LATITUDE 39° 55' 00"

7.5' OGIS topo location

7.5' loc  0.955  15' loc  

0.32  (calc.)

Company _________________________

Farm ___________________________

Quad  BUSINESSBURG

County  MARSHALL

District  CLAY

WELL LOCATION MAP

File No. 051-702
STATE OF WEST VIRGINIA
DEPARTMENT OF MINES
OIL AND GAS DIVISION

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL SALT X

LOCATION: ELEVATION 704 WATERSHED OHIO RIVER

SURFACE OWNER L.C.P. CHEMICALS INC. WEST VIRGINIA ACREAGE 228.02

OIL & GAS ROYALTY OWNER N.A. LEASE ACREAGE N.A.

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 CLEANOUT AND REPLUG RINE WELL 99 END.

WELL OPERATOR L.C.P. CHEMICALS INC. DESIGNATED AGENT A.R. MORRIS PLANT MANAGER

ADDRESS P.O. DRAWER 3 STATE ROUTE 2 ADDRESS P.O. DRAWER "H" STATE ROUTE 2

DATE 11-19 OPERATORS WELL NO. 14 API WELL NO. 41-00-0708

STATE COUNTY PERMIT

SPARTAN TOWNSHIP
MOUNDSVILLE COUNTRY CLUB

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) John W. Dull
R.P.E. # 5214 L.L.S. # 57

PLACE SEAL HERE

FILE NO.
DRAWING NO.
SCALE 1" = 800'
MINIMUM DEGREE OF ACCURACY 1/2400
PROVEN SOURCE OF ELEVATION SQUARE S.E. CORNER
POST FOOTER ELECTRICAL SUBSTATION ELEV. 736.73

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS FORM IV-6 (8-78)
**IV-35**

(Rev 8-81)

**State of West Virginia**

**Department of Mines**

**Oil and Gas Division**

---

**WELL OPERATOR'S REPORT OF**

**DRILLING, FRACKING AND/OR STIMULATING, OR PHYSICAL CHANGE**

**BRINE WELL**

**WELL TYPE:** Oil / Gas / Liquid Injection / Waste Disposal /

(If "Gas," Production / Underground Storage / Deep / Shallow /)

**LOCATION:**

Elevation: 704.51 Watershed: Ohio River

District: Clay County Marshall Quadrangle Businessburg, OH

---

**COMPANY:** LCP Chemicals - W. Va. Inc.

**ADDRESS:** P.O. Drawer J, Moundsville, WV 26041

**DESIGNATED AGENT:** A. R. Morris, Plant Manager

**ADDRESS:** P.O. Drawer J, Moundsville, WV 26041

**SURFACE OWNER:** Same

**ADDRESS:**

**MINERAL RIGHTS OWNER:** Same

**ADDRESS:**

**OIL AND GAS INSPECTOR FOR THIS WORK:** Robert Lowther

**ADDRESS:** Middlebourne, WV 26149

**PERMIT ISSUED:** June 29, 1982

**DRILLING COMMENCED:** Nov. 1, 1982

**DRILLING COMPLETED:** Jan. 13, 1983

---

**IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED ON N/A**

---

**GEOLOGICAL TARGET FORMATION:** Salina

**Depth of completed well:** 6703 feet

**Rotary X / Cable Tools**

**Water strata depth:** Fresh 105 & 920 feet;

**Salt:** 6581 feet

**Coal seam depths:** 82'-84' and 100'-105' Is coal being mined in the area? Yes

**Not under LCP**

---

**OPEN FLOW DATA**

**Producing formation:** Salina

**Pay zone depth:** 6581 feet

**Initial open flow** None Mcf/d

**Oil:** Initial open flow None Bbl/d

**Final open flow** None Mcf/d

**Final open flow** None Bbl/d

**Time of open flow between initial and final tests:** hours

**Static rock pressure:** 0- psig(surface measurement) after 0-hours shut in

(If applicable due to multiple completion--)

**Second producing formation** N/A

**Pay zone depth:** feet

**Gas:** Initial open flow None Mcf/d

**Oil:** Initial open flow None Bbl/d

**Final open flow** None Mcf/d

**Oil:** Initial open flow None 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)
Well completed with 7" casing installed and cemented from bottom of upper salt section 6677' up to bottom of Marcellus shale at 5725' (measured depth). Installed 4½" and 3½" OD center tube suspended from well head to 6676' for water recirculation to produce and/or develop the well as a brine production well.

