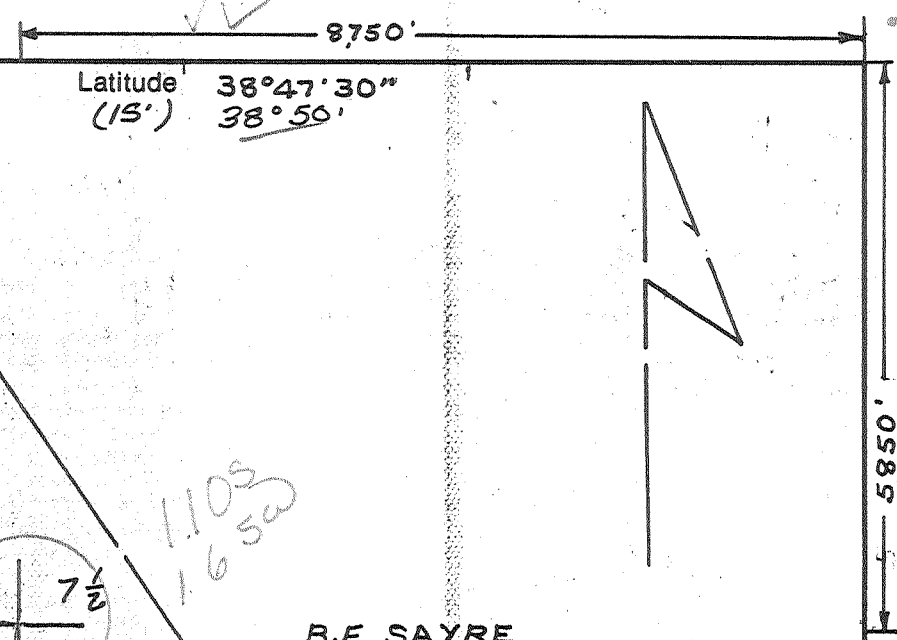


Janie 3/3/89

Latitude $38^{\circ}47'30''$
 (15') $38^{\circ}50'$



ROSIE CASTO

B.F. SAYRE

G.L. CASTO

Beech & Black Gum

398
3.89W

S72°50'E
1067'

LOC. 923

JOE MOLZE

Black oak by road

King Cem.

S40°E - 3102'

N25°18'W - 2280'

white oak

Stone

N53°E
660'

(15') $81^{\circ}45'$
Longitude $81^{\circ}47'30''$

Source of elevation USGS.
 B.M. top of knob 1700' North
 of well Location El. 1119

- New Location
- Storage
- Drill Deeper
- Abandonment
- Re-Drill/Fracture

"I, the undersigned, hereby certify that this map is correct to the best of my knowledge and belief and shows all the information required by the rules and regulations of the oil and gas section of the mining laws of West Virginia.
 Minimum degree of accuracy is one part in 200
 Land Surveyor License No. 92 Legg Star Rt Box 549-B
 Sissonville WVA 25320
 Signed C. Y. Galley Jr.

Company Quinoco Petroleum, Inc.
 Address 1207 Quinin Jr. Box 1433 Charleston, W. 25325
 Farm G.L. CASTO
 Lease 3265 Acres 120
 Well Farm No. 1 Ser. No. 923
 Elevation - Spirit Level 897.0
 Quadrangle COTTAGEVILLE, RAUBERSWOOD 15
 Township or District RIPLEY 3
 County JACKSON
 Sec., Lot, Qr. _____ T _____ R _____
 Coordinates _____
 File No. _____ Dwg. No. _____
 Date 5-22-78 Scale 1"=500

1039
 1037
 110
 9

WELL LOCATION MAP
 STATE OF WEST VIRGINIA

(+) Denotes Values Of Well On United States Topographic Maps

JAC-1443, -Fract.

