

FILE NO. _____
 DRAWING NO. SK-41728-G
 SCALE 1" = 800'
 MINIMUM DEGREE OF ACCURACY 1 IN 10000
 PROVEN SOURCE OF ELEVATION USGS

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) W. F. Nelson
 R.P.E. L.L.S. _____

W.VA. REG. # 2457
 PLACE SEAL HERE

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

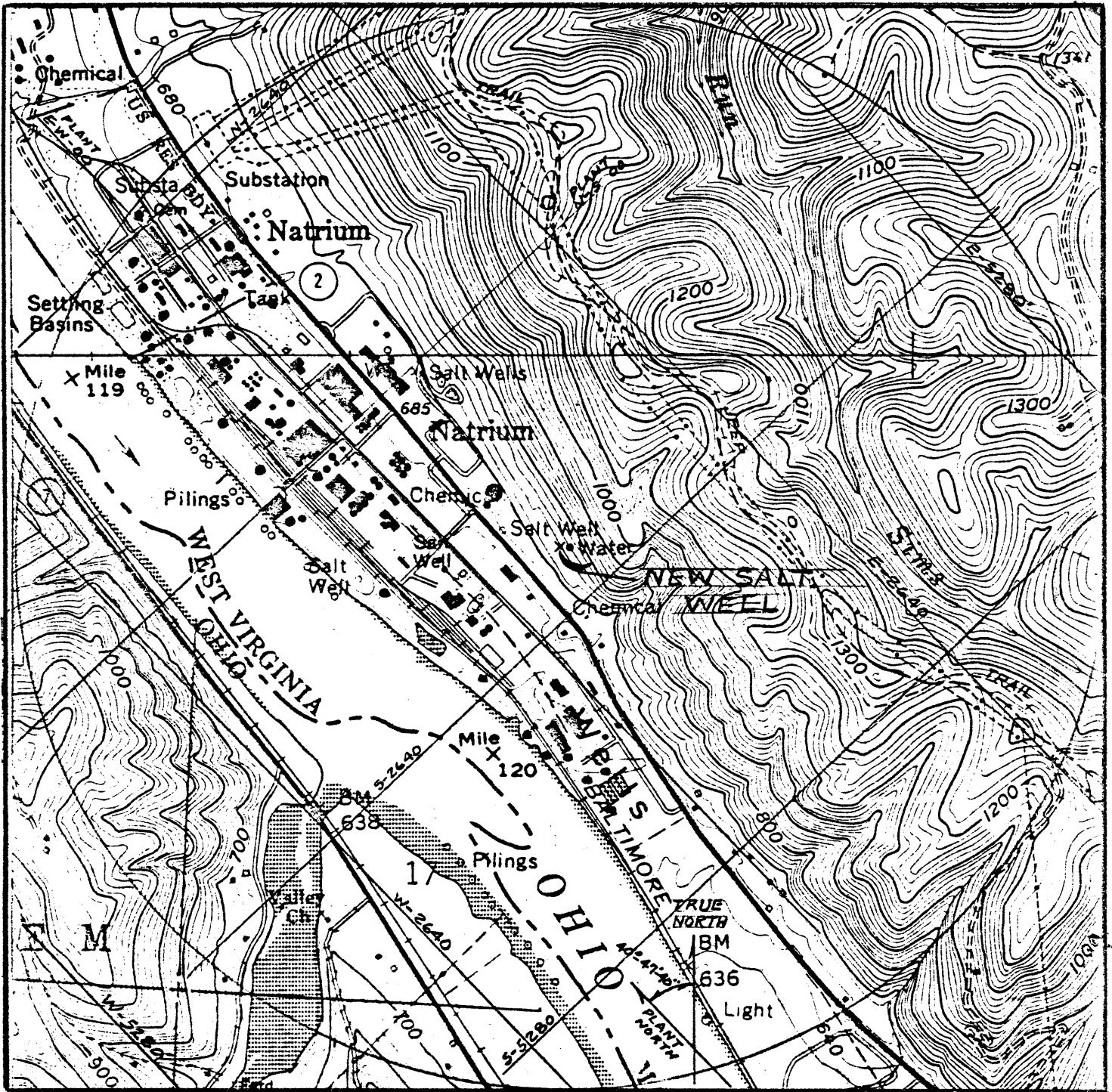
STATE OF WEST VIRGINIA
 DEPARTMENT OF MINES
 OIL AND GAS DIVISION

DATE MARCH 24, 1983
 OPERATOR'S WELL NO. BW-18
 API WELL NO. 47 051 . 0703
 STATE COUNTY PERMIT

WELL TYPE: OIL _____ GAS _____ LIQUID INJECTION _____ WASTE DISPOSAL _____ BRINE
 (IF "GAS" PRODUCTION STORAGE DEEP SHALLOW _____)
 LOCATION: ELEVATION 705'-0" WATER SHED OHIO RIVER
 DISTRICT FRANKLIN COUNTY MARSHALL
 QUADRANGLE NEW MARTINSVILLE 15' N
 SURFACE OWNER PPG INDUSTRIES ACREAGE 273.7
 OIL & GAS ROYALTY OWNER PPG INDUSTRIES LEASE ACREAGE _____
 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 _____ 9-b Cameron-Garner
 TARGET FORMATION SALINA GROUP ESTIMATED DEPTH 6850'-0" APR 25 1983
 WELL OPERATOR PPG INDUSTRIES DESIGNATED AGENT D.F. GOLLA
 ADDRESS BOX 191 ADDRESS BOX 191
 brine well NEW MARTINSVILLE, W.VA. 26155 deep well NEW MARTINSVILLE, W.VA. 26155

