



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

September 17, 2015

SWN PRODUCTION COMPANY, LLC
POST OFFICE BOX 12359
SPRING, TX 773914954

Re: Permit Modification Approval for API Number 900163, Well #: OV ROYALTY TRUST
BRK 201H

6B - Revised saltwater depth, Revised bottom hole location - new plat, 6A-1

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,

A handwritten signature in black ink that reads "Gene Smith" followed by a flourish.

Gene Smith
Assistant Chief of Permitting
Office of Oil and Gas

Promoting a healthy environment.

9/18/2015

4700900163

Mod

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

1) Well Operator: SWN Production Co., LLC 494512924 009-Brooke 002-Cross 620- Stuebenville
Operator ID County District Quadrangle

2) Operator's Well Number: OV Royalty Trust BRK 201H Well Pad Name: OV Royalty Trust PAD

3) Farm Name/Surface Owner: The Trust of Gene Valentine Public Road Access: Brinker Road

4) Elevation, current ground: 1181' Elevation, proposed post-construction: 1181'

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 Associated Pressure(s):
Target Formation- Marcellus, Target Top TVD- 7082', Target Base TVD- 7132' Anticipated Thickness- 50', Associated Pressure- 4600

8) Proposed Total Vertical Depth: 5768'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 14,595'

11) Proposed Horizontal Leg Length: 7569'

12) Approximate Fresh Water Strata Depths: 53'

13) Method to Determine Fresh Water Depths: from nearby water wells

14) Approximate Saltwater Depths: 1145'

15) Approximate Coal Seam Depths: 230-245'

16) Approximate Depth to Possible Void (coal mine, karst, other): Void Expected 230-245'

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: _____

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WV Department of
Environmental Protection

WW-6B
(10/14)

4700900163
Mod

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Office of Oil and Gas

SEP 17 2015

WV Department of
Environmental Protection

API NO. 47- 09

OPERATOR WELL NO. OV Royalty Trust BRX 201H

Well Pad Name: OV Royalty Trust PAD

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	20"	New	H-40	94#	100'	100'	CTS
Fresh Water	13 3/8"	New	J-55	54.5#	345'	345'	287 sx/CTS
Coal	9 5/8"	New	J-55	40#	1549'	1549'	599 sx/CTS
Intermediate	7"	New	J-55	20#	If Needed	If Needed	If Needed/As Needed
Production	5 1/2"	New	HCP-110	20#	14,595'	14,595'	Lead 1073 or 1072 sx/100' made
Tubing	2 3/8"	New	P-110	4.7#	Approx. 5768'	Approx. 5768'	
Liners							

