

ADEQ

ARKANSAS
Department of Environmental Quality

CERTIFIED MAIL 7005 1160 0000 3835 8281
RETURN RECEIPT REQUESTED

October 31, 2007

Mr. Tom Hammons, Environmental Engineer
Great Lakes Chemical Corporation, A Chemtura Company
P. O. Box 7020
El Dorado, AR 71759

**RE: AFIN: 70-00012; Permit No. 3883-WR-3
Central Plant Brine Management and Disposal System
Section 1 - Township 18 South - Range 16 West, El Dorado, Union County**

Dear Mr. Hammons:

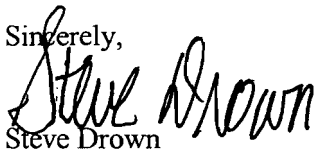
The enclosed permit is your authority to operate and maintain the Central Plant Brine Management and Disposal System as set forth in your permit renewal application dated April 2, 2007.

After consideration of the completed application, the public comments on the record, the requirements of the Arkansas Water and Air Pollution Control Act (A.C.A. Sec. § 8-4-101 et seq) and pertinent regulations, the Department has determined that your permit for the construction, operation, and maintenance of a water pollution control system be issued and effective on the date specified in the permit. This decision is final unless a Commission review has been properly requested under Arkansas Pollution Control and Ecology Commission (APCEC) Regulation No. 8, within 30 days after service of this decision. If you wish to request a Commission review of this decision, you may submit a Request for Commission review and Adjudicatory Hearing pursuant to APCEC Regulation No. 8, §2.1.14. Any other person, who submitted comments on the record, may request an adjudicatory hearing and Commission review pursuant to APCEC Regulation 8, §2.1.13 and §2.5.3. Any request must be in the form and submitted in the manner required by APCEC Regulation No. 8, as amended.

In addition to the permit conditions contained herein, the permittee must comply with all other applicable State and Federal Regulations, including, but not limited to, Acts 1059, 1060, and 1061 of 2003, and the regulations promulgated thereunder by the Arkansas Natural Resources Commission.

If you have any questions, please contact Linda Hanson of the Permits Branch at (501) 682-0646.

Sincerely,



Steve Drown
Chief, Water Division

cc: permit file: AFIN: 70-00012; Permit No. 3883-WR-3
John Lamb, District Field Inspector, Union County
Chuck Campbell, P. E. GBMc and Assoc.



PERMIT

ISSUED BY

STATE OF ARKANSAS
DEPARTMENT OF ENVIRONMENTAL QUALITY
5301 NORTHSHORE DRIVE
NORTH LITTLE ROCK, ARKANSAS 72218-5317

AFIN: 70-00012
Permit No: 3883-WR-3

Effective Date: November 1, 2007
Expiration Date: October 31, 2012

To: Great Lakes Chemical Corporation, A Chemtura Company
Central Plant
P. O. Box 7020
El Dorado, AR 71730

This permit is your authority to operate and maintain the Central Plant Brine Management and Disposal System at the Central Plant located in Section 1, Township 18 South, Range 16 West, in Union County as set forth in your renewal application received April 2, 2007. This permit is issued subject to provisions of the Arkansas Water and Air Pollution Control Act (A.C.A. Sec. 8-4-101 et seq.) and the following conditions:

1. The disposal system shall be operated in accordance with the final plans and specifications approved by the Department of Environmental Quality.
2. The disposal system shall be operated by qualified personnel and maintained in good operating condition at all times.
3. By-passing of the disposal system is prohibited and will result in revocation of this permit and/or other appropriate enforcement action by the Department.
4. No additional extension or modification of the disposal system may be made without modification of this permit.
5. This permit may be revoked or modified whenever it is necessary, in the opinion of the Department, to prevent or abate pollution of any waters of the State.
6. Nothing herein contained shall be construed as releasing the permittee from any liability for damage to persons or property by reason of the installation, maintenance, or operation of the disposal system.
7. This permit is issued in reliance upon the statements and representations made in the initial application, the applications for modification, and the plans and specifications. The Department has no responsibility for the adequacy or proper functioning of the treatment system.
8. This is a No Discharge permit. No brine shall be discharged to the waters of the State. The permittee shall immediately notify the Department within twenty-four (24) hours if there is any discharge from the system.
9. The permittee shall comply with all applicable permit fee requirements for state permits as described in ADEQ Regulation No. 9. Failure to promptly remit all required fees shall be grounds for the Director to initiate enforcement action to terminate this permit under the provisions of Regulation No. 8.
10. See additional permit conditions nos. 11 - 18 attached.

