

FILE NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1"=500'  
 MINIMUM DEGREE OF ACCURACY 1:200  
 PROVEN SOURCE OF ELEVATION RD. INT. ELEV. 622'

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF MINES.  
 (SIGNED) [Signature]  
 R.P.E. \_\_\_\_\_ L.L.S. 551

PLACE SEAL HERE

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS  
 FORM IV-6 (8-78)



DATE 14 DECEMBER, 19 82  
 OPERATOR'S WELL NO. EE-115  
 API WELL NO. 47 - 073 - 1581-Fra  
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA  
 DEPARTMENT OF MINES  
 OIL AND GAS DIVISION

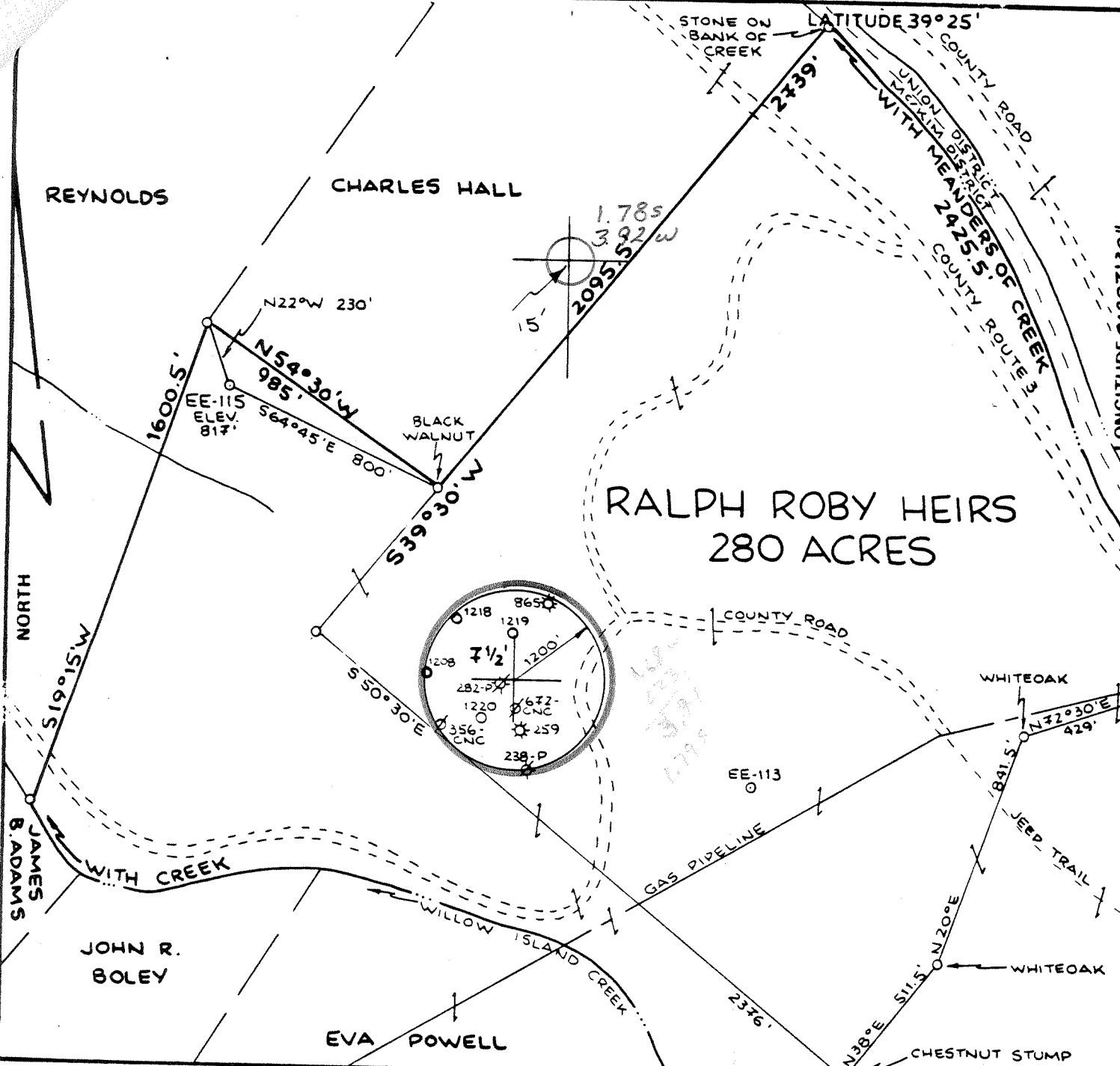
WELL TYPE: OIL  GAS  LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
 (IF "GAS,") PRODUCTION  STORAGE \_\_\_ DEEP \_\_\_ SHALLOW   
 LOCATION: ELEVATION 817' WATER SHED WILLOW ISLAND CREEK  
 DISTRICT McKIM COUNTY PLEASANTS  
 QUADRANGLE RAVEN ROCK 7 1/2' QUAD  
 SURFACE OWNER DOUGLAS CUNNINGHAM ACREAGE 280  
 OIL & GAS ROYALTY OWNER RALPH ROBY HEIRS LEASE ACREAGE 280  
 LEASE NO. \_\_\_\_\_  
 PROPOSED WORK: DRILL  CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE \_\_\_ PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION \_\_\_ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_

PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG \_\_\_  
 TARGET FORMATION OHIO SHALE ESTIMATED DEPTH 4200'  
 WELL OPERATOR Pioneer Western Energy Corp. [DESIGNATED AGENT] David Ferretti - Spilman, Thomas  
 ADDRESS 701 Pike Street ADDRESS Battle & Klostermeyer  
Marietta, Ohio 45750 Box 273, Charleston, W. Va. 25321-0273.

DEC 31 1984

112 1272952

8580'



FILE NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1"=500'  
 MINIMUM DEGREE OF ACCURACY 1:200  
 PROVEN SOURCE OF ELEVATION RD. INT. ELEV. 622'

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(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS  
 FORM IV-6  
 (8-78)



DATE 14 DECEMBER, 19 82  
 OPERATOR'S WELL NO. EE-115  
 API WELL NO. \_\_\_\_\_  
47 - 073 - 1581  
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA  
 DEPARTMENT OF MINES  
 OIL AND GAS DIVISION

WELL TYPE: OIL  GAS  LIQUID INJECTION \_\_\_\_\_ WASTE DISPOSAL \_\_\_\_\_  
 (IF "GAS,") PRODUCTION  STORAGE \_\_\_\_\_ DEEP \_\_\_\_\_ SHALLOW   
 LOCATION: ELEVATION 817' WATER SHED WILLOW ISLAND CREEK  
 DISTRICT McKIM COUNTY PLEASANTS  
 QUADRANGLE RAVEN ROCK 7 1/2' QUAD. St. Marys 15'c  
 SURFACE OWNER DOUGLAS CUNNINGHAM ACREAGE 280  
 OIL & GAS ROYALTY OWNER RALPH ROBY HEIRS LEASE ACREAGE 280  
 LEASE NO. \_\_\_\_\_  
 PROPOSED WORK: DRILL  CONVERT \_\_\_\_\_ DRILL DEEPER \_\_\_\_\_ REDRILL \_\_\_\_\_ FRACTURE OR STIMULATE \_\_\_\_\_ PLUG OFF OLD FORMATION \_\_\_\_\_ PERFORATE NEW FORMATION \_\_\_\_\_ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_  
 PLUG AND ABANDON \_\_\_\_\_ CLEAN OUT AND REPLUG \_\_\_\_\_  
 TARGET FORMATION OHIO SHALE ESTIMATED DEPTH 4200' 6.6 St. Marys (77)  
 WELL OPERATOR ST. MARYS EASTERN ENERGY DESIGNATED AGENT JOHN COX  
 ADDRESS 112 WASHINGTON STREET, P.O. Box 362 ADDRESS 112 WASHINGTON STREET, P.O. Box 362  
ST. MARYS, W. VA. 26170 ST. MARYS, W. VA. 26170



