



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

PERMIT MODIFICATION APPROVAL

October 23, 2013

NOBLE ENERGY, INC.
333 TECHNOLOGY DRIVE, SUITE 110
CANONSBURG, PA 15317

Re: Permit Modification Approval for API Number 5101641 , Well #: SHL 13EHS

Casing Extended

Oil and Gas Operator:

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.

Please call James Martin at 304-926-0499, extension 1654 if you have any questions.

Sincerely,

for

Gene Smith
Regulatory/Compliance Manager
Office of Oil and Gas



July 25, 2013

West Virginia Department of Environmental Protection

601 57th Street, SE

Charleston, WV 25304-2345

Re: SHL 13 API# 47-5101638 – 47-05101639 -47-05101655 – 47-05101640-47-05101641
47-05101642- 47-05101643

Dear Laura:

Enclosed please find modifications to the casing string for the above referenced well. We would like to extend the 13 3/8" to 1200' if order to try and avoid red rock issues. This change has been approved by the state inspector. This well is located in Marshall County, WV.

Should you have any questions, or desire any additional information, please do not hesitate to contact me at 724-820-3061 or via email at dswiger@nobleenergyinc.com.

Sincerely,

A handwritten signature in black ink, appearing to read 'Dee Swiger', with a large flourish at the end.

Dee Swiger

Regulatory Analyst

DS/

Enclosures:

Received

JUL 29 2013

Office of Oil and Gas
WV Dept. of Environmental Protection

10/25/2013

MOD

SHL BEHS

API # 47-051-01641

20)

CASING AND TUBING PROGRAM

TYPE	Size	New or Used	Grade	Weight per ft.	FOOTAGE: For Drilling	INTERVALS: Left in Well	CEMENT: Fill -up (Cu. Ft.)
Conductor	30"	N	J55	94.0	40'	40'	CTS
Fresh Water	20"	N	J55	94.0	400'	400'	CTS
Coal	13 3/8"	N	J55	54.5	1200'	1200'	CTS
Intermediate	9 5/8"	N	J55	36.0	3218'	3218'	CTS
Production	5 1/2"	N	P110	20.0	13521'	13521'	TOC 200' above 9.625" shoe
Tubing							
Liners							

WRN
7-25-13

TYPE	Size	Wellbore Diameter	Wall Thickness	Burst Pressure	Cement Type	Cement Yield
Conductor	30"	36"	.25		Type 1	CTS
Fresh Water	20"	26"	.438	2730	Type 1	1.18
Coal	13 3/8"	17 1/2"	.380	2730	Type 1	1.18
Intermediate	9 5/8"	12 3/8"	.352	3520	Type 1	
Production	5 1/2"	8 3/4"	.361	12640	Class A	
Tubing						
Liners						

PACKERS

Kind:				
Sizes:				
Depths Set:				

Received

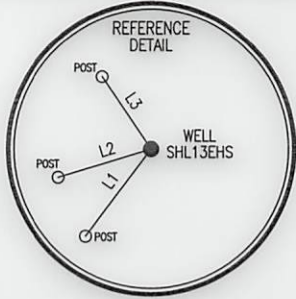
JUL 29 2013



10/25/2013

Well is located on topo map 13,689' feet south of Latitude: 40° 02' 30"

Well is located on topo map 10,038' feet west of Longitude: 80° 30' 00"



SURFACE HOLE LOCATION (SHL)	APPROX. LANDING POINT	BOTTOM HOLE LOCATION (BHL)
UTM 17-NAD83 N:4428319.94 E:539637.04	UTM 17-NAD83 N:4428102.82 E:538996.49	UTM 17-NAD83 N:4429534.46 E:537957.88
NAD27, WV NORTH N:549496.40 E:1709826.68	NAD27, WV NORTH N:548819.13 E:1707712.87	NAD27, WV NORTH N:553574.12 E:1704383.39