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By: Steve Drown 31 Oct 07
Steve Drown, Chief, Water Division Date

11. This system is known as the Central Plant Brine Management and Disposal System located in Section 1, Township 18 South and Range 16 West, in Union County, Arkansas.
12. The Central Plant Brine Management and Disposal System will receive tail brine, recovered ground water and brine recovered from pipeline or operational spills generated from the plant's bromine extraction process. The tail brine and recovered ground water is disposed of through the Central Plant's tail brine system of Class V injection wells. Additional tail brine may be received from Great Lakes Chemical Corporation's West Plant and South Plant, and from Tetra Technologies and Albemarle's East Plant. No additional, secondary or unpermitted waste streams are to be routed to the tail brine system for storage or disposal.
13. This permit covers the holding facilities, emergency containment facilities, pipelines and tanks located at the Central Plant and Central Plant brine system.
14. After initial notification of any discharge, as stated in condition no. 8, the permittee shall follow up with a written summary report of such occurrence due with the annual report stated in condition no. 16. The written submission shall contain a description of the violation and its cause; the period of the violation, including times and dates, and if the violation has not been corrected, the anticipated time it is expected to continue; and, steps taken or planned to reduce, eliminate, and prevent the recurrence of the violation.
15. The brine wells in this disposal system are regulated by AOGC under Class V bromine related injection well permits. Upon changes in the system, such as additions or deletions of wells or pipelines, a new map shall be provided to the Department indicating the locations of the wells and pipelines.
16. An annual report shall be submitted and due by April 1 of the following calendar year. This report shall contain the volumes of tail brine disposed in the Central Plant Brine Management and Disposal System, including the volume of recovered ground water, brine recovered from pipeline or operational spills and volume from the additional tail brine from Great Lakes Chemical Corporation's West Plant and South Plant, and from Tetra Technologies and Albemarle's East Plant. The report shall also include any repairs conducted on the pipelines, any discharge occurrences and other system modifications.
17. If the Permittee wishes to continue the activity regulated under this permit after its expiration date, the Permittee must apply for and obtain a new permit. An administratively complete application must be submitted to the Department at least 120 days prior to the expiration date of this permit. The Director may grant permission to submit an application less than 120 days in advance, but not later than the expiration date of this permit.
18. The permit conditions of this permit will continue in effect past the expiration date pending issuance of a new permit provided that the Permittee has timely submitted a complete application as described in Condition No. 16 and, the Director, through no fault of the Permittee has not issued a new permit prior to the expiration date of this permit.



STATEMENT OF BASIS and PERMIT NARRATIVE

A R K A N S A S
Department of Environmental Quality

DATE: May 9, 2007 (rev. June 8, 2007)

ISSUING OFFICE:

Arkansas Department of Environmental Quality
Water Division, Permits Branch
5301 Northshore Drive
North Little Rock, AR 72118-5317

ADEQ EVALUATING STAFF: Laura Stuart, P.G.

PERMIT TYPE:

Permit Type: Industrial
Facility Type: Chemical Product and Manufacturing
Permit No. 3883-WR-3
AFIN: 70-00012

APPLICANT:	CONSULTANT:
Tom Hammons, Environmental Engineer	Chuck Campbell
Great Lakes Chemical Corporation, A Chemtura Company	GBMc & Associates
P. O. Box 7020	219 Brown Lane
El Dorado, AR 71730	Bryant, AR 72022
870-864-1557	501-847-7077

1. **FACILITY INFORMATION:**

SYSTEM NAME: Central Plant Brine Management & Disposal System
LOCATION: SE/4-S1-T18S-R16W
ZONE: 15
LATITUDE (N): 33° 11' 03"
LONGITUDE (W): 92° 42' 20"
DATUM: NAD 1983
QUADRANGLE: El Dorado West 7.5'
NEAREST CITY: El Dorado
COUNTY: Union
SIC: 2819
NAICS: 325188
FEE CODE: N/A
FEE AMOUNT: 0

APPLICATION RECEIVED DATE: April 2, 2007

FACILITY DESCRIPTION: Bromine is extracted from brine, is stored in above-ground cooling tanks and commingled with recovered

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groundwater. A portion of the brine is sent to the Albemarle West Plant for recovery and the spent tail brine is returned to the West Plant for disposal. The cooled brine is pumped to a pipeline distribution system to the Class V tail brine wells, which are permitted by the AOGC. Additional tail brine may be introduced from the GLCC West Plant, Tetra Technologies, Albemarle East Plant and GLCC South Plant.