IV-35  
(Rev 8-81)

State of West Virginia  
Department of Mines  
Oil and Gas Division

Date APRIL 20, 1987  
Operator's  
Well No. E.E. # 115  
Farm CUNNINGHAM  
API No. 47 - 073 - 1581

WELL OPERATOR'S REPORT  
OF  
DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil \_\_\_ / Gas XX / Liquid Injection \_\_\_ / Waste Disposal \_\_\_ /  
(If "Gas," Production \_\_\_ / Underground Storage \_\_\_ / Deep \_\_\_ / Shallow \_\_\_ /)

LOCATION: Elevation: 817' Watershed MIDDLE ISALND  
District: MCKIM County PLEASANTS Quadrangle \_\_\_\_\_

COMPANY \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
DESIGNATED AGENT \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
SURFACE OWNER \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
MINERAL RIGHTS OWNER \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
OIL AND GAS INSPECTOR FOR THIS WORK \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
PERMIT ISSUED \_\_\_\_\_  
DRILLING COMMENCED \_\_\_\_\_  
DRILLING COMPLETED \_\_\_\_\_  
IF APPLICABLE: PLUGGING OF DRY HOLE ON  
CONTINUOUS PROGRESSION FROM DRILLING OR  
REWORKING. VERBAL PERMISSION OBTAINED  
ON \_\_\_\_\_

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.			
13-10"			
9 5/8			
8 5/8			
7			
5 1/2			
4 1/2			
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION SHALE Depth 2969' - 3064' feet  
Depth of completed well \_\_\_\_\_ feet Rotary \_\_\_ / Cable Tools \_\_\_\_\_  
Water strata depth: Fresh \_\_\_\_\_ feet; Salt \_\_\_\_\_ feet  
Coal seam depths: \_\_\_\_\_ Is coal being mined in the area? \_\_\_\_\_

OPEN FLOW DATA  
Producing formation SHALE Pay zone depth 2969' - 3064' feet  
Gas: Initial open flow \_\_\_\_\_ Mcf/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow 1800 Mcf/d Final open flow 0 Bbl/d  
Time of open flow between initial and final tests \_\_\_\_\_ hours  
Static rock pressure 1050 psig (surface measurement) after 24 hours shut in  
(If applicable due to multiple completion--)  
Second producing formation \_\_\_\_\_ Pay zone depth \_\_\_\_\_ feet  
Gas: Initial open flow \_\_\_\_\_ Mcf/d Oil: Initial open flow \_\_\_\_\_ Bbl/d  
Final open flow \_\_\_\_\_ Mcf/d Oil: Final open flow \_\_\_\_\_ Bbl/d  
Time of open flow between initial and final tests \_\_\_\_\_ hours  
Static rock pressure \_\_\_\_\_ psig (surface measurement) after \_\_\_\_\_ hours shut in

(Continue on reverse side)  
MAY 04 1987

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

SHALE-2969' to 3064'

Fracced with 720,000 CF of Nitrogen

073 1581, Pg. 2

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas

(Attach separate sheets as necessary)

PIONEER WESTERN ENERGY

Well Operator

By: Darrell R. Clin

Date: APRIL 22, 1987

Note: Regulation 2.02(i) provides as follows:  
"The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including coal, encountered in the drilling of a well."

