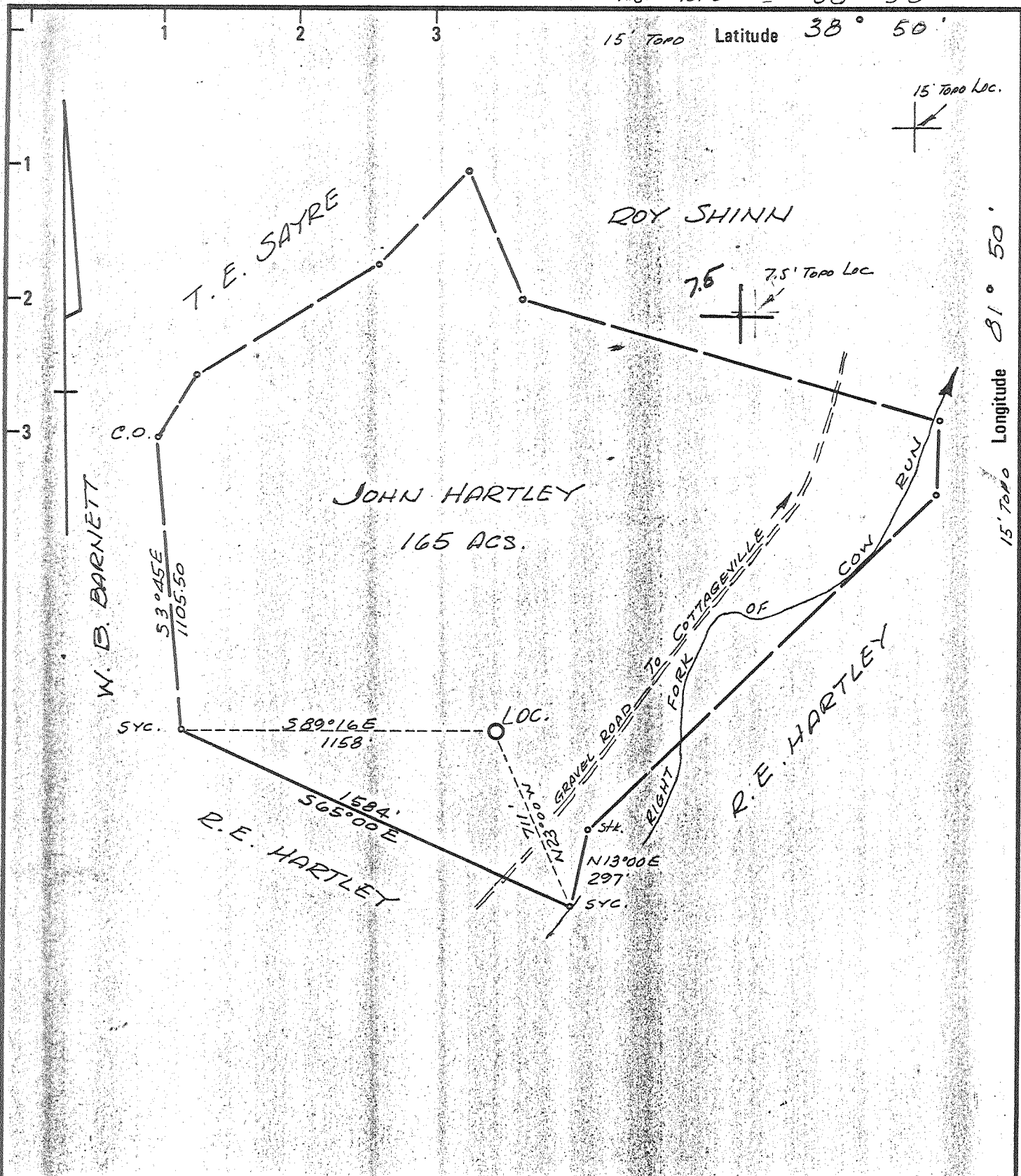


4100

7.5' TOPO = 38° 50' 5/11/77
15' TOPO Latitude 38° 50'



15' TOPO Longitude 81° 50'
7.5' TOPO = 81° 50'
4600

New Location
 Drill Deeper
 Abandonment

Minimum Error of Closure 1 IN. 200
 Source of Elevation USGS Elev 634' Road Intersection SOUTH OF LOC.
 "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 paragraph 6 of the rules and regulations of the oil and gas section of the mining laws of West Virginia."

