EXCO RESOURCES (PA), LLC

INJECTION WELL PERMIT RENEWAL SUBMITTAL

WELCHLANDS 29AW

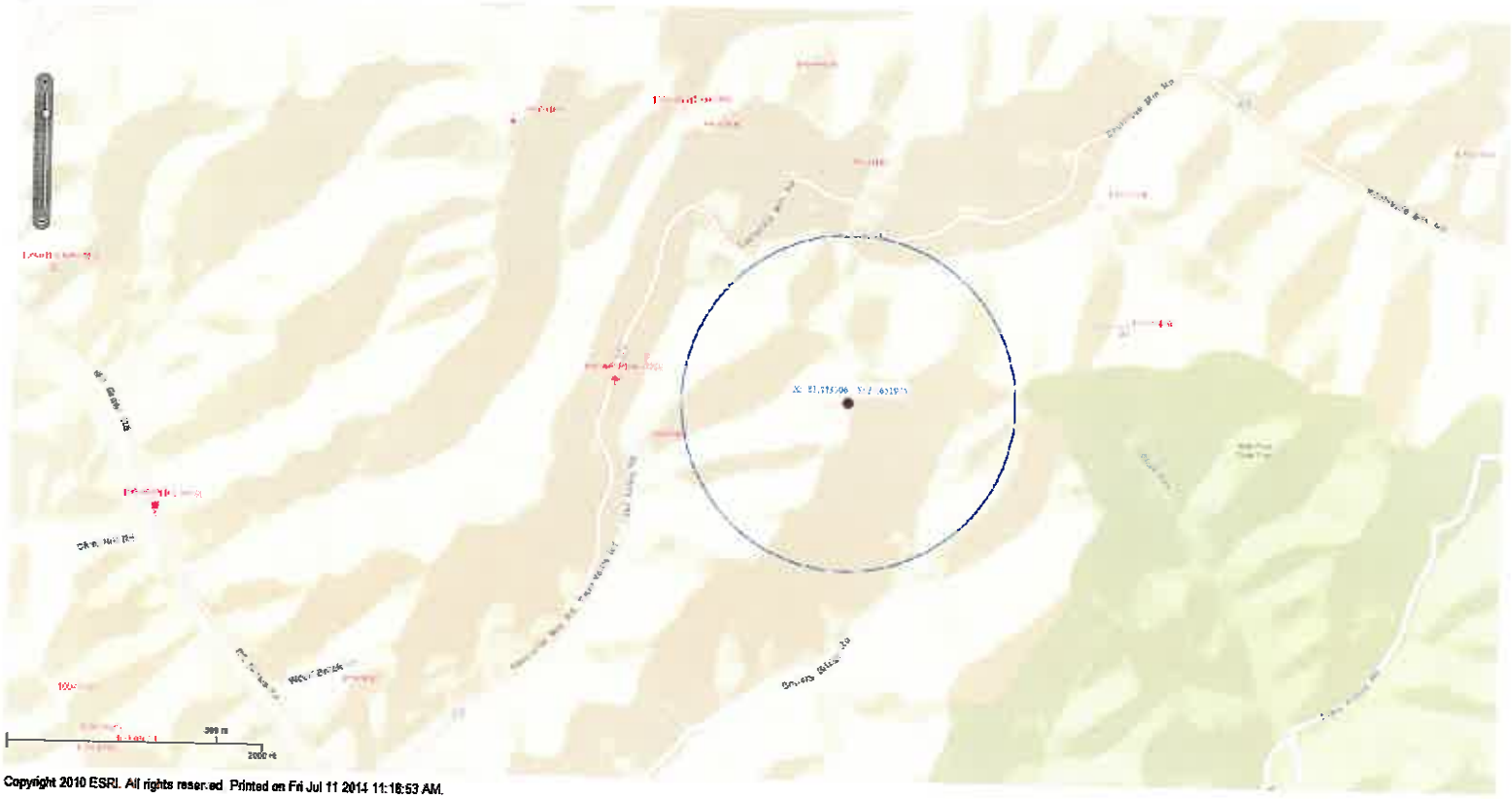
(UIC2D1090980)

Slab Fork District

Wyoming County, WV

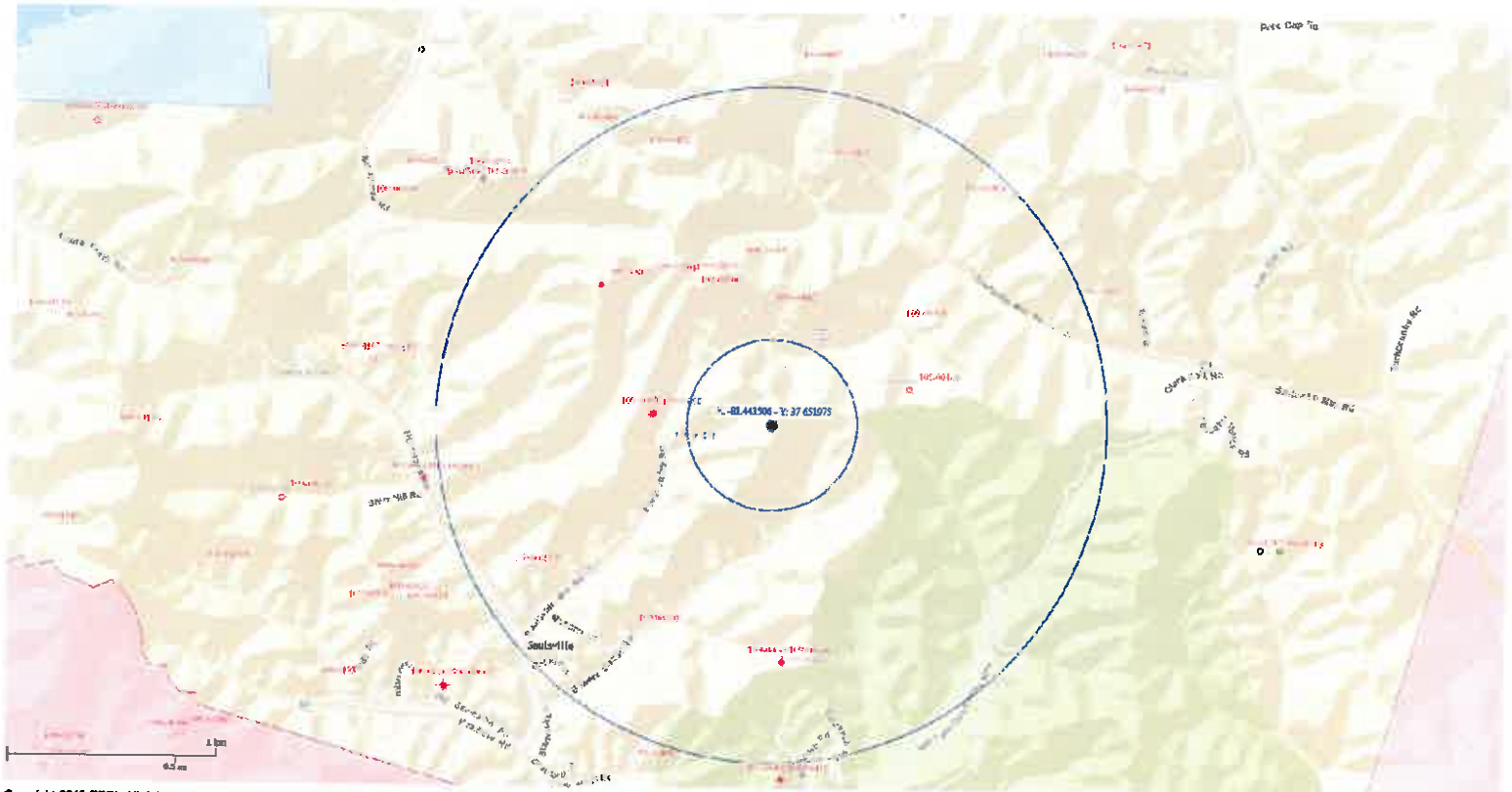
Map from a Flex Viewer application

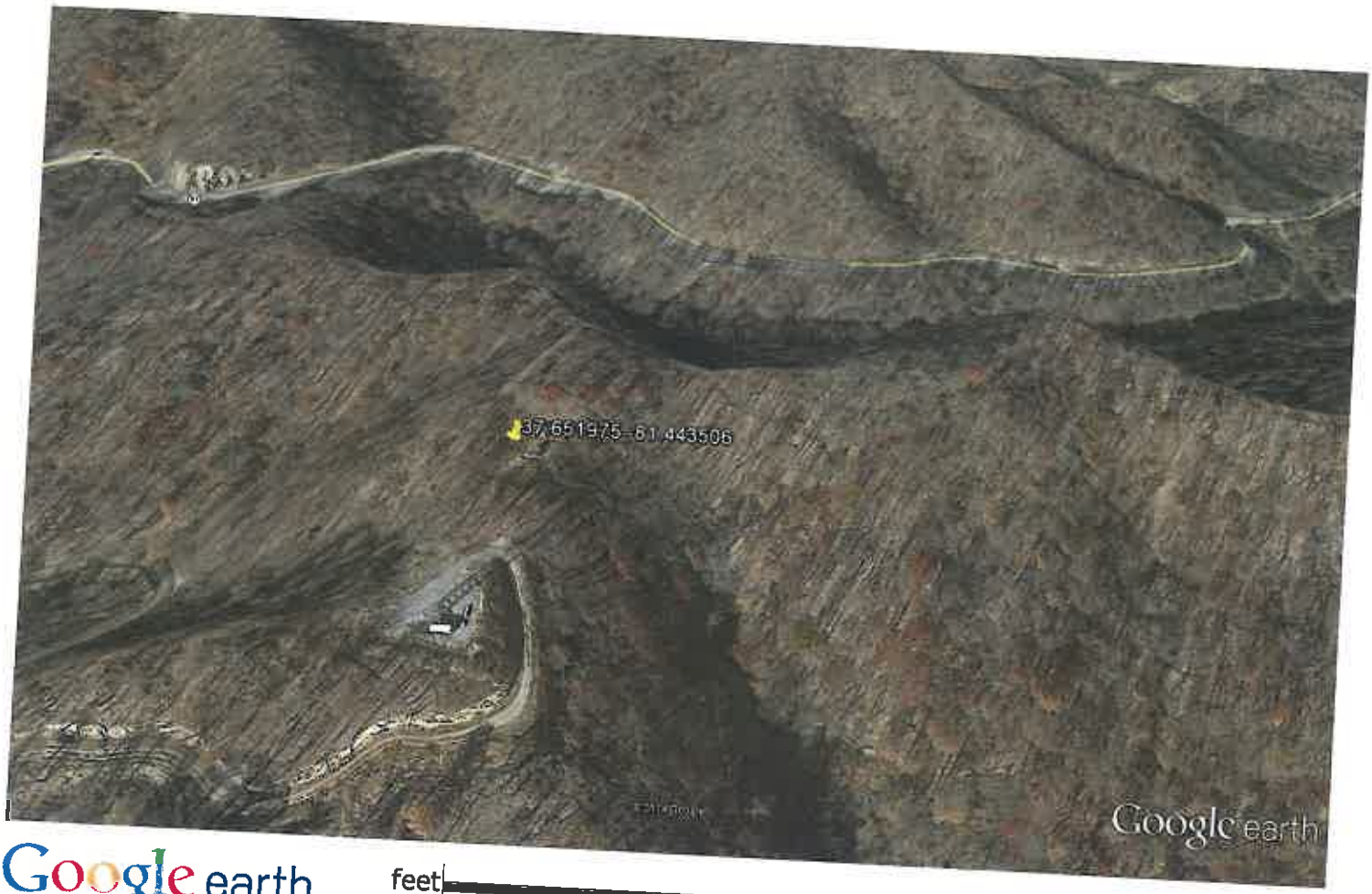
Powered by ArcGIS



Map from a Flex Viewer application

Powered by ArcGIS





Google earth

feet 600

meters 200

UIC-1
(4/25)

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
601 57th Street, SE
Charleston, WV 25304
(304) 926-0450
www.dep.wv.gov/oil-and-gas

UNDERGROUND INJECTION CONTROL (UIC) PERMIT APPLICATION

UIC PERMIT ID # 2D1090980 API # 47-109-00980 WELL # Welchlands 29AW

Section I. Facility Information

Facility Name: Welchlands 29AW

Address:

City: State: WV Zip:

County: Wyoming

Location description:

On the waters of March Fork in Slab Fork District of Wyoming County. Approximate Latitude 37.651975 degrees and Longitude -81.443506 degrees.

Location of well(s) or approximate center of field/project in UTM NAD 83 (meters):

Northing: 416294.6 Easting: 460878.0

Environmental Contact Information:

Name: Brian E, Rushe, P.E. Title: Construction & Regulatory Manager

Phone: 724-720-2590 Email: brushe@excoresources.com

Section 2. Operator Information

Operator Name: EXCO Resources (PA), LLC

Operator ID: 285505

Address: 260 Executive Drive, Suite 100

City: Cranberry Township State: PA Zip: 16066

County: Butler

Contact Name: Brian E. Rushe, P.E. Contact Title: Construction & Regulatory Manager

Contact Phone: 724-720-2590 Contact Email: brushe@excoresources.com

UIC-1
(4/25)

WEST VIRGINIA DEPARTMENT OF
ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
601 57th Street, SE
Charleston, WV 25304
(304) 926-0450
www.dep.wv.gov/oil-and-gas

UNDERGROUND INJECTION CONTROL
(UIC)
PERMIT APPLICATION

UIC PERMIT ID # 2D1090980 API # 47-109-00980 WELL # Welchlands 29AW

Section I. Facility Information

Facility Name: Welchlands 29AW

Address:

City: State: WV Zip:

County: Wyoming

Location description:

On the waters of March Fork in Slab Fork District of Wyoming County. Approximate Latitude 37.651975 degrees and Longitude -81.443506 degrees.

Location of well(s) or approximate center of field/project in UTM NAD 83 (meters):

Northing: 416294.6 Easting: 460878.0

Environmental Contact Information:

Name: Brian E, Rushe, P.E. Title: Construction & Regulatory Manager

Phone: 724-720-2590 Email: brushe@excoresources.com

Section 2. Operator Information

Operator Name: EXCO Resources (PA), LLC

Operator ID: 285505

Address:

City: Cranberry Township State: PA Zip: 16066

County: Butler

Contact Name: Brian E. Rushe, P.E. Contact Title: Construction & Regulatory Manager

Contact Phone: 724-720-2590 Contact Email: brushe@excoresources.com

Section 3. Applicant Information

Ownership Status: ■ PRIVATE ☐ PUBLIC ☐ FEDERAL ☐ STATE
☐ OTHER (explain):

SIC code: ■ 1311 (2D, 2H, 2R) ☐ 1479 (3S) ☐ OTHER (explain):

Section 4. Applicant / Activity Request and Type:

A. Apply for a new UIC Permit: ☐ 2D ☐ 2H ☐ 2R ☐ 3S
B. Reissue existing UIC Permit: ■ 2D ☐ 2H ☐ 2R ☐ 3S
C. Modify existing UIC Permit: ☐ 2D ☐ 2H ☐ 2R ☐ 3S
(Submit only documentation pertaining to the modification request)

2D COMMERCIAL FACILITY: ☐ YES ☐ NO

Section 5. Briefly describe the nature of business and the activities to be conducted:

Renewal of an Underground Injection Control (UIC) permit for the subsurface injection of produced fluids.

CERTIFICATION

All permit applications must be signed by a responsible corporate officer for a corporation, by a general partner for a partnership, by the proprietor of a sole proprietorship, or by a principal executive or ranking elected official for a public agency, or a [1]duly authorized representative in accordance with 47CSR13-13.11.b.

A. Name and title of person applying for permit:

Print Name: Brian E. Rushe, P.E.

Print Title: Construction & Regulatory Manager

B. Signature and Date.

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document 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.

Signature: Brian E. Rushe

Date: 6/20/14

[1] A person is a duly authorized representative if:

The authorization is made in writing by a person described in subdivision 47CSR13-13.11.a.

The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of the plant manager, operator of a well or a well field, superintendent, or position of equivalent responsibility.

The written authorization is submitted to the Director.

EXISTING WELCHLANDS #29 AW WELL HEAD

PHOTO DATE: 11/19/13

EXISTING 10' WIDE ACCESS ROAD TO BE WIDENED AS NEEDED

12" CMP CULVERT

EDGE OF EXISTING FLAT AREA

WESTERN POCAHONTAS PROPERTIES, LLC
PID 10-123-1
DB 413 PG 01

GARAGE

GRAVEL

EARTHEN EMBANKMENT SURROUNDING TANKS

PLASTIC TANK

TWO STEEL TANKS

EXISTING 2" GAS LINE

WELCHLANDS 29 AW
EXISTING WELL HEAD
47-109-00980

UTILITIES TO GARAGE

EPL 962B33

WOODS

2475 2470 2465 2460 2455 2450 2445 2440

NOTE:
EROSION AND SEDIMENT CONTROLS MUST BE IN PLACE FOR ALL EARTH DISTURBANCE PER THE LATEST WV DEP OIL AND GAS EROSION AND SEDIMENT CONTROL FIELD MANUAL AND WV DEP INSPECTOR.

25 0 25 50 FEET

SCALE

PROJECT NO:

SHEET NO: 2 of 2

RECLAMATION PLAN
WELCHLANDS 29 AW

SLAB FORK DISTRICT, WYOMING COUNTY, WEST VIRGINIA

EXCO RESOURCES (PA), LLC
P.O. BOX 8
RAVENSWOOD, WV 26164
PHONE (304)273-5371

DATE:11/25/13 DRAWN BY:RTC CHECKED BY:THK

Larson Design Group ▪ Architects Engineers Surveyors
2502 Cranberry Square
Morgantown, WV 26508
PHONE 877.323.6603
FAX 570.323.9902 ▪ www.larsondesigngroup.com

Larson Design Group®

Current WBD

KB: 2649.2'
DF: 0.0'
GL: 2649.2'
Datum: 0.0' above GL

Welchlands #29AW SWD

API # 47-109-00980
EXCO Resources
12/30/2013
Patrick Slaughter

Conductor
12 3/4" @ 24'
Cement to surface

Water String
9 5/8" @ 697'
32#/ft
Cement to surface

Intermediate Casing
7" @ 1,530'
17#/ft
Cement to surface

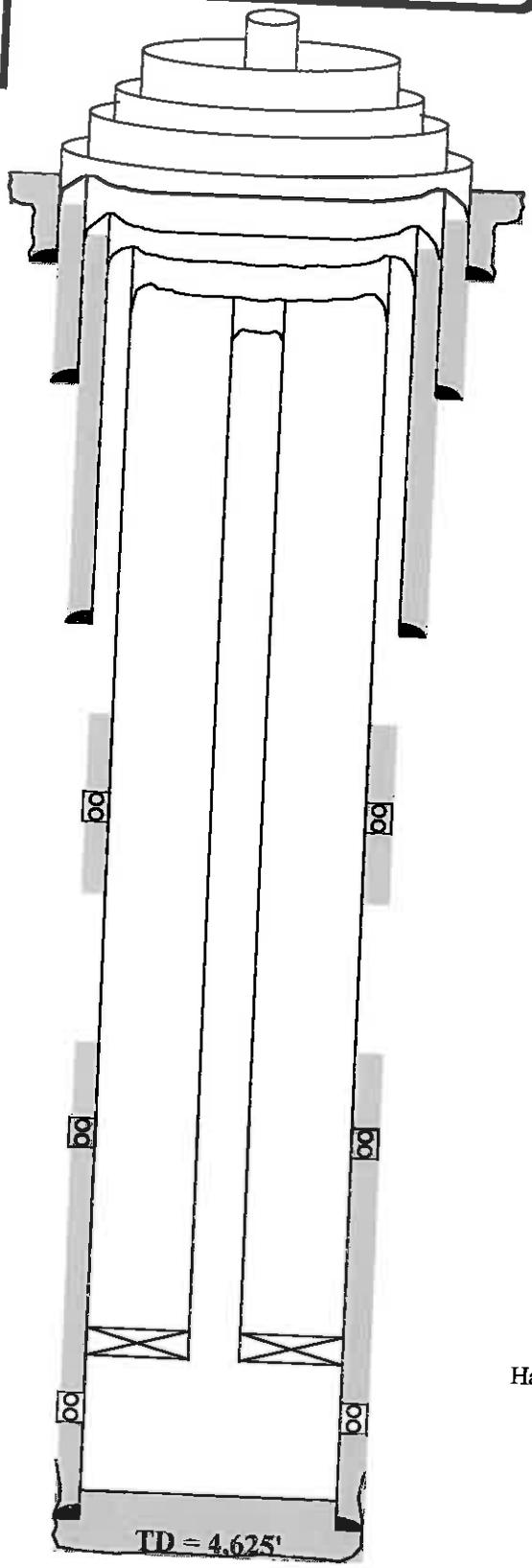
TOC @ 1,810'

BOC @ 2,300'

TOC @ 3,300'

Production Casing
4 1/2" @ 4,540'
10.5#/ft J-55

PBTD = 4,484'



Perfs 2,064-2,098'
(Ravencliff 2,019-2,098')
Cement squeezed April 1994
Class A Cement, 2% $CaCl_2$

DV Tool @ 2,550'

Perfs 3,862-3,872'
(Weir 3,828-3,888')
Cement squeezed April 1994
Class A Cement, 2% $CaCl_2$

Tubing
2 3/8" @ 4,301'
4.7#/ft H-55

Halliburton R4 Packer @ 4,301'

Perfs 4,382-4,411'
(Gordon 4,374-4,424')

NOT TO SCALE

NOT TO SCALE

APPENDIX A
Injection Well Form

1) GEOLOGIC TARGET FORMATION Gordan Sandstone

Depth 4374 Feet (top) 4425 Feet (bottom)

2) Estimated Depth of Completed Well, (or actual depth of existing well): 4599 Feet

3) Approximate water strata depths: Fresh none Feet Salt 2910 Feet

4) Approximate coal seam depths: 575, 735, 970, 1110, 1424

5) Is coal being mined in the area? Yes ☐ No ☑

6) Virgin reservoir pressure in target formation 750 psig Source 47-081-1106, 1024

7) Estimated reservoir fracture pressure 1800 psig (BHFP)

8) MAXIMUM PROPOSED INJECTION OPERATIONS:

Injection rate (bbl/hour) 60 BPH

Injection volume (bbl/day)

Injection pressure (psig)

Bottom hole pressure (psig) 3506

9) DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED, INCLUDING ADDITIVES:

Produced brines, fracturing fluids, pit fluids, 02 scavenger, bacteriacid & scale inhibitor.

Temperature of injected fluid: (°F)

10) FILTERS (IF ANY)

5 Micron

11) SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL

Injection fluid will be treated with phosphonate (scale inhibitor) to protect surface equipment and injection equipment and injection lines.

APPENDIX A (cont.)

12. 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	12-3/4	New			24'	24'	2 sks neat
Fresh Water	9-5/8	New		32#	697'	697'	244 sks
Coal							
Intermediate 1	7	New		17#	1530'	1530'	250 sks
Intermediate 2							
Production	4-1/2	New	J-55	10.5#	4540'	4540'	200 sks
Tubing	2-3/8	New	H-55	4.7#	4380'	4380'	
Liners							

TYPE	Wellbore Diameter	Casing Size	Wall Thickness	Burst Pressure	Cement Type	Cement Yield (cu. ft./sk)	Cement to Surface ? (Y or N)
Conductor							
Fresh Water							
Coal							
Intermediate 1							
Intermediate 2							
Production							
Tubing							
Liners							

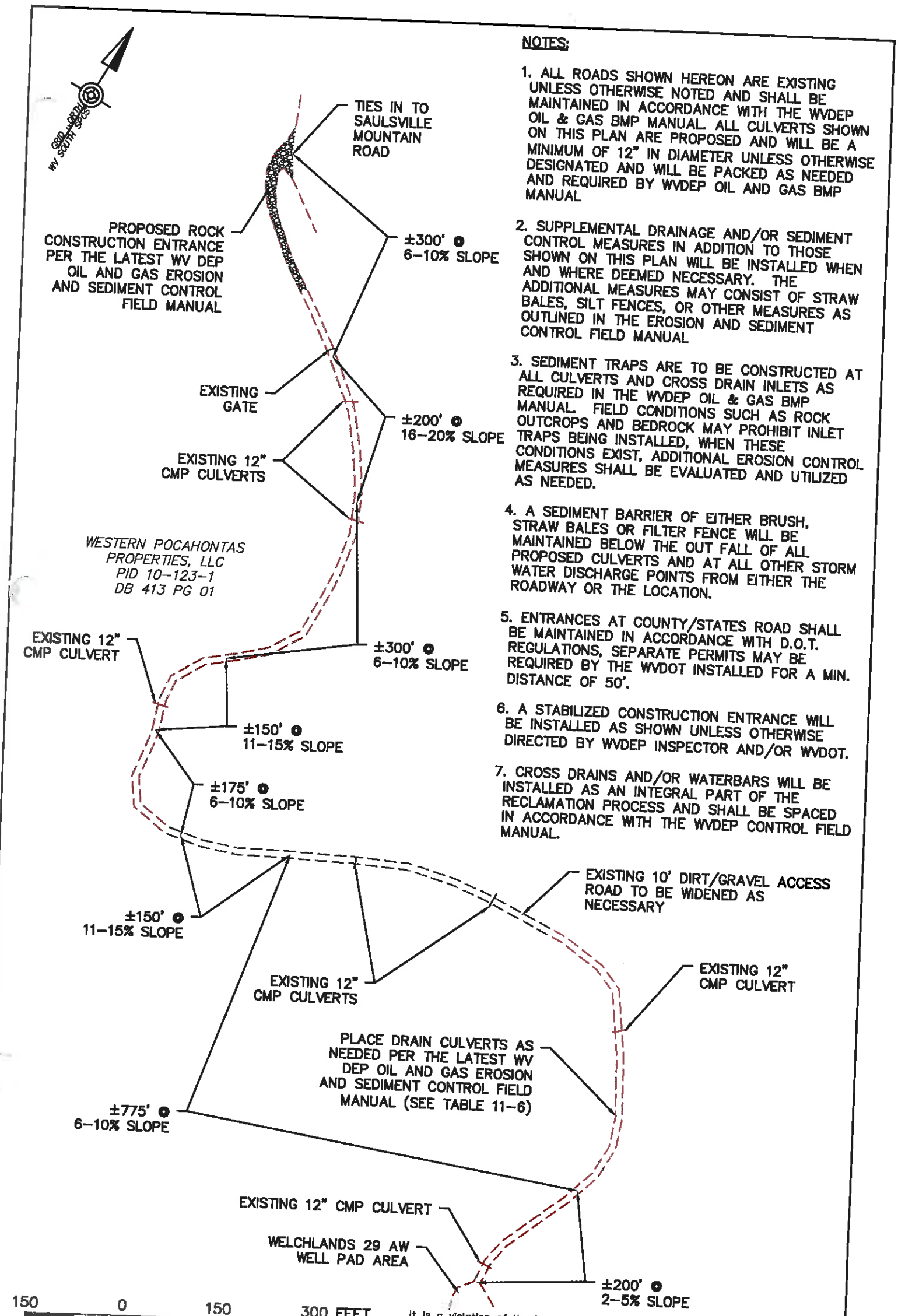
PACKERS	Packer #1	Packer #2	Packer #3	Packer #4
Kind:	Halliburton			
Sizes:	4-1/2 x 2-3/8			
Depths Set:	4350'			

(4/25)

APPENDIX B - Welchlands 29AW
Storage Tank Inventory

API #	Tank ID	Tank Location (UTM NAD 83 Meters)		Installation Date	Tank Age (Months)	Construction Material (Steel, plastic, etc.)	Capacity (gallons)	Type of Fluid Stored	Volume of Fluid Stored (gallons)	Tank Type Single/Double Wall
		Northing	Easting							
47-10900980	none	4167292.10	460890.71	12/15/2006	102	Steel	8820	prod. water	1690	single
47-10900980	none	4167292.10	460890.71	12/15/2006	102	Steel	8820	prod. water	1690	single
47-10900980	none	4167292.10	460890.71	06/2009	60	Plastic	2100	prod. water	10	single

dep



NOTES:

1. ALL ROADS SHOWN HEREON ARE EXISTING UNLESS OTHERWISE NOTED AND SHALL BE MAINTAINED IN ACCORDANCE WITH THE WVDEP OIL & GAS BMP MANUAL. ALL CULVERTS SHOWN ON THIS PLAN ARE PROPOSED AND WILL BE A MINIMUM OF 12" IN DIAMETER UNLESS OTHERWISE DESIGNATED AND WILL BE PACKED AS NEEDED AND REQUIRED BY WVDEP OIL AND GAS BMP MANUAL

2. SUPPLEMENTAL DRAINAGE AND/OR SEDIMENT CONTROL MEASURES IN ADDITION TO THOSE SHOWN ON THIS PLAN WILL BE INSTALLED WHEN AND WHERE DEEMED NECESSARY. THE ADDITIONAL MEASURES MAY CONSIST OF STRAW BALES, SILT FENCES, OR OTHER MEASURES AS OUTLINED IN THE EROSION AND SEDIMENT CONTROL FIELD MANUAL

3. SEDIMENT TRAPS ARE TO BE CONSTRUCTED AT ALL CULVERTS AND CROSS DRAIN INLETS AS REQUIRED IN THE WVDEP OIL & GAS BMP MANUAL. FIELD CONDITIONS SUCH AS ROCK OUTCROPS AND BEDROCK MAY PROHIBIT INLET TRAPS BEING INSTALLED, WHEN THESE CONDITIONS EXIST, ADDITIONAL EROSION CONTROL MEASURES SHALL BE EVALUATED AND UTILIZED AS NEEDED.

4. A SEDIMENT BARRIER OF EITHER BRUSH, STRAW BALES OR FILTER FENCE WILL BE MAINTAINED BELOW THE OUT FALL OF ALL PROPOSED CULVERTS AND AT ALL OTHER STORM WATER DISCHARGE POINTS FROM EITHER THE ROADWAY OR THE LOCATION.

5. ENTRANCES AT COUNTY/STATES ROAD SHALL BE MAINTAINED IN ACCORDANCE WITH D.O.T. REGULATIONS, SEPARATE PERMITS MAY BE REQUIRED BY THE WVDOT INSTALLED FOR A MIN. DISTANCE OF 50'.

6. A STABILIZED CONSTRUCTION ENTRANCE WILL BE INSTALLED AS SHOWN UNLESS OTHERWISE DIRECTED BY WVDEP INSPECTOR AND/OR WVDOT.

7. CROSS DRAINS AND/OR WATERBARS WILL BE INSTALLED AS AN INTEGRAL PART OF THE RECLAMATION PROCESS AND SHALL BE SPACED IN ACCORDANCE WITH THE WVDEP CONTROL FIELD MANUAL.

PROJECT NO.: 8013–010

SHEET NO.: 1 of 2

RECLAMATION PLAN
WELCHLANDS 29 AW

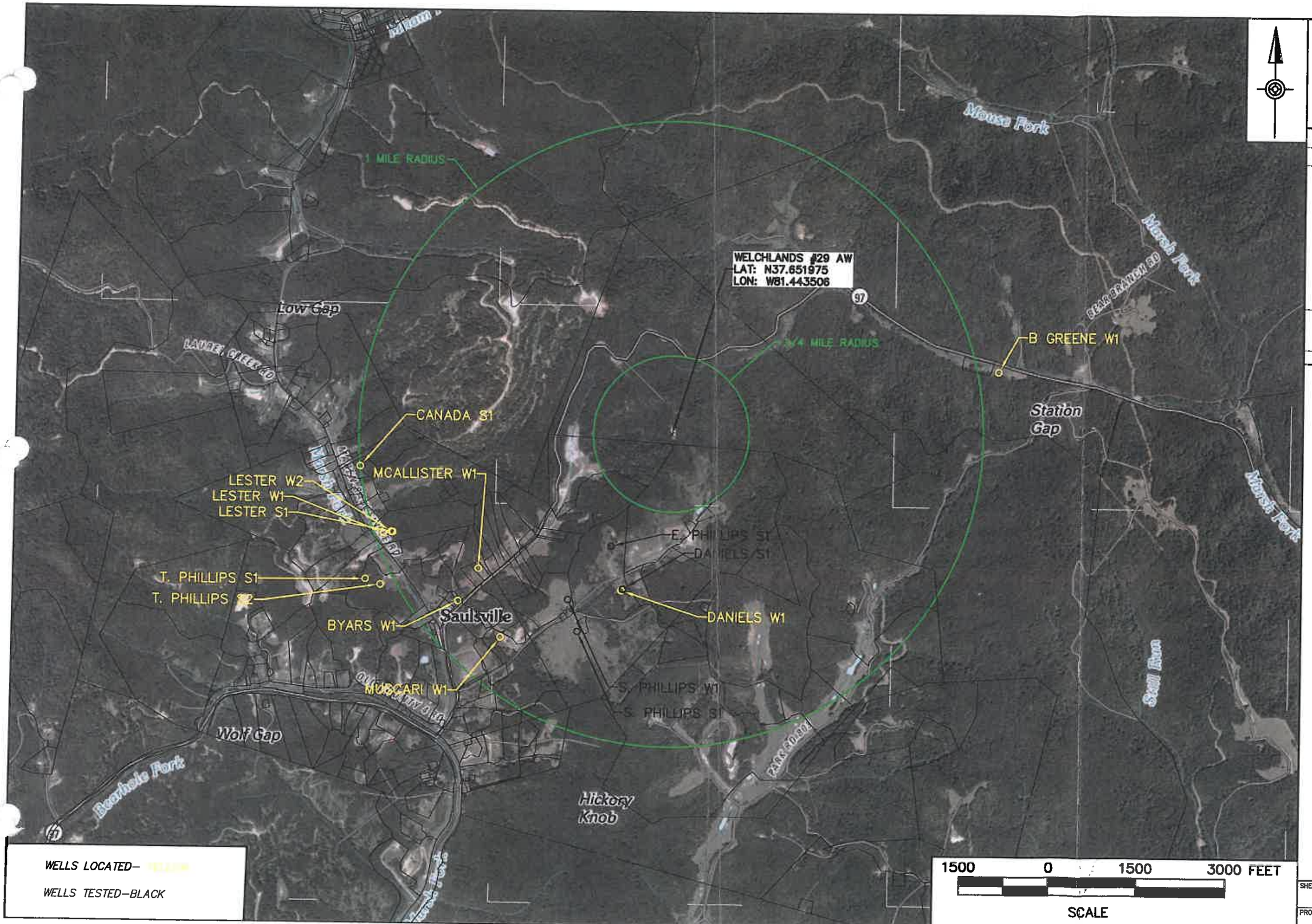
SLAB FORK DISTRICT, WYOMING COUNTY, WEST VIRGINIA

EXCO RESOURCES (PA), LLC
P.O. BOX 8
RAVENSWOOD, WV 26164
PHONE (304)273–5371

DATE:11/25/13 DRAWN BY:RTC CHECKED BY:THK

Larson Design Group ▪ Architects Engineers Surveyors
2502 Cranberry Square
Morgantown, WV 26508
PHONE 877.323.6603
FAX 570.323.9902 ▪ www.larsondesigngroup.com

Larson Design Group



LDG
Larson Design Group

NO.	DATE	COMMENTS	BY	CHK
01	10/30/2013	ADD WELL COORDINATES	RTC	RSV

ISSUE / REVISIONS

WELCHLANDS #29 AW WATER WELL RADIUS MAP

WYOMING COUNTY, SLAB FORK DISTRICT, WEST VIRGINIA

EXCO RESOURCES (PA), LLC
260 EXECUTIVE DRIVE, SUITE 100
CRANBERRY TOWNSHIP, PA 16066
PHONE (724) 720-2590

Larson Design Group • Architects Engineers Surveyors
8050 Rowan Road • Suite 504
Cranberry Township, PA 16066
PHONE 724.591.8562 TOLL FREE 877.323.6603
FAX 570.323.9902 • www.larsondesigngroup.com

SHEET NO.:

PROJECT NO.: 8013–010

WELCHLANDS #29 AW WATER WELL RADIUS MAP

WYOMING COUNTY, SLAB FORK DISTRICT, WEST VIRGINIA

WELCHLANDS #29 AW
LAT: N37.651975
LON: W81.443506

WELLS LOCATED– RED

WELLS TESTED– BLACK

1500 0 1500 3000 FEET

SCALE

NO.	DATE	COMMENTS	BY	CHK
0	10/30/2013	ADD WELL COORDINATES	RSB	

ISSUE / REVISIONS

SHEET NO.:

PROJECT NO.: 8013–010

EXCO RESOURCES (PA), LLC
260 EXECUTIVE DRIVE, SUITE 100
CRANBERRY TOWNSHIP, PA 16066
PHONE (724) 720–2590

Larson Design Group
Larson Design Group • Architects Engineers Surveyors
8050 Rowan Road • Suite 504
Cranberry Township, PA 16066
PHONE 724.591.8562 TOLL FREE 877.323.6603
FAX 570.323.9902 • www.larsondesigngroup.com

(4/25)

APPENDIX C – Wetlands 29 AW

Wells within the Area of Review

API #	Well Type	Well Status (Active, Abandoned, Shut-in, Plugged)	Northing (UTM NAD 83 Meters)	Easting (UTM NAD 83 Meters)	Penetrate Injection Zone (Y or N)	Penetrate Confining Zone (Y or N)	Total Vertical Depth	Surface Elevation
* No wells in close proximity								

Make as many copies as necessary and include page numbers as appropriate.

APPENDIX D - Weldon #29 AW

Public Service District Affidavit

Underground Injection Control Permit applicants must identify all publically recorded drinking water sources within a one (1) mile radius of the proposed injection well facility. If no drinking water sources are present within this radius a written affidavit shall be supplied by the local Public Service District (PSD) as ample verification.

"I certify under penalty of law that (state name of business)

_____

has verified with the public service district (state name of PSD)

_____

that there are no such publically recorded sources.

_____

(Signature of Authorized Representative)

Sworn and subscribed to before me this _____ day of _____, 20_____.

_____, my commission expires _____

(Notary Signature)

_____.

* N/A. All water wells w/in one (1) mile were identified.

(4/25)

APPENDIX E
Water Sources

Operator: EXCO Resources (PA), LLC Year 2013 UIC Permit # 2D1090980 (Welchlands 29AW)

		Source #	Source #	Source #	Source #
Water Source Name					
Northing					
Easting					
Parameter	Units				
TPH - GRO	mg/L				
TPH - DRO	mg/L	* SEE Attached Spreadsheet			
TPH - ORO	mg/L				
BTEX	mg/L				
Chloride	mg/L	wells sampled + the			
Sodium	mg/L				
Total Dissolved Solids (TDS)	mg/L	lab results			
Aluminum	mg/L				
Arsenic	mg/L				
Barium	mg/L				
Iron	mg/L				
Manganese	mg/L				
pH	SU				
Calcium	mg/L				
Sulfate	mg/L				
MBAS	mg/L				
Dissolved Methane	mg/L				
Dissolved Ethane	mg/L				
Dissolved Butane	mg/L				
Dissolved Propane	mg/L				
Bacteria (Total Coliform)	c/100ml				

WELCHLANDS 29 AW WELL PAD ONE (1) MILE RADIUS - LOCATED
SLAB FORK DISTRICT, WYOMING COUNTY, WV

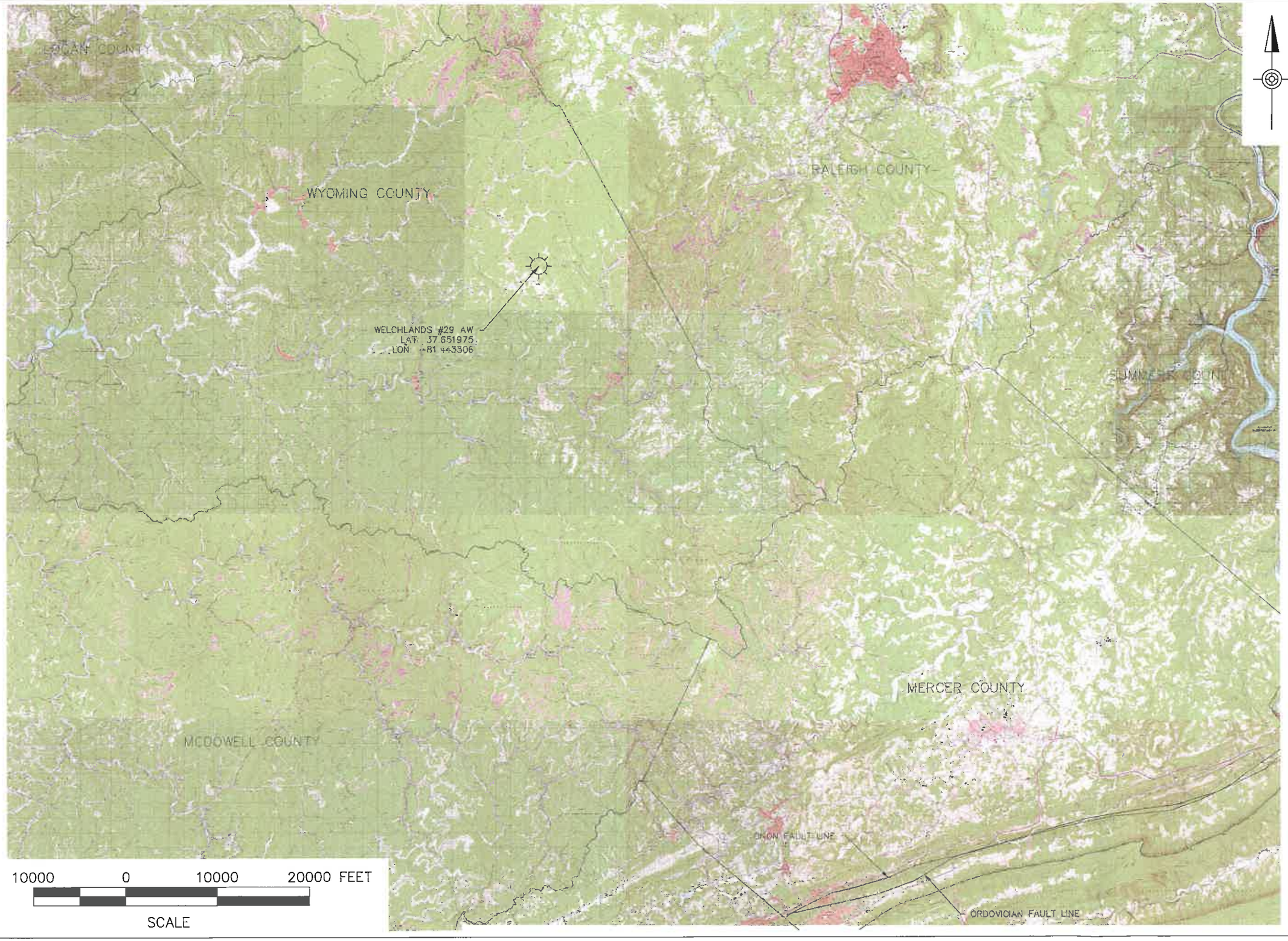
MAP #	PARCEL ID	WATER PURVEYOR	ADDRESS1	ADDRESS2	WELL ID	WATER SOURCE	N COORDINATES	E
6	10- 123-0001-0002-0000	BRENDA GREENE	PO BOX 66	MULLINS WV 25882	B GREENE W1	WW ONLY	238810.936	1845620.886
25	10- 122-0065-0000-0000	PHILLIPS SHIRLEY MAE	HC 89 BOX 408	MCGRAWS WV 25875 9705	S PHILLIPS W1, S PHILLIPS S1	PW, SP & WW	234899.504 234363.066	1838392.011 1838557.740
26	10- 122-0037-0001-0000	DANIELS BARBARA JEAN	P O BOX 182 646 Phillips Rd	MCGRAWS WV 25875 0182	DANIELS W1, DANIELS S1	PW & SP	235060.091 235084.727	1839287.183 1839315.115
29	10- 122-0037-0000-0000	PHILLIPS ETHEL	P O BOX 172	MCGRAWS WV 25875 0172	E PHILLIPS S1	PW & SP	235811.473	1839105.77
39	10- 122-0060-0001-0000	MUSCARI SAMUEL A JR	P O BOX 569	PINEVILLE WV 24874 0569	MUSCARI W1	PW & WW	234255.475	1837263.355
67	10- 122-0063-0000-0000	BYARS DIXIE	HC 89 BOX 118A	MABEN WV 25870 9703	BYARS W1	WW ONLY	234858.731	1836538.298
71	10- 122-0035-0002-0000	MCALLISTER MELVIN DOUGLAS & RI	P O BOX 307	PINEVILLE WV 24874 0307	MCALLISTER W1	PW & WW	235247.432	1836713.238
91	10- 122-0049-0000-0000	PHILLIPS THOMAS JR & CONNIE J	P O BOX 131	MCGRAWS WV 25875 0131	T PHILLIPS S1, T PHILLIPS S2	PW, WW, &SP	235210.317 235120.185	1834973.643 1835227.729
94	10- 122-0033-0000-0000	LESTER CHRISTOPHER J & ROBIN R	P O BOX 115	PINEVILLE WV 24874 0115	LESTER W1, LESTER W2, LESTER S1	PW, 2 WW & SP	235991.051 236015.243 236008.699	1835269.412 1835400.000 1835423.234
103	10- 122-0023-0003-0000	CANADA JIMMY D & DELORES A	HC 89 BOX 114	PINEVILLE WV 24874 0115	CANADA S1	PW & SP	237116.604	1834855.272

APPENDIX F - Welchlands 29AW

Area Permit Wells

API #	Well Type (Injection, Production, Observation, Monitoring)	Well Status (Active, Abandoned, Shut-in, Plugged)	Northing (UTM NAD 83 Meters)	Easting (UTM NAD 83 Meters)
* No wells in close proximity				

Make as many copies as necessary and include page numbers as appropriate.



FAULT LINE MAP

KANAWHA COUNTY, ELK DISTRICT, WEST VIRGINIA

ISSUE / REVISIONS

NO.	DATE	COMMENTS	BY	CHK
01	10/06/13	FAULT LINE DISPLAY		

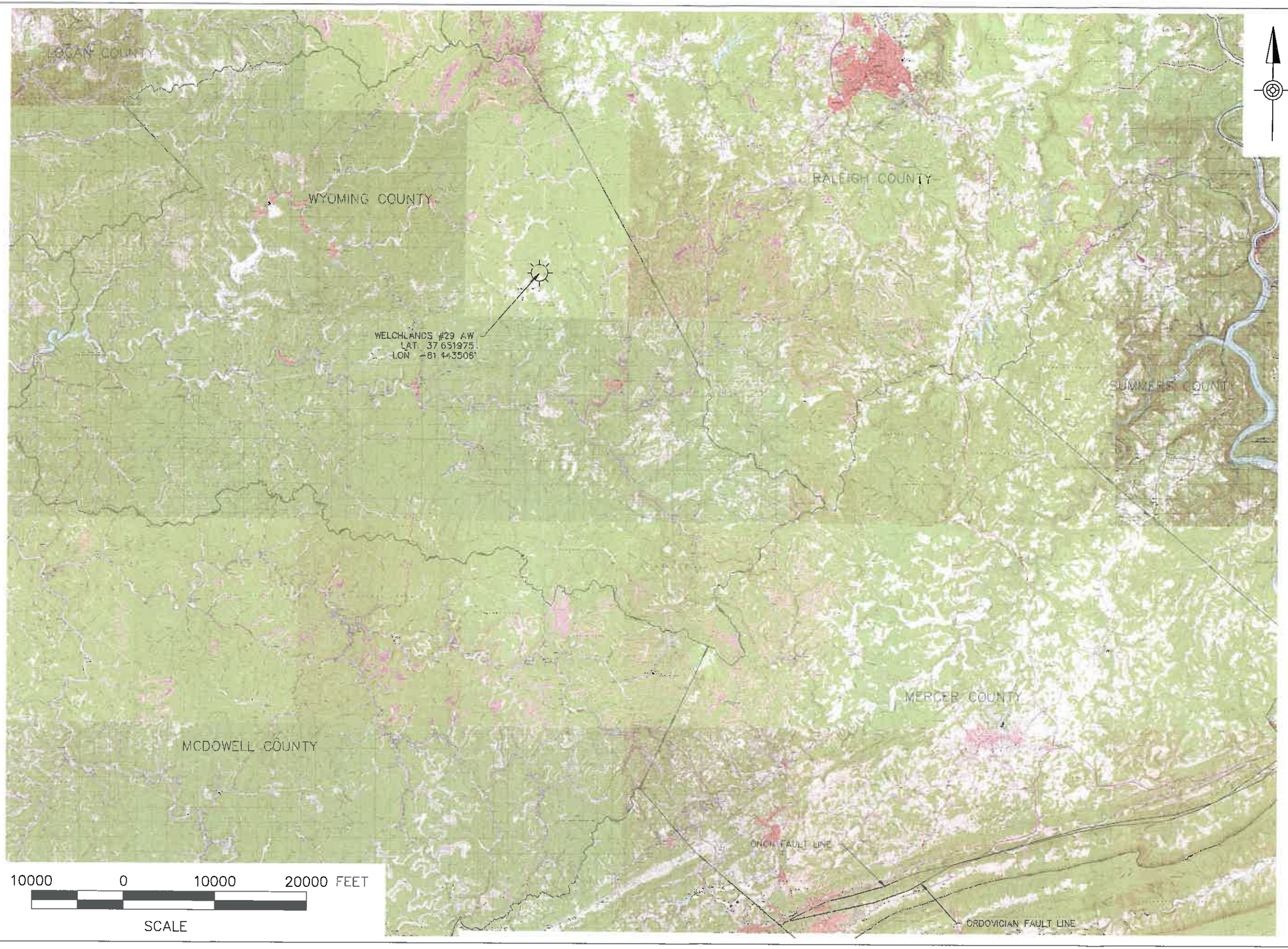
Larson Design Group
LDG

Larson Design Group • Architects Engineers Surveyors
8050 Rowan Road • Suite 504
Cranberry Township, PA 16066
PHONE 724.591.8562 TOLL FREE 877.323.6603
FAX 570.323.9902 • www.larsondesigngroup.com

EXCO RESOURCES (PA), LLC
3000 ERICSSON DRIVE, SUITE 200
WARRENDALE, PA 15086
PHONE (724) 720-2590

SHEET NO.:

PROJECT NO.:



FAULT LINE MAP

KANAWHA COUNTY, ELK DISTRICT, WEST VIRGINIA

EXCO RESOURCES (PA), LLC
3000 ERICSSON DRIVE, SUITE 200
WARRENDALE, PA 15086
PHONE (724) 720-2590

Larson Design Group • Architects Engineers Surveyors
8050 Rowan Road • Suite 504
Cranberry Township, PA 16066
PHONE 724.591.8562 TOLL FREE 877.323.6603
FAX 570.323.9902 • www.larsondesigngroup.com

NO.	DATE	COMMENTS	BY	CHK
01	10/06/13	FAULT LINE DISPLAY		

ISSUE / REVISIONS

SHEET NO.:

PROJECT NO.:

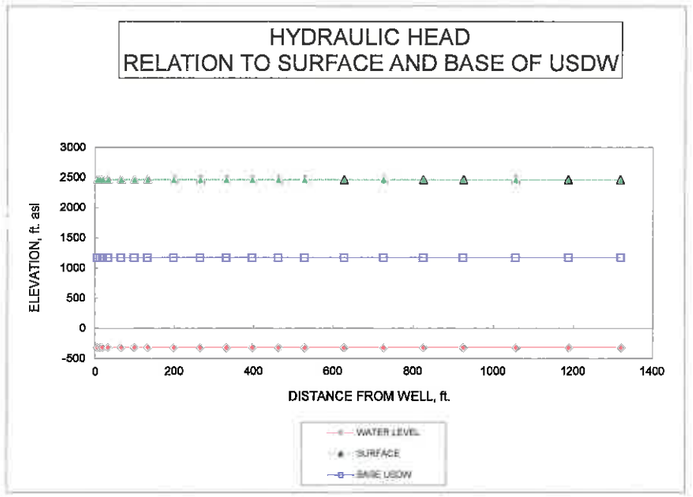
WELL NAME ---------- Welchlands 29 AW
OPERATOR ---------- Exco Resources
PERMIT NUMBER ------ 47-109-00980
DATE OF ANALYSIS -- 12/19/2013
ANALYST ---------- Patrick Slaughter

WELL AND FORMATION PARAMETERS

initial pressure at the top of the injection formation, p(i) (psia) ----------	764.7	Note: add 14.7 to psig for psia
injection rate, q (bwpd) ----------	-11.5	Note: avg injection is negative
length of injection time, (months) ----------	240	From 1st injection to now
viscosity, mu (cp.) ----------	1	
specific gravity of liquid ----------	1.12	
formation volume factor, beta (1 for aqueous liquids) ----------	1	
permeability, k (md.) ----------	80	
reservoir thickness, h (ft.) ----------	50	Gordon Sandstone
compressibility, c(t) 1/psi) ----------	3.00E-06	
porosity, phi, ratio ----------	0.06	
surface elevation KB, (ft.) ----------	2469.2	
depth to injection zone, (ft) ----------	4374	
end of cross-section, (ft.) ----------	1320	1/4 mile

CALCULATION OF CRITICAL PRESSURE RISE

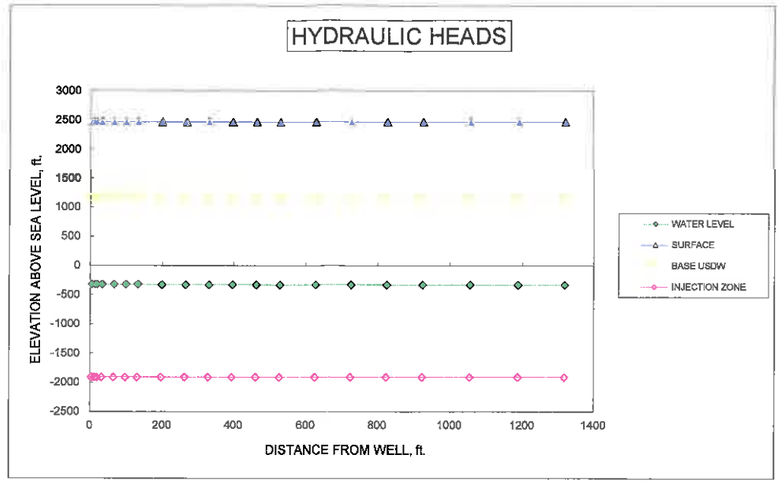
depth of concern, feet below KB (ft.) ----------	1300	Deepest fresh/groundwater
critical pressure rise to lift liquid to depth of concern, (psi) ----------	726.06704	



DISTANCE	pressure	WATER LEVE	SURFACE	BASE USD	INJECTION ZONE
6	768.95378	-319.1975121	2469.2	1169.2	-1904.8
13.2	768.63371	-319.8575134	2469.2	1169.2	-1904.8
19.8	768.46911	-320.1969199	2469.2	1169.2	-1904.8
33	768.26174	-320.6245215	2469.2	1169.2	-1904.8
66	767.98036	-321.2047407	2469.2	1169.2	-1904.8
99	767.81576	-321.5441471	2469.2	1169.2	-1904.8
132	767.69897	-321.7849599	2469.2	1169.2	-1904.8
198	767.53438	-322.1243663	2469.2	1169.2	-1904.8
264	767.41759	-322.365179	2469.2	1169.2	-1904.8
330	767.32701	-322.5519679	2469.2	1169.2	-1904.8
396	767.25299	-322.7045855	2469.2	1169.2	-1904.8
462	767.19041	-322.8336219	2469.2	1169.2	-1904.8
528	767.13621	-322.9453982	2469.2	1169.2	-1904.8
627	767.06645	-323.0892505	2469.2	1169.2	-1904.8
726	767.00693	-323.2119693	2469.2	1169.2	-1904.8
825	766.95504	-323.318976	2469.2	1169.2	-1904.8
924	766.90903	-323.4138411	2469.2	1169.2	-1904.8
1056	766.85482	-323.5256174	2469.2	1169.2	-1904.8
1188	766.80701	-323.6242112	2469.2	1169.2	-1904.8
1320	766.76424	-323.7124063	2469.2	1169.2	-1904.8

RADIAL DISTRIBUTION OF PRESSURE AROUND WELL OF CONCERN

linear term ----------	-0.202975
E(i) term ----------	1.23438E-11



APPENDIX G - WELCHLANDS 29AW

Wells Serviced by Injection Wells

API #	Operator	Producing Formation
* SEE ATTACHED SPREADSHEET		
FOR A LIST OF ALL WELLS		
SERVICED BY WELCHLANDS 29AW		

Make as many copies as necessary and include page numbers as appropriate.

