

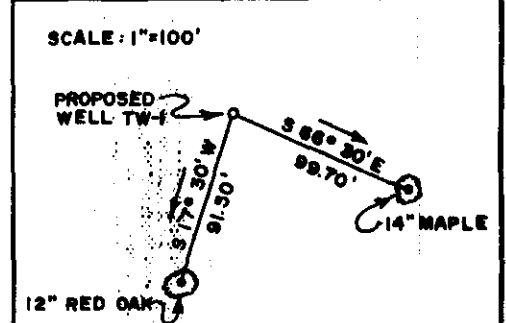
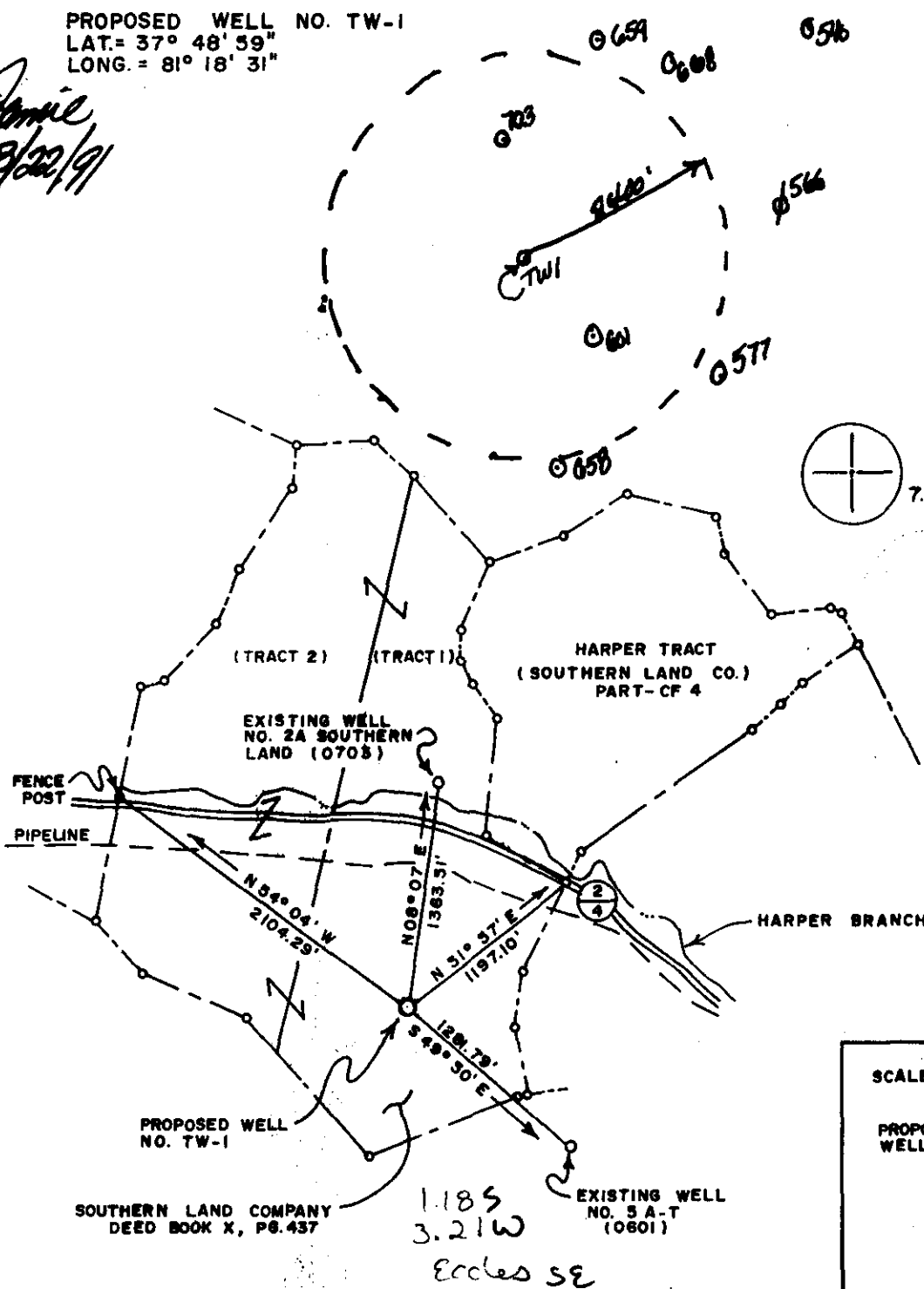
LATITUDE 37° 50' 00"

PROPOSED WELL NO. TW-1
LAT. = 37° 48' 59"
LONG. = 81° 18' 31"

Janie
3/22/91

NORTH

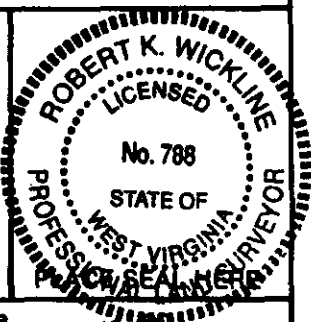
LONGITUDE 81° 17' 30" 1.5619



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

FILE NO. 065-90
 DRAWING NO. _____
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY 1 IN 2,500
 PROVEN SOURCE OF ELEVATION BECKLEY MINING COMPANY BM (1794.2)

