

FILE NO. _____
 DRAWING NO. _____
 SCALE 1" = 200'
 MINIMUM DEGREE OF ACCURACY 1/2500
 PROVEN SOURCE OF ELEVATION _____
PLANT MONUMENT
952.447 N 5200 E 3700

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) Richard Huffman
 R.P.E. _____ L.L.S. W.V. 631

PLACE SEAL HERE

STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
 WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
 (IF "GAS,") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW ___
 LOCATION: ELEVATION 984.9 WATER SHED MONONGAHELA RIVER
 DISTRICT GRANT COUNTY MONONGAHELA
 QUADRANGLE MORGANTOWN SOUTH 7.5
 SURFACE OWNER PRINCESS COALS INC. ACREAGE 708.72
 OIL & GAS ROYALTY OWNER PRINCESS COALS INC. LEASE ACREAGE 816.461
 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 Speechley ESTIMATED DEPTH 3100'
 WELL OPERATOR Borg Warner Chemicals DESIGNATED AGENT Arthur T. Sandy
 ADDRESS PO Box 1868 ADDRESS Same
Perkersburg, WV 26102 105

DATE Sept. 13, 19 82
 OPERATOR'S WELL NO. 1
 API WELL NO. _____
47 - 061 - 0716-Frac
 STATE COUNTY PERMIT
FRAC CANCELLED
 MAR 17 1989
 H. T. HALL FORM IV-6 (8-78)

MONON. - 0716

EXISTING WELL MON 270 39°40'00"

LATITUDE 39° 37' 30"

LONGITUDE 79° 55' 00"
79° 57' 30"

CORD N 22° 58' 45" W 1035.49
DEED

NORTH

N 40° 43' 30" W 797.11
DEED
50° 54' 49" W
1447.9'

4.725
3.08W
15' 0.885
0.82W

9800'

4350

PLANT 2
BORG WARNER CHEMICALS INC
DB 726P 162 PROPERTY FENCE
N 43° 12' 22" W

PRINCESS COALS INC.
DB 816 P 2

NO. 1
546° 37' 48" W
4100'
557° 25' 31" W
415.78'
160.98'
CORNER
N 65° 34' 06" W
DEED 144.80'
GATE POST
ATTR. GATE

SMALL STREAM

FILE NO _____
DRAWING NO _____
SCALE 1" = 200'
MINIMUM DEGREE OF
ACCURACY 1/2500
PROVEN SOURCE OF
ELEVATION _____
PLANT MONUMENT
952.447 N 5200 E 3700

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THIS PLAT IS CORRECT TO THE BEST OF MY
KNOWLEDGE AND BELIEF AND SHOWS ALL THE
INFORMATION REQUIRED BY LAW AND THE REGU-
LATIONS ISSUED AND PRESCRIBED BY THE DEPART-
MENT OF MINES.
(SIGNED) McDonald Huffman
R.P.E. _____ L.L.S. 21.2w 631

