



**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

July 18, 2014

**WELL WORK PERMIT**  
**Horizontal 6A Well**

This permit, API Well Number: 47-9502176, issued to STATOIL USA ONSHORE PROPERTIES, INC., 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: BALL 2H  
Farm Name: BALL, ROBERT D. & SHERRY A.  
**API Well Number: 47-9502176**  
**Permit Type: Horizontal 6A Well**  
Date Issued: 07/18/2014

**Promoting a healthy environment.**

**07/18/2014**

## PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

### CONDITIONS

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1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than fifty (50) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
8. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.
9. Operator shall provide the Office of Oil & Gas notification of the date that drilling commenced on this well. Such notice shall be provided by sending an email to [DEPOOGNotify@wv.gov](mailto:DEPOOGNotify@wv.gov) within 30 days of commencement of drilling.

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

1) Well Operator: Statoil USA Onshore Properties Inc. 494505083 Tyler Ellsworth Porter Falls  
Operator ID County District Quadrangle

2) Operator's Well Number: 2H Well Pad Name: Ball

3) Farm Name/Surface Owner: Ball Farm Public Road Access: CR 42/Scales Road

4) Elevation, current ground: 1169' Elevation, proposed post-construction: 1169' (as-built)

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):  
Marcellus, 6918', 50', 4500 psi

8) Proposed Total Vertical Depth: 6,930'

9) Formation at Total Vertical Depth: Marcellus

10) Proposed Total Measured Depth: 13,800'

11) Proposed Horizontal Leg Length: 6100'

12) Approximate Fresh Water Strata Depths: 337'

13) Method to Determine Fresh Water Depths: Identify lowest elevation within 1500' of pad site and project 200' beyond that depth

14) Approximate Saltwater Depths: 587'

15) Approximate Coal Seam Depths: 395'-398', 855'-858'

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: \_\_\_\_\_

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*Michael D. Hoff  
6-6-14*



WW-6B  
(9/13)

18)

**CASING AND TUBING PROGRAM**

TYPE	Size	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling	INTERVALS: Left in Well	CEMENT: Fill-up (Cu. Ft.)
Conductor	20	New	H40	94.0	120	120	cement to surface
Fresh Water	13.375	New	J/K55	54.5	450	430	cement to surface
Coal							
Intermediate	9.625	New	J/K55	36.0	2800	2790	cement to surface
Production	5.50	New	P110	20.0	13500	13490	cement to surface
Tubing	2.375	New	L80	4.7		6500	production tubing
Liners							

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TYPE	Size	Wellbore Diameter	Wall Thickness	Burst Pressure	Cement Type	Cement Yield (cu. ft./k)
Conductor	20	24	0.438	1530	Class A	2.31
Fresh Water	13.375	17.5	0.380	2730	Class A-BondCem	2.31
Coal						
Intermediate	9.625	12.25	0.352	3520	Class A-BondCem	2.31
Production	5.50	8.50	0.361	12640	Class A-ShaleCem	1.37
Tubing	2.375		0.19	11200		
Liners						

**PACKERS**

Kind:				
Sizes:				
Depths Set:				

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

see attached

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

Well will fractured through the plug-n-perf method with +/- 25 fracturing stages per well. Each fracturing treatment will have 400,000 lbs of sand mixed in 7500 Bbls. of fresh water. The fracturing rate will be between 80 and 100 bpm at a pressure lower than a maximum pressure of 10,000 psi.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): Existing Pad - 16.88 acres

22) Area to be disturbed for well pad only, less access road (acres): Existing Pad - 5.53 acres

23) Describe centralizer placement for each casing string:

Surface - 1 centralizer w/ stop collar 10 ft above float shoe. One Single Bow every joint to 100ft below surface.  
Intermediate - 1 centek centralizer w/ stop collar 10 ft above float shoe. 1 centek centralizer w/ stop collar 10 ft above float collar. 1 centralizer every joint for the first 15 joints. One centralizer every 3 jnts to 100ft below surface.  
Production - 1 centek centralizer w/ stop collar 10ft above shoe. 1 centek centralizer 10ft above float collar. 1 centek centralizer every joint

