

To: File
From: John Legg
Date: May 19, 2016

John Legg
5/19/16

Subject: Class II Administrative Update R13-2840B
Chlorohydrin Remediation Area
Union Carbide Corporation, South Charleston, WV
Permit Application R13-2840B
Plant ID No. 039-00003

Timing

This update was received on March 14, 2016 and assigned to the writer for review on March 17, 2016. The company's legal advertisement ran on March 14, 2016, and the newspaper affidavit of publication arrived at the DAQ on March 24, 2016, the date the update was deemed complete.

Summary

The acid-washing procedure described below to clean the scaling from the packed-bed scrubber (A42PBS) is formally incorporated into the updated permit (R13-2840B) as part of the scrubber's routine maintenance program.

HCl emissions are estimated to increase by 0.23 tons per year. The changes made to R13-2840A (old permit) to arrive at R13-2840B (new permit) are documented in the compare file which is attached to this evaluation as Attachment A.

Process Description

During the acid-washing process, the pH of the system must be allowed to go acidic. This is done by running only process vapor and stopping the addition of caustic (HCl). This process normally takes about 4-5 hours each month. (Six hours per month is allowed in the updated permit.) During acid-washing, the procedure is to manually blow down water from the scrubber so some of the acidity goes to the process sewer. The acidic solution cleans the scaling from the system. Once the process is complete, caustic is re-introduced and the system returns to normal operation within a matter of a few minutes.

Potential HCl Emissions Increase (Resulting from Acid Washing Maintenance Activity)

⁽¹⁾ Total HCl created during acid washing:	6.95	lb/hr
Maximum duration of acid wash activity:	6	hr
Total HCl created over the 6-hr period:	41.7	lb
⁽²⁾ Total HCl in Scrubber System and from blow-down:	4.1	lb
Total potential emissions (41.7 lb - 4.1 lb):	37.65	lb
Total potential emissions [37.65 lb x (12 times/yr)/(2000lb/ton)]:	0.23	ton/yr

- (1) Assumes maximum process vapor contaminant concentrations and design maximum process flowrate.
- (2) Amount of HCl manually blown down from the scrubber system, i.e., permitted HCl emission rate (Section 4.1.4. of permit) of 0.71 lb/hr x 6 hr = 4.1 lb.

Attachment A

Compare File:

Updated Permit R13-2840B (New) Compared to R13-2840A (Old)

WordPerfect Document Compare Summary

Original document: Q:\AIR_QUALITY\J_LEGG\UNION
CARBIDE\R13-2840B\039-00003_PERM_13-2840A.wpd

Revised document: @PFDesktop\MyComputer\Q:\AIR_QUALITY\J_LEGG\UNION
CARBIDE\R13-2840B\039-00003_PERM_13-2840B.wpd

Deletions are shown with the following attributes and color:

~~Strikeout~~, **Blue** RGB(0,0,255).

Deleted text is shown as full text.

Insertions are shown with the following attributes and color:

Double Underline, **Redline**, **Red** RGB(255,0,0).

The document was marked with 23 Deletions, 39 Insertions, 0 Moves.

West Virginia Department of Environmental Protection

*Earl Ray Tomblin
Governor*

Division of Air Quality

*Randy C. Huffman
Cabinet Secretary*

Class II Administrative Update Permit



R13-2840**AB**

This permit is issued in accordance with the West Virginia Air Pollution Control Act (West Virginia Code §§ 22-5-1 et seq.) and 45 C.S.R. 13 — Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits and Procedures for Evaluation. The permittee identified at the facility listed below is authorized to construct the stationary sources of air pollutants identified herein in accordance with all terms and conditions of this permit.

