be completed prior to drilling. Within thirty (30) days of the receipt of such sample analyses the operator shall submit the results to the Chief of the Office of Oil and Gas and to the owners or occupants who may have requested them.

If no water well or spring is located within 1000 feet, the Chief may require the operator to sample and analyze water from a water well or spring within 2000 feet of the proposed well site.

Be advised, you have the right to sample and analyze any water supply at your own expense.

The laboratory used by the operator to analyze the samples will be approved by the Chief. The operator named below has decided to use the following laboratory to analyze the water samples:

Contractor Name Sturm Environmental Services
 Well operator's private laboratory

Well Operator HG Energy, LLC
Address 5260 Dupont Road
Parkersburg, WV 26101

Telephone 304-420-1119

FOR OPERATOR'S USE ONLY: Below, or on an attached page, list those persons which were given this notice. Place an asterisk beside the one(s) that contacted you and requested sampling and analyses. If there were no requests made, indicate by underlining which one you have selected to sample and analyze. If there are no water wells or springs within 1000 feet of the proposed site please indicates such.

No known Water Supply Sources are located within 2000' of proposed well but many water sources have been tested in conjunction with this Wolf Summit drilling program

RECEIVED
Office of Oil and Gas
JAN 03 2014
WV Department of
Environmental Protection

3305808

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

CONSTRUCTION AND RECLAMATION PLAN AND SITE REGISTRATION APPLICATION FORM
GENERAL PERMIT FOR OIL AND GAS PIT WASTE DISCHARGE

Operator HG Energy, LLC OP Code 494497948
Watershed Ten Mile Creek Quadrangle Salem 7.5' 596
Elevation 1176' County Harrison 33 District Ten Mile 09

Description of anticipated Pit Waste: Fluids encountered in drilling shallow well.

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

Will a synthetic liner be used in pit? Yes _____ If so, what mil.? 20 Mil.

Proposed Disposal Method For Treated Pit Wastes:
 Land Application

Underground Injection (UIC Permit Number _____)

Reuse (at API Number _____)

Off Site Disposal (Supply Form WW-9 for disposal location)

Other (Explain _____)

*SOW
12/23/2013
MAC*

Drilling medium anticipated for this well? Air, fresh water, oil based, etc. Air, Fresh Water
- If oilbased, what type? Synthetic, petroleum, etc. _____

Additives to be used? Water, soap, KCl

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Leave in Pit
- If left in pit and plan to solidify, what medium will be used? Cement, lime, sawdust Native soil, cement, lime

- Landfill or offsite name/permit number? _____

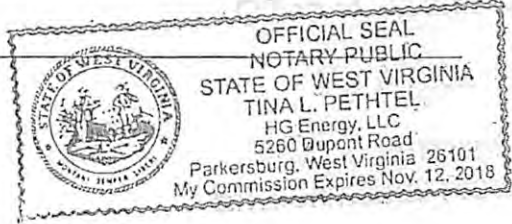
I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations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

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

Company Official Signature *Diane C White*
Company Official (Typed Name) Diane C. White
Company Official Title Accountant

Subscribed and sworn before me this 17th day of December 2013
Tina L. Pethel Notary Public

My commission expires Nov. 12, 2018
Form WW-9



Legend

Property Boundary		Diversion	
Road		Spring	
Existing Fence		Wet Spot	
Planned Fence		Drain Pipe	
Stream		Waterway	
Open Ditch		Cross Drain	
Rock		Filter Strip	
North		Pit: Cut Walls	
Buildings		Pit: Compacted Fill Walls	
Water Wells		Area of Land Application of Pit Waste	
Drill Site			

Proposed Revegetation Treatment: Acres Disturbed

Area I	Approx. 1.0 Ac.	Prevegetation pH _____
Area II	Approx. 0.5 Ac.	

Lime _____ 2 Tons/Acre or Correct to pH _____ 6.5

Fertilizer (10-20-20 or Equivalent) _____ 500 Lbs./Acre (500 lbs. Minimum)

Mulch _____ Straw _____ 2 Tons/Acre

SEED MIXTURES

<u>Area I (Location)</u>		<u>Area II (Road)</u>	
Seed Type	Lbs./Ac.	Seed Type	Lbs./Ac.
Tall Fescue	40	Tall Fescue	40
Ladino Clover	5	Ladino Clover	5

Received
 JAN - 2 2014
 WV Dept. of Environmental Protection
 Office of Oil and Gas

Attach:
 Drawing(s) of road, location, pit and proposed area for land application
 Photocopied section of involved 7.5' topographic sheet.

