



FILE NO. 85117
 DRAWING NO. _____
 SCALE 1" = 500'
 MINIMUM DEGREE OF ACCURACY 1:200
 PROVEN SOURCE OF ELEVATION USGS MONUMENT "791"

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) William Ambrose
 R.P.E. _____ L.L.S. 568

PLACE SEAL HERE

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



DATE 13 FEBRUARY, 1985
 OPERATOR'S WELL NO. HARNESS # 8
 API WELL NO. _____
47 - 107 - 1360
 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 1032' WATER SHED BULL CREEK
 DISTRICT UNION COUNTY WOOD
 QUADRANGLE WILLOW ISLAND Marietta 15 Sc 8
 SURFACE OWNER LOUIS H. HARNESS, ET AL. ACRES 60
 OIL & GAS ROYALTY OWNER _____ LEASE ACREAGE 215
 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 _____ 6-6 Waverly (71)
 TARGET FORMATION DEVONIAN SHALE ESTIMATED DEPTH 5000'
 WELL OPERATOR CUYAHOGA EXPLORATION DESIGNATED AGENT ROGER HUNTER
 ADDRESS ROUTE 1 MARIETTA ADDRESS P.O. BOX 1386 CHARLESTON
OHIO 45750 WEST VIRGINIA 25325



RECEIVED
DEC 16 1985

WR-35

DIVISION OF OIL & GAS
DEPT. OF ENERGY

State of West Virginia
DEPARTMENT OF ENERGY
Oil and Gas Division

Date 12/13/85
Operator's Well No. #8
Farm Harness
API No. 47 - 107 - 1360

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

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

LOCATION: Elevation: 1032 Watershed Bull Creek
District: Union County Wood Quadrangle Willow Island

COMPANY Cuyahoga Exp. & Dev. Corp.

ADDRESS Route #1, Marietta, Ohio 45750

DESIGNATED AGENT Roger Hunter

ADDRESS P. O. Box 1386, Charleston, WV 25325

SURFACE OWNER Lulu Harness et al

ADDRESS Highland Ave. Williamstown, WV 26187

MINERAL RIGHTS OWNER Lulu Harness et al

ADDRESS Highland Ave. Williamstown, WV 26187

OIL AND GAS INSPECTOR FOR THIS WORK Mike
Route #2, Box 135
Underwood ADDRESS Salem, WV 26426

PERMIT ISSUED 3-5-85

DRILLING COMMENCED 5-13-85

DRILLING COMPLETED 5-18-85

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 Cord.			
13-10"			
9 5/8	417'	417'	417'
8 5/8			
7	2288'	2288'	1000'
5 1/2			
4 1/2	3810'	(3810')	1522'
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Devonian Shale Depth 3840' feet

Depth of completed well (3840)' feet Rotary X / Cable Tools

Water strata depth: Fresh N/A feet; Salt 1972' feet

Coal seam depths: N/A Is coal being mined in the area? No

OPEN FLOW DATA

Producing formation Berea Pay zone depth 2401-2408 feet

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

Final open flow (13.68) Mcf/d Final open flow (2.28) Bbl/d

Time of open flow between initial and final tests N/A hours

Static rock pressure 175 psig (surface measurement) after 24 hours shut in

(If applicable due to multiple completion--)

Second producing formation Gantz Pay zone depth 2512-2518 feet

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

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

Time of open flow between initial and final tests N/A hours

Static rock pressure N/A psig (surface measurement) after N/A hours shut in

DEC 30 1985
(Continue on reverse side)

GORDON PAY ZONE DEPTH 2771' - 2795'
 BEREA GANTZ GORDON FORMATIONS FRAC TOGETHER

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

PERFORATION:

7 feet 7 holes 2401' - 2408' } Berea
 6 feet 6 holes 2512' - 2518' } Gantz
 4 feet 4 holes 2771' - 2775' }
 3 feet 3 holes 2782' - 2785' } Gordon
 5 feet 5 holes 2790' - 2795' }
 HSC .39 Goex
 BEREA, GANTZ, GORDON

