

AMHERST LAND CO.  
T.M. 178/1  
5917.67 AC.

BENJAMIN P. CROSSCUP JR., ETALS  
T.M. 187/6  
D.B. 221/181  
2488.8 AC.

CHARLIE CHANCEY, ETALS  
T.M. 187/6  
D.B. 51/124  
14.7 AC.

NORTH

7 1/2' TOPG  
LOCATION

EXISTING WELL (SCALED)

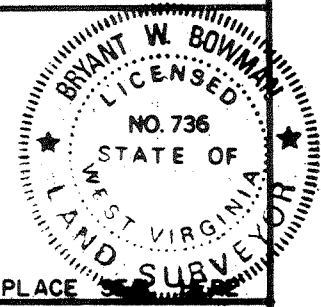
1.785  
2.10w

4.605  
2.17w

EXISTING WELL (SCALED)

FILE NO. \_\_\_\_\_  
DRAWING NO. \_\_\_\_\_  
SCALE 1" = 1000 FT.  
MINIMUM DEGREE OF ACCURACY 1/200  
PROVEN SOURCE OF ELEVATION TOP OF POINT 1035 WEST OF LOCATION

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) Bryant Bowman  
B.P.E. \_\_\_\_\_ L.L.S. 736



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

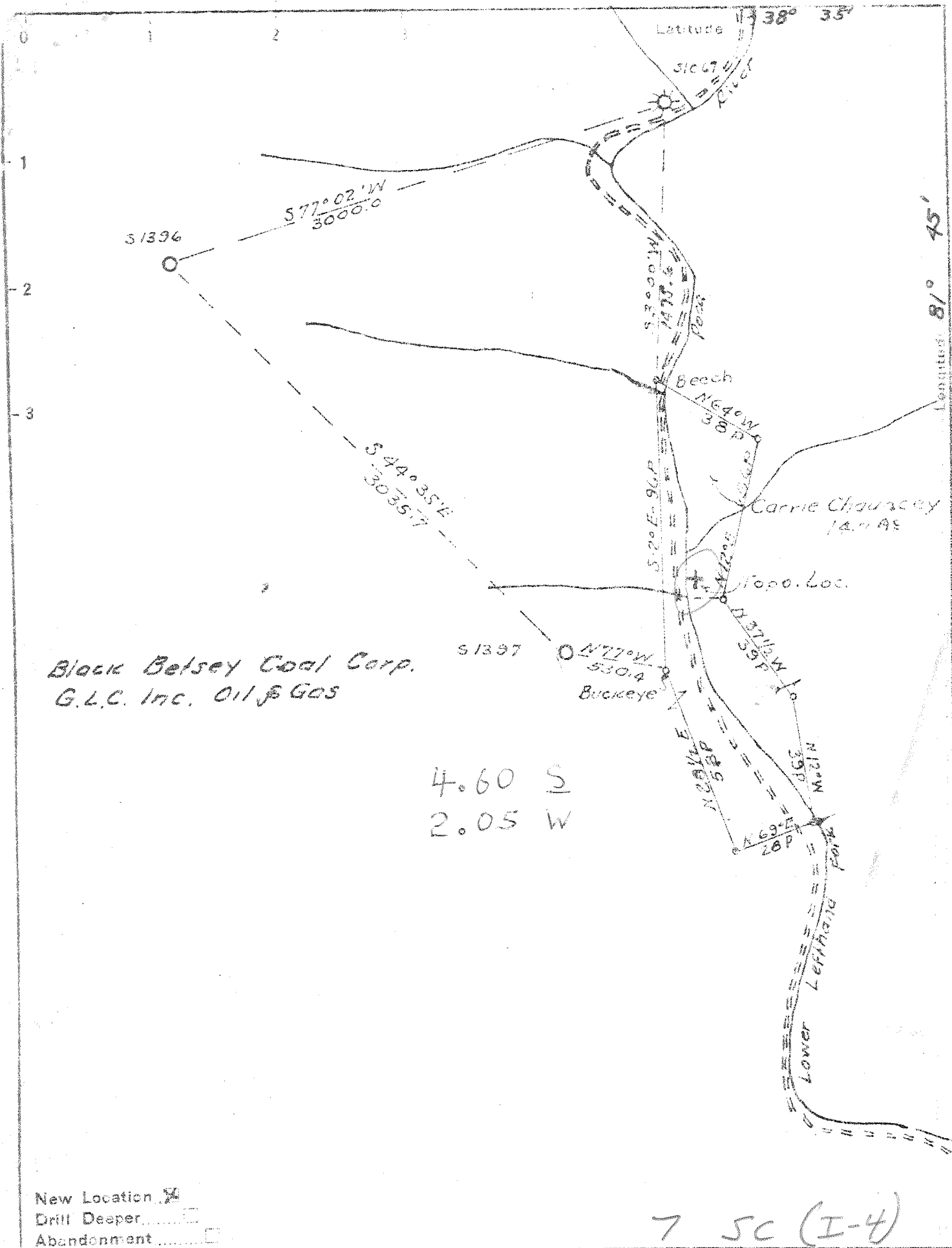


Department of Mines  
Oil & Gas Division

DATE APRIL 5, 1982  
OPERATOR'S WELL NO. BLACK BETSY  
API WELL NO. NO. 4  
47 - 079 - 0532-Frac.  
STATE COUNTY PERMIT

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
(IF "GAS", PRODUCTION \_\_\_ STORAGE \_\_\_ DEEP \_\_\_ SHALLOW \_\_\_)  
LOCATION: ELEVATION 967.00' WATER SHED HEIZER CREEK  
DISTRICT POCATAHICO COUNTY PUTNAM  
QUADRANGLE BANCROFT (7 1/2') WENFIELD SE  
SURFACE OWNER BENJAMIN P. CROSSCUP JR., ETALS ACREAGE 2488.8  
OIL & GAS ROYALTY OWNER CABOT CORP LEASE ACREAGE 2500 AC.  
LEASE NO. 3-468

