



FILE NO. _____
 DRAWING NO. _____
 SCALE **1"=500'**
 MINIMUM DEGREE OF ACCURACY **1:200**
 PROVEN SOURCE OF ELEVATION **ROAD INT. ELEV. 1074'**

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 MINES.
 (SIGNED) *William R. Shaver*
 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 **31 MAY** 19**84**
 OPERATOR'S WELL NO. **PLUM #15**
 API WELL NO. **31-TW 27**
47 - 073 - 1863 - Frac.
 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 **966'** WATER SHED **PANTHER RUN**
 DISTRICT **McKIM** COUNTY **FLEASANTS**
 QUADRANGLE **ELLENBORO 3 1/2' Q. 910.**
 SURFACE OWNER **LUTHER W. PLUM ESTATE** ACREAGE **2-46 AC. TRACTS**
 OIL & GAS ROYALTY OWNER **LUTHER W. PLUM ESTATE** LEASE ACREAGE **92**
 LEASE NO. _____
 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 **GORDON** ESTIMATED DEPTH **3300'**
 WELL OPERATOR **TECHWELL, INC.** DESIGNATED AGENT **DARUS ZEHRSACH**
 ADDRESS **P.O. BOX 796** ADDRESS **P.O. BOX 796**
MORGANTOWN, W.VA. 26505 **MORGANTOWN, W.VA. 26505**

PLCA 1863

Copy to Bob Lowther



Date May 24, 1985
Operator's
Well No. Plum S1 TW-27
Farm LW Plum
API No. 47 - 73 - 1863

IV-35
(Rev 8-81)

RECEIVED
JUL 28 1987

State of West Virginia
Department of Mines
Oil and Gas Division

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

WELL OPERATOR'S REPORT
OF

DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

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

LOCATION: Elevation: 966 Watershed Panther Run
District: McKim County Pleasants Quadrangle Ellenboro

COMPANY Techwell, Inc.
ADDRESS P.O. Box 796 Morgantown, WV 26505
DESIGNATED AGENT Darus Zehrbach
ADDRESS P.O. Box 796 Morgantown, WV 26505
SURFACE OWNER L.W. Plum Estate
ADDRESS RT 2 Box 117 St. Marys, WV 26170
MINERAL RIGHTS OWNER L.W. Plum Estate
ADDRESS same

OIL AND GAS INSPECTOR FOR THIS WORK
General Delivery
Bob Lowther ADDRESS Middlebourne, WV 26149

PERMIT ISSUED September 6, 1984 6/12/85

DRILLING COMMENCED September 12, 1984

DRILLING COMPLETED September 17, 1984 6/12/85

IF APPLICABLE: PLUGGING OF DRY HOLE OR
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.			
13-10"	300	300	CTS
9 5/8			
8 5/8	1100	1100	CTS
7			
5 1/2			
4 1/2	3109	3109	Rule 15-01
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Gordon Depth 3109 feet
Depth of completed well 3109 feet Rotary / Cable Tools _____
Water strata depth: Fresh 80 feet; Salt 1620 feet
Coal seam depths: 1520 Is coal being mined in the area? NO

OPEN FLOW DATA

Producing formation Big Injun Pay zone depth 1961-2022 feet
Gas: Initial open flow 20 Mcf/d Oil: Initial open flow 0 Bbl/d
Final open flow 1 Mcf/d Final open flow 0 Bbl/d

Time of open flow between initial and final tests 24 hours

Static rock pressure 785 psig (surface measurement) after 48 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) SEP 8 1987

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

800 Barrels and sand with Nitrogen assist.

2012-2022 20 shots
 1975-1980 5 shots
 1961-1966 5 shots

RECEIVED
 JUL 28 1987

DIVISION OF OIL & GAS
 DEPARTMENT OF ENERGY

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	<u>REMARKS</u> Including indication of all fresh and salt water, coal, oil and gas
SEE ATTACHED SHEET					

(Attach separate sheets as necessary)

 Well Operator

By: _____

Date: _____

2791
 Note: Regulation 2.02(i) provides as follows:
 "The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including sand, encountered in the drilling of a well."