Plan approved by: Sam D. Warratt _____ Michael D. Duff _____
 Title: Oil & Gas Inspector _____ Date: 12/23/2013 _____

Field Reviewed? X Yes _____ No _____

Pre-seed/mulch all disturbed areas as soon as reasonably possible per WV DEP ETS Manual & Upgrade ETS as necessary



WOLF SUMMIT WATERFLOOD

Harrison County, W.Va.

RECLAMATION PLAN SHOWING ROAD SYSTEMS TO BE USED FOR 2013-14 DRILLING PROGRAM

NOVEMBER 14, 2013

SCALE 1" = 800'

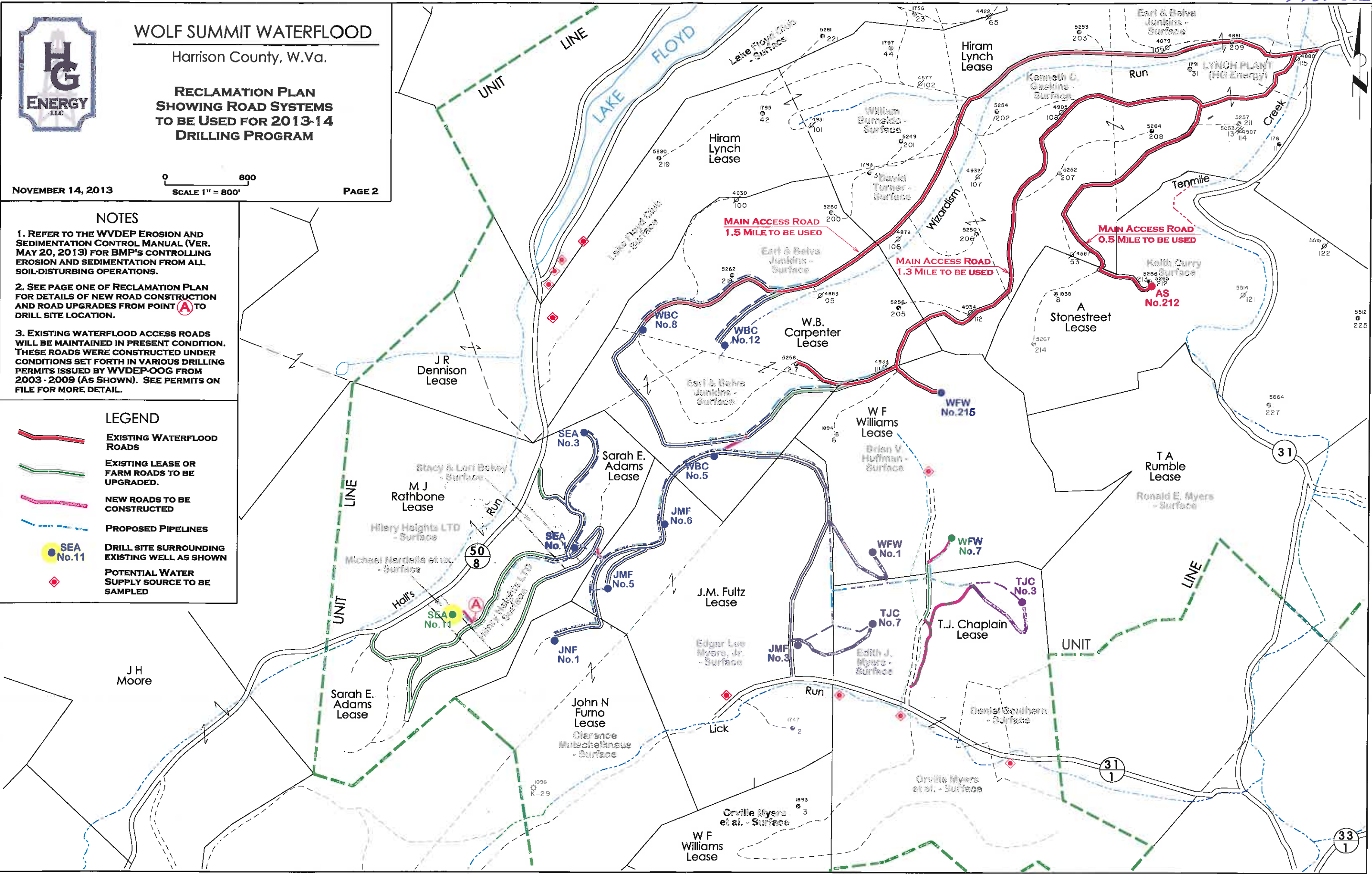
PAGE 2

NOTES

1. REFER TO THE WVDEP EROSION AND SEDIMENTATION CONTROL MANUAL (VER. MAY 20, 2013) FOR BMP'S CONTROLLING EROSION AND SEDIMENTATION FROM ALL SOIL-DISTURBING OPERATIONS.
2. SEE PAGE ONE OF RECLAMATION PLAN FOR DETAILS OF NEW ROAD CONSTRUCTION AND ROAD UPGRADES FROM POINT A TO DRILL SITE LOCATION.
3. EXISTING WATERFLOOD ACCESS ROADS WILL BE MAINTAINED IN PRESENT CONDITION. THESE ROADS WERE CONSTRUCTED UNDER CONDITIONS SET FORTH IN VARIOUS DRILLING PERMITS ISSUED BY WVDEP-OOG FROM 2003 - 2009 (AS SHOWN). SEE PERMITS ON FILE FOR MORE DETAIL.

