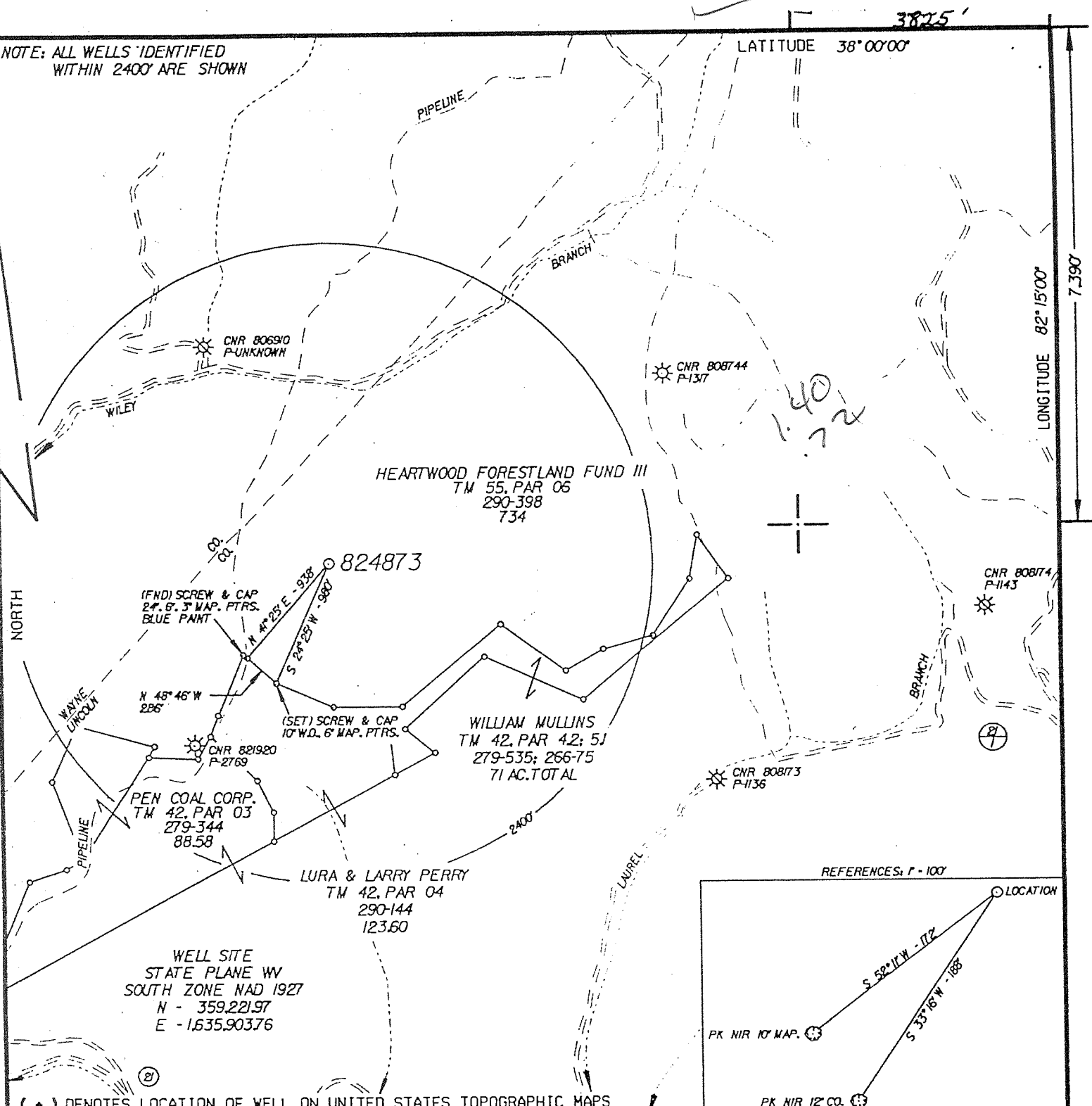


NOTE: ALL WELLS IDENTIFIED WITHIN 2400' ARE SHOWN



(\*) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

FILE NO. CNR24873(HC-Y)DGN  
 DRAWING NO. CNR 824873  
 SCALE 1" = 1000'  
 MINIMUM DEGREE OF ACCURACY 1:200  
 PROVEN SOURCE OF ELEVATION SPOT ELEV. (1355')  
TOP OF KNOB 740' ± SW 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 ENVIRONMENTAL PROTECTION.  
 (SIGNED) [Signature]  
 R.P.E. 647 L.I.S. 647