SEP 8 1987

PERFORATION AND FRACTURING DETAILS

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS INCLUDING INDICATION OF ALL FRESH AND SALT WATER, COAL, OIL, GAS
OVERBURDEN			0	20	
SHALE & SILTSTONE			20	330	30 FRESH WATER
SANDSTONE			280	330	
SHALE			330	340	
SANDSTONE & SHALE			340	380	
SHALE			380	400	
SANDSTONE & SHALE			400	480	
SHALE & SANDSTONE			480	500	
SHALE, LIMESTONE & SANDSTONE			500	550	
SHALE			550	590	
SHALE & SILTSTONE			590	620	
SHALE			620	630	
SANDSTONE & SHALE			630	650	
SHALE, LIMESTONE & SANDSTONE			660	700	
SHALE			700	790	
LIMY SHALE			790	820	
SHALE			820	840	
SANDSTONE			840	870	
SHALE			870	1020	
SILTSTONE			1020	1040	
SHALE			1040	1060	
SILTSTONE			1060	1080	
SHALE			1080	1140	
SHALY SANDSTONE			1140	1160	
SHALE			1160	1300	
SANDY SHALE			1300	1340	
SHALE			1340	1350	
SHALY SANDSTONE			1350	1400	
SHALE			1400	1410	
SANDY SHALE			1410	1440	
SHALY SANDSTONE			1440	1460	
SANDSTONE			1460	1510	
SILTSTONE			1510	1520	
COAL			1520	1530	
SILTSTONE			1530	1540	
SHALE			1540	1560	
SANDSTONE			1560	1640	1620 SALT WATER
SILTSTONE			1640	1660	
SANDSTONE			1660	1680	
SHALE			1680	1720	
SANDSTONE			1720	1770	
SILTSTONE			1770	1820	
SANDSTONE			1820	1830	
SANDY SILTSTONE			1830	1840	
SANDSTONE			1840	1900	
LIMESTONE			1900	1910	BIG LIME
SANDSTONE			1910	1930	KEENER
SHALE			1930	1940	
SHALY SANDSTONE			1940	1950	
SANDY SHALE			1950	1980	
SANDSTONE			1980	2080	BIG INJUN
SHALE			2080	2160	
SILTSTONE			2160	2260	
SHALE			2260	2580	
SANDY SHALE			2580	2600	BEREA
SHALE & SILTSTONE			2600	2820	
SHALE			2820	3109	TOTAL DEPTH

RECEIVED
JUL 28 1987

DIVISION OF OIL & GAS
DEPARTMENT OF ENERGY

TECHWELL, INC.
WELL OPERATOR

BY: E. RAY GARTON-GEOLOGIST
GEOLOGIC EVALUATIONS

DATE: May 1, 1986

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

800 Barrels and sand with Nitrogen assist.

2012-2022	20 shots	Big log
1975-1980	5 shots	Big log
1961-1966	5 shots	Big log

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
SEE ATTACHED SHEET					

(Attach separate sheets as necessary)

Well Operator

By:

Note: Regulation 2.03(1) provides as follows:
 "The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including sand, encountered in the drilling of a well."

PERFORATION AND FRACTURING DETAILS

Pg. 2, 073 1863

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS INCLUDING INDICATION OF ALL FRESH AND SALT WATER, COAL, OIL, GAS
OVERBURDEN			0	20	
SHALE & SILTSTONE			20	300	30 FRESH WATER
SANDSTONE			280	330	
SHALE			330	340	
SANDSTONE & SHALE			340	380	
SHALE			380	400	
SANDSTONE & SHALE			400	450	
SHALE & SANDSTONE			480	500	
SHALE, LIMESTONE & SANDSTONE			500	550	
SHALE			550	590	
SHALE & SILTSTONE			590	620	
SHALE			620	630	
SANDSTONE & SHALE			630	650	
SHALE, LIMESTONE & SANDSTONE			660	700	
SHALE			700	790	
LIMY SHALE			790	820	
SHALE			820	840	
SANDSTONE			840	870	
SHALE			870	1020	
SILTSTONE			1020	1040	
SHALE			1040	1060	
SILTSTONE			1060	1080	
SHALE			1080	1140	
SHALY SANDSTONE			1140	1160	
SHALE			1160	1300	
SANDY SHALE			1300	1340	
SHALE			1340	1350	
SHALY SANDSTONE			1350	1400	
SHALE			1400	1410	
SANDY SHALE			1410	1440	
SHALY SANDSTONE			1440	1460	
SANDSTONE			1460	1510	
SILTSTONE			1510	1520	
COAL			1520	1530	
SILTSTONE			1530	1540	
SHALE			1540	1560	
SANDSTONE			1560	1640	1620 SALT WATER
SILTSTONE			1640	1660	
SANDSTONE			1660	1680	
SHALE			1680	1720	
SANDSTONE			1720	1770	
SILTSTONE			1770	1820	
SANDSTONE			1820	1830	
SANDY SILTSTONE			1830	1840	
SANDSTONE			1840	1900	
LIMESTONE			1900	1910	BIG LIME
SANDSTONE			1910	1930	KEENER
SHALE			1930	1940	
SHALY SANDSTONE			1940	1950	
SANDY SHALE			1950	1980	
SANDSTONE			1980	2080	BIG INJUN <i>See # 90</i>
SHALE			2080	2160	
SILTSTONE			2160	2260	
SHALE			2260	2580	
SANDY SHALE			2580	2600	BEREA
SHALE & SILTSTONE			2600	2820	
SHALE			2820	<u>3109</u>	TOTAL DEPTH