NGF Field Grp	Route Name	State	County	Api Well Number	Exc_250*	Description	Disposition code	Merrick Completion_ID	Year Drilled P00=PRIOR TO 2000	Lease Name	Producing Description
MABEN	MAB05	KY	PIKE	**1619572716**	250*200039	Hamilton 3B		880	P00	W-HAMILTON	Producing
MABEN	MAB05	KY	PIKE	**1619560156**	250*200038	Hamilton 2B		690	P00	W-HAMILTON	Producing
MABEN	MAB05	KY	PIKE	**1619552229**	250*200037	Hamilton 1B		503	P00	W-HAMILTON	Producing
MABEN	MAB05	VA	BUCHANAN	**4502726654**	250*287998	BIG VEIN 02-05		11387	A08	WV-PILGRAM KNOB CREEK	Producing
MABEN	MAB05	VA	BUCHANAN	**4502720540**	250*204893	BREEDING 1B		2445	P00	W-BREEDING	Producing
MABEN	MAB05	WV	WYOMING	**4710902916**	250*151292	CROUCH 28A		7368	07	W-CROUCH	Producing
MABEN	MAB02	WV	WYOMING	**4710902304**	250*205603	Newberry 017N		1765	P00	W-NEWBERRY	Producing
MABEN	MAB07	WV	RALEIGH	**4708101332**	250*287943	BEAVER COAL 161		11109	A08	WV-SULLIVAN_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708101056**	250*287250	BEAVER COAL 102		10212	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB02	WV	WYOMING	**4710902305**	250*205604	Newberry 021N		1943	P00	W-NEWBERRY	Producing
MABEN	MAB08	WV	RALEIGH	**4708101091**	250*287249	BEAVER COAL 101		10097	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB05	WV	WYOMING	**4710902913**	250*151289	Crouch 25A		7365	07	W-CROUCH	Producing
MABEN	MAB06	WV	BOONE	**4700502293**	250*154288	Y&O 15		11588	08	W-Y&O	Producing
MABEN	MAB05	WV	WYOMING	**4710902515**	250*151291	CROUCH 27A		7367	07	W-CROUCH	SI - Long Term_LTSI
MABEN	MAB05	WV	WYOMING	**4710902413**	250*205856	WELCHLANDS 114 NW		1416	04	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB08	WV	RALEIGH	**4708101057**	250*287251	BEAVER COAL 104		10213	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB01	WV	FAYETTE	**4701900892**	250*287352	NEW RIVER 3		10776	A08	WV-NEW RIVER/ALLEGHENY	Producing
MABEN	MAB05	WV	WYOMING	**4710902914**	250*151290	CROUCH 26A		7366	07	W-CROUCH	Producing
MABEN	MAB07	WV	RALEIGH	**4708101245**	250*287272	BEAVER COAL 139		10891	A08	WV-SULLIVAN_BEAVER	Producing
MABEN	MAB03	WV	WYOMING	**4710901397**	250*205545	Welchlands 062BW		592	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB08	WV	RALEIGH	**4708100483**	250*287286	BEAVER COAL A-19		10121	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100484**	250*287288	BEAVER COAL A-20		10122	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100472**	250*287289	BEAVER COAL A-22		10123	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB02	WV	WYOMING	**4710901154**	250*205574	Newberry 003 AN		2661	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	WYOMING	**4710901155**	250*205577	Newberry 005 AN		106	P00	W-NEWBERRY	Producing
MABEN	MAB03	WV	WYOMING	**4710901642**	250*205560	Welchlands 098BW		105	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	WYOMING	**4710901346**	250*205542	Welchlands 058BW		3018	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB08	WV	RALEIGH	**4708100474**	250*287283	BEAVER COAL A-15		10118	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB03	WV	WYOMING	**4710901398**	250*205548	Welchlands 066BW		1034	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB02	WV	WYOMING	**4710901410**	250*205578	Newberry 006 BN		291	P00	W-NEWBERRY	Producing
MABEN	MAB03	WV	WYOMING	**4710901523**	250*205554	Welchlands 077BW		2126	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	WYOMING	**4710901549**	250*205556	Welchlands 082BW		2483	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	WYOMING	**4710901626**	250*205546	Welchlands 064BW		783	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB07	WV	RALEIGH	**4708101188**	250*287279	BEAVER COAL 156 (E-10)		10108	A08	WV-SULLIVAN_BEAVER	Producing
MABEN	MAB03	WV	WYOMING	**4710901309**	250*205538	Welchlands 054 BW		2302	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	**4710901016**	250*205623	Crouch 11A		2307	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	**4710901045**	250*205626	Crouch 17A		2846	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	**4710901046**	250*205629	Crouch 22A		294	P00	W-CROUCH	Producing
MABEN	MAB03	WV	WYOMING	**4710901106**	250*205534	Welchlands 046AW		1575	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	**4710901023**	250*205627	Crouch 18A		3023	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	**4710901021**	250*205610	AGP 8		3022	P00	W-AGP/EASTER	Producing
MABEN	MAB05	WV	WYOMING	**4710901020**	250*205609	AGP 7		2845	P00	W-AGP/EASTER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100461**	250*287285	BEAVER COAL A-17		10120	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB05	WV	WYOMING	**4710901017**	250*205625	Crouch 16A		2664	P00	W-CROUCH	Producing
MABEN	MAB08	WV	RALEIGH	**4708100479**	250*287284	BEAVER COAL A-16		10119	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB05	WV	WYOMING	**4710900996**	250*205624	Crouch 12A		2487	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	**4710900995**	250*205622	Crouch 10A		2130	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	**4710900994**	250*205620	Crouch 08A		1766	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	**4710900993**	250*205619	Crouch 07A		1580	P00	W-CROUCH	Producing
MABEN	MAB08	WV	RALEIGH	**4708100478**	250*287282	BEAVER COAL A-14		10117	A08	WV-RALEIGH_BEAVER	Producing

NCE Field Grp	Route Name	State	County	Api Well Number	Exc_250*	Description	Disposition code	Merrick Completion_ID	Year Drilled P00=PRIOR TO 2000	Lease Name	Producing Description
MABEN	MAB03	WV	WYOMING	**4710901730**	250*205561	Welchlands 101BW		290	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	**4710901018**	250*205628	Crouch 21A		109	P00	W-CROUCH	Producing
MABEN	MAB08	WV	RALEIGH	**4708101071**	250*287262	BEAVER COAL 122		10217	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708101085**	250*287270	BEAVER COAL 134		10105	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708101084**	250*287269	BEAVER COAL 133		10104	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708101095**	250*287267	BEAVER COAL 130		10103	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708101094**	250*287266	BEAVER COAL 129		10754	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB05	WV	WYOMING	**4710902296**	250*205570	WELCHLANDS 110		1941	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	WYOMING	**4710901627**	250*205845	Welchlands 088BW		2500	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB08	WV	RALEIGH	**4708101072**	250*287263	BEAVER COAL 123		10218	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB07	WV	RALEIGH	**4708101182**	250*287278	BEAVER COAL 154		10107	A08	WV-SULLIVAN_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708101066**	250*287261	BEAVER COAL 121		10216	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708101083**	250*287259	BEAVER COAL 118		10102	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708101177**	250*287258	BEAVER COAL 117		10101	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708101063**	250*287257	BEAVER COAL 111		10100	A08	WV-RALEIGH_BEAVER	SI - Long Term_LTSI
MABEN	MAB08	WV	RALEIGH	**4708101060**	250*287254	BEAVER COAL 108		10751	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708101059**	250*287253	BEAVER COAL 106		10750	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB07	WV	RALEIGH	**4708101074**	250*287265	BEAVER COAL 127		10756	A08	W-Sunny Acres 960520	Producing
MABEN	MAB07	WV	RALEIGH	**4708101351**	250*288002	BEAVER COAL 167		11388	A08	WV-SULLIVAN_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100477**	250*287325	BEAVER COAL A-09		10116	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100475**	250*287318	BEAVER COAL A-07		10115	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100438**	250*287309	BEAVER COAL A-06		10114	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100431**	250*287304	BEAVER COAL A-05		10113	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100462**	250*287298	BEAVER COAL A-04		10112	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100430**	250*287293	BEAVER COAL A-03		10111	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB07	WV	RALEIGH	**4708101121**	250*287273	BEAVER COAL 141		10758	A08	W-Sunny Acres 960520	Producing
MABEN	MAB08	WV	RALEIGH	**4708100548**	250*287313	BEAVER COAL A 65		10143	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB07	WV	RALEIGH	**4708101122**	250*287274	BEAVER COAL 142		10760	A08	W-Sunny Acres 960520	Producing
MABEN	MAB07	WV	RALEIGH	**4708101355**	250*288001	BEAVER COAL 165		11468	A08	WV-SULLIVAN_BEAVER	Producing
MABEN	MAB07	WV	RALEIGH	**4708101341**	250*287950	BEAVER COAL 164		11362	A08	WV-SULLIVAN_BEAVER	Producing
MABEN	MAB07	WV	RALEIGH	**4708101340**	250*287949	BEAVER COAL 163		11467	A08	WV-SULLIVAN_BEAVER	Producing
MABEN	MAB07	WV	RALEIGH	**4708101333**	250*287944	BEAVER COAL 162		11115	A08	WV-SULLIVAN_BEAVER	Producing
MABEN	MAB07	WV	RALEIGH	**4708101331**	250*287942	BEAVER COAL 160		11108	A08	WV-SULLIVAN_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708101058**	250*287252	BEAVER COAL 105		10214	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100322**	250*287281	BEAVER COAL A-01		10109	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB01	WV	FAYETTE	**4701900710**	250*206764	New River 86AR		2730	P00	WV-NEW RIVER/ALLEGHENY	Producing
MABEN	MAB01	WV	FAYETTE	**4701900891**	250*287344	NEW RIVER 1		10774	A08	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	**4701900619**	250*205735	Price/Sun 06A		1046	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	**4701900621**	250*206763	Berwind Land 6A		2551	P00	WV-NEW RIVER/ALLEGHENY	Producing
MABEN	MAB01	WV	FAYETTE	**4701900624**	250*205733	Price/Sun 04A		795	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	**4701900644**	250*205728	New River 77AR		2853	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	**4701900646**	250*205695	McNeely 1A		3028	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	**4701900647**	250*205813	Berwind Land 7A		2857	P00	W-BERWIND/FAY1 Brwnds &	Producing
MABEN	MAB01	WV	FAYETTE	**4701900648**	250*205732	Price/Sun 03A		604	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	**4701900616**	250*205812	Berwind Land 5A		2675	P00	W-BERWIND/FAY1 Brwnds &	Producing
MABEN	MAB01	WV	FAYETTE	**4701900658**	250*205736	Price/Sun 08A		1222	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	**4701900611**	250*205811	Berwind Land 4A		2498	P00	W-BERWIND/FAY1 Brwnds &	Producing
MABEN	MAB01	WV	FAYETTE	**4701900713**	250*206766	Burlee 1B		3089	P00	W-BURLEE	Producing
MABEN	MAB01	WV	FAYETTE	**4701900971**	250*206765	New River 88N		2910	04	WV-NEW RIVER/ALLEGHENY	Producing
MABEN	MAB01	WV	FAYETTE	**4701900990**	250*287864	NEW RIVER 44		11084	A08	WV-NEW RIVER/COLLINSWOOD	Producing

NGE Field Corp	Route Name	State	County	Api Well Number	Exc_250*	Description	Disposition code	Merrick Completion_ID	Year Drilled P00=PRIOR TO 2000	Lease Name	Producing Description
MABEN	MAB01	WV	RALEIGH	**4708101244**	250*286677	NEW RIVER 31 (G-51)		10892	A08	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	**4701900935**	250*286676	NEW RIVER 30		10955	A08	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	**4708101217**	250*287351	NEW RIVER 23 NR-B 06		10789	A08	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	**4708101184**	250*287347	NEW RIVER 15		10785	A08	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	**4701900904**	250*287345	NEW RIVER 12		10781	A08	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	**4701900649**	250*205734	Price/Sun 05A		345	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	**4708101312**	250*287797	NEW RIVER 38-1			A08	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB06	WV	BOONE	**4700500978**	250*206747	C Tract 6		2729	P00	W-C TRACT	Producing
MABEN	MAB06	WV	BOONE	**4700500979**	250*206748	C Tract 7		2909	P00	W-C TRACT	Producing
MABEN	MAB06	WV	BOONE	**4700501929**	250*205807	Y&O 05		1778	05	W-Y&O	Producing
MABEN	MAB06	WV	BOONE	**4700501931**	250*205808	Y&O 07		1956	05	W-Y&O	Producing
MABEN	MAB06	WV	BOONE	**4700502078**	250*150078	Y&O 06		6835	06	W-Y&O	Producing
MABEN	MAB06	WV	BOONE	**4700502079**	250*150079	Y&O 08 [.875]		7171	07	W-Y&O	Producing
MABEN	MAB06	WV	BOONE	**4700502169**	250*150620	Y&O 10		7228	07	W-Y&O	Producing
MABEN	MAB06	WV	BOONE	**4700502170**	250*150621	Y&O 11		7173	07	W-Y&O	Producing
MABEN	MAB01	WV	FAYETTE	**4701900618**	250*205731	Price/Sun 02A		301	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB06	WV	BOONE	**4700502179**	250*151155	Y&O 14		7318	07	W-Y&O	Producing
MABEN	MAB01	WV	RALEIGH	**4708101164**	250*287353	NEW RIVER 4		10777	A08	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	**4701900937**	250*287416	NEW RIVER 26		11993	A08	W-BECKWITH	Producing
MABEN	MAB01	WV	FAYETTE	**4701900936**	250*287417	NEW RIVER 25 (NR-D 32)		11247	A08	W-BECKWITH	Producing
MABEN	MAB01	WV	FAYETTE	**4701900593**	250*205814	New River 70AR BCP		3035	P00	W-BERWIND/FAY1 Brwnds &	Producing
MABEN	MAB01	WV	FAYETTE	**4701900595**	250*205809	Berwind Land 1A		2141	P00	W-BERWIND/FAY1 Brwnds &	Producing
MABEN	MAB01	WV	FAYETTE	**4701900599**	250*205726	New River 75AR		2493	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	**4701900603**	250*205727	New River 76AR		2671	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	**4701900607**	250*205730	Price/Sun 01A		116	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	**4701900609**	250*205810	Berwind Land 3A		2319	P00	W-BERWIND/FAY1 Brwnds &	Producing
MABEN	MAB06	WV	BOONE	**4700502171**	250*150622	Y&O 12		7172	07	W-Y&O	Producing
MABEN	MAB08	WV	RALEIGH	**4708100504**	250*287302	BEAVER COAL A-45		10134	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100557**	250*287316	BEAVER COAL A-68		10146	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100550**	250*287315	BEAVER COAL A-67A S		10145	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100549**	250*287314	BEAVER COAL A-66A S		10144	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100547**	250*287312	BEAVER COAL A-64		10142	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100546**	250*287311	BEAVER COAL A-61		10141	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100543**	250*287310	BEAVER COAL A-60		10140	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100526**	250*287308	BEAVER COAL A-59		10139	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100521**	250*287307	BEAVER COAL A-57		10138	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB01	WV	FAYETTE	**4701900903**	250*287355	NEW RIVER 7		10779	A08	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB08	WV	RALEIGH	**4708100509**	250*287303	BEAVER COAL A-46		10135	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708101087**	250*287320	BEAVER COAL A-71		10195	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100508**	250*287301	BEAVER COAL A-44		10133	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100512**	250*287300	BEAVER COAL A-43		10132	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100507**	250*287299	BEAVER COAL A-41		10131	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100500**	250*287297	BEAVER COAL A-38		10130	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100495**	250*287296	BEAVER COAL A-35		10129	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100503**	250*287295	BEAVER COAL A-34		10128	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100498**	250*287294	BEAVER COAL A-33		10127	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100486**	250*287292	BEAVER COAL A-27		10125	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100520**	250*287306	BEAVER COAL A-53		10137	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708101210**	250*287330	BEAVER COAL A-85 (C6)		10205	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	**4708100485**	250*287291	BEAVER COAL A-26		10126	A08	WV-RALEIGH_BEAVER	Producing

NCE Field Grp	Route Name	State	County	Ap	e Name	Producing Description
MABEN	MAB01	WV	FAYETTE	470		Producing
MABEN	MAB01	WV	FAYETTE	470	/ALLEGHENY	Producing
MABEN	MAB05	WV	WYOMING	471		Producing
MABEN	MAB08	WV	RALEIGH	470	EAVER	Producing
MABEN	MAB08	WV	RALEIGH	470	EAVER	Producing
MABEN	MAB08	WV	RALEIGH	470	EAVER	Producing
MABEN	MAB08	WV	RALEIGH	470	EAVER	Producing
MABEN	MAB08	WV	RALEIGH	470	EAVER	Producing
MABEN	MAB08	WV	RALEIGH	470	EAVER	Producing
MABEN	MAB08	WV	RALEIGH	470	EAVER	Producing
MABEN	MAB08	WV	RALEIGH	470	EAVER	SHUT IN_Temporary
MABEN	MAB08	WV	RALEIGH	470	EAVER	Producing
MABEN	MAB08	WV	RALEIGH	470	EAVER	Producing
MABEN	MAB08	WV	RALEIGH	470	EAVER	Producing
MABEN	MAB08	WV	RALEIGH	470	EAVER	SI - Long Term_LTSI
MABEN	MAB08	WV	RALEIGH	470	EAVER	Producing
MABEN	MAB08	WV	RALEIGH	470	EAVER	Producing
MABEN	MAB08	WV	RALEIGH	470	EAVER	Producing
MABEN	MAB01	WV	RALEIGH	470	CrabOrchrd	Producing
MABEN	MAB08	WV	RALEIGH	470	EAVER	Producing
MABEN	MAB01	WV	RALEIGH	470	CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	470	CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	470	CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	470	CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	470	CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	47081	CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	47081	CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	47081	CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	47081	CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	47081	CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	47081	CrabOrchrd	Producing
MABEN	MAB03	WV	RALEIGH	47081	d_NewBvr	Producing
MABEN	MAB01	WV	RALEIGH	47081	CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	47081	CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	47081	CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	47081	CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	47081	CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	470810		Producing
MABEN	MAB06	WV	RALEIGH	470810	CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	470810	CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	470810	CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	470810	CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	470810	CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	470810	CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	470810	CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	470810	CrabOrchrd	Producing

NCE Field Crp	Route Name	State	County	Api Well Number	Exc_250*	Description	Disposition code	Merrick Completion_ID	Year Drilled P00=PRIOR TO 2000	Lease Name	Producing Description
MABEN	MAB01	WV	RALEIGH	4708100662	250*205706	New River 27AR		1950	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100650	250*205759	Crab Orchard 27AC		2316	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB06	WV	RALEIGH	4708100944	250*205637	Dorothy Sarita 012		1767	P00	W-DOROTHY	Producing
MABEN	MAB06	WV	RALEIGH	4708100710	250*205636	Dorothy Sarita 008A		1581	P00	W-DOROTHY	Producing
MABEN	MAB01	WV	RALEIGH	4708100821	250*205725	New River 72AR		2314	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB06	WV	RALEIGH	4708100826	250*205659	Presbytery 1A		2666	P00	W-DOROTHY	Producing
MABEN	MAB03	WV	RALEIGH	4708100878	250*205535	Welchlands 047AW		1761	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB06	WV	RALEIGH	4708100910	250*205642	Dorothy Sarita 021A		2665	P00	W-DOROTHY	Producing
MABEN	MAB06	WV	RALEIGH	4708100818	250*205639	Dorothy Sarita 015ADS		2131	P00	W-DOROTHY	Producing
MABEN	MAB07	WV	RALEIGH	4708100938	250*205744	BEAVER 19B		2672	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB06	WV	RALEIGH	4708100813	250*205641	Dorothy Sarita 017ADS		2488	P00	W-DOROTHY	Producing
MABEN	MAB03	WV	RALEIGH	4708100945	250*205540	Welchlands 056BW		2658	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708100954	250*205537	Welchlands 053		2125	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708100955	250*205541	Welchlands 057BW		2840	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB07	WV	RALEIGH	4708100957	250*205754	Crab Orchard 17BC		1410	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB06	WV	RALEIGH	4708100961	250*205644	Dorothy Sarita 028		3024	P00	W-DOROTHY	Producing
MABEN	MAB03	WV	RALEIGH	4708100966	250*205824	New Beaver 20C		1779	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708100915	250*205840	Welchlands 050AW		1594	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB01	WV	RALEIGH	4708100770	250*205704	New River 22AR		1585	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	4708100718	250*205722	New River 63AR		1773	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	4708100719	250*205723	New River 64AR		1951	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	4708100720	250*205709	New River 33AR		2491	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100722	250*205738	BEAVER 01A		1588	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	4708100727	250*205718	New River 58AR		1045	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100820	250*205743	BEAVER 18A		2494	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100768	250*205741	BEAVER 12A		2137	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100621	250*205782	Jones Gibson 8AJ		304	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100788	250*205742	BEAVER 13A		2315	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100792	250*205764	Crab Orchard 35AC		118	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100796	250*205765	Crab Orchard 39AC		303	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB06	WV	RALEIGH	4708100800	250*205638	Dorothy Sarita 014ADS		1945	P00	W-DOROTHY	Producing
MABEN	MAB07	WV	RALEIGH	4708100811	250*205763	Crab Orchard 33AC		3032	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB06	WV	RALEIGH	4708100812	250*205640	Dorothy Sarita 016ADS		2308	P00	W-DOROTHY	Producing
MABEN	MAB07	WV	RALEIGH	4708100746	250*205739	BEAVER 02A		1774	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB02	WV	MINGO	4705901155	250*205665	Harelands 002AH		790	P00	W-HARELANDS	Producing
MABEN	MAB07	WV	RALEIGH	4708100632	250*205751	Crab Orchard 13AC		346	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB02	WV	MINGO	4705900857	250*205671	Harelands 167		1769	P00	W-HARELANDS	Producing
MABEN	MAB02	WV	MINGO	4705901032	250*205693	Leo 1A (Signiago)		2668	P00	W-SIGNIAGO	Producing
MABEN	MAB02	WV	MINGO	4705901034	250*205694	Leo 4A		2850	P00	W-SIGNIAGO	Producing
MABEN	MAB02	WV	MINGO	4705901126	250*205688	Skillet Fork 004ASF		1770	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	4705900706	250*205687	Skillet 114		1584	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	4705901154	250*205664	Harelands 001AH		599	P00	W-HARELANDS	Producing
MABEN	MAB02	WV	MINGO	4705900705	250*205686	Skillet 113		1405	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	4705901158	250*205666	Harelands 003AH		340	P00	W-HARELANDS	Producing
MABEN	MAB02	WV	MINGO	4705901163	250*205689	Skillet Fork 005ASF		1948	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	4705901625	250*205691	Skillet Fork 006 N		2311	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	4705901636	250*205692	Skillet Fork 002B		1097	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	4705901673	250*205672	Harelands 005NH		1947	04	W-HARELANDS	Producing
MABEN	MAB02	WV	MINGO	4705901674	250*205673	Harelands 006NH		2133	04	W-HARELANDS	Producing
MABEN	MAB02	WV	MINGO	4705901138	250*205667	Harelands 004AH		1041	P00	W-HARELANDS	Producing

NCE Field Corp	Route Name	State	County	Api Well Number	Exc_250*	Description	Disposition code	Merrick Completion_ID	Year Drilled P00=PRIOR TO 2000	Lease Name	Producing Description
MABEN	MAB02	WV	MINGO	**4705900689**	250*205680	Skillet 104		297	P00	W-SKILLET FORK	Producing
MABEN	MAB05	WV	WYOMING	**4710900973**	250*205617	Crouch 05A		1214	P00	W-CROUCH	Producing
MABEN	MAB02	WV	MINGO	**4705900350**	250*205675	Skillet 013		2490	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	**4705900533**	250*205668	Harelands 058		1217	P00	W-HARELANDS	Producing
MABEN	MAB02	WV	MINGO	**4705900663**	250*205676	Skillet 092		2667	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	**4705900679**	250*205677	Skillet 098		2849	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	**4705900736**	250*205670	Harelands 122		1583	P00	W-HARELANDS	Producing
MABEN	MAB02	WV	MINGO	**4705900686**	250*205679	Skillet 102		112	P00	W-SKILLET FORK	Producing
MABEN	MAB03	WV	RALEIGH	**4708100216**	250*205543	Welchlands 059		104	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB02	WV	MINGO	**4705900692**	250*205681	Skillet 105		600	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	**4705900693**	250*205682	Skillet 106		791	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	**4705900694**	250*205669	Harelands 108		1404	P00	W-HARELANDS	Producing
MABEN	MAB02	WV	MINGO	**4705900695**	250*205683	Skillet 109		341	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	**4705900699**	250*205684	Skillet 110		1042	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	**4705900700**	250*205685	Skillet 111		1218	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	**4705900684**	250*205678	Skillet 100		3026	P00	W-SKILLET FORK	Producing
MABEN	MAB07	WV	RALEIGH	**4708100605**	250*205821	Crab Orchard 6AC		1227	P00	W-6AC	Producing
MABEN	MAB01	WV	RALEIGH	**4708100589**	250*205699	New River 10AR		792	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	**4708100591**	250*205698	New River 09AR		602	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	**4708100592**	250*205748	Crab Orchard 10AC		302	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	**4708100596**	250*205747	Crab Orchard 09AC		117	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB06	WV	RALEIGH	**4708100598**	250*205634	Dorothy Sarita 003A		1215	P00	W-DOROTHY	Producing
MABEN	MAB02	WV	MINGO	**4705901675**	250*205674	Harelands 007NH		2310	04	W-HARELANDS	Producing
MABEN	MAB07	WV	RALEIGH	**4708100601**	250*205779	Jones Gibson 5AJ		2855	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	**4708100576**	250*205777	Jones Gibson 2AJ		2496	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	**4708100610**	250*205750	Crab Orchard 12AC		796	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	**4708100614**	250*205700	New River 14AR		342	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	**4708100617**	250*205701	New River 18AR		1043	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	**4708100618**	250*205780	Jones Gibson 6AJ		3033	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	**4708100619**	250*205702	New River 20AR		1220	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	**4708100684**	250*205713	New River 40AR		115	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	**4708100600**	250*205752	Crab Orchard 15AC		1047	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB03	WV	RALEIGH	**4708100276**	250*205564	Welchlands 144		972	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB07	WV	RALEIGH	**4708100630**	250*205781	Jones Gibson 7AJ		119	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB06	WV	RALEIGH	**4708100223**	250*205652	Dorothy Sarita 063		1403	P00	W-DOROTHY	Producing
MABEN	MAB06	WV	RALEIGH	**4708100228**	250*205653	Dorothy Sarita 070		1582	P00	W-DOROTHY	Producing
MABEN	MAB03	WV	RALEIGH	**4708100230**	250*205552	Welchlands 075 BW		1576	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB06	WV	RALEIGH	**4708100232**	250*205654	Dorothy Sarita 078		1768	P00	W-DOROTHY	Producing
MABEN	MAB06	WV	RALEIGH	**4708100235**	250*205655	Dorothy Sarita 084		1946	P00	W-DOROTHY	Producing
MABEN	MAB07	WV	RALEIGH	**4708100579**	250*205746	Crab Orchard 02AC		3031	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB06	WV	RALEIGH	**4708100241**	250*205657	Dorothy Sarita 094		2309	P00	W-DOROTHY	Producing
MABEN	MAB07	WV	RALEIGH	**4708100577**	250*205778	Jones Gibson 3AJ		2673	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	**4708100540**	250*205785	Rowland 1A		348	P00	W-Bkly NewRvr_CrabOrchrd	SI - Long Term_LTSI
MABEN	MAB01	WV	RALEIGH	**4708100560**	250*205697	New River 06AR		298	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB03	WV	RALEIGH	**4708100567**	250*205520	Welchlands 003AW		2123	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	**4708100568**	250*205519	Welchlands 001AW		1938	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB01	WV	RALEIGH	**4708100573**	250*205696	New River 04AR		113	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	**4701900910**	250*287346	NEW RIVER 13		10784	A08	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB06	WV	RALEIGH	**4708100238**	250*205656	Dorothy Sarita 091		2132	P00	W-DOROTHY	Producing
MABEN	MAB02	WV	WYOMING	**4710900444**	250*205587	Newberry 028		1942	P00	W-NEWBERRY	Producing

NGE Field Grp	Route Name	State	County	Api Well Number	Exc_250*	Description	Disposition code	Merrick Completion_ID	Year Drilled P00=PRIOR TO 2000	Lease Name	Producing Description
MABEN	MAB03	WV	RALEIGH	**4708101097**	250*205850	Welchlands 097		308	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB06	WV	RALEIGH	**4708101436**	250*151080	DOROTHY SARITA 047 NDS		7854	07	W-DOROTHY	Producing
MABEN	MAB06	WV	RALEIGH	**4708101437**	250*151225	DOROTHY SARITA 048 NDS		7329	07	W-DOROTHY	Producing
MABEN	MAB05	WV	WYOMING	**4710900096**	250*205562	Welchlands 132		593	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	**4710900406**	250*205527	Welchlands 022		287	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB06	WV	RALEIGH	**4708101434**	250*151078	DOROTHY SARITA 044 NDS		7313	07	W-DOROTHY	Producing
MABEN	MAB05	WV	WYOMING	**4710900431**	250*205529	Welchlands 027		781	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	**4708101396**	250*205858	Welchlands 119		1781	06	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	**4708100976**	250*205826	New Beaver 22C		2142	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	**4710900457**	250*205531	Welchlands 036		1033	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB07	WV	RALEIGH	**4708100682**	250*205762	Crab Orchard 32AC		2854	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB02	WV	WYOMING	**4710900466**	250*205602	NEWBERRY 038		1579	02	W-NEWBERRY	Producing
MABEN	MAB05	WV	WYOMING	**4710900468**	250*205533	Welchlands 039		1396	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	**4710900491**	250*205539	Welchlands 055		2482	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	**4710900420**	250*205528	Welchlands 025		591	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB06	WV	RALEIGH	**4708101314**	250*205660	DOROTHY Sarita 039N		2848	P00	W-DOROTHY	Producing
MABEN	MAB06	WV	RALEIGH	**4708101104**	250*205649	Dorothy Sarita 034		339	P00	W-DOROTHY	Producing
MABEN	MAB06	WV	RALEIGH	**4708101112**	250*205648	Dorothy Sarita 033		789	P00	W-DOROTHY	Producing
MABEN	MAB06	WV	RALEIGH	**4708101156**	250*205650	Dorothy Sarita 035BDS		1040	P00	W-DOROTHY	Producing
MABEN	MAB06	WV	RALEIGH	**4708101157**	250*205651	Dorothy Sarita 037BDS		1216	P00	W-DOROTHY	Producing
MABEN	MAB03	WV	RALEIGH	**4708101249**	250*205851	WELCHLANDS 103		611	02	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB06	WV	RALEIGH	**4708101435**	250*151079	DOROTHY SARITA 045 NDS		7315	07	W-DOROTHY	Producing
MABEN	MAB03	WV	RALEIGH	**4708101313**	250*205853	WELCHLANDS 111N		350	02	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	**4710900529**	250*205553	Welchlands 076		1940	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB01	WV	RALEIGH	**4708101318**	250*205737	New River 39 EOG [NR_039]		1409	04	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB03	WV	RALEIGH	**4708101321**	250*205854	WELCHLANDS 112 NW		1053	04	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	**4708101342**	250*205857	WELCHLANDS 115 NW		1595	05	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB06	WV	RALEIGH	**4708101347**	250*205661	DOROTHY SARITA 040 NDS		3025	05	W-DOROTHY	Producing
MABEN	MAB06	WV	RALEIGH	**4708101363**	250*205662	DOROTHY SARITA 042 NDS		111	05	W-DOROTHY	Producing
MABEN	MAB06	WV	RALEIGH	**4708101394**	250*205663	DOROTHY SARITA 041 N		296	06	W-DOROTHY	Producing
MABEN	MAB03	WV	RALEIGH	**4708101250**	250*205852	WELCHLANDS 104		802	02	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	WYOMING	**4710900939**	250*205532	Welchlands 038AW		1209	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	WYOMING	**4710900889**	250*205524	Welchlands 016AW		2839	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	**4710900894**	250*205612	Rundle 1A		293	P00	W-AGP/EASTER	Producing
MABEN	MAB05	WV	WYOMING	**4710900895**	250*205613	Smith 1A		596	P00	W-AGP/EASTER	Producing
MABEN	MAB05	WV	WYOMING	**4710900901**	250*205526	Welchlands 021AW		102	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	**4710900903**	250*205606	AGP 2		2306	P00	W-AGP/EASTER	Producing
MABEN	MAB05	WV	WYOMING	**4710900503**	250*205544	Welchlands 061		289	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	**4710900931**	250*205614	Cooke 1A		787	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	**4710900886**	250*205608	AGP 4		2663	P00	W-AGP/EASTER	Producing
MABEN	MAB05	WV	WYOMING	**4710900948**	250*205615	Crouch 01A		975	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	**4710900957**	250*205616	Crouch 02A		1038	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	**4710900959**	250*205633	McGuire 2A		1039	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	**4710900960**	250*205631	Glydys 1A		788	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	**4710900966**	250*205618	Crouch 06A		1401	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	**4710900967**	250*205621	Crouch 09A		1944	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	**4710900930**	250*205632	McGuire 1A		976	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	**4710900855**	250*205521	Welchlands 007AW		2300	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	**4710900447**	250*205530	Welchlands 032		969	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	**4710900554**	250*205558	Welchlands 087		2842	P00	W-Bkly Welchlnd_NewBvr	Producing

NGE Field Grp	Route Name	State	County	Api Well Number	Exc_250*	Description	Disposition code	Merrick Completion_ID	Year Drilled P00=PRIOR TO 2000	Lease Name	Producing Description
MABEN	MAB03	WV	WYOMING	**4710900657**	250*205563	Welchlands 140		784	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	**4710900665**	250*205566	Welchlands 155		1211	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	WYOMING	**4710900668**	250*205565	Welchlands 150		1035	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	WYOMING	**4710900681**	250*205567	Welchlands 162		1398	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	WYOMING	**4710900888**	250*205523	Welchlands 015AW		2657	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	WYOMING	**4710900747**	250*205569	Welchlands 166		1763	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	**4710900887**	250*205525	Welchlands 018AW		3017	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	**4710900859**	250*205611	Easter 1AE		108	P00	W-AGP/EASTER	Producing
MABEN	MAB05	WV	WYOMING	**4710900871**	250*205522	Welchlands 009AW		2480	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	**4710900877**	250*205822	Bond 1		1414	P00	W-BOND	Producing
MABEN	MAB05	WV	WYOMING	**4710900879**	250*205605	AGP 1		2129	P00	W-AGP/EASTER	Producing
MABEN	MAB05	WV	WYOMING	**4710900885**	250*205607	AGP 3		2486	P00	W-AGP/EASTER	Producing
MABEN	MAB02	WV	WYOMING	**4710900527**	250*205595	Newberry 073		292	P00	W-NEWBERRY	Producing
MABEN	MAB03	WV	WYOMING	**4710900744**	250*205568	Welchlands 165		1577	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB02	WV	LOGAN	**4704500285**	250*205573	Newberry 003		2484	P00	W-NEWBERRY	Producing
MABEN	MAB03	WV	RALEIGH	**4708101022**	250*205839	Welchlands 049BW		1415	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB02	WV	LOGAN	**4704501395**	250*205600	Newberry 009-NN		1213	01	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	**4704501396**	250*205601	Newberry 012-NN		1400	01	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	**4704501968**	250*150617	Newberry 022NN		7222	07	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	**4704501969**	250*150618	Newberry 027NN		7224	07	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	**4704501970**	250*150619	Newberry 029NN		7223	07	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	**4704502000**	250*151224	Newberry 026N		7225	07	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	**4704500816**	250*205599	Newberry 131		1037	07	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	**4704500286**	250*205575	Newberry 004		2843	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	**4704500813**	250*205598	Newberry 130		974	07	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	**4704500284**	250*205572	Newberry 002		2304	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	**4704500283**	250*205571	Newberry 001		2127	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	**4704500323**	250*205581	Newberry 011		973	P00	W-NEWBERRY	Producing
MABEN	MAB06	WV	RALEIGH	**4708100982**	250*205645	Dorothy Sarita 030BDS		110	P00	W-DOROTHY	Producing
MABEN	MAB06	WV	RALEIGH	**4708100986**	250*205646	Dorothy Sarita 031BDS		295	P00	W-DOROTHY	Producing
MABEN	MAB03	WV	RALEIGH	**4708100993**	250*205842	Welchlands 067 BW		1958	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	**4708101004**	250*205831	New Beaver 27C		3036	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	**4708100977**	250*205827	New Beaver 23C		2320	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB02	WV	LOGAN	**4704500570**	250*205590	Newberry 052		2485	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	**4704500324**	250*205582	Newberry 014		1036	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	**4704500338**	250*205580	Newberry 008		785	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	**4704500352**	250*205583	Newberry 015		1212	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	**4704500306**	250*205579	Newberry 007		594	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	**4704500356**	250*205584	Newberry 016		1399	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	**4704500386**	250*205585	Newberry 019		1578	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	**4704500398**	250*205586	Newberry 020		1764	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	**4704501143**	250*205576	Newberry 004 AN		3020	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	**4704500506**	250*205589	Newberry 035		2305	P00	W-NEWBERRY	Producing
MABEN	MAB03	WV	RALEIGH	**4708100984**	250*205828	New Beaver 24C		2499	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	**4708101080**	250*205849	Welchlands 094BW		123	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB02	WV	LOGAN	**4704500611**	250*205591	Newberry 054		2662	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	**4704500670**	250*205592	Newberry 062		2844	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	**4704500699**	250*205593	Newberry 067		3021	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	**4704500723**	250*205594	Newberry 071		107	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	**4704500738**	250*205596	Newberry 077		595	P00	W-NEWBERRY	Producing

NCE Field Grp	Route Name	State	County	Api Well Number	Exc_250*	Description	Disposition code	Merrick Completion_ID	Year Drilled P00=PRIOR TO 2000	Lease Name	Producing Description	
MABEN	MAB02	WV	LOGAN	**4704500745**	250*205597	Newberry 081		786	P00	W-NEWBERRY	Producing	
MABEN	MAB02	WV	LOGAN	**4704500471**	250*205588	Newberry 031		2128	P00	W-NEWBERRY	Producing	
MABEN	MAB03	WV	RALEIGH	**4708101042**	250*205838	New Beaver 37C		1228	P00	W-Bkly Welchlnd_NewBvr	Producing	
MABEN	MAB03	WV	RALEIGH	**4708101079**	250*205559	Welchlands 092BW		3019	P00	W-Bkly Welchlnd_NewBvr	Producing	
MABEN	MAB03	WV	RALEIGH	**4708101078**	250*205848	Welchlands 091BW		3037	P00	W-Bkly Welchlnd_NewBvr	Producing	
MABEN	MAB03	WV	RALEIGH	**4708101077**	250*205847	Welchlands 090BW		2859	P00	W-Bkly Welchlnd_NewBvr	Producing	
MABEN	MAB03	WV	RALEIGH	**4708101076**	250*205846	Welchlands 089BW		2677	P00	W-Bkly Welchlnd_NewBvr	Producing	
MABEN	MAB03	WV	RALEIGH	**4708101050**	250*205557	Welchlands 085BW		2660	P00	W-Bkly Welchlnd_NewBvr	Producing	
MABEN	MAB06	WV	RALEIGH	**4708101048**	250*205647	Dorothy Sarita 032BDS		598	P00	W-DOROTHY	Producing	
MABEN	MAB03	WV	RALEIGH	**4708100981**	250*205829	New Beaver 25C		2676	P00	W-Bkly Welchlnd_NewBvr	Producing	
MABEN	MAB03	WV	RALEIGH	**4708101044**	250*205823	Bonds 02B		1593	P00	W-Bkly Welchlnd_NewBvr	Producing	
MABEN	MAB03	WV	RALEIGH	**4708101023**	250*205549	Welchlands 071BW		1210	P00	W-Bkly Welchlnd_NewBvr	Producing	
MABEN	MAB03	WV	RALEIGH	**4708101041**	250*205835	New Beaver 32C		801	P00	W-Bkly Welchlnd_NewBvr	Producing	
MABEN	MAB03	WV	RALEIGH	**4708101037**	250*205837	New Beaver 36C		1052	P00	W-Bkly Welchlnd_NewBvr	Producing	
MABEN	MAB03	WV	RALEIGH	**4708101035**	250*205834	New Beaver 31C		610	P00	W-Bkly Welchlnd_NewBvr	Producing	
MABEN	MAB03	WV	RALEIGH	**4708101025**	250*205551	Welchlands 074		1762	P00	W-Bkly Welchlnd_NewBvr	Producing	
MABEN	MAB03	WV	RALEIGH	**4708101034**	250*205833	New Beaver 30C		307	P00	W-Bkly Welchlnd_NewBvr	Producing	
MABEN	MAB03	WV	RALEIGH	**4708101026**	250*205844	Welchlands 079BW		2321	P00	W-Bkly Welchlnd_NewBvr	Producing	
MABEN		VA	BUCHANAN		250*287954	BIG VEIN 1-04	LTSI		A08			
MABEN	MAB08	WV	RALEIGH	**4708101223**	250*287357	POCAHONTAS 1	LTSI	10772	A08	W-VA Pocahontas	SI - Long Term_LTSI	ordered AB
MABEN		WV	RALEIGH		250*287700	BEAVER COAL 321-C	LTSI		A08			
MABEN	MAB01	WV	RALEIGH	**4708100636**	250*205703	New River 21AR	LTSI	1406	P00	W-Bkly NewRvr_CrabOrchrd	SI - Long Term_LTSI	e AB
MABEN	Unassigned	WV	RALEIGH	**4708100253**	250*205658	Dorothy Sarita 119	LTSI	2489	P00	W-DOROTHY	SI - Long Term_LTSI	
MABEN		WV	RALEIGH		250*287614	WPP 3-C	LTSI		A08			
MABEN	MAB01	WV	FAYETTE		250*287348	NEW RIVER 17	LTSI	10787	A08	W-Bkly NewRvr_CrabOrchrd	Producing	
MABEN		WV	FAYETTE		250*287526	NEW RIVER 33	LTSI		A08			
MABEN	MAB01	WV	RALEIGH	**4708100705**	250*205720	New River 61AR	LTSI	1408	P00	W-Bkly NewRvr_CrabOrchrd	Producing	
MABEN	MAB07	WV	RALEIGH	**4708101256**	250*287481	BEAVER COAL 311-C	LTSI	10688	A08	WV-SLAB FORK	SI - Long Term_LTSI	
MABEN		WV	FAYETTE		250*287893	NEW RIVER 47	LTSI		A08			
MABEN	MAB03	WV	WYOMING	**4710901261**	250*205536	Welchlands 051AW	LTSI	1939	P00	W-Bkly Welchlnd_NewBvr	Producing	
MABEN	MAB03	WV	RALEIGH	**4708101322**	250*205855	WELCHLANDS 113 NW	LTSI	1229	04	W-Bkly Welchlnd_NewBvr	SI - Long Term_LTSI	
MABEN	MAB01	WV	FAYETTE	**4701900662**	250*205729	New River 80AR	LTSI	3030	P00	W-Bkly NewRvr_CrabOrchrd	Producing	
MABEN	MAB08	WV	RALEIGH	**4708101207**	250*286739	BEAVER COAL A-82 (C15)	LTSI	10204	A08	WV-RALEIGH_BEAVER	SI - Long Term_LTSI	
MABEN	MAB08	WV	RALEIGH	**4708100518**	250*287359	RALEIGH COUNTY	LTSI	10208	A08	WV-RALEIGH_BEAVER	Producing	
MABEN	MAB01	WV	RALEIGH	**4708101211**	250*287350	NEW RIVER 20 B3	LTSI	10788	A08	W-Bkly NewRvr_CrabOrchrd	SI - Long Term_LTSI	
MABEN	MAB07	WV	RALEIGH	**4708101268**	250*287615	WPP 4-C [mid 11723 deleted]	LTSI		A08	WV-SLAB FORK	SI - Long Term_LTSI	
MABEN	MAB08	WV	RALEIGH	**4708101061**	250*287255	BEAVER COAL 109	LTSI	10098	A08	WV-RALEIGH_BEAVER	SI - Long Term_LTSI	
MABEN	MAB08	WV	RALEIGH	**4708100502**	250*287290	BEAVER COAL A-24	LTSI	10124	A08	WV-RALEIGH_BEAVER	SI - Long Term_LTSI	
MABEN	MAB03	WV	RALEIGH	**4708101006**	250*205832	New Beaver 28C	LTSI	122	P00	W-Bkly Welchlnd_NewBvr	SI - Long Term_LTSI	
MABEN	MAB08	WV	RALEIGH	**4708101062**	250*287256	BEAVER COAL 110	LTSI	10099	A08	WV-RALEIGH_BEAVER	SI - Long Term_LTSI	
MABEN		WV	RALEIGH		250*287246	BEAVER COAL 116	LTSI		A08			
MABEN	MAB08	WV	RALEIGH	**4708101064**	250*287260	BEAVER COAL 119	LTSI	10215	A08	WV-RALEIGH_BEAVER	SI - Long Term_LTSI	
MABEN	MAB03	WV	RALEIGH	**4708101003**	250*205830	New Beaver 26C	LTSI	2858	P00	W-Bkly Welchlnd_NewBvr	SI - Long Term_LTSI	
MABEN	MAB08	WV	RALEIGH	**4708101224**	250*287358	POCAHONTAS 2	LTSI	10773	A08	W-VA Pocahontas	SI - Long Term_LTSI	
MABEN		WV	RALEIGH		250*287268	BEAVER COAL 131	LTSI		A08			
MABEN	MAB08	WV	RALEIGH	**4708100358**	250*287287	BEAVER COAL A-02	LTSI	10110	A08	WV-RALEIGH_BEAVER	Producing	
MABEN	MAB03	WV	RALEIGH	**4708101010**	250*205841	Welchlands 060BW	LTSI	1780	P00	W-Bkly Welchlnd_NewBvr	Producing	
MABEN	MAB03	WV	RALEIGH	**4708101016**	250*205555	Welchlands 078BW	LTSI	2303	P00	W-Bkly Welchlnd_NewBvr	SI - Long Term_LTSI	AB
MABEN	MAB06	WV	RALEIGH	**4708100877**	250*205643	Dorothy Sarita 022ADS	LTSI	2847	P00	W-DOROTHY	SI - Long Term_LTSI	0 production 2013
MABEN	MAB03	WV	RALEIGH	**4708101024**	250*205843	Welchlands 073BW	LTSI	2143	P00	W-Bkly Welchlnd_NewBvr	Producing	

NGE Field Grp	Route Name	State	County	API Name	Producing Description
MABEN	MAB07	WV	RALEIGH	4760520	SI - Long Term_LTSI
MABEN	MAB08	WV	RALEIGH	47AVER	SI - Long Term_LTSI
MABEN	MAB08	WV	RALEIGH	47AVER	SI - Long Term_LTSI
MABEN	MAB07	WV	RALEIGH	47CrabOrchrd	Producing
MABEN	MAB08	WV	RALEIGH	AVER	SI - Long Term_LTSI
MABEN		WV	RALEIGH		
MABEN		WV	RALEIGH		

WELCHLANDS 29AW – UIC 2D1090980

MONITORING PLAN

EXCO's Monitoring Plan for the Welchlands 29AW Injection Well shall consist of the following:

1. The approved UIC permit will be circulated amongst the Production and Regulatory Managers in West Virginia, Pennsylvania, and Texas. The maximum pressure will be duly noted and highlighted.

2. The Murphy Gauge at the pump station, which will shut down the well on high and low pressures, will have the maximum pressure setting clearly marked on the gauge.

3. A weatherproof sign will be installed at the pump station and well head that indicates the maximum operating pressure so it is clear to the operator.

4. The maximum permitted injection pressure will be indicated on the WR-40 Form, which will also summarize the recording of pressure and be submitted on a monthly basis to the West Virginia Department of Environmental Protection.

APPENDIX H

GROUNDWATER PROTECTION PLAN

Facility Name: Welchlands 29AW

County: Wyoming

Facility Location:

Postal Service Address:		
Latitude and Longitude:	37.651975; -81.443506	

Contact Information:

Person:	Brian E. Rushe, P.E. w/ EXCO Resources (PA), LLC
Phone Number:	724-720-2590
E-mail Address:	brushe@excoresources.com

Date: 06/20/14

1. A list of all operations that may contaminate the groundwater.

Production water tanks
Underground piping to production water injection well
Injection well

2. A description of procedures and facilities used to protect groundwater quality from the list of potential contaminant sources above.

Secondary containment structures for tanks; tank inspection conducted in accordance with SPCC Plan
Pipe line inspection
Tubing, packer & multiple casing strings in place for wellbore

3. List procedures to be used when designing and adding new equipment or operations.

When adding additional tanks, secondary containment will be modified to handle additional storage capacity.

4. Summarize all activities at your facility that are already regulated for groundwater protection.

Not applicable.

5. Discuss any existing groundwater quality data for your facility or an adjacent property.

Not applicable.

6. Provide a statement that no waste material will be used for deicing or fill material on the property unless allowed by another rule.

EXCO does not utilize produced water for any kind of onsite deicing activities.

7. Describe the groundwater protection instruction and training to be provided to the employees. Job procedures shall provide direction on how to prevent groundwater contamination.

All field employees will be trained annually during one of EXCO's monthly safety meetings. This training will also coincide with EXCO's SPCC insepction training, which shall include the following:

Dike Integrity Inspection
Piping Inspections
Housekeeping Procedures
Location of spill response materials and inventory

8. Include provisions for inspections of all GPP elements and equipment. Inspections must be made quarterly at a minimum.

Welchlands 29AW shall be inspected on a quarterly basis at a minimum

Signature: Brian E. Rush

Date: 6/20/14

WELCHLANDS 29AW – UIC 2D1090980

PLUGGING & ABANDONMENT PLAN

EXCO's plan to plug and abandon the Welchlands 29AW Injection Well shall consist of the following:

1. Set a cast iron bridge plug above the perforations for the injection zone.
2. Set a cement plug on top of the cast iron bridge plug.
3. Follow all West Virginia DEP Plug 7 Abandon rules and regulations from that point as to further plugs and retrieval of casing from the hole.

EXCO Resources (PA), LLC
260 Executive Drive • Suite 100 • Cranberry Township, PA 16066
Phone (724) 720-2500 • Fax: (724) 720-2505

January 2, 2014

West Virginia Department of Environmental Protection
Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
Attn: Mr. James Peterson

RE: UIC Permit Renewal 2D0392419 (L.C. Wilson #4)
UIC Permit Renewal 2D1090980 (Welchlands 29AW)

Dear Mr. Peterson:

EXCO Resources (PA), LLC is submitting the following information for the L.C. Wilson #4 and Welchlands 29AW UIC Permit Renewals.

1. Three (3) copies of the Injection Well Permit Renewal Submittal for the L.C. Wilson #4 (**UIC 2D0392419**).
2. A check in the amount of $5,000.00 made payable to the State of West Virginia for the Separate Bond Fee for the L.C. Wilson #4 (**UIC 2D0392419**).
3. Three (3) copies of the Injection Well Permit Renewal Submittal for the Welchlands 29AW (**UIC 2D1090980**).
4. A check in the amount of $5,000.00 made payable to the State of West Virginia for the Separate Bond Fee for the Welchlands 29AW (UIC 2D1090980).

If you should have any questions or require additional information, please contact me at (724) 720-2590.

Sincerely,

Brian E. Rushe

Brian E. Rushe, P.E.
Construction & Regulatory Manager

Enclosures

APPENDIX I

Requirement for Financial Responsibility to Plug/Abandon an Injection Well

To: WV Department of Environmental Protection
Office of Oil and Gas
601 57th Street, SE
Charleston, West Virginia 25304-2345
ATTN: Underground Injection Control Program

From: EXCO Resources (PA), LLC
Brian E. Rushe, P.E.
260 Executive Drive, Suite 100
Cranberry Township, PA 16066

Date: June 20, 2014

Subject: Underground Injection Control (UIC) Permit Application
UIC2D1090980
Requirement for Financial Responsibility

I, Brian E. Rushe, verify in accordance with 47CSR13-13.7.g., that I will maintain financial responsibility and resources to close, plug, and abandon underground injection wells(s) in a manner prescribed by the Chief of the Office of Oil and Gas.

Name: Brian E. Rushe, P.E.

Signature: Brian E. Rushe

Date: 6/20/14

APPENDIX J

Site Security for Commercial Facilities

Provide a detailed description of the method(s) utilized at the facility to restrict or prohibit illegal dumping of unauthorized waste or vandalism at the facility.

1. Complete enclosure of all wells, holding tank/pits and manifold assemblies within a chain link or other suitable fencing; and

2. Require that all gates and other entry points be locked when the facility is unattended; or

3. Providing tamper-proof seals for the master valve on each well (a "lock-out" or chain & padlock system would be more secure; however, these devices could create a potential safety hazard if the well needed to be quickly shut in due to an emergency); and

4. Installing locking caps on all valves and connections on holding tanks, unloading racks, and headers.

For the Welchlands 29 AW UIC well, there is a locked gate across the access road as well as locking caps on the valves and tanks.