Company KAISER EXPL. & MINING CO.
 Address Box 98 RAVENSWOOD, W.VA.
 Farm JOHN HARTLEY
 Tract _____ Acres 165 Lease No. 3406
 Well (Farm) No. DEK # 30 Serial No. _____
 Elevation (Spirit Level) 632'0
 Quadrangle 7.5' COTTAGEVILLE
15' RAVENSWOOD
 County JACKSON District UNION
 Engineer N.L. Sifton
 Engineer's Registration No. 1832
 File No. _____ Drawing No. _____
 Date 3-19-77 Scale 1" = 500'

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

WELL LOCATION MAP
 FILE NO. JAC-1399-P

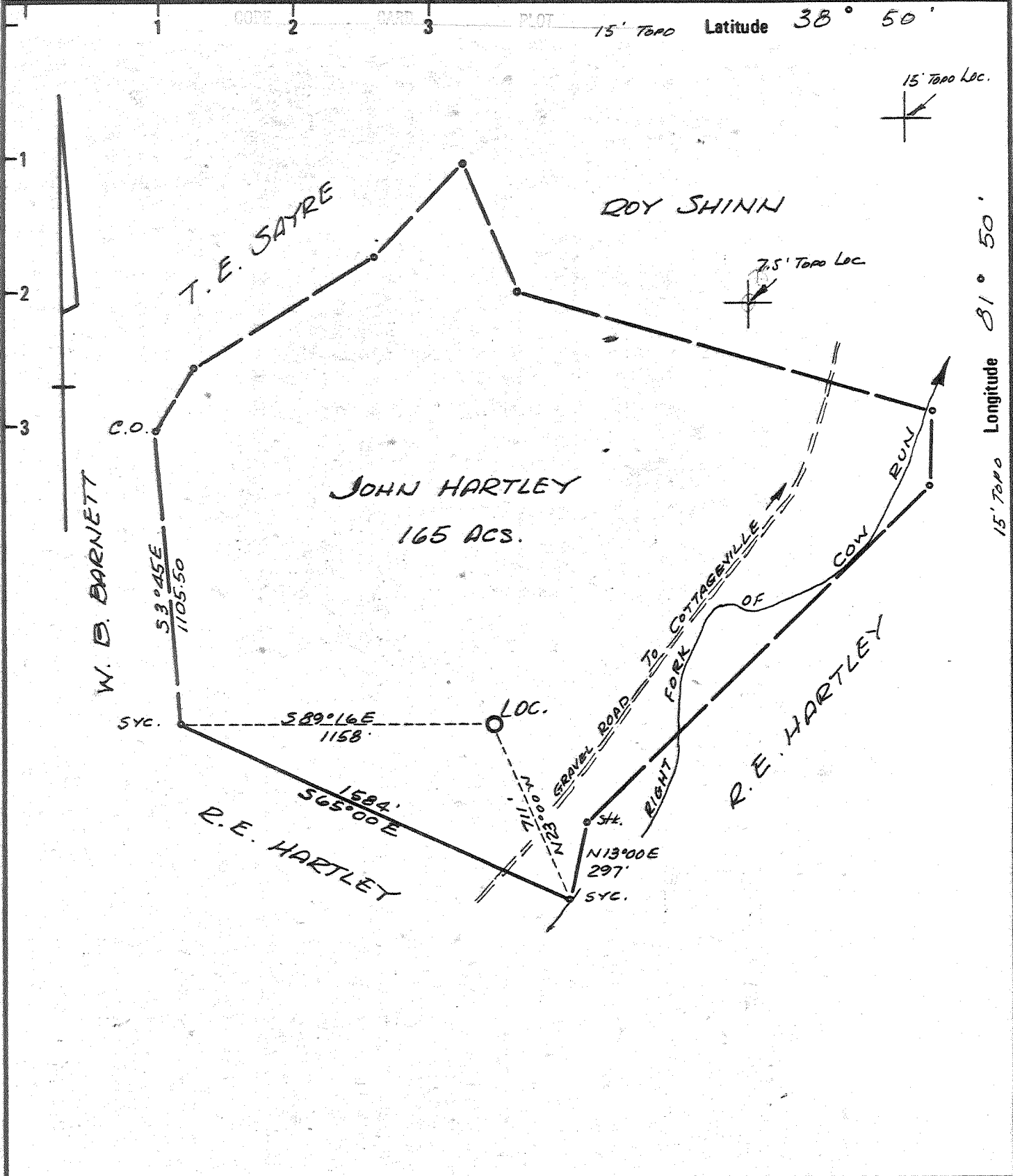
PL CANCELLED FEB 16 1988
 + Denotes location of well on United States Topographic Maps, scale 1 to 62,500 latitude and longitude lines being represented by border lines as shown.