LEGEND

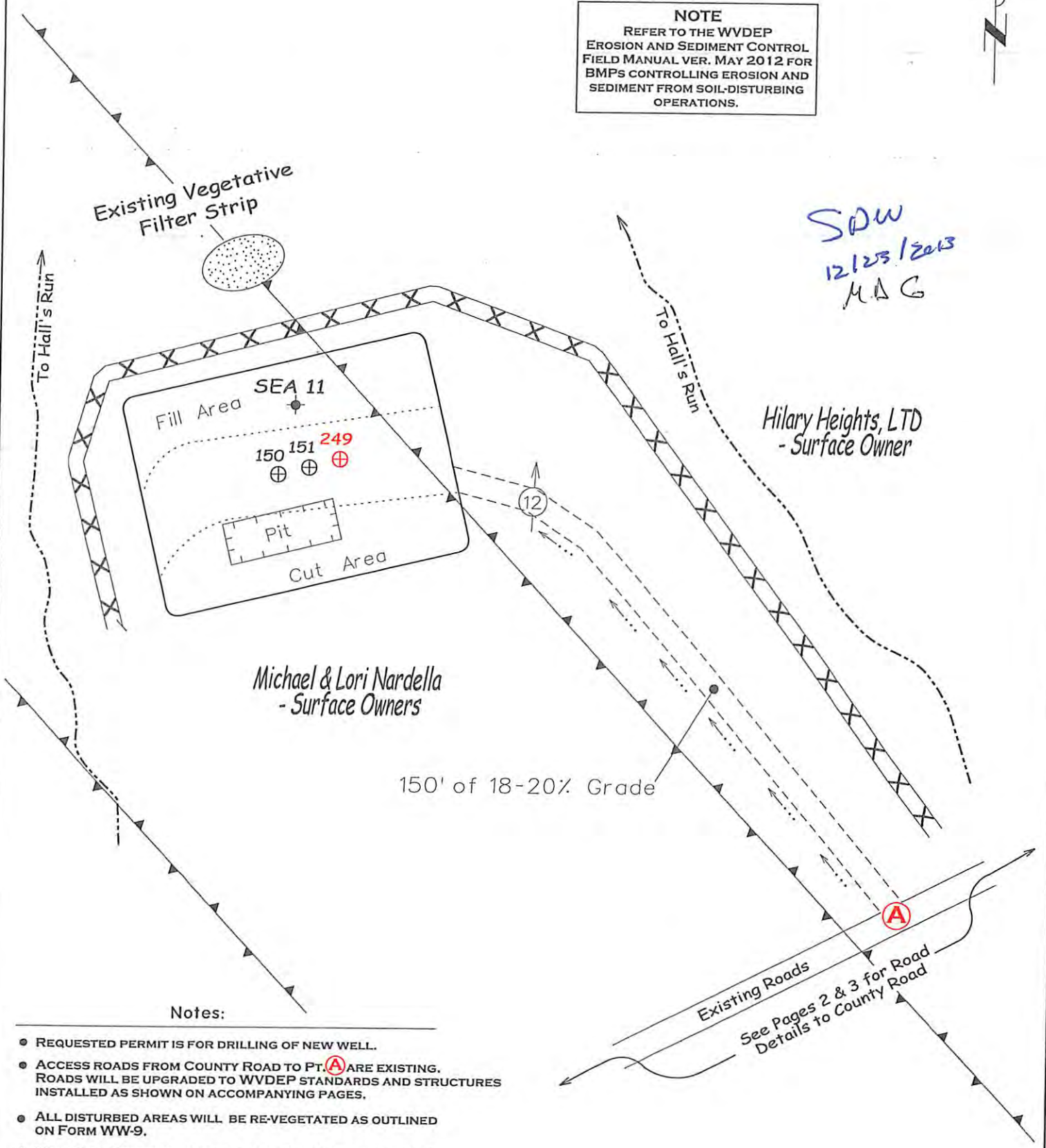
- EXISTING WATERFLOOD ROADS
- EXISTING LEASE OR FARM ROADS TO BE UPGRADED.
- NEW ROADS TO BE CONSTRUCTED
- PROPOSED PIPELINES
- SEA No.11 DRILL SITE SURROUNDING EXISTING WELL AS SHOWN
- POTENTIAL WATER SUPPLY SOURCE TO BE SAMPLED



3307808

Reclamation Plan For: Sarah E. Adams No.249

NOTE
REFER TO THE WVDEP
EROSION AND SEDIMENT CONTROL
FIELD MANUAL VER. MAY 2012 FOR
BMPs CONTROLLING EROSION AND
SEDIMENT FROM SOIL-DISTURBING
OPERATIONS.