APPENDIX K

Identify permit or construction approvals received or applied for under the following programs:

Permit/approvals	ID Number
Hazardous Waste Management Program under RCRA	
NPDES Program	
Prevention of Significant Deterioration (PSD)	
Nonattainment Program	
Dredge or Fill	
NPDES/NPDES – Stormwater	
WVDEP – Office of Waste Management (OWM) – Solid Waste Facility	
WVDEP – OWM – RCRA (Hazardous Waste TSD or Transporter)	
WVDEP – OWM – UST	
CERCLA – Superfund	
WV Voluntary Remediation – Brownfields	
FIFRA – Federal Insecticide, Fungicide and Rodenticide Act	
Well Head Protection Program (WHPP)	
Underground Injection Control (UIC)	UIC 2D1090980
Toxic Substances Control Act (TSCA)	
Best Management Plans	
Management of Used Oil	
Other Relevant Permits (Specify):	

EXCO Resources (PA), LLC
260 Executive Drive • Suite 100 • Cranberry Township, PA 16066
Phone (724) 720-2500 • Fax: (724) 720-2505

Received
Office of Oil & Gas
OCT 30 2014

October 29, 2014

West Virginia Department of Environmental Protection
Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
Attn: Mr. Zachary Stevison

RE: Response to UIC Permit Deficiency Letter
Welchlands 29AW
UIC Permit # 2D1090980

Dear Mr. Stevison:

The following are our responses to your Deficiency Letter dated September 9, 2014.

1. *Check List for the UIC permit application is missing*

   RESPONSE: A completed check list is attached.

2. *Section 5 of the application fails to provide the requested information "Briefly explain the industry and/or field in which the operator resides (i.e. oil and gas producer, commercial oil and gas waste fluid disposal company, unconventional salt mining company).*

   RESPONSE: A revised Section 5 and page 2 of 3 for the UIC application is attached.

3. *Provide a completed and approved WR-37 Pre-Operational Certificate for Liquid Injection or Waste Disposal Well Document. Our records indicate that well 47-109-00980 Welchlands 29AW is operating without representing valid mechanical integrity, which is required to be performed at a frequency no more than every 5 years.*

   RESPONSE: Attached is a copy of the completed and approved WR-37 document.

4. *Inadequate information has been provided. "An aerial map or appropriate drawing(s) of the proposed UIC injection well(s) facility/project area. This map focuses on the surface and near surface structures associated with the UIC*

activities. Included must be all intakes and discharge structures, storage, groundwater supply sources, pipelines, pumps, valves, tank or tank battery, secondary containment, and/or other fluid storage structures. The submitted surface map/drawing should include, but is not limited to: legend/key, scale, and orientation (i.e. north arrow, compass)." The submitted aerial UIC facility map failed to include all pertinent operational surface structures. An updated aerial map shall include all pipelines servicing the injection operation.

RESPONSE: A Detailed Map has been enclosed that shows the injection well filter station, tank pad and pipeline supplying the injection fluid to the well.

5. *Appendix A is not complete. Line item 8 and 9 need to be completed.*

RESPONSE: A revised Appendix A form is attached. Line items 8 and 9 have been completed.

6. *Appendix E has not been completed. The water well data submitted may not legally defensible the primary focus of sample collection.*

RESPONSE: No existing streams or ponds or sources of water were identified within the ¼ mile radius of the Welchlands 29AW UIC well. Therefore, the existing water wells that were sampled are the only existing data we have unless the Department will require us to locate and sample water sources outside the ¼ mile radius.

7. *Sample analysis package HC 89 Box 408/SPhillips W1 and S1*
   a. *There appear to be three chain of custody forms with this package (Chain of Custody request for analysis, chain of custody/request for analysis, and a chain of custody receiving document).*

      RESPONSE: The laboratory's procedure is to have a separate chain of custody for the bacteria sampling. The third page included is the laboratory's receiving document containing all bottles received, preservation, temperature, deviations, and notations.

      i. *The chain of custody/request for analysis for 3K1140-02 total coliform appears to identify the sample as SEDIMENT in the comment field; however, the analysis reports the information as a water matrix. Is this an error?*

      RESPONSE: This is a notation in the comment field utilized by the analyst to note that the sample was received with some sediment in the sample bottle. The analysis is correctly reported as a water matrix on the final report.

      ii. *The received and relinquished signature and timeframes are difficult to follow. All samples provided as part of this package*

were collected at the same time however, received by and relinquished by are not consistent.

RESPONSE: The laboratory has two separate receiving departments. One department receives all microbiological samples and chains of custody while the second department receives samples and chains of custody for all other parameters. The samples are therefore relinquished and received at different times.

b. *HC 89 Box 408/SPhillips W1 and S1 Samples' chain of custody is incomplete. The sample parameters need to be identified, receiving information needs to be completed, as well as sample temperature. Initialing the transfer of a chain of custody is unacceptable.*

RESPONSE: The laboratory can list the parameters on the chain of custody or moving forward with permission of the Department, state "See Attached" with the parameter list added as an attachment to the chain of custody. For this submittal, the parameter list has been included as the last page of the final report. The sample temperature was verified upon receipt and provided to the client as page 17 of the final report. As of July 21st, the laboratory revised its procedures to include signatures for all individuals involved in the sample chain of custody.

c. *The Chain of Custody Receiving document fails to contain a link to the sample chain of custody form. (CoC form contains 3K21140-03 while CoC receiving contains 3K21140-04).*

RESPONSE: As of August the 11th, the numbering of the chain of custody and the receiving document is now our protocol. This document is attached with each chain of custody as part 2 of 2, and becomes a permanent document along with the chain of custody to each client's final analytical report.

d. *The laboratory reporting method does not satisfy the reporting method of detection required in 47CSR32. Reporting a less than symbol does not provide the agency a value that can be assessed.*

RESPONSE: In response to a West Virginia audit in July 2014, all West Virginia projects were set up in the laboratory's LIMS system to report all results to the MDL. As a check to ensure all West Virginia samples are issued to the MDL, the laboratory's LIMS provider set a query that will run daily to verify all projects with the West Virginia designation are reported to the MDL. The final report for 3K21140 can be reissued reporting results to the MDL.

e. *Data submitted and qualified as being outside acceptable limits is unusable.*

RESPONSE: The data is usable and acceptable based on additional passing quality control. Included in this sequence of samples was both a low and high range continuing calibration verification sample, as well as a laboratory control sample duplicate. All of these quality control samples were within the acceptable range. The method blank analyzed with this sequence of samples was non-detect, indicating that no bias was present.

f. *It is unclear if the parameter identified as Gasoline is a GRO analysis or a gasoline sample.*

RESPONSE: The laboratory revised the naming on March 15, 2014 to clearly report GRO as Gasoline Range Organics. The final report for 3K21140 can be reissued showing the correction.

g. *Analytical report form for samples identifies sample 3K21140-05 was collected 16 December 2013 and received by the lab on 21 November 2013.*

RESPONSE: For samples 3K21140-04 and 3K21140-05, the GRO, DRO, and ORO were resampled on December 16, 2013. The laboratory's LIMS system will allow only one received date. The laboratory made a note in the case narrative on the report to that effect. Upon review, if the case narrative note does not adequately address the concerns of the Department, then the laboratory can put the GRO, DRO, and ORO on a separate report.

8. *Sample PO BOX 172/EPHILLIPS SI*

a. *Analytical report form for samples identifies sample 3K222098-02 was collected 19 December 2013 and received by lab on 22 November 2013.*

RESPONSE: For sample 3K22098-02, the GRO, DRO, and ORO was resampled on December 16, 2013. The laboratory's LIMS system will allow only one received date. The laboratory made a note in the case narrative on the report to that effect. Upon review, if the case narrative note does not adequately address the concerns of the Department, then the laboratory can put the GRO, DRO, and ORO on a separate report.

b. *The trip blank is missing from this analysis. 47CRS32.2.1.3.e.A Trip blanks must be prepared, transported and analyzed for each batch of samples for analysis for Nonpotable Volatile Organic Chemicals.*

RESPONSE: The laboratory's procedure for trip blanks typically is to analyze one per day, not per sample as shown on other reports for this project. The trip blank was missed on November 22nd, however all volatiles for all samples were non detect.

c. *The laboratory reporting method does not satisfy the reporting method of detection required in 47CSR32. Reporting a less than symbol does not provide the agency a value that can be assessed.*

RESPONSE: In response to a West Virginia audit in July 2014, all West Virginia projects were set up in the laboratory's LIMS system to report all results to the MDL. As a check to ensure all West Virginia samples are issued to the MDL, the laboratory's LIMS provider set a query that will run daily to verify all projects with the West Virginia designation are reported to the MDL. The final report for 3K22098 can be reissued reporting results to the MDL.

d. *Data submitted and qualified as being outside acceptable limits is unusable.*

RESPONSE: The data is usable and acceptable based on additional passing quality control. Included in this sequence of samples was both a low and high range continuing calibration verification sample, as well as a laboratory control sample duplicate. All of these quality control samples were within the acceptable range. The method blank analyzed with this sequence of samples was non-detect, indicating that no bias was present.

e. *83 Facemyer RD/Wood W1 Samples' chain of custody is incomplete. The sample parameters need to be identified, receiving information needs to be completed, as well as sample temperature. Initialing the transfer of a chain of custody is in acceptable.*

RESPONSE: The laboratory can list the parameters on the chain of custody or with permission of the Department, state "See Attached" with the parameter list added as an attachment to the chain of custody. The sample temperature was verified upon receipt and provided to the client as page 11 of the final report. As of July 21st, the laboratory revised its procedures to include signatures for all individuals involved in the sample chain of custody.

f. *The Chain of Custody Receiving document fails to contain a link to the sample chain of custody form. (CoC from contains 3K22098-11 while CoC receiving contains 3K22089-12).*

RESPONSE: As of August the 11th, the numbering of the chain of custody and the receiving document is now our protocol. This document is attached with each chain of custody as part 2 of 2, and becomes a permanent document along with the chain of custody to each client's final analytical report.

g. *It is unclear if the parameter identified as Gasoline is a GRO analysis or a gasoline sample.*

RESPONSE: The laboratory revised the naming on March 15, 2014 to clearly report GRO as Gasoline Range Organics. The final report for 3K22098 can be reissued showing the correction.

9. *Sample 646 PHILLIPS RD/BDANIELS S1*
   a. *Analytical report form for samples identifies sample 3K22099-02 was collected 16 December 2013 and received by the lab on 22 November 2013.*

RESPONSE: For sample 3K22099-02, the GRO, DRO, and ORO was resampled on December 16, 2013. The laboratory's LIMS system will allow only one received date. The laboratory made a note in the case narrative on the report to that effect. Upon review, if the case narrative note does not adequately address the concerns of the Department, then the laboratory can put the GRO, DRO, and ORO on a separate report.

b. *The trip blank is missing from this analysis. 47CRS32.2.1.3.e.A Trip blanks must be prepared, transported and analyzed for each batch of samples for analysis for Nonpotable Volatile Organic Chemicals.*

RESPONSE: The laboratory's procedure for trip blanks typically is to analyze one per day, not per sample as shown on other reports for this project. The trip blank was missed on November 22nd, however all volatiles for all samples were non detect.

c. *The laboratory reporting method does not satisfy the reporting method of detection required in 47CSR32. Reporting a less than symbol does not provide the agency a value that can be assessed.*

RESPONSE: In response to a West Virginia audit in July 2014, all West Virginia projects were set up in the laboratory's LIMS system to report all results to the MDL. As a check to ensure all West Virginia samples are issued to the MDL, the laboratory's LIMS provider set a query that will run daily to verify all projects with the West Virginia designation are reported to the MDL. The final report for 3K22099 can be reissued reporting results to the MDL.

d. *Data submitted and qualified as being outside acceptable limits is unusable.*

RESPONSE: The data is usable and acceptable based on additional passing quality control. Included in this sequence of samples was both a low and high range continuing calibration verification sample, as well as a laboratory control sample duplicate. All of these quality control samples were within the acceptable range. The method blank analyzed with this sequence of samples was non-detect, indicating that no bias was present.

e. *646 PHILLIPS RD/BDANIELS S1 Samples' chain of custody is incomplete. The sample parameters need to be identified, receiving information needs to be completed, as well as sample temperature. Initialing the transfer of a chain of custody is in acceptable.*

RESPONSE: The laboratory can list the parameters on the chain of custody or moving forward with permission of the Department, state "See Attached" with the parameter list added as an attachment to the chain of custody. For this submittal, the parameter list has been included as the last page of the final report. The sample temperature was verified upon receipt and provided to the client as page 17 of the final report. As of July 21st, the laboratory revised its procedures to include signatures for all individuals involved in the sample chain of custody.

f. *It is unclear if the parameter identified as Gasoline is a GRO analysis or a gasoline sample.*

RESPONSE: The laboratory revised the naming on March 15, 2014 to clearly report GRO as Gasoline Range Organics. The final report for 3K22099 can be reissued showing the correction.

g. *The Chain of Custody Receiving document fails to contain a link to the sample chain of custody form. (CoC from contains 3K22099-03 while CoC receiving contains 3K22099-03)*

RESPONSE: As of August the 11th, the numbering of the chain of custody and the receiving document is now our protocol. This document is attached with each chain of custody as part 2 of 2, and becomes a permanent document along with the chain of custody to each client's final analytical report.

10. *Appendix G has not been completed. Of the list provided a spot check of the wells identified are abandoned ordered, status of abandoned, and there is 2013 production indicated in our system. Please complete Appendix G with only the wells fluid is being accepted from.*

RESPONSE: Attached is an updated list of the wells serviced by the Welchlands 29AW well.

11. *Section 9 Sample HC 89 Box 300/injection well fluid data is useless. Extractable Petroleum Hydrocarbons recover is outside of the QC control limits, the MDL and RL are reported to be the same.*

RESPONSE: The data for the Extractable Petroleum Hydrocarbons data is usable and acceptable based on additional passing quality control. Included in this batch of samples were low and high range continuing calibration verification sample, as well as a laboratory control sample. All of these quality control samples were within the acceptance range. The method blank and instrument blank analyzed with this sequence of samples were non-detect, indicating that no bias was present.

In response to a West Virginia audit in July 2014, all West Virginia projects were set up in the laboratory's LIMS system to report all results to the MDL. As a check to ensure all West Virginia samples are issued to the MDL, the laboratory's LIMS provider set a query that will run daily to verify all projects with the West Virginia designation are reported to the MDL. The final report for 3K08103 can be reissued reporting results to the MDL.

a. *The Chain of Custody Receiving document fails to contain a link to the sample chain of custody form. (CoC form contains 3K08103-02 while CoC receiving contains 3K081013-03).*

RESPONSE: As of August the 11th, the numbering of the chain of custody and the receiving document is now our protocol. This document is attached with each chain of custody as part 2 of 2, and becomes a permanent document along with the chain of custody to each client's final analytical report.

b. *The laboratory reporting method does not satisfy the reporting method of detection required in 47CSR32. Reporting a less than symbol does not provide the agency a value that can be assessed.*

RESPONSE: In response to a West Virginia audit in July 2014, all West Virginia projects were set up in the laboratory's LIMS system to report all results to the MDL. As a check to ensure all West Virginia samples are issued to the MDL, the laboratory's LIMS provider set a query that will run daily to verify all projects with the West Virginia

designation are reported to the MDL. The final report for 3K08103 can be reissued reporting results to the MDL.

c. *The trip blank was not recorded on the Chain of Custody.*

RESPONSE: The trip blank was recorded on the chain of custody listed under the analyses requested but was not recorded as a sample description. In response to the West Virginia audit in July 2014, the laboratory has revised its procedure in location of trip blank analyses on the chain of custody. Trip blanks are now located in the sample description section of the chain of custody.

12. *UIC facility shall provide adequate secondary containment for all fluid storage reservoirs. Provide a physical and quantitative description of all tank and/or tank battery secondary containment(s), providing evidence that the structure(s) can contain 110% of largest tank volume. Provide all calculations and secondary construction information.*

RESPONSE: Secondary containment is provided for all of the tanks. The secondary containment volume minus the tanks in that containment is 18,496 gallons. There are two (2)-210 barrel tanks and one (1)-50 barrel tank. The 110% volume requirement = 9,702 gallons. There is an excess volume of 8,794 gallons above the 110% volume requirement. See the attached operator Annual AST Inspection Form.

13. *Section 9 Operating Requirements/Data: item number 4, 5, and 6 have been omitted.*

RESPONSE: For 9.4, No fluid additives to report during injection.

For 9.5, the Annulus has a standing fluid level of formation water @ 1,700' & then methane gas to surface. These fluids are minimally corrosive.

For 9.6, In the event of a well surface failure EXCO would utilize the SPCC plan to contain the spill from migrating to any water source. In the event of a subsurface failure a number of options are available. EXCO would utilize a combination of rig equipment, non-toxic kill fluids, or plugs to isolate a failure point. Once the problem was identified and temporarily contained a more detailed plan would follow. The fluids we currently dispose of in this well could simply be hauled to another EXCO injection well or to a third party disposal well.

14. *Adequate injection pipeline integrity shall be maintained by each UIC well facility. Provide a plan and/or explanation of pipeline integrity testing and frequency.*

RESPONSE: The pipeline integrity inspection plan and frequency is mentioned in the Groundwater Protection Plan. Quarterly inspections shall be completed at a minimum for all pipelines for evidence of leakage and integrity issues. A revised Section 8 of the Groundwater Monitoring Plan is attached.

15. *Section 13 of the submitted draft permit application indicates "A check in the amount of $5,000.00 made payable to the State of West Virginia for the Separate Bond Fee for the Welchlands 29AW (UIC 2D1090980)" has been submitted. No such check can be located or the appropriate form.*

RESPONSE: Attached is a copy of the correspondence letter to James Peterson with the WV DEP dated January 2, 2014 as well as a copy of the check in the amount of $5,000.00.

16. *Complete Appendix G of the WVDEP UIC application package.*

RESPONSE: An updated spreadsheet of all the wells that service the Welchlands 29AW is attached as referenced on the Appendix G Form that was previously submitted.

17. *Appendix H Groundwater Protection Plan*
    a. *Section 8 fails to provide adequate explanation or detail. The injection facility and appropriate inspection need to presented.*

RESPONSE: A revised Section 8 of the Groundwater Protection Plan is attached.

18. *Provide a detailed description of the injection zone. This shall include all the information and data outlined in Section 8 of the Class 2 and 3 UIC Permit Application Package. Also, provide further documentation and/or evidence supporting the 80 mD permeability value used in your submitted pressure model.*

RESPONSE: The Injection zone for this well is the Upper Devonian Gordon Sandstone with historic records indicating it being found from 4374-4424 ft in the Welchlands 29AW well. A wireline log is not available to EXCO for the injection well and the nearest well with log data sufficient enough to characterize the Gordon sand is the Georgia Pacific Corp. #235 (4710901078) 4 miles to the west. Density porosity measurements in the Georgia Pacific Corp. well average 7.4% (log attached). Gross thickness of the Gordon is 50ft at the Welchlands 29AW well and remains consistent in the general area (isopach attached). The Welchlands 29AW sits on the SE limb of an anticline whose axis has a NE/SW orientation (structure map attached). No faulting is known in the area, while fracturing may be more prolific here than in other areas given the wells proximity to the fold.

19. *Provide a description of the confining zone is required, including lithological names, thickness, confining properties, and formation integrity.*

RESPONSE: Shale is present above and below the injection zone and remains thick for miles around the Welchlands 29AW. The confining shale above the Gordon in the Welchlands well is estimated to be 135ft thick. The Berea sandstone, which is typically <10ft thick in the area, marks the top of the confining zone. The confining shale above thickens to the north and thins slightly to the south (isopach attached). Low permeability, Devonian shale below the target interval is extremely thick in the area. Adequate log data to make an isopach of the shale succession is not available, as most wells stop in the Huron Shale. As can be seen on the Georgia Pacific Corp. #235 log the shale extends for thousands of feet below the injection interval.

20. *Provide a structural contour and isopach map of both the injection and confining layer(s). This shall, at minimum, cover the proposed ¼ mile AOR including all control points.*

RESPONSE: Maps are attached as requested.

21. *Provide geophysical logs of the proposed injection and neighboring wells. Each log shall delineate the upper and lower contacts of the injection and confining geologic units showing the vertical and lateral extent of the proposed injection reservoir.*

RESPONSE: No log for the injection well, but nearest offset with more than just a gamma ray is attached.

22. *Provide a compatibility of injection fluid with formation(s) and formation fluid assessment.*

RESPONSE: Due to no freshwater being seen while drilling at these depths and only injecting brine into the Gordon Sand no fluid compatibility concerns exist.

23. *Provide a groundwater use and dependence evaluation at minimum covering the AOR.*

RESPONSE: Based on telephone discussions with Zac Stevison, Brian Carr, and Jane McColloch with the WV DEP, there are no accurate aquifer maps for this area. If acceptable, then a list of the total depths or depth to water for the water wells that were tested can be added to the water well map. This information was obtained from either the field measurements and/or the resident's knowledge.

24. *Provide a description of the nature of the annulus between the tubing and casing is required, including any additives used.*

RESPONSE: Annulus has a standing fluid level of formation water @ 1,700' & then methane gas to surface. The annulus has 0 psi pressure on it.

25. *Provide the injection well hydrostatic fluid level.*

RESPONSE: The hydrostatic fluid level in the tubing is 1,600' below ground level after a shut in period of 10 days.

If you should have any questions or require additional information, please contact me at (724) 720-2590.

Sincerely,

Brian E. Rushe, P.E.
Construction & Regulatory Manager

Enclosures

CHECKLIST FOR FILING A UIC PERMIT APPLICATION

Please utilize this checklist to ensure you have prepared, completed, and enclosed all required documentation and payment to ensure a timely review of your submittal.

Operator	EXCO Resources (PA), LLC		
Existing UIC Permit ID Number	2D1090980	UIC Well API Number	47-109-00980

Office of Oil and Gas Office Use Only	
Permit Reviewer	ZGS
Date Received	[redacted]
Administratively Complete Date	6/24/2014
Approved Date	
Permit Issued	

Please check the fees and payment included.

Fees		Payment Type	
UIC Permit Fee: $500	✓	Check	✓
Groundwater Protection Plan (GPP) Fee: $50.00	✓	Electronic	
		Other	

Please check the items completed and enclosed.

- ✓ Checklist
- ✓ UIC-1
  - ✓ Section 1 – Facility Information
  - ✓ Section 2 – Operator Information
  - ✓ Section 3 – Application Information
  - ✓ Section 4 – Applicant/Activity Request and Type
  - ✓ Section 5 – Brief description of the Nature of the Business
  - ✓ CERTIFICATION
- ✓ Section 6 – Construction
  - ✓ Appendix A Injection Well Form
  - ✓ Appendix B Storage Tank Inventory
- ✓ Section 7 – Area of Review
  - ✓ Appendix C Wells Within the Area of Review

Received
Office of Oil & Gas
OCT 30 2014

- [x] Appendix D Public Service District Affidavit
- [x] Appendix E Water Sources
- [x] Appendix F Area Permit Wells
- [x] Section 8 – Geological Data on Injection and Confining Zones
- [x] Section 9 – Operating Requirements / Data
  - [x] Appendix G Wells Serviced by Injection Well
- [x] Section 10 – Monitoring
- [x] Section 11 – Groundwater Protection Plan (GPP)
  - [x] Appendix H Groundwater Protection Plan (GPP)
- [x] Section 12 – Plugging and Abandonment
- [x] Section 13 – Additional Bonding
- [x] Section 14 – Financial Responsibility
  - [x] Appendix I Financial Responsibility
- [x] Section 15 – Site Security Plan
  - [x] Appendix J Site Security for Commercial Wells
- [x] Section 16 – Additional Information
  - [x] Appendix K Other Permit Approvals

NOTE: For all 2D wells an additional bond in the amount of $5,000 is required.

Reviewed by (Print Name): Brian E. Rushe, P.E.

Reviewed by (Sign): Brian E. Rushe

Date Reviewed: 10/20/14

Section 3. Applicant Information

Ownership Status: ■ PRIVATE ☐ PUBLIC ☐ FEDERAL ☐ STATE
☐ OTHER (explain):

SIC code: ■ 1311 (2D, 2H, 2R) ☐ 1479 (3S) ☐ OTHER (explain):

Section 4. Applicant / Activity Request and Type:

A. Apply for a new UIC Permit: ☐ 2D ☐ 2H ☐ 2R ☐ 3S
B. Reissue existing UIC Permit: ■ 2D ☐ 2H ☐ 2R ☐ 3S
C. Modify existing UIC Permit: ☐ 2D ☐ 2H ☐ 2R ☐ 3S
(Submit only documentation pertaining to the modification request)
2D COMMERCIAL FACILITY: ☐ YES ■ NO

Section 5. Briefly describe the nature of business and the activities to be conducted:

Renewal of an Underground Injection Control (UIC) permit for the subsurface injection of produced fluids for EXCO Resources (PA), LLC, an oil and gas producer.

Promoting a healthy environment.

dep

WR-37
REV. 5/01

Date: 10-1-2014

Operator's Well Number UIC2D1090980

API Well No.: State 47- County 109 - Permit 00980

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENT-OFFICE OF OIL AND GAS
PRE-OPERATION CERTIFICATE
FOR LIQUID INJECTION OR WASTE DISPOSAL WELL

WELL OPERATOR EXCO Resources (PA), LLC
Address 260 Executive Drive, Suite 100
Cranberry Township, PA 16066

DESIGNATED AGENT
Address

GEOLOGICAL TARGET FORMATION Gordon Sand Depth 4,374 feet(top) to 4,424 feet(bottom)

Virgin reservoir pressure in target formation 1900 psig

Source of information on virgin reservoir pressure: Hydrostatic pore pressure

Perforation intervals 4,382-4,411 Open-hole intervals None

Received
Office of Oil & Ga
OCT 30 2014

MAXIMUM PERMITTED INJECTION OPERATIONS

Well head injection pressure: 200 psig Bottom hole pressure: 2150 (1.12 S.G.) psig

Volume per hour: 60 BPH

DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED

Liquids to be injected for oil recovery: None

Wastes to be disposed of: Produced fluids from wells in area. 1.12 S.G.

Additives (Slurry mediums, inhibitors, solvents, oxidizers, deoxidizers, etc.) None currently. Potentially ammonium bi sulfide (oxygen scavenger) and primary amine (bacteria control) at times to maintain well integrity and injectivity.

SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL Use of oxygen scavenger to prevent putting oxygen into the system to prevent corrosive environment.

ADDITIONAL DRILLING AS PART OF THE CONVERSION (Complete form WR-35)

DETAILS ON NEW CASING AND TUBING PROGRAM AS PART OF THE CONVERSION (To be completed below unless the new casing and tubing program is described on a form WR-35, submitted in connection with the permit to which this form WR-37 relates.)

CASING OR TUBING TYPE	SIZE	GRADE	WEIGHT PER FT.	NEW	USED	FOOTAGE USED IN DRILLING	FOOTAGE LEFT IN WELL	CEMENT USED	PACKERS (KIND, SIZE, DEPTH SET)
CONDUCTOR	12-3/4"			X		24'	24'	2 sks	
FRESH WATER	9-5/8"		32#	X		697'	697'	244 sks	
COAL									
INTERMEDIATE	7"		17#	X		1530'	1530'	250 sks	
PRODUCTION	4-1/2"	J-55	10.5#	X		4540'	4540'	200 sks	
TUBING	2-3/8"	H-55	4.7#	X		4380'	4380'		
LINERS									

WR37

109-0980

MECHANICAL INTEGRITY TEST

Test Method: EXCO opted to monitor the annulus of this well under 47CSR13-6.2.b.1 to demonstrate mechanical integrity. This well has pressure (gauges) and rate (chart recorder) monitoring devices on the annulus to watch for any potential fluid movement. In addition to the aforementioned monitoring, echometer shots will be taken on a quarterly basis to monitor the fluid level in the annulus.

The undersigned certifies that the test was performed on NOT APPLICABLE *, 20___ and demonstrated mechanical integrity of the well. The test was witnessed by NOT APPLICABLE representing the Office of Oil and Gas.

NOT APPLICABLE
Well Operator

NOT APPLICABLE
Date

THIS WELL IS AUTHORIZED FOR INJECTION.

* Signed _____ UIC PROGRAM DIRECTOR

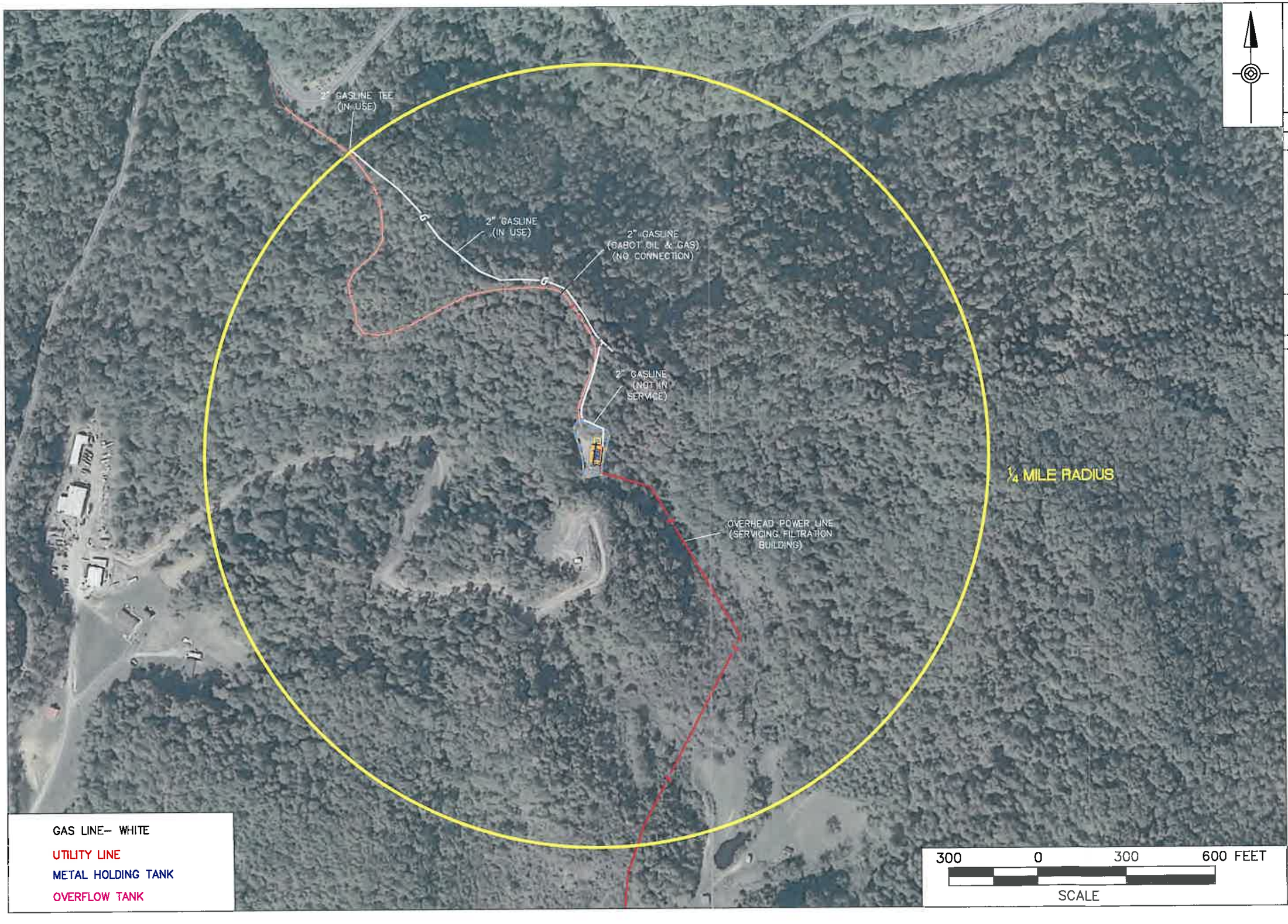
Date 10/1/14

[NOTE: That the mechanical integrity of this well must be demonstrated again within ninety (90) days of five years from this date in order for injection to continue. Please notify the state inspector 24 hours in advance of the test].

Received
Office of Oil & Gas
OCT 30 2014

EXCO Resources (PA), LLC
Well Operator
By: Brian E. Rushe, P.E.
Its Construction & Regulatory Manager

* For the purpose of this form, the test was performed on 10/1/14 even though it is "tested" everyday via gauges and recorder. Gene Smith



Larson Design Group

Received
Office of Oil & Gas
OCT 30 2014

NO.	DATE	COMMENTS	BY	CHK
01	10-8-14	ISSUE / REVISIONS	RTC	RBV

Welchlands #29AW PERMIT # 2D1090980 DETAILED MAP

WYOMING COUNTY, SLAB FORK DISTRICT, WEST VIRGINIA

EXCO RESOURCES (PA), LLC
260 EXECUTIVE DRIVE, SUITE 100
CRANBERRY TOWNSHIP, PA 16066
PHONE (724) 720-2590

Larson Design Group • Architects Engineers Surveyors
8050 Rowan Road • Suite 504
Cranberry Township, PA 16066
PHONE 724.591.8562 TOLL FREE 877.323.6603
FAX 570.323.9902 • www.larsondesigngroup.com

SHEET NO.:

PROJECT NO.: 8013-010

Larson Design Group

Received
Office of Oil & Gas
OCT 30 2014

NO.	DATE	COMMENTS	BY	CHK
01	10-8-14		RTC	RBV

ISSUE / REVISIONS

Welchlands #29AW PERMIT # 2D1090980 DETAILED MAP

WYOMING COUNTY, SLAB FORK DISTRICT, WEST VIRGINIA

EXCO RESOURCES (PA), LLC
260 EXECUTIVE DRIVE, SUITE 100
CRANBERRY TOWNSHIP, PA 16066
PHONE (724) 720-2590

Larson Design Group • Architects Engineers Surveyors
8050 Rowan Road • Suite 504
Cranberry Township, PA 16066
PHONE 724.591.8562 TOLL FREE 877.323.6603
FAX 570.323.9902 • www.larsondesigngroup.com

SHEET NO.:

PROJECT NO.: 8013-010

APPENDIX A
Injection Well Form

1) GEOLOGIC TARGET FORMATION: Gordon Sandstone

Depth: 4374 Feet (top) 4425 Feet (bottom)

2) Estimated Depth of Completed Well, (or actual depth of existing well): 4599 Feet

3) Approximate water strata depths: Fresh none Feet Salt 2910 Feet

4) Approximate coal seam depths: 575, 735, 970, 1110, 1424

5) Is coal being mined in the area? Yes ☐ No ☑

6) Virgin reservoir pressure in target formation 750 psig Source 47-081-1106, 1024

7) Estimated reservoir fracture pressure 1800 psig (BHFP)

8) MAXIMUM PROPOSED INJECTION OPERATIONS:

Injection rate (bbl/hour): 60 BPH

Injection volume (bbl/day): 1440 BPH

Injection pressure (psig): 250 PSIG

Bottom hole pressure (psig): 3506 PSIG

9) DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED, INCLUDING ADDITIVES:

Produced brines, fracturing fluids, pit fluids, 02 scavenger, bacteriacid & scale inhibitor

Temperature of injected fluid: (°F) 57.5

10) FILTERS (IF ANY)

5 Micron

11) SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL

Injection fluid will be treated with phosphonate (scale inhibitor) to protect surface equipment and injection equipment and injection lines.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources
260 Executive Drive
Cranberry Township PA, 16066
Project Manager: Brian Rushe

Project: Welchland 29AW
Project Number: Phillips, Shirley M.
Collector: SSS
Number of Containers: 23

Reported:
10/17/14 10:55

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Sample Type	Date Sampled	Date Received
HC 89 BOX 408/SPHILLIPS W1	3K21140-01	Water	Grab	11/21/13 11:30	11/21/13 19:15
HC 89 BOX 408/SPHILLIPS S1	3K21140-02	Water	Grab	11/21/13 12:20	11/21/13 19:15
TRIP BLANK	3K21140-03	Water	Trip Blank	11/21/13 00:00	11/21/13 19:15

3K21140 Parameter list attached as page 31 of final report. This report replaces the report issued 09/30/14 12:35. 10/07/14 CL

3K21140 Report revised. Case narrative and MDL values added. This report replaces the report printed on 12/27/13 10:52. 09/30/14 mlf

The resamples for GRO/DRO/ORO were collected 12/16/13 and are reported on separate laboratory work order ID: 4J17007. This report replaces the report printed on 10/07/14 11:21. 10/17/14 mlf

Fairway Laboratories, Inc.

Reviewed and Submitted by:

Michael P. Tyler
Laboratory Director

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources
260 Executive Drive
Cranberry Township PA, 16066
Project Manager: Brian Rushe

Project: Welchland 29AW
Project Number: Phillips, Shirley M.
Collector: SS
Number of Containers: 23

Reported: 10/17/14 10:55

Client Sample ID: HC 89 BOX 408/SPHILLIPS W1

Date/Time Sampled: 11/21/13 11:30

Laboratory Sample ID: 3K21140-01 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Calculated Analytes								
Hardness	45.3	0.0657	0.662	mg/l	12/04/13 17:31	SM2340B	rab	
Metals by EPA 200 Series Methods								
Aluminum	<0.0500	0.0149	0.0500	mg/l	12/04/13 17:31	EPA 200.7/4.4	rab	
Arsenic	0.00637	0.00202	0.00400	mg/l	12/04/13 17:33	EPA 200.7/4.4	rab	
Barium	0.293	0.00132	0.0100	mg/l	12/04/13 17:31	EPA 200.7/4.4	rab	
Calcium	12.9	0.0131	0.100	mg/l	12/04/13 17:31	EPA 200.7/4.4	rab	
Iron	15.1	0.00223	0.0200	mg/l	12/04/13 17:31	EPA 200.7/4.4	rab	
Manganese	0.298	0.00146	0.0100	mg/l	12/04/13 17:33	EPA 200.7/4.4	rab	
Sodium	11.0	0.0677	0.400	mg/l	12/04/13 17:31	EPA 200.7/4.4	rab	
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<0.12	0.12	1.00	ug/l	11/28/13 03:00	EPA 8260B	wlm	
Toluene	<0.39	0.39	1.00	ug/l	11/28/13 03:00	EPA 8260B	wlm	
Ethylbenzene	<0.18	0.18	1.00	ug/l	11/28/13 03:00	EPA 8260B	wlm	
Xylenes (total)	<0.35	0.35	2.00	ug/l	11/28/13 03:00	EPA 8260B	wlm	
Surrogate: 4-Bromofluorobenzene	*91.2 %*		*70-130*		*11/28/13 03:00*	*EPA 8260B*	wlm	
Surrogate: 1,2-Dichloroethane-d4	*111 %*		*70-130*		*11/28/13 03:00*	*EPA 8260B*	wlm	
Surrogate: Fluorobenzene	*102 %*		*70-130*		*11/28/13 03:00*	*EPA 8260B*	wlm	
Conventional Chemistry Parameters by SM/EPA Methods								

Fairway Laboratories, Inc.

Received
Office of Oil & Gas
OCT 30 2014

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources
260 Executive Drive
Cranberry Township PA, 16066
Project Manager: Brian Rushe

Project: Welchland 29AW
Project Number: Phillips, Shirley M.
Collector: SS
Number of Containers: 23

Reported: 10/17/14 10:55

Client Sample ID: HC 89 BOX 408/SPHILLIPS W1

Date/Time Sampled: 11/21/13 11:30

Laboratory Sample ID: 3K21140-01 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Conventional Chemistry Parameters by SM/EPA Methods								
Chloride	15.4	0.215	1.00	mg/l	11/22/13 19:16	EPA 300.0/2.1	bdw	
Methylene Blue Active Substances	<0.0250	0.00675	0.0250	mg/l	11/22/13 08:45	SM 5540 C-2011	elb	
pH @ 19.2°C	6.67			pH Units	11/22/13 16:04	SM20-4500H + B	cmh	
Total Dissolved Solids	172	4.00	40.0	mg/l	11/26/13 15:30	SM20-2540C	arr	
Sulfate as SO4	6.60	0.191	1.00	mg/l	11/22/13 19:16	EPA 300.0/2.1	bdw	
Microbiological Parameters by APHA Standard Methods								
E. Coli	<1.0	1.0	1.0	MPN/100 ml	11/22/13 10:39	SM20-9223B	blb	7c
Total Coliforms	<1.0	1.0	1.0	MPN/100 ml	11/22/13 10:39	SM20-9223B	blb	7c
Field Sampled Parameters								
Specific Conductance (Field)	216	0.00	2.00	umhos/cm	11/21/13 11:30	SM20-2510B	SSS	
pH- Field @ 12.5°C	6.91			pH Units	11/21/13 11:30	SM20-4500H + B FIELD	SSS	
Temperature	12.5	0.00	0.100	degrees C	11/21/13 11:30	SM20- 2550B Field	SSS	
Dissolved Gases by RSK 175								
Butane	<0.0200	0.00513	0.0200	mg/l	11/26/13 14:36	RSK 175	bag	
Methane	0.240	0.00150	0.0200	mg/l	11/26/13 14:36	RSK 175	bag	

Fairway Laboratories, Inc.

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources
260 Executive Drive
Cranberry Township PA, 16066
Project Manager: Brian Rushe

Project: Welchland 29AW
Project Number: Phillips, Shirley M.
Collector: SS
Number of Containers: 23

Reported:
10/17/14 10:55

Client Sample ID: HC 89 BOX 408/SPHILLIPS W1

Date/Time Sampled: 11/21/13 11:30

Laboratory Sample ID: 3K21140-01 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Dissolved Gases by RSK 175								
Ethane	<0.0100	0.00227	0.0100	mg/l	11/26/13 14:36	RSK 175	bag	
Propane	<0.0150	0.00363	0.0150	mg/l	11/26/13 14:36	RSK 175	bag	

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources
260 Executive Drive
Cranberry Township PA, 16066
Project Manager: Brian Rushe

Project: Welchland 29AW
Project Number: Phillips, Shirley M.
Collector: SS
Number of Containers: 23

Reported: 10/17/14 10:55

Client Sample ID: HC 89 BOX 408/SPHILLIPS S1

Date/Time Sampled: 11/21/13 12:20

Laboratory Sample ID: 3K21140-02 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Calculated Analytes								
Hardness	140	0.0657	0.662	mg/l	12/04/13 17:45	SM2340B	rab	
Metals by EPA 200 Series Methods								
Aluminum	0.667	0.0149	0.0500	mg/l	12/04/13 17:46	EPA 200.7/4.4	rab	
Arsenic	<0.00400	0.00202	0.00400	mg/l	12/04/13 17:47	EPA 200.7/4.4	rab	
Barium	0.0407	0.00132	0.0100	mg/l	12/04/13 17:46	EPA 200.7/4.4	rab	
Calcium	50.8	0.0131	0.100	mg/l	12/04/13 17:45	EPA 200.7/4.4	rab	
Iron	7.81	0.00223	0.0200	mg/l	12/04/13 17:45	EPA 200.7/4.4	rab	
Manganese	0.684	0.00146	0.0100	mg/l	12/04/13 17:47	EPA 200.7/4.4	rab	
Sodium	1.45	0.0677	0.400	mg/l	12/04/13 17:45	EPA 200.7/4.4	rab	
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<0.15	0.15	1.00	ug/l	11/26/13 15:35	EPA 8260B	bag	2d
Toluene	<0.12	0.12	1.00	ug/l	11/26/13 15:35	EPA 8260B	bag	2d
Ethylbenzene	<0.08	0.08	1.00	ug/l	11/26/13 15:35	EPA 8260B	bag	
Xylenes (total)	<0.28	0.28	2.00	ug/l	11/26/13 15:35	EPA 8260B	bag	
Surrogate: 4-Bromofluorobenzene		*92.9 %*	*70-130*		*11/26/13 15:35*	*EPA 8260B*	bag	
Surrogate: 1,2-Dichloroethane-d4		*99.4 %*	*70-130*		*11/26/13 15:35*	*EPA 8260B*	bag	
Surrogate: Fluorobenzene		*100 %*	*70-130*		*11/26/13 15:35*	*EPA 8260B*	bag	
Conventional Chemistry Parameters by SM/EPA Methods								

Fairway Laboratories, Inc.

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources	Project:	Welchland 29AW	
260 Executive Drive	Project Number:	Phillips, Shirley M.	**Reported:**
Cranberry Township PA, 16066	Collector:	SS	10/17/14 10:55
Project Manager: Brian Rushe	Number of Containers:	23	

Client Sample ID: **HC 89 BOX 408/SPHILLIPS S1** **Date/Time Sampled:** 11/21/13 12:20

Laboratory Sample ID: **3K21140-02 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Conventional Chemistry Parameters by SM/EPA Methods								
Chloride	0.890 J	0.215	1.00	mg/l	11/22/13 19:32	EPA 300.0/2.1	bdw	
Methylene Blue Active Substances	<0.0250	0.00675	0.0250	mg/l	11/22/13 08:45	SM 5540 C-2011	elb	
pH @ 19.2°C	7.09			pH Units	11/22/13 16:04	SM20-4500H + B	cmh	
Total Dissolved Solids	200	4.00	40.0	mg/l	11/26/13 15:30	SM20-2540C	arr	
Sulfate as SO4	6.04	0.191	1.00	mg/l	11/22/13 19:32	EPA 300.0/2.1	bdw	
Microbiological Parameters by APHA Standard Methods								
E. Coli	5.3	1.0	1.0	MPN/100 ml	11/22/13 10:39	SM20-9223B	blb	7d
Total Coliforms	200.5	1.0	1.0	MPN/100 ml	11/22/13 10:39	SM20-9223B	blb	7a, 7d
Field Sampled Parameters								
Specific Conductance (Field)	321	0.00	2.00	umhos/cm	11/21/13 12:20	SM20-2510B	SSS	
pH- Field @ 8.6°C	7.31			pH Units	11/21/13 12:20	SM20-4500H + B FIELD	SSS	
Temperature	8.60	0.00	0.100	degrees C	11/21/13 12:20	SM20- 2550B Field	SSS	
Dissolved Gases by RSK 175								
Butane	<0.0200	0.00513	0.0200	mg/l	11/26/13 15:11	RSK 175	bag	
Methane	<0.0200	0.00150	0.0200	mg/l	11/26/13 15:11	RSK 175	bag	

Fairway Laboratories, Inc.

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources
260 Executive Drive
Cranberry Township PA, 16066
Project Manager: Brian Rushe

Project: Welchland 29AW
Project Number: Phillips, Shirley M.
Collector: SS
Number of Containers: 23

Reported: 10/17/14 10:55

Client Sample ID: HC 89 BOX 408/SPHILLIPS S1

Date/Time Sampled: 11/21/13 12:20

Laboratory Sample ID: 3K21140-02 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Dissolved Gases by RSK 175								
Ethane	<0.0100	0.00227	0.0100	mg/l	11/26/13 15:11	RSK 175	bag	
Propane	<0.0150	0.00363	0.0150	mg/l	11/26/13 15:11	RSK 175	bag	

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources	Project:	Welchland 29AW	
260 Executive Drive	Project Number:	Phillips, Shirley M.	**Reported:**
Cranberry Township PA, 16066	Collector:	SS	10/17/14 10:55
Project Manager: Brian Rushe	Number of Containers:	23	

Client Sample ID: TRIP BLANK **Date/Time Sampled:** 11/21/13 00:00

Laboratory Sample ID: 3K21140-03 (Water/Trip Blank)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<0.15	0.15	1.00	ug/l	11/26/13 16:03	EPA 8260B	bag	2d
Toluene	<0.12	0.12	1.00	ug/l	11/26/13 16:03	EPA 8260B	bag	2d
Ethylbenzene	<0.08	0.08	1.00	ug/l	11/26/13 16:03	EPA 8260B	bag	
Xylenes (total)	<0.28	0.28	2.00	ug/l	11/26/13 16:03	EPA 8260B	bag	
Surrogate: 4-Bromofluorobenzene		*91.9 %*	*70-130*		*11/26/13 16:03*	*EPA 8260B*	bag	
Surrogate: 1,2-Dichloroethane-d4		*98.9 %*	*70-130*		*11/26/13 16:03*	*EPA 8260B*	bag	
Surrogate: Fluorobenzene		*101 %*	*70-130*		*11/26/13 16:03*	*EPA 8260B*	bag	

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources	Project:	Welchland 29AW	
260 Executive Drive	Project Number:	Phillips, Shirley M.	**Reported:**
Cranberry Township PA, 16066	Collector:	SS	10/17/14 10:55
Project Manager: Brian Rushe	Number of Containers:	23	

Notes

2d	The LCS spike recovery was outside acceptance limits. Data accepted based on additional batch QC.
7a	> 200 TNTC.
7c	Potable (drinkable) - No bacteria present above reportable levels.
7d	Contaminated - Not fit for human consumption.
J	Detected between the Method Detection Limit (MDL) and the Reporting Limit (RL); therefore, result is an estimated value.

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources	Project:	Welchland 29AW	
260 Executive Drive	Project Number:	Phillips, Shirley M.	**Reported:**
Cranberry Township PA, 16066	Collector:	SS	10/17/14 10:55
Project Manager: Brian Rushe	Number of Containers:	23	

Definitions

If surrogate values are not within the indicated range, then the results are considered to be estimated.

Reporting limits are adjusted accordingly when samples are analyzed at a dilution due to the matrix.

The following analyses are to be performed immediately upon sampling: pH, sulfite, chlorine residual, dissolved oxygen, filtration for ortho phosphorus, and ferrous iron. The date and time reported reflect the time the samples were analyzed at the laboratory.

MBAS, calculated as LAS, mol wt 348

If the solid sample weight for VOC analysis does not fall within the 3.5-6.5 gram range, the results are considered estimated values.

Samples collected by Fairway Laboratories' personnel are done so in accordance with Standard Operating Procedures established by Fairway Laboratories.

*	P indicates analysis performed by Fairway Laboratories, Inc. at the Pennsdale location. This location is PaDEP Chapter 252 certified.
<	Represents "less than" - indicates that the result was less than the reporting limit.
MDL	Method Detection Limit - is the lowest or minimum level that provides 99% confidence level that the analyte is detected. Any reported result values that are less than the RL are considered estimated values.
RL	Reporting Limit - is the lowest or minimum level at which the analyte can be quantified.
[CALC]	Indicates a calculated result. Calculations use results from other analyses performed under accredited methods.

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources	Project:	Welchland 29AW	
260 Executive Drive	Project Number:	Phillips, Shirley M.	**Reported:**
Cranberry Township PA, 16066	Collector:	SS	10/17/14 10:55
Project Manager: Brian Rushe	Number of Containers:	23	

Terms & Conditions

Services provided by Fairway Laboratories Inc. are limited to the terms and conditions stated herein, unless otherwise agreed to in a formal contract.

CHAIN OF CUSTODY Fairway Laboratories Inc. ("Fairway," "us" or "we") will initiate a chain-of-custody/request for analysis upon sample receipt unless the client includes a completed form with the received sample(s). Upon request, Fairway will provide chain-of-custody forms for use.

CONFIDENTIALITY Fairway maintains confidentiality in all of our client interactions. The client's consent will be required before releasing information about the services provided.

CONTRACTS All contracts are subject to review and approval by Fairway's legal council. Each contract must be signed by a corporate officer.

PAYMENT/BILLING Unless otherwise set forth in a signed contract or purchase order, terms of payment are "NET 30 Days." The time allowed for payment shall begin based on the invoice date. A 1.5% per month service charge may be added to all unpaid balances beyond the initial 30 days. In its sole discretion, Fairway reserves the right to request payment before services and hold sample results for payment of due balances. We will not bill a third party without prior agreement among all parties acknowledging and accepting responsibility for payment.

SAMPLE COLLECTION AND SUBMISSION Clients not requesting collection services from Fairway are responsible for proper collection, preservation, packaging, and delivery of samples to the laboratory in accordance with current law and commercial practice. Fairway shall have no responsibility for sample integrity prior to the receipt of the sample(s) and/or for any inaccuracy in test or analyses results as a result of the failure of the client or any third party to maintain the integrity of samples prior to delivery to Fairway. All samples submitted must be accompanied by a completed chain of custody or similar document clearly noting the requested analyses, dates/time sampled, client contact information, and trail of custody.

SUBCONTRACTING Some analyses may require subcontracting to another laboratory. Unless the client indicates otherwise, this decision will be made by Fairway. Subcontracted work will be identified on the final report in accordance with NELAC requirements.

RETURN OF RESULTS Fairway routinely provides faxed or verbal results within 10 working days of receipt of sample(s) and a hard copy of the data results is routinely received via US Postal Service within 15 working days. At the request of the client, Fairway may offer expedited return of sample results. Surcharges may apply to rush requests. All rush requests must be pre-approved by Fairway. We reserve the right to charge an archive retrieval fee for results older than one (1) year from the date of the request. All records will be maintained by Fairway for 5 years, after which, they will be destroyed.

SAMPLE DISPOSAL Fairway will maintain samples for four (4) weeks after the sample receipt date. Fairway will dispose of samples which are not and/or do not contain hazardous wastes (as such term is defined by applicable federal or state law), unless prior arrangements have been made for long-term storage. Fairway reserves the right to charge a disposal fee for the proper disposal of samples found or suspected to contain hazardous waste. A return shipping charge will be invoiced for samples returned to the client at their request.

HAZARD COMMUNICATION The client has the responsibility to inform the laboratory of any hazardous characteristics known or suspected about the sample, and to provide information on hazard prevention and personal protection as necessary or otherwise required by applicable law.

WARRANTY AND LIMITATION OF LIABILITY For services rendered, Fairway warrants that it will apply its best scientific knowledge and judgment and to employ its best level of effort consistent with professional standards within the environmental testing industry in performing the analytical services requested by its clients. We disclaim any other warranties, expressed or implied by law. Fairway does not accept any legal responsibility for the purposes for which client uses the test results.

LITIGATION All costs associated with compliance to any subpoena for documents, for testimony in a court of law, or for any other purpose relating to work performed by Fairway Laboratories, Inc. shall be invoiced by Fairway and paid by client. These costs shall include, but are not limited to, hourly charges for the persons involved, travel, mileage, and accommodations and for any and all other expenses associated with said litigation.