Scale 15' 7 1/2'

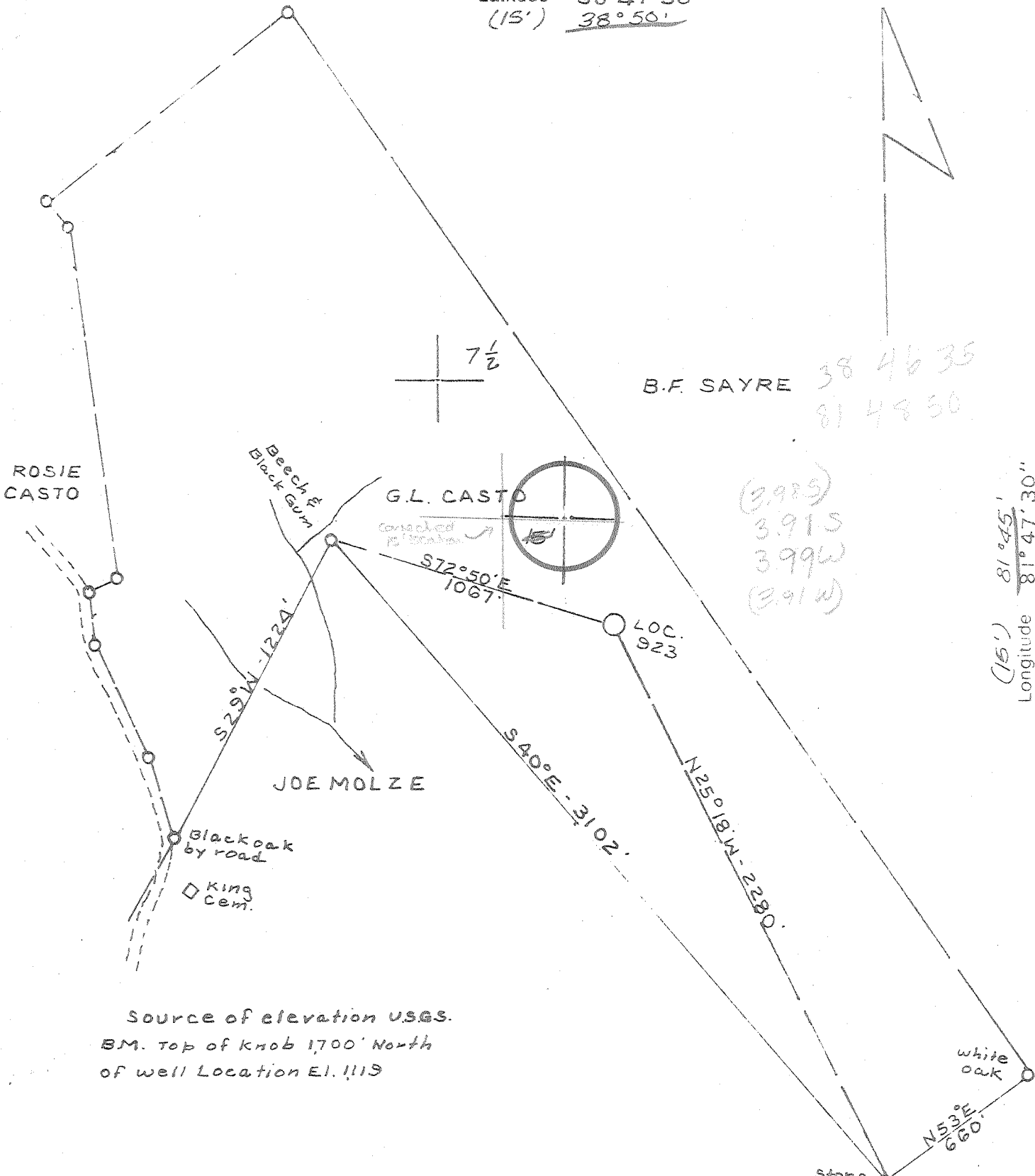
MAR 31 1989
47-035

DEEP WELL (1037) (110) (9) (1039) (1035) OWWD 6-0 Providence (359)

8750'

Latitude 38°47'30"
(15') 38°50'

5850'



Source of elevation USGS.
B.M. Top of knob 1700' North
of well Location El. 1119

- New Location
- Storage
- Drill Deeper
- Abandonment
- Re-Drill/Fracture

"I, the undersigned, hereby certify that this map is correct to the best of my knowledge and belief and shows all the information required by the rules and regulations of the oil and gas section of the mining laws of West Virginia. Minimum degree of accuracy is one part in 200.
Land Surveyor or License No. 92 Legg Star Rt Box 549-B
Sissonville WVA 25320
Signed C. Y. Galley Jr.