MAY 04 1987

Date: APRIL 20, 1987

Operator's Well No. E.E. #115

API Well No. 47 - 073 - 1581  
State County Permit

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENERGY  
OIL AND GAS DIVISION

WELL OPERATOR'S REPORT  
OF  
INITIAL GAS-OIL RATIO TEST

WELL OPERATOR PIONEER WESTERN ENERGY  
Address P O BOX 5068  
CLEARWATER, FLORIDA 33518

DESIGNATED AGENT DAVID SERRITTI  
Address 1101 KANAWHA  
THE BANKING & TRUST BLDG  
CHARLESTON, WV 25321

GEOLOGICAL TARGET FORMATION: SHALE Depth \_\_\_\_\_ feet  
Perforation Interval 2969' - 3064' feet

GUIDELINES FOR TESTING:

- 1- A minimum of gas vented or flared
- 2- A 24 hour preflow into pipelines or tanks
- 3- Uniform producing rate during the 24 hour test per test period
- 4- Measurement standards as for Form IV-39, "Report of Annual Production" (see Regulation 21.51)
- 5- Separate Form IV-36 for each producing formation in a multiple completion

TEST DATA				
START OF TEST-DATE <u>9/5/86</u>	TIME <u>7:20 a.m.</u>	END OF TEST-DATE <u>9/6/86</u>	TIME <u>7:20 a.m.</u>	DURATION OF TEST <u>24 hours</u>
TUBING PRESSURE	CASING PRESSURE <u>1050</u>	SEPARATOR PRESSURE <u>0</u>	SEPARATOR TEMPERATURE <u>0</u>	
OIL PRODUCTION DURING TEST <u>0</u> bbls.	GAS PRODUCTION DURING TEST <u>1800</u> Mcf	WATER PRODUCTION DURING TEST & SALINITY <u>0</u> bbls. P.P.M.		
OIL GRAVITY <u>0</u> °API	PRODUCING METHOD (Flowing, pumping, gas lift, etc.) <u>FLOWING</u>			

GAS PRODUCTION		
MEASUREMENT METHOD FLANGI TAP <input checked="" type="checkbox"/> PIPE TAP <input type="checkbox"/> L-10 <input type="checkbox"/>	POSITIVE CHOKE <input type="checkbox"/> CRITICAL FLOW PROVER <input type="checkbox"/>	
ORIFICE DIAMETER <u>1/2"</u>	PIPE DIAMETER (INSIDE DIAM.) <u>1.996"</u>	NOMINAL CHOKE SIZE - in. _____
DIFFERENTIAL PRESSURE RANGE <u>0-100 in.</u>	MAX. STATIC PRESSURE RANGE <u>0 - 500</u>	PROVER & ORIFICE DIA. - in. _____
DIFFERENTIAL <u>72 in.</u>	STATIC <u>30 psi</u>	GAS GRAVITY (Air=1.0) MEASURED _____ ESTIMATED <u>XX</u>
GAS GRAVITY (Air=1.0) <u>.72</u>	FLOWING TEMPERATURE <u>55°</u>	GAS TEMPERATURE <u>60°</u> F
24 HOUR COEFFICIENT <u>1.58</u>	24 HOUR COEFFICIENT <u>1.58</u> PRESSURE - <u>30</u> psia	

TEST RESULTS			
DAILY OIL <u>0</u> bbls.	DAILY WATER <u>0</u> bbls.	DAILY GAS <u>75</u> Mcf.	GAS-OIL RATIO <u>75 SCF/STB</u>

PIONEER WESTERN ENERGY  
Well Operator  
By: David R. Clin  
Its: VICE-PRESIDENT

2360

MAY 04 1987

IV-35  
(Rev 8-81)

RECEIVED



MAR 22 1983

State of West Virginia

OIL AND GAS DIVISION  
WV DEPARTMENT OF MINES

Department of Mines

Oil and Gas Division

Date March 15, 1983

Operator's

Well No. E. E. #115

Farm D. J. Cunningham

API No. 47 - 073 - 1581

WELL OPERATOR'S REPORT  
OF

DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil X / Gas X / Liquid Injection \_\_\_ / Waste Disposal \_\_\_ /  
(If "Gas," Production X / Underground Storage \_\_\_ / Deep \_\_\_ / Shallow \_\_\_)

LOCATION: Elevation: 817' Watershed Willow Island Run  
District: McKim County Pleasants Quadrangle Raven Rock

COMPANY St. Marys Eastern Energy, Inc.

