

A-N31-31E, 573.59'  
 B-S21-30E, 228.79'  
 C-S54-16W, 472.70'

16  
4

1 1/2' TOPO

FILE NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY 1 in 200  
 PROVEN SOURCE OF ELEVATION USGS-BM-ELLENBORO-807'-USGS ELLENBORO QUAD.

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. 624  
*Norton Surveys + Consulting, Inc.*

PLACE SEAL HERE

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



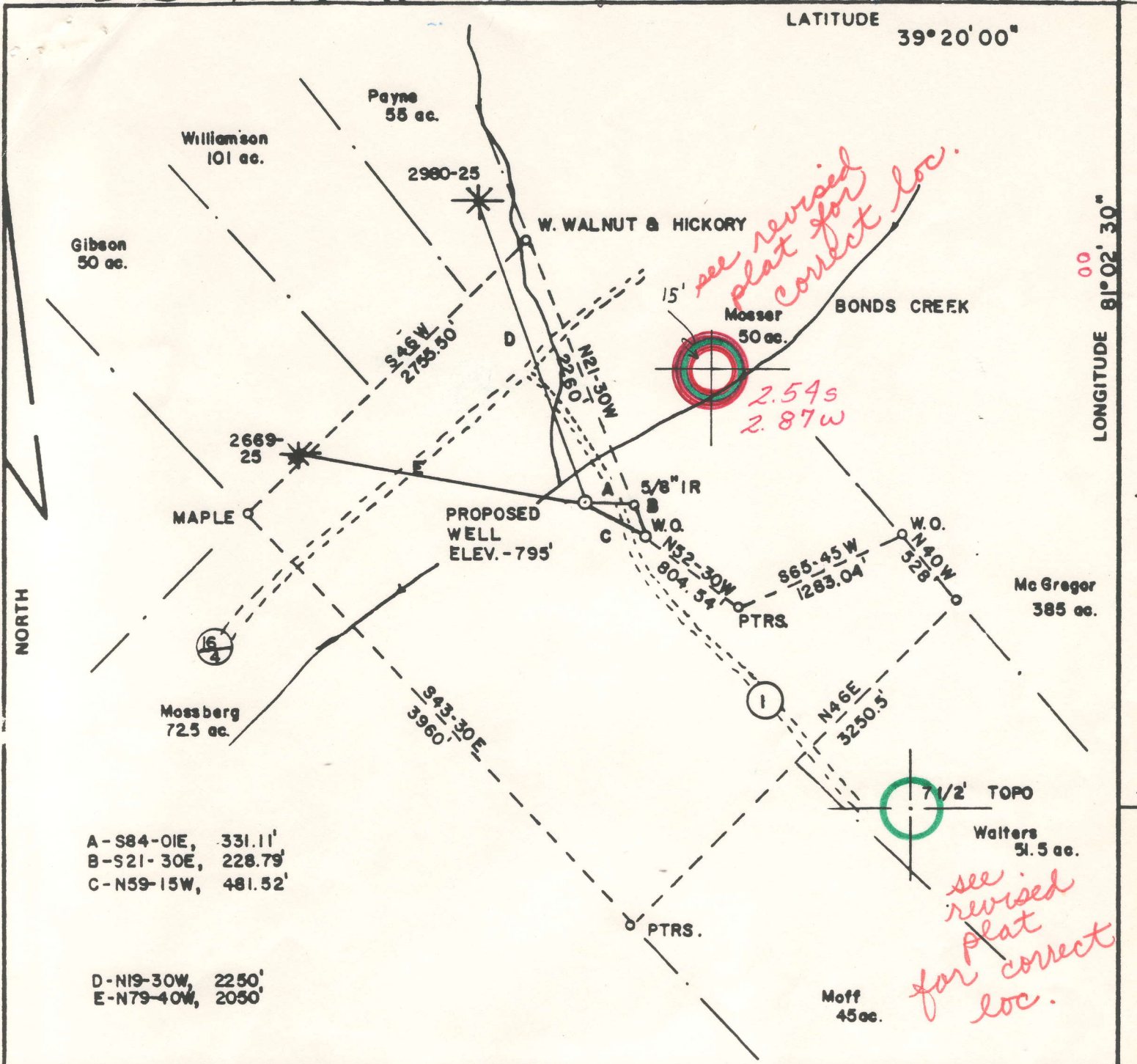
DATE JANUARY 11, 19 83  
 OPERATOR'S WELL NO. LANDVOIGHT-1  
 API WELL NO. \_\_\_\_\_  
47 - 085 - 6131  
 STATE COUNTY PERMIT  
Revised etc.