Company DEVON CORP.
 Address P.O. BOX 1433 CHARLESTON WV.
 Farm G.L. CASTO
 Lease 3265 Acres 120
 Well Farm No. 1 Ser. No. 923
 Elevation - Spirit Level 897.0 *SE*
 Quadrangle COTTAGEVILLE, ROBERTSWOOD 15'
 Township or District RIPLEY
 County JACKSON
 Sec., Lot, Or. _____ T _____ R _____
 Coordinates _____
 File No. _____ Dwg. No. _____
 Date 5-22-78 Scale 1"=500

WELL LOCATION MAP
STATE OF WEST VIRGINIA

(+) Denotes Values Of Well On United States Topographic Maps

JAC-1443

Scale 15' 7 1/2'

Deep Well 47-035 JUN 7 1978
6-6 Providence (359)



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

Oil and Gas Division

WELL RECORD 17

RECEIVED

SEP - 4 1979

47-035-1443

OIL & GAS DIVISION

DEPT. OF MINES

Rotary XXX Oil _____
Cable _____ Gas XXX
Recycling _____ Comb. _____
Water Flood _____ Storage _____
Disposal _____ (Kind) _____

Quadrangle Cottageville

Permit No. JAC-1443

Company DEVON CORPORATION
Address PO Box 1433, Charleston, WV 25325
Farm George L. Casto Acres 120
Location (waters) Spruce Run
Well No. 923 Elev. 897
District Ripley County Jackson
The surface of tract is owned in fee by George L. Casto, 3110 Blain Blvd.
Address Charleston, WV
Mineral rights are owned by Same as above
Address _____
Drilling Commenced December 14, 1978
Drilling Completed December 22, 1978
Initial open flow 87 MCFD XXX bbls.
Final production 9.4 MCFD XXX per day bbls.
Well open 5 hrs. before test 1625 RP.

Casing and Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft. (Sks.)
Size 20-16			
Cond. 13-10"			
9 5/8	202	202	100 sax=to surface
8 5/8			
7	2596	2596	75 sax=625'
5 1/2			
4 1/2	4875	4875	200 sax=2400'
3			
2			
Liners Used			

Well treatment details:

Attach copy of cementing record.

Perforated 4 1/2" casing at 4798' to 4800' with 16 shots

Fractured Oriskany Sand with 45,000# sand and 908 BBL water

Coal was encountered at None reported Feet _____ Inches _____
Fresh water _____ Feet _____ Salt Water _____ Feet _____
Producing Sand Oriskany Sand Depth 4798-4800

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	* Remarks
Surface			0	12		
Shale			12	195		
Sand			195	225		
Shale			225	250		
Sand			250	286		
Shale			286	515		
Broken Sand			515	610		
Shale			610	667		
Sand			667	688		
Shale			688	732		
Sand			732	783		
Shale			783	888		
Sand			888	897		
Shale			897	1022		
Sand			1022	1038		
Shale			1038	1192		
Sand			1192	1277		
Shale			1277	1358		
Sand			1358	1402		
Shale			1402	1414		
Sand			1414	1448		
Shale			1448	1542		
Sand			1542	1560		
Shale			1560	1706		

(over)

* Indicates Electric Log tops in the remarks section.

47-035-1443

Formation	Color	Hard or Soft	Top Feet	Bottom Feet	Oil, Gas or Water	Remarks
Sand			1706	1727		
Shale			1727	1785		
Maxon Sand			1785	1869		
Shale			1869	1883		
Big Lime			1883	2010		
Shale			2010	2034		
Injun Sand			2034	2136		
Shale			2136	2495		
Coffee Shale			2495	2518		
Berea Sand			2518	2531		
Shale			2531	3692		
Br. Shale			3692	4152		
Shale			4152	4535		
Marcellus Shale			4535	4698		
Onondaga L. S.			4698	4773		
Oriskany Sand			4773	4802		
Helderberg L. S.			4802	4900		
Log Total Depth				4900'		

Date January 9 1979

APPROVED A. C. House Owner

By District Geologist (Title)



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APR 08 1990

State of West Virginia

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

DEPARTMENT OF ENERGY
Oil and Gas Division

Date 4-4-90
Operator's
Well No. 923
Farm Casto
API No. 47 - 035 - 1443 - F

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

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

LOCATION: Elevation: 897.0 Watershed Spruce Run
District: Ripley County Jackson Quadrangle Cottageville

COMPANY Quinoco Petroleum, Inc.