### WELL LOG

<table>
<thead>
<tr>
<th>FORMATION</th>
<th>COLOR</th>
<th>HARD OR SOFT</th>
<th>TOP FEET</th>
<th>BOTTOM FEET</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gravel &amp; Sand</td>
<td></td>
<td></td>
<td>0</td>
<td>73</td>
<td></td>
</tr>
<tr>
<td>Shale</td>
<td></td>
<td></td>
<td>73</td>
<td>82</td>
<td></td>
</tr>
<tr>
<td>Coal</td>
<td></td>
<td></td>
<td>82</td>
<td>84</td>
<td></td>
</tr>
<tr>
<td>Shale-Lime</td>
<td></td>
<td></td>
<td>84</td>
<td>100</td>
<td>Water 105' - Est. 1&quot; stream</td>
</tr>
<tr>
<td>Coal</td>
<td></td>
<td></td>
<td>100</td>
<td>105</td>
<td></td>
</tr>
<tr>
<td>Shale-Lime-Med</td>
<td></td>
<td></td>
<td>105</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td>Shale-Red Rock</td>
<td></td>
<td></td>
<td>250</td>
<td>535</td>
<td></td>
</tr>
<tr>
<td>Soft Shale</td>
<td></td>
<td></td>
<td>535</td>
<td>1170</td>
<td>Water 920' - Estimated additional 1&quot; stream</td>
</tr>
<tr>
<td>Lime - Med</td>
<td></td>
<td></td>
<td>1170</td>
<td>1285</td>
<td></td>
</tr>
<tr>
<td>Sand &amp; Shale</td>
<td></td>
<td></td>
<td>1285</td>
<td>1305</td>
<td></td>
</tr>
<tr>
<td>White Sand</td>
<td></td>
<td></td>
<td>1305</td>
<td>1390</td>
<td></td>
</tr>
<tr>
<td>Lime &amp; Slate</td>
<td></td>
<td></td>
<td>1390</td>
<td>1640</td>
<td>9-5/8&quot; casing set 1583'</td>
</tr>
<tr>
<td>Shale &amp; Slate</td>
<td></td>
<td></td>
<td>1640</td>
<td>5621</td>
<td></td>
</tr>
<tr>
<td>Marcellus Shale - Soft</td>
<td></td>
<td></td>
<td>5621</td>
<td>5725</td>
<td></td>
</tr>
<tr>
<td>Lime &amp; Chert Hard</td>
<td></td>
<td></td>
<td>5725</td>
<td>5960</td>
<td></td>
</tr>
<tr>
<td>Oriskiny Sand - Hard</td>
<td></td>
<td></td>
<td>5960</td>
<td>6050</td>
<td></td>
</tr>
<tr>
<td>Lime &amp; Shale - Med. to Hard</td>
<td></td>
<td></td>
<td>6050</td>
<td>6581</td>
<td></td>
</tr>
<tr>
<td>Salt - Soft</td>
<td></td>
<td></td>
<td>6581</td>
<td>6680</td>
<td>7' casing 6671'</td>
</tr>
<tr>
<td>Anhydrite - Med.</td>
<td></td>
<td></td>
<td>6680</td>
<td>6691</td>
<td></td>
</tr>
<tr>
<td>Salt - Soft Salina@ T.D.</td>
<td></td>
<td></td>
<td>6691</td>
<td>6703</td>
<td>T.D.</td>
</tr>
</tbody>
</table>

(Attach separate sheets as necessary)

LCP CHEMICALS - WEST VIRGINIA, INC.

Well Operator

By: [Signature] A. R. Morris, Plant Manager

Date: March 7, 1983

Prepared By: Robert C. Sellers

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 any encountered in the drilling of a well."
STATE OF WEST VIRGINIA
OFFICE OF OIL AND GAS - DEPARTMENT OF MINES

OIL AND GAS WELL PERMIT APPLICATION

WELL TYPE: Oil / Gas / Brine X /

(If "Gas", Production _ / Underground storage _ / Deep _ / Shallow _ /)

LOCATION: Elevation: 704.51 Watershed: Ohio River
District: Clay County: Marshall Quadrangle: Businessburg, OH

WELL OPERATOR LCP Chemicals - W. Va. Inc.
Address P. O. Drawer "J"
Moundsville, WV 26041

DESIGNATED AGENT A. R. Morris, Plant Manager
Address P. O. Drawer "J"
Moundsville, WV 26041

OIL AND GAS ROYALTY OWNER Same
Address

Acreage 227.86

SURFACE OWNER Same
Address

Acreage 227.86

FIELD SALE (IF MADE TO): NAME 
Address

OIL AND GAS INSPECTOR TO BE NOTIFIED: NAME 
Address

The undersigned well operator is entitled to operate for purposes at the above location under a deed X / lease / other contract dated 4/30 , 1980 , to the undersigned well operator from Allied Chemical Corporation.

(If said deed, lease, or other contract has been recorded:)

Recorded on May 5 , 1980 in the office of the Clerk of County Commission of

Marshall County, West Virginia, in Book page 437. A permit is requested as follows:

PROPOSED WORK: Drill X / Drill Deeper / Redrill / Fracture or stimulate / Plug off old formation / Perforate new formation / Other physical change in well (specify)

planned as shown on the work order on the reverse side hereof.

The above named coal operator, coal owner(s), and coal lessee are hereby notified that any objection they wish to make or are required to make by Code 22-4-3 must be filed with the Department of Mines within fifteen (15) days after receipt of this Application by the Dept. Copies of this Permit Application and the enclosed plat and reclamation plan have been mailed by registered mail or delivered by hand to the above named coal operator, coal owner(s), and coal lessees on or before the day of the mailing or delivery of this Application to the Department of Mines at Charleston, West Virginia.