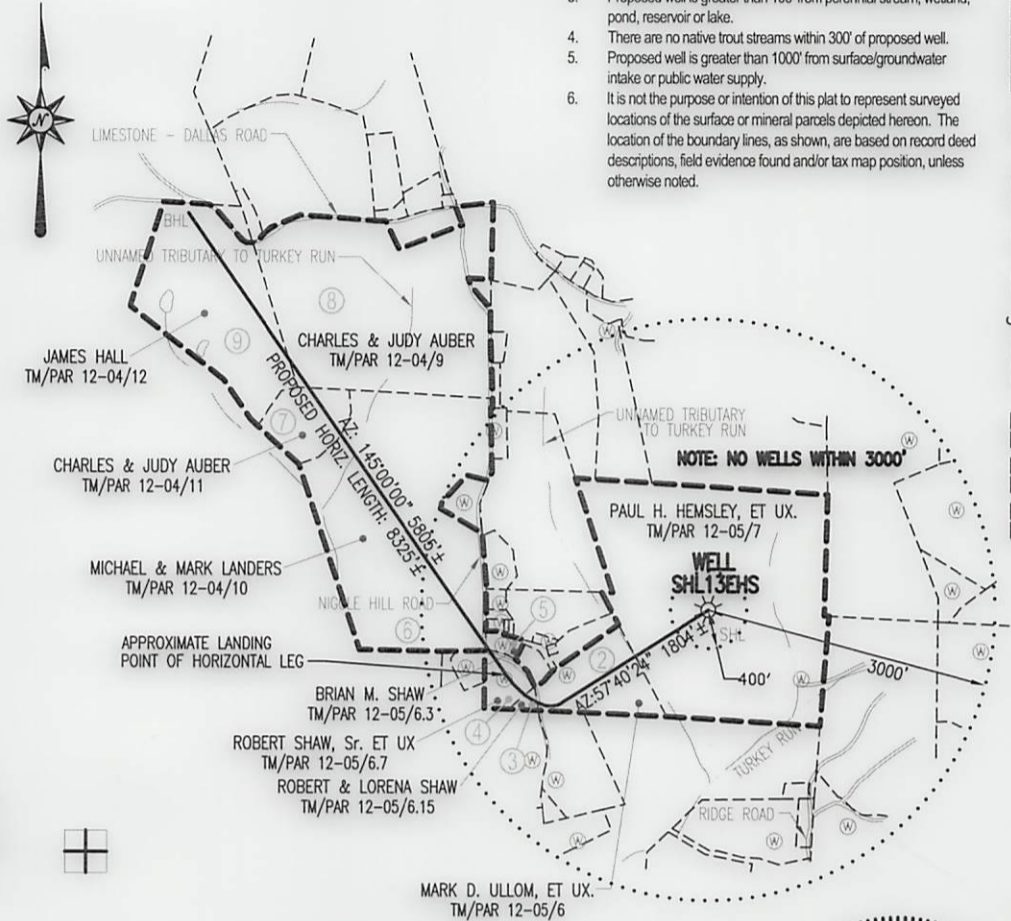
LINE	BEARING	DISTANCE
L1	S 37°08'48" W	236.18'
L2	S 73°09'28" W	211.48'
L3	N 34°30'14" W	189.17'

NOTES:

1. There are no water wells or developed springs within 250' of proposed well.
2. There are no existing buildings within 625' of proposed well.
3. Proposed well is greater than 100' from perennial stream, wetland, pond, reservoir or lake.
4. There are no native trout streams within 300' of proposed well.
5. Proposed well is greater than 1000' from surface/groundwater intake or public water supply.
6. It is not the purpose or intention of this plat to represent surveyed locations of the surface or mineral parcels depicted hereon. The location of the boundary lines, as shown, are based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.

LEGEND

- TOPO MAP POINT
- WELL
- ALL ARE POINTS UNLESS OTHERWISE NOTED.
- WATER SOURCE
- LEASE NUMBER BASED ON ATTACHED WW-6A1
- MINERAL TRACT BOUNDARY
- PARCEL LINES
- WELL REFERENCE
- PROPOSED HORIZONTAL WELL
- ROAD
- STREAM CENTER LINE
- WELLS WITHIN 3000'**
- EXISTING WELLS
- PLUGGED WELLS



Blue Mountain Engineering
11023 MASON DIXON HIGHWAY
BURTON, WV 26562
PHONE: (304) 662-6486

FILE #: SHL13EHS
 DRAWING #: SHL13EHS
 SCALE: 1" = 2000'
 MINIMUM DEGREE OF ACCURACY: 1/2500
 PROVEN SOURCE OF ELEVATION: U.S.G.S. MONUMENT THOMAS 1498.81'

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:

R.P.E.: _____ L.L.S.: P.S. No. 2000

GEORGE D. SIX
LICENSED
No. 2000
STATE OF WEST VIRGINIA
PROFESSIONAL SURVEYOR

PLACE SEAL HERE

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



DATE: APRIL 17, 2013
 OPERATOR'S WELL #: SHL13EHS
 API WELL #: 47 51 01641HGA
 STATE COUNTY PERMIT

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

WATERSHED: TURKEY RUN ELEVATION: 1288.25'

COUNTY/DISTRICT: MARSHALL / SAND HILL QUADRANGLE: VALLEY GROVE, WV 7.5'

SURFACE OWNER: PAUL H. & ANNETTE A. HEMSLEY ACREAGE: 121.65±

OIL & GAS ROYALTY OWNER: SEE ATTACHED WW-6A1 ACREAGE: 393.282±

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION PLUG & ABANDON
 CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY): _____

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: TVD: 6781'± TMD: 13521'±

WELL OPERATOR NOBLE ENERGY INC. DESIGNATED AGENT STEVEN M. GREEN
 Address 333 TECHNOLOGY DRIVE, SUITE 116 Address 500 VIRGINIA STREET EAST, UNITED CENTER SUITE 590
 City CANONSBURG State PA Zip Code 15317 City CHARLESTON State WV Zip Code 25301

10/25/2013