Michael & Lori Nardella
- Surface Owners

Hilary Heights, LTD
- Surface Owner

Notes:

- REQUESTED PERMIT IS FOR DRILLING OF NEW WELL.
- ACCESS ROADS FROM COUNTY ROAD TO PT. (A) ARE EXISTING. ROADS WILL BE UPGRADED TO WVDEP STANDARDS AND STRUCTURES INSTALLED AS SHOWN ON ACCOMPANYING PAGES.
- ALL DISTURBED AREAS WILL BE RE-VEGETATED AS OUTLINED ON FORM WW-9.
- MAINTAIN SEDIMENT BARRIERS AND DRAINAGE STRUCTURES.
- ALL ROAD GRADES <5% EXCEPT AS NOTED.
- LOCATION OF DRILL PIT MAY BE CHANGED BASED ON AS-BUILT CONSIDERATIONS.
- DRAWING NOT TO SCALE.

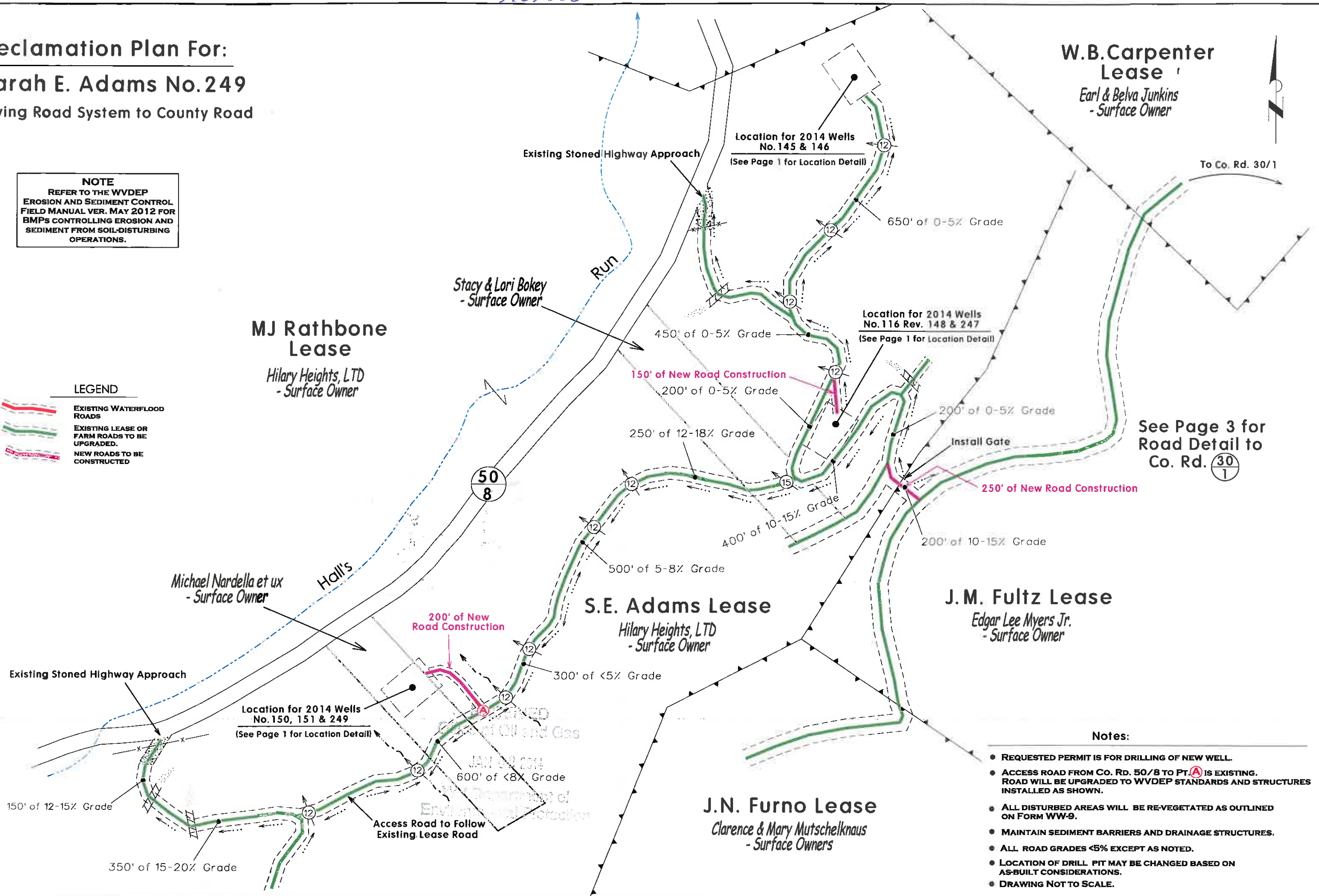
Existing Roads
See Pages 2 & 3 for Road
Details to County Road

