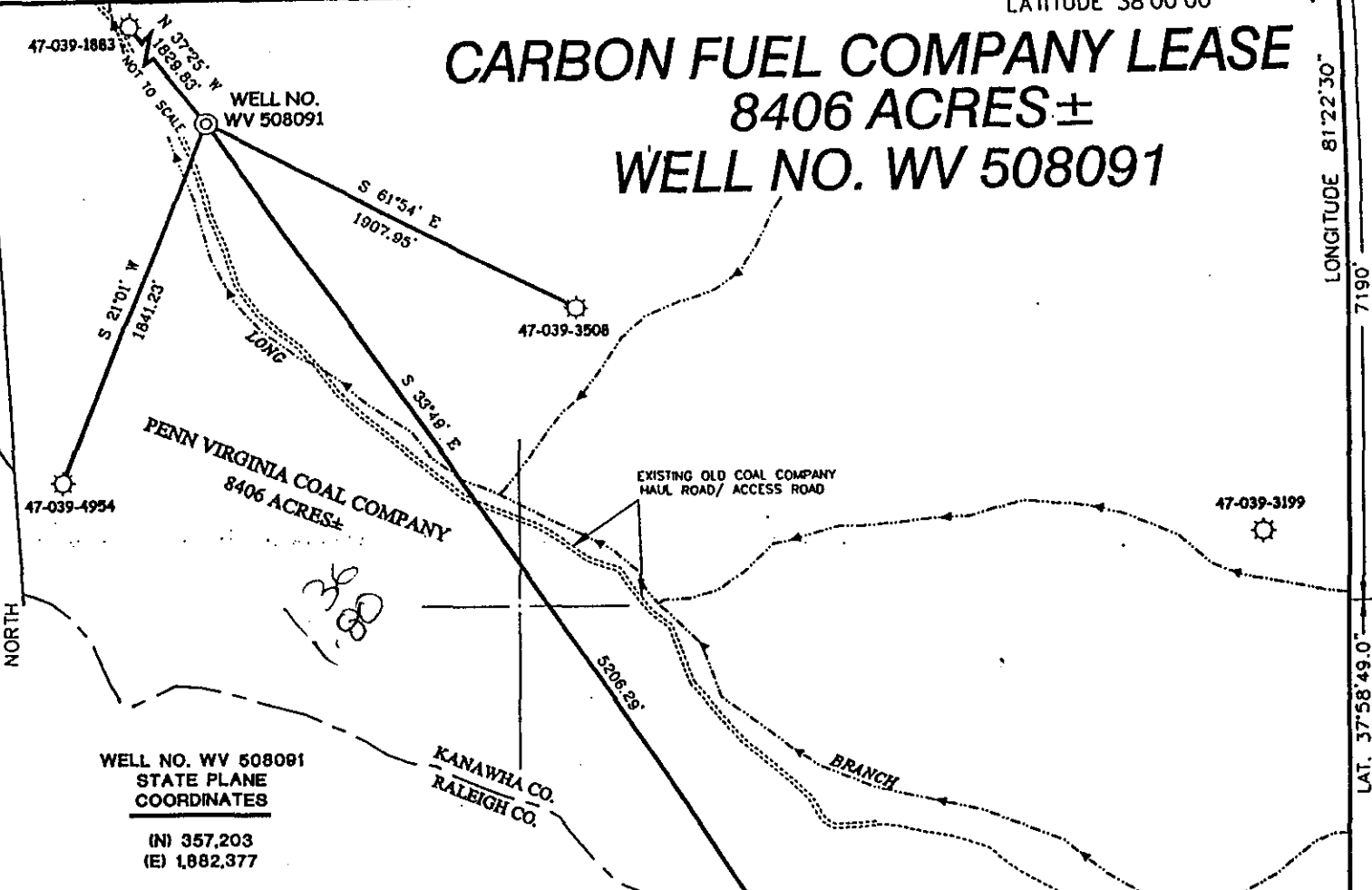


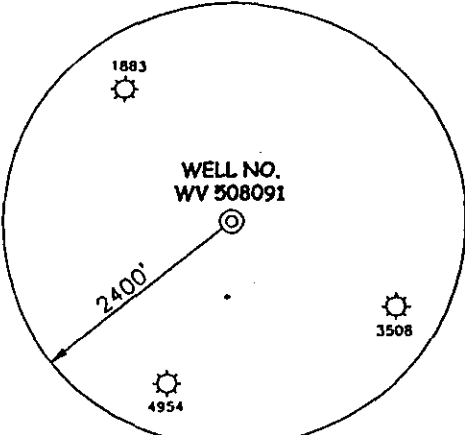
CARBON FUEL COMPANY LEASE 8406 ACRES ± WELL NO. WV 508091