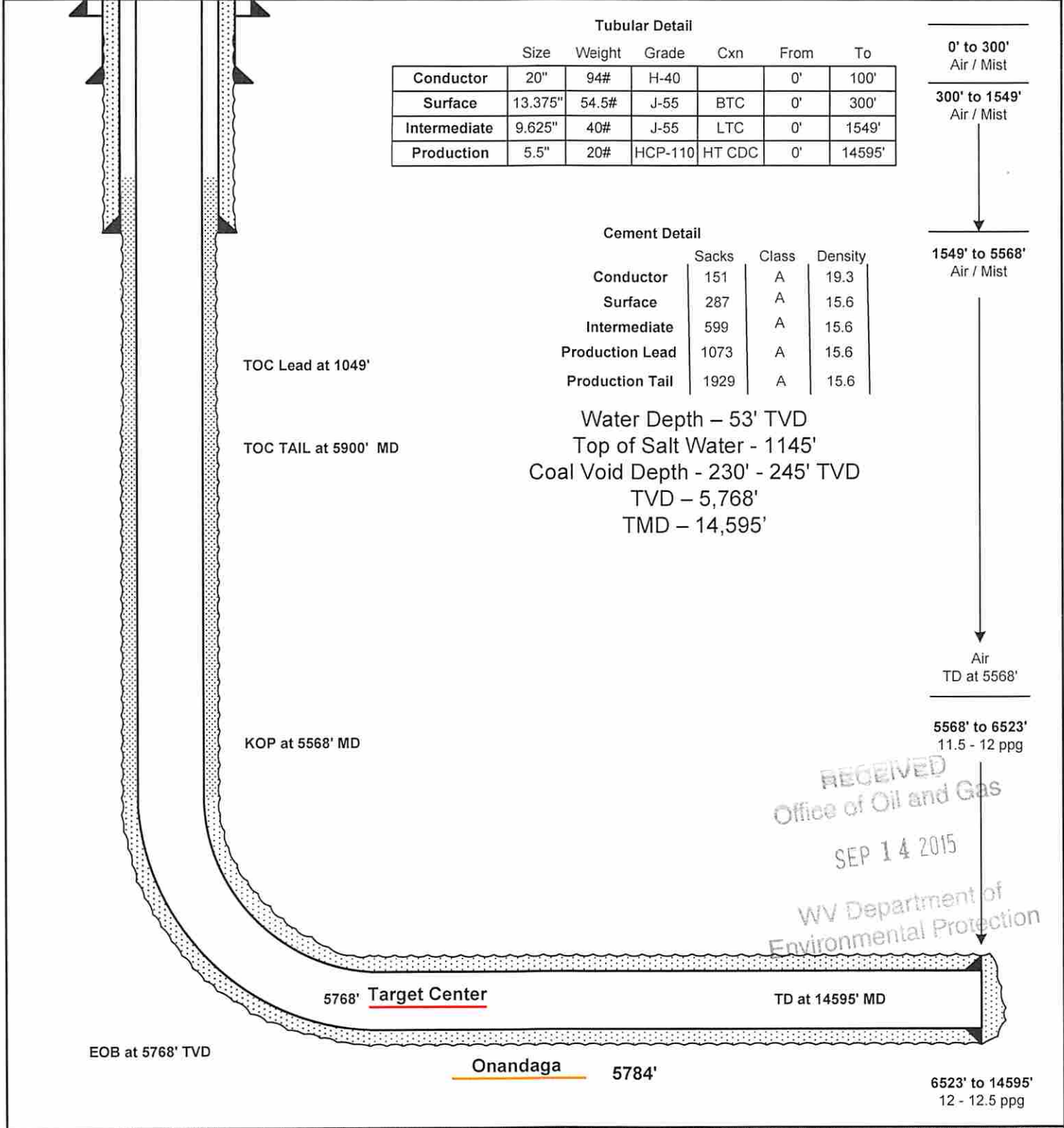
TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Max. Associated Surface Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	20"	30"	0.25	2120	81	Class A	1.19/50% Excess
Fresh Water	13 3/8"	17.5"	0.380	2740	633	Class A	1.19/50% Excess
Coal	9 5/8"	12 1/4"	0.395	3950	1768	Class A	1.19/50% Excess
Intermediate	7"	8 3/4"	0.317	4360	3250	Class A	1.20/15% Excess
Production	5 1/2"	8 3/4"	0.361	12360	9500	Class A	1.20/15% Excess
Tubing	2 3/8"	4.778"	0.190				
Liners							

PACKERS

Kind:	10K Arrowset AS1-X			
Sizes:	5 1/2"			
Depths Set:				

4700900163 Med

Southwestern Energy Company		Proposed Drilling Program	
Well	: OV ROYALTY TRUST LLC BRK 201	Re-entry Rig	: TBD
Field	: PANHANDLE FIELD	Prospect	: PANHANDLE
County	: BROOKE	State	: WV
SHL	: 40.28574901 Latitude -80.58432 Longitude		
BHL	: 40.30466839 Latitude -80.60012032 Longitude		
KB Elev	: 1203 ft MSL	KB	: 26 ft AGL
		GL Elev	: 1177 ft MSL



K:\EandP\WVD\Team Data\Drilling\Wells\OV Royalty Trust LLC Pad\OV Royalty Trust BRK 201\Drilling Program\Master SWN Well Input Sheet v E-0-1.xlsm

9/18/2015

NOTE: This drawing was created for the Reentry Rig. The depths and lengths shown in the plat are referenced to Reentry Rig RKB.