Reclamation Plan For: Sarah E. Adams No. 249 Showing Road System to County Road

NOTE
REFER TO THE WVDEP
EROSION AND SEDIMENT CONTROL
FIELD MANUAL VER. MAY 2012 FOR
BMPs CONTROLLING EROSION AND
SEDIMENT FROM SOIL-DISTURBING
OPERATIONS.

LEGEND

-  EXISTING WATERFLOOD ROADS
-  EXISTING LEASE OR FARM ROADS TO BE UPGRADED.
-  NEW ROADS TO BE CONSTRUCTED



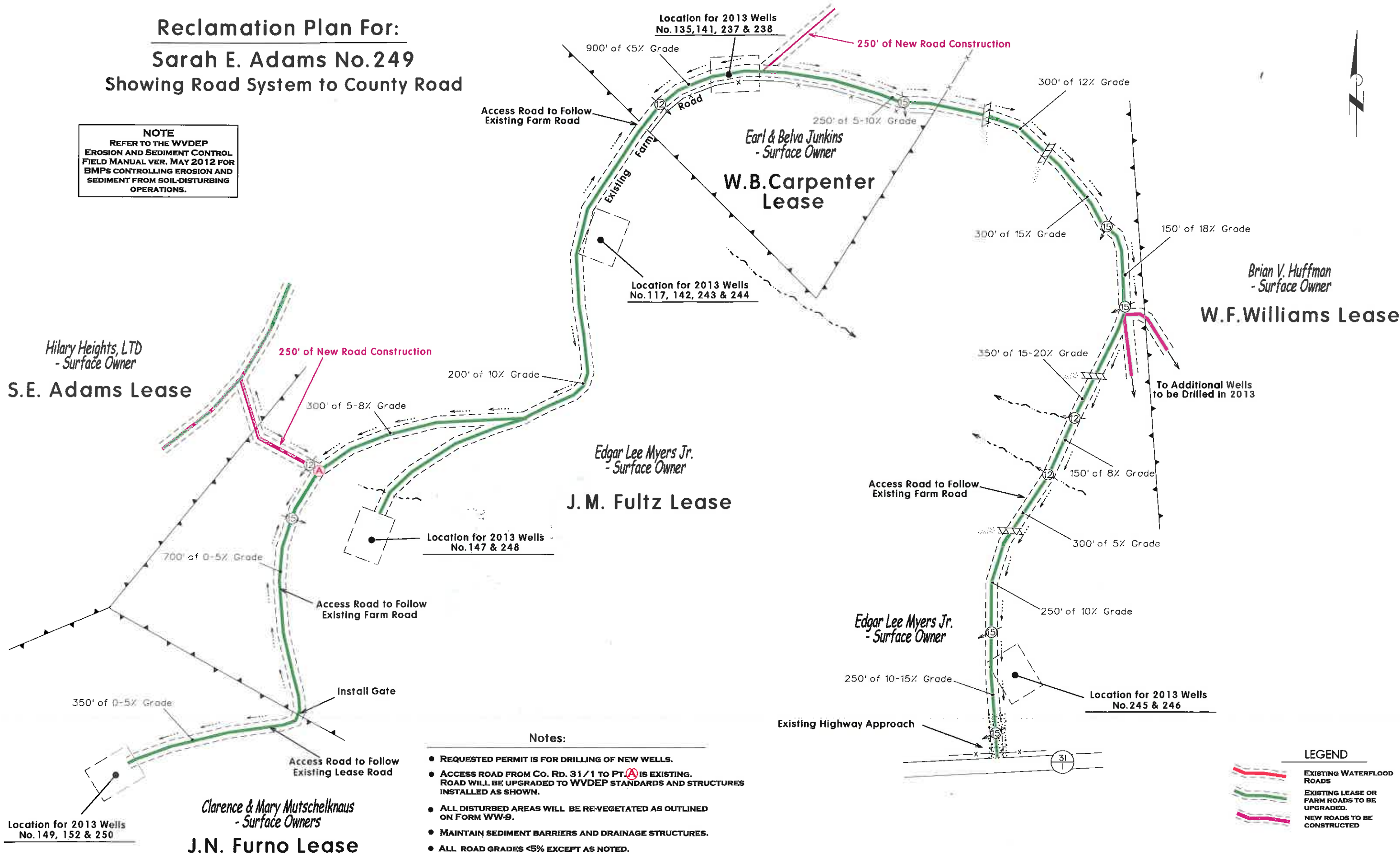
See Page 3 for Road Detail to Co. Rd. 30/1