PLACE SEAL HERE

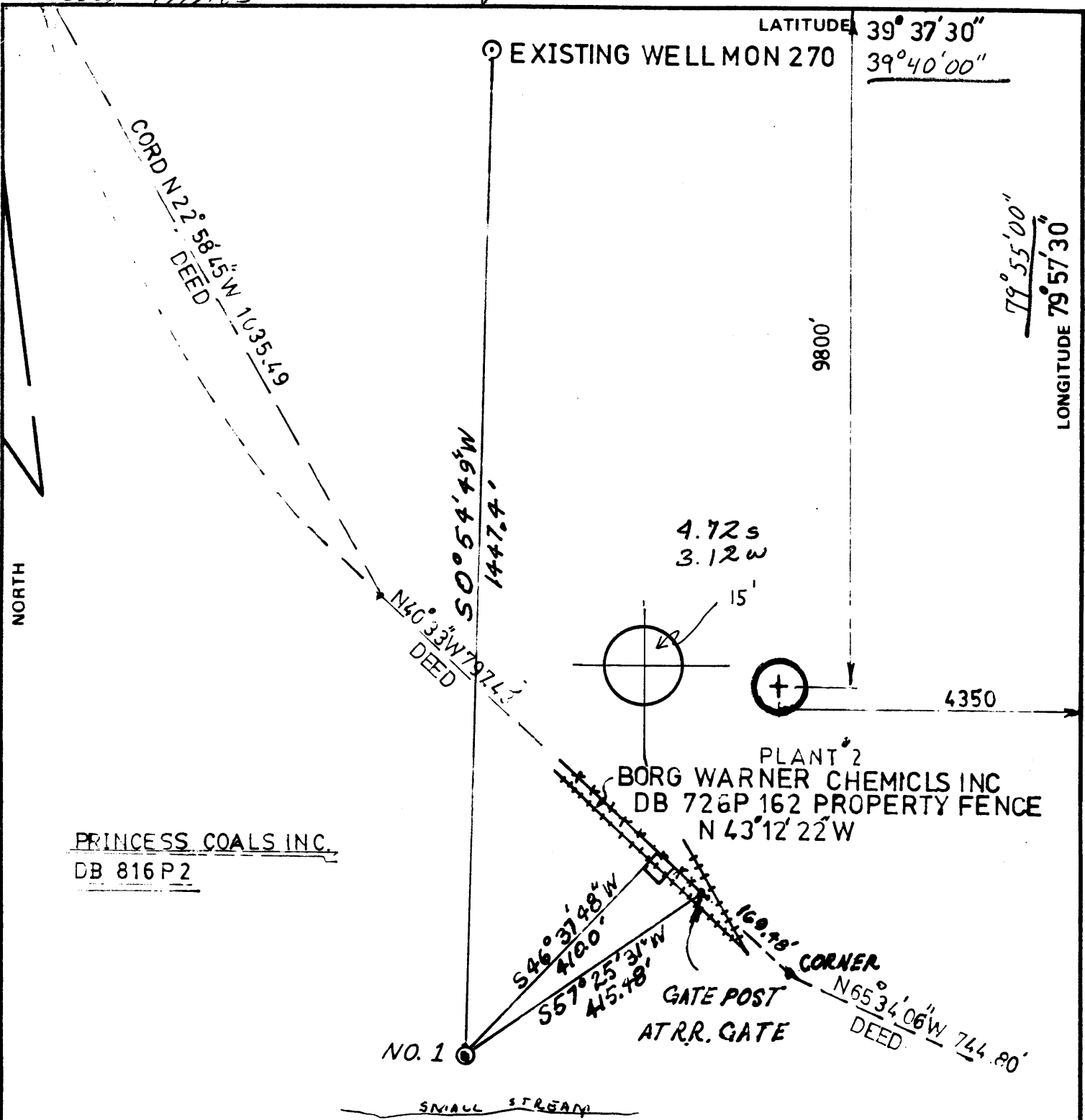
STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION



DATE Sept. 13, 19 82
OPERATOR'S WELL NO. 1
API WELL NO.
47 - 061 - 0716-F
STATE COUNTY PERMIT

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS,") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW ___
LOCATION: ELEVATION 984.9 WATER SHED MONONGAHELA RIVER
DISTRICT GRANT 5 COUNTY MONONGAHELA
QUADRANGLE MORGANTOWN SOUTH 7.5 485 086 WC 4
SURFACE OWNER PRINCESS COALS INC. ACREAGE 708.72
OIL & GAS ROYALTY OWNER PRINCESS COALS INC. LEASE ACREAGE 816.461
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 Speechley ESTIMATED DEPTH 3100'
WELL OPERATOR Borg Warner Chemicals SIGNED AGENT Arthur T. Sandy
ADDRESS PO Box 1868 105 ADDRESS Same
Perkersburg, WV 26102

DEC 8 1986



PRINCESS COALS INC.
DB 816 P2

PLANT 2
BORG WARNER CHEMICALS INC
DB 726P 162 PROPERTY FENCE
N 43°12'22"W

FILE NO _____
DRAWING NO. _____
SCALE 1" = 200'
MINIMUM DEGREE OF
ACCURACY 1/2500
PROVEN SOURCE OF
ELEVATION _____
PLANT MONUMENT

