



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

January 3, 2017
PERMIT MODIFICATION APPROVAL
Horizontal 6A / Horizontal 6A Well - 1

SWN PRODUCTION COMPANY, LLC
POST OFFICE BOX 12359

SPRING, TX 773914954

Re: Permit Modification Approval for JAMES SEABRIGHT BRK 6H
47-009-00176-00-00

Modified Surface and Bottom Hole Locations

SWN PRODUCTION COMPANY, 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: JAMES SEABRIGHT BRK 6H
Farm Name: SEABRIGHT, JAMES K. & MARTHA MAY
U.S. WELL NUMBER: 47-009-00176-00-00
Horizontal 6A / Horizontal 6A Well - 1
Date Issued: January 3, 2017

Promoting a healthy environment.

01/06/2017

WW-6B
(10/14)

API NO. 47-~~9~~ - 00176 Mon
OPERATOR WELL NO. James Seabright BRK 6H
Well Pad Name: James Seabright BRK Pad

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 1-Buffalo 247-Bethany
Operator ID County District Quadrangle
- 2) Operator's Well Number: James Seabright BRK 6H Well Pad Name: James Seabright BRK Pad
- 3) Farm Name/Surface Owner: James S. Seabright Energy, L.P. d/b/a J. James S. Seabright Public Road Access: Bealls Ridge Road
- 4) Elevation, current ground: 1129' Elevation, proposed post-construction: 1129'
- 5) Well Type (a) Gas Oil Underground Storage
Other
(b) If Gas Shallow Deep
Horizontal
- 6) Existing Pad: Yes or No yes *E. K. R. 10-17-16*
- 7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Associated Pressure(s):
Target Formation- Marcellus, Target Top TVD- 6037', Target Base TVD- 6077' Anticipated Thickness- 40', Associated Pressure- 3634
- 8) Proposed Total Vertical Depth: 6053'
- 9) Formation at Total Vertical Depth: Marcellus
- 10) Proposed Total Measured Depth: 15,943'
- 11) Proposed Horizontal Leg Length: 9362.17'
- 12) Approximate Fresh Water Strata Depths: 250'
- 13) Method to Determine Fresh Water Depths: from offset wells
- 14) Approximate Saltwater Depths: 868'
- 15) Approximate Coal Seam Depths: 311'
- 16) Approximate Depth to Possible Void (coal mine, karst, other): None that we are aware of.
- 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 & Gas

Page 1 of 3

OCT 20 2016

01/06/2017

WW-6B
(10/14)

API NO. 47-9 - 00176 MOU
 OPERATOR WELL NO. James Seabright BRK 01
 Well Pad Name: James Seabright BRK 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	H-40	48#	350'	350'	331 sx/CTS
Coal	9 5/8"	New	J-55	36#	1718'	1718'	666 sx/CTS
Intermediate	7"	New	J-55	20#	If Needed	If Needed	If Needed/As Needed
Production	5 1/2"	New	HCP-110	20#	15,943'	15,943'	Level 157 on well 2201 per 12/1/16
Tubing	2 3/8"	New	P-110	4.7#	Approx. 6084'	Approx. 6084'	
Liners							

