

FILE NO. _____
 DRAWING NO. _____
 SCALE **1" = 500'**
 MINIMUM DEGREE OF ACCURACY **1:200**
 PROVEN SOURCE OF ELEVATION **HIGH POINT ELEV. 1049'**

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 F. Mosser
 R.P.E. _____ L.L.S. **551**

PLACE SEAL HERE

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



DATE **30 MARCH**, 19**85**
 OPERATOR'S WELL NO. **TW-46**
 API WELL NO. _____
47 - 085 - 7367 REV
 STATE COUNTY PERMIT

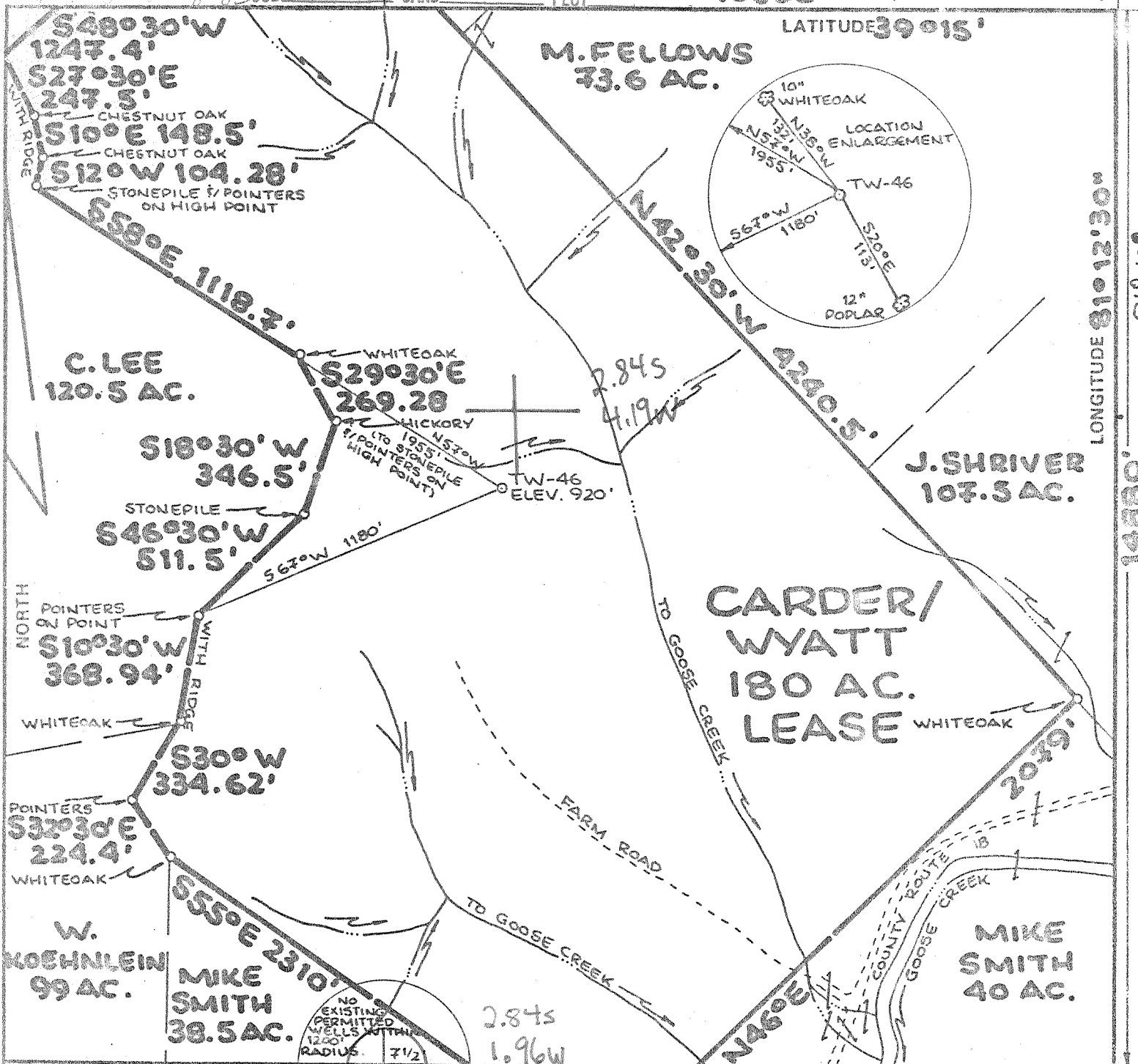
STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