952.447 N5200 E 3700

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) Edmund Huffman
R.P.E. _____ L.L.S. W.V. 631



STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION



DATE Sept. 13, 19 82
OPERATOR'S WELL NO. 1
API WELL NO. 47-061-0716
STATE COUNTY PERMIT

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS
WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS,") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW ___
LOCATION: ELEVATION 984.9 WATER SHED MONONGAHELA RIVER
DISTRICT GRANT COUNTY MONONGAHELA
QUADRANGLE MORGANTOWN SOUTH 7.5 Morgantown 15'Wc
SURFACE OWNER PRINCESS COALS INC. ACREAGE 708.72
OIL & GAS ROYALTY OWNER PRINCESS COALS INC. LEASE ACREAGE 816.461
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 Speechley ESTIMATED DEPTH 3100' DPD-Gantz, 4th, 5th JAN 24 1983
WELL OPERATOR Borg Warner Chemicals DESIGNATED AGENT Arthur K Sandy Speechley
ADDRESS PO Box 1868 ADDRESS Same
Perkersburg, WV 26102 3-3 Westover (69)



Date 9/20/83
 Operator's Well No. 1
 Farm Princess Coals Inc
 API No. 47 - 061 - 0716

RECEIVED
 SEP 22 1983

State of West Virginia
 Department of Mines
 Oil and Gas Division

OIL & GAS DIVISION
 DEPT. OF MINES
 WELL OPERATOR'S REPORT
 OF
 DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

RECEIVED
 DEC 13 1983

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

LOCATION: Elevation: 985 Watershed Monongahela River
 District: Grant County Monongalia Quadrangle Morgantown S. 7 1/2

COMPANY Borg-Warner Chemicals
 ADDRESS Box 1868, Parkersburg WV 26101
 DESIGNATED AGENT Arthur T. Sandy
 ADDRESS Same
 SURFACE OWNER Princess Coals Inc
 ADDRESS PO Box 1210, Huntington WV 25714
 MINERAL RIGHTS OWNER Same
 ADDRESS Same
 OIL AND GAS INSPECTOR FOR THIS WORK W. Blosser
 ADDRESS Fairmont, WV
 PERMIT ISSUED
 DRILLING COMMENCED Mar. 8, 1983
 DRILLING COMPLETED Mar. 12, 1983
 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.			
13-10"	38'	38'	surface
9 5/8			
8 5/8	691'	691'	surface
7			
5 1/2			
4 1/2		3040'	585 ft ³
3			
2-3/8		2732.60'	None
Liners used			

GEOLOGICAL TARGET FORMATION Speechley Depth 3100 feet
 Depth of completed well 3040 feet Rotary XX / Cable Tools
 Water strata depth: Fresh 160 feet; Salt feet
 Coal seam depths: 166-170, 180-184 Is coal being mined in the area? No

OPEN FLOW DATA
 Producing formation Speechley/Fifth/Fourth "A"/Gantz Pay zone depth 2750, 2100, 2025, 1500 feet
 Gas: Initial open flow 70 Mcf/d Oil: Initial open flow none Bbl/d
 Final open flow 516 Mcf/d Final open flow none Bbl/d
 Time of open flow between initial and final tests hours
 Static rock pressure 680 psig (surface measurement) after 168 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

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

- 3-23-83: treated Speechley (2710-2746, 2786-~~2820~~) with 540 MSCF N₂.
gas test before frac: 0 Mcf; gas test af: 46 Mcf/day
- 3-28-83: treated Fifth (2105-~~2109~~) with 540 MSCF N₂.
gas test before frac: 0 Mcf; gas test af: 0 Mcf/day
- 3-31-83: treated Fourth "A" (2015-~~2039~~) with 108 MSCF N₂.
gas test before frac: 0 Mcf; gas test af: 112 Mcf/day
- 4-06-83: treated Gantz (1485-~~1492~~) with 540 MSCF N₂.
gas test before frac: 70 Mcf/day; gas test af: 404 Mcf/day