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

Surface - Class A + 3% CaCl<sub>2</sub>  
Intermediate - Class A cmt, 0.05% Retarder, 0.25% Defoamer, 1% Accelerator, 0.25% Dispersant, 0.65% Retarder, 9.10 gal/sk Fresh Water.  
Production - Class A cmt, 10% bwow Dispersent, 0.6% bwoc Fluid Loss, (See attached "Cement Additives" for remainder)

25) Proposed borehole conditioning procedures:

Surface - Drilled with air to section total depth. Prior to tripping, hole will be blown clean at 3000CFM then displaced with water.  
Intermediate - Drilled with 8.6 ppg synthetic based mud to section total depth. At section total depth, pump 40bbl viscous pill and circulate hole clean.  
Production - Drilled with 12.0-12.5 ppg synthetic based mud to section total depth. Approximately 500ft from total depth, pump 20 bbl heavy weight pill for hole cleaning. At section total depth pump another 20bbl heavy weight pill and continue to circulate at least bottoms up. Pump rates will be maintained in excess of 600 GPM, and rotation in excess of 100 RPM to assist cuttings transport. A 50 bbl weighted spacer will be pumped ahead of the cement to assist in mud removal and reduc

\*Note: Attach additional sheets as needed.

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

20" conductor will be pre-set prior to start of operations and cemented in place to surface at approximately 120ft. A 17 ½" surface hole will be drilled with air to approximately 550' md/tvd. 13 3/8" surface casing will be installed and cemented to surface in order to isolate fresh water zones and provide a competent shoe for well control while drilling deeper horizons. A 12 ¼" intermediate hole section will be drilled with Synthetic Based Mud (SBM) and a conventional mud motor to approximately 2800' md/tvd through the base of the Berea Sandstone. 9 5/8" Intermediate casing will be installed and cemented to surface in order to isolate the Big Injun from lower hydrocarbon bearing zones and provide a competent shoe for well control while drilling deeper horizons. An 8 ½" pilot hole section will be drilled vertically, and potentially cored over the Marcellus horizon, and TD'd into the Onodaga at approximately 7068' tvd (well will be TD'd no deeper than 100' into the Onodaga), at which point wireline formation evaluation logs will be taken. The vertical pilot hole will be plugged back and permanently abandoned with cement plugs from total depth to planned kick-off point. The wellbore will be open-hole sidetracked, deviated, and landed horizontally in the Marcellus Target horizon and extended laterally to total depth of 13,800' md/ 6930' tvd using SBM and conventional mud motors. A 5 ½" production casing will be installed and cemented to surface, at which point the rig will be released to the next well.

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## Cement Additives

Surface - Class A + 3% CaCl<sub>2</sub>

Intermediate - Class A cmt, 0.05% Retarder, 0.25% Defoamer, 1% Accelerator, 0.25% Dispersant, 0.65% Retarder, 9.10 gal/sk Fresh Water

Production - Class A cmt, 10% bwoc Dispersant, 0.6% bwoc Fluid Loss, 0.4%bwoc Retarder, 0.1% bwoc Free water control agent, 0.25%bwoc Defoamer, 0.1% bwoc Fluid Loss, 6.32 gal/sk Fresh Water

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APR 23 2014

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Marcellus - Drilling Well Schematic