SWN

Southwestern Energy®

PO Box 1300
Jane Lew, WV 26378
PHONE: (832) 796-1610

September 1, 2015

Ms. Laura Adkins
Office of Oil & Gas
601 57th Street
Charleston, WV 25304

4700900163 Mod

RE: New Well OV Royalty Trust LLC BRK 201H

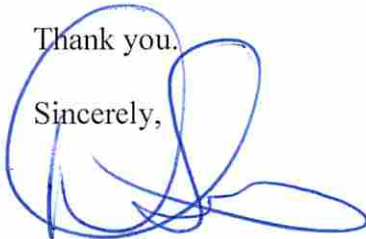
Dear Ms. Adkins

Enclosed please find a revised WW6A1 and mylar for the above captioned well. We would like to shift the wellbore. We will not be crossing an additional leases. We will be missing one and it has been removed from the 6A1. This well is situated on the OV Royalty Trust property, in Cross Creek District, Brooke County, West Virginia.

If you have any questions or desire additional information, please me at 304-884-1614

Thank you.

Sincerely,



Dee Southall
Regulatory Supervisor
Southwestern Energy Production Company, LLC
PO Box 1300
Jane Lew, WV 26378

RECEIVED
Office of Oil and Gas
SEP 02 2015
WV Department of
Environmental Protection

$\frac{R^2}{A} \rightarrow V^+$

The Right People doing the Right Things,
wisely Investing the cash flow from
our underlying Assets, will create Value+

9/18/2015

Exhibit "A"

Attached hereto and made part of the State of West Virginia Oil and Gas Permit Form WW-6A1 by, SWN Production Company L.L.C. Operator
 OV Royalty Trust L.L.C. 201H
 Brooke County, West Virginia

Tract #	Tax Parcel	Lease Number	Lessor	Lessee	Royalty	BK/Pg
1)	4-CC22-41	1-324547-000	1986 Gene Charles Valentine Trust dated November 26, Great Lakes Energy Partners L.L.C. Range Resources - Appalachia L.L.C. Range Resources - Appalachia L.L.C. Chesapeake Appalachia L.L.C.	Great Lakes Energy Partners L.L.C. Range Resources - Appalachia L.L.C. Chesapeake Appalachia L.L.C. SWN Production Company L.L.C.	14.00% 14.00% 10/552 30/480	10/121 20/733 10/552 30/480
2)	4-C22G-57	47-000692-000	Charles R. Boggs Chesapeake Appalachia L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, L.L.C.	18.00%	16/637 30/480
3)	4-CC22-32	47-000551-000	Charles V Isinghood and Betty Isinghood Chesapeake Appalachia L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, L.L.C.	18.00%	14/545 30/480
4)	4-C22G-83	47-000446-000	John Isinghood Chesapeake Appalachia L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, L.L.C.	18.00%	14/323 30/480
5)	4-CC22-33	47-000551-000	Charles V. Isinghood and Betty Isinghood Chesapeake Appalachia L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, L.L.C.	18.00%	14/545 30/480
6)	4-C22C-128	47-000313-000	Betty Hanlon Chesapeake Appalachia L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, L.L.C.	18.00%	14/340 30/480
7)	4-CC22-40	47-000895-000	Carolyn Freeman Chesapeake Appalachia L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, L.L.C.	12.50%	18/447 30/480
8)	4-C22C-160	47-000446-000	John Isinghood Chesapeake Appalachia L.L.C.	Chesapeake Appalachia L.L.C. SWN Production Company L.L.C.	18.00%	14/323 30/480
9)	4-C22C-163	1-120107-002 1-120107-001	Earl Price Linda Rosser Chesapeake Appalachia L.L.C.	SWN Production Company L.L.C. SWN Production Company, L.L.C. SWN Production Company, L.L.C.	18.00% 18.00%	30/735 30/740 30/740
10)	4-C22C-163.01	1-120107-001	Linda Rosser Chesapeake Appalachia L.L.C.	SWN Production Company L.L.C.	18.00%	30/740
11)	4-CC18-39	47-000780-001	Aretta Mina Uirich Keadle Chesapeake Appalachia L.L.C. 1-329412-001 Charles Melvin Uirich Chesapeake Appalachia L.L.C. 47-000780-005 David Nurmi Chesapeake Appalachia L.L.C. 47-000780-002 James M. Simpson II Chesapeake Appalachia L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, L.L.C. Chesapeake Appalachia, L.L.C. SWN Production Company, L.L.C. Chesapeake Appalachia, L.L.C. SWN Production Company, L.L.C. Chesapeake Appalachia, L.L.C. SWN Production Company, L.L.C.	18.00% 14.00% 18.00% 18.00% 18.00%	17/125 30/480 11/516 30/480 18/33 30/480 17/163 30/480