E. MO 10-17-16

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							

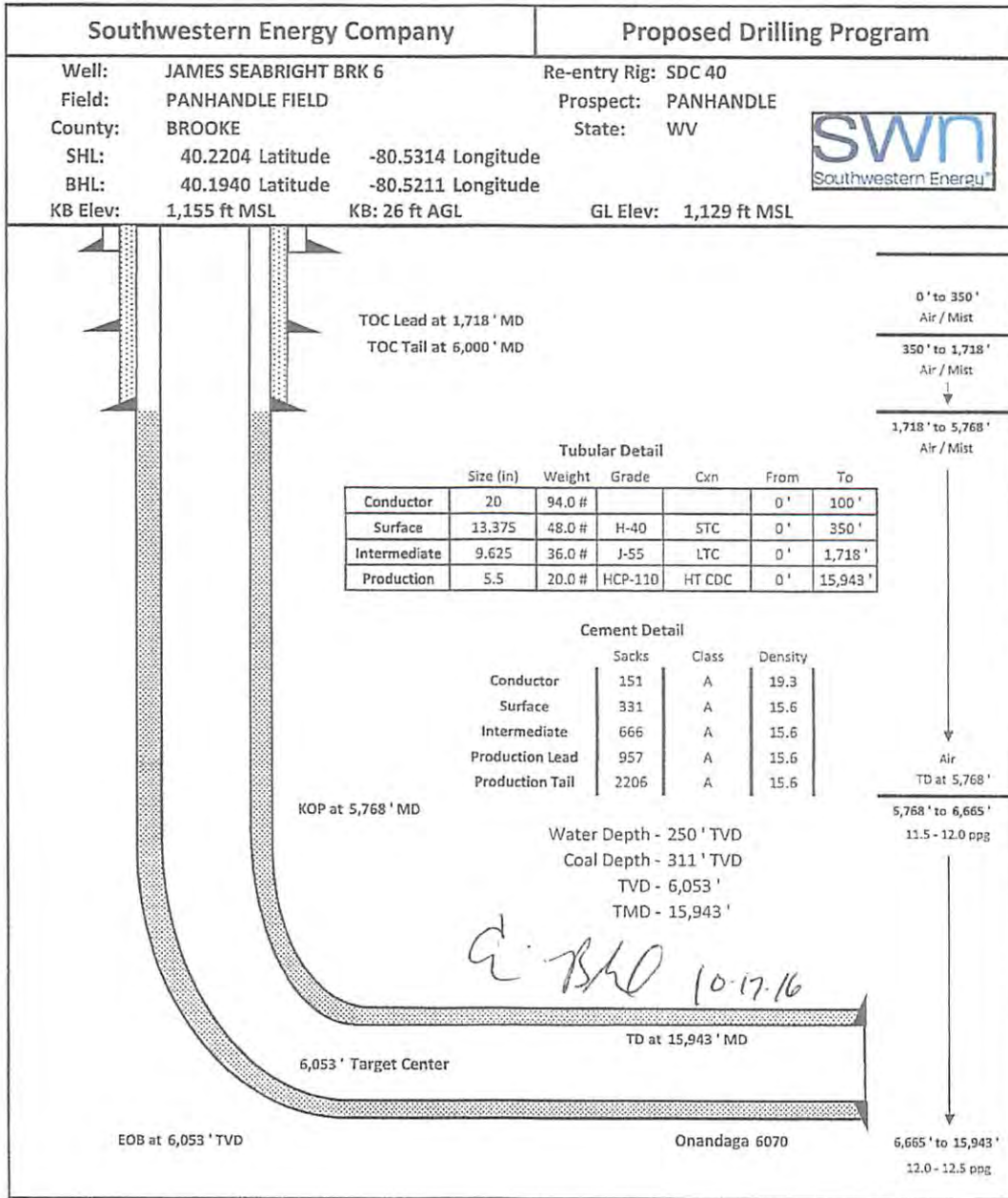
PACKERS

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

Received
Office of Oil & Gas
OCT 20 2016

01/06/2017

9-00176 MOD



Received
Office of Oil & Gas
OCT 20 2016

01/06/2017



RETTEW Associates, Inc.
27 Travato Street, Suite 101
Bridgeport, WV 26330
Phone (800) 738-8395
Email: rettew@rettew.com
Website: www.rettew.com

SURFACE HOLE LOCATION (SHL):

UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,452,326.655
EASTING: 539,868.683

KICKOFF POINT LOCATION (KOP):

UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,452,212.525
EASTING: 539,628.405

LANDING POINT LOCATION (LPL):

UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,452,025.484
EASTING: 539,634.654

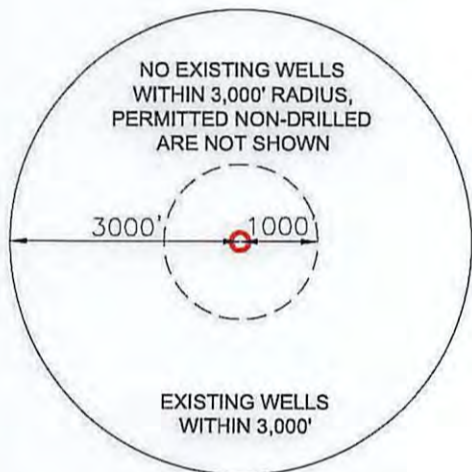
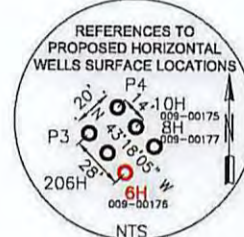
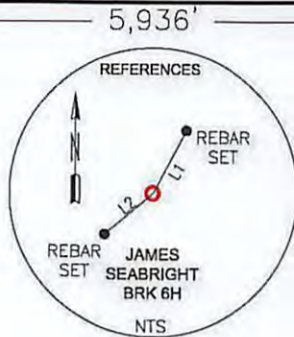
BOTTOM HOLE LOCATION (BHL):