- Denotes one inch spaces on border line of original tracing.
 47-035

Jac 1399

4450' Oriskany

5/11/77
7.5' TOPO = 38° 50'



New Location
 Drill Deeper
 Abandonment

Minimum Error of Closure 1 IN 200
 Source of Elevation U.S.G.S Elev 634' Road Intersection SOUTH OF LOC.
 "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 paragraph 6 of the rules and regulations of the oil and gas section of the mining laws of West Virginia."

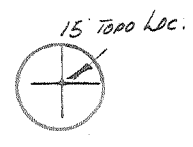
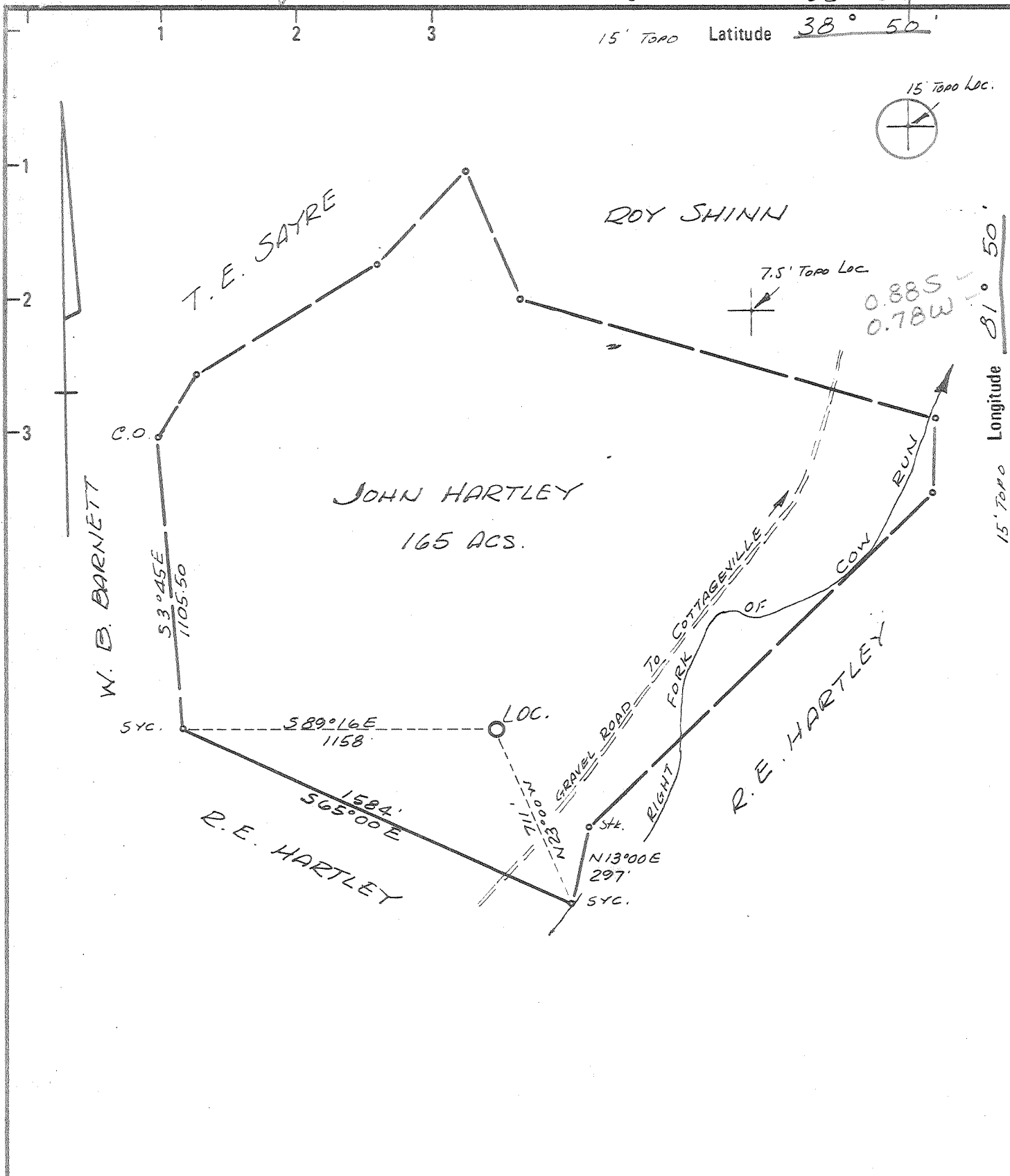
Company KAISER EXPL. & MINING CO.
 Address Box 98 RAVENSWOOD, W.VA.
 Farm JOHN HARTLEY
 Tract _____ Acres 165 Lease No. 3406
 Well (Farm) No. DEK # 30 Serial No. _____
 Elevation (Spirit Level) 632.0
 Quadrange 7.5' COTTAGEVILLE
15' RAVENSWOOD
 County JACKSON District UNION
 Engineer N.L. Sefton
 Engineer's Registration No. 1832
 File No. _____ Drawing No. _____
 Date 3-19-77 Scale 1" = 500'