PROPOSED WORK: DRILL \_\_\_ CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION \_\_\_ PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_  
PLUG AND ABANDON \_\_\_ CLEAN OUT AND REPLUG 6-6  
TARGET FORMATION \_\_\_\_\_ ESTIMATED DEPTH ELK-POCA  
WELL OPERATOR CABOT OIL AND GAS CORP DESIGNATED AGENT JIM CRAMLETT  
ADDRESS P.O. BOX 628 CHARLESTON W.Va. ADDRESS P.O. BOX 628 CHARLESTON W.Va.



Black Betsey Coal Corp.  
G.L.C. Inc. Oil & Gas

4.60 S  
2.05 W

New Location   
Drill Deeper   
Abandonment

Company Godfrey L. Cabot Inc.  
Address Box 1473 Charleston W. Va.  
Farm Black Betsey Land Corp.  
Tract \_\_\_\_\_ Acres 2500 Lease No. 3-462  
Well (Farm) No. 4 Serial No. 1396  
Elevation (Spirit Level) 951.0  
Quadrangle Winfield - SE  
County Putnam District Pocatalica  
Engineer H. L. Simmons Jr.  
Engineer's Registration No. 1652  
File No. \_\_\_\_\_ Drawing No. \_\_\_\_\_  
Date 9-24-52 Scale 1" = 660'

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

WELL LOCATION MAP  
FILE NO PUT-532

+ Denotes location of well on United States Topographic Maps, scale 1 to 62,500, latitude and longitude lines being represented by border lines as shown.  
- Denotes one inch spaces on border line of original tracing

Deep Well

*Winfield*  
*Oct-532*

GODFREY L. CASOT, INC.