Exhibit "A"
 Attached hereto and made part of the State of West Virginia Oil and Gas Permit Form WW-6A1 by, SWN Production Company L.L.C. Operator

OV Royalty Trust L.L.C. 201H
 Brooke County, West Virginia

Tract #	Tax Parcel	Lease Number	Lessor	Lessee	Royalty	BK/PG
		47-000780-004	M L Buchanan, Jr. Chesapeake Appalachia L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, L.L.C.	18.00%	18/732 30/480
11)	4-CC18-39	47-000780-003	Priscilla Gay Buchanan Chesapeake Appalachia L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, L.L.C.	18.00%	17/565 30/480
cont'd		47-000780-007	Christine Isabel Harvey Chesapeake Appalachia L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, L.L.C.	18.00%	21/735 30/480
		47-000780-006	Charles M. Nurmi Chesapeake Appalachia L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, L.L.C.	18.00%	21/731 30/480
		47-000780-008	Heather Marie Ruschman Chesapeake Appalachia L.L.C.	Chesapeake Appalachia, L.L.C. SWN Production Company, L.L.C.	18.00%	22/440 30/480
12)	4-CC18-62	47-001458-000	Thomas J. Boyd Family Trust Chesapeake Appalachia L.L.C.	Chesapeake Appalachia L.L.C. SWN Production Company L.L.C.	18.00%	21/193 30/480