DRIVING DIRECTIONS: 2 mi on Hwy 15 S from El Dorado and Hwy 82
PROCESS DESCRIPTION: ND UI
NEAREST STREAM: Bayou de Loutre & branches of Dry Creek
STREAM SEGMENT: 2E & 2D
REVISION REASON: permit renewal & modification
PREVIOUS PERMIT: 3883-WR-2
INSPECTOR: Lamb

2. GENERAL REQUIREMENTS

This permit covers the operation of surface facilities, such as tanks, temporary storage ponds, transmission lines and pumps, containment structures and any related structures at the facility, associated with the production and storage of feed brine and the disposal of spent or tail brine.

A. INTRODUCTION

This permit action is a renewal with modification of permit 3883-WR-2. Great Lakes Chemical Corporation, A Chemtura Company (GLCC) operates a bromine production facility in El Dorado, Arkansas. Production brine is pumped from the Smackover Formation at depths of approximately 8000 feet below ground surface.

This feed brine is transported to the plant where bromine is extracted. The spent brine that remains is transported via pipelines and reinjected back into the Smackover. This permit covers the transportation and storage facilities for the spent brine prior to reinjection, i.e., the brine field disposal system.

B. CHANGES FROM THE PREVIOUS PERMIT:

- 1) Removed "constructed" from permit condition no. 1 since the system is not new and does not need to be constructed.
- 2) Removed permit condition no. 2 since the system is not new and does not need to be constructed.
- 3) Permit condition no. 3 in 3883-WR-2 is now condition no. 2 in 3883-WR-3.
- 4) Permit condition no. 4 is now condition no. 3.
- 5) Condition no. 5 is now condition no. 4 and has been revised by removing the "volume and strength of the waste" reference.
- 6) Condition no. 6 is now condition no. 5.
- 7) Condition no. 7 is now condition no. 6.
- 8) Condition no. 8 is now condition no. 7.
- 9) Condition no. 9 is now condition no. 8 and the 24 hour notification

requirement has been added.

- 10) Condition no. 10 is now condition no. 9
- 11) Condition no. 10 in 3883-WR-3 was added to reference the additional permit conditions on page 2.
- 12) Condition no. 11 in 3883-WR-3 was added to include the location of the system.
- 13) Condition no. 12 has been revised in 3883-WR-3 to include tail brine from the Central, South, and West Plant systems, as well as tail brine from Tetra Technologies, Inc. and Albemarle East Plants.
- 14) Condition no. 12 was removed and replaced by condition nos. 17 and 18.
- 15) Condition no. 13 was removed as ADEQ does not permit the disposal wells, rather AOGC does and has been replaced by condition no. 15.
- 16) Condition no. 14 was removed, since ADEQ does not permit the disposal wells, nor the volumes, so there is no reason to include an limitations on volume increase, and has been replaced by condition no. 15.
- 17) Condition no. 16 in 3883-WR-2 was removed since GLCC no longer uses ponds for the storage of tail brine.
- 18) Condition no. 16 in 3883-WR-3 was added to include an annual reporting requirement, as well as spill reporting, in conjunction with condition no. 8.

3. BASIS FOR PERMIT CONDITIONS

The Arkansas Department of Environmental Quality has made a tentative determination to issue a permit for the no-discharge facility as described in the application. Permit requirements and conditions are based on regulations pursuant to the Arkansas Water and Air Pollution Control Act (Act 472 of 1949, as amended, Ark. Code Ann. § 8-4-101 et. seq.).

4. SOURCES FOR DOCUMENT DEVELOPMENT

- (A) Regulation No. 1, Regulation for the Prevention of Pollution by Salt Water and Other Oil Field Wastes Produced by Wells in All Fields or Pools
- (B) Regulation No. 2, Water Quality Standards for Surface Waters of the State of Arkansas, as amended.
- (C) Regulation No. 8, Administrative Procedures, as amended.
- (D) Regulation No. 9, Fee System for Environmental Permits, as amended.
- (E) ACT 165 of 1993, Public Notice Requirements
- (F) ACT 472 of 1949, as amended, Arkansas Water and Air Pollution Control Act

5. PUBLIC NOTICE

A public notice regarding this draft permit was sent to a newspaper having general circulation in the county of the facility for publication with a copy provided to the applicant. The public notice described the facility and the procedures used in issuing the permit. A 30-

day comment period followed the publication of the notice, during which the Department accepted written comments regarding the technical merits of the permit. In addition, a public hearing may have been held during which the Department accepted both written and oral comments. All comments were considered by the Director before a final permit decision was made. Those who submitted written comments or made oral comments for the record at a public hearing had legal standing to appeal the Director's final permit decision. The permit became final and effective 30 days following the Director's final permit decision.

For additional information, contact:

Permits Branch
Water Division
Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118-5317
(501) 682-0648