WELL NO. WV 508091
STATE PLANE
COORDINATES
(N) 357,203
(E) 1,882,377

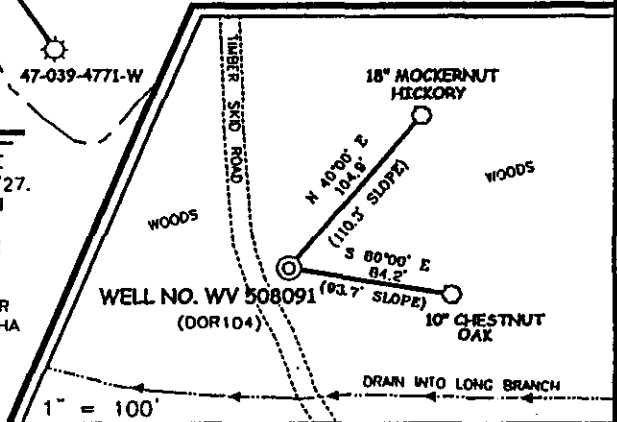
WELL NO. WV 508091
CARBON FUEL
COORDINATES
(N) 18,901
(E) 26,928

REFERENCES



NOTES ON SURVEY

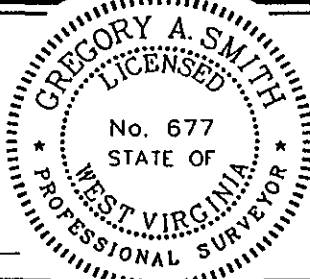
1. TIES TO WELLS ARE BASED ON STATE PLANE GRID NORTH WV SOUTH ZONE NAD '27.
2. TIES TO REFERENCES ARE BASED ON MAGNETIC NORTH 02/21/01.
3. LEASE BOUNDARY DOES NOT APPEAR WITHIN THE SCOPE OF THIS PLAT.
4. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF KANAWHA COUNTY IN FEBRUARY, 2001.
5. WELL LAT./LONG. ESTABLISHED BY DGPS (SUBMETER MAPPING GRADE).



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.

P.S. 677

Gregory A. Smith



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

DATE MARCH 5, 2001
 OPERATORS WELL NO. WV 508091
 API WELL NO. 47-039-05390
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 2500 FILE NO. 3851P508091 (87-63)
 PROVEN SOURCE OF ELEVATION CARBON FUEL CONTROL POINT #8483 - ELEVATION 1493.6'
 SCALE 1" = 800'

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

WELL TYPE : OIL GAS LIQUID INJECTION WASTE DISPOSAL IF "GAS" PRODUCTION STORAGE DEEP SHALLOW

LOCATION : ELEVATION 1796' WATERSHED LONG BRANCH OF FIFTEEN MILE FORK
 DISTRICT CABIN CREEK COUNTY KANAWHA QUADRANGLE DOROTHY 7.5'

SURFACE OWNER PENN VIRGINIA COAL COMPANY ACREAGE 8406±
 ROYALTY OWNER PENN VIRGINIA COAL COMPANY LEASE ACREAGE 8406±
 PROPOSED WORK : LEASE NO. 009965

DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER
 PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION DEVONIAN SHALE
 ESTIMATED DEPTH 6520'

WELL OPERATOR EQUITABLE PRODUCTION - EASTERN STATES, INC. DESIGNATED AGENT STEPHEN G. PERDUE
 ADDRESS P.O. BOX 2347 CHARLESTON, WV 25328 ADDRESS P.O. BOX 2347 CHARLESTON, WV 25328

LONGITUDE 81°22'30" LONGITUDE 81°22'30" LAT. 37°58'49.0" COUNTY NAME KAN PERMIT 5390

6-6 262

Reviewed AK

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

Well Operator's Report of Well Work

Farm Name: Penn Virginia Coal co. (WV-508091-Carbon Fuel) Operator Well No.: 508091

LOCATION: Elevation: 1796' Quadrangle: Dorothy

District: Cabin Creek County: Kanawha

Latitude: 7190 Feet South of 38 Deg. 0
Longitude: 9510 Feet West of 81 Deg. 22 30

Company: Equitable Production
P.O. Box 2347, 1710 Pennsylvania Avenue
Charleston, WV 25328

Agent: Stephen G. Perdue

Inspector: Carlos Hively

Permit Issued: 5/3/01

Well work commenced: 07/23/01

Well work completed: 08/15/01

Verbal Plugging

Permission granted on: _____

Rotary Rig X Cable Rig _____

Total Depth 3690 feet

Fresh water depths (ft) 45'

Salt water depths (ft) 1341'

Casing & Tubing Size	Used in Drilling	Left in Well	Cement Fill Up Cu. Ft.
13 3/8"	38'	38'	grouted
9 5/8"	539.35'	539.35'	243.25 ft³
7"	2019.05'	2019.05'	402.85 ft³
4 1/2"	3696'	3696'	245.7 ft³
2 3/8"		35335'	

Is coal being mined in area?