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

N OF CUSTODY/
ST FOR ANALYSIS

FAIRWAY LABORATORIES
Environmental Lab

3K21140-01 K
HC 89 BOX 408/SPHILLIPS W1
Sampled: 11/21/13 11:30
Water-100 mL Bact
EXCO Resources

EXCO WV
HC 89 Box 408

Brian Rushe

Fax #:

Welchland 29 Av

uested: Total Coliform ☑ Fecal Coliform ☐ HPC ☐
cted: 11-21-13 11:30
n/description: Sphillips W1

Signature	Date	Time
[signature]	11-21-13	11:30
[signature]	11-21-13	
[signature] 2W	11/21/13	1915

LIMS #
File #: 730
Total coliform: <1/100mL
E coli:
Fecal:
HPC:
Analyst: JJB
Analysis Started: 1039 11/22/13
In: 1044 Out: 1232 11/23/13 24H

Type Treatment: UV ☐ Ozone ☐
Chlorine residual:
Number of containers:
Matrix: Water ☐ other
Comments: 24hr

White Original - FLI File Canary - Customer Mailing/Report Pink - Customer Receipt Copy
★★ Please complete all of the grayed areas. ★★

N OF CUSTODY/
ST FOR ANALYSIS

FAIRWAY LABORATORIES
Environmental Labo

3K21140-02 K
HC 89 BOX 408/SPHILLIPS S1
Sampled: 11/21/13 12:20
Water-100 mL Bact
EXCO Resources

EXCO WV
HC 89 Box 408

Brian Rushe

Fax #:

Welchland 29AW

LIMS #:
File #: 731
Total coliform: >200.5/100mL
E coli: 5.3/100mL
Fecal:
HPC:
Analyst:
Analysis Started: 1039 11/22/13
In: 1044 Out: 1232 11/23/13

uested: Total Coliform ☒ Fecal Coliform ☐ HPC ☐
ected: 11.21.13 12:20
n/description: Sphillips S1

Signature	Date	Time
[signature]	11.21.13	12:20
[signature]	11.21.13	
[signature] 2.6	11/21/13	1915

Type Treatment: UV ☐ Ozone ☐
Chlorine residual:
Number of containers:
Matrix: Water ☐ other
Comments: 24hr
Tan-Sediment

White Original - FLI File Canary - Customer Mailing/Report Pink - Customer Receipt Copy
★★ Please complete all of the grayed areas. ★★

COC # 3K21140-03 Page ____ of ____

CHAIN OF CUSTODY / REQUEST FOR ANALYSIS

FAIRWAY LABORATORIES INC.

Client Name:	EXCO WV
Address:	
Contact:	Brian Rushe
Phone #:	
Fax #:	
Project Name:	Welchland 29 AW
Quote/PO #:	Phillips
TAT:	
Normal	
Rush	
Date Required:	

Receiving Info	Y	N
Custody Seals		
Seals Intact?		
Received on ice?		
COC/ Labels agree?		
Correct containers?		
Correct preservation?		
VOA head space		
Sample Temp: ____		
Report to PADEP?		
PWSID #:		

FLI use only	Sample Description / Location	Sample Date	Sample Time	Grab or Composite	Soil	Water	Other? Explain	# of Containers	EXCO WV Parameters	Field pH	Field S.C.	Field Temp.	Trip Blank	Comments
	HC 89 Box 408													
	Sphillips W1	11.21.13	11:30	G		X		11	X	6.91	216µS	12.5°C		
	Sphillips S1	11.21.13	12:20	G		X		11	X	7.31	321µS	8.6°C		
													X	Includes Bacti
													X	1 HCl Vial

Analyses Requested

Signature	Date	Time
Sampled By:	11.21.13	12:35
Received by:		
Relinquished by:	11.21.13	16:45
Received by:	11/21/13	16:45
Relinquished by:	11/21/13	19:15
Received by:	11/21/13	19:15

Remarks

Circle One : PA (WV) OH

Received
Office of Oil & Gas
OCT 30 2014

2019 9th Avenue, P.O. Box 1925, Altoona, PA 16602 • P: 814-946-4306/F: 814-946-8791 • www.fairwaylaboratories.com

SOP FLI0601-002 Revision 16 Date: September 13, 2013 Page of

Chain of Custody Receiving Document

Page ___ of ___

Receiver: CR

Date/Time of this check: 11/21/13 20:20 Sample Temperature: 2.6 Client: EXCO Lab # 3K21140-04

Received at Lab on ICE ? Y ☐ * **Sample Temperature when arrived at Lab:** 2.6 **Acceptable?** Y ☐ * **or In cool down process?** ☐ *

Custody Seals? Y Intact? Y

COC/Labels on bottles agree? Y ☐ * Correct containers for all the analysis requested? Y ☐ * Matrix: WW

COC #	Number and Type of BOTTLES										Comments
	Poly Non-Pres.	Poly H2SO4	Poly HNO3	Amber H2SO4	Aimber Non-Pres.	Poly NaOH	VOCS (Head space?)	Other ☐ *	Properly Preserved ☑ *	Bacti	
1	2		1	1			GHL				
2	2		1	1			↓				
TB							MHL				

* DEVIATION PRESENT:	CLIENT CALLED:	CLIENT RESPONSE:
⊗ No Ice ( )	YES ( )	Proceed with analysis; qualify data ( )
⊗ Not at Proper Temperature ( )	By Whom:	Will Resample ( )
⊗ Wrong Container ( )		Provided Information ( )
⊗ Missing Information: ( )	Date:	No Response; Proceed and qualified ( )
		Client Contact: Date:

* Comments: _____

Received
Office of Oil & Gas
OCT 30 2014

Chain of Custody Receiving Document

This is a date sensitive document and may not be current after November 21, 2013.

SITE VISIT FORM
ONE FORM FOR EACH WATER SOURCE

Part A: GENERAL INFORMATION

Welchland 29 AW 3/C211 40-25

Water Source Sample ID:	SPhillips W1	Well Pad Name:	[redacted]	Permit No.:	Well Operator: EXCO
Coordinates: (in NAD83, in decimal degrees)	Lat N37.64419	Long W-81.44939	Elevation 1997	FT (msl)	
Date Sampled: 11-21-13	Time Sampled (Military): 11:30	Sampled By: SS	☐ N/A: No Sample (See Notes)		
Person interviewed (circle one):	Owner	Resident	Other: _____		

PROPERTY OWNER		RESIDENT OR OTHER	
Name:	Shirley Phillips	Name:	
Address:	HC 89 Box 408	Address:	
Address:	McGrans, WV, 25875	Address:	
Phone No.:	304-294-6108	Phone No.:	

Part B: DOCUMENTATION OF SAMPLING REFUSAL

Received
Office of Oil & Gas
OCT 30 2014

Is Person Refusing the Property Owner as Listed Above? Yes ☐ No ☐ If No, Notify Property Owner

Refusal in person or over phone: Date of Refusal: Time of Refusal:

Reason(s) for Refusal:

Name of Company Documenting Refusal:

Part C: WATER QUALITY

Reported Quality	Yes	No	N/A	Observed Quality	Yes	No	N/A
Staining	☒ Iron	☐	☐		☐	☒	☐
Odor	☐	☒ Sulfur	☐		☐	☒	☐
Cloudiness	☐	☒	☐		☐	☒	☐
Sheen	☐	☒	☐		☐	☒	☐
Effervescence	☐	☒	☐		☐	☒	☐
Taste	☒ Food	☐	☐		N/A	(N/A)	N/A

Treatment		Pump Type	
☒ None	☐ UV Light	☐ None	
☐ Softening	☐ pH Adjustment	☐ Gas Piston	
☐ Chlorination	☐ Other: _____	☒ Submersible	
☐ Iron Removal		☐ Windmill	
☐ In-line Sediment Filter		☐ Jet	
☐ Charcoal Filter		☐ Other: _____	
Yes ☐ No ☐ Functioning Properly		☐ Capacity _____ GPM	

Part D: WATER SOURCE INFORMATION

Does this source supply any other properties? NO If yes, identify properties _____

Is the water source(s) located on the property: Yes ☒ No ☐ If No, please explain: _____

Number of people using this water source? 1 Gallons/day, if metered: _____

Has water source ever gone dry? Yes ☐ No ☒

Pressure Tank Yes ☒ No ☐ Size of tank _____ gallons ☐ Actual size ☐ Estimated ☐ Unknown

Water Use ☒ Domestic ☒ Husbandry ☐ Irrigation ☐ Other: _____

Compass course from water source to dwelling SW Estimated distance from water source to dwelling 15 FT.

Are there any other water sources on the property? Yes ☒ No ☐ If yes, how many? _____ Total (2) _____

Provide all water source ID(s) Spring, Well

Are you aware of any abandoned water source (s)? NO If yes, where _____, when _____

SITE VISIT FORM
ONE FORM FOR EACH WATER SOURCE

3K21140-06

Water Source Type: ☒ Water Well

Drilled Well: Yes ☒ No ☐ Dug Well: Yes ☐ No ☐ Artesian: Yes ☐ No ☐ Other: _____

Reported total well depth: ~120 FT. Well casing diameter: _____ IN. Missing/damaged pit-less adaptor Yes ☐ No ☐ Unknown ☐

Reported depth of water level: 48ft 9in ~~ft~~ Reported pump depth _____ FT.

Date Drilled 23 yrs ago Drilling Company _____ Is the well in basement or crawlspace? _____

Driller log available Yes ☐ No ☐

Signature of owner authorizing release of water log(s) _____

Water Source Type: ☐ Spring

Discharge Pipe Yes ☐ No ☐ Seep/Ground Surface Flow Yes ☐ No ☐ Spring House Yes ☐ No ☐ Underground Vault Yes ☐ No ☐

Water Source Type: ☐ Cistern

Size of Cistern _____ gallons ☐ Actual size ☐ Estimated ☐ Unknown

Source of water: _____ (e.g. Delivered, spring, well, gutter, etc.)

Water Source Type: ☐ Surface Water

☐ Pond ☐ Lake ☐ Creek ☐ River

Water Source Type: Public Water Yes ☒ No ☐

PART E: DESCRIPTION OF WATER SOURCE (check all that apply)

- ☐ Loose, missing, or damaged cover (circle one if applicable)
- ☐ Evidence of insects, spiders, animals (circle one if applicable)
- ☐ Any cracked or damaged well casing/spring vault (circle one if applicable)
- ☒ Water source open to surface water Small hole, see pics → Covered most of the time
- ☐ Additional storage or holding tank/coyote system (circle one if applicable)
- ☐ Cover flush with ground
- ☐ Evidence of erosion
- ☐ Water source secured
- ☐ Source buried
- ☐ Location unknown
- ☐ Other: _____

PART F: DESCRIPTION OF AREA SURROUNDING WATER SOURCE (check all that apply) Show locations on site sketch and provide approximate distance & compass course. Document housekeeping conditions. (Attach photos.)

- ☒ Ground sloping toward water source
- ☐ Water source downgradient of septic system
- ☐ Signs of failing septic, soggy ground, foul odor (circle all that apply)
- ☒ Close proximity to garden, agricultural field, orchard, greenhouse. (circle all that apply)
- ☐ Close proximity to junkyard, dumping area, landfill. (circle all that apply)
- ☐ Close proximity to fuel storage tanks, equipment storage or maintenance areas, garage. (circle all that apply)
- ☒ Located in field with livestock, barn, barnyard, other out building. (circle all that apply)
- ☐ Close proximity to salt storage area, salted roadway.
- ☐ Close proximity to pipeline.
- ☐ Other: _____

ADDITIONAL REMARKS & COMMENTS:

Received
Office of Oil & Gas
OCT 30 2014

SITE VISIT FORM
ONE FORM FOR EACH WATER SOURCE

3K21140-07

PART G: GAS MONITORING AND SAMPLING

Dissolved Phase Gas Sample Collected?: ☒ Yes ☐ No IS WELL VENTED? Yes ☐ No ☒ Unknown ☐

Gas Sample Collection Method: Water Displacement Method A (non-preserve) ☐ Yes Direct Fill Method B (preserve) ☐ Yes Two Phase Method ☐ Yes

Free Phase Gas Water Well Head Space Screening Conducted? ☒ Yes ☐ No Combustible Gas Meter: Bacharach-Turner Meter Calibrated? Yes ☒

Sustained Methane = 0 (% of LEL) Peak Methane = 0 (% of LEL)

(Contact EQT Immediately if Sustained Methane Exceeds 25% of LEL in Water Well Headspace OR 10% of LEL in Building or Structure)

Description of Sample Screening and Collection (Location and Method):

PART H: SAMPLING

SAMPLED	SAMPLING POINT LOCATION
☐ Before Treatment ☐ After Treatment ☒ No Treatment ☐ Not Sure	☐ Inside Faucet: _____ ☐ Pressure Tank ☐ Overflow/Discharge Pipe ☒ Outside Faucet: Spicket ☐ Wellhead ☐ Other: _____ ☐ Seep ☐ Surface Water (sampled at coordinates in Part A)

SAMPLING METHOD: ☐ Existing well pump ☐ Sampling pump ☐ Low flow ☐ Disposable Bailer ☐ Other: _____

Was the water source purged before sampling? Yes ☒ No ☐ If yes, volume (gal.) and/or time (min) purged: 15 mins

Is it possible to run water for 30 minutes? Yes ☒ No ☐ If no, please explain: _____

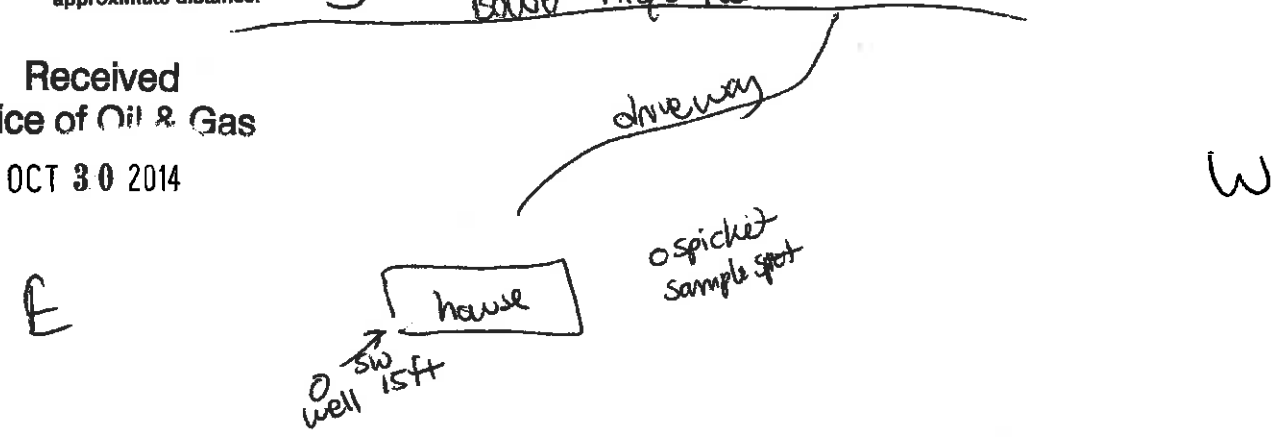
Average water usage within last 24 hours N/A

Chain of custody attached? ☒ Yes ☐ No Name of Certified Laboratory: Fairway Laboratories, Inc.

FIELD METER TYPE: Oakton Meter Calibrated? Yes ☐ No ☐

FIELD PARAMETERS: Turbidity: _____ pH: 6.91 Conductivity: 21605 Temperature: 12.5°C

PART I: PLAN SKETCH and PHOTOGRAPHS *(use additional pages as necessary).* **Show compass course and provide approximate distance.**



Received
Office of Oil & Gas
OCT 30 2014

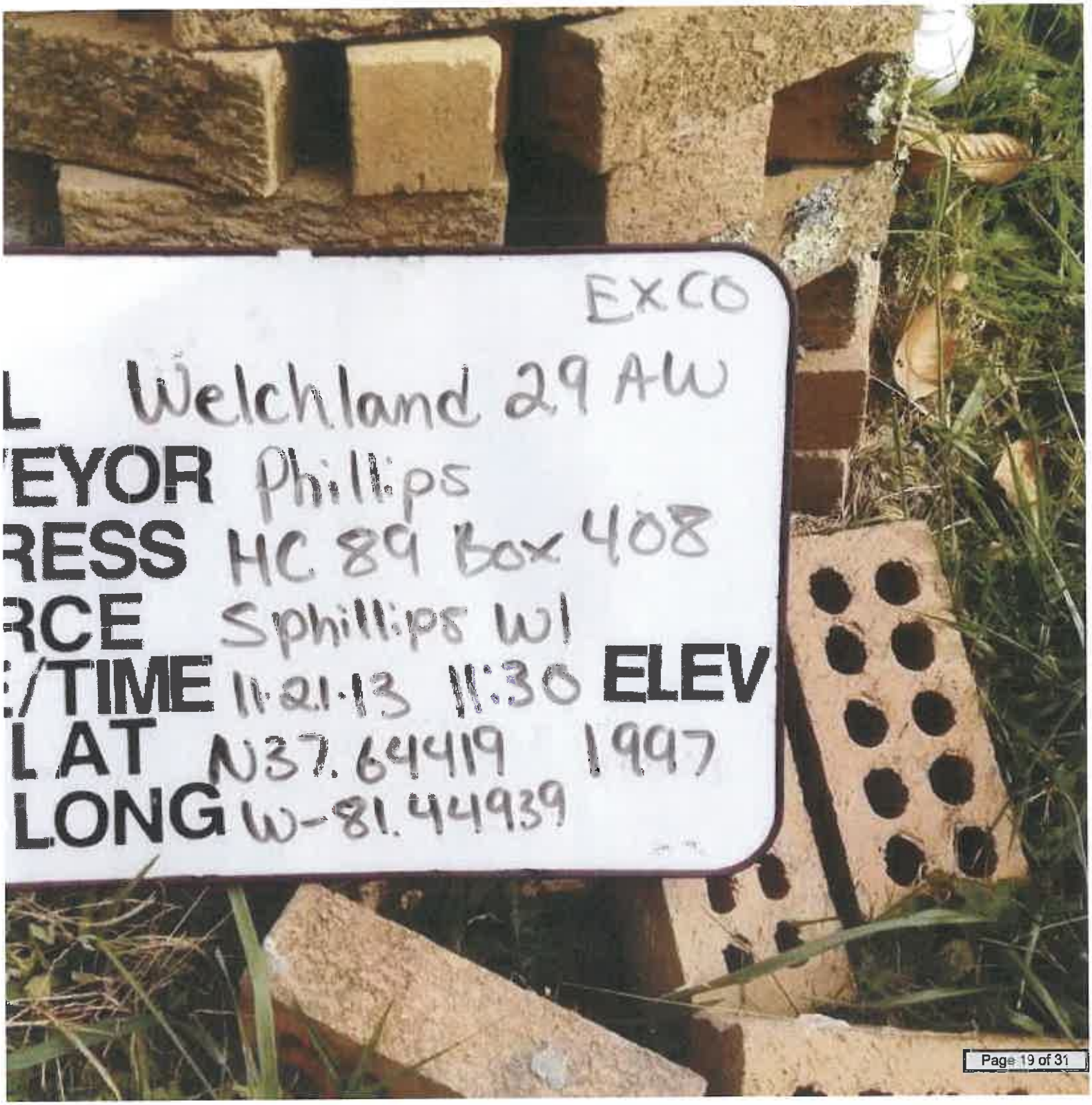
Sampler/Interviewer

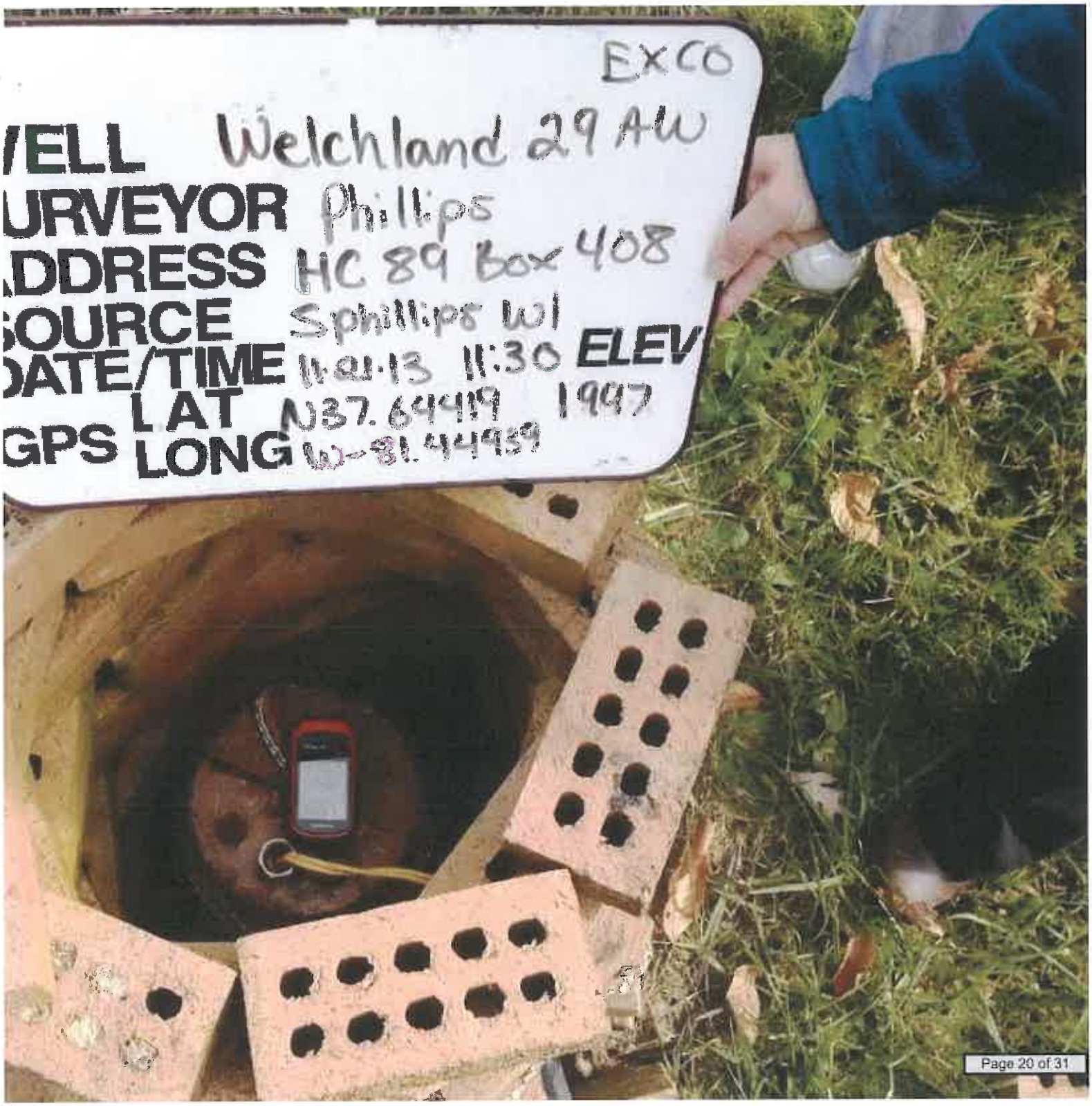
I hereby acknowledge that I have supplied the correct information to the best of my knowledge

Sign _____ Print Stephanie Snyder Date 11-21-13

Company: Fairway Laboratories Inc. Address: _____ Phone: _____

Page 3 of 3





Received
Office of Oil & Gas

SITE VISIT FORM
ONE FORM FOR EACH WATER SOURCE

Part A: GENERAL INFORMATION

3K21140-08

Water Source Sample ID: SPhillips S1	Well Pad Name: Welchland 29AW	Permit No.:	Well Operator: EXCO	
Coordinates: (In NAD83, in decimal degrees)	Lat N37.64278	Long W-81.44880	Elevation 1993	FT (msl)
Date Sampled: 11-21-13	Time Sampled (Military): 12:20	Sampled By: SS	☐ N/A: No Sample (See Notes)	
Person Interviewed (circle one): (Owner)	Resident	Other:		

PROPERTY OWNER		RESIDENT OR OTHER	
Name:	Shirley Phillips	Name:	
Address:	HC 89 Box 408	Address:	
Address:	McGrans, WV, 25875	Address:	
Phone No.:	304-294-6108	Phone No.:	

Part B: DOCUMENTATION OF SAMPLING REFUSAL

Received
Office of Oil & Gas
OCT 30 2014

Is Person Refusing the Property Owner as Listed Above? Yes ☐ No ☐ If No, Notify Property Owner

Refusal in person or over phone: Date of Refusal: Time of Refusal:

Reason(s) for Refusal:

Name of Company Documenting Refusal:

Part C: WATER QUALITY

	Reported Quality			Observed Quality		
	Yes	No	N/A	Yes	No	N/A
Staining	☐	☒	☐	☐	☒	☐
Odor	☐	☒	☐	☐	☒	☐
Cloudiness	☐	☒	☐	☐	☒	☐
Sheen	☐	☒	☐	☐	☒	☐
Effervescence	☐	☒	☐	☐	☒	☐
Taste	☒ food	☐	☐	N/A	(N/A)	N/A

Treatment		Pump Type	
☒ None	☐ UV Light	☐ None	
☐ Softening	☐ pH Adjustment	☐ Gas Piston	
☐ Chlorination	☐ Other:	☒ SS Submersible	
☐ Iron Removal		☐ Windmill	
☐ In-line Sediment Filter		☐ Jet	
☐ Charcoal Filter		☒ Other: gravity fed	
Yes ☐ No ☐ Functioning Properly		☐ Capacity _____ GPM	

Part D: WATER SOURCE INFORMATION

Does this source supply any other properties? NO If yes, identify properties

Is the water source(s) located on the property: Yes ☒ No ☐ If No, please explain:

Number of people using this water source? 0 Gallons/day, if metered:

Has water source ever gone dry? Yes ☐ No ☐

Pressure Tank Yes ☐ No ☒ Size of tank _____ gallons ☐ Actual size ☐ Estimated ☐ Unknown

Water Use ☐ Domestic ☒ Husbandry ☐ Irrigation ☐ Other:

Compass course from water source to dwelling N Estimated distance from water source to dwelling 200 ft. yrds

Are there any other water sources on the property? Yes ☒ No ☐ If yes, how many? Total (2) Well, Spring

Provide all water source ID(s)

Are you aware of any abandoned water source (s)? No If yes, where, when

SITE VISIT FORM
ONE FORM FOR EACH WATER SOURCE

3/C2114009

Water Source Type: ☐ Water Well

Drilled Well: Yes ☐ No ☐ Dug Well: Yes ☐ No ☐ Artesian: Yes ☐ No ☐ Other: _____

Reported total well depth: _____ FT. Well casing diameter: _____ IN. Missing/damaged pit-less adaptor Yes ☐ No ☐ Unknown ☐

Reported depth of water level: _____ FT. Reported pump depth _____ FT.

Date Drilled _____ Drilling Company _____ Is the well in basement or crawlspace? _____

Driller log available Yes ☐ No ☐

Signature of owner authorizing release of water log(s) _____

Water Source Type: ☒ Spring

Discharge Pipe Yes ☐ No ☐ Seep/Ground Surface Flow Yes ☐ No ☐ Spring House Yes ☐ No ☐ Underground Vault Yes ☐ No ☐

Water Source Type: ☐ Cistern

Size of Cistern _____ gallons ☐ Actual size ☐ Estimated ☐ Unknown

Source of water: _____ (e.g. Delivered, spring, well, gutter, etc.)

Water Source Type: ☐ Surface Water

☐ Pond ☐ Lake ☐ Creek ☐ River

Water Source Type: Public Water Yes ☒ No ☐ To home

PART E: DESCRIPTION OF WATER SOURCE (check all that apply)

☐ Loose, missing, or damaged cover (circle one if applicable)	☐ Evidence of erosion
☐ Evidence of insects, spiders, animals (circle one if applicable)	☒ Water source secured
☐ Any cracked or damaged well casing/spring vault (circle one if applicable)	☐ Source buried
☐ Water source open to surface water	☐ Location unknown
☐ Additional storage or holding tank/coyote system (circle one if applicable)	☐ Other: _____
☐ Cover flush with ground	

PART F: DESCRIPTION OF AREA SURROUNDING WATER SOURCE (check all that apply) Show locations on site sketch and provide approximate distance & compass course. Document housekeeping conditions. (Attach photos.)

☐ Ground sloping toward water source

☐ Water source downgradient of septic system

☐ Signs of failing septic, soggy ground, foul odor (circle all that apply)

☒ Close proximity to garden, agricultural field, orchard, greenhouse. (circle all that apply)

☐ Close proximity to junkyard, dumping area, landfill. (circle all that apply)

☐ Close proximity to fuel storage tanks, equipment storage or maintenance areas, garage. (circle all that apply)

☒ Located in field with livestock, barn, barnyard, other out building. (circle all that apply)

☐ Close proximity to salt storage area, salted roadway.

☐ Close proximity to pipeline.

☐ Other: _____

Received
Office of Oil & Gas
OCT 30 2014

ADDITIONAL REMARKS & COMMENTS:

SITE VISIT FORM
ONE FORM FOR EACH WATER SOURCE

PART G: GAS MONITORING AND SAMPLING 3K21140-10

Dissolved Phase Gas Sample Collected?: ☒ Yes ☐ No IS WELL VENTED? Yes ☐ No ☐ Unknown ☐

Gas Sample Collection Method: Water Displacement Method A (non-preserve) ☐ Yes Direct Fill Method B (preserve) ☒ Yes Two Phase Method ☐ Yes

Free Phase Gas Water Well Head Space Screening Conducted? ☐ Yes ☒ No Combustible Gas Meter: _____ Meter Calibrated? Yes ☐

Sustained Methane = NA (% of LEL) Peak Methane = NA (% of LEL)

(Contact EQT immediately if Sustained Methane Exceeds 25% of LEL in Water Well Headspace OR 10% of LEL in Building or Structure)

Description of Sample Screening and Collection (Location and Method):

PART H: SAMPLING

SAMPLED	SAMPLING POINT LOCATION
☐ Before Treatment ☐ After Treatment	☐ Inside Faucet: _____ ☐ Pressure Tank ☐ Overflow/Discharge Pipe
☒ No Treatment ☐ Not Sure	☒ Outside Faucet: Beside Barn ☐ Wellhead ☐ Other: _____
	☐ Seep ☐ Surface Water (sampled at coordinates in Part A)

SAMPLING METHOD: ☒ Existing well pump ☐ Sampling pump ☐ Low flow ☐ Disposable Bailer ☐ Other: _____

Was the water source purged before sampling? Yes ☐ No ☒ If yes, volume (gal.) and/or time (min) purged: _____

Is it possible to run water for 30 minutes? Yes ☐ No ☐ If no, please explain: _____

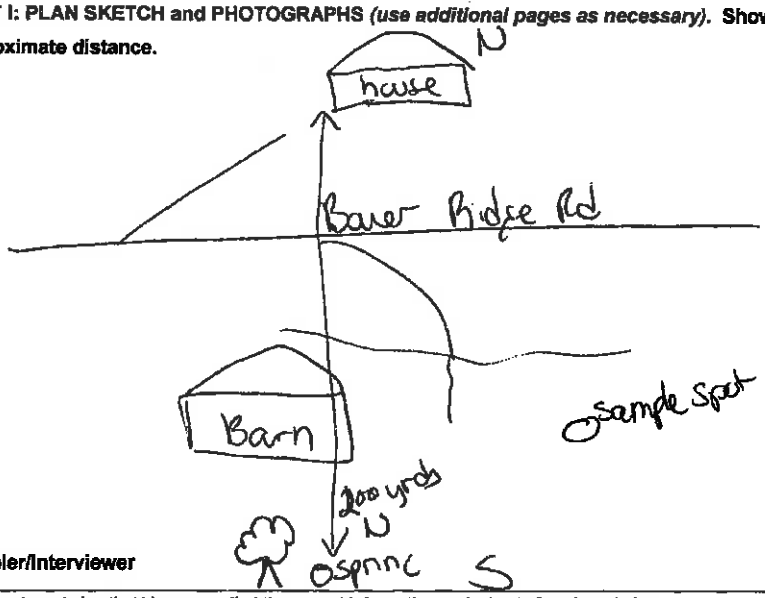
Average water usage within last 24 hours NA

Chain of custody attached? ☒ Yes ☐ No Name of Certified Laboratory: _____

FIELD METER TYPE: Oakton Meter Calibrated? Yes ☐ No ☐

FIELD PARAMETERS: Turbidity: — pH: 7.31 Conductivity: 3215 µS Temperature: 8.6°C

PART I: PLAN SKETCH and PHOTOGRAPHS *(use additional pages as necessary).* **Show compass course and provide approximate distance.**



Received
Office of Oil & Gas
OCT 30 2014

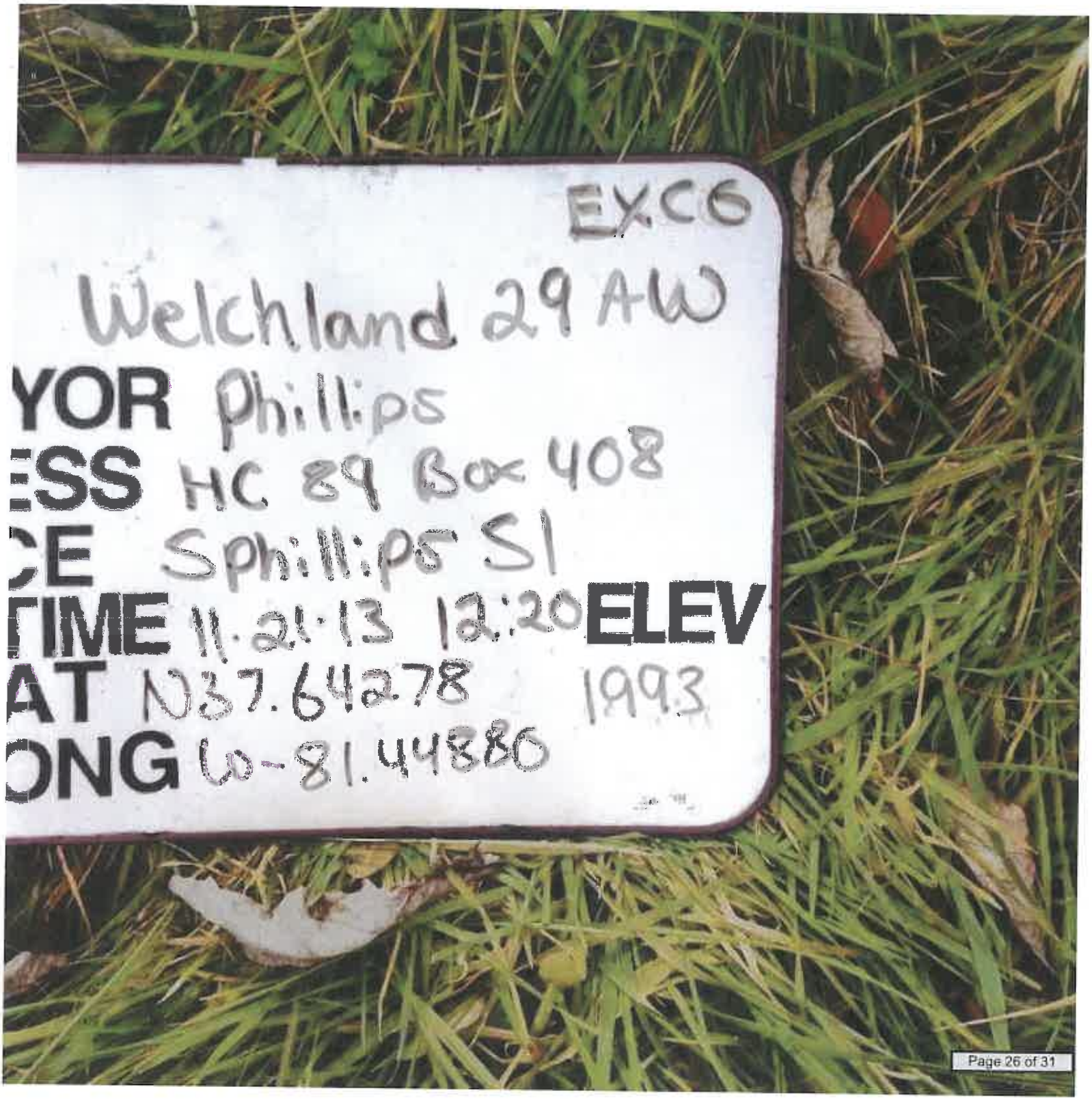
Sampler/Interviewer

I hereby acknowledge that I have supplied the correct information to the best of my knowledge

Sign _____ Print Stephanie Smith Date 11.21.13

Company: Fairway Laboratories Inc. Address: _____ Phone: _____

Page 3 of 3




EXCO
WELL Welchland 29 AW
PURVEYOR Phillips
ADDRESS HC 89 Box 408
SOURCE Phillips SI
DATE/TIME 9 21 13 12 20 ELEV
GPS LAT 1037 64278 1993
LONG 80-81 44280

W. Va. Code R. 35-8-15 Water Supply Testing.

15.3.b. **Parameters** - The operator shall analyze samples for the following parameters:

15.3.b.1. Total Petroleum Hydrocarbons (GRO, DRO, ORO)
15.3.b.2. BTEX
15.3.b.3. Chloride
15.3.b.4. Sodium
15.3.b.5. Total Dissolved Solids (TDS)
15.3.b.6. Aluminum
15.3.b.7. Arsenic
15.3.b.8. Barium
15.3.b.9. Iron
15.3.b.10. Manganese
15.3.b.11. pH
15.3.b.12. Calcium
15.3.b.13. Sulfate
15.3.b.14. Detergents (MBAS)
15.3.b.15. Dissolved Methane
15.3.b.16. Dissolved Ethane
15.3.b.17. Dissolved Butane
15.3.b.18. Dissolved Propane
15.3.b.19. Bacteria (total coliform)
15.3.b.20. Any others parameters determined by the operator or the Chief.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources
260 Executive Drive
Cranberry Township PA, 16066
Project Manager: Brian Rushe

Project: Welchland 29AW
Project Number: Daniels, Barbara
Collector: SS
Number of Containers: 11

Reported:
10/17/14 11:01

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Sample Type	Date Sampled	Date Received
646 PHILLIPS RD/BDANIELS S1	3K22099-01	Water	Grab	11/22/13 12:25	11/22/13 21:15

3K22099 Parameter list attached as page 17 of final report. This report replaces the report issued 09/30/14 13:11. 10/07/14 CL

3K22099 Report revised. Case narrative and MDL values added. This report replaces the report printed on 12/27/13 10:54. 09/30/14 mlf

The resample for GRO/DRO/ORO was collected 12/16/13 and is reported on separate laboratory work order ID: 4J17010. This report replaces the report printed on 10/07/14 11:20. 10/17/14 mlf

Fairway Laboratories, Inc.

Reviewed and Submitted by:

Michael P. Tyler
Laboratory Director

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources
260 Executive Drive
Cranberry Township PA, 16066
Project Manager: Brian Rushe

Project: Welchland 29AW
Project Number: Daniels, Barbara
Collector: SS
Number of Containers: 11

Reported: 10/17/14 11:01

Client Sample ID: 646 PHILLIPS RD/BDANIELS S1

Date/Time Sampled: 11/22/13 12:25

Laboratory Sample ID: 3K22099-01 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Calculated Analytes								
Hardness	32.8	0.0657	0.662	mg/l	12/05/13 09:58	SM2340B	rab	
Metals by EPA 200 Series Methods								
Aluminum	0.0556	0.0149	0.0500	mg/l	12/05/13 09:58	EPA 200.7/4.4	rab	
Arsenic	<0.00400	0.00202	0.00400	mg/l	12/05/13 10:00	EPA 200.7/4.4	rab	
Barium	0.0150	0.00132	0.0100	mg/l	12/05/13 09:58	EPA 200.7/4.4	rab	
Calcium	12.7	0.0131	0.100	mg/l	12/05/13 09:57	EPA 200.7/4.4	rab	
Iron	0.0342	0.00223	0.0200	mg/l	12/05/13 09:58	EPA 200.7/4.4	rab	
Manganese	<0.00146	0.00146	0.0100	mg/l	12/05/13 10:00	EPA 200.7/4.4	rab	
Sodium	0.968	0.0677	0.400	mg/l	12/05/13 09:57	EPA 200.7/4.4	rab	
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<0.15	0.15	1.00	ug/l	11/26/13 16:31	EPA 8260B	bag	2d
Toluene	<0.12	0.12	1.00	ug/l	11/26/13 16:31	EPA 8260B	bag	2d
Ethylbenzene	<0.08	0.08	1.00	ug/l	11/26/13 16:31	EPA 8260B	bag	
Xylenes (total)	<0.28	0.28	2.00	ug/l	11/26/13 16:31	EPA 8260B	bag	
Surrogate: 4-Bromofluorobenzene		*92.4 %*	*70-130*		*11/26/13 16:31*	*EPA 8260B*	bag	
Surrogate: 1,2-Dichloroethane-d4		*98.8 %*	*70-130*		*11/26/13 16:31*	*EPA 8260B*	bag	
Surrogate: Fluorobenzene		*99.9 %*	*70-130*		*11/26/13 16:31*	*EPA 8260B*	bag	
Conventional Chemistry Parameters by SM/EPA Methods								

Fairway Laboratories, Inc.

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources
260 Executive Drive
Cranberry Township PA, 16066
Project Manager: Brian Rushe

Project: Welchland 29AW
Project Number: Daniels, Barbara
Collector: SS
Number of Containers: 11

Reported: 10/17/14 11:01

Client Sample ID: 646 PHILLIPS RD/BDANIELS S1

Date/Time Sampled: 11/22/13 12:25

Laboratory Sample ID: 3K22099-01 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Conventional Chemistry Parameters by SM/EPA Methods								
Chloride	0.748 J	0.325	1.00	mg/l	11/23/13 11:42	EPA 300.0/2.1	bdw	
Methylene Blue Active Substances	<0.0250	0.00675	0.0250	mg/l	11/23/13 09:00	SM 5540 C-2011	elb	
pH @ 16.1°C	7.97			pH Units	11/23/13 14:29	SM20-4500H + B	cmh	
Total Dissolved Solids	140	4.00	40.0	mg/l	11/26/13 15:30	SM20-2540C	arr	
Sulfate as SO4	2.43	0.279	1.00	mg/l	11/23/13 11:42	EPA 300.0/2.1	bdw	
Microbiological Parameters by APHA Standard Methods								
E. Coli	2.0	1.0	1.0	MPN/100 ml	11/22/13 21:19	SM20-9223B	cmh	7d
Total Coliforms	200.5	1.0	1.0	MPN/100 ml	11/22/13 21:19	SM20-9223B	cmh	7a, 7d
Field Sampled Parameters								
Specific Conductance (Field)	200	0.00	2.00	umhos/cm	11/22/13 12:25	SM20-2510B	SSS	
pH- Field @ 11.5°C	7.13			pH Units	11/22/13 12:25	SM20-4500H + B FIELD	SSS	
Temperature	11.5	0.00	0.100	degrees C	11/22/13 12:25	SM20- 2550B Field	SSS	
Dissolved Gases by RSK 175								
Butane	<0.0200	0.00513	0.0200	mg/l	11/26/13 19:19	RSK 175	bag	
Methane	<0.0200	0.00150	0.0200	mg/l	11/26/13 19:19	RSK 175	bag	

Fairway Laboratories, Inc.

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources
260 Executive Drive
Cranberry Township PA, 16066
Project Manager: Brian Rushe

Project: Welchland 29AW
Project Number: Daniels, Barbara
Collector: SS
Number of Containers: 11

Reported:
10/17/14 11:01

Client Sample ID: 646 PHILLIPS RD/BDANIELS S1

Date/Time Sampled: 11/22/13 12:25

Laboratory Sample ID: 3K22099-01 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Dissolved Gases by RSK 175								
Ethane	<0.0100	0.00227	0.0100	mg/l	11/26/13 19:19	RSK 175	bag	
Propane	<0.0150	0.00363	0.0150	mg/l	11/26/13 19:19	RSK 175	bag	

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources	Project:	Welchland 29AW	
260 Executive Drive	Project Number:	Daniels, Barbara	**Reported:**
Cranberry Township PA, 16066	Collector:	SS	10/17/14 11:01
Project Manager: Brian Rushe	Number of Containers:	11	

Notes

2d	The LCS spike recovery was outside acceptance limits. Data accepted based on additional batch QC.
7a	> 200 TNTC.
7d	Contaminated - Not fit for human consumption.
J	Detected between the Method Detection Limit (MDL) and the Reporting Limit (RL); therefore, result is an estimated value.

Definitions

If surrogate values are not within the indicated range, then the results are considered to be estimated.

Reporting limits are adjusted accordingly when samples are analyzed at a dilution due to the matrix.

The following analyses are to be performed immediately upon sampling: pH, sulfite, chlorine residual, dissolved oxygen, filtration for ortho phosphorus, and ferrous iron. The date and time reported reflect the time the samples were analyzed at the laboratory.

MBAS, calculated as LAS, mol wt 348

If the solid sample weight for VOC analysis does not fall within the 3.5-6.5 gram range, the results are considered estimated values.

Samples collected by Fairway Laboratories' personnel are done so in accordance with Standard Operating Procedures established by Fairway Laboratories.

*	P indicates analysis performed by Fairway Laboratories, Inc. at the Pennsdale location. This location is PaDEP Chapter 252 certified.
<	Represents "less than" - indicates that the result was less than the reporting limit.
MDL	Method Detection Limit - is the lowest or minimum level that provides 99% confidence level that the analyte is detected. Any reported result values that are less than the RL are considered estimated values.
RL	Reporting Limit - is the lowest or minimum level at which the analyte can be quantified.
[CALC]	Indicates a calculated result. Calculations use results from other analyses performed under accredited methods.

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources
260 Executive Drive
Cranberry Township PA, 16066
Project Manager: Brian Rushe

Project: Welchland 29AW
Project Number: Daniels, Barbara
Collector: SS
Number of Containers: 11

Reported:
10/17/14 11:01

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources	Project:	Welchland 29AW	
260 Executive Drive	Project Number:	Daniels, Barbara	**Reported:**
Cranberry Township PA, 16066	Collector:	SS	10/17/14 11:01
Project Manager: Brian Rushe	Number of Containers:	11	

Terms & Conditions

Services provided by Fairway Laboratories Inc. are limited to the terms and conditions stated herein, unless otherwise agreed to in a formal contract.

CHAIN OF CUSTODY Fairway Laboratories Inc. ("Fairway," "us" or "we") will initiate a chain-of-custody/request for analysis upon sample receipt unless the client includes a completed form with the received sample(s). Upon request, Fairway will provide chain-of-custody forms for use.

CONFIDENTIALITY Fairway maintains confidentiality in all of our client interactions. The client's consent will be required before releasing information about the services provided.

CONTRACTS All contracts are subject to review and approval by Fairway's legal council. Each contract must be signed by a corporate officer.

PAYMENT/BILLING Unless otherwise set forth in a signed contract or purchase order, terms of payment are "NET 30 Days." The time allowed for payment shall begin based on the invoice date. A 1.5% per month service charge may be added to all unpaid balances beyond the initial 30 days. In its sole discretion, Fairway reserves the right to request payment before services and hold sample results for payment of due balances. We will not bill a third party without prior agreement among all parties acknowledging and accepting responsibility for payment.

SAMPLE COLLECTION AND SUBMISSION Clients not requesting collection services from Fairway are responsible for proper collection, preservation, packaging, and delivery of samples to the laboratory in accordance with current law and commercial practice. Fairway shall have no responsibility for sample integrity prior to the receipt of the sample(s) and/or for any inaccuracy in test or analyses results as a result of the failure of the client or any third party to maintain the integrity of samples prior to delivery to Fairway. All samples submitted must be accompanied by a completed chain of custody or similar document clearly noting the requested analyses, dates/time sampled, client contact information, and trail of custody.

SUBCONTRACTING Some analyses may require subcontracting to another laboratory. Unless the client indicates otherwise, this decision will be made by Fairway. Subcontracted work will be identified on the final report in accordance with NELAC requirements.

RETURN OF RESULTS Fairway routinely provides faxed or verbal results within 10 working days of receipt of sample(s) and a hard copy of the data results is routinely received via US Postal Service within 15 working days. At the request of the client, Fairway may offer expedited return of sample results. Surcharges may apply to rush requests. All rush requests must be pre-approved by Fairway. We reserve the right to charge an archive retrieval fee for results older than one (1) year from the date of the request. All records will be maintained by Fairway for 5 years, after which, they will be destroyed.

SAMPLE DISPOSAL Fairway will maintain samples for four (4) weeks after the sample receipt date. Fairway will dispose of samples which are not and/or do not contain hazardous wastes (as such term is defined by applicable federal or state law), unless prior arrangements have been made for long-term storage. Fairway reserves the right to charge a disposal fee for the proper disposal of samples found or suspected to contain hazardous waste. A return shipping charge will be invoiced for samples returned to the client at their request.

HAZARD COMMUNICATION The client has the responsibility to inform the laboratory of any hazardous characteristics known or suspected about the sample, and to provide information on hazard prevention and personal protection as necessary or otherwise required by applicable law.

WARRANTY AND LIMITATION OF LIABILITY For services rendered, Fairway warrants that it will apply its best scientific knowledge and judgment and to employ its best level of effort consistent with professional standards within the environmental testing industry in performing the analytical services requested by its clients. We disclaim any other warranties, expressed or implied by law. Fairway does not accept any legal responsibility for the purposes for which client uses the test results.

LITIGATION All costs associated with compliance to any subpoena for documents, for testimony in a court of law, or for any other purpose relating to work performed by Fairway Laboratories, Inc. shall be invoiced by Fairway and paid by client. These costs shall include, but are not limited to, hourly charges for the persons involved, travel, mileage, and accommodations and for any and all other expenses associated with said litigation.

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

OF CUSTODY/
T FOR ANALYSIS

FAIRWAY LABORATORIES
Environmental L

3K22099-01 K
646 PHILLIPS RD./BDANIELS S1
Sampled: 11/22/13 12:25
Water-100 mL Bacti
EXCO Resources

4306
3791

EXCO WV

Fax #:

uested: Total Coliform ❑ Fecal Coliform ❑ HPC ❑
lected:
on/description:

	Signature	Date	Time
		11/22/13	1225
by:	BH/CH 0.8	11/22/13	2115

LIMS #
File #: 746
Total coliform: > 200.5 /100 ml
E coli: 2.0/100 ml
Fecal:
HPC:

Analyst: CH
Analysis Started: 2119 11/22/13
In: 2123 Out: 1919 11/23 CE

Type Treatment: UV ❑ Ozone ❑
Chlorine residual:
Number of containers:
Matrix: Water ❑ other
Comments:

White Original - FLI File Canary - Customer Mailing/Report Pink - Customer Receipt Copy
★★ Please complete all of the grayed areas. ★★

CHAIN OF CUSTODY / REQUEST FOR ANALYSIS

FAIRWAY LABORATORIES INC.

COC # 3K220990Z Page ____ of ____

Client Name:	EXCO WV
Address:	
Contact:	Brian Rushe
Phone #:	
Fax #:	
Project Name:	Welchland 29 AW
Quote/PO #:	Daniels

TAT:

Normal	
Rush	
Date Required:	

Receiving Info	Y	N
Custody Seals		
Seals Intact?		
Received on ice?		
COC/ Labels agree?		
Correct containers?		
Correct preservation?		
VOA head space		

Sample Temp: ____

Report to PADEP? | PWSID #:

FLI use only	Sample Description / Location	Sample Date	Sample Time	Grab or Composite	Soil	Water	Other? Explain	# of Containers	Analyses Requested: EXCO WV Parameters	Field pH	Field S.C.	Field Temp.	Trip Blank	Comments
	646 Phillips Rd.													
	Bdaniels S1	11·22·13	12:25	G		X		11	X	7.13	2006	11.5c		
													X	Includes Bacti
													X	1 HCl Vial

	Signature	Date	Time
Sampled By:		11·22·13	12:35
Received by:		11-22-13	1745
Relinquished by:		11-22-13	2115
Received by:			
Relinquished by:			
Received by:		112213	21:15

Remarks

Circle One : PA (WV) OH

Received
Office of Oil & Gas
OCT 30 2014

SOP FLI0601-002 Revision 16 Date: September 13, 2013 Page of

Chain of Custody Receiving Document

Page ___ of ___

Receiver: CR

Date/Time of this check: 11/22/13 21:20 Sample Temperature: 0.8 Client: EXCO Lab # 3/C2209903

Received at Lab on ICE ? Y ☐ * **Sample Temperature when arrived at Lab:** 0.8 **Acceptable?** Y ☐ * **or In cool down process?** ☐ *

Custody Seals? ___ Intact? Y

COC/Labels on bottles agree? Y ☐* Correct containers for all the analysis requested? Y ☐ * Matrix: WW

COC #	Number and Type of BOTTLES										Comments
	Poly Non-Pres.	Poly H2SO4	Poly HNO3	Amber H2SO4	Amber Non-Pres.	Poly NaOH	VOCS (Head space?)	Other ☐ *	Properly Preserved ☐ *	Bacti	
1	2		1	1			6HL				

*** DEVIATION PRESENT:**
- ⊗ **No Ice** ( )
- ⊗ **Not at Proper Temperature** ( )
- ⊗ **Wrong Container** ( )
- ⊗ **Missing Information:** ( )

CLIENT CALLED:
YES ( )
By Whom:
_____ **Date:** _____

CLIENT RESPONSE:
- **Proceed with analysis; qualify data** ( )
- **Will Resample** ( )
- **Provided Information** ( )
- **No Response; Proceed and qualified** ( )

Client Contact: _____ **Date:** _____

* Comments: _____

Received
Office of Oil & Gas
OCT 30 2014

Chain of Custody Receiving Document

This is a date sensitive document and may not be current after November 21, 2013.

SITE VISIT FORM
ONE FORM FOR EACH WATER SOURCE

Part A: GENERAL INFORMATION

3K2209704

Water Source Sample ID: BDaniels S1	Well Pad Name: Welchland 29AW	Permit No.:	Well Operator: EXCO	
Coordinates: (in NAD83, in decimal degrees)	Lat N37.64475	Long W-81.44605	Elevation 2054	FT (msl)
Date Sampled: 11.22.13	Time Sampled (Military): 12:25	Sampled By: SS	☐ N/A: No Sample (See Notes)	
Person Interviewed (circle one): Owner Resident	Other:			

PROPERTY OWNER		RESIDENT OR OTHER	
Name:	Barbara Daniels	Name:	
Address:	646 Phillips Rd	Address:	
Address:	Saulsville, WV,	Address:	
Phone No.:	304-294-5048	Phone No.:	

Part B: DOCUMENTATION OF SAMPLING REFUSAL

Is Person Refusing the Property Owner as Listed Above? Yes ☐ No ☐ If No, Notify Property Owner

Refusal in person or over phone: Date of Refusal: Time of Refusal:

Reason(s) for Refusal:

Name of Company Documenting Refusal:

Received
Office of Oil & Gas
OCT 30 2014

Part C: WATER QUALITY

	Reported Quality			Observed Quality		
	Yes	No	N/A	Yes	No	N/A
Staining	☐	☒	☐	☐	☒	☐
Odor	☐	☒	☐	☐	☒	☐
Cloudiness	☐	☒	☐	☐	☒	☐
Sheen	☐	☒	☐	☐	☒	☐
Effervescence	☐	☒	☐	☐	☒	☐
Taste	☒ Food	☐	☐	N/A	(N/A)	N/A

Treatment		Pump Type	
☒ None	☐ UV Light	☐ None	
☐ Softening	☐ pH Adjustment	☐ Gas Piston	
☐ Chlorination	☐ Other:	☒ Submersible	
☐ Iron Removal		☐ Windmill	
☐ In-line Sediment Filter		☐ Jet	
☐ Charcoal Filter		☐ Other:	
Yes ☐ No ☐ Functioning Properly		☐ Capacity ____ GPM	

Part D: WATER SOURCE INFORMATION

Does this source supply any other properties? No If yes, identify properties

Is the water source(s) located on the property: Yes ☐ No ☐ If No, please explain:

Number of people using this water source? 2 Gallons/day, If metered:

Has water source ever gone dry? Yes ☒ No ☐ Maybe

Pressure Tank Yes ☐ No ☐ Size of tank ____ gallons ☐ Actual size ☐ Estimated ☐ Unknown

Water Use ☒ Domestic ☐ Husbandry ☐ Irrigation ☐ Other:

Compass course from water source to dwelling NW Estimated distance from water source to dwelling 25 FT.

