



DIVISION OF ENVIRONMENTAL PROTECTION

CECIL H. UNDERWOOD
GOVERNOR

10 McJunkin Road
Nitro, WV 25143-2506

JOHN E. CAFFREY
DIRECTOR

DOEP/OAG-1245

August 18, 1997

Mr. Charles Stout
Applied Mechanics Corporation
Route 1, Box 41-J
Bridgeport, West Virginia 26330

Dear Mr. Stout:

Enclosed you will find Underground Injection Control Permit Number UIC2D0871926 dated the eighteenth day of August, 1997. The permit consists of pages one (1) through eight (8). Be advised that the duration of the permit is for a period of five (5) years from the effective date August 18, 1997.

Also be advised that all conditions established by UIC Permit Number UIC2D0871926, either expressly or incorporated by reference, must be strictly adhered to. All monitoring forms shall be submitted to the Office of Oil and Gas in a manner and at the frequency prescribed. The monitoring forms will be compared with the scope of permitted activity to verify compliance.

Please review the permit carefully and be aware of all permit conditions. Compliance of all permit conditions will be strictly enforced.

The operation of this injection well facility in general, including maintenance of all related surface equipment, shall be conducted so as to preclude any unlawful discharge of waste materials into the surface or ground waters of this state.

Sincerely,

A handwritten signature in cursive script that reads "Michael W. Lewis".

Michael W. Lewis
UIC Program Director
Office of Oil and Gas

MWL/kh

Enclosures as stated

API WELL NO. 087-1926
OPERATOR'S WELL NO. HARPER 1
UIC PERMIT NO. UIC2D0871926

UNDERGROUND INJECTION CONTROL PERMITS
FOR
DIVISION OF ENVIRONMENTAL PROTECTION,
OFFICE OF OIL AND GAS AND OFFICE OF WATER RESOURCES
FOR
CLASS II INJECTION WELLS
BRINE DISPOSAL

This document consists of the Underground Injection Control Permit required by the Division of Environmental Protection, Office of Oil and Gas, and the Office of Water Resources.

The Underground Injection Control Permit No. UIC2D0871926 consists of the terms of Form WW-3 (see Attachment A), Attachment B and of the following terms and conditions:

1. The requirements of Section 13.06, and 13.12, Series IX of the West Virginia Administrative Regulations of the State Environmental Quality Board are hereby incorporated by reference as terms and conditions.
2. All reports required by this permit shall be submitted to the Office of Oil and Gas with the exception stated in paragraph 3 below. The frequency of reporting shall be that required by the Chief of the Office of Oil and Gas.
3. The following shall be reported immediately to the Chief of the Office of Water Resources in accordance with Section 13.06(d) and Section 13.12(1)(6), Series IX, of the West Virginia Administrative Regulations of the State Environmental Quality Board.
 - (a) Any monitoring or other information which indicates that any contaminant may cause an endangerment to an underground source of drinking water;

- (b) Any non-compliance with a permit condition or any malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water; and
 - (c) Any non-compliance which may endanger health or environment.
4. The applicant must satisfy the requirement of the Office of Oil and Gas regarding any corrective action needed on all known wells penetrating the injection zone within the area of review. This must be done in a manner which satisfies the requirements of Section 13.07(b), Series IX, of the West Virginia Administrative Regulations of the State Environmental Quality Board.
 5. This permit is for authorization of injection of only fluids as defined for Class II wells in Series IX Regulations Section 4.02 of Chapter 22-11. The fluids to be injected shall only be from those sources listed in the permit application. Additional sources of fluids may be approved upon written request by the permittee.
 6. The maximum wellhead injection pressure is calculated as 900 psig.
 7. The permittee shall provide for security at the injection facility to guard against illegal or unauthorized dumping and injection at the injection facility.
 8. The permittee shall sample and analyze injection fluids upon request by the Office of Oil and Gas at a frequency not to exceed twice a year. Analyses shall cover all parameters listed on Attachment B of this permit.
 9. The permittee shall monitor daily and report monthly monitoring results. These reports shall be submitted to the Office of Oil and Gas, Division of Environmental Protection, on the appropriate forms (Regulation 38 CSR 18-7.5).
 10. Authorization to inject is contingent upon submission and approval of the Office of Oil and Gas Form WR-37 for each well. Construction modifications from the proposed work plan (O&G Form WW-3) and mechanical integrity will be evaluated at this time. Operational conditions will be finalized at this time. Upon approval of Form WR-37, conditions established on this form are incorporated by reference as conditions of this permit. FORM WR-37 SHALL BE SUBMITTED WITHIN 30 DAYS OF THE EFFECTIVE DATE OF THE UIC PERMIT.