WELL RECORD 20

Map Square  
Lot No.  
Warrant No. 41-29

SERIAL NO. 1396 OPERATING DISTRICT PN  
FARM Black Betsey Land Corp. NO. 4 LEASE NO. 3-468  
COUNTY Putnam TAX DISTRICT Pocatalico STATE West Virginia  
DRILLING COMMENCED October 18, 1952 DRILLING COMPLETED January 16, 1953  
CONTRACTOR W. L. Heeter ADDRESS Spencer, West Virginia

ROCK PRESSURE RECORD

Oriskany Sand 1150 lbs. in 12 hrs.  
Sand lbs. in hrs.  
Sand lbs. in hrs.

PRODUCING SAND RECORD

Oriskany Sand, from 5003 to 5010 Init. Prod. 1,161 M. C. F. G.  
Sand, from to Init. Prod. M. C. F. G.  
Sand, from to Init. Prod. M. C. F. G.

OPEN FLOW

Time, Conditions: After shot:

Water  
Inches Mercury in inch opening  
Volume 1,980 M. C. F.

CASING RECORD

| SIZE | WEIGHT | USED IN DRILLING | LEFT IN WELL | HOW CASING SET       |
|------|--------|------------------|--------------|----------------------|
| 13"  | 48#    | 385              | 385          | Shoe                 |
| 10"  | 35.75  | 911              | 911          | Shoe                 |
| 8"   | 24#    | 2187             | 2187         | Shoe & Anchor Packer |
| 7"   | 24#    | 4924             | 4924         | Spang B. H. Packer   |

24 HOUR PRODUCTION TEST AFTER TUBING

M. C. F. Line Pressure  
Bbl. Oil in 24 Hours

TUBED AND SHUT IN

Date

Packer, Size Kind  
Set, Depth Size Anchor  
Pest. Top Bottom  
Pest. Top Bottom

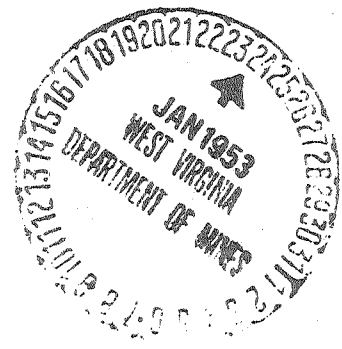
SHOOTING RECORD

Shot with 40 qts. from 5020 to 4999 Date 1/19/53  
Gauge Before Shot 1,161 Mcf. Min. Gauge 30 After Shot 1,980 M

ELEVATION:

951

| FORMATION      | COLOR | TOP  | BOTTOM | STEEL LINE MEASUREMENTS | HARD OR SOFT | OIL, GAS OR WATER | DEPTH FOUND | REMARKS            |
|----------------|-------|------|--------|-------------------------|--------------|-------------------|-------------|--------------------|
| Surface        |       | 0    | 8      |                         |              |                   |             |                    |
| Red Rock       |       | 8    | 32     |                         |              |                   |             |                    |
| White Slate    |       | 32   | 70     |                         |              |                   |             |                    |
| Red Rock       |       | 70   | 137    |                         |              |                   |             |                    |
| Lime           |       | 137  | 184    |                         |              |                   |             |                    |
| Red Rock       |       | 184  | 214    |                         |              |                   |             |                    |
| Lime           |       | 214  | 238    |                         |              |                   |             |                    |
| Red Rock       |       | 238  | 280    |                         |              |                   |             |                    |
| Slate          |       | 280  | 324    |                         |              |                   |             |                    |
| Red Rock       |       | 324  | 335    |                         |              |                   |             |                    |
| Sand           |       | 335  | 370    |                         |              |                   |             |                    |
| Coal           |       | 370  | 375    |                         |              |                   |             |                    |
| Slate          |       | 375  | 402    |                         |              |                   |             |                    |
| Red Rock       |       | 402  | 420    |                         |              |                   |             |                    |
| Slate          |       | 420  | 465    |                         |              |                   |             |                    |
| Red Rock       |       | 465  | 504    |                         |              |                   |             |                    |
| Slate & Shells |       | 504  | 540    |                         |              |                   |             |                    |
| Red Rock       |       | 540  | 590    |                         |              |                   |             |                    |
| Slate          |       | 590  | 608    |                         |              |                   |             |                    |
| Red Rock       |       | 608  | 629    |                         |              |                   |             |                    |
| Lime           |       | 629  | 650    |                         |              |                   |             |                    |
| Slate          |       | 650  | 695    |                         |              |                   |             |                    |
| Red Rock       |       | 695  | 768    |                         |              |                   |             |                    |
| Dark Sand      |       | 768  | 945    |                         |              | Water             | 854         | One bailer per hr. |
| Slate & Shell  |       | 945  | 1030   |                         |              |                   |             |                    |
| Sand           |       | 1030 | 1104   |                         |              |                   |             |                    |
| Slate          |       | 1104 | 1110   |                         |              |                   |             |                    |
| Sand           |       | 1110 | 1155   |                         |              | Water             | 1035        | One bailer per hr. |
| Slate          |       | 1155 | 1213   |                         |              |                   |             |                    |
| Black Slate    |       | 1213 | 1370   |                         |              |                   |             |                    |
| White Slate    |       | 1370 | 1475   |                         |              |                   |             |                    |
| Sand           |       | 1475 | 1525   |                         |              |                   |             |                    |
| Slate          |       | 1525 | 1601   |                         |              |                   |             |                    |
| Salt Sand      |       | 1601 | 1798   |                         |              | Water             | 1643        | Hole full.         |
| Blue Slate     |       | 1798 | 1801   |                         |              |                   |             |                    |
| Sand           |       | 1801 | 1862   |                         |              |                   |             |                    |



| FORMATION        | COLOR | TOP  | BOTTOM | STEEL LINE MEASUREMENTS | NAME OF SOFT | OIL, GAS OR WATER | DEPTH FOUND | REMARKS     |
|------------------|-------|------|--------|-------------------------|--------------|-------------------|-------------|-------------|
| Slate            |       | 1862 | 1867   |                         |              |                   |             |             |
| Lime             |       | 1867 | 1881   |                         |              |                   |             |             |
| Slate            |       | 1881 | 1884   |                         |              |                   |             |             |
| Little Lime      |       | 1884 | 1906   |                         |              |                   |             |             |
| Slate            |       | 1906 | 1910   |                         |              |                   |             |             |
| Big Lime         |       | 1910 | 2088   |                         |              |                   |             |             |
| Big Injun        |       | 2088 | 2142   |                         |              |                   |             |             |
| Lime             |       | 2142 | 2256   |                         |              |                   |             |             |
| Slate & Shells   |       | 2256 | 2565   |                         |              |                   |             |             |
| Brown Shale      |       | 2565 | 2574   |                         |              |                   |             |             |
| Berea            |       | 2574 | 2594   |                         |              |                   |             |             |
| Slate & Shells   |       | 2594 | 3814   |                         |              | Gas & Oil         | 3375        | Small show. |
| Brown shale      |       | 3814 | 3829   |                         |              | Gas               | 3600        | Nice show.  |
| Slate & Shells   |       | 3829 | 4059   |                         |              | Gas               | 3680        | 58 Mcf.     |
| Brown Shale      |       | 4059 | 4118   |                         |              |                   |             |             |
| Slate & Shells   |       | 4118 | 4170   |                         |              |                   |             |             |
| Brown Shale      |       | 4170 | 4300   |                         |              |                   |             |             |
| Slate & Shells   |       | 4300 | 4648   |                         |              | Gas               | 4485        | 127 Mcf.    |
| Brown Shale      |       | 4648 | 4911   |                         |              |                   |             |             |
| Corniferous Lime |       | 4911 | 5001   | 4924                    |              |                   |             |             |
| ORISKANY SAND    |       | 5001 |        |                         |              |                   |             |             |
| TOTAL DEPTH      |       |      | 5020   | 5020                    |              | Gas               | 5003-5010;  | 1,161 Mcf.  |