Issued to:

**Union Carbide Corporation
South Charleston Facility
039-00003**

*John A**William F. Benedict**Durham*
Director

*Issued: January 23, 2014 • Effective: January 23, 2014***DRAFT**

Facility Location: South Charleston, Kanawha County, West Virginia
Mailing Address: PO Box 8361
South Charleston, WV
Facility Description: Groundwater/Soil remediation process.
SIC Codes: 2869
UTM Coordinates: 439.67 km Easting • 4,246.72 km Northing • Zone 17
Permit Type: Class II Administrative Update
Description of ~~Change~~:

~~Installation of a groundwater/soil remediation system at the Chlorobenzene Area using existing air pollution control devices.~~

Change: Specific requirements for scrubber maintenance (acid-washing of packed bed scrubber A42PBS) were established in the permit.

Any person whose interest may be affected, including, but not necessarily limited to, the applicant and any person who participated in the public comment process, by a permit issued, modified or denied by the Secretary may appeal such action of the Secretary to the Air Quality Board pursuant to article one [§§ 22B-1-1 et seq.], Chapter 22B of the Code of West Virginia. West Virginia Code §22-5-14.

The source is subject to 45CSR30. Changes authorized by this permit must also be incorporated into the facility's Title V operating permit. Commencement of the operations authorized by this permit shall be determined by the appropriate timing limitations associated with Title V permit revisions per 45CSR30.

Table of Contents

1.0. Emission Units 3

2.0. General Conditions 4

 2.1. Definitions 4

 2.2. Acronyms 4

 2.3. Authority 5

 2.4. Term and Renewal 5

 2.5. Duty to Comply 5

 2.6. Duty to Provide Information 5

 2.7. Duty to Supplement and Correct Information 6

 2.8. Administrative Permit Update 6

 2.9. Permit Modification 6

 2.10. Major Permit Modification 6

 2.11. Inspection and Entry 6

 2.12. Emergency 6

 2.13. Need to Halt or Reduce Activity Not a Defense 7

 2.14. Suspension of Activities 7

 2.15. Property Rights 7

 2.16. Severability 8

 2.17. Transferability 8

 2.18. Notification Requirements 8

 2.19. Credible Evidence 8

3.0. Facility-Wide Requirements 9

 3.1. Limitations and Standards 9

 3.2. Monitoring Requirements 9

 3.3. Testing Requirements 9

 3.4. Recordkeeping Requirements 10~~1~~

 3.5. Reporting Requirements 11

4.0. Source-Specific Requirements 12~~3~~

 4.1. Limitations and Standards 12~~3~~

 4.2. Testing Requirements 13~~4~~

 4.3. Monitoring and Recordkeeping Requirements 14~~5~~

 4.4. Reporting Requirements 16~~7~~

CERTIFICATION OF DATA ACCURACY 17~~8~~

2.3. Authority

This permit is issued in accordance with West Virginia Air Pollution Control Law W.Va. Code §§22-5-1 et seq. and the following Legislative Rules promulgated thereunder:

- 2.3.1. 45CSR13 – *Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Temporary Permits, General Permits and Procedures for Evaluation;*

2.4. Term and Renewal

- 2.4.1. This permit supercedes and replaces previously issued Permit R13-2840A. This permit shall remain valid, continuous and in effect unless it is revised, suspended, revoked or otherwise changed under an applicable provision of 45CSR13 or any applicable legislative rule.

2.5. Duty to Comply

- 2.5.1. The permitted facility shall be constructed and operated in accordance with the plans and specifications filed in Permit Applications R13-2840, R13-2840A, R13-2840B and any modifications, administrative updates, or amendments thereto. The Secretary may suspend or revoke a permit if the plans and specifications upon which the approval was based are not adhered to; [45CSR§§13-5.11 and 13-10.3]
- 2.5.2. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the West Virginia Code and the Clean Air Act and is grounds for enforcement action by the Secretary or USEPA;
- 2.5.3. Violations of any of the conditions contained in this permit, or incorporated herein by reference, may subject the permittee to civil and/or criminal penalties for each violation and further action or remedies as provided by West Virginia Code 22-5-6 and 22-5-7;
- 2.5.4. Approval of this permit does not relieve the permittee herein of the responsibility to apply for and obtain all other permits, licenses and/or approvals from other agencies; i.e., local, state and federal, which may have jurisdiction over the construction and/or operation of the source(s) and/or facility herein permitted.