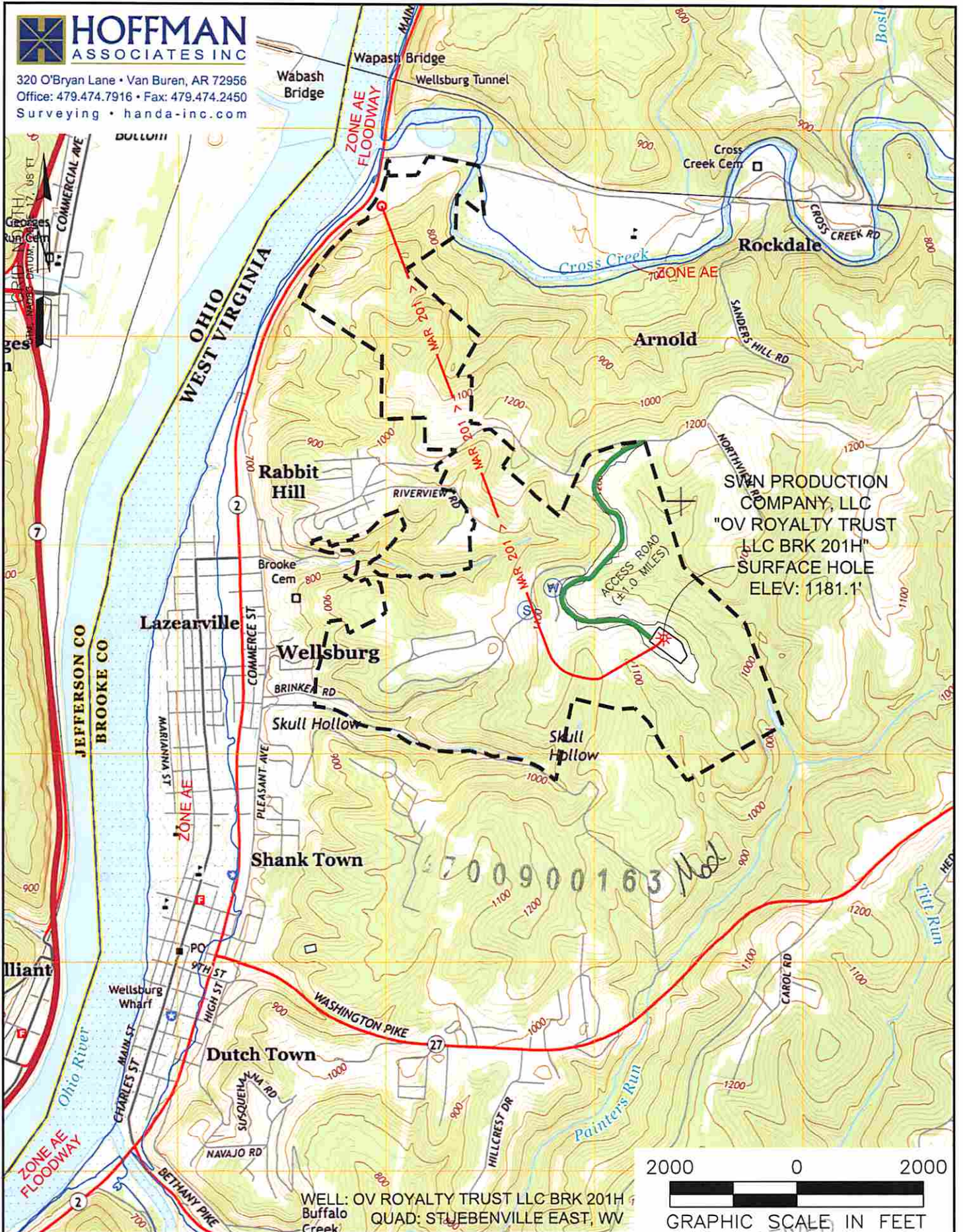
47-000900163

RECEIVED
 WV Department of
 Environmental Protection
 SEP 02 2015

9/18/2015



320 O'Bryan Lane • Van Buren, AR 72956
Office: 479.474.7916 • Fax: 479.474.2450
Surveying • handa-inc.com



WELL: OV ROYALTY TRUST LLC BRK 201H
Buffalo Creek
QUAD: STUEBENVILLE EAST, WV



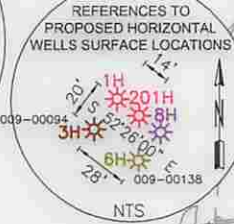
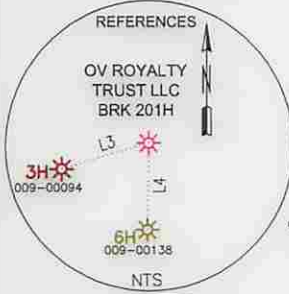
NAME AND DISTANCE TO THE NEAREST STREAM: AN UNNAMED TRIBUTARY OF PAINTERS RUN CREEK IS LOCATED ±0.44 MILES SOUTHEAST OF THE CENTER OF THE DRILL PAD.		STREAM CROSSING COORDINATES (NAD 83): NO NEW CROSSINGS.		COMPANY: 	
WELL RESTRICTIONS: WELL PAD, LOD, & E & S CONTROL FEATURES TO PERENNIAL STREAM, LAKE, POND, RESERVOIR OR WETLAND: >100 FEET WELL PAD, LOD, & E & S CONTROL FEATURES TO NATURALLY PRODUCING TROUT STREAM: >300 FEET WELL PAD, LOD, & E & S CONTROL FEATURES TO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY: >1000 FEET WELL SHL TO EXISTING WATER WELL OR DEVELOPED SPRING: >250 FEET CENTER OF PAD TO OCCUPIED DWELLING STRUCTURE: >625 FEET CENTER OF PAD TO AGRICULTURAL BUILDINGS LAGER THAN 2500 SQ FT: >625 FEET		OPERATOR'S OV ROYALTY TRUST LLC BRK		WELL #: 201H	
FEMA FLOOD INFORMATION: BY GRAPHIC PLOTTING ONLY FEMA FIRM UNINCORPORATED AREA OF BROOKE COUNTY, WEST VIRGINIA; MAP NUMBERS 54009C0090 D, & 54009C0088 D; EFFECTIVE DATE APRIL, 19, 2010.		LOCATION: CROSS CREEK DISTRICT BROOKE COUNTY, WEST VIRGINIA		SURFACE HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 40.285751' LONGITUDE: -80.584317'	
LEGEND: ○ PROPOSED SURFACE HOLE / BOTTOM HOLE ✱ EXISTING / PRODUCING WELLHEAD ✖ ABANDONED WELL ✖ PLUGGED & ABANDONED WELL △ CUT CONDUCTOR		(S) EXISTING SPRING (W) EXISTING WATER WELL — ACCESS ROAD — ACCESS ROAD TO PREV. SITE — HIGHWAY/INTERSTATE — COUNTY ROAD		BOTTOM HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 40.304476' LONGITUDE: -80.600186'	
REVISIONS: △ UPDATED DIRECTIONAL PATH 08-20-2015 △ CORRECTED COMMA PLACEMENT, 08-21-2015		DATE: 08-18-2015		DRAWN BY: S. HUTSON SCALE: 1" = 2000' DRAWING NO: 59072 TOPOGRAPHIC MAP	