ADDRESS 1207 Quarrier St., Charleston, WV 25301

DESIGNATED AGENT Bill W. Backus

ADDRESS Same as Above

SURFACE OWNER C. E. Wright

ADDRESS 527 Central Ave., Charleston, WV 25302

MINERAL RIGHTS OWNER Same

ADDRESS _____

OIL AND GAS INSPECTOR FOR THIS WORK Jerry

Tephabock ADDRESS Rt. 1, Box 101-A, Ripley, WV

PERMIT ISSUED 3-31-89

DRILLING COMMENCED 7-31-89

DRILLING COMPLETED 3-1-90

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	202	202	Cemented to surface
8 5/8			
7	2596	2596	75 sxs
5 1/2			
4 1/2		4875	200 sxs
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Brown Shale/Berea Depth _____ 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? No

OPEN FLOW DATA

Producing formation Brown Shale Pay zone depth 3702-4152 feet

Gas: Initial open flow _____ Mcf/d Oil: Initial open flow _____ Bbl/d

Final open flow 23.0 Mcf/d Final open flow _____ Bbl/d

Time of open flow between initial and final tests _____ hours

Static rock pressure 980 psig (surface measurement) after 72 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

APR 16 1990

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

1. Set drillable bridge plug at 4250'. Perforated 4½" 2828', squeezed 75 sxs neat cement. Top of cement behind 4½" 1930'.
2. Perforated Brown Shale 3702'-4152' with 27 shots. Foam frac with 310 bbls water 720 sxs sand and 535 MScf N₂.
3. Perforated Berea 2519'-2523' with 5 shots. Water frac with 487 bbls and 450 sxs sand. Not commercial. Squeezed perforations with 50 sxs neat cement.

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
See original					<p><i>Squeeze & frac Record only</i> <i>A. J. Janic</i></p> <p>RECEIVED APR 06 1990 DIVISION OF OIL & GAS DEPARTMENT OF ENERGY</p>

(Attach separate sheets as necessary)

Quinoco Petroleum, Inc

Well Operator

By:

William B. Baker

Date:

4-5-90

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."
8470

035-1443-F
 Issued 3/31/89 Expires 3/31/91
 Page 3 of 8

STATE OF WEST VIRGINIA
 DEPARTMENT OF ENERGY, DIVISION OF OIL AND GAS
 WELL WORK PERMIT APPLICATION

40475, 3, 307

- 1) Well Operator: Quinoco Petroleum, Inc.
- 2) Operator's Well Number: George Casto #923 3) Elevation: 897
- 4) Well type: (a) Oil / or Gas /
 (b) If Gas: Production / Underground Storage /
 Deep / Shallow /
- 5) Proposed Target Formation(s): Berea/Brown Shale
- 6) Proposed Total Depth: 4152 feet
- 7) Approximate fresh water strata depths: None reported
- 8) Approximate salt water depths: None reported
- 9) Approximate coal seam depths: None Reported
- 10) Does land contain coal seams tributary to active mine? Yes / No /
- 11) Proposed Well Work: Rework well by re-cementing, perforating and fracturing the Berea and Brown Shale formations
- 12)

CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS		FOOTAGE INTERVALS		CEMENT	
	Size	Grade	Weight per ft.	For drilling	Left in well	Fill-up (cu. ft.)
Conductor	9 5/8"			202	202	100 sacks to surface
Fresh Water						
Coal						
Intermediate	7"			2596	2596	75 sacks
Production	4 1/2"				4875	2860' by log
Tubing						380SR19-11.
Liners						Fracture Squeeze Job

PACKERS : Kind _____
 Sizes _____
 Depths set _____

RECEIVED
 MAR 30 1989

For Division of Oil and Gas Use Only

DIVISION OF OIL & GAS
 DEPARTMENT OF ENERGY

Fee(s) paid: Well Work Permit Reclamation Fund WPCP
 Plat WW-9 WW-2B Bond 50000 (Type) Agent

0770

RECEIVED
MAR 30 1989

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

Date: MARCH 3, 1989
Operator's well number
George L. Casto #923
API Well No: 47 - 035 - 1443 - FRAC
State - County - Permit