Well Name: Ball 2S  
 Field Name: Marcellus  
 County: Tyler, WV  
 API #: 0

GLE (R): 1195  
 DF(R): 22  
 Y = 4372965.72  
 Y = 4372965.72

TVD(R): 7,100  
 TMD(R): 7,100  
 Profile: Vertical Pilot Hole  
 AFE No.: n/a

BHL: X = 520988.06  
 SHL: X = 520988.06

Formations & Csg Points	Depth, ft			Form. Temp. (F)	Pore Press. (EMW)	Frac. Gradient (EMW)	Planned MW	Measure Depth (ft)
	MD	TVD	SS					
Conductor	230	230	1.097	-	-	-	-	120
Casing Point	450	450	76.7	65	-	-	Air/Mix	450
Approximate fresh water strata -337'								
Big Lime	2,057	2,057	-0.88	-	-	-	B.B.	2,057
Big Injun (Base)	2,512	2,512	-1.205	-	-	-	B.B.	2,512
Berea Sand	2,705	2,705	-1.888	-	-	-	B.B.	2,705
Casing Point	2,800	2,800	-2.383	82	-	> 2.0	SBM	2,800
Gordon Sand	2,944	2,944	-1.727	-	-	-	B.B.	2,944
Riley	4,804	4,804	-3.587	-	-	-	B.B.	4,804
Genesee	6,823	6,823	-5.606	145	-	-	9.5	6,823
Tully	6,848	6,848	-5.631	150	-	-	9.5	6,848
Marcellus	6,918	6,918	-5.791	150	-	-	9.5	6,918
Onondaga	6,968	6,968	-5.751	155	-	-	9.5	7,068

20" Conductor  
 17 1/2" Surface

Profile: Vertical  
 Bit Type: 37 3/2" Hammer bit  
 BHA: -  
 Mud: Air/Mix  
 Surveys: n/a  
 Logging: n/a  
 Casing: 13.375in 54.5 # 1-SS BTC set @ = 450 MD/450 TVD  
 Centralizers: 1 centralizer w/ stop collar 10 ft above float shoe. One Single Flow every joint to 100ft below surface.  
 Cement: 15.8 ppg BondCem gas tight single slurry tail design to surface  
 Potential Drilling Problems:

FIT/LOT: 14.0 ppg EMW  
 12 1/4" Intermediate

Profile: Nudge and hold for anticollision  
 Bit Type: PDC 7-blade, 16mm cutters, Smith MDS1716  
 BHA: 8" Directional Assy 6-7 lobe 4.0 Stg 0.17 rpg, 620 DIFF  
 Mud: SBM  
 Surveys: Gyro MS, MWD EM Pulse  
 Logging: n/a  
 Casing/Liner: 9.625in 36# J55 BTC set at 2800MD/2800TVD  
 Liner Hanger: n/a  
 Centralizers: 1 centralizer w/ stop collar 10 ft above float shoe. 1 centralizer w/ stop collar 10 ft above float collar. 1 centralizer every joint for the first 15 joints. One centralizer every 3 joints to 100ft below surface.  
 Cement: 15.8 ppg BondCem gas tight single slurry tail design to surface  
 Potential Drilling Problems: Slow ROP, BSR in marcellus

FIT/LOT: 15.0 ppg EMW  
 8 1/2" Production

Profile: Vertical Pilot Hole  
 Bit Type: 8 1/2" Security FXD65 (vert)  
 BHA: Directional Assembly (Steerable Motor) + EM w/ GR  
 Mud: SBM  
 Surveys: MWD EM Pulse  
 Logging: Whole core across Marcellus target interval + Quad Combo WL Log  
 Casing/Liner: n/a  
 Csg Hanger: n/a  
 Centralizers: n/a  
 Cement: Plugback w/ (2) 600ft linear plugs to approximately 5800 md  
 Potential Drilling Problems:  
 Notes / Comments:

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Cement Outside Casing

WV Department of Environmental Protection  
 07/18/2014

Last Revision Date: 7/10/2014  
 Revised by: George Manthos

Note: Depths are referenced to RKB  
 Note: Not Drawn to Scale



4709502176

**StatOil** Marcellus - Drilling Well Schematic

Well Name: Ball 2H  
 Field Name: Marcellus  
 County: Tyler, WV  
 AFE #: 0

GLE (R): 1.195  
 DW (W): 22  
 Y: 4374994.42  
 X: 520791.00  
 SHL: 520798.06  
 Y: 4372965.72

TVD (R): 6930  
 TWD (R): 75900  
 Profile: Horizontal  
 AFE No.: n/a

Formations & Csg Points	Depth, ft			Form. Temp. (F)	Pore Press. (EMW)	Frac Gradient (EMW)	Planned MW	Measure Depth (ft)	Program	Details
	MD	TVD	SS							
Conductor	120	120	1,097	-	-	-	-	120		20" Conductor 17 1/2" Surface
Casing Point	450	450	767	65	-	-	Air / Muc	450		FIT/LOT: 14.0 ppg EMW Profile: Vertical Bit Type: 17 1/2" Hammer bit BHA: - Mud: Air / Muc Surveys: n/a Logging: n/a Casing: 13.375in 54.5 # J-55 BTC set @ - 450 MD/450 TVD Centralizers: 1 centralizer w/ stop collar 10 ft above float shoe. One Single flow every joint to 100ft below surface. Cement: 15.8 ppg BondCem gas tight single slurry tail design to surface Potential Drilling Problems: - FIT/LOT: 14.0 ppg EMW Profile: Nudge and hold for anticollision Bit Type: PDC 7-blade, 16mm cutters, Smith MD5716 BHA: 8" Directional Assy 6:7 Lobe 4.0 Stg 0.17 rpg, 620 DIFF Mud: SBM Surveys: Gyro MS, MWD EM Pulse Logging: n/a Casing/Liner: 9.625in 36# J55 BTC set at 2000MD/2000TVD. Liner Hanger: n/a Centralizers: 1 centek centralizer w/ stop collar 10 ft above float shoe. 1 centek centralizer w/ stop collar 10 ft above float collar. 1 centralizer every joint for the first 15 joints. One centralizer every 3 joints to 100ft below surface. Cement: 15.8 ppg, BondCem gas tight, single slurry tail design to surface Potential Drilling Problems: - Note: KOP, DKB bit center
Approximate fresh water strata - 337										
Big Lime	2,057	2,057	840	-	-	-	-	8.6		
Big Injun (Base)	2,512	2,512	1,295	-	-	-	-	8.6		
Berea Sand	2,705	2,705	1,488	-	-	-	-	8.6		
Casing Point	2,800	2,800	1,583	B2	-	>10.0	SBM	2,800		FIT/LOT: 15.0 ppg EMW Profile: K0 from Vertical, Land HZ Bit Type: 8 1/2" Security FXD65 (vert) 8 1/2" Smith SD1513 (curve & lateral) BHA: Directional Assembly (Steerable Motor) + EM w/ GR 6.75in 7-8 Lobe, 2.9 Stg (0.17rpg, 560 Diff) - Vert 6.75in 6-7 Lobe, 5.0 Stg (1.95 deg Fixed, 0.29 rpg, 715 Diff) - HZ Mud: SBM Surveys: MWD EM Pulse Logging: n/a Casing/Liner: 5.5in 20# P110EC Vam Top NT to 0' to TD @ 13800 R MD Csg Hanger: Fluted mandrel hanger Centralizers: 1 centek centralizer w/ stop collar 10ft above shoe. 1 centek centralizer 10ft above float collar. 1 centek centralizer every joint (floating) until KOP. 1 centek centralizer every 3 joints (floating) until 200ft inside intermediate shoe. 1 centek centralizer 50ft below mandrel hanger. Cement: 15.0 ppg Gas tight, single slurry tail design to surface Potential Drilling Problems: Wellbore instability in lateral w/ MW < 11.5 ppg Notes / Comments: -
Gordon Sand	2,944	2,944	1,727	-	-	-	-	8.6		
Riley	4,804	4,804	3,507	-	-	-	-	8.6		
KOP1	6,140	6,140	4,923	-	-	-	-	12.0		
Genesee	6,823	6,823	5,606	-	-	-	-	12.0		
Tully	6,848	6,848	5,631	117	-	-	-	12.0		
Marcellus	6,918	6,918	5,701	118	-	-	-	12.0		
Tgt Landing Point	7,400	6,942	5,725	118	-	-	-	12.0		
Onondaga	6,968	6,968	5,751	-	-	-	-	-		TMD: 13,800 TVD: 6,930

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Cement Outside Casing  
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Last Revision Date: 7/10/2014  
 Revised by: George Manthos  
 Note: Depths are referenced to RKB  
 Note: Not Drawn to Scale



WW-9  
(9/13)

API Number 47 - \_\_\_\_\_ - \_\_\_\_\_  
Operator's Well No. Ball 2H \_\_\_\_\_

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Statoil USA Onshore Properties Inc. OP Code 494505083

Watershed (HUC 10) 05030106 Quadrangle Porters Falls

Elevation 1169' County Tyler District Ellsworth

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

Will a pit be used? Yes  No

If so, please describe anticipated pit waste: \_\_\_\_\_

Will a synthetic liner be used in the pit? Yes  No  If so, what ml.? \_\_\_\_\_

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 \_\_\_\_\_)

