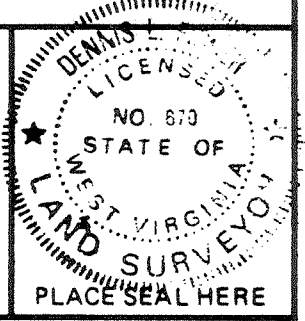


NOTE: PROPOSED LOCATION IS N. 41° 43' E., 307' FROM NE CORNER OF HOUSE AND S. 41° 16' E., 81' FROM SW CORNER OF SHED.

FILE NO. \_\_\_\_\_  
DRAWING NO. REV 1  
SCALE 1" = 500'  
MINIMUM DEGREE OF ACCURACY 1:200  
PROVEN SOURCE OF ELEVATION SPOT ELEV. 587 AT INTERSECTION OF ROAD AND DRIVE

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) Dennis L. Fisher  
R.P.E. \_\_\_\_\_ L.L.S. 670



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



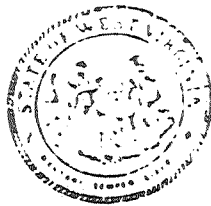
DATE JANUARY 25, 19 82  
OPERATOR'S WELL NO. KEM 148  
API WELL NO. 47-107-1209  
STATE COUNTY PERMIT

STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES  
OIL AND GAS DIVISION

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
(IF "GAS,") PRODUCTION \_\_\_ STORAGE \_\_\_ DEEP X SHALLOW \_\_\_  
LOCATION: ELEVATION 621 WATER SHED BIG POND CREEK  
DISTRICT HARRIS Belleville COUNTY WOOD  
QUADRANGLE POND CREEK (7-5) BELLEVILLE (16) WC  
SURFACE OWNER ALBERT E. ROACH ACREAGE 65  
OIL & GAS ROYALTY OWNER GERALDINE SAMS LEASE ACREAGE 220  
LEASE NO. \_\_\_\_\_  
PROPOSED WORK: DRILL X 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 BRISKANY ESTIMATED DEPTH 4377'  
WELL OPERATOR KAISER EXPLORATION & MINING DESIGNATED AGENT KAISER EXPLORATION & MINING COMPANY  
ADDRESS PO BOX 8, RAVENSWOOD, WEST VIRGINIA 26164 ADDRESS PO BOX 8, RAVENSWOOD, WEST VIRGINIA 26164  
DEEP WELL 66 Neptune (255)

MAR 29 1982



REVISED

IV-35  
(Rev 8-81)

State of West Virginia  
Department of Mines  
Oil and Gas Division

Date October 5, 1983  
Operator's  
Well No. KEM - 148  
Farm Geraldine Sams  
API No. 47 - 107 - 1209

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 \_\_\_ /)

LOCATION: Elevation: 621' Watershed Big Pond Creek  
District: Harris County Wood Quadrangle Pond Creek (7.5)  
Bellevue (15)

COMPANY KAISER EXPLORATION AND MINING COMPANY

ADDRESS P.O. Box 8, Ravenswood, WV 26164

DESIGNATED AGENT R. A. Pryce

ADDRESS P.O. Box 8, Ravenswood, WV 26164

SURFACE OWNER Geraldine Sams

ADDRESS P.O. Box 11, Belleville, WV 26133

MINERAL RIGHTS OWNER Same

ADDRESS \_\_\_\_\_

OIL AND GAS INSPECTOR FOR THIS WORK Richard

Morris ADDRESS Box 372, Grantsville

PERMIT ISSUED 3/08/82

DRILLING COMMENCED 6/24/82

DRILLING COMPLETED 6/29/82

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"		248'	200 sks
9 5/8			
8 5/8			
7		1855'	165 sks
5 1/2			
4 1/2		4380'	225 sks
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Oriskany S.S. Depth 4260 feet

Depth of completed well 4422 feet Rotary X / Cable Tools \_\_\_\_\_

Water strata depth: Fresh -- feet; Salt -- feet Drilled on fluid  
not known

Coal seam depths: None Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Oriskany S.S. Pay zone depth 4292-4299 feet

Gas: Initial open flow 7.5 Mcf/d Oil: Initial open flow --- Bbl/d

Final open flow Too much fluid to test Mcf/d Final open flow --- Bbl/d

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

Static rock pressure 1025 psig (surface measurement) after --- hours shut in

(If applicable due to multiple completion--)

Second producing formation Brown Shale Pay zone depth 3410-3635 feet

Gas: Initial open flow Trace Mcf/d Oil: Initial open flow N/A Bbl/d

Final open flow 168 Mcf/d Oil: Final open flow N/A Bbl/d

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

Static rock pressure 650 psig (surface measurement) after -- hours shut in

MAY 29 1984

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

- 7/06/82 Oriskany S.S. Perforation 4292-4299 28 shots, .4" diameter
- 7/07/82 Oriskany S.S. Frac: 15,000 # of 80/100 sand, 45,000# of 20/40 sand  
Treatment pressure = 2850 psig ISIP: 1900 psig  
Total of 737 bbl of water and 300000 SCF of nitrogen used.
- 9/16/83 McCullough set a permanent plug at 3718' to plug Oriskany sandstone. Perforated the Brown Shale from 3410 to 3635 with 20 .39" holes.
- 9/23/83 B.J. Hughes foam frac'd with 60000# of 20/40 sand, concentration 2-10 ppg; formation broke down at 4000 psig with 200 bbl 75 quality foam. Treated with 75 quality foam at 2700 psig. Used 920000 SCF of nitrogen; 280 bbl of sand ladened fluid; and 320 bbl of fluid. ISIP: 980 psig WELL LOG 5 minute shut in: 810 psig.