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 800' WATER SHED BONDS CREEK  
 DISTRICT CLAY COUNTY RITCHE  
 QUADRANGLE ELLENBORO - St. Marys 15' SE  
 SURFACE OWNER S. LANDVOIGHT ACREAGE 96  
 OIL & GAS ROYALTY OWNER S. LANDVOIGHT LEASE ACREAGE 200  
 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 DEVONIAN SHALE ESTIMATED DEPTH 5900'  
 WELL OPERATOR O.F.S. KEYSTONE CORP DESIGNATED AGENT MICHAEL L. STURMS 6-6  
 ADDRESS 615 IRON CITY DRIVE ADDRESS 170 THOMPSON DRIVE  
PITTSBURGH, PA. 15205 DEEP WELL BRIDGEPORT, W. VA. (84)

FEB 14 1983



LATITUDE 39° 20' 00"

LONGITUDE 81° 02' 30"

11,240'

A-S84-01E, 331.11'  
 B-S21-30E, 228.79'  
 C-N59-15W, 481.52'

D-N19-30W, 2250'  
 E-N79-40W, 2050'

FILE NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1" = 500'  
 MINIMUM DEGREE OF ACCURACY 1 in 200  
 PROVEN SOURCE OF ELEVATION USGS-BM-PIKE-794  
U.S.G.S. ELLENBORO QUAD.

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. 624  
Norton Surveys & Consulting, Inc.

PLACE SEAL HERE

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



DATE DECEMBER 24, 19 82  
 OPERATOR'S WELL NO. LANDVOIGHT - 1  
 API WELL NO. \_\_\_\_\_  
47 - 085 - 6131  
 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 795' WATER SHED BONDS CREEK  
 DISTRICT CLAY COUNTY RITCHIE  
 QUADRANGLE ELLENBORO St. Marys 15' SE  
 SURFACE OWNER T. STEPHEN LANDVOIGHT ACREAGE 96  
 OIL & GAS ROYALTY OWNER T. STEPHEN LANDVOIGHT LEASE ACREAGE 200  
 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) \_\_\_\_\_

JAN 03 1983

PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG \_\_\_  
 TARGET FORMATION DEVONIAN SHALE ESTIMATED DEPTH 5990'  
 WELL OPERATOR O.F.S. KEYSTONE CORP DESIGNATED AGENT MICHAEL L. STURMS  
 ADDRESS 615 IRON CITY DRIVE ADDRESS 170 THOMPSON DRIVE  
PITTSBURGH, PA. 15205 BRIDGEPORT, W.VA. 26330



IV-35  
(Rev 8-81)

Date 9/1/83

### State of West Virginia

Operator's

Department of Mines

Well No. Grayam #1

Oil and Gas Division

Farm Landowner

API No. 47-085 6131

#### WELL OPERATOR'S REPORT OF

DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

**RECEIVED**  
SEP 7 - 1983  
OIL & GAS DIVISION  
DEPT. OF MINES

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

LOCATION: Elevation: 800 Watershed Bonds Creed  
District: Clay County Ritchie Quadrangle Ellenboro 7.5

COMPANY OFS- Keystone

ADDRESS 615 Iron City Drive, Pgh., Pa. 15205

DESIGNATED AGENT Micheal L. Sturms

ADDRESS 170 Thompson Dr., Bridgeport, W. Va.