MAR. 0703



TOPOGRAPHIC MAP OF NATRIUM AREA
1-MILE RADIUS PROPOSED WELL

● MARKED IN RED INDICATES
FRESH WATER WELLS

APR 10 1983
 OIL & GAS DIVISION
 DEPT. OF MINES

MARCH 23, 83

CLP



IV-35
(Rev 8-81)

JUL 25 1983

State of West Virginia
Department of Mines
Oil and Gas Division

Date July 5, 1983
Operator's
Well No. Brine Well No. 18
Farm ARRICK (D. P. C.)
API No. 47 - 51 - 0703

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

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

LOCATION: Elevation: 705' Watershed Ohio River
District: Franklin County Marshall Quadrangle New Martinsville

COMPANY PPG INDUSTRIES, INC.
ADDRESS Box 191, New Martinsville, WV 26155
DESIGNATED AGENT D. F. Golla
ADDRESS Box 191, New Martinsville, WV 26155
SURFACE OWNER PPG INDUSTRIES, INC.
ADDRESS SAME
MINERAL RIGHTS OWNER PPG INDUSTRIES, INC.
ADDRESS SAME
OIL AND GAS INSPECTOR FOR THIS WORK Robert A. Lowther ADDRESS General Delivery Middlebourne, WV 26149
PERMIT ISSUED April 18, 1983
DRILLING COMMENCED May 9, 1983
DRILLING COMPLETED June 17, 1983

Casing & Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.			
13-10"	112	112	NONE
9 5/8	1765	1765	To Surface
8 5/8			
7	6858	6858	To Surface
5 1/2			
4 1/2			
4 EUE	6863	6863	None
2			
Liners used	NONE		

IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED ON May 25, 1983 (Plugged to change drilling direction.)

GEOLOGICAL TARGET FORMATION Salina Group Depth 6753 feet
Depth of completed well 6910 feet Rotary x / Cable Tools
Water strata depth: Fresh 55-100 feet; Salt -- feet
Coal seam depths: 328' - 333' Is coal being mined in the area? No

OPEN FLOW DATA - Not applicable to brine wells.

Producing formation _____ Pay zone depth _____ feet
Gas: Initial open flow _____ Mcf/d Oil: Initial open flow _____ Ebl/d
Final open flow _____ Mcf/d Final open flow _____ Ebl/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 _____ Ebl/d
Final open flow _____ Mcf/d Oil: Final open flow _____ Ebl/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.
Production casing perforated with four (4) shots at 6841-6842 for development purposes.

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Clay, sandy shale			0	45	Fresh water 45' - 90'
Sand & gravel			45	113	
Sand (Hard)			113	145	
Pennsylvanian			145	1202	
Monongahela			145	232	Pittsburgh Coal 328' - 333'
Conemaugh			232	856	
Allegheny			856	1100	
Pottsville			1100	1202	
Mississippian			1202	2053	
Maxton			1202	1314	Slight Gas Show
Mauch Chunk			1314	1326	Gas Show
Greenbrier			1366	1431	
Big Injun			1451	1661	
Weir			1820	1880	Slight Gas Show
Berea			2018	2053	
Devonian			2053	6552	
Gordon			2177	2196	Slight Gas Show
Speechley			2348	2386	
Riley			2980	3018	Slight Gas Show
Benson			3058	3010	Slight Gas Show
Marcellus Shale			5208	5790	
Tully			5790	5876	
Onondaga Lime			5876	5886	
Huntersville Chert			5886	6096	
Oriskany (Ridgely)			6096	6149	
Oriskany (Shriver)			6149	6470	
Helderberg Lime			6470	6552	
Silurian			6552	--	
Keyser Lime			6552	6763	
Salina			6763	6881	
Anhydrite & Dolomite			6881	6910	

NOTE: Well log information furnished by geologist of Huntley and Huntley Inc. from drillers log, samples, and electric logs.

(Attach separate sheets as necessary)

Well Operator

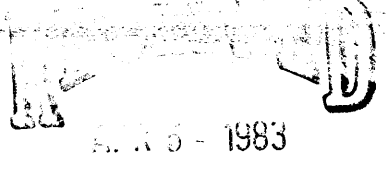
PPG INDUSTRIES, INC.

X By: Dominic J. Golla

Date: July 7, 1983

FORM IV-35
(Obverse)
[02-83]

DRILLING CONTRACTOR
S. W. Jack Drilling Co.