Are there any other water sources on the property? Yes ☒ #55 No ☒ If yes, how many? Total (2)

Provide all water source ID(s)

Are you aware of any abandoned water source (s)? Well If yes, where Several years when

SITE VISIT FORM
ONE FORM FOR EACH WATER SOURCE

3/L22 09905

Water Source Type: ☐ Water Well

Drilled Well: Yes ☐ No ☐ Dug Well: Yes ☐ No ☐ Artesian: Yes ☐ No ☐ Other: _____

Reported total well depth: _____ FT. Well casing diameter: _____ IN. Missing/damaged pit-less adaptor Yes ☐ No ☐ Unknown ☐

Reported depth of water level: _____ FT. Reported pump depth _____ FT.

Date Drilled _____ Drilling Company _____ Is the well in basement or crawlspace? _____

Driller log available Yes ☐ No ☐

Signature of owner authorizing release of water log(s) _____

Water Source Type: ☒ Spring

Holding Tank

Discharge Pipe Yes ☐ No ☐ Seep/Ground Surface Flow Yes ☐ No ☐ Spring House Yes ☐ No ☐ Underground Vault Yes ☒ No ☐

Water Source Type: ☐ Cistern

Size of Cistern _____ gallons ☐ Actual size ☐ Estimated ☐ Unknown

Source of water: _____ (e.g. Delivered, spring, well, gutter, etc.)

Water Source Type: ☐ Surface Water

☐ Pond ☐ Lake ☐ Creek ☐ River

Water Source Type: Public Water Yes ☒ No ☐

PART E: DESCRIPTION OF WATER SOURCE (check all that apply)

- ☐ Loose, missing, or damaged cover (circle one if applicable)
- ☐ Evidence of insects, spiders, animals (circle one if applicable)
- ☐ Any cracked or damaged well casing/spring vault (circle one if applicable)
- ☐ Water source open to surface water
- ☐ Additional storage or holding tank/coyote system (circle one if applicable)
- ☐ Cover flush with ground
- ☐ Evidence of erosion
- ☐ Water source secured
- ☐ Source buried
- ☐ Location unknown
- ☐ Other: _____

PART F: DESCRIPTION OF AREA SURROUNDING WATER SOURCE (check all that apply) Show locations on site sketch and provide approximate distance & compass course. Document housekeeping conditions. (Attach photos.)

- ☐ Ground sloping toward water source
- ☐ Water source downgradient of septic system
- ☐ Signs of failing septic, soggy ground, foul odor (circle all that apply)
- ☐ Close proximity to garden, agricultural field, orchard, greenhouse. (circle all that apply)
- ☐ Close proximity to junkyard, dumping area, landfill. (circle all that apply)
- ☐ Close proximity to fuel storage tanks, equipment storage or maintenance areas, garage. (circle all that apply)
- ☐ Located in field with livestock, barn, barnyard, other out building. (circle all that apply)
- ☐ Close proximity to salt storage area, salted roadway.
- ☐ Close proximity to pipeline.
- ☐ Other: _____

Received
Office of Oil & Gas
OCT 30 2014

ADDITIONAL REMARKS & COMMENTS: Used clean glass jar from kitchen to grab sample, at home owners request.

SITE VISIT FORM
ONE FORM FOR EACH WATER SOURCE

3K22 09906

PART G: GAS MONITORING AND SAMPLING

Dissolved Phase Gas Sample Collected?: ☒ Yes ☐ No IS WELL VENTED? Yes ☐ No ☐ Unknown ☐

Gas Sample Collection Method: Water Displacement Method A (non-preserve) ☐ Yes Direct Fill Method B (preserve) ☒ Yes Two Phase Method ☐ Yes

Free Phase Gas Water Well Head Space Screening Conducted? ☐ Yes ☒ No Combustible Gas Meter: Bacharach Turner Meter Calibrated? Yes ☒

Sustained Methane = NA (% of LEL) Peak Methane = NA (% of LEL)

(Contact EQT Immediately if Sustained Methane Exceeds 25% of LEL in Water Well Headspace OR 10% of LEL in Building or Structure)

Description of Sample Screening and Collection (Location and Method):

PART H: SAMPLING

SAMPLED	SAMPLING POINT LOCATION
☐ Before Treatment ☐ After Treatment ☒ No Treatment ☐ Not Sure	☐ Inside Faucet: _____ ☐ Pressure Tank ☐ Overflow/Discharge Pipe ☐ Outside Faucet: _____ ☐ Wellhead ☒ Other: holding tank ☐ Seep ☐ Surface Water (sampled at coordinates in Part A)

SAMPLING METHOD: ☐ Existing well pump ☐ Sampling pump ☐ Low flow ☐ Disposable Bailer ☒ Other: Grab

Was the water source purged before sampling? Yes ~~☒~~ No ☒ If yes, volume (gal.) and/or time (min) purged: 1

Is it possible to run water for 30 minutes? Yes ☐ No ☒ If no, please explain: _____

Average water usage within last 24 hours NA

Chain of custody attached? ☒ Yes ☐ No Name of Certified Laboratory: Fairway Laboratories

FIELD METER TYPE: Oakton Meter Calibrated? Yes ☒ No ☐

FIELD PARAMETERS: Turbidity: _____ pH: 7.13 Conductivity: 200's Temperature: 11.5°C

PART I: PLAN SKETCH and PHOTOGRAPHS *(use additional pages as necessary)*. Show compass course and provide approximate distance.

Received
Office of Oil & Gas
OCT 30 2014

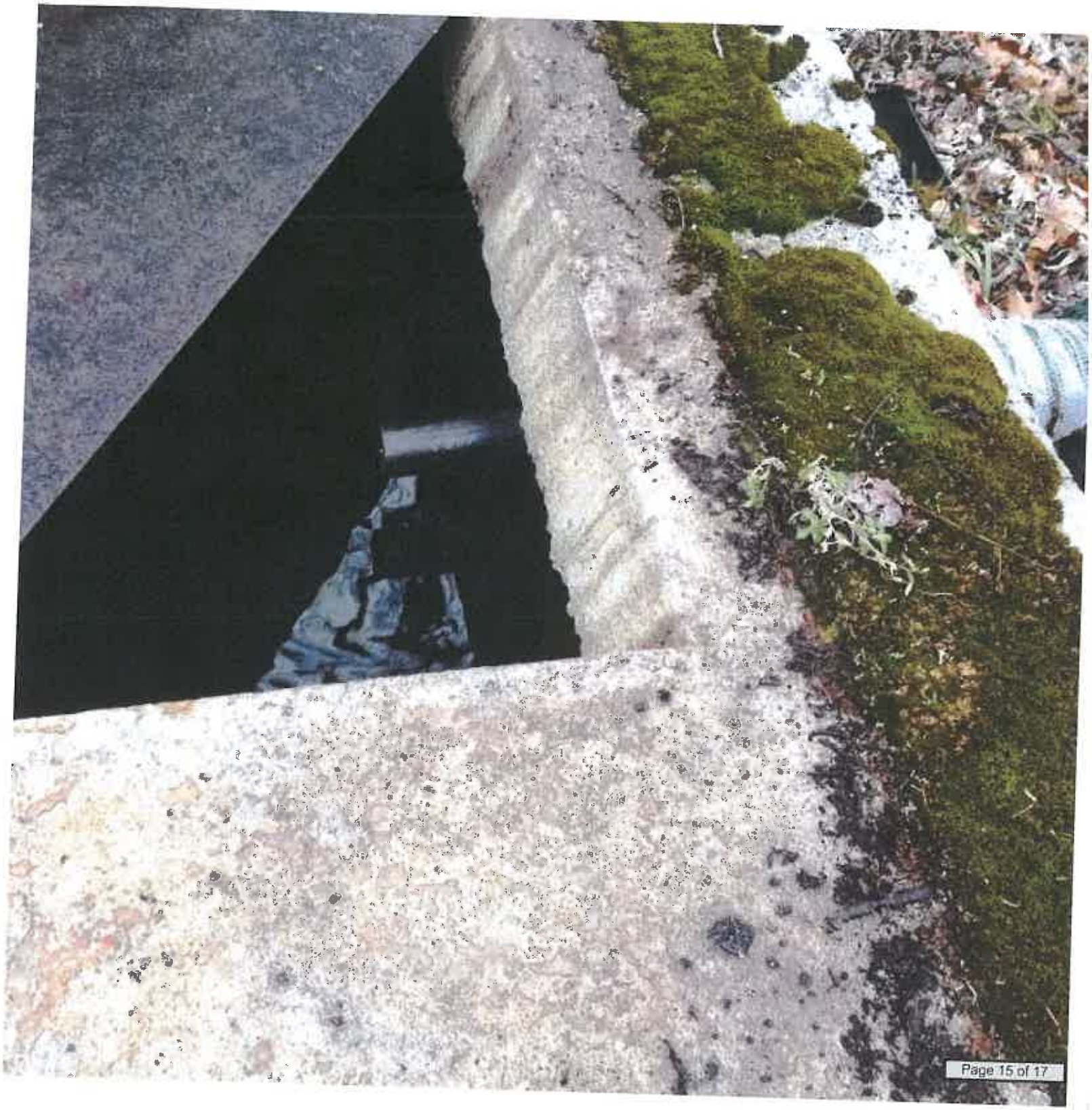
Sampler/Interviewer

Ospring origin

I hereby acknowledge that I have supplied the correct information to the best of my knowledge

Sign _____ Print Stephanie Smith Date 11-22-13

Company: Fairway Laboratories Inc. Address: _____ Phone: _____



W. Va. Code R. 35-8-15 Water Supply Testing.

15.3.b. **Parameters** - The operator shall analyze samples for the following parameters:

15.3.b.1. Total Petroleum Hydrocarbons (GRO, DRO, ORO)
15.3.b.2. BTEX
15.3.b.3. Chloride
15.3.b.4. Sodium
15.3.b.5. Total Dissolved Solids (TDS)
15.3.b.6. Aluminum
15.3.b.7. Arsenic
15.3.b.8. Barium
15.3.b.9. Iron
15.3.b.10. Manganese
15.3.b.11. pH
15.3.b.12. Calcium
15.3.b.13. Sulfate
15.3.b.14. Detergents (MBAS)
15.3.b.15. Dissolved Methane
15.3.b.16. Dissolved Ethane
15.3.b.17. Dissolved Butane
15.3.b.18. Dissolved Propane
15.3.b.19. Bacteria (total coliform)
15.3.b.20. Any others parameters determined by the operator or the Chief.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources		Project:	Welchland 29AW	
260 Executive Drive		Project Number:	Phillips, Ethel	**Reported:**
Cranberry Township PA, 16066		Collector:	SS	10/17/14 10:59
Project Manager:	Brian Rushe	Number of Containers:	11	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Sample Type	Date Sampled	Date Received
PO BOX 172/EPHILLIPS S1	3K22098-01	Water	Grab	11/22/13 11:45	11/22/13 21:15

3K22098 Parameter list attached as page 18 of final report. This report replaces the report issued 09/30/14 13:03. 10/07/14 CL

3K22098 Report revised. Case narrative and MDL values added. This report replaces the report printed on 12/27/13 10:53. 09/30/14 mlf

The resample for GRO/DRO/ORO was collected 12/19/13 and is reported on separate laboratory work order ID: 4J17009. This report replaces the report printed on 10/07/14 11:20. 10/17/14 mlf

Fairway Laboratories, Inc.

Reviewed and Submitted by:

Michael P. Tyler
Laboratory Director

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources	Project:	Welchland 29AW	
260 Executive Drive	Project Number:	Phillips, Ethel	**Reported:**
Cranberry Township PA, 16066	Collector:	SS	10/17/14 10:59
Project Manager: Brian Rushe	Number of Containers:	11	

Client Sample ID: **PO BOX 172/EPHILLIPS S1** **Date/Time Sampled:** 11/22/13 11:45

Laboratory Sample ID: **3K22098-01 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Calculated Analytes								
Hardness	50.0	0.0657	0.662	mg/l	12/05/13 09:46	SM2340B	rab	
Metals by EPA 200 Series Methods								
Aluminum	<0.0500	0.0149	0.0500	mg/l	12/05/13 09:46	EPA 200.7/4.4	rab	
Arsenic	<0.00400	0.00202	0.00400	mg/l	12/05/13 09:48	EPA 200.7/4.4	rab	
Barium	0.0214	0.00132	0.0100	mg/l	12/05/13 09:46	EPA 200.7/4.4	rab	
Calcium	17.9	0.0131	0.100	mg/l	12/05/13 09:46	EPA 200.7/4.4	rab	
Iron	0.0596	0.00223	0.0200	mg/l	12/05/13 09:46	EPA 200.7/4.4	rab	
Manganese	<0.00146	0.00146	0.0100	mg/l	12/05/13 09:48	EPA 200.7/4.4	rab	
Sodium	2.31	0.0677	0.400	mg/l	12/05/13 09:46	EPA 200.7/4.4	rab	
Volatile Organic Compounds by EPA Method 8260B								
Benzene	<0.15	0.15	1.00	ug/l	11/26/13 16:59	EPA 8260B	bag	2d
Toluene	<0.12	0.12	1.00	ug/l	11/26/13 16:59	EPA 8260B	bag	2d
Ethylbenzene	<0.08	0.08	1.00	ug/l	11/26/13 16:59	EPA 8260B	bag	
Xylenes (total)	<0.28	0.28	2.00	ug/l	11/26/13 16:59	EPA 8260B	bag	
Surrogate: 4-Bromofluorobenzene		*92.0 %*	*70-130*		*11/26/13 16:59*	*EPA 8260B*	bag	
Surrogate: 1,2-Dichloroethane-d4		*119 %*	*70-130*		*11/26/13 16:59*	*EPA 8260B*	bag	
Surrogate: Fluorobenzene		*121 %*	*70-130*		*11/26/13 16:59*	*EPA 8260B*	bag	
Conventional Chemistry Parameters by SM/EPA Methods								

Fairway Laboratories, Inc.

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources	Project:	Welchland 29AW	
260 Executive Drive	Project Number:	Phillips, Ethel	**Reported:**
Cranberry Township PA, 16066	Collector:	SS	10/17/14 10:59
Project Manager: Brian Rushe	Number of Containers:	11	

Client Sample ID: PO BOX 172/EPHILLIPS S1 **Date/Time Sampled:** 11/22/13 11:45

Laboratory Sample ID: 3K22098-01 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Conventional Chemistry Parameters by SM/EPA Methods								
Chloride	0.862 J	0.325	1.00	mg/l	11/23/13 11:25	EPA 300.0/2.1	bdw	
Methylene Blue Active Substances	<0.0250	0.00675	0.0250	mg/l	11/23/13 09:00	SM 5540 C-2011	elb	
pH @ 15.4°C	7.89			pH Units	11/23/13 14:29	SM20-4500H + B	cmh	
Total Dissolved Solids	92.0	4.00	40.0	mg/l	11/26/13 15:30	SM20-2540C	arr	
Sulfate as SO4	6.51	0.279	1.00	mg/l	11/23/13 11:25	EPA 300.0/2.1	bdw	
Microbiological Parameters by APHA Standard Methods								
E. Coli	6.4	1.0	1.0	MPN/100 ml	11/22/13 21:19	SM20-9223B	cmh	7d
Total Coliforms	200.5	1.0	1.0	MPN/100 ml	11/22/13 21:19	SM20-9223B	cmh	7a, 7d
Field Sampled Parameters								
Specific Conductance (Field)	125	0.00	2.00	umhos/cm	11/22/13 11:45	SM20-2510B	SSS	
pH- Field @ 11.5°C	6.92			pH Units	11/22/13 11:45	SM20-4500H + B FIELD	SSS	
Temperature	11.5	0.00	0.100	degrees C	11/22/13 11:45	SM20- 2550B Field	SSS	
Dissolved Gases by RSK 175								
Butane	<0.0200	0.00513	0.0200	mg/l	11/26/13 18:59	RSK 175	bag	
Methane	<0.0200	0.00150	0.0200	mg/l	11/26/13 18:59	RSK 175	bag	

Fairway Laboratories, Inc.

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources	Project:	Welchland 29AW	
260 Executive Drive	Project Number:	Phillips, Ethel	**Reported:**
Cranberry Township PA, 16066	Collector:	SS	10/17/14 10:59
Project Manager: Brian Rushe	Number of Containers:	11	

Client Sample ID: **PO BOX 172/EPHILLIPS S1** **Date/Time Sampled:** 11/22/13 11:45

Laboratory Sample ID: **3K22098-01 (Water/Grab)**

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Dissolved Gases by RSK 175								
Ethane	<0.0100	0.00227	0.0100	mg/l	11/26/13 18:59	RSK 175	bag	
Propane	<0.0150	0.00363	0.0150	mg/l	11/26/13 18:59	RSK 175	bag	

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources	Project:	Welchland 29AW	
260 Executive Drive	Project Number:	Phillips, Ethel	**Reported:**
Cranberry Township PA, 16066	Collector:	SS	10/17/14 10:59
Project Manager: Brian Rushe	Number of Containers:	11	

Notes

2d	The LCS spike recovery was outside acceptance limits. Data accepted based on additional batch QC.
7a	> 200 TNTC.
7d	Contaminated - Not fit for human consumption.
J	Detected between the Method Detection Limit (MDL) and the Reporting Limit (RL); therefore, result is an estimated value.

Definitions

If surrogate values are not within the indicated range, then the results are considered to be estimated.

Reporting limits are adjusted accordingly when samples are analyzed at a dilution due to the matrix.

The following analyses are to be performed immediately upon sampling: pH, sulfite, chlorine residual, dissolved oxygen, filtration for ortho phosphorus, and ferrous iron. The date and time reported reflect the time the samples were analyzed at the laboratory.

MBAS, calculated as LAS, mol wt 348

If the solid sample weight for VOC analysis does not fall within the 3.5-6.5 gram range, the results are considered estimated values.

Samples collected by Fairway Laboratories' personnel are done so in accordance with Standard Operating Procedures established by Fairway Laboratories.

*	P indicates analysis performed by Fairway Laboratories, Inc. at the Pennsdale location. This location is PaDEP Chapter 252 certified.
<	Represents "less than" - indicates that the result was less than the reporting limit.
MDL	Method Detection Limit - is the lowest or minimum level that provides 99% confidence level that the analyte is detected. Any reported result values that are less than the RL are considered estimated values.
RL	Reporting Limit - is the lowest or minimum level at which the analyte can be quantified.
[CALC]	Indicates a calculated result. Calculations use results from other analyses performed under accredited methods.

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources	Project:	Welchland 29AW	
260 Executive Drive	Project Number:	Phillips, Ethel	**Reported:**
Cranberry Township PA, 16066	Collector:	SS	10/17/14 10:59
Project Manager: Brian Rushe	Number of Containers:	11	

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources	Project:	Welchland 29AW	
260 Executive Drive	Project Number:	Phillips, Ethel	**Reported:**
Cranberry Township PA, 16066	Collector:	SS	10/17/14 10:59
Project Manager: Brian Rushe	Number of Containers:	11	

Terms & Conditions

Services provided by Fairway Laboratories Inc. are limited to the terms and conditions stated herein, unless otherwise agreed to in a formal contract.

CHAIN OF CUSTODY Fairway Laboratories Inc. ("Fairway," "us" or "we") will initiate a chain-of-custody/request for analysis upon sample receipt unless the client includes a completed form with the received sample(s). Upon request, Fairway will provide chain-of-custody forms for use.

CONFIDENTIALITY Fairway maintains confidentiality in all of our client interactions. The client's consent will be required before releasing information about the services provided.

CONTRACTS All contracts are subject to review and approval by Fairway's legal council. Each contract must be signed by a corporate officer.

PAYMENT/BILLING Unless otherwise set forth in a signed contract or purchase order, terms of payment are "NET 30 Days." The time allowed for payment shall begin based on the invoice date. A 1.5% per month service charge may be added to all unpaid balances beyond the initial 30 days. In its sole discretion, Fairway reserves the right to request payment before services and hold sample results for payment of due balances. We will not bill a third party without prior agreement among all parties acknowledging and accepting responsibility for payment.

SAMPLE COLLECTION AND SUBMISSION Clients not requesting collection services from Fairway are responsible for proper collection, preservation, packaging, and delivery of samples to the laboratory in accordance with current law and commercial practice. Fairway shall have no responsibility for sample integrity prior to the receipt of the sample(s) and/or for any inaccuracy in test or analyses results as a result of the failure of the client or any third party to maintain the integrity of samples prior to delivery to Fairway. All samples submitted must be accompanied by a completed chain of custody or similar document clearly noting the requested analyses, dates/time sampled, client contact information, and trail of custody.

SUBCONTRACTING Some analyses may require subcontracting to another laboratory. Unless the client indicates otherwise, this decision will be made by Fairway. Subcontracted work will be identified on the final report in accordance with NELAC requirements.

RETURN OF RESULTS Fairway routinely provides faxed or verbal results within 10 working days of receipt of sample(s) and a hard copy of the data results is routinely received via US Postal Service within 15 working days. At the request of the client, Fairway may offer expedited return of sample results. Surcharges may apply to rush requests. All rush requests must be pre-approved by Fairway. We reserve the right to charge an archive retrieval fee for results older than one (1) year from the date of the request. All records will be maintained by Fairway for 5 years, after which, they will be destroyed.

SAMPLE DISPOSAL Fairway will maintain samples for four (4) weeks after the sample receipt date. Fairway will dispose of samples which are not and/or do not contain hazardous wastes (as such term is defined by applicable federal or state law), unless prior arrangements have been made for long-term storage. Fairway reserves the right to charge a disposal fee for the proper disposal of samples found or suspected to contain hazardous waste. A return shipping charge will be invoiced for samples returned to the client at their request.

HAZARD COMMUNICATION The client has the responsibility to inform the laboratory of any hazardous characteristics known or suspected about the sample, and to provide information on hazard prevention and personal protection as necessary or otherwise required by applicable law.

WARRANTY AND LIMITATION OF LIABILITY For services rendered, Fairway warrants that it will apply its best scientific knowledge and judgment and to employ its best level of effort consistent with professional standards within the environmental testing industry in performing the analytical services requested by its clients. We disclaim any other warranties, expressed or implied by law. Fairway does not accept any legal responsibility for the purposes for which client uses the test results.

LITIGATION All costs associated with compliance to any subpoena for documents, for testimony in a court of law, or for any other purpose relating to work performed by Fairway Laboratories, Inc. shall be invoiced by Fairway and paid by client. These costs shall include, but are not limited to, hourly charges for the persons involved, travel, mileage, and accommodations and for any and all other expenses associated with said litigation.

Fairway Laboratories, Inc.

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

OF CUSTODY/
T FOR ANALYSIS

FAIRWAY LABORATORIES
Environmental Lal

3K22098-01 K

P.O. BOX 172/EPHILLIPS S1 106
Sampled: 11/22/13 11:45 '91
Water-100 mL Bacti
EXCO Resources

EXCO WV
P.O. Box 172
Brian Rushe
Fax #:
Welchland 29A

ested: ~~Total Coliform~~ ☑ Fecal Coliform ☐ HPC ☐
cted: 11-22-13 11:45
n/description: Shallops S1

Signature	Date	Time
Stephen Snyder	11.22.13	11:45
PH CH 0.8	11/23/13	7115

LIMS #
File #: 745
Total coliform: >200.9 /100mL
E coli: 6.4 /100mL
Fecal:
HPC:
Analyst: CH
Analysis Started: 2119 11/22/13
In: 2123 Out: 1919 11/23/13 CE

Type Treatment: UV ☐ Ozone ☐
Chlorine residual:
Number of containers:
Matrix: Water ☐ other
Comments:

White Original - FLI File Canary - Customer Mailing/Report Pink - Customer Receipt Copy
★★ Please complete all of the grayed areas. ★★

CHAIN OF CUSTODY / REQUEST FOR ANALYSIS

FAIRWAY LABORATORIES INC.

COC # 3K20098-02 Page ____ of ____

Client Name:	EXCO WV
Address:	
Contact:	Brian Rushe
Phone #:	
Fax #:	
Project Name:	Welchland 29 AW
Quote/PO #:	Phillips

TAT:

Normal	
Rush	
Date Required:	

Receiving Info	Y	N
Custody Seals		
Seals Intact?		
Received on ice?		
COC/ Labels agree?		
Correct containers?		
Correct preservation?		
VOA head space		
Sample Temp:		
Report to PADEP?		
PWSID #:		

FLI use only	Sample Description / Location	Sample Date	Sample Time	Grab or Composite	Soil	Water	Other? Explain	# of Containers	EXCO WV Parameters	Field pH	Field S.C.	Field Temp.	Trip Blank	Comments
	P.O. Box 172													
	Ephillips S1	11-22-13	11:45	G		X		11	X	6.92	1250us	11.5c		
													X	Includes Bacti
													X	1 HCl Vial

Analyses Requested

	Signature	Date	Time
Sampled By:		11-22-13	12:05
Received by:	Ry Hebb	11-22-13	1745
Relinquished by:		11-22-13	2115
Received by:			
Relinquished by:			
Received by:		11-23-13	21:15

Remarks

Circle One : PA (WV) OH

Received
Office of Oil & Gas
OCT 30 2014

SOP FLI0601-002 Revision 16 Date: September 13, 2013 Page of

Chain of Custody Receiving Document

Page ___ of ___

Receiver: JR

Date/Time of this check: 11-22-13 2:50 Sample Temperature: 0-8 Client: EXCO Lab # 3K22098-03

Received at Lab on ICE ? Y ☐ * **Sample Temperature when arrived at Lab:** 0-8 **Acceptable?** Y ☐ * **or In cool down process?** ☐ *

Custody Seals? Y Intact? Y

COC/Labels on bottles agree? Y ☐ * Correct containers for all the analysis requested? Y ☐ * Matrix: WL

COC #	Number and Type of BOTTLES										Comments
	Poly Non-Pres.	Poly H2SO4	Poly HNO3	Amber H2SO4	Amber Non-Pres.	Poly NaOH	VOCS (Head space?)	Other ☐*	Properly Preserved ☒*	Bacti	
1	2		1	1			VOA	2 Bottle 11-22-13			

*** DEVIATION PRESENT:**
- ⊗ **No Ice** ( )
- ⊗ **Not at Proper Temperature** ( )
- ⊗ **Wrong Container** ( )
- ⊗ **Missing Information:** ( )

CLIENT CALLED:
YES ( )
By Whom:
_____ **Date:** _____

CLIENT RESPONSE:
- **Proceed with analysis; qualify data** ( )
- **Will Resample** ( )
- **Provided Information** ( )
- **No Response; Proceed and qualified** ( )

Client Contact: _____ **Date:** _____

* Comments: _____

Received
Office of Oil & Gas
OCT 30 2014

Chain of Custody Receiving Document

This is a date sensitive document and may not be current after November 21, 2013.

SITE VISIT FORM
ONE FORM FOR EACH WATER SOURCE

3K22098-04

Part A: GENERAL INFORMATION

Water Source Sample ID: EPhillips S1	Well Pad Name: Welchland 29AW	Permit No.:	Well Operator: EXCO	
Coordinates: (In NAD83, in decimal degrees)	Lat N37.64680	Long W81.44695	Elevation 2000	FT (msl)
Date Sampled: 11.22.13	Time Sampled (Military): 11:45	Sampled By: SS	☐ N/A: No Sample (See Notes)	
Person Interviewed (circle one): Owner	Resident	Other:		

PROPERTY OWNER		RESIDENT OR OTHER	
Name:	Ethel Phillips	Name:	
Address:	P.O. Box 172	Address:	
Address:	McGrans, WV, 25875	Address:	
Phone No.:	304-294-4869	Phone No.:	

Part B: DOCUMENTATION OF SAMPLING REFUSAL

Received
Office of Oil & Gas
OCT 30 2014

Is Person Refusing the Property Owner as Listed Above? Yes ☐ No ☐ If No, Notify Property Owner

Refusal in person or over phone: Date of Refusal: Time of Refusal:

Reason(s) for Refusal:

Name of Company Documenting Refusal:

Part C: WATER QUALITY

	Reported Quality			Observed Quality			Treatment	Pump Type
	Yes	No	N/A	Yes	No	N/A		
Staining	☐	☒	☐	☐	☒	☐	☒ None ☐ UV Light	☐ None
Odor	☐	☒	☐	☐	☐	☐	☐ Softening ☐ pH Adjustment	☐ Gas Piston
Cloudiness	☐	☒	☐	☐	☐	☐	☐ Chlorination ☐ Other:	☐ Submersible
Sheen	☐	☒	☐	☐	☐	☐	☐ Iron Removal	☐ Windmill
Effervescence	☐	☒	☐	☐	☐	☐	☐ In-line Sediment Filter	☐ Jet
Taste	☒ good	☐	☐	N/A	N/A	N/A	☐ Charcoal Filter	☒ Other: Gravity
							Yes ☐ No ☐ Functioning Properly	☐ Capacity _____ GPM

Part D: WATER SOURCE INFORMATION

Does this source supply any other properties? No If yes, identify properties

Is the water source(s) located on the property: Yes ☒ No ☐ If No, please explain:

Number of people using this water source? 2+06 Gallons/day, if metered:

Has water source ever gone dry? Yes ☐ No ☒

Pressure Tank Yes ☐ No ☒ Size of tank _____ gallons ☐ Actual size ☐ Estimated ☐ Unknown

Water Use ☒ Domestic ☐ Husbandry ☐ Irrigation ☐ Other:

Compass course from water source to dwelling SSE Estimated distance from water source to dwelling 110 ft. yards

Are there any other water sources on the property? Yes ~~☒~~ SS No ☒ If yes, how many? ~~Total (3):~~ 85

Provide all water source ID(s)

Are you aware of any abandoned water source (s)? If yes, where, when

* possible test 2 other springs?

SITE VISIT FORM
ONE FORM FOR EACH WATER SOURCE

3K22098-05

Water Source Type: ☐ Water Well

Drilled Well: Yes ☐ No ☐ Dug Well: Yes ☐ No ☐ Artesian: Yes ☐ No ☐ Other: _____

Reported total well depth: _____ FT. Well casing diameter: _____ IN. Missing/damaged pit-less adaptor Yes ☐ No ☐ Unknown ☐

Reported depth of water level: _____ FT. Reported pump depth _____ FT.

Date Drilled _____ Drilling Company _____ Is the well in basement or crawlspace? _____

Driller log available Yes ☐ No ☐

Signature of owner authorizing release of water log(s) _____

Water Source Type: ☒ Spring → from house Spicket

Discharge Pipe Yes ☐ No ☐ Seep/Ground Surface Flow Yes ☐ No ☐ Spring House Yes ☐ No ☐ Underground Vault Yes ☐ No ☐

Water Source Type: ☐ Cistern

Size of Cistern _____ gallons ☐ Actual size ☐ Estimated ☐ Unknown

Source of water: _____ (e.g. Delivered, spring, well, gutter, etc.)

Water Source Type: ☐ Surface Water

☐ Pond ☐ Lake ☐ Creek ☐ River

Water Source Type: Public Water Yes ☒ No ☐

PART E: DESCRIPTION OF WATER SOURCE (check all that apply)

- ☒ Loose, missing, or damaged cover (circle one if applicable)
- ☐ Evidence of insects, spiders, animals (circle one if applicable)
- ☐ Any cracked or damaged well casing/spring vault (circle one if applicable)
- ☐ Water source open to surface water
- ☐ Additional storage or holding tank/coyote system (circle one if applicable)
- ☐ Cover flush with ground
- ☐ Evidence of erosion
- ☐ Water source secured
- ☐ Source buried
- ☐ Location unknown
- ☐ Other: _____

PART F: DESCRIPTION OF AREA SURROUNDING WATER SOURCE (check all that apply) Show locations on site sketch and provide approximate distance & compass course. Document housekeeping conditions. (Attach photos.)

- ☒ Ground sloping toward water source
- ☐ Water source downgradient of septic system
- ☐ Signs of failing septic, soggy ground, foul odor (circle all that apply)
- ☐ Close proximity to garden, agricultural field, orchard, greenhouse. (circle all that apply)
- ☐ Close proximity to junkyard, dumping area, landfill. (circle all that apply)
- ☐ Close proximity to fuel storage tanks, equipment storage or maintenance areas, garage. (circle all that apply)
- ☐ Located in field with livestock, barn, barnyard, other out building. (circle all that apply)
- ☐ Close proximity to salt storage area, salted roadway.
- ☐ Close proximity to pipeline.
- ☐ Other: _____

ADDITIONAL REMARKS & COMMENTS:

SITE VISIT FORM
ONE FORM FOR EACH WATER SOURCE

PART G: GAS MONITORING AND SAMPLING 3/C22098-06

Dissolved Phase Gas Sample Collected?: ☐ Yes ☐ No IS WELL VENTED? Yes ☐ No ☐ Unknown ☐

Gas Sample Collection Method: Water Displacement Method A (non-preserve) ☐ Yes Direct Fill Method B (preserve) ☐ Yes Two Phase Method ☐ Yes

Free Phase Gas Water Well Head Space Screening Conducted? ☐ Yes ☒ No Combustible Gas Meter: Bascam-Turner Meter Calibrated? Yes ☒

Sustained Methane = NA (% of LEL) Peak Methane = NA (% of LEL)

(Contact EQT immediately if Sustained Methane Exceeds 25% of LEL in Water Well Headspace OR 10% of LEL in Building or Structure)

Description of Sample Screening and Collection (Location and Method):

PART H: SAMPLING

SAMPLED	SAMPLING POINT LOCATION
☐ Before Treatment ☐ After Treatment ☒ No Treatment ☐ Not Sure	☐ Inside Faucet: _____ ☐ Pressure Tank ☐ Overflow/Discharge Pipe ☒ Outside Faucet: Side of house ☐ Wellhead ☐ Other: _____ ☐ Seep ☐ Surface Water (sampled at coordinates in Part A)

SAMPLING METHOD: ☐ Existing well pump ☐ Sampling pump ☐ Low flow ☐ Disposable Bailer ☒ Other: Grab

Was the water source purged before sampling? Yes ☒ No ☐ If yes, volume (gal.) and/or time (min) purged: 15mins

Is it possible to run water for 30 minutes? Yes ☒ No ☐ If no, please explain: _____

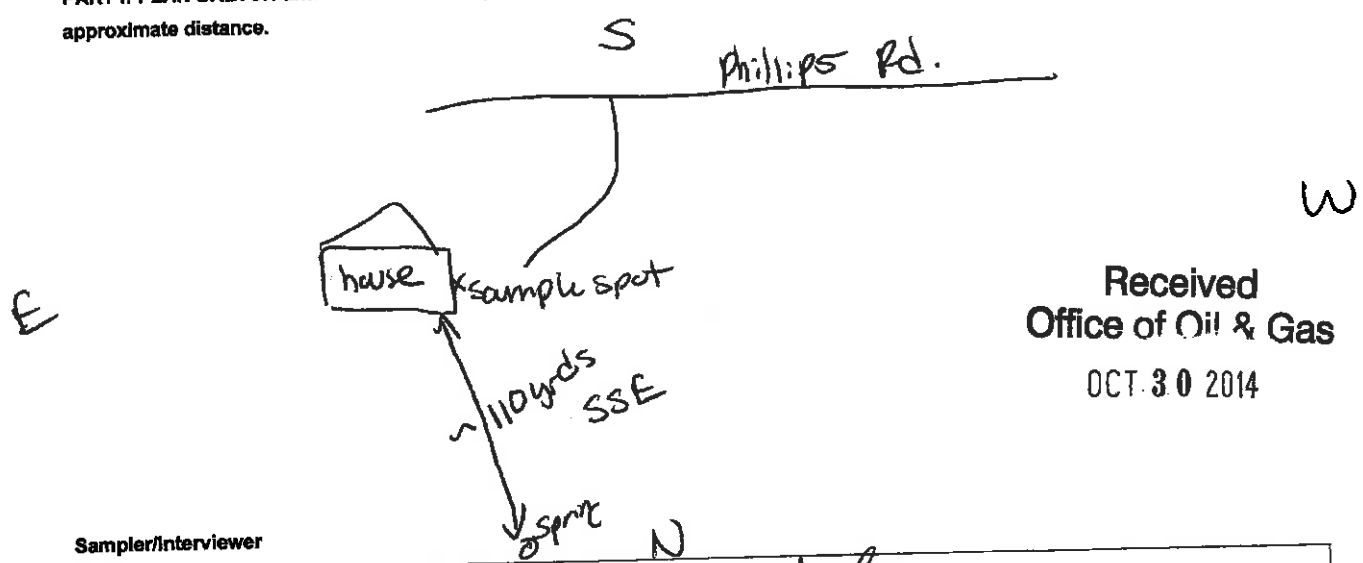
Average water usage within last 24 hours NA

Chain of custody attached? ☒ Yes ☐ No Name of Certified Laboratory: Fairway Laboratories, Inc.

FIELD METER TYPE: Oakton Meter Calibrated? Yes ☒ No ☐

FIELD PARAMETERS: Turbidity: _____ pH: 6.92 Conductivity: 125.0 µS Temperature: 11.5 °C

PART I: PLAN SKETCH and PHOTOGRAPHS ***(use additional pages as necessary).*** **Show compass course and provide approximate distance.**



Received
Office of Oil & Gas
OCT 30 2014

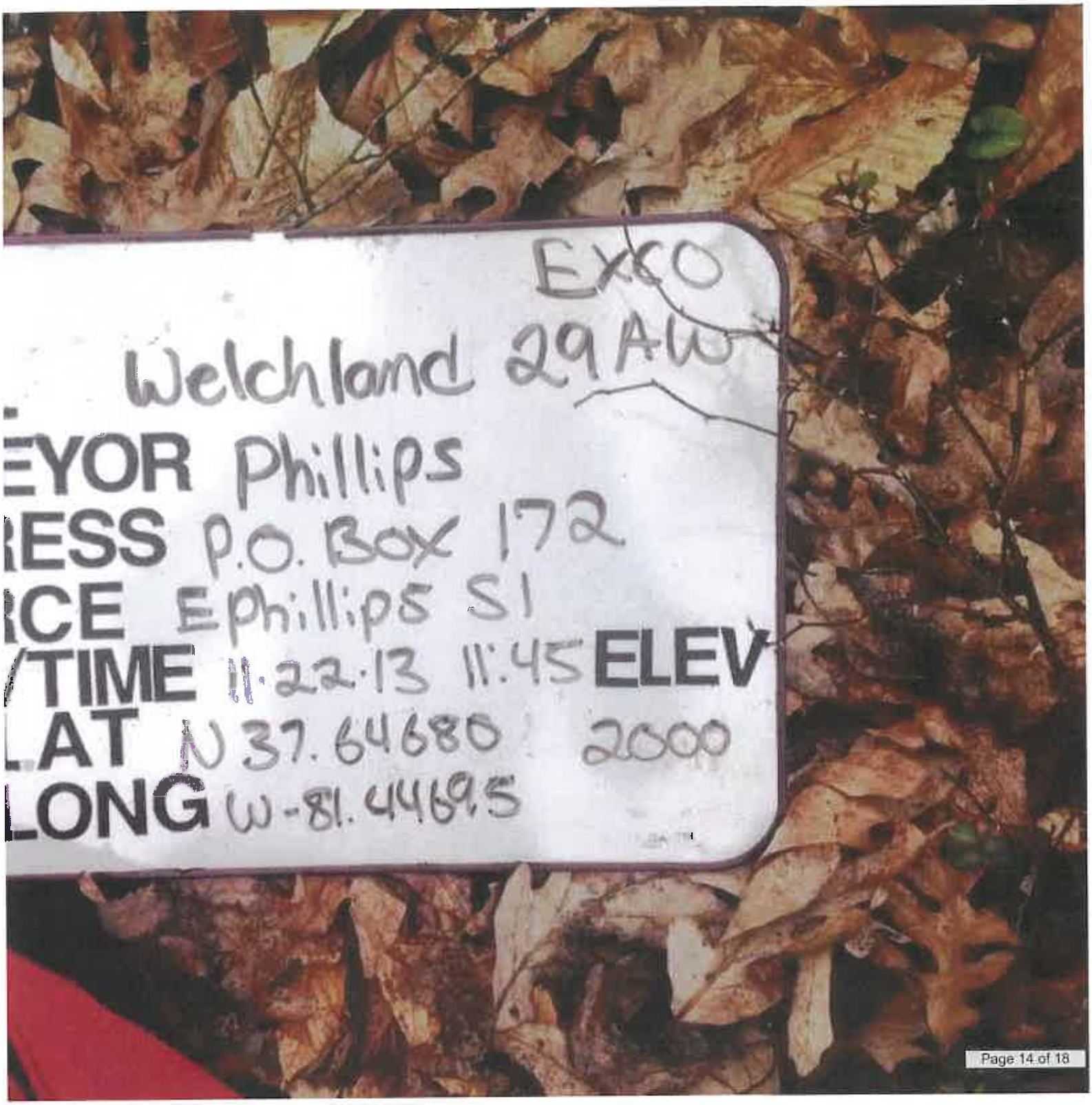
Sampler/Interviewer

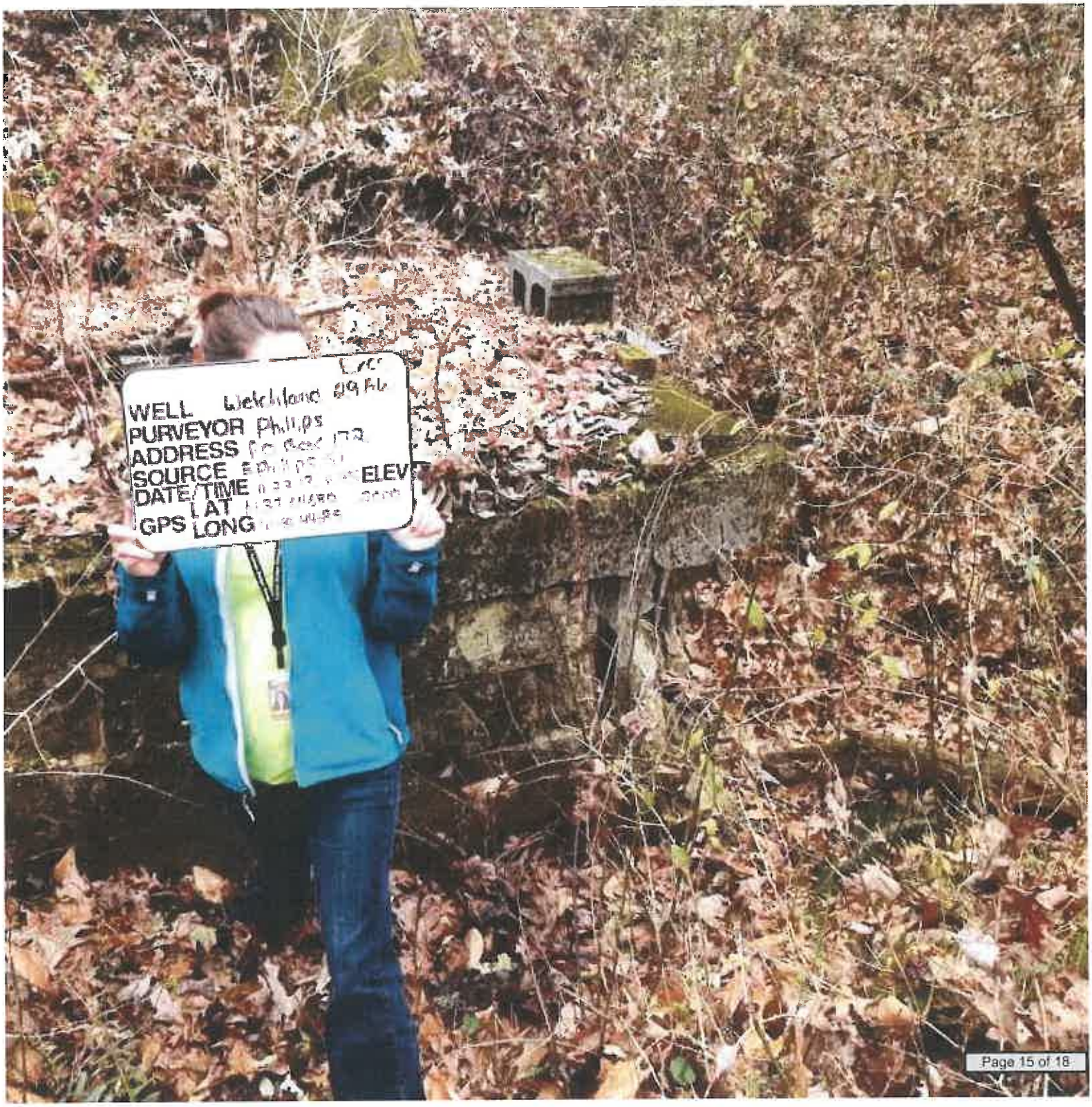
I hereby acknowledge that I have supplied the correct information to the best of my knowledge

Sign Stephanie Hyler Print Stephanie Hyler Date 11-22-13

Company: Fairway Laboratories Inc. Address: _____ Phone: _____

Page 3 of 3





W. Va. Code R. 35-8-15 Water Supply Testing.

15.3.b. **Parameters** - The operator shall analyze samples for the following parameters:

15.3.b.1. Total Petroleum Hydrocarbons (GRO, DRO, ORO)
15.3.b.2. BTEX
15.3.b.3. Chloride
15.3.b.4. Sodium
15.3.b.5. Total Dissolved Solids (TDS)
15.3.b.6. Aluminum
15.3.b.7. Arsenic
15.3.b.8. Barium
15.3.b.9. Iron
15.3.b.10. Manganese
15.3.b.11. pH
15.3.b.12. Calcium
15.3.b.13. Sulfate
15.3.b.14. Detergents (MBAS)
15.3.b.15. Dissolved Methane
15.3.b.16. Dissolved Ethane
15.3.b.17. Dissolved Butane
15.3.b.18. Dissolved Propane
15.3.b.19. Bacteria (total coliform)
15.3.b.20. Any others parameters determined by the operator or the Chief.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources	Project:	Welchland 29AW	
260 Executive Drive	Project Number:	Phillips, Shirley M.	**Reported:**
Cranberry Township PA, 16066	Collector:	SS	10/17/14 11:02
Project Manager: Brian Rushe	Number of Containers:	6	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Sample Type	Date Sampled	Date Received
HC 89 BOX 408/SPHILLIPS W1	4J17007-01	Water	Grab	12/16/13 11:20	12/17/13 13:40
HC 89 BOX 408/SPHILLIPS S1	4J17007-02	Water	Grab	12/16/13 11:00	12/17/13 13:40

Laboratory ID: 4J17007 is the resamples for GRO/ORO/DRO for laboratory report ID: 3K21140. 10/17/14 mlf

Fairway Laboratories, Inc.

Reviewed and Submitted by:

Michael P. Tyler
Laboratory Director

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources
260 Executive Drive
Cranberry Township PA, 16066
Project Manager: Brian Rushe

Project: Welchland 29AW
Project Number: Phillips, Shirley M.
Collector: SS
Number of Containers: 6

Reported: 10/17/14 11:02

Client Sample ID: HC 89 BOX 408/SPHILLIPS W1 **Date/Time Sampled:** 12/16/13 11:20

Laboratory Sample ID: 4J17007-01 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Extractable Petroleum Hydrocarbons by 8015								
Oil Range Organics	<34.3	34.3	258	ug/l	12/21/13 03:51	EPA 8015D mod	rsr	
Diesel Range Organics	<63.1	63.1	258	ug/l	12/21/13 03:51	EPA 8015D mod	rsr	
Surrogate: o-Terphenyl		*46.1 %*	*40-140*		*12/21/13 03:51*	*EPA 8015D mod*	rsr	
Volatile Petroleum Hydrocarbons by 8015 GRO								
Gasoline Range Organics	<9.35	9.35	100	ug/l	12/18/13 00:35	EPA 8015D mod	bag	
Surrogate: a,a,a-Trifluorotoluene		*98.1 %*	*70-130*		*12/18/13 00:35*	*EPA 8015D mod*	bag	

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources
260 Executive Drive
Cranberry Township PA, 16066
Project Manager: Brian Rushe

Project: Welchland 29AW
Project Number: Phillips, Shirley M.
Collector: SS
Number of Containers: 6

Reported: 10/17/14 11:02

Client Sample ID: HC 89 BOX 408/SPHILLIPS S1

Date/Time Sampled: 12/16/13 11:00

Laboratory Sample ID: 4J17007-02 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Extractable Petroleum Hydrocarbons by 8015								
Oil Range Organics	<33.7	33.7	252	ug/l	12/21/13 05:07	EPA 8015D mod	rsr	
Diesel Range Organics	<61.9	61.9	252	ug/l	12/21/13 05:07	EPA 8015D mod	rsr	
Surrogate: o-Terphenyl		*21.2 %*	*40-140*		*12/21/13 05:07*	*EPA 8015D mod*	rsr	2n
Volatile Petroleum Hydrocarbons by 8015 GRO								
Gasoline Range Organics	<9.35	9.35	100	ug/l	12/18/13 01:11	EPA 8015D mod	bag	
Surrogate: a,a,a-Trifluorotoluene		*96.6 %*	*70-130*		*12/18/13 01:11*	*EPA 8015D mod*	bag	

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources
260 Executive Drive
Cranberry Township PA, 16066
Project Manager: Brian Rushe

Project: Welchland 29AW
Project Number: Phillips, Shirley M.
Collector: SS
Number of Containers: 6

Reported:
10/17/14 11:02

Notes

2n The surrogate value is not within the indicated range, results are considered to be estimated.

Definitions

If surrogate values are not within the indicated range, then the results are considered to be estimated.

Reporting limits are adjusted accordingly when samples are analyzed at a dilution due to the matrix.

The following analyses are to be performed immediately upon sampling: pH, sulfite, chlorine residual, dissolved oxygen, filtration for ortho phosphorus, and ferrous iron. The date and time reported reflect the time the samples were analyzed at the laboratory.

MBAS, calculated as LAS, mol wt 348

If the solid sample weight for VOC analysis does not fall within the 3.5-6.5 gram range, the results are considered estimated values.

Samples collected by Fairway Laboratories' personnel are done so in accordance with Standard Operating Procedures established by Fairway Laboratories.

* P indicates analysis performed by Fairway Laboratories, Inc. at the Pennsdale location. This location is PaDEP Chapter 252 certified.

< Represents "less than" - indicates that the result was less than the reporting limit.

MDL Method Detection Limit - is the lowest or minimum level that provides 99% confidence level that the analyte is detected. Any reported result values that are less than the RL are considered estimated values.

RL Reporting Limit - is the lowest or minimum level at which the analyte can be quantified.

[CALC] Indicates a calculated result. Calculations use results from other analyses performed under accredited methods.

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources	Project:	Welchland 29AW	
260 Executive Drive	Project Number:	Phillips, Shirley M.	**Reported:**
Cranberry Township PA, 16066	Collector:	SS	10/17/14 11:02
Project Manager: Brian Rushe	Number of Containers:	6	

Terms & Conditions

Services provided by Fairway Laboratories Inc. are limited to the terms and conditions stated herein, unless otherwise agreed to in a formal contract.

CHAIN OF CUSTODY Fairway Laboratories Inc. ("Fairway," "us" or "we") will initiate a chain-of-custody/request for analysis upon sample receipt unless the client includes a completed form with the received sample(s). Upon request, Fairway will provide chain-of-custody forms for use.

CONFIDENTIALITY Fairway maintains confidentiality in all of our client interactions. The client's consent will be required before releasing information about the services provided.

CONTRACTS All contracts are subject to review and approval by Fairway's legal council. Each contract must be signed by a corporate officer.

PAYMENT/BILLING Unless otherwise set forth in a signed contract or purchase order, terms of payment are "NET 30 Days." The time allowed for payment shall begin based on the invoice date. A 1.5% per month service charge may be added to all unpaid balances beyond the initial 30 days. In its sole discretion, Fairway reserves the right to request payment before services and hold sample results for payment of due balances. We will not bill a third party without prior agreement among all parties acknowledging and accepting responsibility for payment.

SAMPLE COLLECTION AND SUBMISSION Clients not requesting collection services from Fairway are responsible for proper collection, preservation, packaging, and delivery of samples to the laboratory in accordance with current law and commercial practice. Fairway shall have no responsibility for sample integrity prior to the receipt of the sample(s) and/or for any inaccuracy in test or analyses results as a result of the failure of the client or any third party to maintain the integrity of samples prior to delivery to Fairway. All samples submitted must be accompanied by a completed chain of custody or similar document clearly noting the requested analyses, dates/time sampled, client contact information, and trail of custody.

SUBCONTRACTING Some analyses may require subcontracting to another laboratory. Unless the client indicates otherwise, this decision will be made by Fairway. Subcontracted work will be identified on the final report in accordance with NELAC requirements.

RETURN OF RESULTS Fairway routinely provides faxed or verbal results within 10 working days of receipt of sample(s) and a hard copy of the data results is routinely received via US Postal Service within 15 working days. At the request of the client, Fairway may offer expedited return of sample results. Surcharges may apply to rush requests. All rush requests must be pre-approved by Fairway. We reserve the right to charge an archive retrieval fee for results older than one (1) year from the date of the request. All records will be maintained by Fairway for 5 years, after which, they will be destroyed.

SAMPLE DISPOSAL Fairway will maintain samples for four (4) weeks after the sample receipt date. Fairway will dispose of samples which are not and/or do not contain hazardous wastes (as such term is defined by applicable federal or state law), unless prior arrangements have been made for long-term storage. Fairway reserves the right to charge a disposal fee for the proper disposal of samples found or suspected to contain hazardous waste. A return shipping charge will be invoiced for samples returned to the client at their request.

HAZARD COMMUNICATION The client has the responsibility to inform the laboratory of any hazardous characteristics known or suspected about the sample, and to provide information on hazard prevention and personal protection as necessary or otherwise required by applicable law.

WARRANTY AND LIMITATION OF LIABILITY For services rendered, Fairway warrants that it will apply its best scientific knowledge and judgment and to employ its best level of effort consistent with professional standards within the environmental testing industry in performing the analytical services requested by its clients. We disclaim any other warranties, expressed or implied by law. Fairway does not accept any legal responsibility for the purposes for which client uses the test results.

LITIGATION All costs associated with compliance to any subpoena for documents, for testimony in a court of law, or for any other purpose relating to work performed by Fairway Laboratories, Inc. shall be invoiced by Fairway and paid by client. These costs shall include, but are not limited to, hourly charges for the persons involved, travel, mileage, and accommodations and for any and all other expenses associated with said litigation.

Fairway Laboratories, Inc.

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

CHAIN OF CUSTODY / REQUEST FOR ANALYSIS

Please print. See back of COC for instructions/terms and conditions.