Will closed loop system be used? If so, describe: Yes

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Air/Fresh Water - vert. seccoil based mud for horiz sec

-If oil based, what type? Synthetic, petroleum, etc. Synthetic

Additives to be used in drilling medium? emulsifier, food grade oil, barite, surfactant, calcium carbonate, gilsonite, lubricant, graphite, lime

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. Landfill

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) N/A

-Landfill or offsite name/permit number? Wetzel County Landfill

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 Bekki Winfree

Company Official (Typed Name) Bekki Winfree

Company Official Title Sr. Regulatory Advisor

APR 23 2014

Office of Oil and Gas  
WV Dept. of Environmental Protection

Subscribed and sworn before me this 13 day of February, 2014

Wally Anthony Stuka  
My commission expires April 16, 2017

Notary Public



4709502176

Form WW-9

Operator's Well No. Ball 2H

Statoil USA Onshore Properties Inc.

Proposed Revegetation Treatment: Acres Disturbed 0.95 Prevegetation pH \_\_\_\_\_

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20 (or equivalent)

Fertilizer amount 500 lbs/acre

Mulch 90 bales Tons/acre

Seed Mixtures

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Orchard Grass	40 lbs/acre	Orchard Grass	40 lbs/acre
Landino Clover	5 lbs/aacre	Landino Clover	5 lbs/acre
Meadow Mix	50 lbs/acre	Meadow Mix	50 lbs/acre

Attach:

Drawing(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided)

Photocopied section of involved 7.5' topographic sheet.

**See Attached**

Plan Approved by: 

Comments: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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Title: COG Impact

Date: 2-7-14 APR 23 2014

Field Reviewed?  Yes  No

Office of Oil and Gas  
WW Dept. of Environmental Protection

07/18/2014



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**Ball Unit – Site Safety Plan**

**Statoil USA Onshore Properties, Inc.**

*[Handwritten signature]*  
2-7-14

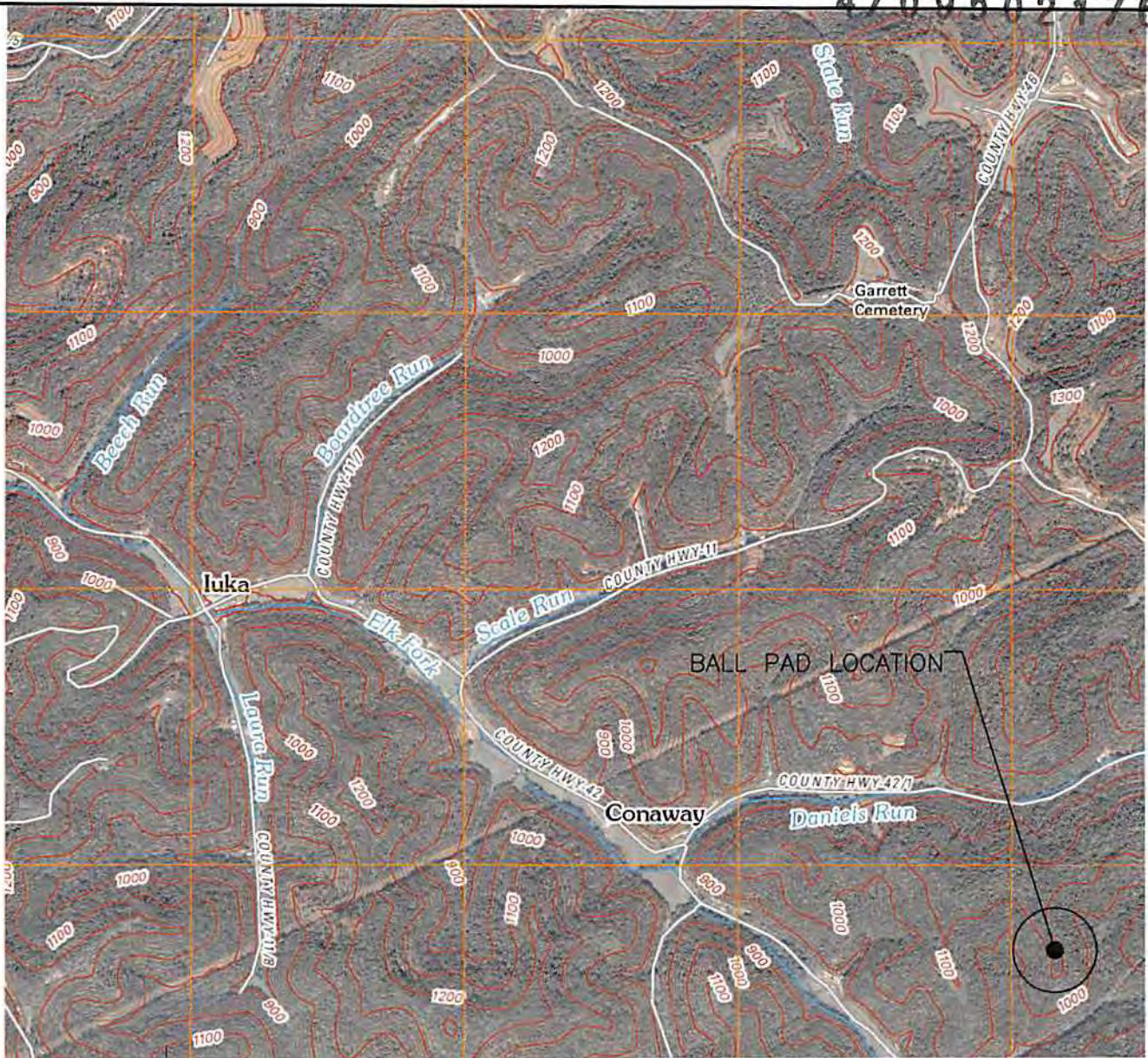
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**ROAD CLASSIFICATION**