- Notes:**
- REQUESTED PERMIT IS FOR DRILLING OF NEW WELL.
 - ACCESS ROAD FROM Co. Rd. 50/8 TO PT. (A) IS EXISTING. ROAD WILL BE UPGRADED TO WVDEP STANDARDS AND STRUCTURES INSTALLED AS SHOWN.
 - ALL DISTURBED AREAS WILL BE RE-VEGETATED AS OUTLINED ON FORM WW-9.
 - MAINTAIN SEDIMENT BARRIERS AND DRAINAGE STRUCTURES.
 - ALL ROAD GRADES <5% EXCEPT AS NOTED.
 - LOCATION OF DRILL PIT MAY BE CHANGED BASED ON AS-BUILT CONSIDERATIONS.
 - DRAWING NOT TO SCALE.

3305808

Reclamation Plan For: Sarah E. Adams No.249 Showing Road System to County Road

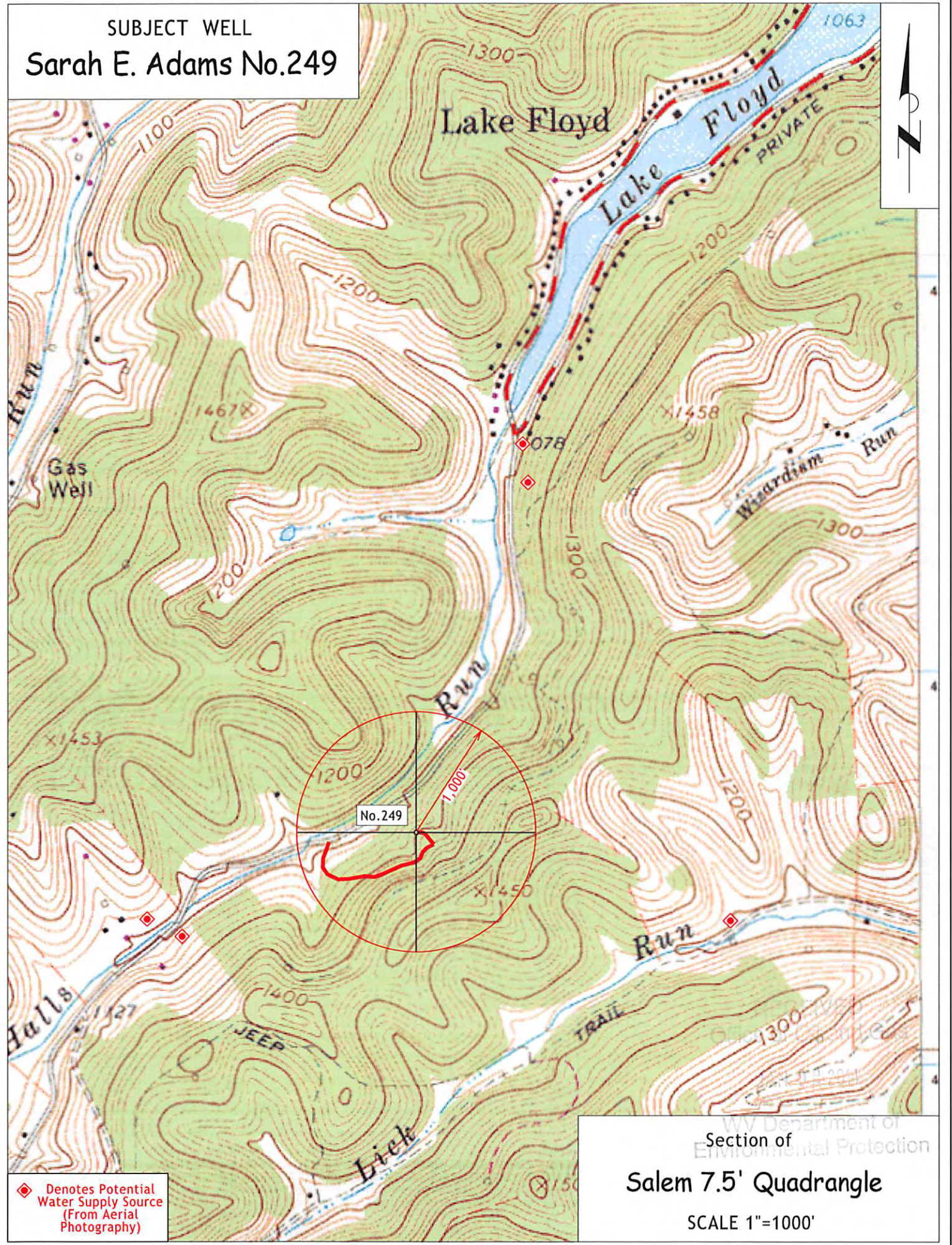
NOTE
REFER TO THE WVDEP
EROSION AND SEDIMENT CONTROL
FIELD MANUAL VER. MAY 2012 FOR
BMPs CONTROLLING EROSION AND
SEDIMENT FROM SOIL-DISTURBING
OPERATIONS.