2019 9th Ave.
P.O. Box 1925
Altoona, PA 16602
Phone: (814) 946-4306
Fax: (814) 946-8791

FAIRWAY LABORATORIES
Environmental Laboratory

89 Kristi Rd
Pennsdale, PA 17756
Phone: (570) 494-6380

4J17007 #1

(he) 10-17-14 QCC 3162140-20

COC #

Page ____ of ____

Client Name: Exco WV
Address:
Contact: Brian Rushe
Phone #:
Fax #:
Project Name: Welchland 29AW
Quote/PO #: Phillips

Received on ice? Y N
Sample Temp:

Reportable to PADEP? Yes ☐
PWSID #

TAT: Normal ☐ Rush ☐
Rush TAT subject to pre-approval and surcharge.
Date Required: __/__/__

Sample Description/Location	GRAB	Composite	Composite Start: Start Date	Composite Start: Start Time	GRAB -or- Composite End: End Date	GRAB -or- Composite End: End Time	Matrix: Solid	Matrix: Water	Matrix: Other	# of Containers	Analyses Requested: Exco (resample)	Bottle Type/Comments
HC 89 Box 408												
S Phillips (W)	X				12-16-13	11:20		X		3	X	
S Phillips S1	X				12-16-13	11:00		X		3	X	

LAB USE ONLY

FedEx USPS
UPS Other

Tracking #

	Date	Time
Sampled by:	12-16-13	11:30
Relinquished by:	12-17-13	6:00
Relinquished by:	12/17	13:40
Relinquished by:		

	Date	Time
Received by:	12/17	10:00
Received by:		
Received by:		
Received by:	12/17/13	13:40

Remarks

By relinquishing my sample to Fairway Laboratories, Inc., I hereby agree to the terms and conditions printed on the reverse.

White Original - FLI File Canary - FLI Copy Pink - Customer Receipt Copy

Page of 4J17007 #2 (Re) 10-17-14 CC

Chain of Custody Receiving Document

Page ___ of ___

Receiver: 4S

Date/Time of this check: 12/17/13 14:05 Sample Temperature: 1.4 Client: Exco WV Lab # ~~3K21440-21~~

Received at Lab on ICE ? Y ☐ * **Sample Temperature when arrived at Lab:** 1.4 **Acceptable?** Y ☐ * **or In cool down process?** ☐ *

Custody Seals? Y Intact? Y

COC/Labels on bottles agree? Y ☐ * Correct containers for all the analysis requested? Y ☐ * Matrix: water

COC #	Number and Type of BOTTLES										Comments
	Poly Non-Pres.	Poly H2SO4	Poly HNO3	Amber H2SO4	Amber Non-Pres.	Poly NaOH	VOCS (Head space?) HCL	Other ☐ *	Properly Preserved ☐ *	Bacti	
1				1			2		Y		
2				1			2		Y		

* DEVIATION PRESENT:		CLIENT CALLED:	CLIENT RESPONSE:	
☹ No Ice	( )	YES ( )	Proceed with analysis; qualify data	( )
☹ Not at Proper Temperature	( )	By Whom:	Will Resample	( )
☹ Wrong Container	( )		Provided Information	( )
☹ Missing Information:	( )	___ Date: ___	No Response; Proceed and qualified	( )
			Client Contact: ___ Date: ___	

* Comments: ___

Chain of Custody Receiving Document

This is a date sensitive document and may not be current after December 11, 2013.

W. Va. Code R. 35-8-15 Water Supply Testing.

15.3.b. **Parameters** - The operator shall analyze samples for the following parameters:

15.3.b.1. Total Petroleum Hydrocarbons (GRO, DRO, ORO)
15.3.b.2. BTEX
15.3.b.3. Chloride
15.3.b.4. Sodium
15.3.b.5. Total Dissolved Solids (TDS)
15.3.b.6. Aluminum
15.3.b.7. Arsenic
15.3.b.8. Barium
15.3.b.9. Iron
15.3.b.10. Manganese
15.3.b.11. pH
15.3.b.12. Calcium
15.3.b.13. Sulfate
15.3.b.14. Detergents (MBAS)
15.3.b.15. Dissolved Methane
15.3.b.16. Dissolved Ethane
15.3.b.17. Dissolved Butane
15.3.b.18. Dissolved Propane
15.3.b.19. Bacteria (total coliform)
15.3.b.20. Any others parameters determined by the operator or the Chief.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources
260 Executive Drive
Cranberry Township PA, 16066
Project Manager: Brian Rushe

Project: Welchland 29AW
Project Number: Phillips, Ethel
Collector: SS
Number of Containers: 3

Reported:
10/17/14 11:03

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Sample Type	Date Sampled	Date Received
PO BOX 172/EPHILLIPS S1	4J17009-01	Water	Grab	12/19/13 11:20	12/20/13 06:30

Laboratory ID: 4J17009 is the resample for GRO/ORO/DRO for laboratory report ID: 3K22098. 10/17/14 mlf

Client Sample ID: PO BOX 172/EPHILLIPS S1 **Date/Time Sampled:** 12/19/13 11:20

Laboratory Sample ID: 4J17009-01 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Extractable Petroleum Hydrocarbons by 8015								
Oil Range Organics	<41.7	41.7	312	ug/l	12/21/13 14:43	EPA 8015D mod	rsr	
Diesel Range Organics	162 J	76.6	312	ug/l	12/21/13 14:43	EPA 8015D mod	rsr	
Surrogate: o-Terphenyl		*62.4 %*	*40-140*		*12/21/13 14:43*	*EPA 8015D mod*	rsr	
Volatile Petroleum Hydrocarbons by 8015 GRO								
Gasoline Range Organics	<9.35	9.35	100	ug/l	12/23/13 11:50	EPA 8015D mod	bag	
Surrogate: a,a,a-Trifluorotoluene		*92.0 %*	*70-130*		*12/23/13 11:50*	*EPA 8015D mod*	bag	

Fairway Laboratories, Inc.

Reviewed and Submitted by:

Michael P. Tyler
Laboratory Director

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources	Project:	Welchland 29AW	
260 Executive Drive	Project Number:	Phillips, Ethel	**Reported:**
Cranberry Township PA, 16066	Collector:	SS	10/17/14 11:03
Project Manager: Brian Rushe	Number of Containers:	3	

Notes

J — Detected between the Method Detection Limit (MDL) and the Reporting Limit (RL); therefore, result is an estimated value.

Definitions

If surrogate values are not within the indicated range, then the results are considered to be estimated.

Reporting limits are adjusted accordingly when samples are analyzed at a dilution due to the matrix.

The following analyses are to be performed immediately upon sampling: pH, sulfite, chlorine residual, dissolved oxygen, filtration for ortho phosphorus, and ferrous iron. The date and time reported reflect the time the samples were analyzed at the laboratory.

MBAS, calculated as LAS, mol wt 348

If the solid sample weight for VOC analysis does not fall within the 3.5-6.5 gram range, the results are considered estimated values.

Samples collected by Fairway Laboratories' personnel are done so in accordance with Standard Operating Procedures established by Fairway Laboratories.

P indicates analysis performed by Fairway Laboratories, Inc. at the Pennsdale location. This location is PaDEP Chapter 252 certified.

< — Represents "less than" - indicates that the result was less than the reporting limit.

MDL — Method Detection Limit - is the lowest or minimum level that provides 99% confidence level that the analyte is detected. Any reported result values that are less than the RL are considered estimated values.

RL — Reporting Limit - is the lowest or minimum level at which the analyte can be quantified.

[CALC] — Indicates a calculated result. Calculations use results from other analyses performed under accredited methods.

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources	Project:	Welchland 29AW	
260 Executive Drive	Project Number:	Phillips, Ethel	**Reported:**
Cranberry Township PA, 16066	Collector:	SS	10/17/14 11:03
Project Manager: Brian Rushe	Number of Containers:	3	

Terms & Conditions

Services provided by Fairway Laboratories Inc. are limited to the terms and conditions stated herein, unless otherwise agreed to in a formal contract.

CHAIN OF CUSTODY Fairway Laboratories Inc. ("Fairway," "us" or "we") will initiate a chain-of-custody/request for analysis upon sample receipt unless the client includes a completed form with the received sample(s). Upon request, Fairway will provide chain-of-custody forms for use.

CONFIDENTIALITY Fairway maintains confidentiality in all of our client interactions. The client's consent will be required before releasing information about the services provided.

CONTRACTS All contracts are subject to review and approval by Fairway's legal council. Each contract must be signed by a corporate officer.

PAYMENT/BILLING Unless otherwise set forth in a signed contract or purchase order, terms of payment are "NET 30 Days." The time allowed for payment shall begin based on the invoice date. A 1.5% per month service charge may be added to all unpaid balances beyond the initial 30 days. In its sole discretion, Fairway reserves the right to request payment before services and hold sample results for payment of due balances. We will not bill a third party without prior agreement among all parties acknowledging and accepting responsibility for payment.

SAMPLE COLLECTION AND SUBMISSION Clients not requesting collection services from Fairway are responsible for proper collection, preservation, packaging, and delivery of samples to the laboratory in accordance with current law and commercial practice. Fairway shall have no responsibility for sample integrity prior to the receipt of the sample(s) and/or for any inaccuracy in test or analyses results as a result of the failure of the client or any third party to maintain the integrity of samples prior to delivery to Fairway. All samples submitted must be accompanied by a completed chain of custody or similar document clearly noting the requested analyses, dates/time sampled, client contact information, and trail of custody.

SUBCONTRACTING Some analyses may require subcontracting to another laboratory. Unless the client indicates otherwise, this decision will be made by Fairway. Subcontracted work will be identified on the final report in accordance with NELAC requirements.

RETURN OF RESULTS Fairway routinely provides faxed or verbal results within 10 working days of receipt of sample(s) and a hard copy of the data results is routinely received via US Postal Service within 15 working days. At the request of the client, Fairway may offer expedited return of sample results. Surcharges may apply to rush requests. All rush requests must be pre-approved by Fairway. We reserve the right to charge an archive retrieval fee for results older than one (1) year from the date of the request. All records will be maintained by Fairway for 5 years, after which, they will be destroyed.

SAMPLE DISPOSAL Fairway will maintain samples for four (4) weeks after the sample receipt date. Fairway will dispose of samples which are not and/or do not contain hazardous wastes (as such term is defined by applicable federal or state law), unless prior arrangements have been made for long-term storage. Fairway reserves the right to charge a disposal fee for the proper disposal of samples found or suspected to contain hazardous waste. A return shipping charge will be invoiced for samples returned to the client at their request.

HAZARD COMMUNICATION The client has the responsibility to inform the laboratory of any hazardous characteristics known or suspected about the sample, and to provide information on hazard prevention and personal protection as necessary or otherwise required by applicable law.

WARRANTY AND LIMITATION OF LIABILITY For services rendered, Fairway warrants that it will apply its best scientific knowledge and judgment and to employ its best level of effort consistent with professional standards within the environmental testing industry in performing the analytical services requested by its clients. We disclaim any other warranties, expressed or implied by law. Fairway does not accept any legal responsibility for the purposes for which client uses the test results.

LITIGATION All costs associated with compliance to any subpoena for documents, for testimony in a court of law, or for any other purpose relating to work performed by Fairway Laboratories, Inc. shall be invoiced by Fairway and paid by client. These costs shall include, but are not limited to, hourly charges for the persons involved, travel, mileage, and accommodations and for any and all other expenses associated with said litigation.

Fairway Laboratories, Inc.

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

4J17009#1 (Re) 10-17-14 OCC ~~3K22098-11~~

COC #

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Please print. See back of COC for instructions/terms and conditions.

2019 9th Ave.
P.O. Box 1925
Altoona, PA 16602
Phone: (814) 946-4306
Fax: (814) 946-8791

FAIRWAY LABORATORIES
Environmental Laboratory

89 Kristi Rd
Pennsdale, PA 17756
Phone: (570) 494-6380

Client Name: EXCO WV
Address:
Contact: Brian Rushe
Phone #:
Fax #:
Project Name: Welchland 29Ato
Quote/PO #: Phillips

Received on ice? Y N
Sample Temp:

Reportable to PADEP? Yes ☐
PWSID #

TAT: Normal ☐ Rush ☐
Rush TAT subject to pre-approval and surcharge.
Date Required: __/__/__

LAB USE ONLY
FedEx USPS
UPS Other
Tracking #

Analyses Requested: EXCO (presample)

Sample Description/Location	GRAB	Composite	Composite Start: Start Date	Start Time	GRAB -or- Composite End: End Date	End Time	Matrix: Solid	Water	Other	# of Containers	EXCO (presample)							Bottle Type/Comments
P.O. Box 172																		
E Phillips S1	X				12-19-13	11:20		X		3	X							

Received
Office of Oil & Gas
OCT 30 2014

	Date	Time		Date	Time
Sampled by: [signature]	12-19-13	11:30	Received by: D Anderson	12/20/13	13:25
Relinquished by: [signature]	12-20-19	13:25	Received by:		
Relinquished by: D Anderson	12/20/19	16:30	Received by:		
Relinquished by:			Received by: CB	12/20	6:30

Remarks

By relinquishing my sample to Fairway Laboratories, Inc., I hereby agree to the terms and conditions printed on the reverse.

White Original - FLI File Canary - FLI Copy Pink - Customer Receipt Copy

4J17009 #2
Re 10-17-14 QCC

Chain of Custody Receiving Document

Receiver: CB

Page ___ of ___

Date/Time of this check: 12/23 8'45 Sample Temperature: 3 Client: EXCO Lab # ~~3K22098-12~~

Received at Lab on ICE ? Y ☐ * **Sample Temperature when arrived at Lab:** 3.6 **Acceptable?** Y ☐ * **or In cool down process?** ☐ *

Custody Seals? Y/ Intact? Y

COC/Labels on bottles agree? Y ☐* Correct containers for all the analysis requested? Y ☐ * Matrix: WATER

COC #	Number and Type of BOTTLES										Comments
	Poly Non-Pres.	Poly H2SO4	Poly HNO3	Amber H2SO4	Amber Non-Pres.	Poly NaOH	VOCS (Head space?)	Other ☐ *	Properly Preserved ☐ *	Bacti	
51							2 Hea		N/A		

Received
Office of Oil & Gas
OCT 30 2014

* DEVIATION PRESENT:	CLIENT CALLED:	CLIENT RESPONSE:
☹ No Ice ( )	YES ( )	Proceed with analysis; qualify data ( )
☹ Not at Proper Temperature ( )	By Whom:	Will Resample ( )
☹ Wrong Container ( )		Provided Information ( )
☹ Missing Information: ( )	Date:	No Response; Proceed and qualified ( )
		Client Contact: Date:

* Comments: RESAMPLE

Chain of Custody Receiving Document

This is a date sensitive document and may not be current after December 11, 2013.

W. Va. Code R. 35-8-15 Water Supply Testing.

15.3.b. **Parameters** - The operator shall analyze samples for the following parameters:

15.3.b.1. Total Petroleum Hydrocarbons (GRO, DRO, ORO)
15.3.b.2. BTEX
15.3.b.3. Chloride
15.3.b.4. Sodium
15.3.b.5. Total Dissolved Solids (TDS)
15.3.b.6. Aluminum
15.3.b.7. Arsenic
15.3.b.8. Barium
15.3.b.9. Iron
15.3.b.10. Manganese
15.3.b.11. pH
15.3.b.12. Calcium
15.3.b.13. Sulfate
15.3.b.14. Detergents (MBAS)
15.3.b.15. Dissolved Methane
15.3.b.16. Dissolved Ethane
15.3.b.17. Dissolved Butane
15.3.b.18. Dissolved Propane
15.3.b.19. Bacteria (total coliform)
15.3.b.20. Any others parameters determined by the operator or the Chief.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources	Project:	Welchland 29AW	
260 Executive Drive	Project Number:	Daniels, Barbara	**Reported:**
Cranberry Township PA, 16066	Collector:	SS	10/17/14 11:04
Project Manager: Brian Rushe	Number of Containers:	3	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Sample Type	Date Sampled	Date Received
646 PHILLIPS RD/BDANIELS S1	4J17010-01	Water	Grab	12/16/13 11:40	12/17/13 13:40

Laboratory ID: 4J17010 is the resample for GRO/ORO/DRO for laboratory report ID: 3K22099. 10/17/14 mlf

Client Sample ID: 646 PHILLIPS RD/BDANIELS S1 **Date/Time Sampled:** 12/16/13 11:40

Laboratory Sample ID: 4J17010-01 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Extractable Petroleum Hydrocarbons by 8015								
Oil Range Organics	<34.0	34.0	255	ug/l	12/21/13 06:23	EPA 8015D mod	rsr	
Diesel Range Organics	<62.5	62.5	255	ug/l	12/21/13 06:23	EPA 8015D mod	rsr	
Surrogate: o-Terphenyl		*41.1 %*	*40-140*		*12/21/13 06:23*	*EPA 8015D mod*	rsr	
Volatile Petroleum Hydrocarbons by 8015 GRO								
Gasoline Range Organics	<9.35	9.35	100	ug/l	12/18/13 01:47	EPA 8015D mod	bag	
Surrogate: a,a,a-Trifluorotoluene		*97.0 %*	*70-130*		*12/18/13 01:47*	*EPA 8015D mod*	bag	

Fairway Laboratories, Inc.

Reviewed and Submitted by:

Michael P. Tyler
Laboratory Director

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources	Project:	Welchland 29AW	
260 Executive Drive	Project Number:	Daniels, Barbara	**Reported:**
Cranberry Township PA, 16066	Collector:	SS	10/17/14 11:04
Project Manager: Brian Rushe	Number of Containers:	3	

Definitions

If surrogate values are not within the indicated range, then the results are considered to be estimated.

Reporting limits are adjusted accordingly when samples are analyzed at a dilution due to the matrix.

The following analyses are to be performed immediately upon sampling: pH, sulfite, chlorine residual, dissolved oxygen, filtration for ortho phosphorus, and ferrous iron. The date and time reported reflect the time the samples were analyzed at the laboratory.

MBAS, calculated as LAS, mol wt 348

If the solid sample weight for VOC analysis does not fall within the 3.5-6.5 gram range, the results are considered estimated values.

Samples collected by Fairway Laboratories' personnel are done so in accordance with Standard Operating Procedures established by Fairway Laboratories.

*	P indicates analysis performed by Fairway Laboratories, Inc. at the Pennsdale location. This location is PaDEP Chapter 252 certified.
<	Represents "less than" - indicates that the result was less than the reporting limit.
MDL	Method Detection Limit - is the lowest or minimum level that provides 99% confidence level that the analyte is detected. Any reported result values that are less than the RL are considered estimated values.
RL	Reporting Limit - is the lowest or minimum level at which the analyte can be quantified.
[CALC]	Indicates a calculated result. Calculations use results from other analyses performed under accredited methods.

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources	Project:	Welchland 29AW	
260 Executive Drive	Project Number:	Daniels, Barbara	**Reported:**
Cranberry Township PA, 16066	Collector:	SS	10/17/14 11:04
Project Manager: Brian Rushe	Number of Containers:	3	

Terms & Conditions

Services provided by Fairway Laboratories Inc. are limited to the terms and conditions stated herein, unless otherwise agreed to in a formal contract.

CHAIN OF CUSTODY Fairway Laboratories Inc. ("Fairway," "us" or "we") will initiate a chain-of-custody/request for analysis upon sample receipt unless the client includes a completed form with the received sample(s). Upon request, Fairway will provide chain-of-custody forms for use.

CONFIDENTIALITY Fairway maintains confidentiality in all of our client interactions. The client's consent will be required before releasing information about the services provided.

CONTRACTS All contracts are subject to review and approval by Fairway's legal council. Each contract must be signed by a corporate officer.

PAYMENT/BILLING Unless otherwise set forth in a signed contract or purchase order, terms of payment are "NET 30 Days." The time allowed for payment shall begin based on the invoice date. A 1.5% per month service charge may be added to all unpaid balances beyond the initial 30 days. In its sole discretion, Fairway reserves the right to request payment before services and hold sample results for payment of due balances. We will not bill a third party without prior agreement among all parties acknowledging and accepting responsibility for payment.

SAMPLE COLLECTION AND SUBMISSION Clients not requesting collection services from Fairway are responsible for proper collection, preservation, packaging, and delivery of samples to the laboratory in accordance with current law and commercial practice. Fairway shall have no responsibility for sample integrity prior to the receipt of the sample(s) and/or for any inaccuracy in test or analyses results as a result of the failure of the client or any third party to maintain the integrity of samples prior to delivery to Fairway. All samples submitted must be accompanied by a completed chain of custody or similar document clearly noting the requested analyses, dates/time sampled, client contact information, and trail of custody.

SUBCONTRACTING Some analyses may require subcontracting to another laboratory. Unless the client indicates otherwise, this decision will be made by Fairway. Subcontracted work will be identified on the final report in accordance with NELAC requirements.

RETURN OF RESULTS Fairway routinely provides faxed or verbal results within 10 working days of receipt of sample(s) and a hard copy of the data results is routinely received via US Postal Service within 15 working days. At the request of the client, Fairway may offer expedited return of sample results. Surcharges may apply to rush requests. All rush requests must be pre-approved by Fairway. We reserve the right to charge an archive retrieval fee for results older than one (1) year from the date of the request. All records will be maintained by Fairway for 5 years, after which, they will be destroyed.

SAMPLE DISPOSAL Fairway will maintain samples for four (4) weeks after the sample receipt date. Fairway will dispose of samples which are not and/or do not contain hazardous wastes (as such term is defined by applicable federal or state law), unless prior arrangements have been made for long-term storage. Fairway reserves the right to charge a disposal fee for the proper disposal of samples found or suspected to contain hazardous waste. A return shipping charge will be invoiced for samples returned to the client at their request.

HAZARD COMMUNICATION The client has the responsibility to inform the laboratory of any hazardous characteristics known or suspected about the sample, and to provide information on hazard prevention and personal protection as necessary or otherwise required by applicable law.

WARRANTY AND LIMITATION OF LIABILITY For services rendered, Fairway warrants that it will apply its best scientific knowledge and judgment and to employ its best level of effort consistent with professional standards within the environmental testing industry in performing the analytical services requested by its clients. We disclaim any other warranties, expressed or implied by law. Fairway does not accept any legal responsibility for the purposes for which client uses the test results.

LITIGATION All costs associated with compliance to any subpoena for documents, for testimony in a court of law, or for any other purpose relating to work performed by Fairway Laboratories, Inc. shall be invoiced by Fairway and paid by client. These costs shall include, but are not limited to, hourly charges for the persons involved, travel, mileage, and accommodations and for any and all other expenses associated with said litigation.

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Please print. See back of COC for instructions/terms and conditions.

2019 9th Ave.
P.O. Box 1925
Altoona, PA 16602
Phone: (814) 946-4306
Fax: (814) 946-8791

FAIRWAY LABORATORIES
Environmental Laboratory

89 Kristi Rd
Pennsdale, PA 17756
Phone: (570) 494-6380

4J17010 #1

(re) 10-17-14 acc
3K22049-10
COC #

Page ____ of ____

Client Name: EXCO WV
Address:
Contact: Brian Rushe
Phone #:
Fax #:
Project Name: Welchland 29Aw
Quote/PO #: Daniels

Received on ice? Y N
Sample Temp:

Reportable to PADEP? Yes ☐
PWSID #

TAT: Normal ☐ Rush ☐
Rush TAT subject to pre-approval and surcharge.
Date Required: __/__/__

Sample Description/Location	GRAB	Composite	Composite Start: Start Date	Composite Start: Start Time	GRAB -or- Composite End: End Date	GRAB -or- Composite End: End Time	Matrix: Solid	Matrix: Water	Matrix: Other	# of Containers	Analyses Requested: EXCO (Resample)	Bottle Type/Comments
646 Phillips Rd												
BDaniels S1	X				12-16-13	11:40		X		3	X	

LAB USE ONLY

FedEx USPS
UPS Other

Tracking #

	Date	Time		Date	Time
Sampled by:	12-16-13	12:00	Received by:	12/17	10:00
Relinquished by:	12-17-13	6:00	Received by:	Date	Time
Relinquished by:	12/17/13	13:40	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date 12/17/13	Time 1340

Remarks

By relinquishing my sample to Fairway Laboratories, Inc., I hereby agree to the terms and conditions printed on the reverse.

White Original - FLI File Canary - FLI Copy Pink - Customer Receipt Copy

Received
Office of Oil & Gas
OCT 30 2014

Chain of Custody Receiving Document

Page ___ of ___

Receiver: YNS (R) 10-17-14 acc

Date/Time of this check: 12/17/13 14:07 Sample Temperature: 1.4 Client: Exco WV Lab # 3K22099-11

Received at Lab on ICE ? Y ☐ * **Sample Temperature when arrived at Lab:** 1.4 **Acceptable?** Y ☐ * **or In cool down process?** ☐ *

Custody Seals? Y Intact? Y

COC/Labels on bottles agree? Y ☐* Correct containers for all the analysis requested? Y ☐ * Matrix: water

COC #	Number and Type of BOTTLES										Comments
	Poly Non-Pres.	Poly H2SO4	Poly HNO3	Amber H2SO4	Amber Non-Pres.	Poly NaOH	VOCS (Head space?) HCL	Other ☐ *	Properly Preserved ☐ *	Bacti	
1				1			2		Y		

*** DEVIATION PRESENT:**
- ⊗ No Ice ( )
- ⊗ Not at Proper Temperature ( )
- ⊗ Wrong Container ( )
- ⊗ Missing Information: ( )

CLIENT CALLED:
YES ( )
By Whom:
_____ Date: _____

CLIENT RESPONSE:
- Proceed with analysis; qualify data ( )
- Will Resample ( )
- Provided Information ( )
- No Response; Proceed and qualified ( )

Client Contact: _____ Date: _____

* Comments:

Chain of Custody Receiving Document

This is a date sensitive document and may not be current after December 11, 2013.

4J17010#3

W. Va. Code R. 35-8-15 Water Supply Testing.

15.3.b. **Parameters** - The operator shall analyze samples for the following parameters:

15.3.b.1. Total Petroleum Hydrocarbons (GRO, DRO, ORO)
15.3.b.2. BTEX
15.3.b.3. Chloride
15.3.b.4. Sodium
15.3.b.5. Total Dissolved Solids (TDS)
15.3.b.6. Aluminum
15.3.b.7. Arsenic
15.3.b.8. Barium
15.3.b.9. Iron
15.3.b.10. Manganese
15.3.b.11. pH
15.3.b.12. Calcium
15.3.b.13. Sulfate
15.3.b.14. Detergents (MBAS)
15.3.b.15. Dissolved Methane
15.3.b.16. Dissolved Ethane
15.3.b.17. Dissolved Butane
15.3.b.18. Dissolved Propane
15.3.b.19. Bacteria (total coliform)
15.3.b.20. Any others parameters determined by the operator or the Chief.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources		Project:	Welchland 29AW	
260 Executive Drive		Project Number:	Injection Well	**Reported:**
Cranberry Township PA, 16066		Collector:	SS	10/07/14 11:19
Project Manager:	Brian Rushe	Number of Containers:	11	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Sample Type	Date Sampled	Date Received
HC 89 BOX 300/INJECTION WELL	3K08103-01	Water	Grab	11/07/13 13:00	11/08/13 18:15

3K08103 Parameter list attached as page 10 of final report. This report replaces the report issued 09/30/14 13:32. 10/07/14 CL

3K08103 Report revised. MDL values added and GRO analysis name revised. This report replaces the report printed on 12/27/13 16:12. 09/30/14 mlf

Fairway Laboratories, Inc.

Reviewed and Submitted by:

Michael P. Tyler
Laboratory Director

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources	Project:	Welchland 29AW	
260 Executive Drive	Project Number:	Injection Well	**Reported:**
Cranberry Township PA, 16066	Collector:	SS	10/07/14 11:19
Project Manager: Brian Rushe	Number of Containers:	11	

Client Sample ID: HC 89 BOX 300/INJECTION WELL **Date/Time Sampled:** 11/07/13 13:00

Laboratory Sample ID: 3K08103-01 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Extractable Petroleum Hydrocarbons by 8015								
Oil Range Organics	206000	100000	100000	ug/l	11/12/13 14:54	EPA 8015D mod	rsr	2a, 2b
Diesel Range Organics	135000	100000	100000	ug/l	11/12/13 14:54	EPA 8015D mod	rsr	2a, 2b
Surrogate: o-Terphenyl		*38.7 %*	*40-140*		*11/12/13 14:54*	*EPA 8015D mod*	rsr	
Metals by EPA 200 Series Methods								
Barium	3.61	0.132	1.00	mg/l	11/15/13 01:54	EPA 200.7/4.4	rab	
Iron	426	0.223	2.00	mg/l	11/15/13 01:54	EPA 200.7/4.4	rab	
Manganese	13.8	0.146	1.00	mg/l	11/15/13 01:56	EPA 200.7/4.4	rab	
Volatile Organic Compounds by EPA Method 8260B								
Benzene	2620	30.0	250	ug/l	11/14/13 00:27	EPA 8260B	MTC	
Toluene	14700	97.5	250	ug/l	11/14/13 00:27	EPA 8260B	MTC	
Ethylbenzene	1110	45.0	250	ug/l	11/14/13 00:27	EPA 8260B	MTC	
Xylenes (total)	11500	87.5	500	ug/l	11/14/13 00:27	EPA 8260B	MTC	
Surrogate: 4-Bromofluorobenzene		*101 %*	*70-130*		*11/14/13 00:27*	*EPA 8260B*	MTC	
Surrogate: 1,2-Dichloroethane-d4		*95.6 %*	*70-130*		*11/14/13 00:27*	*EPA 8260B*	MTC	
Surrogate: Fluorobenzene		*93.4 %*	*70-130*		*11/14/13 00:27*	*EPA 8260B*	MTC	
Conventional Chemistry Parameters by SM/EPA Methods								

Fairway Laboratories, Inc.

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources	Project:	Welchland 29AW	
260 Executive Drive	Project Number:	Injection Well	**Reported:**
Cranberry Township PA, 16066	Collector:	SS	10/07/14 11:19
Project Manager: Brian Rushe	Number of Containers:	11	

Client Sample ID: HC 89 BOX 300/INJECTION WELL **Date/Time Sampled:** 11/07/13 13:00

Laboratory Sample ID: 3K08103-01 (Water/Grab)

Analyte	Result	MDL	RL	Units	Date / Time Analyzed	Method	* Analyst	Note
Conventional Chemistry Parameters by SM/EPA Methods								
Bromide	584	3.84	20.0	mg/l	11/12/13 15:58	EPA 300.0/2.1	bdw	
Chloride	49000	1070	5000	mg/l	11/13/13 23:25	EPA 300.0/2.1	bdw	
Specific Conductance (EC)	114000		2.00	umhos/cm	11/08/13 20:55	SM20-2510B	cmh	
pH @ 16.1°C	5.41			pH Units	11/08/13 20:55	SM20-4500H + B	cmh	
Total Dissolved Solids	80400	4.00	40.0	mg/l	11/11/13 15:30	SM20-2540C	arr	
Total Suspended Solids	150	2.00	8.00	mg/l	11/12/13 13:56	SM20-2540D	arr	2a
Sulfate as SO4	271	27.9	100	mg/l	11/12/13 15:58	EPA 300.0/2.1	bdw	
Volatile Petroleum Hydrocarbons by 8015 GRO								
Gasoline Range Organics	370000	935	10000	ug/l	11/18/13 20:13	EPA 8015D mod	bag	
Surrogate: a,a,a-Trifluorotoluene		*91.9 %*	*70-130*		*11/18/13 20:13*	*EPA 8015D mod*	bag	

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources	Project:	Welchland 29AW	
260 Executive Drive	Project Number:	Injection Well	**Reported:**
Cranberry Township PA, 16066	Collector:	SS	10/07/14 11:19
Project Manager: Brian Rushe	Number of Containers:	11	

Notes

2a	The RPD result exceeded the QC control limits for the duplicate, LCSD or MSD sample analyzed.
2b	The spike recovery was outside acceptance limits for the MS and/or MSD. Data accepted based on acceptable LCS recovery.
J	Detected between the Method Detection Limit (MDL) and the Reporting Limit (RL); therefore, result is an estimated value.

Definitions

If surrogate values are not within the indicated range, then the results are considered to be estimated.

Reporting limits are adjusted accordingly when samples are analyzed at a dilution due to the matrix.

The following analyses are to be performed immediately upon sampling: pH, sulfite, chlorine residual, dissolved oxygen, filtration for ortho phosphorus, and ferrous iron. The date and time reported reflect the time the samples were analyzed at the laboratory.

MBAS, calculated as LAS, mol wt 348

If the solid sample weight for VOC analysis does not fall within the 3.5-6.5 gram range, the results are considered estimated values.

Samples collected by Fairway Laboratories' personnel are done so in accordance with Standard Operating Procedures established by Fairway Laboratories.

*	P indicates analysis performed by Fairway Laboratories, Inc. at the Pennsdale location. This location is PaDEP Chapter 252 certified.
<	Represents "less than" - indicates that the result was less than the reporting limit.
MDL	Method Detection Limit - is the lowest or minimum level that provides 99% confidence level that the analyte is detected. Any reported result values that are less than the RL are considered estimated values.
RL	Reporting Limit - is the lowest or minimum level at which the analyte can be quantified.
[CALC]	Indicates a calculated result. Calculations use results from other analyses performed under accredited methods.

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources	Project:	Welchland 29AW	
260 Executive Drive	Project Number:	Injection Well	**Reported:**
Cranberry Township PA, 16066	Collector:	SS	10/07/14 11:19
Project Manager: Brian Rushe	Number of Containers:	11	

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

2019 Ninth Avenue
PO Box 1925
Altoona, PA 16603
(814) 946-4306
NELAP: PA 07-062, VA 460212

89 Kristi Road
Pennsdale, PA 17756
(570) 494-6380
PaDEP: PA 41-04684

State Certifications: MD 275, WV 364

FAIRWAY LABORATORIES
www.fairwaylaboratories.com

EXCO Resources	Project:	Welchland 29AW	
260 Executive Drive	Project Number:	Injection Well	**Reported:**
Cranberry Township PA, 16066	Collector:	SS	10/07/14 11:19
Project Manager: Brian Rushe	Number of Containers:	11	

Terms & Conditions

Services provided by Fairway Laboratories Inc. are limited to the terms and conditions stated herein, unless otherwise agreed to in a formal contract.

CHAIN OF CUSTODY Fairway Laboratories Inc. ("Fairway," "us" or "we") will initiate a chain-of-custody/request for analysis upon sample receipt unless the client includes a completed form with the received sample(s). Upon request, Fairway will provide chain-of-custody forms for use.

CONFIDENTIALITY Fairway maintains confidentiality in all of our client interactions. The client's consent will be required before releasing information about the services provided.

CONTRACTS All contracts are subject to review and approval by Fairway's legal council. Each contract must be signed by a corporate officer.

PAYMENT/BILLING Unless otherwise set forth in a signed contract or purchase order, terms of payment are "NET 30 Days." The time allowed for payment shall begin based on the invoice date. A 1.5% per month service charge may be added to all unpaid balances beyond the initial 30 days. In its sole discretion, Fairway reserves the right to request payment before services and hold sample results for payment of due balances. We will not bill a third party without prior agreement among all parties acknowledging and accepting responsibility for payment.

SAMPLE COLLECTION AND SUBMISSION Clients not requesting collection services from Fairway are responsible for proper collection, preservation, packaging, and delivery of samples to the laboratory in accordance with current law and commercial practice. Fairway shall have no responsibility for sample integrity prior to the receipt of the sample(s) and/or for any inaccuracy in test or analyses results as a result of the failure of the client or any third party to maintain the integrity of samples prior to delivery to Fairway. All samples submitted must be accompanied by a completed chain of custody or similar document clearly noting the requested analyses, dates/time sampled, client contact information, and trail of custody.

SUBCONTRACTING Some analyses may require subcontracting to another laboratory. Unless the client indicates otherwise, this decision will be made by Fairway. Subcontracted work will be identified on the final report in accordance with NELAC requirements.

RETURN OF RESULTS Fairway routinely provides faxed or verbal results within 10 working days of receipt of sample(s) and a hard copy of the data results is routinely received via US Postal Service within 15 working days. At the request of the client, Fairway may offer expedited return of sample results. Surcharges may apply to rush requests. All rush requests must be pre-approved by Fairway. We reserve the right to charge an archive retrieval fee for results older than one (1) year from the date of the request. All records will be maintained by Fairway for 5 years, after which, they will be destroyed.

SAMPLE DISPOSAL Fairway will maintain samples for four (4) weeks after the sample receipt date. Fairway will dispose of samples which are not and/or do not contain hazardous wastes (as such term is defined by applicable federal or state law), unless prior arrangements have been made for long-term storage. Fairway reserves the right to charge a disposal fee for the proper disposal of samples found or suspected to contain hazardous waste. A return shipping charge will be invoiced for samples returned to the client at their request.

HAZARD COMMUNICATION The client has the responsibility to inform the laboratory of any hazardous characteristics known or suspected about the sample, and to provide information on hazard prevention and personal protection as necessary or otherwise required by applicable law.

WARRANTY AND LIMITATION OF LIABILITY For services rendered, Fairway warrants that it will apply its best scientific knowledge and judgment and to employ its best level of effort consistent with professional standards within the environmental testing industry in performing the analytical services requested by its clients. We disclaim any other warranties, expressed or implied by law. Fairway does not accept any legal responsibility for the purposes for which client uses the test results.

LITIGATION All costs associated with compliance to any subpoena for documents, for testimony in a court of law, or for any other purpose relating to work performed by Fairway Laboratories, Inc. shall be invoiced by Fairway and paid by client. These costs shall include, but are not limited to, hourly charges for the persons involved, travel, mileage, and accommodations and for any and all other expenses associated with said litigation.

Fairway Labs in Altoona, PA is a NELAP (National Environmental Laboratory Accreditation Program) accredited lab, and as such, certifies that all applicable test results meet the requirements of NELAP, unless otherwise stated on the analytical report.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

3K08103-01 K
HC 89 BOX 300/INJECTION WELL
Sampled: 11/07/13 13:00
Water-100 mL Bacti
EXCO Resources

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

FAIRWAY LABORATORIES
Environmental Lal

Please print.

Client Name: EXCO WV

Address:
EXCO Resources
HC 89 Box 300
Maben, WV 25870

Contact:

Phone #: Fax #:

Project Name: Welchland 29 AW

Anaylsis Requested: Total Coliform ☐ Fecal Coliform ☐ HPC ☐

Date/time collected: 11-7-13 13:00

Sample location/description: Injection well

	Signature	Date	Time
Sampled by:	[signature]	11-7-13	13:00
Received by:			
Relinquished by:		11/8/13	
Received by:	JH/JAB 1.8	11/7/13	1815

LIMS #
File #: 317
Total coliform: < 1 /50 ml
E coli: < 1 /50 ml
Fecal:
HPC:

Analyst: JAB
Analysis Started: 1832 11/8/13
In: 1840 Out: 1341 11/09/13

Type Treatment: UV ☐ Ozone ☐
Chlorine residual:
Number of containers:
Matrix: Water ☐ other
Comments: brown sand dilution, fair odor

White Original - FLI File Canary - Customer Mailing/Report Pink - Customer Receipt Copy

★★ Please complete all of the grayed areas. ★★

Page 7 of 10

Received
Office of Oil & Gas
OCT 30 2014

CHAIN OF CUSTODY / REQUEST FOR ANALYSIS

FAIRWAY LABORATORIES INC.

COC # 31608103002 Page ____ of ____

Client Name:	EXCO WV
Address:	
Contact:	Bryan Rushe
Phone #:	
Fax #:	
Project Name:	Welchland 29AW
Quote/PO #:	Injection Well

TAT:

Normal	
Rush	
Date Required:	

Receiving Info	(Y)	N
Custody Seals		
Seals intact?		
Received on ice?		
COC/ Labels agree?		
Correct containers?		
Correct preservation?		
VOA head space		

Sample Temp: ____

Report to PADEP? ____

PWSID #: ____

Received
Office of Oil & Gas
OCT 30 2014

FLI use only	Sample Description / Location	Sample Date	Sample Time	Grab or Composite	Soil	Water	Other? Explain	# of Containers	EXCO Parameters	Field pH	Field S.C.	Field Temp.	Trip Blank	Comments
	HC 89 Box 300													
	Injection Well	11/7/2013	13:00	G		X		11	X	6.12	2.89 mS	14.2°		
													X	Includes Bacti
													X	1 HCl Vial

Signature	Date	Time
Sampled By: Stephen Brushee	11/7/2013	13:45
Received by:		
Relinquished by: Stephen Brushee	11/8/13	14:35
Received by: R. Hebb	11-8-13	1435
Relinquished by: R. Hebb	11-8-13	1815
Received by: CM	11-8-13	18:15

Remarks

Circle One : PA (WV) OH

WVA Samples By

SOP FLI0601-002 Revision 16 Date: September 13, 2013 Page of

Chain of Custody Receiving Document

Page ___ of ___

Receiver: [signature]

Date/Time of this check: 11-8-13 19:55 Sample Temperature: 5.0 Client: EXCO WV Lab # 3608103303

Received at Lab on ICE ? Y ☐ * **Sample Temperature when arrived at Lab:** 5.0 **Acceptable?** Y ☐ * **or In cool down process?** ☐ *

Custody Seals? Y Intact? Y

COC/Labels on bottles agree? Y ☐ * Correct containers for all the analysis requested? Y ☐ * Matrix: WW

COC #	Number and Type of BOTTLES										Comments
	Poly Non-Pres.	Poly H2SO4	Poly HNO3	Amber H2SO4	Amber Non-Pres.	Poly NaOH	VOCS (Head space?)	Other ☐ *	Properly Preserved ☑ *	Bacti	
TB	2		1	1			Y/N			1	
							Y/N				

Received
Oil & Gas
NOV 30 2014

*** DEVIATION PRESENT:**
- ⊗ No Ice ( )
- ⊗ Not at Proper Temperature ( )
- ⊗ Wrong Container ( )
- ⊗ Missing Information: ( )

CLIENT CALLED:
YES ( )
By Whom: _____ Date: _____

CLIENT RESPONSE:
- Proceed with analysis; qualify data ( )
- Will Resample ( )
- Provided Information ( )
- No Response; Proceed and qualified ( )

Client Contact: _____ Date: _____

* Comments: _____

Chain of Custody Receiving Document

This is a date sensitive document and may not be current after November 5, 2013.

W. Va. Code R. 35-8-15 Water Supply Testing.

15.3.b. **Parameters** - The operator shall analyze samples for the following parameters:

15.3.b.1. Total Petroleum Hydrocarbons (GRO, DRO, ORO)
15.3.b.2. BTEX
15.3.b.3. Chloride
15.3.b.4. Sodium
15.3.b.5. Total Dissolved Solids (TDS)
15.3.b.6. Aluminum
15.3.b.7. Arsenic
15.3.b.8. Barium
15.3.b.9. Iron
15.3.b.10. Manganese
15.3.b.11. pH
15.3.b.12. Calcium
15.3.b.13. Sulfate
15.3.b.14. Detergents (MBAS)
15.3.b.15. Dissolved Methane
15.3.b.16. Dissolved Ethane
15.3.b.17. Dissolved Butane
15.3.b.18. Dissolved Propane
15.3.b.19. Bacteria (total coliform)
15.3.b.20. Any others parameters determined by the operator or the Chief.

Inspection Checklist for Owner / Operator Annual AST Inspection

Well Name: Welchlands 29 AW 250*155179	WV Tank Ref. ID No.: MAB-Welchlands 29AW GRP 3 (08/28/2014)
Permit No.: 4710900980	Tank ID No.: T2
EXCO Facility Location: Maben Office	Date of Inspection:
Name of Person Conducting Inspection (print): Steve Dennis	MAB03
Signature of Person Conducting Inspection:	

Section 1 – AST Design

Does the AST continue to meet original design standards of the facility?	☒ YES OR ☐ NO, if "NO" provide details below;

Section 2 – AST Construction and Installation

Is the foundation of the AST Adequate?	☒ YES OR ☐ NO, if "NO" provide details below;
Is the AST system compatible with the material stored?	☒ YES OR ☐ NO, if "NO" provide details below;

Section 3 – General Maintenance and Testing of AST System

- Examination of the Tank system exterior surfaces for the following:

  Note below any Flaws, Areas of Excessive Wear, Corrosion, Distortions, Deterioration or any condition that may adversely affect the structural integrity of the AST system:

Section 4 – Corrosion Protection and Maintenance (existing and past corrosion protection)

Does the AST system include a Galvanic and/or Impressed Current System?	☐ YES OR ☒ NO, If "YES" provide details below;
Is there an External Coating applied to the AST system? (other than paint)	☐ YES OR ☒ NO, If "YES" provide details below;
Is there Internal Coating or Liner for the tank?	☐ YES OR ☒ NO, If "YES" provide details below;

Inspection Checklist for Owner / Operator Annual AST Inspection

Section 5 – Release Detection Method and Procedures:

- The AST System is visually inspected on a routine basis and corrective measures are employed if a release is detected. EXCO will follow the prepared Spill Prevention Response Plan for the facility in the event of a release.

Section 6 – Release Prevention Methods and Procedures:

- The AST System is visually inspected on a routine basis.

Section 7 – Secondary Containment Structures: Earthen Dike

Secondary Capacity Requirements;	133. Calculate Volume of Secondary Containment Structure; (Length X Width X Height = Cubic Feet of secondary containment) Length (feet) 40.167 X Width (feet) 29.583_ X Height (feet) 2.33 = 2772.6 cf Calculated Secondary Containment Structure Volume = cf of Sec. Cont. 2772.6 X 7.48 gallons per cubic foot = 20,739.2, gallons 134. Calculate Precipitation Volume (25 year, 24 hour) for Containment; Length (sec. cont. in feet) X Width (sec. cont. in feet) X 0.38 feet X 7.48 gallons per cubic foot = 3377.5, gallons 135. Calculate Total Secondary Containment Volume Needed; Vol. of largest Tank in Containment Structure (gallons), 8820 + Precip. Vol., (No. 2) (gallons), 3377.5 =12,197.5, gallons 136. Is Secondary Containment Structure Volume (No. 1) greater than or equal to Total Secondary Containment Volume Needed (No. 3)? ☒ YES OR ☐ NO, If "YES" – Secondary Containment Structure is Adequate If "NO" - Secondary Containment Structure is Inadequate
Is the Secondary Containment compatible with stored materials?	☒ YES OR ☐ NO, If "NO" provide details below;
Does the Secondary Containment have Structure Soundness / Integrity?	☒ YES OR ☐ NO, If "NO" provide details below;

Inspection Checklist for Owner / Operator Annual AST Inspection

Section 8 – Record Keeping:

- **Leak Detection System, (If applicable) - Records of visual inspections are maintained at the local field office**
- **Corrosion Protection System, (If applicable) - Records of maintenance of Corrosion Protection Systems are maintained at the local field office.**
- **General Operation and Maintenance (including upgrades and repairs to AST system) - Records of General Operation and Maintenance are maintained at the local field office.**

API# Welchlands 29AW 47- 109-00980	Tank ID	Tank Location northing 4167292.10mN	easting 460890.71mE	installation date	tank age (mo.)	construction material	capacity (gal)	Type of fluid stored	volume of fluid Gal. stored	tank type
	none			12/15/2006	102	steel	8820	produced water	1690	single wall
	none			12/15/2006	102	steel	8820	produced water	1690	single wall
	none			Jun-09	60	plastic	2100	produced water	10	single wall

8. Include provisions for inspections of all GPP elements and equipment. Inspections must be made quarterly at a minimum.

EXCO personnel shall complete quarterly inspections at a minimum for all production tanks in accordance with the SPCC Plan; all secondary containment; all underground piping; and the injection well head for evidence of leakage and integrity issues.

Signature: Brian E. Rush

Date: 10/17/14

EXCO Resources (PA), LLC
260 Executive Drive • Suite 100 • Cranberry Township, PA 16066
Phone (724) 720-2500 • Fax: (724) 720-2505

January 2, 2014

West Virginia Department of Environmental Protection
Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
Attn: Mr. James Peterson

RE: UIC Permit Renewal 2D0392419 (L.C. Wilson #4)
UIC Permit Renewal 2D1090980 (Welchlands 29AW)

Dear Mr. Peterson:

EXCO Resources (PA), LLC is submitting the following information for the L.C. Wilson #4 and Welchlands 29AW UIC Permit Renewals:

1. Three (3) copies of the Injection Well Permit Renewal Submittal for the L.C. Wilson #4 (**UIC 2D0392419**).
2. A check in the amount of $5,000.00 made payable to the State of West Virginia for the Separate Bond Fee for the L.C. Wilson #4 (**UIC 2D0392419**).
3. Three (3) copies of the Injection Well Permit Renewal Submittal for the Welchlands 29AW (**UIC 2D1090980**).
4. A check in the amount of $5,000.00 made payable to the State of West Virginia for the Separate Bond Fee for the Welchlands 29AW (**UIC 2D1090980**).

If you should have any questions or require additional information, please contact me at (724) 720-2590.