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

NOTICE AND APPLICATION FOR A WELL WORK PERMIT

4) Surface Owner(s) to be served:
(a) Name George L. Casto ~~DECEASED~~
Address 3110 Blain Blvd.
Charleston, WV
(b) Name Charles E. Wright
Address 527 Central Avenue
Charleston, WV 25302
(c) Name _____
Address _____
6) Inspector Jerry A. Tephabock
Address Route 1, Box 101-A
Ripley, WV 25271
Telephone (304)- 372-6805

5) (a) Coal Operator:
Name N/A
Address _____
(b) Coal Owner(s) with Declaration
Name N/A
Address _____
Name N/A
Address _____
(c) Coal Lessee with Declaration
Name N/A
Address _____

TO THE PERSON(S) NAMED ABOVE TAKE NOTICE THAT:

_____ Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas OR

X Included is the information required by Chapter 22B, Article 1, Section 8(d) of the Code of West Virginia (see page 2)

I certify that as required under Chapter 22B of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through 8 on the above named parties, by:

- X Personal Service (Affidavit attached)
- _____ Certified Mail (Postmarked postal receipt attached)
- _____ Publication (Notice of Publication attached)

I have read and understand Chapter 22B and 38 CSR 11-18, and I agree to the terms and conditions of any permit issued under this application.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, 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.

Well Operator QUINOCO PETROLEUM, INC
By: [Signature]
Its: District Manager
Address 1207 Quarrier Street, PO Box 1433
Charleston, West Virginia 25325
Telephone 342-6193

Subscribed and sworn before me this 3RD day of MARCH, 1989

[Signature] Notary Public
My commission expires DECEMBER 9, 1997



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

RECEIVED

MAY 31 1978

Oil and Gas Division

OIL & GAS DIVISION
DEPT. OF MINES

OIL AND GAS WELL PERMIT APPLICATION

TO THE DEPARTMENT OF MINES,
Charleston, W. Va.

Surface Owner George L. Casto
Address 3110 Blain Blvd., Charleston, WV
Mineral Owner George L. Casto, et ux
Address 3110 Blain Blvd., Charleston, WV 25312
Coal Owner Same as above
Address _____
Coal Operator Not operated
Address _____

DATE May 23, 1978
Company DEVON CORPORATION
Address Box 1433, Charleston, W. Va.
Farm George L. Casto Acres 120 ac
Location (waters) Spruce Run
Well No. 923 Elevation 897
District Ripley County Jackson
Quadrangle Cottageville

THIS PERMIT MUST BE POSTED AT THE WELL SITE

If provisions being in accordance with Chapter 22,
of the W. Va. Code, the location is hereby approved
for drilling. This permit shall expire if
operations have not commenced by 6-1-78.

INSPECTOR
TO BE NOTIFIED Richard J. Morris
ADDRESS Grantsville, W.Va.
PHONE 354-7259

[Signature]
Deputy Director - Oil & Gas Division

GENTLEMEN:

The undersigned well operator is entitled to drill upon the above named farm or tract of land for oil and gas, having fee title thereto, (or as the case may be) under grant or lease dated May 11 19 69 by G. L. Casto, et ux made to Commonwealth Gas and recorded on the _____ day of _____ 19____, in Jackson County, Book 109 Page 381
XXX NEW WELL DRILL DEEPER REDRILL FRACTURE OR STIMULATE
OIL AND GAS WELL ORIGINALLY DRILLED BEFORE JUNE 5, 1969.

The enclosed plat was prepared by a registered engineer or licensed land surveyor and all coal owners and/or operators have been notified as of the above date.

The above named coal owners and/or operator are hereby notified that any objection they wish to make, or are required to make by Section 3 of the Code, must be received by, or filed with the Department of Mines within ten (10) days. *

Copies of this notice and the enclosed plat were mailed by registered mail, or delivered to the above named coal operators or coal owners at their above shown respective address _____ day _____ before, or on the same day with the mailing or delivery of this copy to the Department of Mines at Charleston, West Virginia.