SURFACE OWNER T. L. Landvoigt

ADDRESS Sycamore Springs Farm

MINERAL RIGHTS OWNER Same

ADDRESS Highland, W. Va., 26346

OIL AND GAS INSPECTOR FOR THIS WORK Sam Hersman

P. O. Box 66 ADDRESS Smithville, W. Va., 26178

PERMIT ISSUED December 28, 1982

DRILLING COMMENCED 3/11/83

DRILLING COMPLETED 4/19/83

IF APPLICABLE: PLUGGING OF DRY HOLE ON  
CONTINUOUS PROGRESSION FROM DRILLING OR  
REWORKING. VERBAL PERMISSION OBTAINED  
ON N/A

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.			
13-10"	237.6'	237.6'	150SX
9 5/8			
8 5/8	2013.5'	2013.5'	385 Sx Poz mix 100 Sx Class A
7			
5 1/2			
4 1/2	5731.8'	5731.8'	20 Sx Thixotrop 45 Sx Pozmix
3			
2 3/8	5645.9'	5645.9'	
Liners used			

GEOLOGICAL TARGET FORMATION Devonian Shales Depth 5900 feet

Depth of completed well 5990 feet Rotary x / Cable Tools    

Water strata depth: Fresh 40 feet; Salt 1549 feet

Coal seam depths: 505-510 feet Is coal being mined in the area? No

#### OPEN FLOW DATA

Producing formation Devonian Shales Pay zone depth 5701' feet

Gas: Initial open flow show Mcf/d Oil: Initial open flow 0 Bbl/d

Final open flow 120 Mcf/d Final open flow 3-4 Bbl/d

Time of open flow between initial and final tests 87 ~~XXXXX~~ days

Static rock pressure 670 psig (surface measurement) after 16 ~~XXXXX~~ shut in days  
(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

SEP 26 1983  
(Continue on reverse side)

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

PERFS: 5237' - 5701' 34 Shots *Rhinestreet*  
 4516' - 5197' 26 Shots *Jawa & Rhinestreet*  
 3741' - 4480' 30 Shots *Huron*  
 3096' - 3682' 42 Shots *-Up.Dev.*

FRACTURED: 4/29/83 to 4/30/83 - Halliburton 4 stage frac job.

1st stage - 500,000 SCF N<sub>2</sub>, 39,500# CO<sub>2</sub>, 5 BBL. acid  
 2nd stage - 320,000 SCF N<sub>2</sub>, 40,000# CO<sub>2</sub>, 5 BBL. acid  
 3rd stage - 350,000 SCF N<sub>2</sub>, 40,000# CO<sub>2</sub>, 3 BBL. acid  
 4th stage - 330,000 SCF N<sub>2</sub>, 39,000# CO<sub>2</sub>, 4 BBL. acid

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 & Shale			0	40	water @ 40'
Sand & Shale			40	160	
R.R. & Shale			160	210	
Sand			210	290	
Sand, Shale & R.R.			290	315	
R. R.			315	350	
Sand			350	405	
Sand & Shale			405	505	
Coal			505	510	
Sand & Shale			510	715	
R. R. & Shale			775	870	
Brown Shale			870	905	
Sand & Shale			905	1490	
Maxton			1490	1544	
Sand & Shale			1544	1602	Gas & water @ 1549'
Little Lime			1602	1612	
Sand & Shale			1612	1662	
Big Lime			1662	1746	
Shale			1746	1768	
Big Injun			1768	1847	
Shale			1847	1856	
Squaw			1856	1870	
Shale & Sandy Shale			1870	2186	
Weir			2186	2199	
Shale & Sandy Shale			2199	2352	
Berea			2352	2372	
Shale			2372	2472	
Gordon			2472	2482	
Shale & Sandy Shale			2482	2644	
Fifth			2644	2656	
Shale & Sandy Shale			2656	3663	
Balltown			3663	3680	
Shale & Sandy Shale			3680	4514	
Siltstone			4514	4532	
Sand & Sandy Shale			4532	5874	
Marcellus Shale			5874	5972	
Onondaga			5972	-	

*5972*  
*2372*  
*3600*

5990'

T.D.

(Attach separate sheets as necessary)

OFS- Keystone  
Well Operator

By: *J. S. Harwin* Chief Geologist

Date: \_\_\_\_\_

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."