2.6. Duty to Provide Information

The permittee shall furnish to the Secretary within a reasonable time any information the Secretary may request in writing to determine whether cause exists for administratively updating, modifying, revoking or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Secretary copies of records to be kept by the permittee. For information claimed to be confidential, the permittee shall furnish such records to the Secretary along with a claim of confidentiality in accordance with 45CSR31. If confidential information is to be sent to USEPA, the permittee shall directly provide such information to USEPA along with a claim of confidentiality in accordance with 40 C.F.R. Part 2.

and/or established or set forth in underlying documents. The Secretary, or his duly authorized representative, may at his option witness or conduct such test(s). Should the Secretary exercise his option to conduct such test(s), the operator shall provide all necessary sampling connections and sampling ports to be located in such manner as the Secretary may require, power for test equipment and the required safety equipment, such as scaffolding, railings and ladders, to comply with generally accepted good safety practices. Such tests shall be conducted in accordance with the methods and procedures set forth in this permit or as otherwise approved or specified by the Secretary in accordance with the following:

- a. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with 40 C.F.R. Parts 60, 61, and 63 in accordance with the Secretary's delegated authority and any established equivalency determination methods which are applicable. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4 or 45CSR§13-5.4 as applicable.
- b. The Secretary may on a source-specific basis approve or specify additional testing or alternative testing to the test methods specified in the permit for demonstrating compliance with applicable requirements which do not involve federal delegation. In specifying or approving such alternative testing to the test methods, the Secretary, to the extent possible, shall utilize the same equivalency criteria as would be used in approving such changes under Section 3.3.1.a. of this permit. If a testing method is specified or approved which effectively replaces a test method specified in the permit, the permit may be revised in accordance with 45CSR§13-4 or 45CSR§13-5.4 as applicable.
- c. All periodic tests to determine mass emission limits from or air pollutant concentrations in discharge stacks and such other tests as specified in this permit shall be conducted in accordance with an approved test protocol. Unless previously approved, such protocols shall be submitted to the Secretary in writing at least thirty (30) days prior to any testing and shall contain the information set forth by the Secretary. In addition, the permittee shall notify the Secretary at least fifteen (15) days prior to any testing so the Secretary may have the opportunity to observe such tests. This notification shall include the actual date and time during which the test will be conducted and, if appropriate, verification that the tests will fully conform to a referenced protocol previously approved by the Secretary.
- d. The permittee shall submit a report of the results of the stack test within sixty (60) days of completion of the test. The test report shall provide the information necessary to document the objectives of the test and to determine whether proper procedures were used to accomplish these objectives. The report shall include the following: the certification described in paragraph 3.5.1.; a statement of compliance status, also signed by a responsible official; and, a summary of conditions which form the basis for the compliance status evaluation. The summary of conditions shall include the following:
 1. The permit or rule evaluated, with the citation number and language;
 2. The result of the test for each permit or rule condition; and,
 3. A statement of compliance or noncompliance with each permit or rule condition.

[WV Code § 22-5-4(a)(~~15~~14-15) and 45CSR13]

3.4. Recordkeeping Requirements

- 3.4.1. **Retention of records.** The permittee shall maintain records of all information (including monitoring data, support information, reports and notifications) required by this permit recorded in a form suitable and readily available for expeditious inspection and review. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation. The files shall be maintained for at least five (5) years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. At a minimum, the most recent two (2) years of data shall be maintained on site. The remaining three (3) years of data may be maintained off site, but must remain accessible within a reasonable time. Where appropriate, the permittee may maintain records electronically (on a computer, on computer floppy disks, CDs, DVDs, or magnetic tape disks), on microfilm, or on microfiche.
- 3.4.2. **Odors.** For the purposes of 45CSR4, the permittee shall maintain a record of all odor complaints received, any investigation performed in response to such a complaint, and any responsive action(s) taken.
[45CSR§4. State-Enforceable only.]