Sincerely,

Brian E. Rushe, P.E.
Construction & Regulatory Manager

Enclosures

Received
Office of Oil & Gas
OCT 30 2014

NOT WV (AND THERE IS ONE FURTHER DOWN ON THE PAGE)

NCE Field Grp	Route Name	State	County	Api Well Number	Exc_250*	EXCO OWNED/ OPERATED	ACTIVE STATUS	GAS or OIL well	EXCO SHARE	3RD Q 2014 status	long term shut in	DOUBLE CHECK OF API	Description	Disposition code	Merrick Completion_ID	Year Drilled P00=PRIOR TO 2000	Lease Name	Producing Description
MABEN	MAB05	KY	PIKE	1619572716	250*200039	Y	Active WI Well	GAS	0.3558717	Producing		1619572716	Hamilton 3B		880	P00	W-HAMILTON	Producing
MABEN	MAB05	KY	PIKE	1619560156	250*200038	Y	Active WI Well	GAS	0.4030347	Producing		1619560156	Hamilton 2B		690	P00	W-HAMILTON	Producing
MABEN	MAB05	KY	PIKE	1619552229	250*200037	Y	Active WI Well	GAS	0.4975	Producing		1619552229	Hamilton 1B		503	P00	W-HAMILTON	Producing
MABEN	MAB05	VA	BUCHANAN	4502726654	250*287998	Y	Active WI Well	GAS	0.4495012	Producing		4502726654	BIG VEIN 02-05		11387	A08	WV-PILGRAM KNOB CREEK	Producing
MABEN	MAB05	VA	BUCHANAN	4502720540	250*204893	Y	Active WI Well	GAS	0.2499176	Producing		4502720540	BREEDING 1B		2445	P00	W-BREEDING	Producing
MABEN	MAB05	WV	WYOMING	4710902916	250*151292	Y	Active WI Well	GAS	0.4975	Producing		4710902916	CROUCH 28A		7368	07	W-CROUCH	Producing
MABEN	MAB02	WV	WYOMING	4710902304	250*205603	Y	Active WI Well	GAS	0.4975	Producing		4710902304	Newberry 017N		1765	P00	W-NEWBERRY	Producing
MABEN	MAB07	WV	RALEIGH	4708101332	250*287943	Y	Active WI Well	GAS	0.4975	Producing		4708101332	BEAVER COAL 161		11109	A08	WV-SULLIVAN_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708101056	250*287250	Y	Active WI Well	GAS	0.4975	Producing		4708101056	BEAVER COAL 102		10212	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB02	WV	WYOMING	4710902305	250*205604	Y	Active WI Well	GAS	0.4975	Producing		4710902305	Newberry 021N		1943	P00	W-NEWBERRY	Producing
MABEN	MAB08	WV	RALEIGH	4708101091	250*287249	Y	Active WI Well	GAS	0.4975	Producing		4708101091	BEAVER COAL 101		10097	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB05	WV	WYOMING	4710902913	250*151289	Y	Active WI Well	GAS	0.4975	Producing		4710902913	Crouch 25A		7365	07	W-CROUCH	Producing
MABEN	MAB06	WV	BOONE	4700502293	250*154288	Y	Active WI Well	GAS	0.4975	Producing		4700502293	Y&O 15		11588	08	W-Y&O	Producing
MABEN	MAB05	WV	WYOMING	4710902515	250*151291	Y	Active WI Well	GAS	0.4975	Producing		4710902915	CROUCH 27A		7367	07	W-CROUCH	SI - Long Term_LTSI
MABEN	MAB05	WV	WYOMING	4710902413	250*205856	Y	Active WI Well	GAS	0.4975	Producing		4710902413	WELCHLANDS 114 NW		1416	04	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB08	WV	RALEIGH	4708101057	250*287251	Y	Active WI Well	GAS	0.4975	Producing		4708101057	BEAVER COAL 104		10213	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB01	WV	FAYETTE	4701900892	250*287352	Y	Active WI Well	GAS	0.4975	Producing		4701900892	NEW RIVER 3		10776	A08	WV-NEW RIVER/ALLEGHENY	Producing
MABEN	MAB05	WV	WYOMING	4710902914	250*151290	Y	Active WI Well	GAS	0.4975	Producing		4710902914	CROUCH 26A		7366	07	W-CROUCH	Producing
MABEN	MAB07	WV	RALEIGH	4708101245	250*287272	Y	Active WI Well	GAS	0.4975	Producing		4708101245	BEAVER COAL 139		10891	A08	WV-SULLIVAN_BEAVER	Producing
MABEN	MAB03	WV	WYOMING	4710901397	250*205545	Y	Active WI Well	GAS	0.4975	Producing		4710901397	Welchlands 062BW		592	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB08	WV	RALEIGH	4708100483	250*287286	Y	Active WI Well	GAS	0.4975	Producing		4708100483	BEAVER COAL A-19		10121	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100484	250*287288	Y	Active WI Well	GAS	0.4975	Producing		4708100484	BEAVER COAL A-20		10122	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100472	250*287289	Y	Active WI Well	GAS	0.4975	Producing		4708100472	BEAVER COAL A-22		10123	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB02	WV	WYOMING	4710901154	250*205574	Y	Active WI Well	GAS	0.4975	Producing		4710901154	Newberry 003 AN		2661	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	WYOMING	4710901155	250*205577	Y	Active WI Well	GAS	0.4975	Producing		4710901155	Newberry 005 AN		106	P00	W-NEWBERRY	Producing
MABEN	MAB03	WV	WYOMING	4710901642	250*205560	Y	Active WI Well	GAS	0.4975	Producing		4710901642	Welchlands 098BW		105	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	WYOMING	4710901346	250*205542	Y	Active WI Well	GAS	0.4975	Producing		4710901346	Welchlands 058BW		3018	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB08	WV	RALEIGH	4708100474	250*287283	Y	Active WI Well	GAS	0.4975	Producing		4708100474	BEAVER COAL A-15		10118	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB03	WV	WYOMING	4710901398	250*205548	Y	Active WI Well	GAS	0.4975	Producing		4710901398	Welchlands 066BW		1034	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB02	WV	WYOMING	4710901410	250*205578	Y	Active WI Well	GAS	0.4975	Producing		4710901410	Newberry 006 BN		291	P00	W-NEWBERRY	Producing
MABEN	MAB03	WV	WYOMING	4710901523	250*205554	Y	Active WI Well	GAS	0.4975	Producing		4710901523	Welchlands 077BW		2126	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	WYOMING	4710901549	250*205556	Y	Active WI Well	GAS	0.4975	Producing		4710901549	Welchlands 082BW		2483	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	WYOMING	4710901626	250*205546	Y	Active WI Well	GAS	0.4975	Producing		4710901626	Welchlands 064BW		783	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB07	WV	RALEIGH	4708101188	250*287279	Y	Active WI Well	GAS	0.4975	Producing		4708101188	BEAVER COAL 156 (E-10)		10108	A08	WV-SULLIVAN_BEAVER	Producing
MABEN	MAB03	WV	WYOMING	4710901309	250*205538	Y	Active WI Well	GAS	0.4975	Producing		4710901309	Welchlands 054 BW		2302	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	4710901016	250*205623	Y	Active WI Well	GAS	0.4975	Producing		4710901016	Crouch 11A		2307	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	4710901045	250*205626	Y	Active WI Well	GAS	0.4975	Producing		4710901045	Crouch 17A		2846	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	4710901046	250*205629	Y	Active WI Well	GAS	0.4975	Producing		4710901046	Crouch 22A		294	P00	W-CROUCH	Producing
MABEN	MAB03	WV	WYOMING	4710901106	250*205534	Y	Active WI Well	GAS	0.4975	Producing		4710901106	Welchlands 046AW		1575	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	4710901023	250*205627	Y	Active WI Well	GAS	0.4975	Producing		4710901023	Crouch 18A		3023	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	4710901021	250*205610	Y	Active WI Well	GAS	0.422875	Producing		4710901021	AGP 8		3022	P00	W-AGP/EASTER	Producing
MABEN	MAB05	WV	WYOMING	4710901020	250*205609	Y	Active WI Well	GAS	0.422875	Producing		4710901020	AGP 7		2845	P00	W-AGP/EASTER	Producing
MABEN	MAB08	WV	RALEIGH	4708100461	250*287285	Y	Active WI Well	GAS	0.4975	Producing		4708100461	BEAVER COAL A-17		10120	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB05	WV	WYOMING	4710901017	250*205625	Y	Active WI Well	GAS	0.4601875	Producing		4710901017	Crouch 16A		2664	P00	W-CROUCH	Producing
MABEN	MAB08	WV	RALEIGH	4708100479	250*287284	Y	Active WI Well	GAS	0.4975	Producing		4708100479	BEAVER COAL A-16		10119	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB05	WV	WYOMING	4710900996	250*205624	Y	Active WI Well	GAS	0.4975	Producing		4710900996	Crouch 12A		2487	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	4710900995	250*205622	Y	Active WI Well	GAS	0.4975	Producing		4710900995	Crouch 10A		2130	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	4710900994	250*205620	Y	Active WI Well	GAS	0.4975	Producing		4710900994	Crouch 08A		1766	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	4710900993	250*205619	Y	Active WI Well	GAS	0.4975	Producing		4710900993	Crouch 07A		1580	P00	W-CROUCH	Producing
MABEN	MAB08	WV	RALEIGH	4708100478	250*287282	Y	Active WI Well	GAS	0.4975	Producing		4708100478	BEAVER COAL A-14		10117	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB03	WV	WYOMING	4710901730	250*205561	Y	Active WI Well	GAS	0.4975	Producing		4710901730	Welchlands 101BW		290	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	4710901018	250*205628	Y	Active WI Well	GAS	0.4975	Producing		4710901018	Crouch 21A		109	P00	W-CROUCH	Producing
MABEN	MAB08	WV	RALEIGH	4708101071	250*287262	Y	Active WI Well	GAS	0.4975	Producing		4708101071	BEAVER COAL 122		10217	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708101085	250*287270	Y	Active WI Well	GAS	0.4975	Producing		4708101085	BEAVER COAL 134		10105	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708101084	250*287269	Y	Active WI Well	GAS	0.4975	Producing		4708101084	BEAVER COAL 133		10104	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708101095	250*287267	Y	Active WI Well	GAS	0.4975	Producing		4708101095	BEAVER COAL 130		10103	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708101094	250*287266	Y	Active WI Well	GAS	0.4975	Producing		4708101094	BEAVER COAL 129		10754	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB05	WV	WYOMING	4710902296	250*205570	Y	Active WI Well	GAS	0.4975	Producing		4710902296	WELCHLANDS 110		1941	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	WYOMING	4710901627	250*205845	Y	Active WI Well	GAS	0.4975	Producing		4710901627	Welchlands 088BW		2500	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB08	WV	RALEIGH	4708101072	250*287263	Y	Active WI Well	GAS	0.4975	Producing		4708101072	BEAVER COAL 123		10218	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB07	WV	RALEIGH	4708101182	250*287278	Y	Active WI Well	GAS	0.4975	Producing		4708101182	BEAVER COAL 154		10107	A08	WV-SULLIVAN_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708101066	250*287261	Y	Active WI Well	GAS	0.4975	Producing		4708101066	BEAVER COAL 121		10216	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708101083	250*287259	Y	Active WI Well	GAS	0.4975	Producing		4708101083	BEAVER COAL 118		10102	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708101177	250*287258	Y	Active WI Well	GAS	0.4975	Producing		4708101177	BEAVER COAL 117		10101	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708101063	250*287257	Y	InActive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4708101063	BEAVER COAL 111		10100	A08	WV-RALEIGH_BEAVER	SI - Long Term_LTSI
MABEN	MAB08	WV	RALEIGH	4708101060	250*287254	Y	Active WI Well	GAS	0.4975	Producing		4708101060	BEAVER COAL 108		10751	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708101059	250*287253	Y	Active WI Well	GAS	0.4975	Producing		4708101059	BEAVER COAL 106		10750	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB07	WV	RALEIGH	4708101074	250*287265	Y	Active WI Well	GAS	0.4975	Producing		4708101074	BEAVER COAL 127		10756	A08	W-Sunny Acres 960520	Producing
MABEN	MAB07	WV	RALEIGH	4708101351	250*288002	Y	Active WI Well	GAS	0.4975	Producing		4708101351	BEAVER COAL 167		11388	A08	WV-SULLIVAN_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100477	250*287325	Y	Active WI Well	GAS	0.4975	Producing		4708100477	BEAVER COAL A-09		10116	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100475	250*287318	Y	Active WI Well	GAS	0.4975	Producing		4708100475	BEAVER COAL A-07		10115	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100438	250*287309	Y	Active WI Well	GAS	0.4975	Producing		4708100438	BEAVER COAL A-06		10114	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100431	250*287304	Y	Active WI Well	GAS	0.4975	Producing		4708100431	BEAVER COAL A-05		10113	A08	WV-RALEIGH_BEAVER	Producing

NCE Field Grp	Route Name	State	County	Api Well Number	Exc_250	EXCO OWNED/ OPERATED	ACTIVE STATUS	GAS or OIL well	EXCO SHARE	3RD Q 2014 status	long term shut in	DOUBLE CHECK OF API	Description	Disposition code	Merrick Completion_ID	Year Drilled P00=PRIOR TO 2000	Lease Name	Producing Description
MABEN	MAB08	WV	RALEIGH	4708100462	250*287298	Y	Active WI Well	GAS	0.4975	Producing		4708100462	BEAVER COAL A-04		10112	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100430	250*287293	Y	Active WI Well	GAS	0.4975	Producing		4708100430	BEAVER COAL A-03		10111	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB07	WV	RALEIGH	4708101121	250*287273	Y	Active WI Well	GAS	0.4975	Producing		4708101121	BEAVER COAL 141		10758	A08	W-Sunny Acres 960520	Producing
MABEN	MAB08	WV	RALEIGH	4708100548	250*287313	Y	Active WI Well	GAS	0.4975	Producing		4708100548	BEAVER COAL A 65		10143	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB07	WV	RALEIGH	4708101122	250*287274	Y	Active WI Well	GAS	0.4975	Producing		4708101122	BEAVER COAL 142		10760	A08	W-Sunny Acres 960520	Producing
MABEN	MAB07	WV	RALEIGH	4708101355	250*288001	Y	Active WI Well	GAS	0.4975	Producing		4708101355	BEAVER COAL 165		11468	A08	WV-SULLIVAN_BEAVER	Producing
MABEN	MAB07	WV	RALEIGH	4708101341	250*287950	Y	Active WI Well	GAS	0.4975	Producing		4708101341	BEAVER COAL 164		11362	A08	WV-SULLIVAN_BEAVER	Producing
MABEN	MAB07	WV	RALEIGH	4708101340	250*287949	Y	Active WI Well	GAS	0.4975	Producing		4708101340	BEAVER COAL 163		11467	A08	WV-SULLIVAN_BEAVER	Producing
MABEN	MAB07	WV	RALEIGH	4708101333	250*287944	Y	Active WI Well	GAS	0.4975	Producing		4708101333	BEAVER COAL 162		11115	A08	WV-SULLIVAN_BEAVER	Producing
MABEN	MAB07	WV	RALEIGH	4708101331	250*287942	Y	Active WI Well	GAS	0.4975	Producing		4708101331	BEAVER COAL 160		11108	A08	WV-SULLIVAN_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708101058	250*287252	Y	Active WI Well	GAS	0.4975	Producing		4708101058	BEAVER COAL 105		10214	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100322	250*287281	Y	Active WI Well	GAS	0.4975	Producing		4708100322	BEAVER COAL A-01		10109	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB01	WV	FAYETTE	4701900710	250*206764	Y	Active WI Well	GAS	0.4975	Producing		4701900710	New River 86AR		2730	P00	WV-NEW RIVER/ALLEGHENY	Producing
MABEN	MAB01	WV	FAYETTE	4701900891	250*287344	Y	Active WI Well	GAS	0.4975	Producing		4701900891	NEW RIVER 1		10774	A08	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	4701900619	250*205735	Y	Active WI Well	GAS	0.4975	Producing		4701900619	Price/Sun 06A		1046	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	4701900621	250*206763	Y	Active WI Well	GAS	0.4975	Producing		4701900621	Berwind Land 6A		2551	P00	WV-NEW RIVER/ALLEGHENY	Producing
MABEN	MAB01	WV	FAYETTE	4701900624	250*205733	Y	Active WI Well	GAS	0.4975	Producing		4701900624	Price/Sun 04A		795	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	4701900644	250*205728	Y	Active WI Well	GAS	0.4975	Producing		4701900644	New River 77AR		2853	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	4701900646	250*205695	Y	Active WI Well	GAS	0.4975	Producing		4701900646	McNeely 1A		3028	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	4701900647	250*205813	Y	Active WI Well	GAS	0.4975	Producing		4701900647	Berwind Land 7A		2857	P00	W-BERWIND/FAY1 Brwnds &	Producing
MABEN	MAB01	WV	FAYETTE	4701900648	250*205732	Y	Active WI Well	GAS	0.4975	Producing		4701900648	Price/Sun 03A		604	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	4701900616	250*205812	Y	Active WI Well	GAS	0.4975	Producing		4701900616	Berwind Land 5A		2675	P00	W-BERWIND/FAY1 Brwnds &	Producing
MABEN	MAB01	WV	FAYETTE	4701900658	250*205736	Y	Active WI Well	GAS	0.4975	Producing		4701900658	Price/Sun 08A		1222	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	4701900611	250*205811	Y	Active WI Well	GAS	0.24875	Producing		4701900611	Berwind Land 4A		2498	P00	W-BERWIND/FAY1 Brwnds &	Producing
MABEN	MAB01	WV	FAYETTE	4701900713	250*206766	Y	Active WI Well	GAS	0.4975	Producing		4701900713	Burlee 1B		3089	P00	W-BURLEE	Producing
MABEN	MAB01	WV	FAYETTE	4701900971	250*206765	Y	Active WI Well	GAS	0.4975	Producing		4701900971	New River 88N		2910	04	WV-NEW RIVER/ALLEGHENY	Producing
MABEN	MAB01	WV	FAYETTE	4701900990	250*287864	Y	Active WI Well	GAS	0.4975	Producing		4701900990	NEW RIVER 44		11084	A08	WV-NEW RIVER/COLLINSWOOD	Producing
MABEN	MAB01	WV	RALEIGH	4708101244	250*286677	Y	Active WI Well	GAS	0.4975	Producing		4708101244	NEW RIVER 31 (G-51)		10892	A08	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	4701900935	250*286676	Y	Active WI Well	GAS	0.4975	Producing		4701900935	NEW RIVER 30		10955	A08	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	4708101217	250*287351	Y	Active WI Well	GAS	0.4975	Producing		4708101217	NEW RIVER 23 NR-8 06		10789	A08	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	4708101184	250*287347	Y	Active WI Well	GAS	0.4975	Producing		4708101184	NEW RIVER 15		10785	A08	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	4701900904	250*287345	Y	Active WI Well	GAS	0.4975	Producing		4701900904	NEW RIVER 12		10781	A08	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	4701900649	250*205734	Y	Active WI Well	GAS	0.4975	Producing		4701900649	Price/Sun 05A		345	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	4708101312	250*287797	Y	INActive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4708101312	NEW RIVER 38-1			A08	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB06	WV	BOONE	4700500978	250*206747	Y	Active WI Well	GAS	0.4975	Producing		4700500978	C Tract 6		2729	P00	W-C TRACT	Producing
MABEN	MAB06	WV	BOONE	4700500979	250*206748	Y	Active WI Well	GAS	0.4975	Producing		4700500979	C Tract 7		2909	P00	W-C TRACT	Producing
MABEN	MAB06	WV	BOONE	4700501929	250*205807	Y	Active WI Well	GAS	0.4975	Producing		4700501929	Y&O 05		1778	05	W-Y&O	Producing
MABEN	MAB06	WV	BOONE	4700501931	250*205808	Y	Active WI Well	GAS	0.4975	Producing		4700501931	Y&O 07		1956	05	W-Y&O	Producing
MABEN	MAB06	WV	BOONE	4700502078	250*150078	Y	Active WI Well	GAS	0.4975	Producing		4700502078	Y&O 06		6835	06	W-Y&O	Producing
MABEN	MAB06	WV	BOONE	4700502079	250*150079	Y	Active WI Well	GAS	0.4975	Producing		4700502079	Y&O 08 [.875]		7171	07	W-Y&O	Producing
MABEN	MAB06	WV	BOONE	4700502169	250*150620	Y	Active WI Well	GAS	0.4975	Producing		4700502169	Y&O 10		7228	07	W-Y&O	Producing
MABEN	MAB06	WV	BOONE	4700502170	250*150621	Y	Active WI Well	GAS	0.4975	Producing		4700502170	Y&O 11		7173	07	W-Y&O	Producing
MABEN	MAB01	WV	FAYETTE	4701900618	250*205731	Y	Active WI Well	GAS	0.4975	Producing		4701900618	Price/Sun 02A		301	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB06	WV	BOONE	4700502179	250*151155	Y	Active WI Well	GAS	0.4975	Producing		4700502201	Y&O 14		7318	07	W-Y&O	Producing
MABEN	MAB01	WV	RALEIGH	4708101164	250*287353	Y	Active WI Well	GAS	0.4975	Producing		4708101164	NEW RIVER 4		10777	A08	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	4701900937	250*287416	Y	Active WI Well	GAS	0.4975	Producing		47-019-00937	NEW RIVER 26		11993	A08	W-BECKWITH	Producing
MABEN	MAB01	WV	FAYETTE	4701900936	250*287417	Y	Active WI Well	GAS	0.4975	Producing		4701900936	NEW RIVER 25 (NR-D 32)		11247	A08	W-BECKWITH	Producing
MABEN	MAB01	WV	FAYETTE	4701900593	250*205814	Y	Active WI Well	GAS	0.472625	Producing		4701900593	New River 70AR BCP		3035	P00	W-BERWIND/FAY1 Brwnds &	Producing
MABEN	MAB01	WV	FAYETTE	4701900595	250*205809	Y	Active WI Well	GAS	0.4601875	Producing		4701900595	Berwind Land 1A		2141	P00	W-BERWIND/FAY1 Brwnds &	Producing
MABEN	MAB01	WV	FAYETTE	4701900599	250*205726	Y	Active WI Well	GAS	0.4975	Producing		4701900599	New River 75AR		2493	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	4701900603	250*205727	Y	Active WI Well	GAS	0.4975	Producing		4701900603	New River 76AR		2671	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	4701900607	250*205730	Y	Active WI Well	GAS	0.4975	Producing		4701900607	Price/Sun 01A		116	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	4701900609	250*205810	Y	Active WI Well	GAS	0.24875	Producing		4701900609	Berwind Land 3A		2319	P00	W-BERWIND/FAY1 Brwnds &	Producing
MABEN	MAB06	WV	BOONE	4700502171	250*150622	Y	Active WI Well	GAS	0.4975	Producing		4700502171	Y&O 12		7172	07	W-Y&O	Producing
MABEN	MAB08	WV	RALEIGH	4708100504	250*287302	Y	Active WI Well	GAS	0.4975	Producing		4708100504	BEAVER COAL A-45		10134	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100557	250*287316	Y	Active WI Well	GAS	0.4975	Producing		4708100557	BEAVER COAL A-68		10146	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100550	250*287315	Y	Active WI Well	GAS	0.4975	Producing		4708100550	BEAVER COAL A-67A S		10145	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100549	250*287314	Y	Active WI Well	GAS	0.4975	Producing		4708100549	BEAVER COAL A-66A S		10144	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100547	250*287312	Y	Active WI Well	GAS	0.4975	Producing		4708100547	BEAVER COAL A-64		10142	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100546	250*287311	Y	Active WI Well	GAS	0.4975	Producing		4708100546	BEAVER COAL A-61		10141	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100543	250*287310	Y	Active WI Well	GAS	0.4975	Producing		4708100543	BEAVER COAL A-60		10140	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100526	250*287308	Y	Active WI Well	GAS	0.4975	Producing		4708100526	BEAVER COAL A-59		10139	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100521	250*287307	Y	Active WI Well	GAS	0.4975	Producing		4708100521	BEAVER COAL A-57		10138	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB01	WV	FAYETTE	4701900903	250*287355	Y	Active WI Well	GAS	0.4975	Producing		4701900903	NEW RIVER 7		10779	A08	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB08	WV	RALEIGH	4708100509	250*287303	Y	Active WI Well	GAS	0.4975	Producing		4708100509	BEAVER COAL A-46		10135	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708101087	250*287320	Y	Active WI Well	GAS	0.4975	Producing		4708101087	BEAVER COAL A-71		10195	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100508	250*287301	Y	Active WI Well	GAS	0.4975	Producing		4708100508	BEAVER COAL A-44		10133	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100512	250*287300	Y	Active WI Well	GAS	0.4975	Producing		4708100512	BEAVER COAL A-43		10132	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100507	250*287299	Y	Active WI Well	GAS	0.4975	Producing		4708100507	BEAVER COAL A-41		10131	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100500	250*287297	Y	Active WI Well	GAS	0.4975	Producing		4708100500	BEAVER COAL A-38		10130	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100495	250*287296	Y	Active WI Well	GAS	0.4975	Producing		4708100495	BEAVER COAL A-35		10129	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100503	250*287295	Y	Active WI Well	GAS	0.4975	Producing		4708100503	BEAVER COAL A-34		10128	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100498	250*287294	Y	Active WI Well	GAS	0.4975	Producing		4708100498	BEAVER COAL A-33		10127	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100486	250*287292	Y	Active WI Well	GAS	0.4975	Producing		4708100486	BEAVER COAL A-27		10125	A08	WV-RALEIGH_BEAVER	Producing

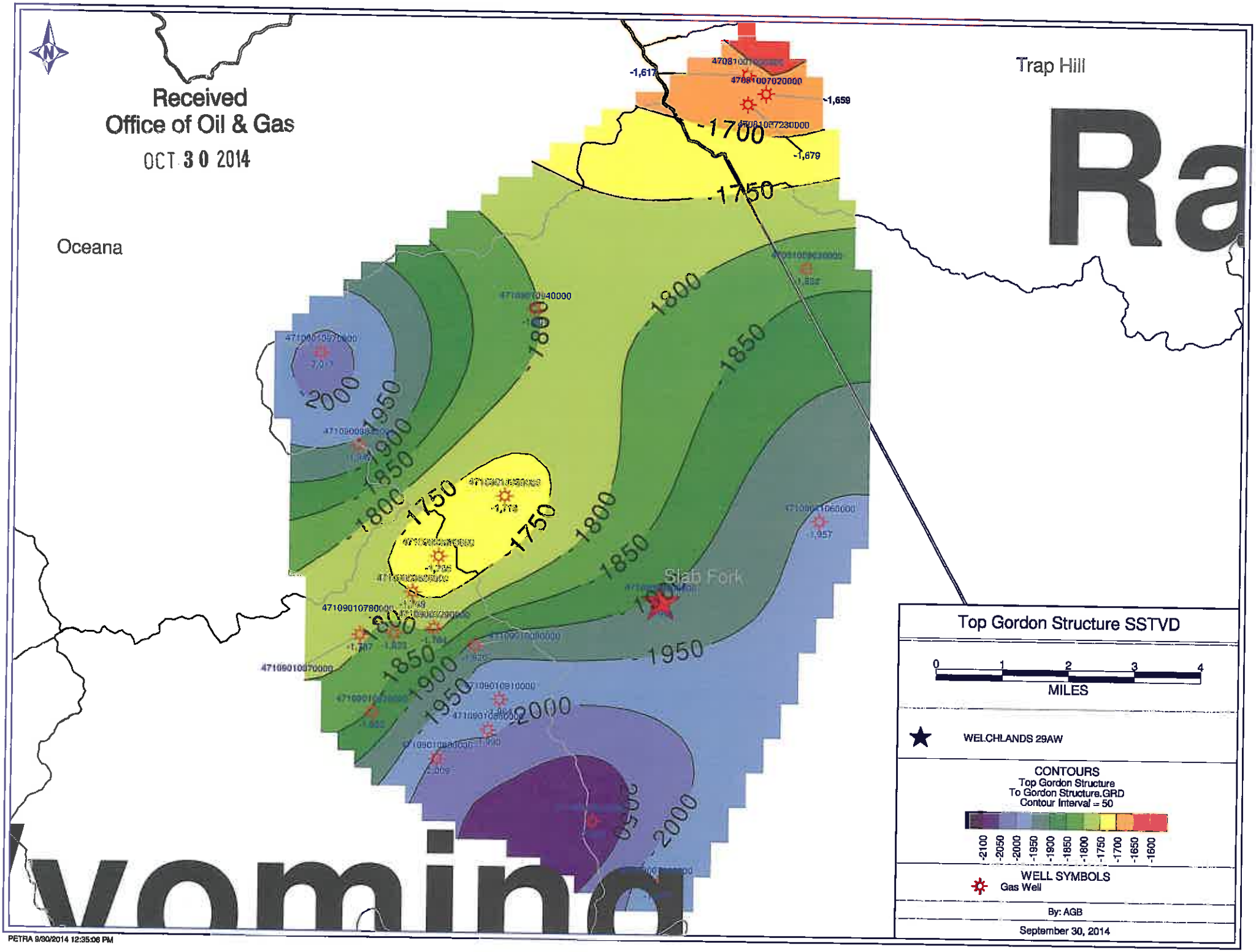
NCE Field Grp	Route Name	State	County	Api Well Number	Exc_250*	EXCO OWNED/ OPERATED	ACTIVE STATUS	GAS or OIL well	EXCO SHARE	BRD Q 2014 status	long term shut in	DOUBLE CHECK OF API	Description	Disposition code	Merrick Completion_ID	Year Drilled POD=PRIOR TO 2000	Lease Name	Producing Description
MABEN	MAB08	WV	RALEIGH	4708100520	250*287306	Y	Active WI Well	GAS	0.4975	Producing		4708100520	BEAVER COAL A-53		10137	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708101210	250*287330	Y	Active WI Well	GAS	0.4975	Producing		4708101210	BEAVER COAL A-85 (C6)		10205	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100485	250*287291	Y	Active WI Well	GAS	0.4975	Producing		4708100485	BEAVER COAL A-26		10126	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB01	WV	FAYETTE	4701900907	250*287356	Y	Active WI Well	GAS	0.4975	Producing		4701900907	NEW RIVER 8		10780	A08	W-BECKWITH	Producing
MABEN	MAB01	WV	FAYETTE	4701900902	250*287349	Y	Active WI Well	GAS	0.4975	Producing		4701900902	NEW RIVER 2		10775	A08	WV-NEW RIVER/ALLEGHENY	Producing
MABEN	MAB05	WV	WYOMING	4710900991	250*205630	Y	Active WI Well	GAS	0.4975	Producing		4710900991	Crouch 23A		597	P00	W-CROUCH	Producing
MABEN	MAB08	WV	RALEIGH	4708100531	250*287366	Y	Active WI Well	GAS	0.4975	Producing		4708100531	WESTMORELAND COAL 6		10211	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100519	250*287365	Y	Active WI Well	GAS	0.4975	Producing		4708100519	WESTMORELAND COAL 2		10210	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708101215	250*287364	Y	Active WI Well	GAS	0.4975	Producing		4708101215	WESTMORELAND 1 BCC-B C26		10209	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708101241	250*287245	Y	Active WI Well	GAS	0.4975	Producing		4708101241	BEAVER COAL A-88 (BCCA-14)		10988	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100975	250*287317	Y	Active WI Well	GAS	0.4975	Producing		4708100975	BEAVER COAL A-69		10193	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708101222	250*287326	Y	Active WI Well	GAS	0.4975	Producing		4708101222	BEAVER COAL A-86		10206	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708100563	250*287319	Y	Active WI Well	GAS	0.4975	Producing		4708100563	BEAVER COAL A-70		10194	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708101209	250*287329	Y	Active WI Well	GAS	0.4975	Producing		4708101209	BEAVER COAL A-81 (B22)		10203	A08	WV-RALEIGH_BEAVER	SHUT IN_Temporary
MABEN	MAB08	WV	RALEIGH	4708101208	250*287328	Y	Active WI Well	GAS	0.4975	Producing		4708101208	BEAVER COAL A-79 (A10)		10202	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708101206	250*287327	Y	Active WI Well	GAS	0.4975	Producing		4708101206	BEAVER COAL A-78 (C17)		10201	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708101205	250*287247	Y	Active WI Well	GAS	0.4975	Producing		4708101205	BEAVER COAL A-76-2 (A11)		10200	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708101197	250*287324	Y	Active WI Well	GAS	0.4975	Producing		4708101197	BEAVER COAL A-75 (BCC-A C4)		10199	A08	WV-RALEIGH_BEAVER	SI - Long Term_LTSI
MABEN	MAB08	WV	RALEIGH	4708101196	250*287323	Y	Active WI Well	GAS	0.4975	Producing		4708101196	BEAVER COAL A-74		10198	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708101195	250*287322	Y	Active WI Well	GAS	0.4975	Producing		4708101195	BEAVER COAL A-73		10197	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB08	WV	RALEIGH	4708101194	250*287321	Y	Active WI Well	GAS	0.4975	Producing		4708101194	BEAVER COAL A-72		10196	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB01	WV	RALEIGH	4708101174	250*287354	Y	Active WI Well	GAS	0.4975	Producing		4708101174	NEW RIVER 6		10778	A08	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB08	WV	RALEIGH	4708101240	250*287244	Y	Active WI Well	GAS	0.4975	Producing		4708101240	BEAVER COAL A-87 (BCC-A4)		11016	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB01	WV	RALEIGH	4708100685	250*205716	Y	Active WI Well	GAS	0.4975	Producing		4708100685	New River 49AR		793	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	4708100716	250*205724	Y	Active WI Well	GAS	0.472625	Producing		4708100716	New River 66AR		2136	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100668	250*205774	Y	Active WI Well	GAS	0.4975	Producing		4708100668	Daniels 1A		1954	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	4708100672	250*205710	Y	Active WI Well	GAS	0.4975	Producing		4708100672	New River 34AR		2669	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	4708100675	250*205712	Y	Active WI Well	GAS	0.4975	Producing		4708100675	New River 37AR		3029	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	4708100677	250*205715	Y	Active WI Well	GAS	0.4975	Producing		4708100677	New River 42AR		603	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	4708100666	250*205707	Y	Active WI Well	GAS	0.4975	Producing		4708100666	New River 28AR		2134	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100683	250*205766	Y	Active WI Well	GAS	0.398	Producing		4708100683	Crab Orchard 5AC		606	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	4708100663	250*205708	Y	Active WI Well	GAS	0.4975	Producing		4708100663	New River 29AR		2312	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100696	250*205753	Y	Active WI Well	GAS	0.398	Producing		4708100696	Crab Orchard 16AC		1223	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	4708100699	250*205717	Y	Active WI Well	GAS	0.4975	Producing		4708100699	New River 50AR		343	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100703	250*205787	Y	INActive WI Well	GAS	0.4975	Non Prod/Shut in HGO	LTSI	4708100703	Southern Lands 2A		1225	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	4708100704	250*205719	Y	Active WI Well	GAS	0.4975	Producing		4708100704	New River 60AR		1221	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	4708100706	250*205721	Y	Active WI Well	GAS	0.4975	Producing		4708100706	New River 62AR		1587	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB03	WV	RALEIGH	4708100967	250*205825	Y	Active WI Well	GAS	0.4975	Producing		4708100967	New Beaver 21C		1957	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB01	WV	RALEIGH	4708100678	250*205714	Y	Active WI Well	GAS	0.4975	Producing		4708100678	New River 41AR		300	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100653	250*205760	Y	Active WI Well	GAS	0.4975	Producing		4708100653	Crab Orchard 28AC		2495	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100633	250*205749	Y	Active WI Well	GAS	0.4975	Producing		4708100633	Crab Orchard 11AC		605	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100634	250*205755	Y	Active WI Well	GAS	0.4975	Producing		4708100634	Crab Orchard 22AC		1589	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100641	250*205756	Y	Active WI Well	GAS	0.4975	Producing		4708100641	Crab Orchard 23AC		1775	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	4708100642	250*205705	Y	Active WI Well	GAS	0.4975	Producing		4708100642	New River 24AR		1772	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB06	WV	RALEIGH	4708100645	250*205635	Y	Active WI Well	GAS	0.4975	Producing		4708100645	Dorothy Sarita 007A		1402	P00	W-DOROTHY	Producing
MABEN	MAB07	WV	RALEIGH	4708100667	250*205775	Y	Active WI Well	GAS	0.4975	Producing		4708100667	Hawley 1A		2139	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100651	250*205758	Y	Active WI Well	GAS	0.4975	Producing		4708100651	Crab Orchard 26AC		2138	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	4708100717	250*205711	Y	Active WI Well	GAS	0.4975	Producing		4708100717	New River 36AR		2851	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100654	250*205757	Y	Active WI Well	GAS	0.4975	Producing		4708100654	Crab Orchard 25AC		1953	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100655	250*205784	Y	Active WI Well	GAS	0.4975	Producing		4708100655	Lacy 1A		798	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100656	250*205783	Y	Active WI Well	GAS	0.4975	Producing		4708100656	Lacy 2A		607	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100658	250*205776	Y	Active WI Well	GAS	0.4975	Producing		4708100658	Hawley 2A		2317	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100659	250*205786	Y	Active WI Well	GAS	0.4975	Producing		4708100659	Southern Lands 1A		1049	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	4708100662	250*205706	Y	Active WI Well	GAS	0.4975	Producing		4708100662	New River 27AR		1950	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100650	250*205759	Y	Active WI Well	GAS	0.4975	Producing		4708100650	Crab Orchard 27AC		2316	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB06	WV	RALEIGH	4708100944	250*205637	Y	Active WI Well	GAS	0.4975	Producing		4708100944	Dorothy Sarita 012		1767	P00	W-DOROTHY	Producing
MABEN	MAB06	WV	RALEIGH	4708100710	250*205636	Y	Active WI Well	GAS	0.398	Producing		4708100710	Dorothy Sarita 008A		1581	P00	W-DOROTHY	Producing
MABEN	MAB01	WV	RALEIGH	4708100821	250*205725	Y	Active WI Well	GAS	0.4975	Producing		4708100821	New River 72AR		2314	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB06	WV	RALEIGH	4708100826	250*205659	Y	Active WI Well	GAS	0.4975	Producing		4708100826	Presbytery 1A		2666	P00	W-DOROTHY	Producing
MABEN	MAB03	WV	RALEIGH	4708100878	250*205535	Y	Active WI Well	GAS	0.4975	Producing		4708100878	Welchlands 047AW		1761	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB06	WV	RALEIGH	4708100910	250*205642	Y	Active WI Well	GAS	0.4975	Producing		4708100910	Dorothy Sarita 021A		2665	P00	W-DOROTHY	Producing
MABEN	MAB06	WV	RALEIGH	4708100818	250*205639	Y	Active WI Well	GAS	0.4975	Producing		4708100818	Dorothy Sarita 015ADS		2131	P00	W-DOROTHY	Producing
MABEN	MAB07	WV	RALEIGH	4708100938	250*205744	Y	Active WI Well	GAS	0.4975	Producing		4708100938	BEAVER 19B		2672	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB06	WV	RALEIGH	4708100813	250*205641	Y	Active WI Well	GAS	0.4975	Producing		4708100813	Dorothy Sarita 017ADS		2488	P00	W-DOROTHY	Producing
MABEN	MAB03	WV	RALEIGH	4708100945	250*205540	Y	Active WI Well	GAS	0.4975	Producing		4708100945	Welchlands 056BW		2658	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708100954	250*205537	Y	Active WI Well	GAS	0.4975	Producing		4708100954	Welchlands 053		2125	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708100955	250*205541	Y	Active WI Well	GAS	0.4975	Producing		4708100955	Welchlands 057BW		2840	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB07	WV	RALEIGH	4708100957	250*205754	Y	Active WI Well	GAS	0.4975	Producing		4708100957	Crab Orchard 17BC		1410	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB06	WV	RALEIGH	4708100961	250*205644	Y	Active WI Well	GAS	0.4975	Producing		4708100961	Dorothy Sarita 028		3024	P00	W-DOROTHY	Producing
MABEN	MAB03	WV	RALEIGH	4708100966	250*205824	Y	Active WI Well	GAS	0.4975	Producing		4708100966	New Beaver 20C		1779	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708100915	250*205840	Y	Active WI Well	GAS	0.4975	Producing		4708100915	Welchlands 050AW		1594	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB01	WV	RALEIGH	4708100770	250*205704	Y	Active WI Well	GAS	0.4601875	Producing		4708100770	New River 22AR		1585	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	4708100718	250*205722	Y	Active WI Well	GAS	0.4975	Producing		4708100718	New River 63AR		1773	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	4708100719	250*205723	Y	Active WI Well	GAS	0.4975	Producing		4708100719	New River 64AR		1951	P00	W-Bkly NewRvr_CrabOrchrd	Producing

NCE Field Grp	Route Name	State	County	Api Well Number	Exc_250*	EXCO OWNED/ OPERATED	ACTIVE STATUS	GAS or OIL well	EXCO SHARE	3RD Q 2014 status	long term shut in	DOUBLE CHECK OF API	Description	Disposition code	Merrick Completion_ID	Year Drilled PDP-PMDR TO 2000	Lease Name	Producing Description
MABEN	MAB01	WV	RALEIGH	4708100720	250*205709	Y	Active WI Well	GAS	0.4975	Producing		4708100720	New River 33AR		2491	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100722	250*205738	Y	Active WI Well	GAS	0.4975	Producing		4708100722	BEAVER 01A		1588	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	4708100727	250*205718	Y	Active WI Well	GAS	0.4975	Producing		4708100727	New River 58AR		1045	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100820	250*205743	Y	Active WI Well	GAS	0.24875	Producing		4708100820	BEAVER 18A		2494	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100768	250*205741	Y	Active WI Well	GAS	0.2114375	Producing		4708100768	BEAVER 12A		2137	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100621	250*205782	Y	Active WI Well	GAS	0.4975	Producing		4708100621	Jones Gibson 8AJ		304	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100788	250*205742	Y	Active WI Well	GAS	0.2114375	Producing		4708100788	BEAVER 13A		2315	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100792	250*205764	Y	Active WI Well	GAS	0.4975	Producing		4708100792	Crab Orchard 35AC		118	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100796	250*205765	Y	Active WI Well	GAS	0.4975	Producing		4708100796	Crab Orchard 39AC		303	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB06	WV	RALEIGH	4708100800	250*205638	Y	Active WI Well	GAS	0.4975	Producing		4708100800	Dorothy Sarita 014ADS		1945	P00	W-DOROTHY	Producing
MABEN	MAB07	WV	RALEIGH	4708100811	250*205763	Y	Active WI Well	GAS	0.4975	Producing		4708100811	Crab Orchard 33AC		3032	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB06	WV	RALEIGH	4708100812	250*205640	Y	Active WI Well	GAS	0.4975	Producing		4708100812	Dorothy Sarita 016ADS		2308	P00	W-DOROTHY	Producing
MABEN	MAB07	WV	RALEIGH	4708100746	250*205739	Y	Active WI Well	GAS	0.44775	Producing		4708100746	BEAVER 02A		1774	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB02	WV	MINGO	4705901155	250*205665	Y	Active WI Well	GAS	0.4975	Producing		4705901155	Harelands 002AH		790	P00	W-HARELANDS	Producing
MABEN	MAB07	WV	RALEIGH	4708100632	250*205751	Y	Active WI Well	GAS	0.4975	Producing		4708100632	Crab Orchard 13AC		346	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB02	WV	MINGO	4705900857	250*205671	Y	Active WI Well	GAS	0.4975	Producing		4705900857	Harelands 167		1769	P00	W-HARELANDS	Producing
MABEN	MAB02	WV	MINGO	4705901032	250*205693	Y	Active WI Well	GAS	0.4664063	Producing		4705901032	Leo 1A (Signiago)		2668	P00	W-SIGNIAGO	Producing
MABEN	MAB02	WV	MINGO	4705901034	250*205694	Y	Active WI Well	GAS	0.4353125	Producing		4705901034	Leo 4A		2850	P00	W-SIGNIAGO	Producing
MABEN	MAB02	WV	MINGO	4705901126	250*205688	Y	Active WI Well	GAS	0.4975	Producing		4705901126	Skillet Fork 004ASF		1770	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	4705900706	250*205687	Y	Active WI Well	GAS	0.4975	Producing		4705900706	Skillet 114		1584	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	4705901154	250*205664	Y	Active WI Well	GAS	0.4975	Producing		4705901154	Harelands 001AH		599	P00	W-HARELANDS	Producing
MABEN	MAB02	WV	MINGO	4705900705	250*205686	Y	Active WI Well	GAS	0.4975	Producing		4705900705	Skillet 113		1405	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	4705901158	250*205666	Y	Active WI Well	GAS	0.4975	Producing		4705901158	Harelands 003AH		340	P00	W-HARELANDS	Producing
MABEN	MAB02	WV	MINGO	4705901163	250*205689	Y	Active WI Well	GAS	0.4975	Producing		4705901163	Skillet Fork 005ASF		1948	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	4705901625	250*205691	Y	Active WI Well	GAS	0.4975	Producing		4705901625	Skillet Fork 006 N		2311	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	4705901636	250*205692	Y	Active WI Well	GAS	0.4975	Producing		4705901636	Skillet Fork 002B		1097	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	4705901673	250*205672	Y	Active WI Well	GAS	0.4975	Producing		4705901673	Harelands 005NH		1947	04	W-HARELANDS	Producing
MABEN	MAB02	WV	MINGO	4705901674	250*205673	Y	Active WI Well	GAS	0.4975	Producing		4705901674	Harelands 006NH		2133	04	W-HARELANDS	Producing
MABEN	MAB02	WV	MINGO	4705901138	250*205667	Y	Active WI Well	GAS	0.4975	Producing		4705901138	Harelands 004AH		1041	P00	W-HARELANDS	Producing
MABEN	MAB02	WV	MINGO	4705900689	250*205680	Y	Active WI Well	GAS	0.4975	Producing		4705900689	Skillet 104		297	P00	W-SKILLET FORK	Producing
MABEN	MAB05	WV	WYOMING	4710900973	250*205617	Y	Active WI Well	GAS	0.4975	Producing		4710900973	Crouch 05A		1214	P00	W-CROUCH	Producing
MABEN	MAB02	WV	MINGO	4705900350	250*205675	Y	Active WI Well	GAS	0.4975	Producing		4705900350	Skillet 013		2490	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	4705900533	250*205668	Y	Active WI Well	GAS	0.4975	Producing		4705900533	Harelands 058		1217	P00	W-HARELANDS	Producing
MABEN	MAB02	WV	MINGO	4705900663	250*205676	Y	Active WI Well	GAS	0.4975	Producing		4705900663	Skillet 092		2667	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	4705900679	250*205677	Y	Active WI Well	GAS	0.4975	Producing		4705900679	Skillet 098		2849	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	4705900736	250*205670	Y	Active WI Well	GAS	0.4975	Producing		4705900736	Harelands 122		1583	P00	W-HARELANDS	Producing
MABEN	MAB02	WV	MINGO	4705900686	250*205679	Y	Active WI Well	GAS	0.4975	Producing		4705900686	Skillet 102		112	P00	W-SKILLET FORK	Producing
MABEN	MAB03	WV	RALEIGH	4708100216	250*205543	Y	Active WI Well	GAS	0.4975	Producing		4708100216	Welchlands 059		104	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB02	WV	MINGO	4705900692	250*205681	Y	Active WI Well	GAS	0.4975	Producing		4705900692	Skillet 105		600	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	4705900693	250*205682	Y	Active WI Well	GAS	0.4975	Producing		4705900693	Skillet 106		791	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	4705900694	250*205669	Y	Active WI Well	GAS	0.4975	Producing		4705900694	Harelands 108		1404	P00	W-HARELANDS	Producing
MABEN	MAB02	WV	MINGO	4705900695	250*205683	Y	Active WI Well	GAS	0.4975	Producing		4705900695	Skillet 109		341	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	4705900699	250*205684	Y	Active WI Well	GAS	0.4975	Producing		4705900699	Skillet 110		1042	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	4705900700	250*205685	Y	Active WI Well	GAS	0.4975	Producing		4705900700	Skillet 111		1218	P00	W-SKILLET FORK	Producing
MABEN	MAB02	WV	MINGO	4705900684	250*205678	Y	Active WI Well	GAS	0.4975	Producing		4705900684	Skillet 100		3026	P00	W-SKILLET FORK	Producing
MABEN	MAB07	WV	RALEIGH	4708100605	250*205821	Y	Active WI Well	GAS	0.4975	Producing		4708100605	Crab Orchard 6AC		1227	P00	W-6AC	Producing
MABEN	MAB01	WV	RALEIGH	4708100589	250*205699	Y	Active WI Well	GAS	0.4975	Producing		4708100589	New River 10AR		792	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	4708100591	250*205698	Y	Active WI Well	GAS	0.4975	Producing		4708100591	New River 09AR		602	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100592	250*205748	Y	Active WI Well	GAS	0.4975	Producing		4708100592	Crab Orchard 10AC		302	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100596	250*205747	Y	Active WI Well	GAS	0.4975	Producing		4708100596	Crab Orchard 09AC		117	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB06	WV	RALEIGH	4708100598	250*205634	Y	Active WI Well	GAS	0.4975	Producing		4708100598	Dorothy Sarita 003A		1215	P00	W-DOROTHY	Producing
MABEN	MAB02	WV	MINGO	4705901675	250*205674	Y	Active WI Well	GAS	0.4975	Producing		4705901675	Harelands 007NH		2310	04	W-HARELANDS	Producing
MABEN	MAB07	WV	RALEIGH	4708100601	250*205779	Y	Active WI Well	GAS	0.4975	Producing		4708100601	Jones Gibson 5AJ		2855	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100576	250*205777	Y	Active WI Well	GAS	0.4975	Producing		4708100576	Jones Gibson 2AJ		2496	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100610	250*205750	Y	Active WI Well	GAS	0.4975	Producing		4708100610	Crab Orchard 12AC		796	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	4708100614	250*205700	Y	Active WI Well	GAS	0.4975	Producing		4708100614	New River 14AR		342	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	4708100617	250*205701	Y	Active WI Well	GAS	0.4975	Producing		4708100617	New River 18AR		1043	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100618	250*205780	Y	Active WI Well	GAS	0.4975	Producing		4708100618	Jones Gibson 6AJ		3033	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	4708100619	250*205702	Y	Active WI Well	GAS	0.4975	Producing		4708100619	New River 20AR		1220	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	RALEIGH	4708100684	250*205713	Y	Active WI Well	GAS	0.4975	Producing		4708100684	New River 40AR		115	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100600	250*205752	Y	Active WI Well	GAS	0.4975	Producing		4708100600	Crab Orchard 15AC		1047	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB03	WV	RALEIGH	4708100276	250*205564	Y	Active WI Well	GAS	0.4975	Producing		4708100276	Welchlands 144		972	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB07	WV	RALEIGH	4708100630	250*205781	Y	Active WI Well	GAS	0.4975	Producing		4708100630	Jones Gibson 7AJ		119	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB06	WV	RALEIGH	4708100223	250*205652	Y	Active WI Well	GAS	0.4975	Producing		4708100223	Dorothy Sarita 063		1403	P00	W-DOROTHY	Producing
MABEN	MAB06	WV	RALEIGH	4708100228	250*205653	Y	Active WI Well	GAS	0.4975	Producing		4708100228	Dorothy Sarita 070		1582	P00	W-DOROTHY	Producing
MABEN	MAB03	WV	RALEIGH	4708100230	250*205552	Y	INActive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4708100230	Welchlands 075 BW		1576	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB06	WV	RALEIGH	4708100232	250*205654	Y	Active WI Well	GAS	0.4975	Producing		4708100232	Dorothy Sarita 078		1768	P00	W-DOROTHY	Producing
MABEN	MAB06	WV	RALEIGH	4708100235	250*205655	Y	Active WI Well	GAS	0.4975	Producing		4708100235	Dorothy Sarita 084		1946	P00	W-DOROTHY	Producing
MABEN	MAB07	WV	RALEIGH	4708100579	250*205746	Y	Active WI Well	GAS	0.4975	Producing		4708100579	Crab Orchard 02AC		3031	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB06	WV	RALEIGH	4708100241	250*205657	Y	Active WI Well	GAS	0.4975	Producing		4708100241	Dorothy Sarita 094		2309	P00	W-DOROTHY	Producing
MABEN	MAB07	WV	RALEIGH	4708100577	250*205778	Y	Active WI Well	GAS	0.4975	Producing		4708100577	Jones Gibson 3AJ		2673	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708100540	250*205785	Y	Active WI Well	GAS	0.4975	Producing		4708100540	Rowland 1A		348	P00	W-Bkly NewRvr_CrabOrchrd	SI - Long Term_LTSI
MABEN	MAB01	WV	RALEIGH	4708100560	250*205697	Y	Active WI Well	GAS	0.4975	Producing		4708100560	New River 06AR		298	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB03	WV	RALEIGH	4708100567	250*205520	Y	Active WI Well	GAS	0.4975	Producing		4708100567	Welchlands 003AW		2123	P00	W-Bkly Welchlnd_NewBvr	Producing