WELL TYPE: OIL GAS LIQUID INJECTION _____ WASTE DISPOSAL _____
 (IF "GAS.") PRODUCTION STORAGE _____ DEEP SHALLOW _____
 LOCATION: ELEVATION **920'** WATER SHED **GOOSE CREEK**
 DISTRICT **GRANT 2 275** COUNTY **RITCHIE 085**
 QUADRANGLE **CAIRO 3 1/2' QUAD. Harrisville 15' NW, 057**
 SURFACE OWNER **DANIEL EUGENE WYATT** ACREAGE **180**
 OIL & GAS ROYALTY OWNER **CARDER / WYATT** LEASE ACREAGE **180**

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 **NEWBERG 866** ESTIMATED DEPTH **8500**
 WELL OPERATOR **TECHWELL, INC.** DESIGNATED AGENT **DARUS ZEHRBACH**
 ADDRESS **P.O. Box 396** ADDRESS **P.O. Box 396**
MORGANTOWN, W.VA. 26505 **MORGANTOWN, W.VA. 26505**

Deep Well



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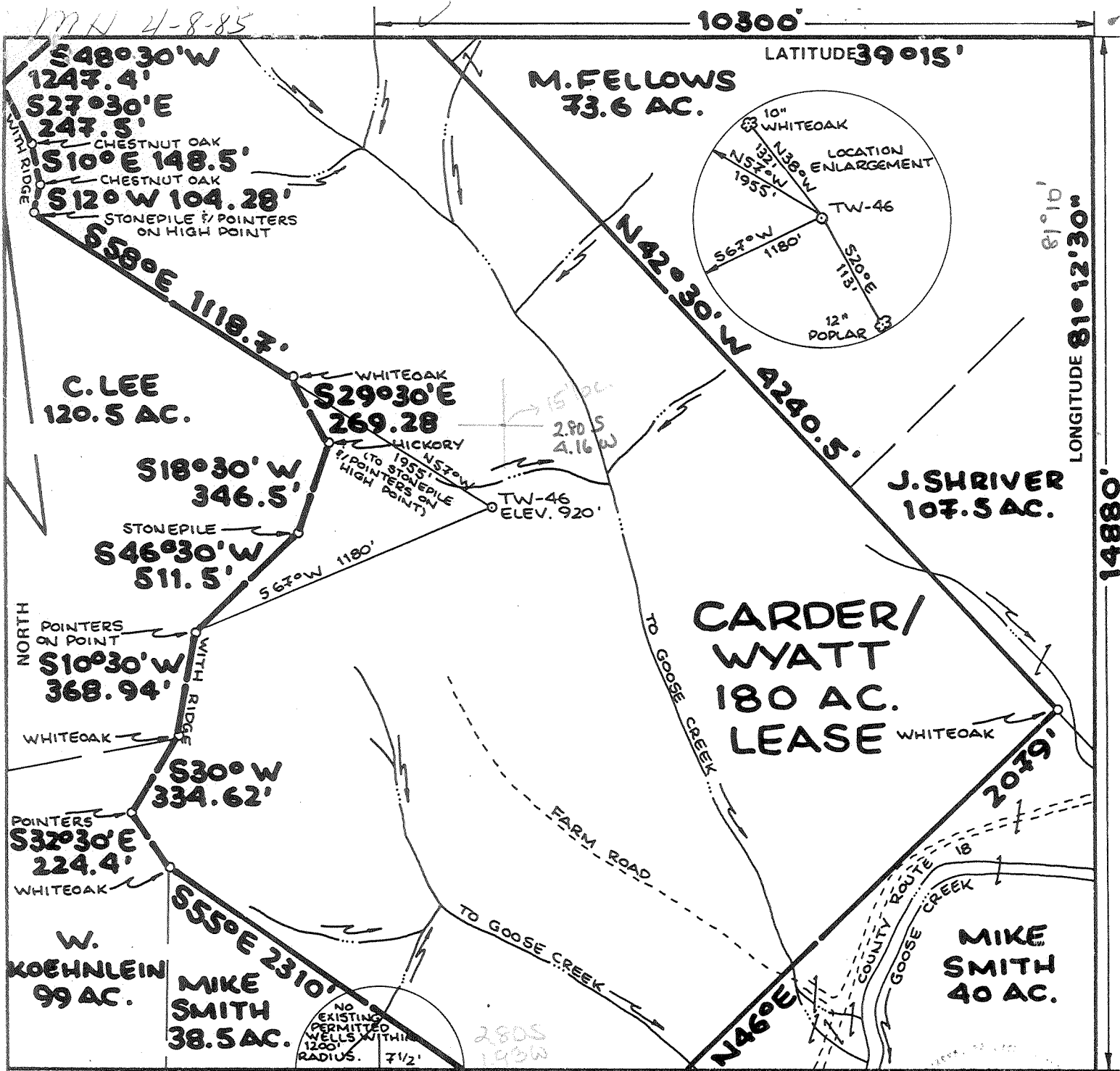
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STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