TECHWELL, INC.
WELL OPERATOR

BY: E. RAY GARTON-GEOLOGIST APR 7 1986
GEOLOGIC EVALUATIONS

DATE: May 1, 1986 *J. huh?*



1) Date: June 19, 19 84
 2) Operator's Well No. Plum S1-TW27
 3) API Well No. 47 - 73 - 1863
 State County Permit

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

- 4) WELL TYPE: A Oil / Gas
 B (If "Gas", Production / Underground storage Deep Shallow)
- 5) LOCATION: Elevation: 966 Watershed: Panther Run (OM: 4C)
 District: McKim County: Pleasants Quadrangle: Ellenboro
- 6) WELL OPERATOR Techwell, Inc. 7) DESIGNATED AGENT Darus Zehrbach
 Address PO Box 796 Address same
Morgantown, WV 26505
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED 9) DRILLING CONTRACTOR:
 Name Bob Lowther 758-4764 Name _____
 Address General Delivery Address _____
Middlebourne, WV 26149
- 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, Gordon
- 12) Estimated depth of completed well, 3300 feet
 13) Approximate strata depths: Fresh, 250 feet; salt, _____ feet.
 14) Approximate coal seam depths: NA Is coal being mined in the area? Yes / No

RECEIVED

JUL 18 1984

OIL & GAS DIVISION
 DEPT. OF MINES

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				Kinds
Fresh water	11.75			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	280	280	CTS		NEAT
Coal										Sizes
Intermediate	8.625			<input checked="" type="checkbox"/>		1879	1879	CTS		
Production	4.5			<input checked="" type="checkbox"/>		3300	3300	Rule 15-01		Depths set
Tubing										
Liners										Perforations:
										Top Bottom

OFFICE USE ONLY
 DRILLING PERMIT

Permit number 47-073-1863 Date July 27, 1984

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 July 27, 1986 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: BLANKET	Agent: <u>MS</u>	Plat: <u>MM</u>	Casing: <u>MM</u>	Fee: <u>1006</u>
----------------------	------------------	-----------------	-------------------	------------------

Margaret J. Hasse
 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



1) Date: May 24, 19 85
 2) Operator's Well No. Plum SI TW-27
 3) API Well No. 47 State 73 County 1863 F Permit

RECEIVED
 JUN 05 1985

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

- 4) WELL TYPE: Oil & Gas Division / Gas / DEPT. OF MINES / If for production / Underground storage _____ / Deep _____ / Shallow /
- 5) LOCATION: Elevation: 966 Watershed: Panther Run
 District: McKim County: Pleasants Quadrangle: Ellenboro
- 6) WELL OPERATOR Techwell, Inc. 7) DESIGNATED AGENT Darus Zehrbach
 Address P.O. Box 796 Address same
Morgantown, WV 26505 48950
- 8) OIL & GAS INSPECTOR TO BE NOTIFIED 9) DRILLING CONTRACTOR:
 Name Bob Lowther 758-4764 Name Burdette
 Address General Delivery Address Charleston, WV
Middlebourne, WV 26149
- 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, Big Injun--Squaw--Gordon
 12) Estimated depth of completed well, 3109 feet
 13) Approximate strata depths: Fresh, 80 feet; salt, _____ feet.
 14) Approximate coal seam depths: 1520 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"/>		300	300	CTS	
Coal									Sizes
Intermediate	8.625			<input checked="" type="checkbox"/>		1100	1100	CTS	
Production	4.5			<input checked="" type="checkbox"/>		3109	3109	Rule 15-01	Depths set
Tubing									
Liners									Perforations: Top Bottom

OFFICE USE ONLY
 DRILLING PERMIT

Permit number 47-073-1863 Frac Date June 12 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 June 12, 1987 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond:	Agent:	Plat:	Casing	Fee
15-6	AIB	MU	MU	15-08

Margaret J. Hesse
 Administrator, Office of Oil and Gas

NOTE: Keep one copy of this permit posted at the drilling location.

File

See the reverse side of the APPLICANT'S COPY for instructions to the well operator.