PLACE SEAL HERE

STATE OF WEST VIRGINIA  
 DIVISION OF ENVIRONMENTAL PROTECTION  
 OIL AND GAS DIVISION



DATE JANUARY 04, 2002  
 OPERATOR'S WELL NO. 824873  
 API WELL NO. 47 043 03155

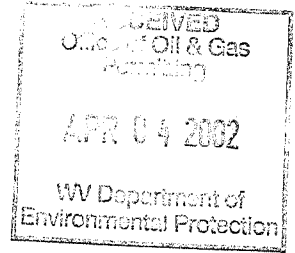
WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL   
 (IF "GAS,") PRODUCTION  STORAGE  DEEP  SHALLOW   
 LOCATION: ELEVATION 1239' WATER SHED WILEY BRANCH OF EAST FORK OF TWELVEPOLE CREEK  
 DISTRICT HARTS CREEK COUNTY LINCOLN  
 QUADRANGLE WILSONDALE, WY 7.5'  
 SURFACE OWNER HEARTWOOD FORESTLAND FUND III ACREAGE 734  
 OIL & GAS ROYALTY OWNER COLUMBIA NATURAL RESOURCES, INC. LEASE ACREAGE 734  
 LEASE NO. FEE LANDS  
 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   
 TARGET FORMATION DEVONIAN SHALE ESTIMATED DEPTH \_\_\_\_\_  
 WELL OPERATOR COLUMBIA NATURAL RESOURCES, INC. DESIGNATED AGENT THOMAS H. BLAKE  
 ADDRESS P.O. BOX 6070, CHARLESTON, WV 25362 ADDRESS SAME

FEB 15 2002

COUNTY NAME LIN  
 PERMIT 3155

*MB*

State of West Virginia  
 Division of Environmental Protection  
 Section of Oil and Gas  
 Well Operator's Report of Well Work



Farm name: Heartwood Forestland Fund III  
 Location Elevation: 1239'  
 District: Harts Creek

Operator Well No: 824873  
 Quadrangle: Wilsondale  
 County: Lincoln

COLUMBIA NATURAL RESOURCES	Casing & Tubing	Used in drilling	Left in Well	Cement fill up Cu.Ft.
Address: P.O. Box 6070	13 3/8"	15'	15'	Driven
Charleston, WV 25362	9 5/8"	377'	377'	177
Agent: Thomas H. Blake	7"	1836'	1836'	380
Inspector: Dave Belcher	4 1/2"	3688'	3688'	165
Date Permit Issued: 2/11/2002				
Date Well work commenced: 02/21/2002				
Date Well Work completed: 03/12/2002				
Verbal Plugging:				
Date Permission granted on:				
Rotary X Cable Rig				
Total Depth (feet): 3720				
Fresh Water Depth (ft): 330				
Salt Water Depth (ft.): 1680				
Is coal being mined in area ( Yes )				
Coal Depths (ft): 121-124, 212-216, 270-273, Open Mine 340-345,				

**OPEN FLOW DATA**

**Producing formation: Devonian Shale**

Gas: Initial open flow MCF/d

Final open flow 103 MCF/d

Time of open flow between initial and final tests 72 Hours

Static rock Pressure 152 psig (surface pressure) after 72 Hours

Pay zone depth (ft) from 2650' to 3640'

Oil: Initial open flow Bbl/d

Final open flow Bbl/d

**2nd producing formation:**

Gas: Initial open flow MCF/d

Final open flow MCF/d

Time of open flow between initial and final tests Hours

Static rock Pressure psig (surface pressure) after Hours

Pay zone depth (ft) from to

Oil: Initial open flow Bbl/d

Final open flow Bbl/d

**3rd producing formation:**

Gas: Initial open flow MCF/d

Final open flow MCF/d

Time of open flow between initial and final tests Hours

Static rock Pressure psig (surface pressure) after Hours

Pay zone depth (ft) from to from

Oil: Initial open flow Bbl/d

Final open flow Bbl/d

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.

WELL OPERATOR: COLUMBIA NATURAL RESOURCES, INC.

By: *John A. Hough*

Date: 4/3/2002

APR 5 2002

LIN 3155

# Well 824873

## Geological Data

<u>Formation</u>	<u>TOP</u>	<u>BASE</u>
Sand, Shale and Coals	0	980
Salt Sand	980	1490
Maxon Interval	1490	1670
Shale/Sandstone/Red Rock	1670	1760
Little Lime	1760	1800
Big Lime	1800	2006
Shale/Sandstone	2006	2585
Berea	2585	2670
Cleveland	2670	2710
Devonian Shale	2710	TD

DTD 3720'

LTD 3722'

## Well Treatment

Perforated Devonian Shale from 2650'-3640'/45H'. N2 frac using 1,550,000 Scf N2 @ 56,579 Scf/min.

BD	2244
ATP	2587
ISIP	1456
5 MIN	1241
10 MIN	1053
15 MIN	900
MTP	3681