PLEASE SUBMIT COPIES OF ALL
GEOPHYSICAL LOGS DIRECTLY TO:

WEST VIRGINIA GEOLOGICAL AND
ECONOMIC SURVEY
P. O. BOX 879
MORGANTOWN, WEST VIRGINIA 26505
AC-304 - 292-6331

Very truly yours, DEVON CORPORATION

(Sign Name) A. C. Youse

A. C. Youse, Well Operator, Dist. Geologist
PO Box 1433

Address
of
Well Operator

Street

Charleston,
City or Town

West Virginia 25325

State

*SECTION 3 . . . If no objections are filed or found by the Department of mines, within said period of ten days from the receipt of notice and plat by the department of mines, to said proposed location, the department shall forthwith issue to the well operator a permit reciting the filing of such plat, that no objections have been made by the coal operators or found thereto by the department and that the same is approved and the well operator authorized to proceed.

BLANKET BOND

JAC-1443

PERMIT NUMBER

47-035

[Handwritten signature]

THIS IS AN ESTIMATE ONLY
ACTUAL INFORMATION WILL BE SUBMITTED ON OG-10 UPON COMPLETION

PROPOSED WORK ORDER TO XXX DRILL _____ DEEPEN _____ FRACTURE-STIMULATE _____
 DRILLING CONTRACTOR: (If Known) _____ RESPONSIBLE AGENT: _____
 NAME FWA Drilling Co. NAME Bill Endicott
 ADDRESS Box 448, Elkview, W. Va. ADDRESS Box 1433, Charleston, W. Va.
 TELEPHONE 965-3379 TELEPHONE 342-3171
 ESTIMATED DEPTH OF COMPLETED WELL: 4925 ROTARY XXX CABLE TOOLS _____
 PROPOSED GEOLOGICAL FORMATION: Oriskany
 TYPE OF WELL: OIL _____ GAS XXX COMB. _____ STORAGE _____ DISPOSAL _____
 RECYCLING _____ WATER FLOOD _____ OTHER _____

TENTATIVE CASING PROGRAM:

CASING AND TUBING SIZE	USED FOR DRILLING	LEFT IN WELL	CEMENT FILL UP OR SACKS - CUBIC FT.
20 - 16			
13 - 10			
9 - 5/8	200	200	100 sax=to surface
8 - 5/8			
7	2625	2625	75 sax=625'
5 1/2			
4 1/2		4925	150 sax=1800'
3			Perf. Top
2			Perf. Bottom
Liners			Perf. Top
			Perf. Bottom

APPROXIMATE FRESH WATER DEPTHS _____ FEET _____ SALT WATER _____ FEET _____
 APPROXIMATE COAL DEPTHS None anticipated
 IS COAL BEING MINED IN THE AREA? No BY WHOM? _____

TO DRILL:

SUBMIT FIVE (5) COPIES OF OG - 1, \$100.00 PERMIT FEE, PERFORMANCE BOND AND PERMANENT COPY OF PLAT.

TO DRILL DEEPER OR REDRILL:

SUBMIT FIVE (5) COPIES OF OG - 1, SHOWING ORIGINAL PERMIT NUMBER AND PERFORMANCE BOND. ON WELLS DRILLED PRIOR TO 1929, A PERMANENT COPY OF THE PLAT AND THE ORIGINAL WELL RECORD MUST ALSO BE SUBMITTED.

TO FRACTURE - STIMULATE:

OIL AND/OR GAS WELL ORIGINALLY DRILLED BEFORE JUNE 5, 1929, FIVE (5) COPIES OG - 1, PERFORMANCE BOND, PERMANENT PLAT AND ORIGINAL WELL RECORD.

OIL AND/OR GAS WELL ORIGINALLY DRILLED ON AND/OR AFTER JUNE 5, 1929, FIVE COPIES OG - 1, SHOWING ORIGINAL PERMIT NUMBER, AND PERFORMANCE BOND.

Required forms must be filed within ninety (90) days of completion for bond release. Inspector to be notified twenty-four (24) hours in advance.

The following waiver must be completed by the coal operator if the permit is to be issued within ten days of receipt thereof.

WAIVER: I the undersigned, Agent for _____ Coal Company, Owner or Operator of the coal under this lease have examined and place on our mine maps this proposed well location.

We the _____ Coal Company have no objections to said well being drilled at this location, providing operator has complied with all rules and regulations in Articles 4, 5, and 7, Chapter 22 of the West Virginia Code.

 For Coal Company

 Official Title