UTM (NAD83, ZONE 17, METERS):
NORTHING: 4,449,398.737
EASTING: 540,749.642

GRID NORTH
UTM, NAD83 DATUM, ZONE 17, US FT

Table with columns: TRACT, SURFACE OWNERS, TAX PARCEL, ACRES. Contains 7 rows of land ownership data.

Table with columns: LINE, BEARING, DISTANCE, DESCRIPTION, MONUMENT. Contains 6 rows of survey line data.

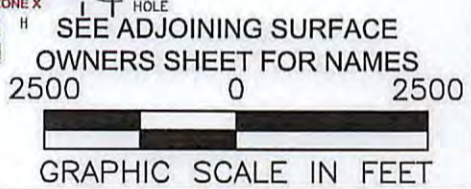


NOTES ON SURVEY

- 1. COORDINATES SYSTEM IS UTM, NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
2. SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND FIELD LOCATIONS.
3. THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
4. NO DWELLINGS AND BUILDINGS WITHIN 625 FEET OF PROPOSED OF CENTER OF PAD.
5. NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
6. NO PERENNIAL STREAMS, LAKES, PONDS, RESERVOIRS OR WETLANDS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
7. NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.

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. 2313



COMPANY: SWN SWN Production Company, LLC Production Company™

(+) 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 GRADE GPS ELEVATION: (NAVD 88, US FT)

JAMES SEABRIGHT BRK
OPERATOR'S WELL #: 6H
API WELL #: 47 9 00176M00
STATE COUNTY PERMIT

WELL TYPE: OIL [] WASTE DISPOSAL [] PRODUCTION [] DEEP [] GAS [x] LIQUID INJECTION [] STORAGE [] SHALLOW [x]
WATERSHED: SUGARCAMP RUN, BUFFALO CREEK ELEVATION: 1129.0' (DESIGN)±
DISTRICT: BUFFALO COUNTY: BROOKE QUADRANGLE: BETHANY, WV-PA
SURFACE OWNER: JAMES K. & MARTHA MAY SEABRIGHT; LIFE INTEREST & JAMES H. SEABRIGHT ACREAGE: 173.00±
OIL & GAS ROYALTY OWNER: MARTHA MAY SEABRIGHT, LE, & JAMES H. SEABRIGHT ACREAGE: 173.00±
DRILL [x] DRILL DEEPER [] REDRILL [] FRACTURE OR STIMULATE [x] PLUG OFF OLD FORMATION [] PERFORATE NEW FORMATION []
CONVERT [] PLUG & ABANDON [] CLEAN OUT & REPLUG [] OTHER CHANGE [] (SPECIFY) 01/06/2017
TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 6,053' TVD 15,943' TMD

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

Table with columns: LEGEND, REVISIONS, DATE. Includes symbols for proposed surface hole, existing wellhead, abandoned well, etc.



RETTEW Associates, Inc.
 27 Travato Street, Suite 101
 Bridgeport, WV 26330
 Phone (800) 738-8395
 Email: rettetw@rettetw.com
 Website: www.rettetw.com