Well No. #4  
Farm Black Betsy  
API # 47 - 079 - 0532-FRAC  
Date May 25, 1982

STATE OF WEST VIRGINIA  
OFFICE OF OIL AND GAS - DEPARTMENT OF MINES

OIL AND GAS WELL PERMIT APPLICATION

WELL TYPE: Oil    / Gas    /  
(If "Gas", Production    / Underground storage    / Deep    / Shallow    /

LOCATION: Elevation: 967' Watershed: Heizer Creek  
District: Pocatalico County: Putnam Quadrangle: Bancroft 7-1/2'

WELL OPERATOR Cabot Oil & Gas Corporation  
Address P. O. Box 628  
Charleston, WV 25322

DESIGNATED AGENT H. Baird Whitehead  
Address P. O. Box 628  
Charleston, WV 25322

OIL AND GAS ROYALTY OWNER Cabot Oil & Gas Corporation  
Address P. O. Box 628  
Charleston, WV 25322  
Acreage   

COAL OPERATOR Not Operated  
Address   

SURFACE OWNER Benjamin Grosscup  
Address Box 433  
Gate Mills, OH 44040  
Acreage 2495.8

COAL OWNER(S) WITH DECLARATION ON RECORD:  
NAME I. V. Cunningham  
Address 431 McKinley Avenue  
Charleston, WV 25314

FIELD SALE (IF MADE) TO:  
NAME     
Address   

NAME     
Address   

OIL AND GAS INSPECTOR TO BE NOTIFIED:  
NAME Martin Nichols  
Address P. O. Box 554  
Clendenin, WV 25045  
Telephone 548-6993

COAL LESSEE WITH DECLARATION ON RECORD:  
NAME     
Address   

The undersigned well operator is entitled to operate for oil or gas purposes at the above location under a deed XX / lease    / other contract    / dated 9/19, 19 40, to the undersigned well operator from Black Betsy Land Corporation.

(If said deed, lease, or other contract has been recorded:)

Recorded on 9/30, 19 40, in the office of the Clerk of County Commission of Putnam County, West Virginia, in 72 Book at page 483. A permit is requested as follows:

PROPOSED WORK: Drill    / Drill Deeper    / Redrill    / Fracture or stimulate XX / Plug off old formation    / Perforate new formation XX / Other physical change in well (specify)   

--planned as shown on the work order on the reverse side hereof.

The above named coal operator, coal owner(s), and coal lessee are hereby notified that any objection they wish to make or are required to make by Code §22-4-3 must be filed with the Department of Mines within fifteen (15) days after receipt of this Application by the Dept. 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 lessees on or before the day of the mailing or delivery of this Application to the Department of Mines at Charleston, West Virginia.

PLEASE SUBMIT COPIES OF ALL GEOPHYSICAL LOGS DIRECTLY TO:  
WEST VIRGINIA OIL AND GAS CONSERVATION COMMISSION  
1613 WASHINGTON ST., E.  
CHARLESTON, WV 25311  
Telephone - 304/348-3092

CABOT OIL AND GAS CORPORATION  
Well Operator

By: H. Baird Whitehead  
Its: District Production Superintendent

(Revised 3-81)

PROPOSED WORK ORDER

THIS IS AN ESTIMATE ONLY:  
ACTUAL INFORMATION MUST BE SUBMITTED ON FORM IV-35 UPON COMPLETION

DRILLING CONTRACTOR (IF KNOWN) Unknown

Address \_\_\_\_\_

GEOLOGICAL TARGET FORMATION Devonian Shale and Oriskany

Estimated depth of completed well 5020 Actual feet. Rotary \_\_\_ / Cable tools XX /  
Approximate water strata depths: Fresh, \_\_\_\_\_ feet; salt, 854, 1035 feet.  
Approximate coal seam depths: 370 \_\_\_\_\_ feet. 1643  
Is coal being mined in this area: Yes \_\_\_ / No XX /