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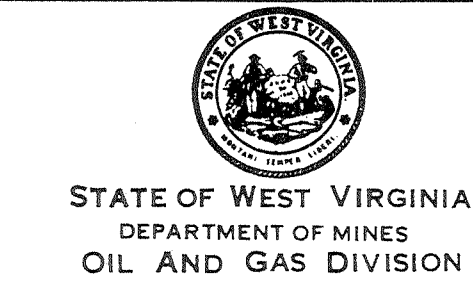


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 FORM IV-6 (8-78)
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 (IF "GAS,") PRODUCTION STORAGE _____ DEEP SHALLOW _____
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 DISTRICT **GRANT** COUNTY **RITCHIE**
 QUADRANGLE **CAIRO 3 1/2' QUAD.** *Harrisville NW*
 SURFACE OWNER **DANIEL EUGENE WYATT** ACREAGE **180**
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MORGANTOWN, W.VA. 26505 **MORGANTOWN, W.VA. 26505**



DATE **30 MARCH**, 19 **85**
 OPERATOR'S WELL NO. **TW-46**
 API WELL NO. _____
47 - **085** - **7367 REV**
 STATE COUNTY PERMIT

DEEP WELL 1-0 unnamed (10)

7367-REV

FILE COPY
RECEIVED

MAR 28 1985



1) Date: March 22, 19 85
 2) Operator's Well No. CARDER/WYATT TW-45
 3) API Well No. 47 - 85 - 7367
 State County Permit

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

- 4) WELL TYPE: A Oil / Gas
 B (If "Gas", Production / Underground storage / Deep / Shallow)
- 5) LOCATION: Elevation: 926 / Watershed: Goose Creek
 District: Grant / County: Ritchie / Quadrangle: Cairo
- 6) WELL OPERATOR Techwell, Inc. 48950 / 7) DESIGNATED AGENT Darus H. Zehrbach
 Address P.O. BOX 796 / Address same
Morgantown, WV 26505
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED / 9) DRILLING CONTRACTOR:
 Name Sam Hersman 477-3597 / Name _____
 Address P.O. BOX 66 / Address _____
Smithville, WV 26178
- 10) PROPOSED WELL WORK: Drill / Drill deeper / Redrill / Stimulate
 Plug off old formation / Perforate new formation
 Other physical change in well (specify) _____
- 11) GEOLOGICAL TARGET FORMATION, Basement Newburg
 12) Estimated depth of completed well, 14,000 8,000 feet
 13) Approximate strata depths: Fresh, 235 feet; salt, 1800 feet.
 14) Approximate coal seam depths: NA Is coal being mined in the area? Yes / No

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	Left in well		
Conductor	13				<input checked="" type="checkbox"/>	20	0		Kinds
Fresh water	11.75			<input checked="" type="checkbox"/>		250	250	CTS	
Coal									Sizes
Intermediate	8.625			<input checked="" type="checkbox"/>		1825	1825	CTS	<u>BASE OF Berea</u>
Production	4.50			<input checked="" type="checkbox"/>		<u>14000 8,000</u>	<u>14000 8,000</u>	Rule-15-01	Depths set
Tubing									
Liners									Perforations: Top Bottom

OFFICE USE ONLY
 DRILLING PERMIT

Permit number 47-085-7367 / Date March 29, 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 29, 1987 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond:	Agent:	Plat:	Casing	Fee
<u>156</u>	<u>SW</u>	<u>TS</u>	<u>TS</u>	<u>1393</u>

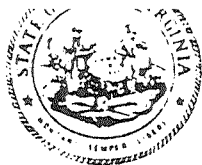
T. H. D.
 Administrator, Office of Oil and Gas

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

incomplete



do not release
with this record

State of West Virginia
Department of Mines
Oil and Gas Division

Date March 1, 1986
Operator's
Well No. Carder/Wyatt TW-45-
Farm Daniel Wyatt
API No. 47 - 85 - 7367

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

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

LOCATION: Elevation: 920 Watershed Goose Creek
District: Grant County Ritchie Quadrangle Cairo

COMPANY Techwell, Inc.
ADDRESS P.O. Box 796 Marcantown, WV 26505
DESIGNATED AGENT Darus H Zehrbach
ADDRESS same
SURFACE OWNER Daniel Wyatt
ADDRESS 6852 Highland Place worthing, OH 43085
MINERAL RIGHTS OWNER SAME
ADDRESS _____
OIL AND GAS INSPECTOR FOR THIS WORK _____
Tom Harsman ADDRESS Smithville, WV 26178
PERMIT ISSUED 3/29/85
DRILLING COMMENCED 5/22/85
DRILLING COMPLETED 6/5/85
IF APPLICABLE: PLUGGING OF DRY HOLE ON
CONTINUOUS PROGRESSION FROM DRILLING OR
REWORKING. VERBAL PERMISSION OBTAINED
ON _____

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.	319	319	CTS
13-10"			
9 5/8			
8 5/8	1979	1979	CTS
7			
5 1/2			
4 1/2	7500	7500	CTS
3			
2			
Liners used	RECEIVED NOV 23 1988		

GEOLOGICAL TARGET FORMATION Newberg Depth 8500 feet
Depth of completed well 7500 feet Rotary / Cable Tools _____
Water strata depth: Fresh _____ feet; Salt _____ feet
Coal seam depths: 500, 1140, 1400 Is coal being mined in the area?