3.5. Reporting Requirements

- 3.5.1. **Responsible official.** Any application form, report, or compliance certification required by this permit to be submitted to the DAQ and/or USEPA shall contain a certification by the responsible official that states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.
- 3.5.2. **Confidential information.** A permittee may request confidential treatment for the submission of reporting required by this permit pursuant to the limitations and procedures of W.Va. Code § 22-5-10 and 45CSR31.
- 3.5.3. **Correspondence.** All notices, requests, demands, submissions and other communications required or permitted to be made to the Secretary of DEP and/or USEPA shall be made in writing and shall be deemed to have been duly given when delivered by hand, or mailed first class with postage prepaid to the address(es) set forth below or to such other person or address as the Secretary of the Department of Environmental Protection may designate:

If to the DAQ:

Director
WVDEP
Division of Air Quality
601 57th Street, SE
Charleston, WV 25304-2345

If to the USEPA:

Associate Director
Office of Air Enforcement and Compliance Assistance
(3AP20)
U. S. Environmental Protection Agency
Region III
1650 Arch Street
Philadelphia, PA 19103-2029

4.0. Source-Specific Requirements

4.1. Limitations and Standards

- 4.1.1. All emissions of regulated pollutants from the Chlorohydrin (Area 42) Vapor Extractive System (A42VE) and Chlorobenzene Area Vapor Extractive System (CLBVE) shall be routed to the Thermal Oxidizer (A42INC).
- 4.1.2. All emissions of regulated pollutants from the Thermal Oxidizer shall be routed to the Packed Bed Scrubber (A42PBS).
- 4.1.3. Criteria pollutant emissions vented from the Packed Bed Scrubber A42PBS shall not exceed the following:

<u>Criteria Pollutant</u>	lb/hr	tpy
NO _x	0.10	0.44
CO	0.44	1.92
SO ₂	0.01	0.02
PM	0.01	0.01
VOC	3.46	15.07

- 4.1.4. Hazardous Air Pollutant emissions vented from the Packed Bed Scrubber A42PBS shall not exceed the following:

<u>Hazardous Air Pollutant</u>	lb/hr	tpy
1,1,2-Trichloroethane	0.20	0.84
Vinylidene Chloride	0.15	0.65
Ethylene Dichloride	1.53	6.67
Trichloroethene	0.40	1.70
<u>Hydrochloric Acid (HCl)</u>	0.71 ⁽¹⁾	3.10 ⁽²⁾
Other Organic HAPs	0.46	1.61
Total HAPs	3.44	14.5679

(1) Except when scrubber maintenance (acid-washing) is being performed (see 4.1.9 and 4.1.10).

(2) 3.10 tpy of HCl emissions emitted during normal scrubber operation plus 0.23 tpy of HCl emissions emitted during scrubber maintenance (acid-washing) (see 4.1.9 and 4.1.10.)

4.1.5 The regenerative thermal oxidizer shall be designed, operated and maintained so as to reduce emissions of VOCs by at least 98% or to less than 3.46 pounds per hour.

4.1.5.1 The thermal oxidizer shall be operated with a firebox temperature of at least 1400°F at all times when the contaminated vent gas is being combusted. Compliance with this requirement shall be based on a daily average.

4.1.6 The packed bed scrubber shall be designed, operated and maintained so as to reduce emissions of HCl by at least 99.5% or to no more than 0.71 pounds per hour except when scrubber maintenance (acid-washing) is being performed.

4.1.6.1 The packed bed scrubber shall be operated with a daily average pH of the inlet liquid of at least 7.0 when the contaminated vent gas is being combusted except that during periods of scrubber maintenance (acid-washing), the pH of the inlet liquid shall not be included in this daily average.

4.1.7 Visible emissions from the thermal oxidizer (TO-1) shall not exceed twenty percent (20%) opacity except that an opacity level of up to forty percent (40%) is permitted during startup periods during the first eight (8) minutes of operation of the unit.
[45CSR§6-4.3.] & [45CSR§6-4.4.]