1) Date: December 27, 19 83  
 2) Operator's Well No. #1 Grayam (Landvoight)  
 3) API Well No. 47 085 - 6131  
 State            County            Permit           

DRILLING CONTRACTOR:

S. W. Jack Drilling  
P. O. Box 48  
Buchannon, W. Va. 26201

STATE OF WEST VIRGINIA  
 DEPARTMENT OF MINES, OIL AND GAS DIVISION

OIL AND GAS WELL PERMIT APPLICATION

- 4) WELL TYPE: A Oil X / Gas X /  
 B (If "Gas", Production            / Underground storage            / Deep            / Shallow X /)
- 5) LOCATION: Elevation: 795 Watershed: Bonds Creek  
 District: Clay County: Pitchie Quadrangle: Ellenboro
- 6) WELL OPERATOR O.F.S. - Keystone Corp. 11) DESIGNATED AGENT Michael Sturms  
 Address 615 Iron City Drive Address 170 Thompson Drive  
Pittsburgh, Pa. 15205 Bridgport, W. Va.  
(304) 842-3100
- 7) OIL & GAS ROYALTY OWNER Stephen Landvoight 12) COAL OPERATOR None  
 Address Sycamore Springs Farm Address             
Highland, W. Va. 26346
- 8) SURFACE OWNER Stephen Landvoight 13) COAL OWNER(S) WITH DECLARATION ON RECORD:  
 Address Sycamore Springs Farm Name None  
Highland, W. Va. 26346 Address             
 Acreage 96.07 Name             
 Address
- 9) FIELD SALE (IF MADE) TO:  
 Address
- 10) OIL & GAS INSPECTOR TO BE NOTIFIED  
 Name Mr. Doe Mace Address             
 Address Rt. #1, Box 5 Address             
Sandridge, W. Va. 25274
- 15) PROPOSED WORK: Drill X / Drill deeper            / Redrill            / Fracture or stimulate X /  
 Plug off old formation            / Perforate new formation             
 Other physical change in well (specify)
- 16) GEOLOGICAL TARGET FORMATION, Devonian shales
- 17) Estimated depth of completed well, 5990' feet
- 18) Approximate water strata depths: Fresh, 150 feet; salt, 1800 feet.
- 19) Approximate coal seam depths: No Coal Is coal being mined in the area? Yes            / No X /

20) 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	<u>11 8/4</u>		<u>42</u>	<u>x</u>		<u>69</u>	<u>120</u>		Kinds
Fresh water									
Coal									Sizes
Intermediate	<u>8 5/8</u>	<u>ERW</u>	<u>23.0</u>	<u>x</u>		<u>2000</u>	<u>2000</u>	<u>2000</u>	Depths set
Production	<u>4 1/2</u>	<u>ERW</u>	<u>10.5</u>	<u>x</u>		<u>5950</u>	<u>5950</u>	<u>2950</u>	
Tubing	<u>2 3/8</u>	<u>J55</u>	<u>4.6</u>	<u>x</u>					Perforations:
Liners									Top <u>3500'</u> Bottom <u>000'</u>

21) EXTRACTION RIGHTS

- Check and provide one of the following:  
 Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil or gas.  
 The requirement of Code 22-4-1-(c) (1) through (4). (See reverse side for specifics.)

22) ROYALTY PROVISIONS

Is the right to extract, produce or market the oil or gas based upon a lease or other continuing contract or contracts providing for flat well royalty or any similar provision for compensation to the owner of the oil or gas in place which is not inherently related to the volume of oil or gas so extracted, produced or marketed? Yes  No

If the answer above is No, nothing additional is needed. If the answer is Yes, you may use Affidavit Form IV-60.

23) Required Copies (See reverse side.)

24) Copies of this Permit Application and the enclosed plat and reclamation plan have been mailed by registered mail or delivered by hand to the above named coal operator, coal owner(s), and coal lessee on or before the day of the mailing or delivery of this Permit Application to the Department of Mines at Charleston, West Virginia.

Notary:             
 My Commission Expires DONNA SLIMAN, NOTARY PUBLIC  
GREEN TREE BORO, ALLEGHENY COUNTY  
MY COMMISSION EXPIRES SEPT. 12, 1983

Signed:             
 Its:           

OFFICE USE ONLY  
**DRILLING PERMIT** 19  
 Permit number 47-085-6131 Date           

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. 10) 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.)

Permit expires August 28, 1983 unless drilling is commenced prior to that date and prosecuted with due diligence.

Bond:	Agent:	Plat:	Casing	Fee
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 Administrator, Office of Oil and Gas