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fresh and salt water, coal, oil and gas
Shale			0	85	
Sandstone and shale			85	1506	
Shale			1506	1953	
Coffee Shale			1953	1972	
Berea S.S.			1972	1976	
Shale			1976	3127	s/g @ 2715
Brown Shale			3127	3630	
Shale			3630	3980	
Marcellus			3980	4195	
Onondage L.S.			4195	4260	
Oriskany s.s.			4260	4310	s/g @ 4282
Helderberg			4310	4422	

3410  
1976  
          
1434

(Attach separate sheets as necessary)

KAISER EXPLORATION AND MINING COMPANY

Well Operator

By: R. A. P

Date: October 5, 1983

Note: Regulation 2.02(i) provides as follows:  
"The term 'log' or 'well log' shall mean a systematic

STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES

Oil and Gas Division

OIL AND GAS WELL PERMIT APPLICATION

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

Surface Owner Albert E. Roach  
Address \_\_\_\_\_  
Mineral Owner Geraldine Sams  
Address P. O. Box 11, Belleville, WV 26133  
Coal Owner Same  
Address \_\_\_\_\_  
Coal Operator None  
Address \_\_\_\_\_

DATE January 25, 1982  
Company Kaiser Exploration and Mining Company  
Address P. O. Box 8, Ravenswood, WV 26164  
Farm Geraldine Sams Acres 65  
Location (waters) Big Pond Creek  
Well No. KEM #148 Elevation 621'  
District Harris County Wood  
Quadrangle Pond Creek (7.5) Belleview (15)

RECEIVED  
FEB 22 1982  
OIL AND GAS DIVISION  
WV DEPARTMENT OF MINES

THIS PERMIT MUST BE POSTED AT THE WELL SITE.  
PROVISIONS BEING IN ACCORDANCE WITH CHAPTER 22  
ARTICLE 4 OF THE W. VA. CODE, THE LOCATION IS HEREBY  
APPROVED FOR drilling  
OPERATIONS HAVE NOT COMMENCED BY 11-8-82

INSPECTOR  
TO BE NOTIFIED Deo Mace  
ADDRESS Rt. 1, Box 65, Sandridge, WV  
PHONE 655-8693

GENTLEMEN:

The undersigned well operator is entitled to drill upon the above named farm or tract of land for oil and gas, having fee  
therein, (or as the case may be) under grant or lease dated October 3 19 80 by Geraldine Sams &  
Arlene Seals made to Kaiser Exploration and Mining Company and recorded on the 14 day of November  
80 in Wood County, Book 747 Page 66  
 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  
at their above shown respective address \_\_\_\_\_ day \_\_\_\_\_ before, or on the  
\_\_\_\_\_ day with the mailing or delivery of this copy to the Department of Mines at Charleston, West Virginia.

PLEASE SUBMIT COPIES OF ALL  
PHYSICAL LOGS DIRECTLY TO:

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

Address  
of  
Well Operator

Very truly yours,  
(Sign Name) R.A. Poyce / de  
Well Operator  
Kaiser Exploration and Mining Company  
P. O. Box 8  
Street  
Ravenswood  
City or Town  
West Virginia 26164  
State

RECEIVED

MAR 05 1982

OIL AND GAS DIVISION  
WV DEPARTMENT OF MINES

SECTION 3. . . . If no objections are filed or found by the Department of mines, within said period of ten days from the receipt of  
this plat by the department of mines, to said proposed location, the department shall forthwith issue to the well operator a permit reciting  
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 POND

47-107-1209

PERMIT NUMBER

PROPOSED WORK ORDER TO X DRILL DEEPEN FRACTURE-STIMULATE

DRILLING CONTRACTOR: (If Known)

RESPONSIBLE AGENT:

NAME Clint Hurt & Associates, Inc.

NAME Robert A. Pryce

ADDRESS P. O. Box 388, Elkview, WV 25071

ADDRESS P. O. Box 8, Ravenswood, WV 2616

TELEPHONE 273-5371

TELEPHONE 273-5371

ESTIMATED DEPTH OF COMPLETED WELL: 4377'

ROTARY X CABLE TOOLS

PROPOSED GEOLOGICAL FORMATION: Oriskany

TYPE OF WELL: OIL \_\_\_\_\_ GAS X 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.
10-16			
13-10			
9-5/8 10 3/4"	250'	250'	150 sks class A (to surface)
7	1851'	1851'	65 sks 50/50 pozmix 100 sks Class A
5 1/2			
4 1/2	4371'	4371'	225 sks class A
3			Perf. Top
2			Perf. Bottom
Liners			Perf. Top
			Perf. Bottom

APPROXIMATE FRESH WATER DEPTHS \_\_\_\_\_ FEET SALT WATER \_\_\_\_\_ FEET

APPROXIMATE COAL DEPTHS \_\_\_\_\_

IS COAL BEING MINED IN THE AREA? None 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 hereof.

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