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS
					Including indication of all fresh and salt water, coal, oil and gas
soil			0	4	
sandstone			4	16	
shale			16	33	
sandstone			33	97	
shale			97	103	
sandstone			103	166	3" water @ 166' "Buffalo SS"
coal			166	170	
shaly sandstone			170	180	
coal			180	184	
shaly sandstone			184	192	
sandstone			192	230	"Big Dunkard SS"
shale			230	285	
sandstone & shale			285	366	
shale			366	448	
sandstone			448	515	"1st, Salt Sand"
shale			515	550	
sandstone			550	632	"2nd Salt Sand"
shale & sandstone			632	909	1" water @ 810' "3rd Salt Sand" 710 - 810
limestone			909	922	"Little Lime"
shale & siltstone, lime			922	960	
limestone (Greenbrier)			960	1048	"Big Lime"
sandstone			1048	1150	"Big Injun"
shaly siltstone			1150	1230	
sandstone			1230	1278	"Squaw"
siltstone			1278	1296	
sandstone			1296	1328	"Squaw"
siltstone			1328	1480	
sandstone			1480	1495	show gas @ 1485 12/10ths W x 1 1/2"
shaly siltstone			1495	1563	"Gantz Sand" 1480' - 1495'
sandstone			1563	1600	"50 FT"
sandy/shaly siltstones			1600	2007	"30 FT" 1603' - 1637'
silty sandstone			2007	2040	"Gordon Stray" 1760' - 1769'
shaly siltstone			2040	2102	"Gordon" 1864' - 1891'
sandstone			2102	2122	"4th" - 2007' - 2040'
siltstone			2122	2140	"5th" - 2102 - 2122'
silty sandstone			2140	2158	
shaly/coarse siltstones			2158	3044	TD "Speechley" 2698' - 2808'

(Attach separate sheets as necessary)

3044
1150
1894 exptl ftg.

Borg-Warner Chemicals
Well Operator

By: Arthur T. Sandy, Energy Resource Manager

Date: September 20, 1983

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 coal, encountered in the drilling of a well."

RECEIVED
NOV 25 1985



1) Date: August 15, 19 86
 2) Operator's Well No. One
 3) API Well No. 47 061 716 Frac.
 State County Permit

STATE OF WEST VIRGINIA
 DEPARTMENT OF ENERGY, 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: 984.9' / Watershed: Monongahela River
 District: Grant 105 5 / County: Monongahela Co / Quadrangle: Morgantown South 484
 6) WELL OPERATOR Borg Warner Chemicals DE: 6500 7) DESIGNATED AGENT Arthur T. Sandy
 Address P.O. Box 1868 Address Same
Parkersburg, W.V. 26102
 8) OIL & GAS INSPECTOR TO BE NOTIFIED Name Donald Ellis
 Address 2604 Crabapple Lane
Fairmont, W.V. 26564
 9) DRILLING CONTRACTOR: Name _____ Address _____
 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, Speckley Gantz sand #3
 12) Estimated depth of completed well, 3100' feet
 13) Approximate trata depths: Fresh, _____ feet; salt, _____ feet.
 14) Approximate coal seam depths: _____ 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		
Conductor	11"	H-40	42#	X		50' 38"	50' 38"	CTS Kinds
Fresh water								
Coal								Sizes
Intermediate	8 5/8"	H-40	20#	X		650' 691"	650' 691"	CTS
Production	4 1/2"	J-55	10.5#	X		3040'	3040'	To 1200' Depths set
Tubing								
Liners								Perforations: Top Bottom

OFFICE USE ONLY
 DRILLING PERMIT

Permit number 47-061-0716-F Date December 5, 1986

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 December 5, 1988 unless well work is commenced prior to that date and prosecuted with due diligence.

