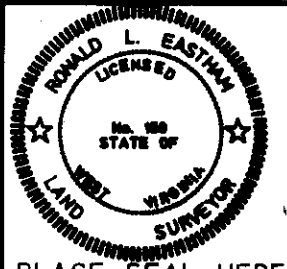


(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE NO. \_\_\_\_\_  
 DRAWING NO. \_\_\_\_\_  
 SCALE 1" = 2000'  
 MINIMUM DEGREE OF ACCURACY 1: 43086  
 PROVEN SOURCE OF ELEVATION U.S.G.S. BM 'UE-1044.1'  
 Elev. 1044.651

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 THE LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENERGY.

(SIGNED) *Ronald L. Eastman*  
 R.P.E. \_\_\_\_\_ L.L.S. 150



PLACE SEAL HERE

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

DATE June 22 19 93  
 OPERATOR'S WELL NO. Rowland Land Co. 409  
 API WELL NO. SN. 144661

**47-081-0963**  
 STATE COUNTY PERMIT

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
 (IF "GAS,") PRODUCTION \_\_\_ STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X

LOCATION: ELEVATION 2550.81 WATER SHED Right Fork of Sycamore Creek of Clear Fork of Big Coal River  
 DISTRICT Clear Fork COUNTY Raleigh  
 QUADRANGLE Dorothy Gales WC

SURFACE OWNER Rowland Land Company, Ltd. ACREAGE 630537  
 OIL & GAS ROYALTY OWNER Rowland Land Company, Ltd. LEASE NO. 80594 ACREAGE 4734087

PROPOSED WORK: DRILL \_\_\_ CONVERT X 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 INFORMATION Devonian Shale ESTIMATED DEPTH 8000' KB **OCT 8 1993**

WELL OPERATOR Ashland Exploration, Inc. DESIGNATED AGENT A. Ray Chandler  
 ADDRESS P.O. Box 391 4619 Ashland, Ky. 41114 ADDRESS P.O. Box 178 Charleston, W.V. 25311

FORM W.W.-6

COUNTY NAME RAL  
 PERMIT 0963

6-6247

State of West Virginia  
Division of Environmental Protection  
Section of Oil and Gas

Well Operator's Report of Well Work

Farm Name: ROWLAND LAND COMPANY

Operator Well No.: 109-S-144661

Location: Elevation: 2,550.80

Quadrangle: DOROTHY

District: CLEAR FORK County: RALEIGH  
Latitude: 2300 Feet South of 37 Deg. 55 Min. Sec.  
Longitude: 5800 Feet West of 81 Deg. 25 Min. Sec.

Company: ASHLAND EXPLORATION, INC.  
P.O. BOX 391, AT-6  
ASHLAND, KY 41114-0391

Agent: B. E. Widener

Inspector: RODNEY DILLON  
Permit Issued: 10-08-93  
Well Work Commenced: 12-23-93  
Well Work Completed: 07-18-94  
Verbal Plugging  
Permission granted on:  
Rotary  Cable \_\_\_\_\_ Rig \_\_\_\_\_  
Total Depth (feet) 6005  
Fresh water depths (ft) Damp 535  
Salt water depths (ft) \_\_\_\_\_

Casing & Tubing	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
Size 16"	40'	40'	11.8
8 5/8"	2130'	2130'	654
4 1/2"	5931'	5931'	516
2 3/8"	5806'	5806'	

Is coal being mined in area (Y/N)? N  
Coal Depths (ft): 207, 358-364, 433, 545-548  
628-631

OPEN FLOW DATA

Producing formation Devonian Shale Pay zone depth (ft) 5157-5857  
 Gas: Initial open flow 0 MCF/d Oil: Initial open flow -- Bbl/d  
 Final open flow 298 MCF/d Final open flow -- Bbl/d  
 Time of open flow between initial and final tests 3 Hours  
 Static Rock Pressure 490 psig (surface pressure) after 72 Hours

Second producing formation -- Pay zone depth (ft) \_\_\_\_\_  
 Gas: Initial open flow -- MCF/d Oil: Initial open flow -- Bbl/d  
 Final open flow -- MCF/d Final open flow -- Bbl/d  
 Time of open flow between initial and final tests -- Hours  
 Static Rock Pressure -- psig (surface pressure) after -- Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

For: Ashland Exploration, Inc.  
By: James L. Stephens James L. Stephens, Eng. Tech.  
Date: 7/26/94 AUG 15 1994

<u>Formation or Rock Type</u>	<u>Top</u>	<u>Base</u>
Sand and Shale (base Lee Sand)	0	2161
Pennington	2161	3083
Princeton	2329	2319
M. Maxton	2707	2755
L. Maxton	3001	3069
Little Lime	3083	3187
Big Lime	3187	3507
Borden	3507	3989
M. Weir	3623	3699
Sunbury Shale	4085	4102
Berea	4102	4135
Devonian Shale	4102	T.D.
Gordon	4291	4313

Drillers TD 6005

Loggers TD 5946

85/8 cmt'd to surface on primary job.

Perf L. Devonian using 3/8" HCG .39 jets 1 spf @ 5857, 5837, 5827, 5825, 5791, 5768, 5720, 5713, 5670, 5657, 5653, 5645, 5579, 5539, 5537, 5518, 5505, 17 holes total. Pump 300 gal 6% HCl-Fe acid, 90-75Q FF L. Devonian using 123,400# 20/40 sand, 822,000 scf N<sub>2</sub> @ 24000, 27000, 25500, 24300 scf/min. BD 2562, ATP 3650, ATR 34 BPM, MTP 3916, ISIP 2575, TF 200 Bbls.

Perf U. Dev. using 3/8" HCG .39 jets sf 1 spf @ 5296, 5290, 5285, 5283, 5271, 5267, 5260, 5241, 5231, 5221, 5212, 5196, 5194, 5188, 5181, 5174, 5172, 5157 (18 holes total). Pump 500 gal 8% HCl-Fe acid, 90-75Q FF U. Dev. using 103,900# 20/40 sand, 790,000 scf N<sub>2</sub> @ 24400, 29100, 27400, 21600 scf/min. BD @ 2537, ATP 3850 @ 34 BPM foam, MTP 4208, ISIP 3832, TF 182 Bbl.