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 ENERGY.
 (SIGNED) Robert K. Wickline
 R.P.E. _____ L.L.S. 788



STATE OF WEST VIRGINIA
 DEPARTMENT OF ENERGY
OIL AND GAS DIVISION



DATE DECEMBER 18, 1990
 OPERATOR'S WELL NO. TW-1
 API WELL NO. _____

WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS,") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X
 LOCATION: ELEVATION 2169.3 WATERSHED HARPER BRANCH
 DISTRICT CLEAR FORK COUNTY RALEIGH
 QUADRANGLE ECCLES 7.5

SURFACE OWNER SOUTHERN LAND COMPANY ACREAGE _____
 OIL & GAS ROYALTY OWNER SOUTHERN LAND COMPANY LEASE ACREAGE 4.8 ac ±

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 BIG LIME ESTIMATED DEPTH 2950'
 WELL OPERATOR BDM ENGINEERING SERVICES CO. DESIGNATED AGENT C. DAVID LOCKE
 ADDRESS 1199 VAN VOORHIS RD. Ste. 4-4761 ADDRESS 1199 VAN VOORHIS RD. Ste. 4
MORGANTOWN, WV 26505 MORGANTOWN, WV 26505

1991 02 21
 MAR 23 1991

4-4 Slab Fork (L) VANDERBILT (O) SPD - Coals - Poca 3, 4 (Beckley)

FORM VW-6 HALLS INC. 068065

COUNTY NAME PERMIT

API # 47-81-00912

SOUTHERN LAND COMPANY
District: CLEARFORK
Elevation: 2169.3

Operator Well No.: TW-1
County: RALEIGH
Quadrangle: ECCLES

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N.V. Division of
Environmental Protection
NOV 06 92
Permitting
Office of Oil & Gas

ADDITIONAL OPEN FLOW DATA

Third Producing Formation: Poca #3, #4 Pay Zone Depth: 1083-1087
and 1066-1070

Gas: Initial open flow: 22 mcf
Final open flow: 40 mcf
Time of open flow between initial and final tests: 72 hours
Static rock pressure: 95 psi

Fourth Producing Formation: Beckley Coal Pay Zone Depth: 801-806
Gas: Initial open flow: 4 mcf
Final open flow: 8 mcf
Time of open flow between initial and final tests: 72 hours
Static rock pressure: 68 psi

DETAILS OF PERFORATED INTERVALS AND FRACTURING

May 21, 1991 Perforated Big Lime 2660 to 2910 (20 shots)

May 22, 1991 Fraced Big Lime with Foamed Acid using 4000 gal. 15% acid, 171.5 MCFN2, BDP 1720 psi, ATP 2550 psi, ISIP 1713 psi, 15 min SIP 1613 psi.

May 28, 1991 Perforated Ravencliff 1670 to 1705 (20 shots)

May 29, 1991 Fraced Ravencliff with 75 Q Nitrogen Foam using 100 gal. 15% acid, 15,000# 80/100 sand, 45,000# 20/40 sand, BDP 1250 psi, ATP 2380 psi, ISIP 1750 psi, 15 min SIP 1490 psi.

June 25, 1991 Notched Poca #3 Coal 1083 to 1087.

June 26, 1991 Notched Poca #4 Coal 1066 to 1070.

June 27, 1991 Stimulated Poca #3 and #4 with 1500 bbls water. 38,000# sand (7,950# 80/100, 30,050# 20/40. BDP 1766 psi, ATP 2250 psi, ISIP 1193 psi, 15 min SIP 723 psi.

June 28, 1991 Notched and Stimulated Beckley Coal 801 to 806, 1500 bbls water. 60,000# sand (15,000# 80/100, 45,000# 20/40), BDP 1270 psi, ATP 1400 psi, ISIP 591 psi, 15 min SIP 437 psi.

NOV 20 1992

API # 47-81-00912

SOUTHERN LAND COMPANY
District: CLEARFORK
Elevation: 2169.3

Operator Well No.: TW-1
County: RALEIGH
Quadrangle: ECCLES

FORMATION NAME	TOP	BASE	THICKNESS	NOTES
Sandstone & Shale	0	142	142	
Shale	142	260	118	
Sandstone	260	442	182	
Shale	442	522	80	
Sandstone	522	740	218	
Sandstone & Shale	740	890	150	
Beckley Coal Rider	792	797	5	
Beckley Coal	800	808	8	Show of methane on mudlog
Sandstone	890	950	60	
Shale	950	996	46	
Pocahontas #6 Coal	954	956	2	
Pocahontas #5 Coal	952	965	3	
Sandstone	996	1075	79	
Shale & Sandstone	1075	1464	389	
Pocahontas #4 Coal	1071	1077	6	Show of methane
Pocahontas #3 Coal	1091	1098	7	Show of methane
Princeton	1464	1526	62	
Ravencliff	1668	1712	46	Show of gas @ 1679
Little Lime	2472	2543	71	
Pencil Cave	2533	2575	42	
Big Lime	2587			Show of gas @ 2655, 2833, 2878, 2912, and 2932