Coal Depths (ft): 96'-97'; 128'-135'; 147'-150'; 177'-181';

OPEN FLOW DATA

Producing formation Gordon / Berea; Lower Weir; Upper Weir; Big Lime

Gas: Initial open flow 325 MCF/d

Final open flow: 2732 MCF/d

Time of open flow between initial and final tests _____ Hours

Static rock pressure 342 psig (surface pressure) after _____ Hours

Second 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): _____

Oil: Initial open flow _____ Bbl/d

Final open flow: _____

Hours _____

Hours _____

Pay Zone Depth (ft): _____

Oil: Initial open flow _____ Bbl/d

Final open flow: _____

Hours _____

Hours _____

See Attach for details

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WV Department of
Environmental Protection

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.

Kathy L. Dawney
For: Equitable Production Company

By: Shirley A. Davis
Date: 8/24/01

AUG 31 2001
AUG 31 2001

KAN 5390

3070'
3377'
3589'

3123' Lower Weir
3480' Berea
3606' Gordon
3690' TD

GT @ TD = 325 mcf/d

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WV Department of
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AUG 31 2001

KAN 5390

EASTERN STATES OIL & GAS, INC.
WR-35 COMPLETION REPORT - Attachment
Well Treatment Summary

Well: WV-508091-Carbon Fuel

API# 47-039-05390

Date	08/07/01	08/07/01	08/07/01	08/07/01		
Type Frac Acid, N ₂ , Foam, Water	N ²	85-80-75 Q Foam	85-80-75 Q Foam	Acid w/ N ² Displacement		
Zone Treated	Gordon Berea	Lower Weir	Upper Weir	Big :Lime		
# Perfs From - To:	30 3320' - 3601'	21 3079' - 3099'	20 2982' - 3018'	16 2722' - 2798'		
BD Pressure @ psi	2724	1177	2424	234		
ATP psi	2388	2253	2208	1353		
Avg. Rate, B=B/M, S= SCF/M	38,600 S	28 B (foam)	32 B (foam)	12.5 B		
Max. Treat Press psi	2728	2310	24	2600		
ISIP psi	2066	211	104	273		
Frac Gradient	.67	.50	.46	.56		
10 min S-I Pressure	1132		292	1131		
Material Volume						
Sand-sks		571	707			
Water-bbl		240	255			
SCF N ₂	755,000	455,700	662,800	55,005		
Acid-gal	450 gal 15%	250 gal 15.2%	250 gal 15.2%	2500 gal 15%		
NOTES:						

TOP	BOTTOM	FORMATION	REMARKS
0	95'	Sand & Shale	Water @ 45'
96'	97'	Coal	
98'	127'	Sand Shale	
128'	135'	Coal	
136'	146'	Sand Shale	
147'	150'	Coal	
151'	176'	Sand Shale	
177'	181'	Coal	
182'	925'	Sand Shale	Lost Circ @ 248'
925'	1005'	Sand	
1005'	1130'	Sand Shale	
1130'	1332'	Sand	
1332'	1418'	Salt Sand	Water @ 1341'
1419'	1460'	Shale	
1461'	1567'	Salt Sand	
1568'	1655'	Shale	
1655'	1720'	Sand Shale	
1720'	1820'	Shale	
1820'	1915'	Sand Shale	
1915'	2003'	Red Rock	
2003'	2047'	Ravenciff	
2047'	2085'	Shale	
2085'	2200'	Upper Maxton	
2200'	2350'	Shale	GT @ 2321' = NS
2372'	2456'	Lower Maxton	Water @ 2410'
2464'	2530'	Little Lime	GT @ 2511' = NS
2550'	2888'	Big Lime	GT @ 2732' = NS
2900'	2930'	Big Injun	
2973'	3330'	Upper Weir	GT @ 3328' = 325 mcf

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 Permitting

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WV Department of
 Environmental Protection

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