- 1) Date: March 24 1983
- 2) Operator's Well No. Brine Well No. 18
- 3) SIC Code 28
- 4) API Well No. 47 - 51 - 0703
State County Permit
- 5) UIC Permit _____

OIL & GAS DIVISION
DEPT. OF MINES
STATE OF WEST VIRGINIA

LIQUID INJECTION OR WASTE DISPOSAL WELL PERMIT APPLICATION

For Both

DEPT. OF MINES, OFFICE OF OIL AND GAS, DNR, DIVISION OF WATER RESOURCES

- 6) WELL TYPE: Liquid Injection X / (Brine Well Disposal ___ / Gas Injection ___ /
- 7) LOCATION: Elevation 705 ft. Watershed Ohio River
District Franklin County Marshall Quadrangle New Martinsville
- 8) WELL OPERATOR PPG Industries, Inc. 12) DESIGNATED AGENT D. F. Golla
Address P. O. Box 191 Address PPG Industries, Inc.
New Martinsville, WV 26155 New Martinsville, WV 26155
- 9) ROYALTY OWNER N/A 13) COAL OPERATOR None
Address _____ Address _____
Acreage _____
- 10) SURFACE OWNER PPG Industries, Inc. 14) COAL OWNER(S) WITH DECLARATION ON RECORD:
Name PPG Industries, Inc.
Address P. O. Box 191
New Martinsville, WV 26155
Name _____
Address _____
- 11) OIL AND GAS INSPECTOR TO BE NOTIFIED BEFORE DRILLING, AND 24 HOURS IN ADVANCE OF ANY MECHANICAL INTEGRITY TEST
Name Robert A. Lowther 15) COAL LESSEE WITH DECLARATION ON RECORD:
Ac General Delivery Name None
Middlebourne, W.Va. 26149 Address _____
PH: 758-4/64

The undersigned well operator is entitled to operate for liquid injection or waste disposal purposes at the above location under a deed X / lease ___ / other contract ___ / dated October 21, 1946, to the undersigned well operator from Reconstruction Finance Corp. (If said deed, lease, or other contract has been recorded:)
Recorded on November 20, 1946, in the office of the Clerk of the County Commission of Marshall County, West Virginia, in Deed Book 244 at page 76. A permit is requested as follows:

- PROPOSED WORK: Convert ___ / Drill X / Drill deeper ___ / Fracture or stimulate ___ / Plug off old formation ___ / Other physical change in well (specify) _____
- Date of first liquid injection or waste disposal: July 1, 1983.

PROPOSED WORK ORDER

THIS IS AN ESTIMATE ONLY:

ACTUAL INFORMATION MUST BE SUBMITTED ON FORM IV-37 UPON COMPLETION

- Estimated depth of completed well 6850 feet Rotary X / Cable tools ___ /
- Approximate water strata depths: Fresh, 50-90 feet; salt, _____ feet.
- Approximate coal seam depths: 400, 1025 Is coal being mined in the area? Yes ___ / No X /
- GEOLOGICAL TARGET FORMATION Salina Group Depth 6720 feet (top) to 6850 feet (bottom)
 - a) Virgin reservoir pressure in target formation NA psig; Source _____
 - b) Estimated reservoir fracture pressure NA psig (BHFP)
 - c) Perforation intervals NA Open-hole intervals NA

MAXIMUM PROPOSED INJECTION OPERATIONS

Volume per hour: 12,000 gal. Bottom hole pressure: 3800 psig

DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED - PLUS ADDITIVES

Fresh Water

SPECIFICATION FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL None

FILTERS (IF ANY) None

27) CASING AND TUBING PROGRAM

CASING OR TUBING TYPE	SPECIFICATIONS					FOOTAGE INTERVALS		CEMENT FILL-UP OR SACKS Cubic ft.	PACKERS
	Size	Grade	Weight per ft.	New	Used	For drilling	Left in well		
Conductor	13 3/8"	J55	48.00	X		100	100	CTS	Kinds
Fresh water									CUP
Coal									Sizes
Intermediate	9 5/8"	J55	40.00	X		1800	1800	to Surface	7" X 4 1/2
Production	7"	J55	26.00	X		6840	6840	to Surface	Depths set
Tubing	4 1/2"	J55	11.60	X			6850	None	6830
Liners									Perforations
									Top Bottom
									6825

8) Copies of this Permit Application and the enclosed plat and reclamation plan have been mailed or delivered by hand to the above named coal operator, coal owner(s), and coal lessee on or before the day of the mailing or delivery of this Permit Application to the Department of Mines at Charleston, West Virginia.

The person signing this document shall make the following certification:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document 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.

PPG Industries, Inc.
Well Operator

By [Signature]
Its Vice President Industrial
Chemicals-U.S.

W A I V E R

The undersigned coal operator _____ / owner _____ / 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.

Date: _____, 19____.

By: _____

Its _____

OFFICE USE ONLY

PERMIT

Permit number 47-051-0703

April 18 19 83
Date

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 prior to the construction of roads, locations and pits for any permitted work. (Refer to No. 10)

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.

Permit expires December 18, 1983 unless work is commenced prior to that date and prosecuted with due diligence.

Bond:	Agent:	Plat:	Casing:	Fee:
Blanket	O.K. n.y.	[Signature]	[Signature]	51857

[Signature]
Administrator, Office of Oil and Gas