ADDRESS P. O. Box 340, St. Marys, WV 26170

DESIGNATED AGENT John R. Cox

ADDRESS P. O. Box 340, St. Marys, WV 26170

SURFACE OWNER D. J. Cunningham

ADDRESS Rt. 39, St. Marys, WV 26170

MINERAL RIGHTS OWNER Ralph Roby Heirs

ADDRESS c/o Morgan Roby, Belmont, WV

OIL AND GAS INSPECTOR FOR THIS WORK Robert

Lowther ADDRESS Middlebourne, WV

PERMIT ISSUED 12-28-82

DRILLING COMMENCED 1-19-83

DRILLING COMPLETED 1-23-83

IF APPLICABLE: PLUGGING OF DRY HOLE ON  
CONTINUOUS PROGRESSION FROM DRILLING OR  
REWORKING. VERBAL PERMISSION OBTAINED  
ON \_\_\_\_\_

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.			
13-10"			
9 5/8			
8 5/8	990'	990'	Cement to Surface 200 sks.
7			
5 1/2			
4 1/2	--	3890'	405 sks.
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Ohio Shale Depth 3900 feet

Depth of completed well 3900 feet Rotary X / Cable Tools \_\_\_\_\_

Water strata depth: Fresh 95 feet; Salt N/A feet

Coal seam depths: N/A Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Huron Ohio Shale Pay zone depth 3252-3803 3800 feet

Gas: Initial open flow 105 Mcf/d Oil: Initial open flow -- Bbl/d

Final open flow 60 Mcf/d Final open flow -- Bbl/d

Time of open flow between initial and final tests 48 hours

Static rock pressure 470 psig (surface measurement) after 24 hours shut in  
(If applicable due to multiple completion--)

Second producing formation N/A Pay zone depth \_\_\_\_\_ feet

Gas: Initial open flow \_\_\_\_\_ Mcf/d Oil: Initial open flow \_\_\_\_\_ Bbl/d

Final open flow \_\_\_\_\_ Mcf/d Oil: Final open flow \_\_\_\_\_ Bbl/d

Time of open flow between initial and final tests \_\_\_\_\_ hours

Static rock pressure \_\_\_\_\_ psig (surface measurement) after \_\_\_\_\_ hours shut in

MAR 23 1983

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

32 - .39 Holes

3252' - 3803'

Stimulation - 2,000,000 SCF N<sub>2</sub>

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Clay	yellow	soft	0	20	<p>Same record as Pleasant 1509 1536 1557 1558 1580</p> <p>Gas</p> <p>Gas</p> <p>Gas</p> <p>Huron @ TD 3900 2170 1730</p>
Sandstone	grey	hard	20	100	
Shale	grey	soft	100	140	
Shale	red	soft	140	200	
Sandstone	grey	hard	200	240	
Shale	grey	soft	240	390	
Sandstone	brown	hard	390	420	
Shale	grey	soft	420	575	
Sandstone	grey	hard	575	610	
Shale	grey	soft	610	800	
Sandstone	grey	hard	800	900	
Shale	red	soft	900	990	
Sandstone	brown	hard	990	1030	
Shale	grey	soft	1030	1150	
Sandstone	grey	hard	1150	1220	
Shale	grey	soft	1220	1260	
Sandstone	grey	hard	1260	1300	
Shale	grey	soft	1300	1325	
Sand	white	hard	1325	1450	
Shale	grey	soft	1450	1500	
Sand	grey	hard	1500	1575	
Shale	grey	soft	1575	1620	
Sandstone	grey	hard	1620	1770	
Shale	grey	soft	1770	1795	
Sandstone	grey	hard	1795	1815	
Shale	grey	soft	1815	1840	
Sandstone	brown	hard	1840	1865	
Shale	grey	soft	1865	2320	
Sand and Shale	grey	soft	2320	2615	
Shale	grey	soft	2615	3475	
Sand and Shale	brown	soft	3475	3900	

(Attach separate sheets as necessary)

St. Marys Eastern Energy, Inc.  
Well Operator

By:  Designated Agent

Date: March 15, 1983

Note: Regulation 2.02(i) provides as follows:  
"The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including those encountered in the drilling of a well."