CASING AND TUBING PROGRAM

| CASING OR TUBING TYPE | SPECIFICATIONS |       |               |     | FOOTAGE INTERVALS |                | CEMENT FILL UP OR SACKS Cubic ft. | PACKERS                     |
|-----------------------|----------------|-------|---------------|-----|-------------------|----------------|-----------------------------------|-----------------------------|
|                       | Size           | Grade | Weight per ft | New | Used              | For Drill-ling |                                   |                             |
| Conductor             |                |       |               |     |                   |                |                                   | Kinds                       |
| Fresh water           | 13-3/8         | H-40  | 48            |     | X                 | 385            | (Present)                         |                             |
| Coal                  | 10-3/4         | H-40  | 32.75         |     | X                 | 911            | (Present)                         | Sizes                       |
| Intermed.             | 8-5/8          | J-55  | 24            |     | X                 | 2187           | (Present)                         |                             |
| Production            | 7              | J-55  | 23            |     | X                 | 4924           | Will squeeze                      | Depths set                  |
| Tubing                | 1.9            | J-55  | 2.75          | X   |                   | 4500           | w/100 sks.                        |                             |
| Liners                |                |       |               |     |                   |                |                                   | Perforations:<br>Top Bottom |

*NOTE: Regulation 7.02 of the Department of Mines provides that the original and four copies of Form IV-2 must be filed with the Department, accompanied by (i) a plat in the form prescribed by Regulation 11, (ii) a bond in one of the forms prescribed by Regulation 12, or in lieu thereof the other security allowed by Code §22-4-2, (iii) Form IV-9, "Reclamation Plan" applicable to the reclamation required by Code §22-4-12b and Regulation 23, (iv) unless previously paid on the same well, the fee required by Code §22-4-12a, and (v) if applicable, the consent required by Code §22-4-8a from the owner of any water well or dwelling within 200 feet of the proposed well.*

*A separate Form IV-2 shall not be required for fracturing or stimulating a well where fracturing or stimulating is to be part of the work for which a permit is sought and is noted as such on the Form IV-2 filed in connection therewith.*

THIS PERMIT MUST BE POSTED AT THE WELL SITE.  
ALL PROVISIONS BEING IN ACCORDANCE WITH CHAPTER 22,  
ARTICLE 4 OF THE W. VA. CODE, THE LOCATION IS HEREBY  
APPROVED FOR fracturing. THIS PERMIT SHALL EXPIRE  
IF OPERATIONS HAVE NOT COMMENCED BY 2-9-83  
BY [Signature]

*The following waiver must be completed by the coal operator and by any coal owner or coal lessee who has recorded a declaration under Code §22-4-20, if the permit is to be issued within fifteen (15) days of receipt thereof:*

W A I V E R

The undersigned coal operator \_\_\_ / owner \_\_\_ / lessee \_\_\_ / of the coal under this well location has examined this proposed well location. If a mine map exists which covers the area of the well location, the well location has been added to the mine map. The undersigned has no objection to the work proposed to be done at this location, provided the well operator has complied with all applicable requirements of the West Virginia Code and the governing regularions.

Date: \_\_\_\_\_, 19\_\_\_\_.

By: \_\_\_\_\_

Its: \_\_\_\_\_



IV-35  
(Rev 8-81)

RECEIVED

SEP 16 1982 State of West Virginia  
Department of Mines  
OIL AND GAS DIVISION  
WV DEPARTMENT OF MINES Oil and Gas Division

Date September 13, 1982  
Operator's  
Well No. #4  
Farm Black Betsy  
API No. 47 - 079 - 0532-FRA

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 XX /)

LOCATION: Elevation: 967' Watershed Heizer Creek  
District: Pocatalico County Putnam Quadrangle Bancroft 7-1/2'

COMPANY Cabot Oil and Gas Corporation

ADDRESS Box 628, Charleston, WV 25322

DESIGNATED AGENT H. Baird Whitehead

ADDRESS Box 628, Charleston, WV 25322

SURFACE OWNER Benjamin Grosscup

ADDRESS Box 433, Gate Mills, OH 44040

MINERAL RIGHTS OWNER Cabot Oil and Gas Corp.