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

WELL LOCATION MAP
 FILE NO. JAC-1399-P

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 - Denotes one inch spaces on border line of original tracing.

47-035



15' TOPO Longitude 81° 50'
7.5' TOPO = 81° 50'

- New Location
- Drill Deeper
- Abandonment

Minimum Error of Closure 1 IN 200
Source of Elevation USGS Elev. 634' Road Intersection
SOUTH OF LOC.

"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 paragraph 6 of the rules and regulations of the oil and gas section of the mining laws of West Virginia."

Company KAISER EXPL. & MINING CO.
 Address Box 98 RAVENSWOOD, W.VA.
 Farm JOHN HARTLEY
 Tract _____ Acres 165 Lease No. 3406
 Well (Farm) No. DEK # 30 Serial No. _____
 Elevation (Spirit Level) 632.0
 Quadrangle 7.5' COTTAGEVILLE
15' RAVENSWOOD SC
 County JACKSON District UNION
 Engineer N. L. Sefton
 Engineer's Registration No. 1832
 File No. _____ Drawing No. _____
 Date 6-3-19-77 Scale 1" = 500'

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

WELL LOCATION MAP
FILE NO. JAC-1399

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- Denotes one inch spaces on border line of original tracing.

47-035



RECEIVED

MAR 5 1978

STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
Oil and Gas Division

DEPARTMENT OF MINES

WELL RECORD /3

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

Quadrangle Ravenswood 15'

Permit No. JAC-1399

Company Kaiser Exploration & Mining Co.
Address Box 98, Ravenswood, WV
Farm John Hartley Acres 165
Location (waters) Rt. Fk. of Cow Run of Mill Ck.
Well No. DEK #30 Elev. 632
District Union County Jackson

The surface of tract is owned in fee by _____
John Hartley, Et ux.

Address Rt. 2, Box 15, Cottageville, WV 25239

Mineral rights are owned by John Hartley, Et ux.

Address Same

Drilling Commenced 7/9/77

Drilling Completed 7/23/77

Initial open flow Show cu. ft. _____ bbls.

Final production 50 MCFD ~~cu. ft. per day~~ bbls.

Well open _____ hrs. before test 1100 RP.

Well treatment details:

Attach copy of cementing record. Halliburton

Perforated Oriskany section at 4343' - 4344' and 4349' - 4351' with 8 Omega Jet shots/foot. Fractured Oriskany with 665 bbl. of water, 8,000 lbs. of 80/100 and 25,000 lbs. 20/40 sand at 12.8 bbl/min. Perforated Marcellus at 4072' - 4255' with 29 Omega Jet shots. Fractured Marcellus with 724 bbl water, 3,000 lbs. 80/100, 20,000 lbs. 20/40 and 15,000 lbs. of 10/20 sand and 125 MSCF nitrogen at 24 bbl/min.