NOV 16 1984



2) Operator's Well No. E.E. 115  
3) API Well No. 47 - 073 - 1581-FRAC  
State County Permit

STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES, OIL AND GAS DIVISION  
OIL & GAS DIVISION  
DEPT. OF MINES APPLICATION FOR A WELL WORK PERMIT

- 4) WELL TYPE: A Oil  / Gas   
B (If "Gas", Production \_\_\_\_\_ / Underground storage \_\_\_\_\_ / Deep \_\_\_\_\_ / Shallow \_\_\_\_\_)
- 5) LOCATION: Elevation: 817' Watershed: Willow Island Run  
District: McKim County: Pleasants Quadrange: Raven Rock
- 6) WELL OPERATOR Pioneer Western Energy Corp 7) DESIGNATED AGENT David Ferretti - Spilman,  
Address 701 Pike St. Address Thomas, Battle & Klostermeyer  
Marietta, OH 45750 Box 273, Charleston WV 25321-0273
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED  
Name Robert Lowther 9) DRILLING CONTRACTOR:  
Address Middlebourne, WV Name N/A  
Address \_\_\_\_\_
- 10) PROPOSED WELL WORK: Drill \_\_\_\_\_ / Drill deeper \_\_\_\_\_ / Redrill \_\_\_\_\_ / Stimulate   
Plug off old formation \_\_\_\_\_ / Perforate new formation   
Other physical change in well (specify) \_\_\_\_\_
- 11) GEOLOGICAL TARGET FORMATION, Devonian Shale
- 12) Estimated depth of completed well, 3900 feet
- 13) Approximate strata depths: Fresh, 95 feet; salt, N/A feet.
- 14) Approximate coal seam depths: N/A Is coal being mined in the area? Yes \_\_\_\_\_ / No
- 15) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS (Cubic feet)	PACKERS	
	Size	Grade	Weight per ft.	New	Used	For drilling	Left in well			
Conductor	It is our intention to re-perforate and re-stimulate the Devonian Shale formation in this well which was initially perforated and fractured in the Ohio Shale at a deeper depth. We intend to come up the hole and re-complete the well at a shallower depth without plugging off the initially completed deeper formation.									
Fresh water									Kinds	
Coal									Sizes	
Intermediate									Depths set	
Production									Perforations:	
Tubing									Top	
Liners									Bottom	
									2970	
									3066	

OFFICE USE ONLY  
DRILLING PERMIT

Permit number 47-073-1581-FRAC Date December 7, 1984

This permit covering the well operator and well location shown below is evidence of permission granted to drill in accordance with the pertinent legal requirements subject to the conditions contained herein and on the reverse hereof. Notification must be given to the District Oil and Gas Inspector, (Refer to No. 8) Prior to the construction of roads, locations and pits for any permitted work. In addition, the well operator or his contractor shall notify the proper district oil and gas inspector 24 hours before actual permitted work has commenced.)

The permitted work is as described in the Notice and Application, plat, and reclamation plan, subject to any modifications and conditions specified on the reverse hereof.  
Permit expires December 7, 1986 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond:	Agent:	Plat:	Casing:	Fee:
<u>120</u>	<u>MW</u>	<u>MW</u>	<u>MW</u>	<u>125</u>

Margaret J. Hesse  
Administrator, Office of Oil and Gas

NOTE: Keep one copy of this permit posted at the drilling location.

See the reverse side of the APPLICANT'S COPY for instructions to the well operator.

File

12/3