ADDRESS Box 628, Charleston, WV 25322

OIL AND GAS INSPECTOR FOR THIS WORK Martin

Nichols ADDRESS Box 554, Clendenin, WV 25045

PERMIT ISSUED June 9, 1982

DRILLING COMMENCED 8/27/82

DRILLING COMPLETED 9/11/82

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

| Casing<br>&<br>Tubing  | Used in<br>Drilling | Left<br>in Well | Cement<br>fill up<br>Cu. ft. |
|------------------------|---------------------|-----------------|------------------------------|
| Size<br>20-16<br>Cord. |                     |                 |                              |
| 13                     | 385                 | 385             |                              |
| 10                     | 911                 | 911             |                              |
| 8                      | 2187                | 2187            |                              |
| 7                      | 4924                | 4924            |                              |
| 5 1/2                  |                     |                 |                              |
| 4 1/2                  |                     |                 |                              |
| 3                      |                     |                 |                              |
| 2                      |                     |                 |                              |
| 1 1/2<br>Oriskany      | 4924.95             | 4924.95         |                              |
| 1 1/2<br>Brown Sh      | 4470.84             | 4470.84         |                              |

GEOLOGICAL TARGET FORMATION Devonian Shale and Oriskany Depth 5020 feet

Depth of completed well 5020 feet Rotary \_\_\_ / Cable Tools XX

Water strata depth: Fresh \_\_\_ feet; Salt 854, 1035, feet

Coal seam depths: 370 Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Devonian Shale Pay zone depth 4172-4486 feet

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

Final open flow 605 MCF 575 Mcf/d Final open flow -- Bbl/d

Time of open flow between initial and final tests -- hours

Static rock pressure 700# psig (surface measurement) after 72 hours shut in

(If applicable due to multiple completion--)

Second producing formation Oriskany Pay zone depth 4999-5020 feet

Gas: Initial open flow 30 Mcf/d Oil: Initial open flow -- Bbl/d

Final open flow 30 Mcf/d Oil: Final open flow -- Bbl/d

Time of open flow between initial and final tests -- hours

Static rock pressure 160 psig (surface measurement) after 72 hours shut in

(Continue on reverse side)

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

Set Baker Model D Packer @ 4860'. Perforated 7" @ 4550' (1 ft - 4 holes) to squeeze. Squeezed w/115 sks 50/50 poz, 10% salt, 5# gilsonite/sk & 3/4 of 1% CFR-2. Perforated Shale from 4172-4486' (16 holes). Loaded tubing w/1000 gals 15% HCL. Broke down Shale @ 2300 PSI. Treated w/49,900# 20/40 Sand (1#/gal). ATP 3360#. AIR 20 BPM. (5 bbls of H2O plus 13,000 SCF N2). Total fluid 319 bbls (sand laden 274 bbls). 988,000 SCF N2, ISIP 900#; 15 min 600#.