- Notes:**
- REQUESTED PERMIT IS FOR DRILLING OF NEW WELLS.
 - ACCESS ROAD FROM Co. Rd. 31/1 TO PT. A IS EXISTING. ROAD WILL BE UPGRADED TO WVDEP STANDARDS AND STRUCTURES INSTALLED AS SHOWN.
 - ALL DISTURBED AREAS WILL BE RE-VEGETATED AS OUTLINED ON FORM WW-9.
 - MAINTAIN SEDIMENT BARRIERS AND DRAINAGE STRUCTURES.
 - ALL ROAD GRADES <math><5\%</math> EXCEPT AS NOTED.
 - LOCATION OF DRILL PIT MAY BE CHANGED BASED ON AS-BUILT CONSIDERATIONS.
 - DRAWING NOT TO SCALE.



SUBJECT WELL
Sarah E. Adams No.249



◆ Denotes Potential Water Supply Source (From Aerial Photography)

WV Department of Environmental Protection
Section of
Salem 7.5' Quadrangle
SCALE 1"=1000'

(BOT. HL: LON:-80°30'49.4")

LON:-80°30'53.1"

4175

SURVEY NOTES

1 - Well ties and Latitude and Longitude were measured by Topcon Hiper GA survey grade GPS. Bearings are referenced to UTM Grid North (Zone 17 North - NAD 1927).

2 - Surface owners, adjoining information, Lease names, & line mapping obtained from HGE GIS system.

3 - No Title Opinion was provided to the Surveyor during this survey. This survey is subject to a complete title Opinion.

UTM Coordinates (Zone 17N-NAD 1983)		LOCATION REFERENCES
Surface	N-4,346,833m. E-541,875m.	UTM 27 N 49°30' W 39.0' EX: WELL S 35°26' E 95.3' 16" POPLAR
Bottom Hole	N-4,346,934m. E-541,963m.	Brg. Direction is prop. well to the ref.