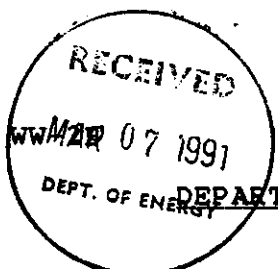
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WV Division of
Environmental Protection

NOV 06 92

Permitting
Office of Oil & Gas

Issued 3/22/91

081-0912 Expires 3/22/93



FORM WVMAR 07 1991

Page ___ of ___

STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY, DIVISION OF OIL AND GAS
WELL WORK PERMIT APPLICATION

- 1) Well Operator: BDM Engineering Services Company 3285 (1) 331
- 2) Operator's Well Number: TW-1 3) Elevation: 2169.3
- 4) Well type: (a) Oil ___ / or Gas X /
(b) If Gas: Production X / Underground Storage ___ /
Deep ___ / Shallow X /
- 5) Proposed Target Formation(s): Big Lime
- 6) Proposed Total Depth: 2950 feet
- 7) Approximate fresh water strata depths: 380', 241', 422'
- 8) Approximate salt water depths: OK None Reported
- 9) Approximate coal seam depths: 930', 1008', 1230', 691', 797'-799'
- 10) Does land contain coal seams tributary to active mine? Yes ___ / No X /

11) Proposed Well Work: Drill & Stimulate New Well.

12) Copy of Pipe & Cement program attached

CASING AND TUBING PROGRAM

TYPE	SPECIFICATIONS		FOOTAGE INTERVALS		CEMENT
	Size	Grade	Weight per ft.	For drilling / Left in well	
Conductor	13 3/8"				
Fresh Water					<u>38 CSR 8-11.3</u>
Coal					<u>38 CSR 8-11.22</u>
Intermediate	8 5/8"	H-40	28#	1350'	<u>Cement to surface</u>
Production	4 1/2"	J-55	10.5#	1650'	<u>38 CSR 8-11.1</u>
Tubing					
Liners					

PACKERS : Kind External Casing Packer
 Sizes 8 5/8"
 Depths set 1006'

For Division of Oil and Gas Use Only

2832
 Fee(s) paid: Well Work Permit Reclamation Fund WPCP
 Plat WW-9 WW-2B Bond Single Sure Agent
 (Type) Sure

11973

- 1) Date: _____
- 2) Operator's well number _____
- 3) API Well No: 47 - 081 - 0912
State - County - Permit

TW - 1

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

RECEIVED
Division of Energy

MAR 18 91

NOTICE AND APPLICATION FOR A WELL WORK PERMIT

- 4) Surface Owner(s) to be served:
 - (a) Name Southern Land Company
Address 1401 Kanawha Valley Bldg.
Charleston, WV 25301
 - (b) Name _____
Address _____
 - (c) Name _____
Address _____
- 5) (a) Coal Operator:
 - Name New Beckley Mining Corporation
Address PO Box 145, Mattsville Rd.
Glen Daniel, WV 25844
 - (b) Coal Owner(s) with Declaration
 - Name Southern Land Company
Address 1401 Kanawha Valley Bldg.
Charleston, WV 25301
 - Name _____
Address _____
 - (c) Coal Lessee with Declaration
 - Name New Beckley Mining Corporation
Address PO Box 145, Mattsville Road
Glen Daniel, WV 25844
- 6) Inspector Rodney C. Dillon
Address PO Box 1526
Sophia, WV 25921
Telephone (304)- 683-3989

TO THE PERSON(S) NAMED ABOVE TAKE NOTICE THAT:

_____ Included is the lease or leases or other continuing contract or contracts by which I hold the right to extract oil and gas OR

_____ Included is the information required by Chapter 22B, Article 1, Section 8(d) of the Code of West Virginia (see page 2)

I certify that as required under Chapter 22B of the West Virginia Code I have served copies of this notice and application, a location plat, and accompanying documents pages 1 through _____ on the above named parties, by:

- _____ Personal Service (Affidavit attached)
- _____ Certified Mail (Postmarked postal receipt attached)
- _____ Publication (Notice of Publication attached)

I have read and understand Chapter 22B and 38 CSR 11-18, and I agree to the terms and conditions of any permit issued under this application.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete.

I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

OFFICIAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
My Commission Expires 10-25-99

Well Operator BDM Engineering Services Company
By: C.D. Locke
Its: Agent
Address 1199 Van Voorhis Road, Suite 4, Morgantown, WV
26505
Telephone 304-598-2666

Subscribed and sworn before me this 21 day of December, 1990

Cynthia L. Day

Notary Public

My commission expires 10-25-99