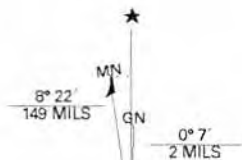
- Interstate Route
  - US Route
  - Ramp
  - State Route
  - Local Road
  - 4WD
- Interstate Route    
 US Route    
 State Route



**QUADRANGLE LOCATION**

Round Bottom	New Martinsville	Wileyville
Pندن City	Porters Falls	Pine Grove
Middlebourne	Shirley	Center Point

ADJOINING 7.5' QUADRANGLES



UTM GRID AND 2011 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
ND
Grid Zone Designation
17S

Produced by the United States Geological Survey  
 North American Datum of 1983 (NAD83)  
 World Geodetic System of 1984 (WGS84). Projection and  
 1 000-meter grid: Universal Transverse Mercator, Zone 17S  
 10 000-foot ticks: West Virginia Coordinate System of 1983  
 (north zone)

Imagery.....NAIP, September 2009  
 Roads.....©2006-2010 Tele Atlas  
 Names.....GNIS, 2009  
 Hydrography.....National Hydrography Dataset, 2009  
 Contours.....National Elevation Dataset, 2006

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**PICKERING ASSOCIATES**  
*the art of engineering*  
 11283 Emerson Avenue  
 Parkersburg, West Virginia 26104  
 Phone: (304) 464-5305  
 Fax: (304) 464-4428

**Drawing Description**  
 BALL PAD LOCATION  
 STATOIL USA ONSHORE PROPERTIES, INC.  
 TYLER COUNTY, WEST VIRGINIA  
 LOCATION MAP

Project: 2146001	Plot Date: 01/30/14
Designed By: AMZ	Revision: 0
Drawn By: AMZ	Drawing Number:
Checked By: MAW	<b>FIG 1</b>
Scale: AS NOTED	