Bond: <input checked="" type="checkbox"/>	Agent: <u>RB</u>	Plat: <u>AS</u>	Casing: <u>AS</u>	Fee: <u>366968</u>	WPCP: <u>Tax 14</u>	S&E: <u>AS</u>	Other: _____
---	------------------	-----------------	-------------------	--------------------	---------------------	----------------	--------------

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

[Signature]
 Director, Division of Oil and Gas

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

8784

PROPOSED WORK ORDER

THIS IS AN ESTIMATE ONLY: ACTUAL INFORMATION MUST BE SUBMITTED ON FORM IV-35 UPON COMPLETION

(12-81)

DRILLING CONTRACTOR (IF KNOWN) _____

Address _____

GEOLOGICAL TARGET FORMATION, Speechley

Estimated depth of completed well, 3100 feet Rotary X / Cable tools _____ /

Approximate water strata depths: Fresh, N/A feet; salt, N/A feet.

Approximate coal seam depths: 350' Is coal being mined in the area? Yes _____ / No X /

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	11"	H-40	42#	X		50'	50'	To surface	Kinds	
Fresh Water										
Coal									Sizes	
Intermediate	8 5/8"	H-40	20#	X		650'	650'	To surface		
Production	4 1/2"	J-55	10.5#	X		3000'	3000'	To 1200'	Depths set	
Tubing										
Liners									Perforations:	
									Top	Bottom

NOTE: Regulation 7.02 of the Department of Mines provides that the original and four copies of Form IV-2 must be filed with the Department, accompanied by (i) a plat in the form prescribed by Regulation 11, (ii) a bond in one of the forms prescribed by Regulation 12, or in lieu thereof the other security allowed by Code § 22-4-2, (iii) Form IV-9, "Reclamation Plan", applicable to the reclamation required by Code § 22-4-12b and Regulation 23, (iv) unless previously paid on the same well, the fee required by Code § 22-4-12a, and (v) if applicable, the consent required by Code § 22-4-8a from the owner of any water well or dwelling within 200 feet of the proposed well.

A separate Form IV-2 shall not be required for fracturing or stimulating a well where fracturing or stimulating is to be part of the work for which a permit is sought and is noted as such on the Form IV-2 filed in connection therewith.

THIS PERMIT MUST BE POSTED AT THE WELL SITE.
ALL PROVISIONS BEING IN ACCORDANCE WITH CHAPTER 22, ARTICLE 4 OF THE W. VA. CODE, THE LOCATION IS HEREBY APPROVED FOR drilling. THIS PERMIT SHALL EXPIRE IF OPERATIONS HAVE NOT COMMENCED BY 9-18-83
BY [Signature]

The following waiver must be completed by the coal operator and by any coal owner or coal lessee who has recorded a declaration under Code 22-4-20, if the permit is to be issued within fifteen (15) days of receipt thereof.

WAIVER

The undersigned coal operator _____ / owner X / lessee _____ / of the coal under this well location has examined this proposed well location. If a mine map exists which covers the area of the well location, the well location has been added to the mine map. The undersigned has no objection to the work proposed to be done at this location, provided, the well operator has complied with all applicable requirements of the West Virginia Code and the governing regulations.

(See attached letter)

Date: _____, 19 _____

By _____
Its _____

Morgantown Ordnance Works

DIVISION OF PRINCESS COALS, INC.
P. O. BOX 1109
MORGANTOWN, WEST VIRGINIA 26505
PHONE 304/292-9453

September 14, 1982

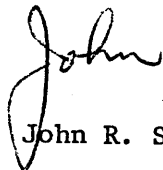
Arthur Sandy
Borg Warner Chemicals
International Center
Parkersburg, WV 26101

Dear Art:

It certainly was a pleasure meeting with you last week and reviewing the two well locations proposed by Borg Warner. We agree on the locations you have selected and look forward to your starting the proposed drilling program.

If we can be of additional assistance, please do not hesitate to contact us.

Sincerely,



John R. Snider

JRS/l ds

cc Phil Snyder
Cecil Underwood

RECEIVED

OCT 19 1982

OIL AND GAS DIVISION
WV DEPARTMENT OF MINES