11. A well head pressure gauge shall be installed and maintained on the injection tubing to facilitate inspection and ensure compliance of maximum injection pressures as approved on Oil and Gas Form WR-37. A daily reading of the injection pressure shall be taken and reported on Form WR-40.
12. The permittee shall monitor the 2 3/8" X 7" and 7" X 9 5/8" casing annuli with pressure sensitive devices or with such a method as approved or required by the Office of Oil and Gas to allow early detection of any leaks from the injection zone or casing. The results of such monitoring shall be reported monthly on Form WR-40.
13. The area of review is designated as a 1/4 mile radius around the injection project.
14. The permittee shall fulfill the requirements of the Office of Oil and Gas regarding maintaining financial responsibility and resources to close, plug, and abandon permitted wells.
15. The herein-described activity is to be extended, modified, added to, made, enlarged, acquired, constructed or installed, and operated, used and maintained strictly in accordance with the terms and conditions of this permit; with the information submitted with the Permit Application No. UIC2D0871926; with the plan of maintenance and method of operation thereof submitted with such application(s); and with any applicable rules and regulations promulgated by the State Environmental Quality Board.
16. Failure to comply with the terms and conditions of this permit, with the plans and specifications submitted with the Permit Application No. UIC2D0871926 and with the plan of maintenance and method of operation thereof submitted with such application(s) shall constitute grounds for the revocation or suspension of this permit and for the invocation of all the enforcement procedures set forth in Article 11, Chapter 22, of the Code of West Virginia.
17. This permit is issued in accordance with the provisions of Article 11, Chapter 22, of the Code of West Virginia and is transferable under the terms of Section 7 of said article.

18. The operation of this injection well facility in general, including maintenance of all related surface equipment, shall be conducted so as to preclude any unlawful discharge of waste materials into the surface or ground waters of this State.
19. The permittee must satisfy the requirement of the Office of Oil and Gas for plugging and abandonment of permitted injection wells in such a manner as to ensure that no fluid movement occurs either from the injection zone into an underground source of drinking water or from one underground source of drinking water to another (as required by Section 13.07(f) of the West Virginia Administrative Regulations of the State Environmental Quality Board, Series IX).

Date: August 18, 1997

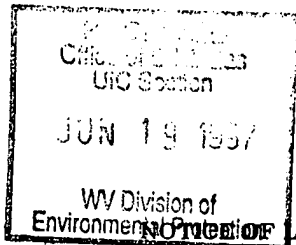
John E. Caffrey
Director
Division of Environmental Protection

By: Michael W. Jarvis

Title: VIC Program Director

ATTACHMENT A

7/85



- 1) Date: May 14, 1997
- 2) Operator's Well No. C. T. Harper #1
- 3) SIC Code 1310
- 4) API Well NO. 47 - 087 - 1926
State County Permit
- 5) UIC Permit No. 2D0871926

STATE OF WEST VIRGINIA
LIQUID INJECTION OR WASTE DISPOSAL WELL WORK PERMIT APPLICATION
for the
DEPARTMENT OF ENERGY, OIL AND GAS DIVISION

- 6) WELL TYPE: Liquid injection / Gas injection (not storage) / Waste disposal
- 7) LOCATION: Elevation: 778 Watershed: Pocatalico
District: Harper County: Roane Quadrangle: Walton
- 8) WELL OPERATOR Applied Mechanics Corp.
Address Rt. 1, Box 41-J
Bridgeport, WV 26330
- 9) DESIGNATED AGENT Charles L. Stout
Address Rt. 1, Box 41-J
Bridgeport, WV 26330
(304) 623-9355
- 10) OIL & GAS INSPECTOR TO BE NOTIFIED
Name Homer Daugherty
Address Linden Rt., Box 6
Looneyville, WV 25259
- 11) DRILLING CONTRACTOR:
Name Not Available
Address _____
- 12) PROPOSED WELL WORK: Drill / Drill deeper / Redrill / Stimulate
Plug off old formation / Perforate new formation / Convert
Other physical change in well (specify) _____
- 13) GEOLOGICAL TARGET FORMATION, Weir, Squaw, Berea Depth _____ feet (top) to _____ feet (bottom)
- 14) Estimated depth of completed well, (or actual depth of existing well) 2,400 ft.
- 15) Approximate water strata depths; Fresh, 200 feet; salt, 650 feet.
- 16) Approximate coal seam depths: None
- 17) Is coal being mined in the area? Yes / No
- 18) Virgin reservoir pressure in target formation 2,000 psig. Source Halliburton
- 19) Estimated reservoir fracture pressure N.A. psig (BHFP)
- 20) MAXIMUM PROPOSED INJECTION OPERATIONS: Volume per hour: 10 Bbls. Bottom hole pressure 1,843
- 21) DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED, INCLUDING ADDITIVES:
Produced Saltwater
- 22) FILTERS (IF ANY): None
- 23) SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL: None