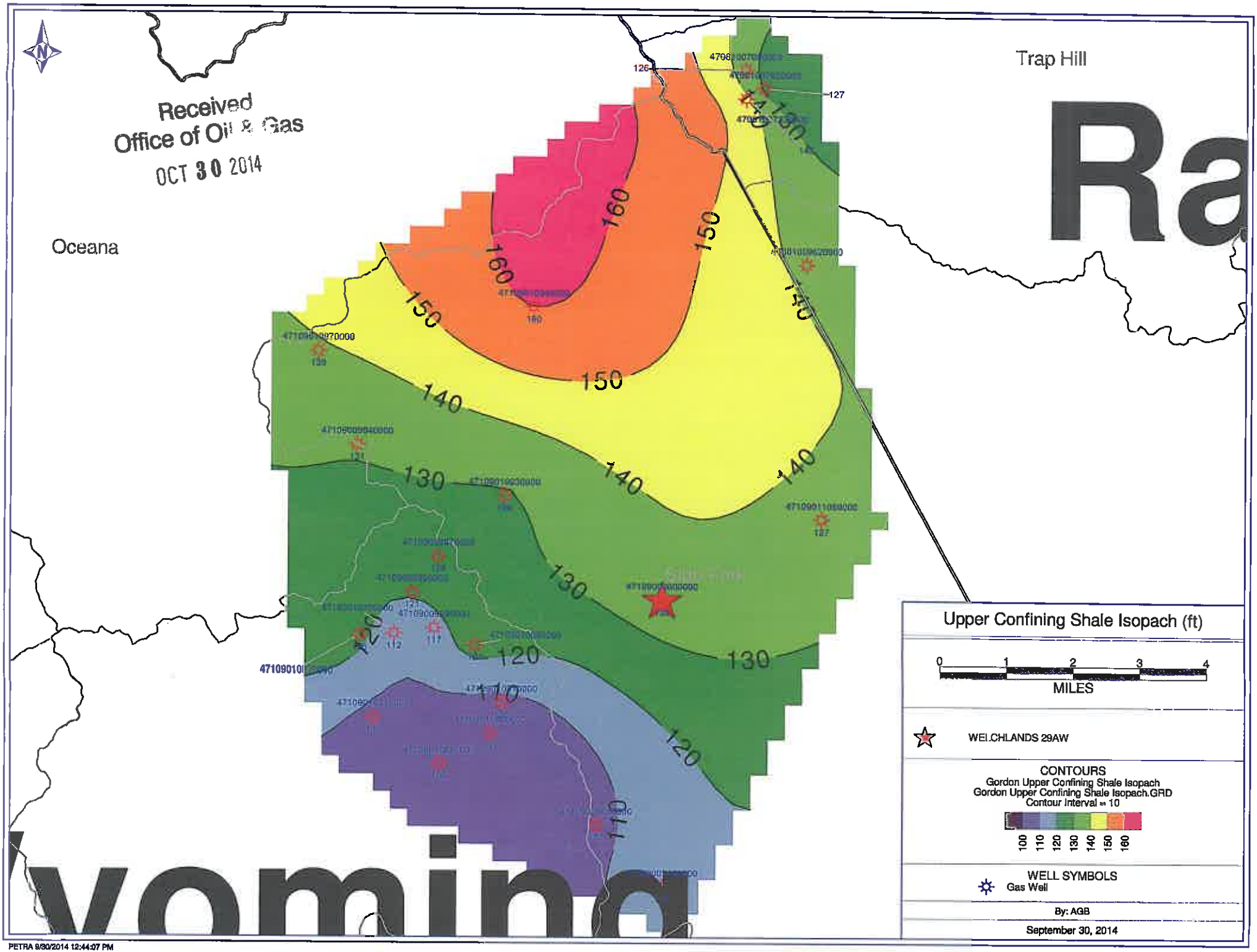
NCE Field Grp	Route Name	State	County	Api Well Number	Exc_250*	EXCO OWNED/ OPERATED	ACTIVE STATUS	GAS or OIL well	EXCO SHARE	3RD Q 2014 status	long term shut in	DOUBLE CHECK OF API	Description	Disposition code	Merrick Completion_ID	Year Drilled P00=PRE90 TO 2000	Lease Name	Producing Description
MABEN	MAB03	WV	RALEIGH	4708100568	250*205519	Y	Active WI Well	GAS	0.4975	Producing		4708100568	Welchlands 001AW		1938	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB01	WV	RALEIGH	4708100573	250*205696	Y	Active WI Well	GAS	0.4975	Producing		4708100573	New River 04AR		113	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB01	WV	FAYETTE	4701900910	250*287346	Y	Active WI Well	GAS	0.4975	Producing		4701900910	NEW RIVER 13		10784	A08	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB06	WV	RALEIGH	4708100238	250*205656	Y	Active WI Well	GAS	0.4975	Producing		4708100238	Dorothy Sarita 091		2132	P00	W-DOROTHY	Producing
MABEN	MAB02	WV	WYOMING	4710900444	250*205587	Y	Active WI Well	GAS	0.4975	Producing		4710900444	Newberry 028		1942	P00	W-NEWBERRY	Producing
MABEN	MAB03	WV	RALEIGH	4708101097	250*205850	Y	Active WI Well	GAS	0.4975	Producing		4708101097	Welchlands 097		308	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB06	WV	RALEIGH	4708101436	250*151080	Y	Active WI Well	GAS	0.4975	Producing		4708101436	DOROTHY SARITA 047 NDS		7854	07	W-DOROTHY	Producing
MABEN	MAB06	WV	RALEIGH	4708101437	250*151225	Y	Active WI Well	GAS	0.4975	Producing		4708101437	DOROTHY SARITA 048 NDS		7329	07	W-DOROTHY	Producing
MABEN	MAB05	WV	WYOMING	4710900096	250*205562	Y	Active WI Well	GAS	0.4975	Producing		4710900096	Welchlands 132		593	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	4710900406	250*205527	Y	Active WI Well	GAS	0.4975	Producing		4710900406	Welchlands 022		287	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB06	WV	RALEIGH	4708101434	250*151078	Y	Active WI Well	GAS	0.4975	Producing		4708101434	DOROTHY SARITA 044 NDS		7313	07	W-DOROTHY	Producing
MABEN	MAB05	WV	WYOMING	4710900431	250*205529	Y	Active WI Well	GAS	0.4975	Producing		4710900431	Welchlands 027		781	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708101396	250*205858	Y	Active WI Well	GAS	0.4975	Producing		4708101396	Welchlands 119		1781	06	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708100976	250*205826	Y	Active WI Well	GAS	0.4975	Producing		4708100976	New Beaver 22C		2142	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	4710900457	250*205531	Y	Active WI Well	GAS	0.4975	Producing		4710900457	Welchlands 036		1033	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB07	WV	RALEIGH	4708100682	250*205762	Y	Active WI Well	GAS	0.4975	Producing		4708100682	Crab Orchard 32AC		2854	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB02	WV	WYOMING	4710900466	250*205602	Y	Active WI Well	GAS	0.4975	Producing		4710900466	NEWBERRY 038		1579	02	W-NEWBERRY	Producing
MABEN	MAB05	WV	WYOMING	4710900468	250*205533	Y	Active WI Well	GAS	0.4975	Producing		4710900468	Welchlands 039		1396	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	4710900491	250*205539	Y	Active WI Well	GAS	0.4975	Producing		4710900491	Welchlands 055		2482	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	4710900420	250*205528	Y	Active WI Well	GAS	0.4975	Producing		4710900420	Welchlands 025		591	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB06	WV	RALEIGH	4708101314	250*205660	Y	Active WI Well	GAS	0.4975	Producing		4708101314	DOROTHY Sarita 039N		2848	P00	W-DOROTHY	Producing
MABEN	MAB06	WV	RALEIGH	4708101104	250*205649	Y	Active WI Well	GAS	0.4975	Producing		4708101104	Dorothy Sarita 034		339	P00	W-DOROTHY	Producing
MABEN	MAB06	WV	RALEIGH	4708101112	250*205648	Y	Active WI Well	GAS	0.4975	Producing		4708101112	Dorothy Sarita 033		789	P00	W-DOROTHY	Producing
MABEN	MAB06	WV	RALEIGH	4708101156	250*205650	Y	Active WI Well	GAS	0.4975	Producing		4708101156	Dorothy Sarita 035BDS		1040	P00	W-DOROTHY	Producing
MABEN	MAB06	WV	RALEIGH	4708101157	250*205651	Y	Active WI Well	GAS	0.4975	Producing		4708101157	Dorothy Sarita 037BDS		1216	P00	W-DOROTHY	Producing
MABEN	MAB03	WV	RALEIGH	4708101249	250*205851	Y	Active WI Well	GAS	0.4975	Producing		4708101249	WELCHLANDS 103		611	02	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB06	WV	RALEIGH	4708101435	250*151079	Y	Active WI Well	GAS	0.4975	Producing		4708101435	DOROTHY SARITA 045 NDS		7315	07	W-DOROTHY	Producing
MABEN	MAB03	WV	RALEIGH	4708101313	250*205853	Y	Active WI Well	GAS	0.4975	Producing		4708101313	WELCHLANDS 111N		350	02	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	4710900529	250*205553	Y	Active WI Well	GAS	0.4975	Producing		4710900529	Welchlands 076		1940	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB01	WV	RALEIGH	4708101318	250*205737	Y	Active WI Well	GAS	0.4975	Producing		4708101318	New River 39 EOG [NR_039]		1409	04	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB03	WV	RALEIGH	4708101321	250*205854	Y	Active WI Well	GAS	0.4975	Producing		4708101321	WELCHLANDS 112 NW		1053	04	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708101342	250*205857	Y	Active WI Well	GAS	0.4975	Producing		4708101342	WELCHLANDS 115 NW		1595	05	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB06	WV	RALEIGH	4708101347	250*205661	Y	Active WI Well	GAS	0.4975	Producing		4708101347	DOROTHY SARITA 040 NDS		3025	05	W-DOROTHY	Producing
MABEN	MAB06	WV	RALEIGH	4708101363	250*205662	Y	Active WI Well	GAS	0.4975	Producing		4708101363	DOROTHY SARITA 042 NDS		111	05	W-DOROTHY	Producing
MABEN	MAB06	WV	RALEIGH	4708101394	250*205663	Y	Active WI Well	GAS	0.4975	Producing		4708101394	DOROTHY SARITA 041 N		296	06	W-DOROTHY	Producing
MABEN	MAB03	WV	RALEIGH	4708101250	250*205852	Y	Active WI Well	GAS	0.4975	Producing		4708101250	WELCHLANDS 104		802	02	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	WYOMING	4710900939	250*205532	Y	Active WI Well	GAS	0.472625	Producing		4710900939	Welchlands 038AW		1209	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	WYOMING	4710900889	250*205524	Y	Active WI Well	GAS	0.4975	Producing		4710900889	Welchlands 016AW		2839	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	4710900894	250*205612	Y	Active WI Well	GAS	0.4975	Producing		4710900894	Rundle 1A		293	P00	W-AGP/EASTER	Producing
MABEN	MAB05	WV	WYOMING	4710900895	250*205613	Y	Active WI Well	GAS	0.4975	Producing		4710900895	Smith 1A		596	P00	W-AGP/EASTER	Producing
MABEN	MAB05	WV	WYOMING	4710900901	250*205526	Y	Active WI Well	GAS	0.4975	Producing		4710900901	Welchlands 021AW		102	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	4710900903	250*205606	Y	Active WI Well	GAS	0.4813313	Producing		4710900903	AGP 2		2306	P00	W-AGP/EASTER	Producing
MABEN	MAB05	WV	WYOMING	4710900503	250*205544	Y	Active WI Well	GAS	0.4975	Producing		4710900503	Welchlands 061		289	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	4710900931	250*205614	Y	Active WI Well	GAS	0.3864083	Producing		4710900931	Cooke 1A		787	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	4710900886	250*205608	Y	Active WI Well	GAS	0.4813313	Producing		4710900886	AGP 4		2663	P00	W-AGP/EASTER	Producing
MABEN	MAB05	WV	WYOMING	4710900948	250*205615	Y	Active WI Well	GAS	0.4975	Producing		4710900948	Crouch 01A		975	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	4710900957	250*205616	Y	Active WI Well	GAS	0.4975	Producing		4710900957	Crouch 02A		1038	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	4710900959	250*205633	Y	Active WI Well	GAS	0.3864083	Producing		4710900959	McGuire 2A		1039	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	4710900960	250*205631	Y	Active WI Well	GAS	0.398	Producing		4710900960	Glydys 1A		788	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	4710900966	250*205618	Y	Active WI Well	GAS	0.398	Producing		4710900966	Crouch 06A		1401	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	4710900967	250*205621	Y	Active WI Well	GAS	0.4975	Producing		4710900967	Crouch 09A		1944	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	4710900930	250*205632	Y	Active WI Well	GAS	0.4975	Producing		4710900930	McGuire 1A		976	P00	W-CROUCH	Producing
MABEN	MAB05	WV	WYOMING	4710900855	250*205521	Y	Active WI Well	GAS	0.4975	Producing		4710900855	Welchlands 007AW		2300	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	4710900447	250*205530	Y	Active WI Well	GAS	0.4975	Producing		4710900447	Welchlands 032		969	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	4710900554	250*205558	Y	Active WI Well	GAS	0.4975	Producing		4710900554	Welchlands 087		2842	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	WYOMING	4710900657	250*205563	Y	Active WI Well	GAS	0.4975	Producing		4710900657	Welchlands 140		784	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	4710900665	250*205566	Y	Active WI Well	GAS	0.4975	Producing		4710900665	Welchlands 155		1211	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	WYOMING	4710900668	250*205565	Y	Active WI Well	GAS	0.4975	Producing		4710900668	Welchlands 150		1035	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	WYOMING	4710900681	250*205567	Y	Active WI Well	GAS	0.4975	Producing		4710900681	Welchlands 162		1398	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MA903	WV	WYOMING	4710900888	250*205523	Y	Active WI Well	GAS	0.4975	Producing		4710900888	Welchlands 015AW		2657	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	WYOMING	4710900747	250*205569	Y	Active WI Well	GAS	0.4975	Producing		4710900747	Welchlands 166		1763	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	4710900887	250*205525	Y	Active WI Well	GAS	0.4975	Producing		4710900887	Welchlands 018AW		3017	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	4710900859	250*205611	Y	Active WI Well	GAS	0.4975	Producing		4710900859	Easter 1AE		108	P00	W-AGP/EASTER	Producing
MABEN	MAB05	WV	WYOMING	4710900871	250*205522	Y	Active WI Well	GAS	0.4975	Producing		4710900871	Welchlands 009AW		2480	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB05	WV	WYOMING	4710900877	250*205822	Y	Active WI Well	GAS	0.4975	Producing		4710900877	Bond 1		1414	P00	W-BOND	Producing
MABEN	MAB05	WV	WYOMING	4710900879	250*205605	Y	Active WI Well	GAS	0.4813313	Producing		4710900879	AGP 1		2129	P00	W-AGP/EASTER	Producing
MABEN	MAB05	WV	WYOMING	4710900885	250*205607	Y	Active WI Well	GAS	0.4813313	Producing		4710900885	AGP 3		2486	P00	W-AGP/EASTER	Producing
MABEN	MAB02	WV	WYOMING	4710900527	250*205595	Y	Active WI Well	GAS	0.4975	Producing		4710900527	Newberry 073		292	P00	W-NEWBERRY	Producing
MABEN	MAB03	WV	WYOMING	4710900744	250*205568	Y	Active WI Well	GAS	0.4975	Producing		4710900744	Welchlands 165		1577	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB02	WV	LOGAN	4704500285	250*205573	Y	Active WI Well	GAS	0.4975	Producing		4704500285	Newberry 003		2484	P00	W-NEWBERRY	Producing
MABEN	MAB03	WV	RALEIGH	4708101022	250*205839	Y	Active WI Well	GAS	0.4975	Producing		4708101022	Welchlands 049BW		1415	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB02	WV	LOGAN	4704501395	250*205600	Y	Active WI Well	GAS	0.4975	Producing		4704501395	Newberry 009-NN		1213	01	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	4704501396	250*205601	Y	Active WI Well	GAS	0.4975	Producing		4704501396	Newberry 012-NN		1400	01	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	4704501968	250*150617	Y	Active WI Well	GAS	0.4975	Producing		4704501968	Newberry 022NN		7222	07	W-NEWBERRY	Producing

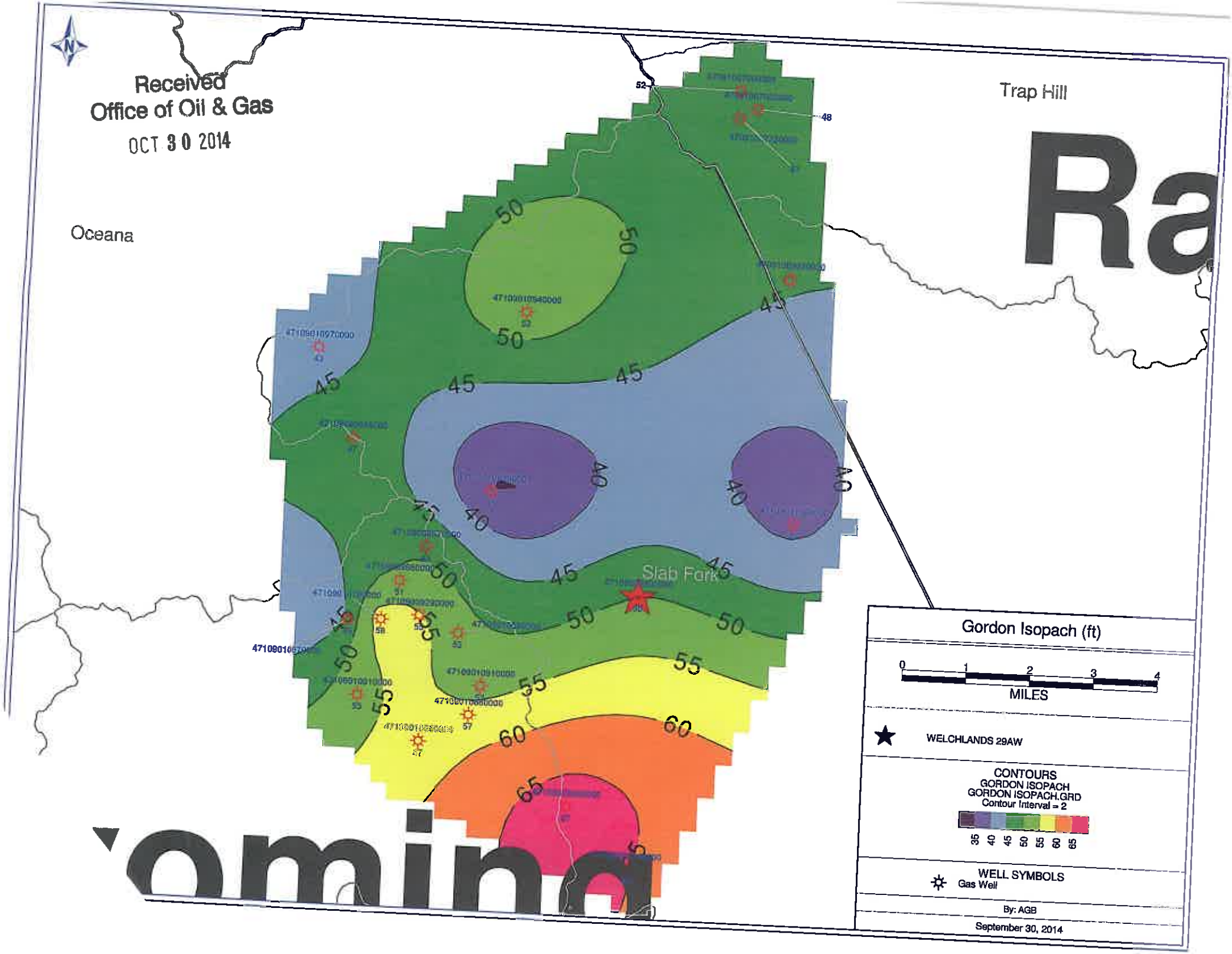
NCE Field Grp	Route Name	State	County	Api Well Number	Exc_250*	EXCO OWNED/ OPERATED	ACTIVE STATUS	GAS or OIL well	EXCO SHARE	3RD Q 2014 status	long term shut in	DOUBLE CHECK OF API	Description	Disposition code	Merrick Completion_ID	Year Drilled P00=PRIOR TO 2000	Lease Name	Producing Description
MABEN	MAB02	WV	LOGAN	4704501969	250*150618	Y	Active WI Well	GAS	0.4975	Producing		4704501969	Newberry 027NN		7224	07	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	4704501970	250*150619	Y	Active WI Well	GAS	0.4975	Producing		4704501970	Newberry 029NN		7223	07	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	4704502000	250*151224	Y	Active WI Well	GAS	0.4975	Producing		4704502000	Newberry 026N		7225	07	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	4704500816	250*205599	Y	Active WI Well	GAS	0.4975	Producing		4704500816	Newberry 131		1037	07	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	4704500286	250*205575	Y	Active WI Well	GAS	0.4975	Producing		4704500286	Newberry 004		2843	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	4704500813	250*205598	Y	Active WI Well	GAS	0.4975	Producing		4704500813	Newberry 130		974	07	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	4704500284	250*205572	Y	Active WI Well	GAS	0.4975	Producing		4704500284	Newberry 002		2304	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	4704500283	250*205571	Y	Active WI Well	GAS	0.4975	Producing		4704500283	Newberry 001		2127	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	4704500323	250*205581	Y	Active WI Well	GAS	0.4975	Producing		4704500323	Newberry 011		973	P00	W-NEWBERRY	Producing
MABEN	MAB06	WV	RALEIGH	4708100982	250*205645	Y	Active WI Well	GAS	0.4975	Producing		4708100982	Dorothy Sarita 030BDS		110	P00	W-DOROTHY	Producing
MABEN	MAB06	WV	RALEIGH	4708100986	250*205646	Y	Active WI Well	GAS	0.4975	Producing		4708100986	Dorothy Sarita 031BDS		295	P00	W-DOROTHY	Producing
MABEN	MAB03	WV	RALEIGH	4708100993	250*205842	Y	Active WI Well	GAS	0.4975	Producing		4708100993	Welchlands 067 BW		1958	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708101004	250*205831	Y	Active WI Well	GAS	0.4975	Producing		4708101004	New Beaver 27C		3036	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708100977	250*205827	Y	Active WI Well	GAS	0.4975	Producing		4708100977	New Beaver 23C		2320	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB02	WV	LOGAN	4704500570	250*205590	Y	Active WI Well	GAS	0.4975	Producing		4704500570	Newberry 052		2485	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	4704500324	250*205582	Y	Active WI Well	GAS	0.4975	Producing		4704500324	Newberry 014		1036	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	4704500338	250*205580	Y	Active WI Well	GAS	0.4975	Producing		4704500338	Newberry 008		785	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	4704500352	250*205583	Y	Active WI Well	GAS	0.4975	Producing		4704500352	Newberry 015		1212	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	4704500306	250*205579	Y	Active WI Well	GAS	0.4975	Producing		4704500306	Newberry 007		594	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	4704500356	250*205584	Y	Active WI Well	GAS	0.4975	Producing		4704500356	Newberry 016		1399	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	4704500386	250*205585	Y	InActive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4704500386	Newberry 019		1578	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	4704500398	250*205586	Y	Active WI Well	GAS	0.4975	Producing		4704500398	Newberry 020		1764	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	4704501143	250*205576	Y	Active WI Well	GAS	0.4975	Producing		4704501143	Newberry 004 AN		3020	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	4704500506	250*205589	Y	Active WI Well	GAS	0.4975	Producing		4704500506	Newberry 035		2305	P00	W-NEWBERRY	Producing
MABEN	MAB03	WV	RALEIGH	4708100984	250*205828	Y	Active WI Well	GAS	0.4975	Producing		4708100984	New Beaver 24C		2499	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708101080	250*205849	Y	Active WI Well	GAS	0.4975	Producing		4708101080	Welchlands 094BW		123	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB02	WV	LOGAN	4704500611	250*205591	Y	Active WI Well	GAS	0.4975	Producing		4704500611	Newberry 054		2662	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	4704500670	250*205592	Y	Active WI Well	GAS	0.4975	Producing		4704500670	Newberry 062		2844	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	4704500699	250*205593	Y	Active WI Well	GAS	0.4975	Producing		4704500699	Newberry 067		3021	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	4704500723	250*205594	Y	Active WI Well	GAS	0.4975	Producing		4704500723	Newberry 071		107	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	4704500738	250*205596	Y	Active WI Well	GAS	0.4975	Producing		4704500738	Newberry 077		595	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	4704500745	250*205597	Y	Active WI Well	GAS	0.4975	Producing		4704500745	Newberry 081		786	P00	W-NEWBERRY	Producing
MABEN	MAB02	WV	LOGAN	4704500471	250*205588	Y	Active WI Well	GAS	0.4975	Producing		4704500471	Newberry 031		2128	P00	W-NEWBERRY	Producing
MABEN	MAB03	WV	RALEIGH	4708101042	250*205838	Y	Active WI Well	GAS	0.4975	Producing		4708101042	New Beaver 37C		1228	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708101079	250*205559	Y	Active WI Well	GAS	0.4975	Producing		4708101079	Welchlands 092BW		3019	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708101078	250*205848	Y	Active WI Well	GAS	0.4975	Producing		4708101078	Welchlands 091BW		3037	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708101077	250*205847	Y	Active WI Well	GAS	0.4975	Producing		4708101077	Welchlands 090BW		2859	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708101076	250*205846	Y	Active WI Well	GAS	0.4975	Producing		4708101076	Welchlands 089BW		2677	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708101050	250*205557	Y	Active WI Well	GAS	0.4975	Producing		4708101050	Welchlands 085BW		2660	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708101048	250*205647	Y	Active WI Well	GAS	0.4975	Producing		4708101048	Dorothy Sarita 032BDS		598	P00	W-DOROTHY	Producing
MABEN	MAB03	WV	RALEIGH	4708100981	250*205829	Y	Active WI Well	GAS	0.4975	Producing		4708100981	New Beaver 25C		2676	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708101044	250*205823	Y	Active WI Well	GAS	0.4975	Producing		4708101044	Bonds 02B		1593	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708101023	250*205549	Y	Active WI Well	GAS	0.4975	Producing		4708101023	Welchlands 071BW		1210	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708101041	250*205835	Y	Active WI Well	GAS	0.4975	Producing		4708101041	New Beaver 32C		801	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708101037	250*205837	Y	Active WI Well	GAS	0.24875	Producing		4708101037	New Beaver 36C		1052	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708101035	250*205834	Y	Active WI Well	GAS	0.24875	Producing		4708101035	New Beaver 31C		610	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708101025	250*205551	Y	Active WI Well	GAS	0.4975	Producing		4708101025	Welchlands 074		1762	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708101034	250*205833	Y	Active WI Well	GAS	0.24875	Producing		4708101034	New Beaver 30C		307	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708101026	250*205844	Y	Active WI Well	GAS	0.4975	Producing		4708101026	Welchlands 079BW		2321	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN		VA	BUCHANAN		250*287954	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI		BIG VEIN 1-04	LTSI		A08		
MABEN	MAB08	WV	RALEIGH	4708101223	250*287357	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4708101223	POCAHONTAS 1	LTSI	10772	A08	W-VA Pocahontas	SI - Long Term_LTSI
MABEN		WV	RALEIGH		250*287700	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI		BEAVER COAL 321-C	LTSI		A08		
MABEN	MAB01	WV	RALEIGH	4708100636	250*205703	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4708100636	New River 21AR	LTSI	1406	P00	W-Bkly NewRvr_CrabOrchrd	SI - Long Term_LTSI
MABEN	Unassigned	WV	RALEIGH	4708100253	250*205658	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4708100253	Dorothy Sarita 119	LTSI	2489	P00	W-DOROTHY	SI - Long Term_LTSI
MABEN		WV	RALEIGH		250*287614	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI		WPP 3-C	LTSI		A08		
MABEN	MAB01	WV	FAYETTE		250*287348	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4701900914	NEW RIVER 17	LTSI	10787	A08	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN		WV	FAYETTE		250*287526	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI		NEW RIVER 33	LTSI		A08		
MABEN	MAB01	WV	RALEIGH	4708100705	250*205720	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4708100705	New River 61AR	LTSI	1408	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB07	WV	RALEIGH	4708101256	250*287481	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4708101256	BEAVER COAL 311-C	LTSI	10688	A08	WV-SLAB FORK	SI - Long Term_LTSI
MABEN		WV	FAYETTE		250*287893	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI		NEW RIVER 47	LTSI		A08		
MABEN	MAB03	WV	WYOMING	4710901261	250*205536	Y	Active WI Well	GAS	0.4975	Producing		4710901261	Welchlands 051AW	LTSI	1939	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708101322	250*205855	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4708101322	WELCHLANDS 113 NW	LTSI	1229	04	W-Bkly Welchlnd_NewBvr	SI - Long Term_LTSI
MABEN	MAB01	WV	FAYETTE	4701900662	250*205729	Y	Inactive WI Well	GAS	0.4975	LTSI_HGO	LTSI	4701900662	New River 80AR	LTSI	3030	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB08	WV	RALEIGH	4708101207	250*286739	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4708101207	BEAVER COAL A-82 (C15)	LTSI	10204	A08	WV-RALEIGH_BEAVER	SI - Long Term_LTSI
MABEN	MAB08	WV	RALEIGH	4708100518	250*287359	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4708100518	RALEIGH COUNTY	LTSI	10208	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB01	WV	RALEIGH	4708101211	250*287350	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4708101211	NEW RIVER 20 B3	LTSI	10788	A08	W-Bkly NewRvr_CrabOrchrd	SI - Long Term_LTSI
MABEN	MAB07	WV	RALEIGH	4708101268	250*287615	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4708101268	WPP 4-C [mid 11723 deleted]	LTSI		A08	WV-SLAB FORK	SI - Long Term_LTSI
MABEN	MAB08	WV	RALEIGH	4708101061	250*287255	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4708101061	BEAVER COAL 109	LTSI	10098	A08	WV-RALEIGH_BEAVER	SI - Long Term_LTSI
MABEN	MAB08	WV	RALEIGH	4708100502	250*287290	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4708100502	BEAVER COAL A-24	LTSI	10124	A08	WV-RALEIGH_BEAVER	SI - Long Term_LTSI
MABEN	MAB03	WV	RALEIGH	4708101006	250*205832	Y	Active WI Well	GAS	0.4975	Producing		4708101006	New Beaver 28C	LTSI	122	P00	W-Bkly Welchlnd_NewBvr	SI - Long Term_LTSI
MABEN	MAB08	WV	RALEIGH	4708101062	250*287256	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4708101062	BEAVER COAL 110	LTSI	10099	A08	WV-RALEIGH_BEAVER	SI - Long Term_LTSI
MABEN		WV	RALEIGH		250*287246	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI		BEAVER COAL 116	LTSI		A08		
MABEN	MAB08	WV	RALEIGH	4708101064	250*287260	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4708101064	BEAVER COAL 119	LTSI	10215	A08	WV-RALEIGH_BEAVER	SI - Long Term_LTSI
MABEN	MAB03	WV	RALEIGH	4708101003	250*205830	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4708101003	New Beaver 26C	LTSI	2858	P00	W-Bkly Welchlnd_NewBvr	SI - Long Term_LTSI

NCE Field Grp	Route Name	State	County	Api Well Number	Exc_250*	EXCO OWNED/ OPERATED	ACTIVE STATUS	GAS or OIL well	EXCO SHARE	3RD Q 2014 status	long term shut in	DOUBLE CHECK OF API	Description	Disposition code	Merrick Completion_ID	Year Drilled PDP-PRIOR TO 2007	Lease Name	Producing Description
MABEN	MAB08	WV	RALEIGH	4708101224	250*287358	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4708101224	POCAHONTAS 2	LTSI	10773	A08	W-VA Pocahontas	SI - Long Term_LTSI
MABEN		WV	RALEIGH		250*287268	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI		BEAVER COAL 131	LTSI		A08		
MABEN	MAB08	WV	RALEIGH	4708100358	250*287287	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4708100358	BEAVER COAL A-02	LTSI	10110	A08	WV-RALEIGH_BEAVER	Producing
MABEN	MAB03	WV	RALEIGH	4708101010	250*205841	Y	Active WI Well	GAS	0.4975	Producing		4708101010	Welchlands 060BW	LTSI	1780	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB03	WV	RALEIGH	4708101016	250*205555	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4708101016	Welchlands 078BW	LTSI	2303	P00	W-Bkly Welchlnd_NewBvr	SI - Long Term_LTSI
MABEN	MAB06	WV	RALEIGH	4708100877	250*205643	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4708100877	Dorothy Sarita 022ADS	LTSI	2847	P00	W-DOROTHY	SI - Long Term_LTSI
MABEN	MAB03	WV	RALEIGH	4708101024	250*205843	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4708101024	Welchlands 073BW	LTSI	2143	P00	W-Bkly Welchlnd_NewBvr	Producing
MABEN	MAB07	WV	RALEIGH	4708101131	250*287275	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4708101131	BEAVER COAL 144	LTSI	10762	A08	W-Sunny Acres 960520	SI - Long Term_LTSI
MABEN	MAB08	WV	RALEIGH	4708101178	250*287280	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4708101178	BEAVER COAL 303-C	LTSI	10771	A08	WV-RALEIGH_BEAVER	SI - Long Term_LTSI
MABEN	MAB08	WV	RALEIGH	4708100525	250*287305	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI	4708100525	BEAVER COAL A-52	LTSI	10136	A08	WV-RALEIGH_BEAVER	SI - Long Term_LTSI
MABEN	MAB07	WV	RALEIGH	4708100735	250*205740	Y	Active WI Well	GAS	0.44775	Producing		4708100735	BEAVER 05A	LTSI	1952	P00	W-Bkly NewRvr_CrabOrchrd	Producing
MABEN	MAB08	WV	RALEIGH		250*287271	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI		BEAVER COAL 135	LTSI	10106	A08	WV-RALEIGH_BEAVER	SI - Long Term_LTSI
MABEN		WV	RALEIGH		250*287525	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI		New River 32	LTSI				
MABEN		WV	RALEIGH		250*287243	Y	Inactive WI Well	GAS	0.4975	Non Prod/Shut In	LTSI		BEAVER COAL 305-C	LTSI		A08		



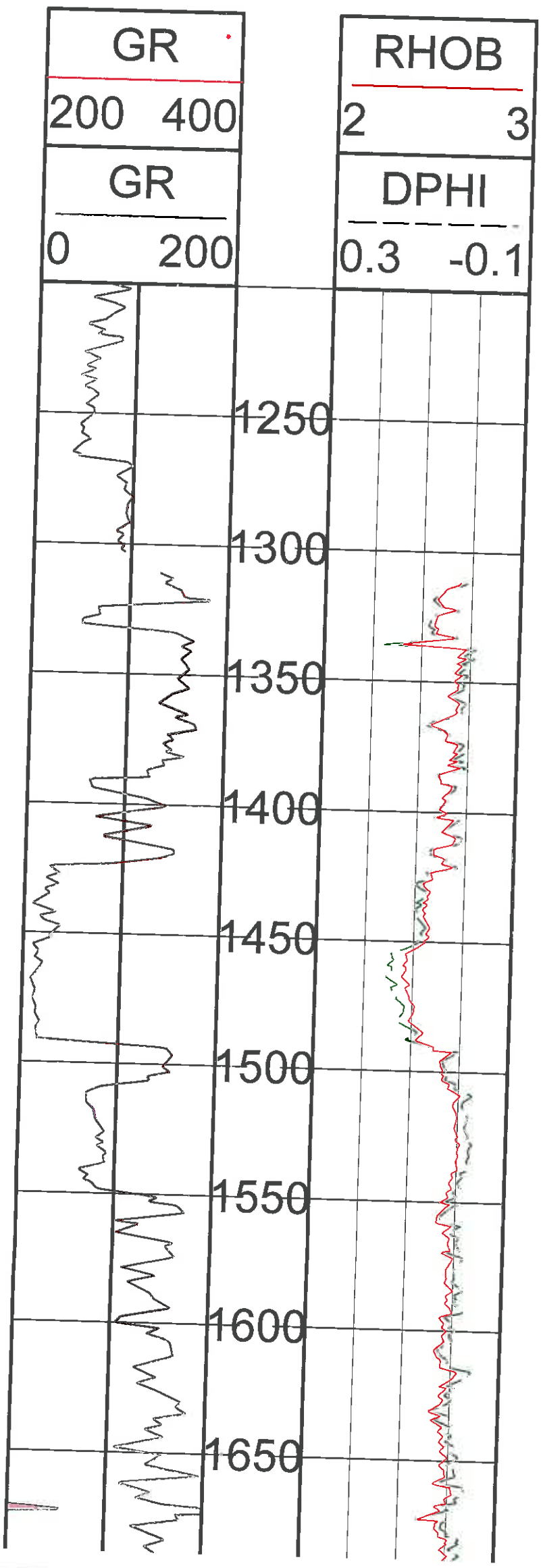
PETRA 9/30/2014 12:35:06 PM

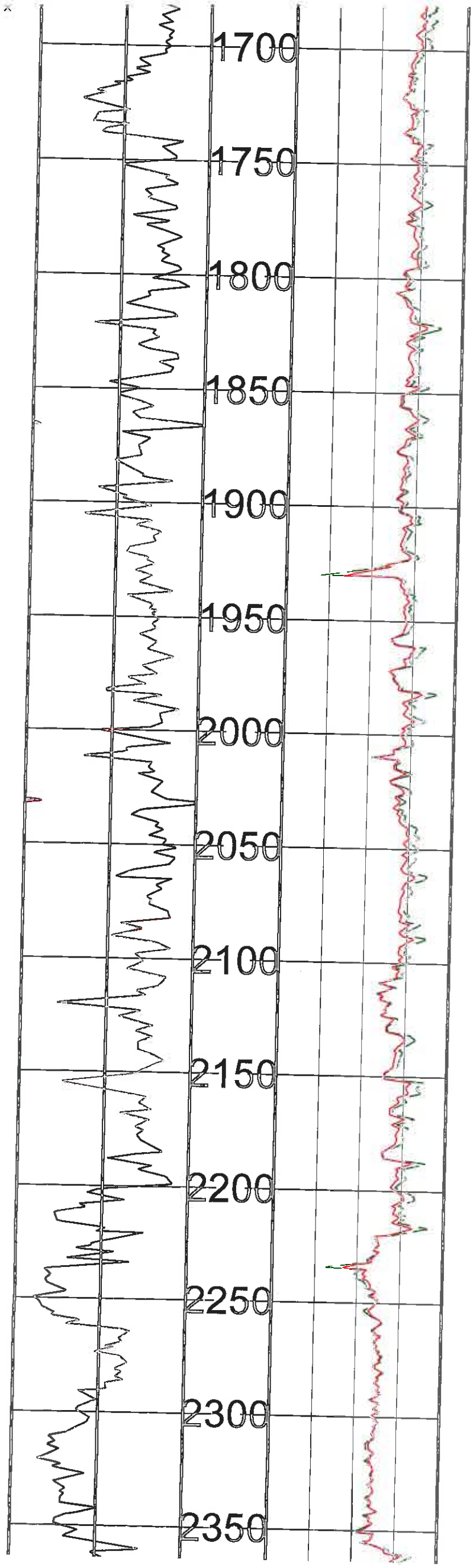

Received
Office of Oil & Gas
OCT 30 2014
Trap Hill
Oceana
Ra
yoming
160
150
140
130
120
110
Upper Confining Shale Isopach (ft)
0 1 2 3 4
MILES
WELCHLANDS 29AW
CONTOURS
Gordon Upper Confining Shale Isopach
Gordon Upper Confining Shale Isopach.GRD
Contour Interval = 10
100 110 120 130 140 150 160
WELL SYMBOLS
Gas Well
By: AGB
September 30, 2014
PETRA 9/30/2014 12:44:07 PM

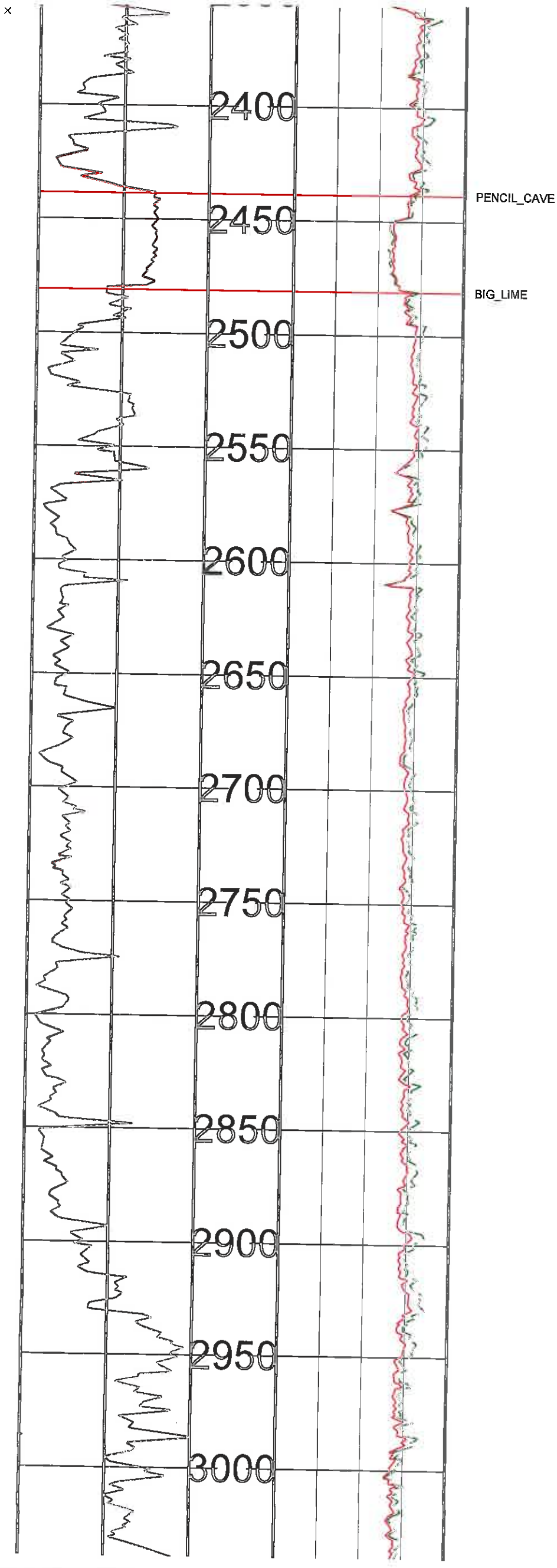


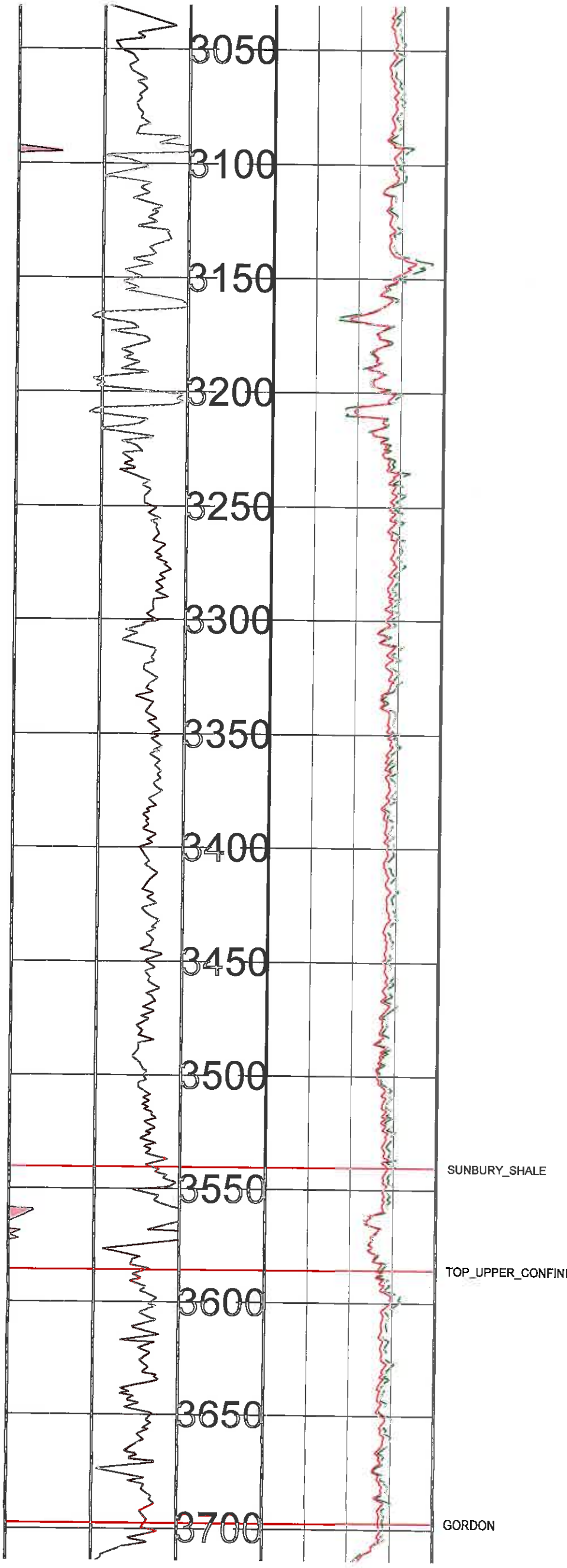
47109010780000

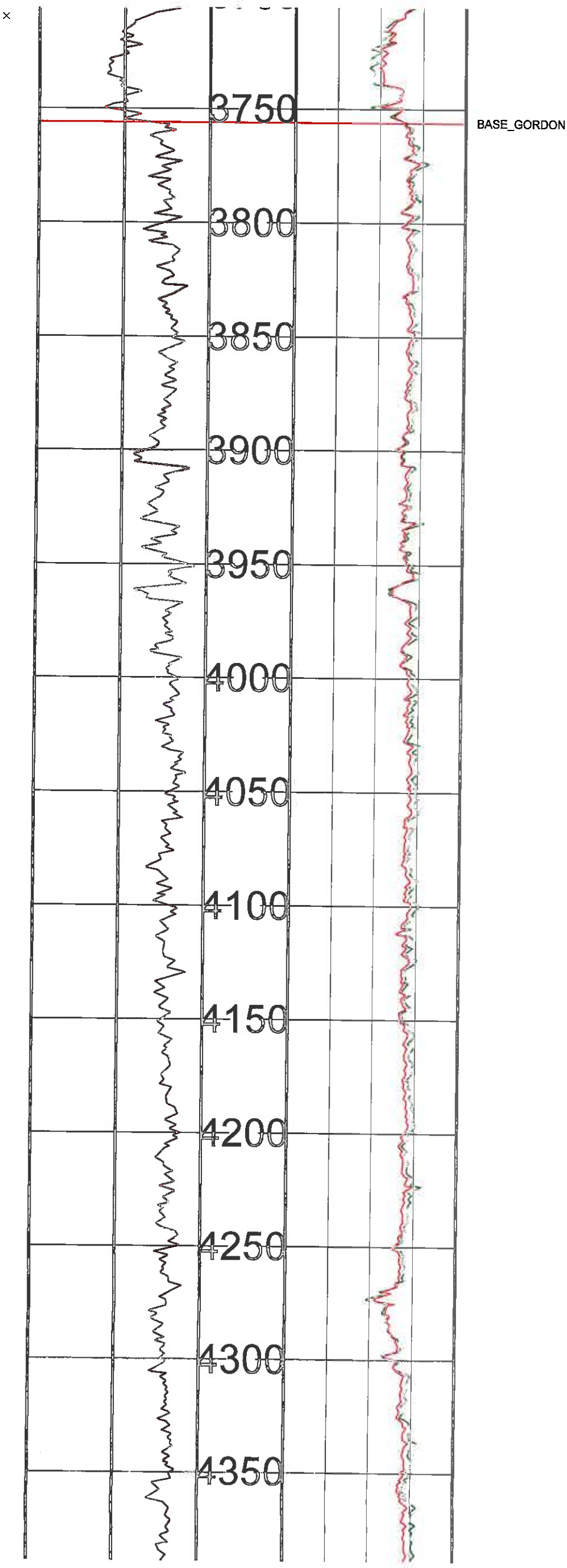
ASHLAND EXPL INC
GEORGIA-PACIFIC CORP
235

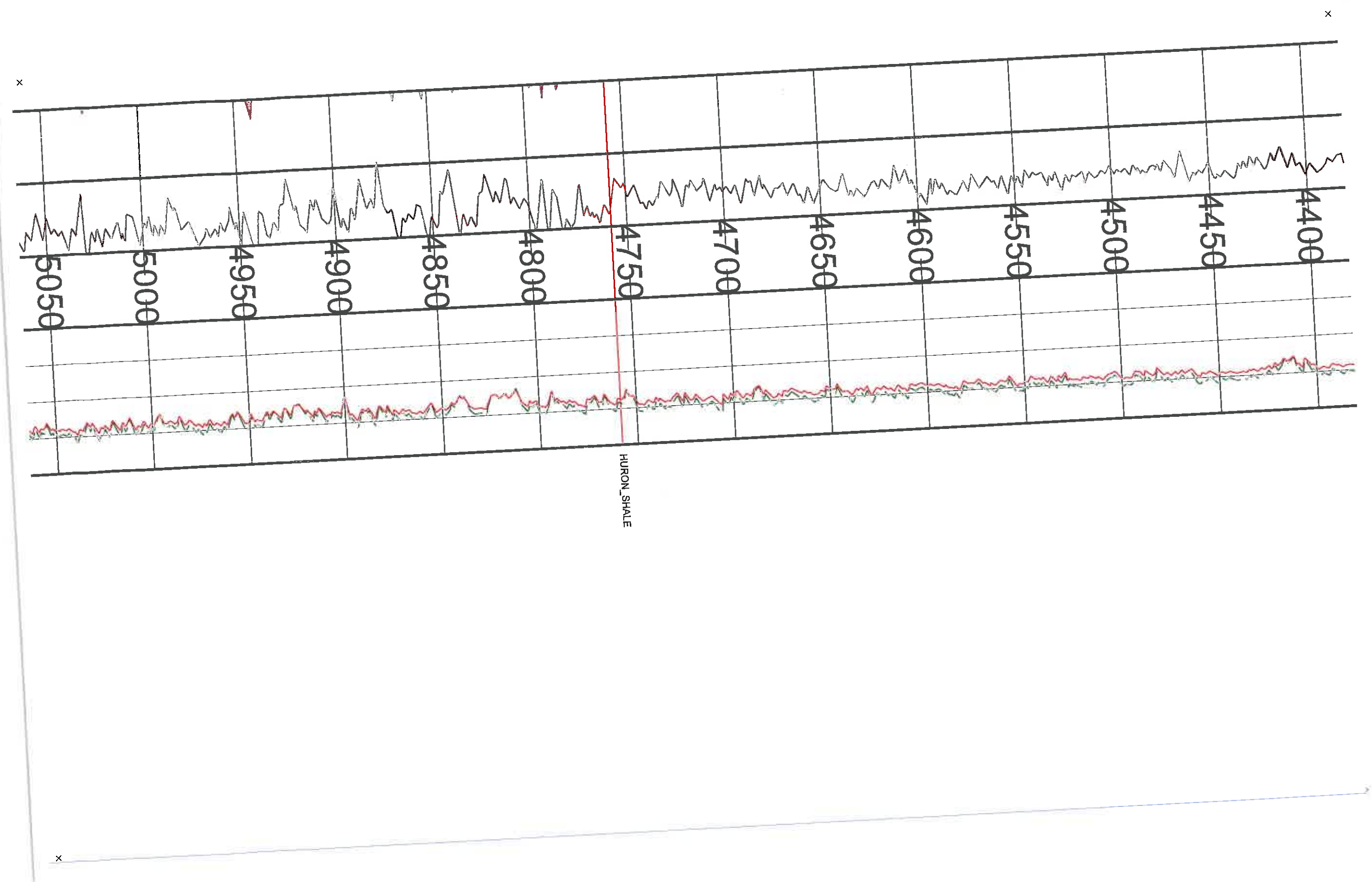


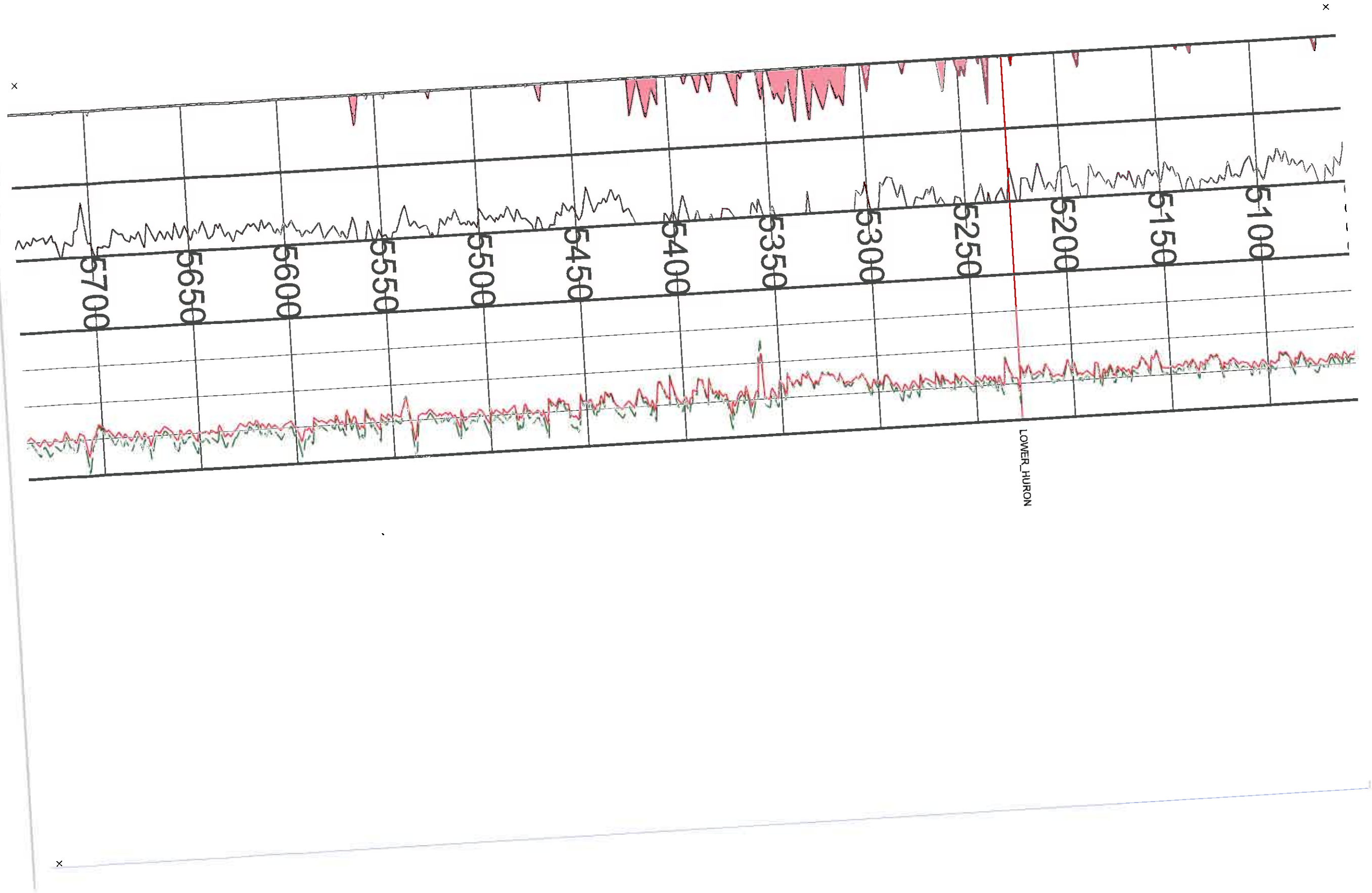

1700
1750
1800
1850
1900
1950
2000
2050
2100
2150
2200
2250
2300
2350

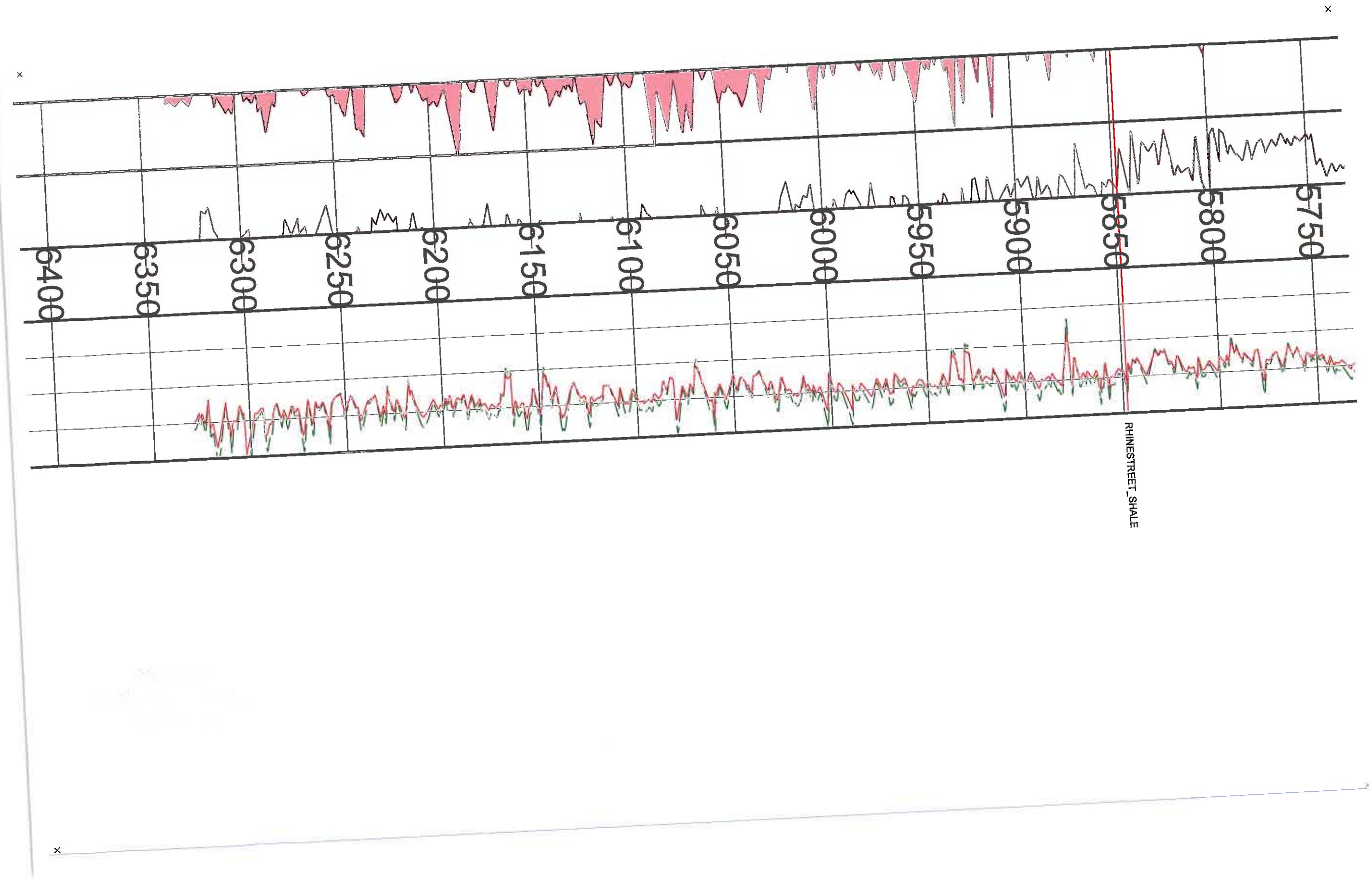

2400
PENCIL_CAVE
2450
BIG_LIME
2500
2550
2600
2650
2700
2750
2800
2850
2900
2950
3000


3050
3100
3150
3200
3250
3300
3350
3400
3450
3500
3550
3600
3650
3700
SUNBURY_SHALE
TOP_UPPER_CONFINING_SHALE
GORDON


3750
BASE_GORDON
3800
3850
3900
3950
4000
4050
4100
4150
4200
4250
4300
4350


5050
5000
4950
4900
4850
4800
4750
4700
4650
4600
4550
4500
4450
4400
HURON_S
HALE


5700
5650
5600
5550
5500
5450
5400
5350
5300
5250
5200
5150
5100
LOWER_HURON


6400
6350
6300
6250
6200
6150
6100
6050
6000
5950
5900
5850
5800
5750
RHINESTREET_S
HALE

EXCO Resources (PA), LLC

260 Executive Drive • Suite 100 • Cranberry Township, PA 16066
Phone (724) 720-2500 • Fax: (724) 720-2505

March 18, 2015

West Virginia Department of Environmental Protection
Office of Oil and Gas
601 57th Street, SE
Charleston, WV 25304
Attn: Mr. Zachary Stevison

RE: Response to Comments
Welchlands 29AW
UIC Permit # 2D1090980

Dear Mr. Stevison:

We are submitting the following information to you.

1. One (1) check made payable to the WVDEP in the amount of $5,000.00 for the Welchlands 29AW UIC Bond.

2. One (1) check made payable to the WVDEP in the amount of $5,000.00 for the LC Wilson #4 UIC Bond.

3. Two (2) original and executed Request to Invest West Virginia Consolidated Investment Fund forms.

4. Two (2) copies of the completed W-9 Request for Taxpayer Identification Number and Certification forms.

The following are our responses to your email comments dated February 25, 2015.

1. *Where are the "formation fluids" coming from? Is the annulus open at surface? If closed, what is pressure gauge range that is being used to monitor this annulus? What other approach, if any, is being used to ensure that formation fluids are not migrating further up the 2 ⅜" x 4 ½" annulus?*

   RESPONSE: The annulus is open at the surface. The annulus is piped into a sales line that has 20psig on it. We have a check valve on the annulus line so we can keep backpressure off of the annulus. In addition to a pressure gauge, we have a chart recorder on the casing line to record any flow at surface. The current pressure reading is 0 psig with no flow at surface.

also monitor the liquid level in the 2 3/8" x 4 ½" annulus to monitor any subsurface fluid movement.

2. *The Welchlands 29AW well appears to have been reworked by squeezing off previous perforations in the Ravencliff Ss (from 2,019'-2,098') and Weir Ss (from 3,828'-3,888') formations. Were one or both of the squeezes unsuccessful or fail later on in the life well? If so, which formation(s) and what are the respective formation pressure(s)?*

   RESPONSE: The cement squeeze on the Weir SS did not hold pressure after the plug was drilled out and tested in April 1994. In response to the first question, the "formation fluids" in the 2 3/8" x 4 ½" annulus would be coming from the Weir SS and using the liquid level from the echometer shots the estimated formation pressure is 1060 psig.

If you should have any questions or require additional information, please contact me at (724) 720-2590.

Sincerely,

Brian E. Rushe, P.E.
Construction & Regulatory Manager

Enclosures