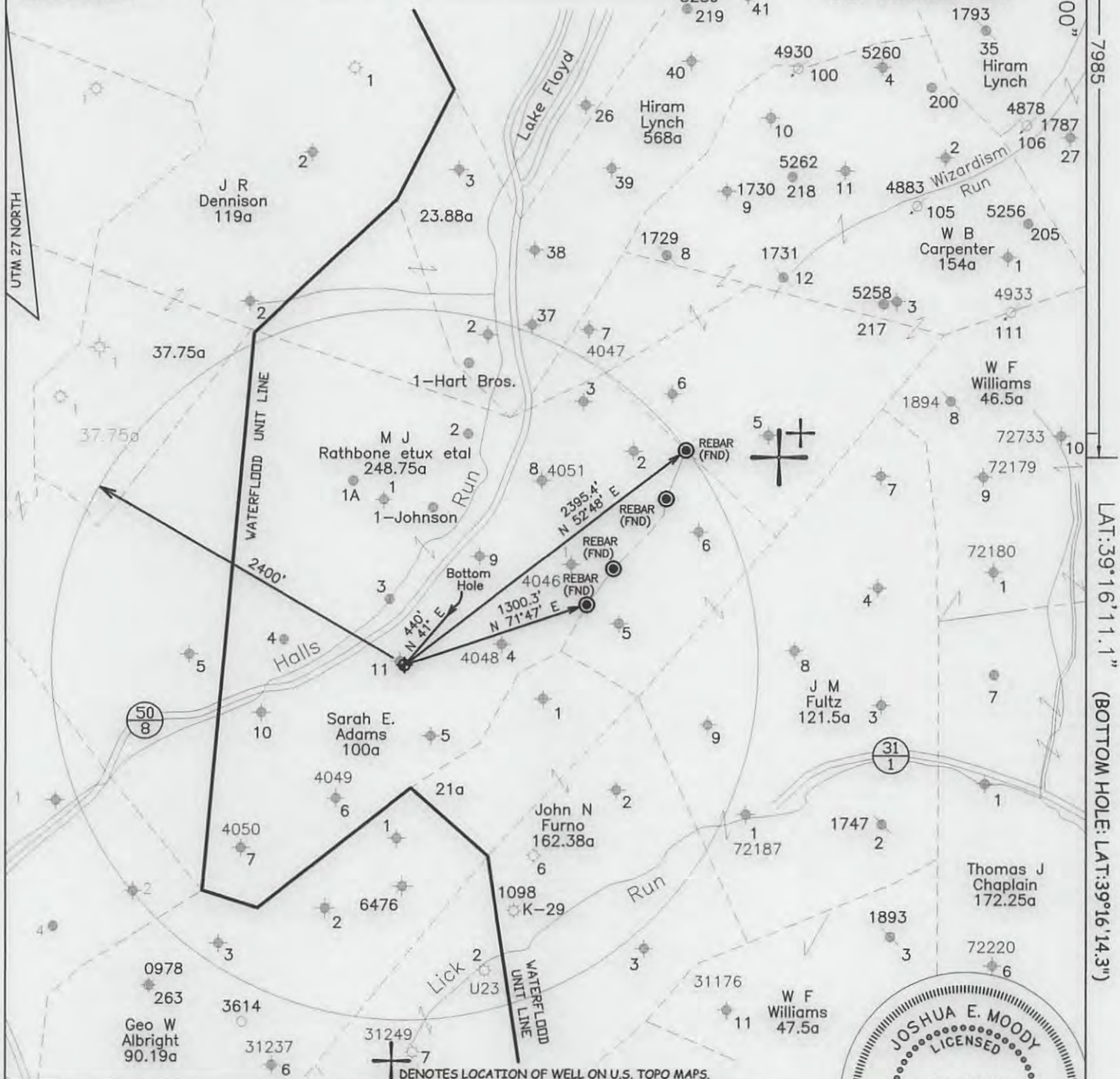
LAT: 39°17'30"
MAP OF
H.G. ENERGY, LLC
-WATERFLOOD UNIT-
S.E. ADAMS 249

LON: 80°30'00"

7985

LAT:39°16'11.1"

(BOTTOM HOLE: LAT:39°16'14.3")



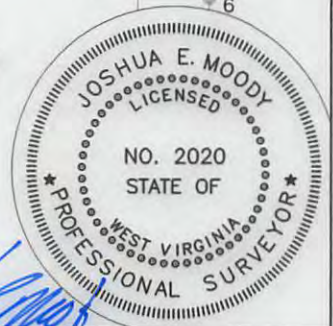
DENOTES LOCATION OF WELL ON U.S. TOPO MAPS.

JOB # 13-014
 DRAWING # 13LAKEFLOYD FOLDER
 SCALE 1" = 1500'
 MINIMUM DEGREE OF ACCURACY 1/2500
 PROVEN SOURCE OF ELEV. BENCH MARK H-80

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 PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
MOODY LAND SURVEYING, LLC
 ST. MARYS, WV 26170



JOSHUA E. MOODY, P.S. 2020

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION OFFICE OF OIL AND GAS

DATE 9/17/13
 OPERATOR'S WELL
 S.E. ADAMS # 249

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL HORIZONTAL
 (IF "GAS") PRODUCTION STORAGE DEEP SHALLOW
 LOCATION: ELEVATION 1176' WATERSHED TEN MILE CREEK API WELL # 05808
 DISTRICT TEN MILE COUNTY HARRISON 47 - 033 - 05808
 QUADRANGLE SALEM 7.5' STATE COUNTY PERMIT

SURFACE OWNER MICHAEL & MARIAM NARDELLA ACREAGE 2.577 ACRES +/-
 OIL & GAS ROYALTY OWNER HILARY HTS. LTD., et al LEASE ACREAGE 100 ACRES +/-
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION
 OTHER PHYSICAL CHANGE IN WELL (SPECIFY) WILL BE DRILLED DIRECTIONALLY (N 41° E 440')
 PLUG & ABANDON CLEAN OUT & REPLUG
 TARGET FORMATION 5TH SAND ESTIMATED DEPTH MD= 3,200'
 WELL OPERATOR H.G. ENERGY, LLC DESIGNATED AGENT MIKE KIRSCH
 ADDRESS 5260 DuPONT ROAD ADDRESS 5260 DuPONT ROAD
PARKERSBURG, WV 26101 PARKERSBURG, WV 26101

COUNTY NAME PERMIT