PLEASE SUBMIT COPIES OF ALL GEOPHYSICAL LOGS DIRECTLY TO:

LCP CHEMICALS - WEST VIRGINIA, INC.
Well Operator

By: A. R. Morris

Plant Manager
PROPOSED WORK ORDER

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

DRILLING CONTRACTOR (IF KNOWN)  S. W. Jack Drilling Co. (Tentatively)

Address  P. O. Box 697

Indiana, PA  15701

GEOLOGICAL TARGET FORMATION  Salina

Estimated depth of completed well  6650' feet.  Rotary X / Cable tools /

Approximate water strata depths:  Fresh  1200' feet; salt  6470' feet.

Approximate coal seam depths:  150' (1 ft.), 450' (1 ft.), 900' (1 ft.)

Is coal being mined in this area:  Yes X / No /

CASING AND TUBING PROGRAM

Casing or Tubing Type  |  Specifications  |  Footage  |  Cement Fill-Up or Sacks  |  Packers

<table>
<thead>
<tr>
<th>Size</th>
<th>Grade</th>
<th>Weight</th>
<th>per ft</th>
<th>New</th>
<th>Used</th>
<th>For Dril-</th>
<th>Left in</th>
<th>Well</th>
<th>Cubic ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>13/8</td>
<td>H-40</td>
<td>48</td>
<td>X</td>
<td>90</td>
<td>90</td>
<td>150 SX</td>
<td>Brown</td>
<td>Hanger</td>
<td></td>
</tr>
<tr>
<td>9.5/8</td>
<td>H-40</td>
<td>32.3</td>
<td>X</td>
<td>1600</td>
<td>1600</td>
<td>500 SX(SUF)</td>
<td>Packer</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SAME AS FRESH WATER ABOVE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SAME AS FRESH WATER ABOVE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production 7&quot;</td>
<td>N-80</td>
<td>26</td>
<td>X</td>
<td>6600</td>
<td>200 SX</td>
<td>Depth set 6150</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top</td>
<td>Bottom</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liners 5 1/2&quot;</td>
<td>J-55</td>
<td>15.5</td>
<td>X</td>
<td>450' No</td>
<td>Perforations: No</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 18, or in lieu thereof the other security allowed by Code §22-4-5, (iii) For: IV-2, "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 §22-4-12c, and (v) if applicable, the consent required by Code §22-4-8a from the owner of any water well or drilling 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 5-23-83

BY

_____________________________________________________

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:
STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION
SECTION OF OIL AND GAS

AFFIDAVIT OF PLUGGING AND FILLING WELL

AFFIDAVIT SHOULD BE IN TRIPLICATE, one copy mailed to the Division, one copy to be retained by the Well Operator and the third copy (and extra copies if required) should be mailed to each coal operator at their respective addresses.

Farm name: HANLIN CHEMICALS Operator Well No.: 14

LOCATION: Elevation: 704.51 Quadrangle: BUSINESSB slugg
Latitude: 4920 Feet South of 39 Deg. 55 Min. 0 Sec.
Longitude: 1880 Feet West of 80 Deg. 47 Min. 30 Sec.

Well Type: OIL GAS OTHER: BRINE

Company: Allied Signal Inc.
PO Box 1
Moundeville, WV 26014

Agent: Don P. DeNeon

Coal Operator or Owner

Permit Issued: 01/26/98

STATE OF WEST VIRGINIA,
County of ss:

Union Drilling and James R. Harry, Consultant, being first duly sworn according to law depose and say that they are experienced in the work of plugging and filling oil and gas wells and were employed by the above named operator and participated in the work of plugging and filling the above well, and Michael W. Lewis, Oil and Gas Inspector representing the Director, say that said work was commenced on the 28 day of January, 1998, and that the well was plugged and filled in the following manner:

<table>
<thead>
<tr>
<th>Type</th>
<th>From</th>
<th>To</th>
<th>Pipe Removed</th>
<th>Left</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class A w/Latex</td>
<td>5.288'</td>
<td>5.900'</td>
<td>1318/81' 0'</td>
<td>78'</td>
</tr>
<tr>
<td>6% Gel</td>
<td>5.149'</td>
<td>5.988'</td>
<td>9158/4' 0'</td>
<td>1,600'</td>
</tr>
<tr>
<td>Class A w/Latex</td>
<td>4.780'</td>
<td>5.149'</td>
<td>7&quot; 5.260' 1,443'</td>
<td></td>
</tr>
<tr>
<td>6% Gel</td>
<td>2.861'</td>
<td>4.780'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Class A w/Latex</td>
<td>1.649'</td>
<td>2.861'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fresh Gel (6%)</td>
<td>0'</td>
<td>1,649'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bridge Plug</td>
<td>5.950'</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Description of monument: 9(5/8) welded pipe w/2" vent (6') length and that the work of plugging and filling said well was completed on the 1 day of July 1998.

Sworn and subscribed before me this 18th day of August 1998.

[Signature]
Notary Public

Oil and Gas Inspector: [Signature]