Coal was encountered at None encountered Feet _____ Inches _____
Fresh water _____ Feet _____ Salt Water _____ Feet _____
Producing Sand Oriskany - Marcellus Depth 4343-4351 and 4072-4255

| Formation | Color | Hard or Soft | Top Feet | Bottom Feet | Oil, Gas or Water | * Remarks |
|---------------|-------|--------------|----------|-------------|-------------------|-----------|
| Sand & Shales | | | 0 | 133 | | |
| Shale | | | 133 | 142 | | |
| Red Rock | | | 142 | 180 | | |
| Sand | | | 180 | 206 | | |
| Red Rock | | | 206 | 257 | | |
| Sand | | | 257 | 265 | | |
| Shale | | | 265 | 310 | | |
| Red Rock | | | 310 | 346 | | |
| Sand | | | 346 | 360 | | |
| Red Rock | | | 360 | 407 | | |
| Sand | | | 407 | 412 | | |
| Shale | | | 412 | 422 | | |
| Sand | | | 422 | 428 | | |
| Red Rock | | | 428 | 491 | | |
| Sand | | | 491 | 522 | | |
| Shale | | | 522 | 731 | | |
| Sand | | | 731 | 751 | | |
| Shale | | | 751 | 783 | | |
| Sand | | | 783 | 802 | | |
| Red Rock | | | 802 | 825 | | |
| Shale | | | 825 | 918 | | |
| Salt Sand | | | 918 | 1008 | | |
| Shale | | | 1008 | 1132 | | |
| Sand | | | 1132 | 1157 | | |

(over)

* Indicates Electric Log tops in the remarks section.

MAR 20 1978

| Formation | Color | Hard or Soft | Top Feet / 3 | Bottom Feet | Oil, Gas or Water | * Remarks |
|-----------------|-------|--------------|--------------|-------------|-------------------|-----------|
| Shale | | | 1157 | 1294 | | |
| Sand | | | 1294 | 1325 | | |
| Shale | | | 1325 | 1476 | | |
| Maxon | | | 1476 | 1538 | | |
| Big Lime | | | 1538 | 1673 | | |
| Shale | | | 1673 | 1696 | | |
| Injun Sand | | | 1696 | 1863 | | |
| Shale | | | 1863 | 2152 | | |
| Coffee Shale | | | 2152 | 2165 | | |
| Berea Sand | | | 2165 | 2184 | | |
| Shale | | | 2184 | 3314 | | |
| Brown Shale | | | 3314 | 3746 | | |
| Shale | | | 3746 | 4135 | | |
| Marcellus Shale | | | 4135 | 4258 | | |
| Onondaga L.S. | | | 4258 | 4338 | | |
| Oriskany | | | 4338 | 4356 | | |
| Helderberg L.S. | | | 4356 | 4415 | | |
| Log Total Depth | | | | 4415 | | |

Date March 2 1978

APPROVED Ralph A. Poyer Owner

By Operations Manager

(Title)



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES

Oil and Gas Division

OIL AND GAS WELL PERMIT APPLICATION

RECEIVED
MAY 10 1977
DEPARTMENT OF MINES

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

DATE March 29, 1977

Surface Owner John Hartley, et ux

Company Kaiser Exploration & Mining Co.

Address Rt. 2, Box 15, Cottageville, WV

Address Box 98, Ravenswood, WV

Mineral Owner John Hartley, et ux 25239

Farm John Hartley Acres 165

Address Rt. 2, Box 15, Cottageville, WV

Location (waters) Rt. Fk. of Cow Run of Mill Ck.

Coal Owner Same as above 25239

Well No. DEK #30 Elevation 632

Address _____

District Union County Jackson

Coal Operator Not operated

Quadrangle Cottageville 7½', Ravenswood 15'

Address _____

THIS PERMIT MUST BE POSTED AT THE WELL SITE

All 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 9-11-77.

INSPECTOR TO BE NOTIFIED Richard 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 April 17 1970 by John Hartley et ux made to Commonwealth Gas Corp. and recorded on the 22nd day of April 1970, in Jackson County, Book 112 Page 685

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

Address of Well Operator

Very truly yours, Kaiser Exploration & Mining Co.

(Sign Name) [Signature]
W. F. Wegener, Owner's Representative

Box 98
Street
Ravenswood
City or Town
West Virginia
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.

JAC-1399 PERMIT NUMBER

"I have read and understand the reclamation requirements as set forth in Chapter 22, Article 4, Section 3, and will carry out the specified requirements."

47-035

Signed by [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 W. Backus
 ADDRESS Box 448, Elkview, WV ADDRESS Box 1433, Charleston, WV
 TELEPHONE 965-3379 TELEPHONE 342-3171
 ESTIMATED DEPTH OF COMPLETED WELL: 4450' 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 | 2300' | 650' | 75 Sax = 625 Feet |
| 5 1/2 | | | |
| 4 1/2 | 4450' | 4450 | 125 Sax = 1500 Feet |
| 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