| FORMATION      | COLOR | HARD OR SOFT | TOP FEET | BOTTOM FEET | REMARKS   |
|----------------|-------|--------------|----------|-------------|---|
|                |       |              |          |             | Including indication of all fresh and salt water, coal, oil and gas |
| Surface        |       |              | 0        | 8           |   |
| Red Rock       |       |              | 8        | 32          |   |
| White Slate    |       |              | 32       | 70          |   |
| Red Rock       |       |              | 70       | 137         |   |
| Lime           |       |              | 137      | 184         |   |
| Red Rock       |       |              | 184      | 214         |   |
| Lime           |       |              | 214      | 238         |   |
| Red Rock       |       |              | 238      | 280         |   |
| Slate          |       |              | 280      | 324         |   |
| Red Rock       |       |              | 324      | 335         |   |
| Sand           |       |              | 335      | 370         |   |
| Coal           |       |              | 370      | 375         |   |
| Slate          |       |              | 375      | 402         |   |
| Red Rock       |       |              | 402      | 420         |   |
| Slate          |       |              | 420      | 465         |   |
| Red Rock       |       |              | 465      | 504         |   |
| Slate & Shells |       |              | 504      | 540         |   |
| Red Rock       |       |              | 540      | 590         |   |
| Slate          |       |              | 590      | 608         |   |
| Red Rock       |       |              | 608      | 629         |   |
| Lime           |       |              | 629      | 650         |   |
| Slate          |       |              | 650      | 695         |   |
| Red Rock       |       |              | 695      | 768         |   |
| Dunkard Sand   |       |              | 768      | 945         | Water 854   |
| Slate & Shell  |       |              | 945      | 1030        |   |
| Sand           |       |              | 1030     | 1104        |   |
| Slate          |       |              | 1104     | 1110        |   |
| Sand           |       |              | 1110     | 1155        | Water 1035  |
| Slate          |       |              | 1155     | 1213        |   |
| Black Slate    |       |              | 1213     | 1370        |   |
| White Slate    |       |              | 1370     | 1475        |   |
| Sand           |       |              | 1475     | 1525        |   |
| Slate          |       |              | 1525     | 1601        |   |
| Salt Sand      |       |              | 1601     | 1798        | Water 1643  |
| Blue Slate     |       |              | 1798     | 1801        |   |
| Sand           |       |              | 1801     | 1862        |   |
| Slate          |       |              | 1862     | 1867        |   |
| Lime           |       |              | 1867     | 1881        |   |

(Attach separate sheets as necessary)

CABOT OIL AND GAS CORPORATION

Well Operator

By: A. Paul Whitford

Date: September 13, 1982

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 ..., encountered in the drilling of a well."



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

BLACK BETSY #4 (CONTINUED)  
47-079-0532-FRAC

WELL LOG

| FORMATION        | COLOR | HARD OR SOFT | TOP FEET | BOTTOM FEET | REMARKS   |
|------------------|-------|--------------|----------|-------------|---|
|                  |       |              |          |             | Including indication of all fresh and salt water, coal, oil and gas |
| Slate            |       |              | 1881     | 1884        |   |
| Little Lime      |       |              | 1884     | 1906        |   |
| Slate            |       |              | 1906     | 1910        |   |
| Big Lime         |       |              | 1910     | 2088        |   |
| Big Injun        |       |              | 2088     | 2142        |   |
| Lime             |       |              | 2142     | 2256        |   |
| Slate & Shells   |       |              | 2256     | 2565        |   |
| Brown Shale      |       |              | 2565     | 2574        |   |
| Berea            |       |              | 2574     | 2594        |   |
| Slate & Shells   |       |              | 2594     | 3814        | Gas & Oil 3375 Small show.  |
| Brown Shale      |       |              | 3814     | 3829        | Gas 3600 Nice show.   |
| Slate & Shells   |       |              | 3829     | 4059        | Gas 3680 58 Mcf.  |
| Brown Shale      |       |              | 4059     | 4118        |   |
| Slate & Shells   |       |              | 4118     | 4170        |   |
| Brown Shale      |       |              | 4170     | 4300        |   |
| Slate & Shells   |       |              | 4300     | 4648        | Gas 4485 127 Mcf.   |
| Brown Shale      |       |              | 4648     | 4911        |   |
| Corniferous Lime |       |              | 4911     | 5001        |   |
| Oriskany Sand    |       |              | 5001     |             |   |
| Total Depth      |       |              |          | 5020        | Gas 5003-5010; 1,161 Mcf  |

(Attach separate sheets as necessary)

CABOT OIL AND GAS CORPORATION  
Well Operator

By: H. Bond H. [Signature]

Date: September 13, 1982

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."

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