07/18/2014



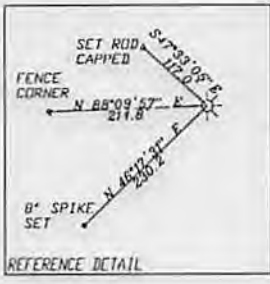
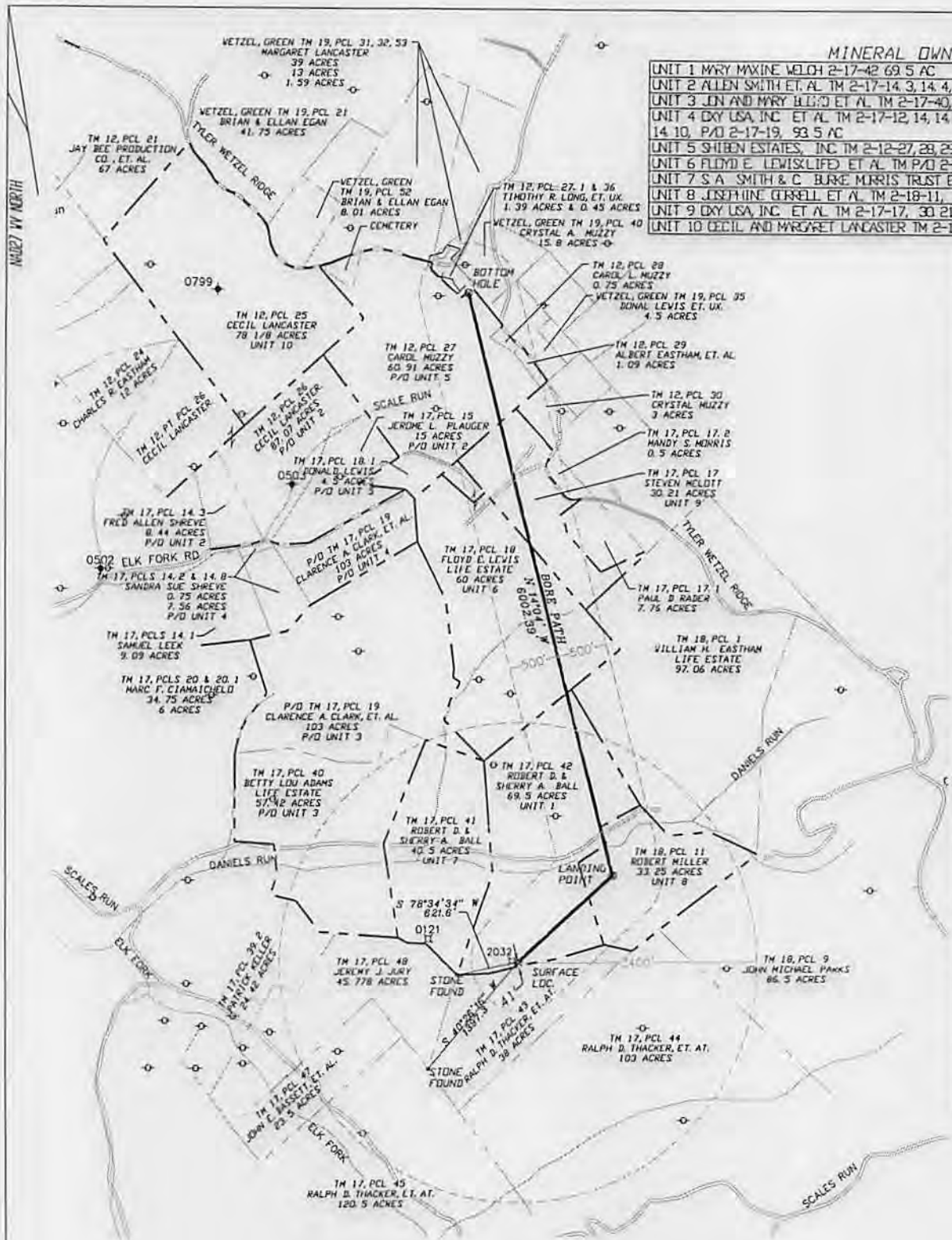
MINERAL OWNERSHIP	
UNIT 1	MARY MAXINE WELCH 2-17-42 69.5 AC
UNIT 2	ALLEN SMITH ET. AL. TM 2-17-14, 3, 14, 4, 14, 9, 15, P/D 2-12-26, 71.75 AC
UNIT 3	JOHN AND MARY HIGDON ET. AL. TM 2-17-40, P/D 2-17-19, 147 AC
UNIT 4	DEX USA, INC. ET. AL. TM 2-17-12, 14, 14, 1, 14, 2, 14, 5, 14, 6, 14, 7, 14, 8, 14, 10, P/D 2-17-19, 93.5 AC
UNIT 5	SHIBEN ESTATES, INC. TM 2-12-27, 28, 29 & 2-17-18 1, 69.5 AC
UNIT 6	FLOYD E. LEWIS/LIFE ET. AL. TM P/D 2-17-18, 60 AC
UNIT 7	S. A. SMITH & C. BURK MORRIS TRUST ET. AL. TM 2-17-41, 40.5 AC
UNIT 8	JOSEPHINE CERRELL ET. AL. TM 2-18-11, 33.25 AC
UNIT 9	DEX USA, INC. ET. AL. TM 2-17-17, 30.21 AC
UNIT 10	CECIL AND MARGARET LANCASTER TM 2-12-25, 78.17 AC