FRAC: Breakdown 1500 psi
 3 pump trucks
 4 1/2" casing
 treat psi 1950
 rate bbl per min 45
 total fluid 57,120
 125 sacks 20/40 sand
 HCL 15% 1000 gal
 KCL 4500 lbs
 Cla Chek
 Pen Surf
 Unislik
 Dura Surf & NDL-100

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fresh and salt water, coal, oil and gas
Red Rock & Clay			0'	800'	
First Cow Run			853'	894'	
Second Cow Run			1092'	1110'	
First Salt Sand			1320'	1350'	
Second Salt Sand			1471'	1559'	
Third Salt Sand			1613'	1662'	
Maxton			1737'	1782'	
Big Injun-Squaw			1856'	2089'	
Weir			2122'	2164'	
Welsh Stray			2339'	2341'	
Berea			2401'	2408'	
DEVONIAN SHALE			2408'		
Gantz			2511'	2526'	
Thirty Foot			2628'	2666'	
Gordon			2766'	2796'	
Speechly/Balltown			3815'	3840'?	

from nearby log:
 top thickness
 Upper Dev undiff 2408 1250
 low Huron 3658

3840?
 Huron @ TD.

(Attach separate sheets as necessary)

Cuyahoga Exploration & Development Corporation
 Well Operator

By: *Timothy*

Date: _____

Note: Regulation 2.02(i) provides as follows:
 "The term 'log' or 'well log' means a detailed geological record of the well, encountered in the well."



1) Date: February 26, 1985
 2) Operator's Well No. Harness #8
 3) API Well No. 47 - 107 - 1360
 State _____ County _____ Permit _____

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES, OIL AND GAS DIVISION
APPLICATION FOR A WELL WORK PERMIT

- 4) WELL TYPE: A Oil X / Gas X /
 B (If "Gas", Production X / Underground storage _____ / Deep _____ / Shallow X /)
- 5) LOCATION: Elevation: 1032' Watershed: Bull Creek
 District: Union County: Wood Quadrangle: Willow Island
- 6) WELL OPERATOR Cuyahoga Exp. & Dev. Corp. 7) DESIGNATED AGENT Roger Hunter
 Address Route 1 Address P. O. Box 1386
Marietta, OH 45750 Charleston, WV 25325
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED 9) DRILLING CONTRACTOR:
 Name Mike Underwood Name not yet determined
 Address Route 2, Box 135 Address _____
Salem, WV 26426
- 10) PROPOSED WELL WORK: Drill X / Drill deeper _____ / Redrill _____ / Stimulate X /
 Plug off old formation _____ / Perforate new formation X /
 Other physical change in well (specify) _____
- 11) GEOLOGICAL TARGET FORMATION, Devonian Shale/Benson Formation
- 12) Estimated depth of completed well, 5,000 feet
 13) Approximate trata depths: Fresh, 100 ²⁴³² feet; salt, 1,500 feet.
 14) Approximate coal seam depths: not applicable Is coal being mined in the area? Yes _____ / No X /

15) 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
Conductor	11 3/4		38.0	X		60'	60'	Kinds <u>CTS NEAT</u>
Fresh water	9 5/8		36.0	X		200'	200'	
Coal								Sizes
Intermediate	7		20.0	X		2500'	2500'	300 sacks
Production	4.5		10.5	X		5000'	5000'	300 sacks
Tubing								Depths set
Liners								
								Perforations:
								Top Bottom

OFFICE USE ONLY
 DRILLING PERMIT

Permit number 47-107-1360 Date March 5, 19 85

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. 8) 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.)

The permitted work is as described in the Notice and Application, plat, and reclamation plan, subject to any modifications and conditions specified on the reverse hereof.

Permit expires March 5, 1987 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond:	Agent:	Plat:	Casing	Fee
<u>52</u>	<u>MW</u>	<u>MW</u>	<u>MW</u>	<u>1240</u>

Margaret D. Hesse
 Administrator, Office of Oil and Gas

NOTE: Keep one copy of this permit posted at the drilling location.

See the reverse side of the APPLICANT'S COPY for instructions to the well operator.

File