4.1.8 **Operation and Maintenance of Air Pollution Control Equipment.** The permittee shall, to the extent practicable, install, maintain, and operate all pollution control equipment listed in Section 1.0 and associated monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions, or comply with any more stringent limits set forth in this permit or as set forth by any State rule, Federal regulation, or alternative control plan approved by the Secretary.
[45CSR§13-5.11.]

4.1.9. Scrubber maintenance (acid-washing) shall be conducted no more than 12 times per year and shall be limited to no more than six (6) hours per each cleaning activity/event.

4.1.10. HCl emissions resulting from scrubber maintenance (acid-washing) shall not exceed 37.65 pounds per event and 0.23 tons per year.

4.2. Testing Requirements

4.2.1. The permittee shall conduct, or have conducted, testing to determine VOC emission rates to the atmosphere according to the schedule in the following table. The initial test shall be conducted within 6 months of commencement of authorized activity. Said testing may be done using a photo ionization

detector or other suitable detector or a sample may be collected and sent to a laboratory for analysis. At the time of the aforementioned testing exhaust flow rates shall also be determined in order to calculate hourly VOC emissions.

Table 4.2.1 - Test Requirements:

Test Results	Testing Frequency
< 50% of permit limit	Once per 12 months
≥ 50% of permit limit	Once per 6 months

- 4.2.2 At least monthly visual particulate emissions checks of the packed bed scrubber exhaust stack will be conducted. These checks shall be conducted during periods of normal operation and for a sufficient time interval to determine if the unit has visible emissions using the procedures outlined in 40 CFR 60, Appendix A, Method 22. If no visible emissions are noted during four consecutive monthly observation periods, visual emissions checks will be conducted quarterly commencing with the next calendar quarter. If no visible emissions are noted during four consecutive calendar quarters, visual checks may be conducted semiannually. If sources of visible emissions are identified during the survey or at any other time, the permittee shall conduct a 40 CFR 60, Appendix A, Method 9 evaluation within 24 hours and restart monthly visual emission checks. A Method 9 evaluation shall not be required if the visible emission condition is corrected within 24 hours and the incinerator is operated at normal operating conditions. A record of each visible emission check required above shall be maintained on site. Said record shall include but not be limited to, the date, time, name of emission unit, the applicable visible emissions requirement, the results of the check, what action (s), if any, was/were taken, and the name of the observer.
- 4.2.3 ~~At least once per day~~ The pH of the scrubber liquid shall be measured at least once per day and shall exclude measurements taken during times when scrubber maintenance (acid-washing) is being performed.

4.3. Monitoring and Recordkeeping Requirements

- 4.3.1. **Record of Monitoring.** The permittee shall keep records of monitoring information that include the following:
- The date, place as defined in this permit and time of sampling or measurements;
 - The date(s) analyses were performed;
 - The company or entity that performed the analyses;
 - The analytical techniques or methods used;
 - The results of the analyses; and
 - The operating conditions existing at the time of sampling or measurement.

4.3.5.2 Daily pH of the scrubber liquid as measured in accordance with 4.2.3.

4.3.5.3 Completed maintenance and calibrations.

4.3.5.4 Copy of the site specific monitoring plan. The plan may refer to the manufacturers operation and maintenance manual or other documents for procedures covering operation, maintenance, calibrations and inspections.

4.3.5.5 Records of monitoring equipment downtime and corrective actions taken.

4.3.6. To demonstrate compliance with 4.1.9 and 4.1.10, the permittee shall record the date and duration of each scrubber maintenance (acid-washing) activity.

4.4. Reporting Requirements

4.4.1. Semiannual monitoring reports will be submitted on or before September 15 for the reporting period of January 1 to June 30 and on or before March 15 for the reporting period July 1 to December 31. All instances of deviation from the permit requirements will be clearly identified in such reports.