LEGEND	
	TOPD MAP POINT
	EXISTING WELLS
	PRE-29 WELLS
	PLUGGED WELL
	MINERAL TRACT
	PARCEL LINES
	PROPOSED WELL
	ROAD
	STREAM

SURFACE LDC.	
UTM 17-NAD 83 METERS	
N:	4372960.25
E:	520978.72
NAD 83	
LAT:	39.506013
LOX:	-80.755981

LANDING POINT LDC.	
UTM 17-NAD 83 METERS	
N:	4373227.93
E:	521264.33
NAD 83	
LAT:	39.508418
LOX:	-80.752650

BOTTOM HOLE LDC.	
UTM 17-NAD 83 METERS	
N:	4374994.38
E:	520790.39
NAD 83	
LAT:	39.524346
LOX:	-80.758108



- 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 TRUIT 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 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.

**PICKERING ASSOCIATES**  
 the art of engineering  
 11283 Emerson Avenue Phone: (304) 461-5305  
 Parkersburg, West Virginia 26104 Fax: (304) 461-4128

FILE#:	2146001
DRAWING#	2146001-STA-BALL. DWG
SCALE:	1"=1500'
ACCURACY:	1/2500
ELEVATION:	OPUS SOL. NAVD 88
DATE:	2/17/14

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 RULES ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

SIGNED: *[Signature]* PSH 2141



WELL TYPE:	<input type="checkbox"/> OIL <input type="checkbox"/> WASTE DISPOSAL <input checked="" type="checkbox"/> PRODUCTION <input type="checkbox"/> DEEP	OPERATOR'S WELL#:	BALL 2H
	<input checked="" type="checkbox"/> GAS <input type="checkbox"/> LIQUID INJECTION <input type="checkbox"/> STORAGE <input checked="" type="checkbox"/> SHALLOW	API WELL#:	47 095 02176H6A
		STATE COUNTY PERMIT	STATE COUNTY PERMIT
WATERSHED:	ELK FURK	COUNTY/DISTRICT:	TYLER/ELLSWORTH
SURFACE OWNER:	ROBERT D. BALL & SHERRY A. BALL ET. AL.		
OIL & GAS ROYALTY OWNER:	MARY MAXINE WELCH		
ACREAGE:	69.5±	ACREAGE:	693.4±
DRILL <input checked="" type="checkbox"/>	CONVERT <input type="checkbox"/>	DRILL DEEPER <input type="checkbox"/>	REDRILL <input type="checkbox"/>
FRACTURE OR STIMULATE <input checked="" type="checkbox"/>	PLUG OFF OLD FORMATION <input type="checkbox"/>	PERFORATE NEW FORMATION <input checked="" type="checkbox"/>	PLUG & ABANDON <input type="checkbox"/>
PAD ELEVATION:	1169'	CLEAN OUT & REPLUG <input type="checkbox"/>	OTHER CHANGE <input type="checkbox"/> (SPECIFY):
TARGET FORMATION:	MARCELLUS	ESTIMATED DEPTH:	TVD. 6930' MD. 13,800'
WELL OPERATOR:	STATOIL USA ONSHORE PROPERTIES INC.	DESIGNATED AGENT:	RICHARD PYLES
ADDRESS:	2103 CITYWEST BLVD. STE. 800	ADDRESS:	803 NASH ROAD
CITY:	HOUSTON	STATE:	TX
ZIP CODE:	77042	CITY:	MIDDLEBOURNE
		STATE:	WV
		ZIP CODE:	26149