OPEN FLOW DATA
Producing formation NOT FRACED Pay zone depth _____ feet
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 measurement) after _____ hours shut in
(If applicable due to multiple completion--)
Second producing formation _____ Pay zone depth _____ feet
Gas: Initial open flow _____ Mcf/d Oil: Initial open flow _____ Bbl/d
Final open flow _____ Mcf/d Oil: Final open flow _____ Bbl/d
Time of open flow between initial and final tests _____ hours
Static rock pressure _____ psig (surface measurement) after _____ hours shut in

(Continue on reverse side)

12/2/88

0857367

FORM IV-35

PERFORATION AND FRACTURING DETAILS

NONE AT THIS TIME

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS INCLUDING INDICATION OF ALL FRESH AND SALT WATER, COAL, OIL, GAS
SOIL			0	20	
SHALE			20	100	
SILTSTONE & SHALE			100	160	
SILTSTONE & SANDSTONE			160	180	
SHALE & SILTSTONE			180	380	
SANDSTONE			380	410	
SHALE			410	480	
SANDSTONE			480	500	
COAL			500	510	
SILTSTONE			510	530	
SANDSTONE			530	560	
SHALE & SANDSTONE			560	630	
SHALE			630	720	
LIMESTONE & SHALE			720	730	
SHALE			730	790	
LIMESTONE & SHALE			790	800	
NO SAMPLE			800	850	
SHALE			850	880	
SANDSTONE			880	890	
NO SAMPLE			890	900	
SANDSTONE & SHALE			900	910	
SHALE			910	930	
SHALE & SANDSTONE			930	1000	
SHALE			1000	1020	
LIMESTONE & SHALE			1020	1030	
SHALE			1030	1040	
SHALE & SANDSTONE			1040	1050	
NO SAMPLE			1050	1060	
SANDSTONE			1060	1100	
SHALE			1100	1120	
SHALE			1120	1140	
COAL			1140	1150	
SHALE			1150	1200	
SANDSTONE			1200	1400	
SANDSTONE & COAL			1400	1420	
SHALE & SANDSTONE			1420	1440	
SANDSTONE			1440	1500	
SHALE & SANDSTONE			1500	1560	
SANDSTONE			1560	1620	
NO SAMPLE			1620	1660	
LIMESTONE			1660	1810	

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DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

BIG LIME

12/2/88

085 7367

SANDSTONE	1810	1940
SHALE	1940	2000
SHALE & SILTSTONE	2000	2260
SHALE & SANDSTONE	2260	2270
SHALE	2270	2300
SILTSTONE	2300	2310
SILTSTONE & SANDSTONE	2310	2330
SHALE & SILTSTONE	2330	3800
SILTSTONE & SANDSTONE	3800	3810
SILTSTONE	3810	3860
SHALE & SILTSTONE	3860	5555
SHALE	5555	5627
LIMESTONE	5627	5810
SANDSTONE	5810	5911
LIMESTONE	5911	6215
LIMESTONE	6215	6261
LIMESTONE	6261	6400
LIMESTONE & DOLOMITE	6400	6510
DOLOMITE & SALT	6510	6620
DOLOMITE	6620	6800
LIMESTONE & DOLOMITE	6800	6860
DOLOMITE	6860	7400
LIMESTONE & DOLOMITE	7400	7500

BIG INJIN

BEREA

MARCELLUS
ONONDAGA
ORISKANY
HELDEBERG
BASS ISLAND

GAMMA RAY TOPS AND BOTTOMS

MARCELLUS	5555	5627
ONONDAGA	5627	5819
ORISKANY	5819	5911
HELDEBERG	5911	6215
BASS ISLAND	6215	6261
SALINA G	6261	6471
SALINA F	6471	6784
SALINA E	6784	6941
SALINA D	6941	6982
SALINA C	6982	7056
SALINA B	7056	7148
NEWBERG (WILLIAMSPORT)	6965	6982
LOCKPORT	7148	7430
POSE HILL	7430	7500

TECHWELL, INC.
WELL OPERATOR

BY: E. RAY GARTON-GEOLOGIST
MAMMOTH GEO, INC.

DATE: March 21, 1986

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NOV 23 1988

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

2632

12/2/88