ADJOINING SURFACE OWNERS

TRACT	ADJOINING SURFACE OWNER	TAX PARCEL	ACRES
A	MARK WEAVER OWEN AND VIRGINIA K. BEALL	03-B34-0049-0000	243.93±
B	NORMA J. SHIDOCK	03-B34-0050-0000	190.25±
C	JOHN DANA GARNER	03-B39-0003-0000	12.78±
D	JAMES B. CALDWELL	03-B39-0009-0000	182.63±
E	JAMES R. GREATHOUSE AND LINDA R. GREATHOUSE	03-B44-0003-0000	73.57±
F	MILDRED MAIN	03-B44-0004-0000	19.58±
G	LARRY AND DEBBIE DOUGLAS	03-B44-0012-0000	11.00±
H	STATE OF WEST VIRGINIA, DEPARTMENT OF COMMERCE, DIVISION OF NATURAL RESOURCES	03-B44-0014-0000	171.67±
I	GENE C. VALENTINE TRUST, DATED NOVEMBER 26, 1986	03-B43-0028-0000	822.26±
J	CURTIS LEE NEEL AND LOUANN L. NEEL, JOINT TENANTS WITH RIGHT OF SURVIVORSHIP	03-B44-0007-0000	3.97±
K	DONNA M. WEEKLEY	03-B44-0002-0000	1.42±
L	MARK WEAVER OWEN AND VIRGINIA K. BEALL	03-B38-0024-0000	188.00±
M	MARK WEAVER OWEN AND VIRGINIA K. BEALL	03-B38-0019-0000	249.00±