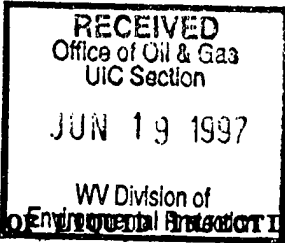
24) CASING AND TUBING PROGRAM

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									Kinds
Fresh water									<u>Tension</u>
Coal									Sizes <u>2" x 7"</u>
Intermediate	<u>9 5/8"</u>		<u>32#</u>			<u>175'</u>	<u>175'</u>	<u>surf</u>	
Production	<u>7"</u>	<u>J-55</u>	<u>20#</u>			<u>1984'</u>	<u>1984'</u>	<u>1000'</u>	Depths set <u>1,980'</u>
Tubing	<u>2 3/8</u>		<u>4#</u>			<u>2000'</u>	<u>2000'</u>		
Liners									Perforations: Top _____ Bottom _____
									<u>Open hole</u>

- 25) APPLICANT'S OPERATING RIGHTS were acquired from Scharp Resources Ltd., Inc.
by deed / lease / other contract / dated _____, 19____, of record in the
Roane County Clerk's office in Spencer, WV Book 116 at page 619

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

h. #
12694



- 1) Date May 14, 1997
Operator's
- 2) Well No. C. T. Harper
- 3) SIC Code 1310
- 4) API Well No. 47 - 087 - 1926
State County Permit

STATE OF WEST VIRGINIA

NOTICE OF LIQUID INJECTION OR WASTE DISPOSAL WELL WORK PERMIT APPLICATION
for the

OFFICE OF OIL AND GAS, DIVISION OF ENVIRONMENTAL PROTECTION

6) SURFACE OWNER(S) OF RECORD TO BE SERVED

(i) Name Mr. & Mrs. Harry R. Lynch
Address 901 Lauden Heights Rd.
Charleston, WV 25314

(ii) Name _____
Address _____

(iii) Name _____
Address _____

7 (i) COAL OPERATOR _____
Address _____

7 (ii) COAL OWNER(S) WITH DECLARATION ON RECORD:
Name _____
Address _____

7 (iii) COAL LESSEE WITH DECLARATION ON RECORD:
Name _____
Address _____

TO THE PERSON(S) NAMED ABOVE: You should have received this Form and the following documents:

- (1) The Application for a Liquid Injection or Waste Disposal Well Work Permit on Form WW-3(B), which sets out the parties involved in the drilling or other work, and
- (2) The plat (surveyor's map) showing the well location on Form WW-6; and
- (3) The Construction and Reclamation Plan on Form WW-9 (unless the well work is only to plug a well), which sets out the plan for erosion and sediment control and for reclamation for the site and access road.

The date proposed for the first injection or waste disposal is _____, 19____.

THE REASON YOU RECEIVED THESE DOCUMENTS IS THAT YOU HAVE RIGHTS REGARDING THE APPLICATION WHICH ARE SUMMARIZED IN THE "INSTRUCTIONS" ON THE REVERSE SIDE OF THE COPY OF THE APPLICATION (FORM WW-3(B)) DESIGNATED FOR YOU. HOWEVER, YOU ARE NOT REQUIRED TO TAKE ANY ACTION AT ALL.

Take notice that under Chapter 22B of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a Well Work Permit with the Chief of the Office of Oil and Gas, West Virginia Division of Environmental Protection, with respect to a well at the location described on the attached Application and depicted on attached form WW-6. Copies of this Notice, the Application, the plat, and the Construction and Reclamation Plan have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.

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.

Applied Mechanics Corp.
Well Operator
By Charles Stacy
Its President

PH: (304) 623-9355

ATTACHMENT B

Injection Fluid Analyses Parameters

<u>Parameter</u>	<u>Ranges</u>
PH	>2 - 10
TDS	0 - 275,000 mg/l
TSS	0 - 1000 mg/l
Aluminum	0 - 10 mg/l
Arsenic	0 - 10 mg/l
Barium	0 - 1500 mg/l
Cadmium	0 - 2 mg/l
Chromium	0 - 1 mg/l
Iron	0 - 1000 mg/l
Lead	0 - 7.5 mg/l
Magnesium	0 - 5000 mg/l
Manganese	0 - 15 mg/l
Potassium	0 - 5000 mg/l
Sodium	0 - 110,000 mg/l
Zinc	0 - 15 mg/l
Surfactants	0 - 10 mg/l
TKN	0 - 25 mg/l
Oil and Grease	0 - 100 mg/l
TOC	0 - 10,000 mg/l
COD	0 - 30,000 mg/l
Acidity	0 - 500 mg/l
Chloride	0 - 250,000 mg/l
Sulfate	0 - 500 mg/l
Cyanide	0 - 1 mg/l
Phenols	0 - 10 mg/l
Calcium	0 - 60,000 mg/l
BNA - Extractables	Trace
Purgeable Aromatics	Trace
Purgeable Halocarbons	Trace
PCBs	<MDL or 50 ppm