9/18/2015



320 O'Bryan Lane • Van Buren, AR 72956
Office: 479.474.7916 • Fax: 479.474.2450
Surveying • handa-inc.com

LINE	BEARING	DISTANCE	DESCRIPTION	MONUMENT
L1	N 33°40'37" W	3218.62'	SHL TO LANDMARK	FOUND IRON PIN
L2	N 36°17'20" W	4023.47'	SHL TO LANDMARK	FOUND IRON PIN
L3	S 72°17'34" W	25.32'	SHL TO REF. PNT.	OV ROYALTY TRUST LLC BRK 3H WELL HEAD (009-00094)
L4	S 03°12'41" W	23.72'	SHL TO REF. PNT.	OV ROYALTY TRUST LLC BRK 6H WELL HEAD (009-00138)
L5	N 65°32'39" W	1914.67'	SHL TO WATER WELL	
L6	N 78°31'28" W	2198.74'	SHL TO SPRING	
LINE	BEARING	DISTANCE	CURVE LENGTH	DESCRIPTION
L7	S 82°47'19" W	1824.83'		SHL TO LP
L8	N 20°37'56" W	7509.60'		LP TO BHL



WWW-6A1 LEGEND
(S) SURFACE OWNER
(R) ROYALTY OWNER
(TMP) TAX MAP PARCEL NUMBER
(L) LEASE NUMBER

SURFACE HOLE LOCATION (SHL):
GEOGRAPHIC (NAD83): LATITUDE: 40.285751' LONGITUDE: -80.584317'
UTM (NAD83, ZONE 17, FEET): NORTHING: 14,631,061.398 EASTING: 1,756,342.562
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,459,556.433 EASTING: 535,334.284
LANDING POINT LOCATION (LPL):
GEOGRAPHIC (NAD83): LATITUDE: 40.285145' LONGITUDE: -80.590812'
UTM (NAD83, ZONE 17, FEET): NORTHING: 14,630,832.340 EASTING: 1,754,532.240
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,459,486.616 EASTING: 534,782.496
BOTTOM HOLE LOCATION (BHL):
GEOGRAPHIC (NAD83): LATITUDE: 40.304476' LONGITUDE: -80.600186'
UTM (NAD83, ZONE 17, FEET): NORTHING: 14,637,860.010 EASTING: 1,751,886.200
UTM (NAD83, ZONE 17, METERS): NORTHING: 4,461,628.654 EASTING: 533,975.982