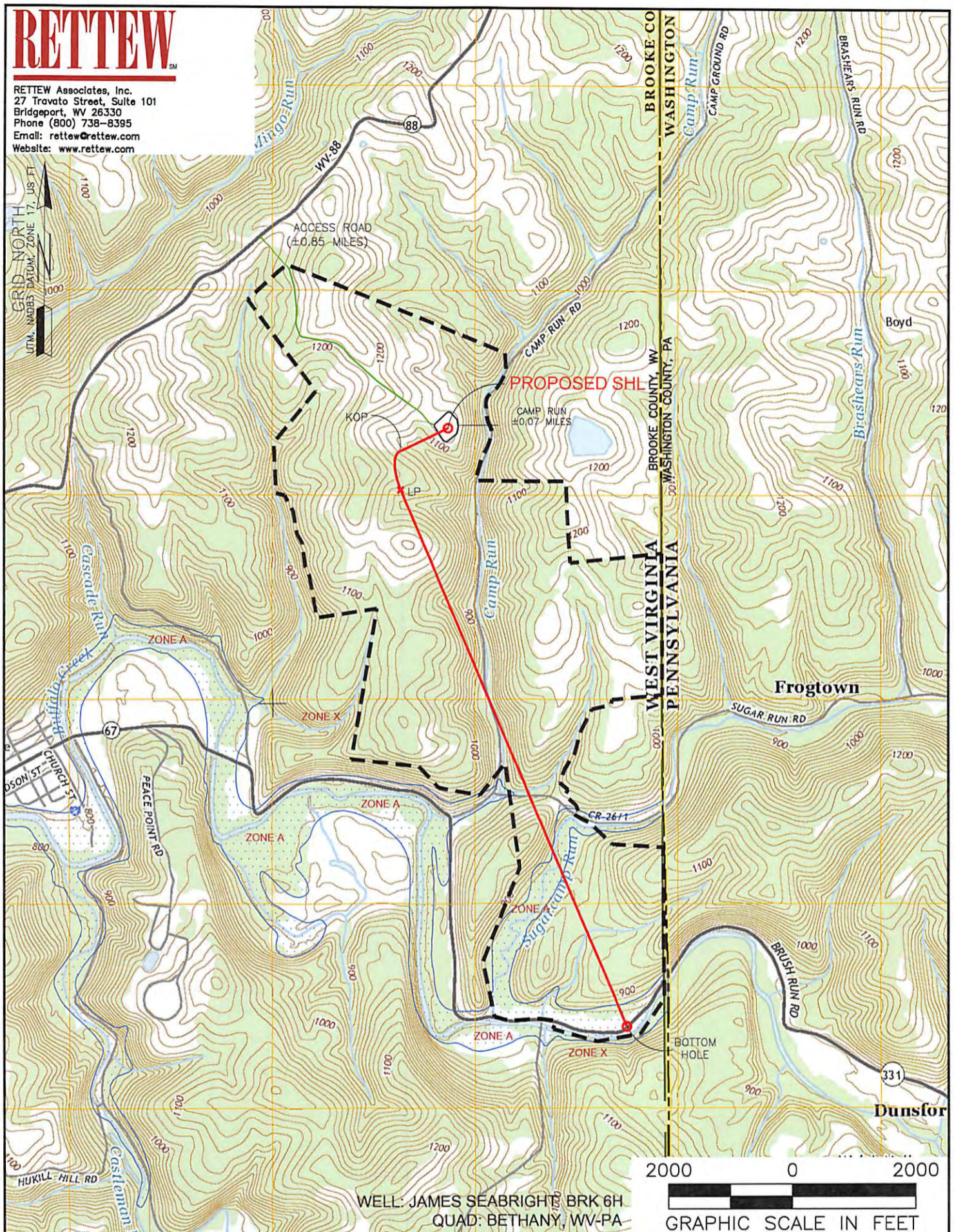
9-00176 MDD 01/06/2017

REVISIONS:	COMPANY:	SWN Production Company, LLC	SWN Production Company™
	OPERATOR'S	JAMES SEABRIGHT BRK	DATE: 10-14-2016
	WELL #:	6H	DRAWN BY: B. HERMAN
	LOCATION:	BUFFALO DISTRICT, BROOKE COUNTY, WEST VIRGINIA	SCALE: N/A
			DRAWING NO: 087569036
			ADJOINING OWNERS

RETTEW

RETTEW Associates, Inc.
27 Travato Street, Suite 101
Bridgeport, WV 26330
Phone (800) 738-8395
Email: rette@rette.com
Website: www.rette.com

GRID NORTH
UTM, NAD83 DATUM, ZONE 17, US FT



WELL: JAMES SEABRIGHT BRK 6H
QUAD: BETHANY, WV-PA



NAME AND DISTANCE TO THE NEAREST STREAM: CAMP RUN IS LOCATED ±0.07 MILES EAST 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 LARGER THAN 2500 SQ FT: >625 FEET		OPERATOR'S JAMES SEABRIGHT BRK WELL #: 6H 9-00176 MOD		LOCATION: BUFFALO DISTRICT, BROOKE COUNTY, WEST VIRGINIA	
FEMA FLOOD INFORMATION: BY GRAPHIC PLOTTING ONLY FEMA FIRM INCORPORATED AREA OF BROOKE COUNTY, WEST VIRGINIA; MAP NUMBER 54009C0135D; EFFECTIVE DATE: APRIL 19, 2010. FLOOD ZONES A & X ARE SITUATED WITHIN THE UNIT.		SURFACE HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 40.220413° LONGITUDE: -80.531424° 01/06/2017		BOTTOM HOLE LOCATION: GEOGRAPHIC (NAD83): LATITUDE: 40.193993° LONGITUDE: -80.521256°	
LEGEND: PROPOSED SURFACE HOLE / BOTTOM HOLE EXISTING / PRODUCING WELLHEAD ABANDONED WELL PLUGGED & ABANDONED WELL CUT CONDUCTOR LEASE BOUNDARY MARCELLUS DHP ACCESS ROAD HIGHWAY/INTERSTATE COUNTY ROAD		REVISIONS:		DATE: 10-14-2016 DRAWN BY: B. HERMAN SCALE: 1" = 200' DRAWING NO: 087569036 TOPOGRAPHIC MAP	

October 18, 2016

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

RE: Proposed New Well James Seabright BRK 6H, James Seabright 8H, & James Seabright 10H

Dear Ms. Adkins

SWN has reviewed the area of the above mentioned well and discovered no shallow wells within 500' of the lateral. This well is situated on the Seabright's property, in Buffalo 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 & Gas

OCT 20 2016

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

01/06/2017

9-00176WVD



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

October 19, 2016

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

RE: Modifications to James Seabright BRK 6H API# 47-009-00176, James Seabright BRK 8H API# 47-009-00132, & James Seabright BRK 10H API# 47-009-00175

Dear Ms. Adkins

Enclosed please find a revised wbd, plat and AOR for the above captioned wells. We would like to modify the TH location and revise the wbd. These wells are situated on the Seabright's property, in Buffalo District, Brooke County, West Virginia.

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

Thank you.

Sincerely,

A handwritten signature in blue ink, appearing to read "Dee Southall". The signature is written over the word "Sincerely,".

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

Received
Office of Oil & Gas
OCT 20 2016

A logo consisting of the text "R²/A" on the left, a red arrow pointing to the right, and "V⁺" on the right. The "R²" and "V⁺" are in a stylized, bold font.

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

01/06/2017