TRACT	SURFACE OWNER (S) / ROYALTY OWNER (R)	TAX PARCEL	ACRES
2	CHARLES R BOGGS (S/R)	4-C22G-57	6.72
3	CHARLES V ISINGHOOD & BETTY ISINGHOOD (S/R)	4-CC22-32	13.00
4	JOHN ISINGHOOD (S/R)	4-C22G-83	5.00
5	CHARLES V ISINGHOOD & BETTY ISINGHOOD (S/R)	4-CC22-33	5.74
6	BETTY HANLON (S/R)	4-C22C-128	4.32
7	CAROLYN FREEMAN (S/R)	4-CC22-40	5.83
8	JOHN ISINGHOOD (S/R)	4-C22C-180	1.50
9	LISA M DELANY & SHAWN A DELANEY (S) DANIEL R VIRTUE & DIANE L VIRTUE (S) EARL PRICE (R) LINDA ROSSER (R)	4-C22C-163	0.30
10	LISA M DELANY & SHAWN A DELANEY (S) LINDA ROSSER (R)	4-C22C-163.01	2.72
11	MYRTLE COX NURMI & OTHERS (S) ARETTA MINA ULRICH KEADLE (R) CHARLES MELVIN ULRICH (R) DAVID NURMI (R) JAMES M SIMPSON II (R) M L BUCHANAN JR (R) PRISCILLA GAY BUCHANAN (R) CHRISTINE ISABEL HARVEY (R) CHARLES M NURMI (R) HEATHER MARIE RUSCHMAN (R)	4-CC18-39	68.18
12	THOMAS M BOYD, RICHARD A BOYD, & DAVID S BOYD TRUSTEES IN TRUST (S) THOMAS J BOYD FAMILY TRUST (R)	4-CC18-62	59.82

SWN PRODUCTION COMPANY, LLC
"OV ROYALTY TRUST LLC BRK 201H"
SURFACE HOLE
ELEV: 1181.1'

- NOTES ON SURVEY**
- COORDINATE SYSTEM IS UTM, NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
 - SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
 - THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
 - NO OCCUPIED DWELLINGS AND AGRICULTURE BUILDINGS GREATER THAN 2500 SQ FT. WITHIN 625 FEET OF PROPOSED OF CENTER OF PAD.
 - NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
 - NO PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
 - NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.
 - NO GROUND INTAKE OR PUBLIC WATER SUPPLY WITHIN 1000 FEET OF WELL PAD, LIMITS OF DISTURBANCE, E & S CONTROLS OR PUBLIC WATER SUPPLY.

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 REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



P.S. 2315 *Samuel Earl Smith*

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25034

MINIMUM DEGREE OF ACCURACY: 1/200
PROVEN SURVEY SOURCE OF ELEVATION: GRADE GPS (NAVD 88, US FT)

COMPANY: **SWN** Production Company, LLC
OPERATOR'S WELL #: 201H
API WELL #: 47 09 00163
STATE COUNTY PERMIT

WELL TYPE: OIL WASTE DISPOSAL PRODUCTION DEEP GAS LIQUID INJECTION STORAGE SHALLOW
WATERSHED: BUFFALO CREEK ELEVATION: 1181.1'
DISTRICT: CROSS CREEK COUNTY: BROOKE QUADRANGLE: STUEBENVILLE EAST WV.
SURFACE OWNER: THE TRUST OF GENE VALENTINE ACREAGE: ±494.38
OIL & GAS ROYALTY OWNER: THE TRUST OF GENE VALENTINE ACREAGE: ±494.38
DRILL DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION
CONVERT PLUG & ABANDON CLEAN OUT & REPLUG OTHER CHANGE (SPECIFY)
TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 5,768' TVD 14,595' TMD

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC ADDRESS: P.O. BOX 1300 CITY: JANE LEW STATE: WV ZIP CODE: 26378
DESIGNATED AGENT: DEE SOUTHALL ADDRESS: P.O. BOX 1300 CITY: JANE LEW STATE: WV ZIP CODE: 26378

LEGEND:	REVISIONS:	DATE: 08-18-2015
○ PROPOSED SURFACE HOLE / BOTTOM HOLE	▲ UPDATED DIRECTIONAL PATH 08-20-2015	DRAWN BY: S. HUTSON
⊙ EXISTING / PRODUCING WELLHEAD	▲ CORRECTED COMMA PLACEMENT, 08-21-2015	
⊘ ABANDONED WELL		DRAWING NO: 59072
⊙ PLUGGED & ABANDONED WELL		WELL LOCATION PLAT
△ CUT CONDUCTOR		