REGION 6
DALLAS, TX 75270

April 23, 2024

Danish Khan
EH&S Regional Delivery Manager
Dow Chemical Company
332 SH 332 E. LJ APB 2A197C
Lake Jackson, Texas 77566

**RE: The United States Environmental Protection Agency Region 6 Reauthorization Approval for Storage of Polychlorinated Biphenyls (PCBs) at Dow Chemical Company, in Freeport, Texas; EPA ID No. TXD008092793**

Dear Mr. Khan:

This letter and the enclosed Conditions of Approval grants approval to Dow Chemical Company for storage of PCB waste. A Public Notice was published in The Facts newspaper announcing the proposed approval which opened a 45-day comment period, during which requests could be made for a Public Hearing. No comments were received during the comment period which closed on April 14, 2024.

Violation of 40 CFR Part 761, or any of the enclosed Conditions of Approval may subject Dow Chemical Company to enforcement action under the Toxic Substances Control Act (TSCA) and/or other applicable laws and regulations. Such action could result in a termination, revocation, or modification of the approval. This approval becomes effective on the date of this letter and expires at midnight, the same day and month, five years later.

If you have questions, please contact Harry Shah at (214) 665-6457 or shah.harry@epa.gov.

Sincerely,

X Melissa Smith

Melissa Smith
Acting Director

Land, Chemicals and Redevelopment Division

Enclosure

cc: Charly Fritz (TCEQ)

# Dow Chemical Company Freeport Storage and Disposal Approval and Supporting Documents Contents:

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**REGION 6**
**1201 Elm Street**
**Dallas, TX 75270**

**IN THE MATTER OF**

| | |
|---|---|
| **Dow Chemical Company** | **) Approval for the Storage of** |
| **Freeport, TX** | **) Polychlorinated Biphenyls** |
| | **) Waste 40 CFR § 761.65** |
| **EPA ID # TXD008092793** | **)** |

## AUTHORITY

This approval is issued pursuant to Section 6(e) of the Toxic Substances Control Act (TSCA) and the federal Polychlorinated Biphenyls (PCBs) Regulations, 40 CFR Part 761.

Failure to comply with the approval conditions specified herein shall constitute a violation of 40 CFR 761.50(a), 761.65 and 761.70 and may be a violation of other provisions of the PCB Regulations in 40 CFR Part 761. A violation of the regulations is a prohibited act under Section 15 of TSCA.

The terms and abbreviations in these conditions are in accordance with those defined in 40 CFR 761.3, unless otherwise noted. The word "Facility" hereinafter refers to Dow Chemical Company, Freeport, Texas, which owns and operates the halogen acid furnace (HAF) unit (B-824 Thermal Oxidizer (TOX)) and the B-33 Rotary Kiln Incinerator. The Facility is located on Dow property in Freeport, Texas on Highway 288, Block 8, and Block 33 of Plant B.

Pursuant to 40 CFR 761. 65 and 761.70, the Facility is approved to operate the following Facility units for storage and disposal of onsite generated PCBs in the manner prescribed by this approval. All PCB waste management is to be confined to the approved units listed in this approval.

### A. PCB WASTES

1. The Facility is authorized to store and dispose of Dow generated polychlorinated biphenyl (PCB) contaminated wastes including but not limited to the following sources:

    1) PCB dielectric fluid wastes from onsite transformers,
    2) PCB contaminated organic wastes from onsite groundwater and recovery wells,
    3) Laboratory wastes and spill materials contaminated with PCBs,
    4) PCB contaminated waste from equipment rinse from decontamination and maintenance activities, and
    5) PCB contaminated wastes from the A-3600 PMDI plant.

2. The Facility is approved to dispose of liquid and non-liquid PCBs received from offsite other Facility sources (e.g., Dow Chemical subsidiaries, joint ventures) under the following conditions:
    1) The non-liquid or liquid PCB waste shall be shipped from Dow facilities in the United States (locations would include but not be limited to Midland, MI; Seadrift, TX; Texas City, TX; La Porte, TX; Plaquemine, LA; and Taft, LA);
    2) Only carriers licensed by the appropriate state and federal agencies shall be used for transport, and shall comply with all applicable Department of Transportation (DOT) regulations; and
    3) The Facility shall utilize its CHEMTREC system for communicating any transportation emergencies such as spills.

## B. DISPOSAL UNITS

The Facility was authorized to operate the following units for disposal of PCBs:

1. The B-824 Thermal Oxidizer (TOX) used for liquid PCB waste disposal.
2. The B-33 Rotary Kiln Incinerator for liquid and nonliquid PCB waste disposal.

The operation for disposal of PCB waste in these units is currently suspended. Dow shall not incinerate PCB waste in B-824 Thermal Incinerator and B-33 Rotary Kiln Incinerator before conducting an acceptable PCB test in accordance with 40 CFR § 761.70, and a revised application has been approved. The testing will be conducted for the B-33 Rotary Kiln incinerator by no later than August 5, 2027, and for the B-824 Thermal Oxidizer by no later than July 8, 2026, unless an extension is granted prior to the due date. If testing is not completed by the due date, then the facility shall submit a revised application to remove the disposal units from the approval.

## C. PCB STORAGE

Dow Chemical Company's approved PCB storage areas are described below. These PCB storage areas shall be maintained in compliance with 40 CFR § 761.65 and the Facility's Application.

The maximum storage capacity ("MSC") and the categories of PCBs and PCB items permitted to be stored at any time in each approved storage area are specified below. The Facility's ability to store PCBs and PCB items at the Facility is limited to the categories and quantities specified below for each PCB storage area. The Facility shall not accept or store any PCBs or PCB items which have not been described below or quantities in excess of those listed below, unless otherwise approved by EPA in writing on a case-by-case basis.

1. B-3307 Container Storage Area: 179.75 feet long by 53.75 feet wide; with a maximum approved capacity of 85,385 gallons.

2. B-3302 Container Storage Area: 100 feet long by 70 feet wide; concrete floor and curbing with a maximum approved capacity of 68,510 gallons.

3. B-3305 Tank Farm Container Storage Area of portable containers: 63.5 feet long by 36 feet wide; with a maximum approved capacity of 21,200 gallons.

4. B-3304 Direct Burn Station(s) for Portable Containers Storage: 58 feet long by 30 feet wide; with a maximum approved capacity of 64,300 gallons.

5. B-800 Container Storage: Area 1 is a rectangular area of 198 ft by 126.75 ft, area 2 is a rectangular area of 198 ft by 65.25 ft, area 3 is a rectangular area of 86 ft by 27.3 ft, area 4 is a square area of 61 ft by 61 ft, area 5 is a rectangular area of 61 ft by 30.75 ft, and area 6 is a semicircular area with a 59 ft radius attached to a rectangular area of 17 ft by 27.3 ft; with a maximum approved capacity of 185,000 gallons.

6. B-824 Direct Burn Station(s) for Portable Containers Storage: 72.75 feet long by 43.33 feet wide; with a maximum approved capacity of 42,600 gallons.

7. B-3308 Bulk Liquid Storage Area: Area 1 is of 74.67 ft by 56.33 ft, area 2 is half of 56.33 ft by 34.08 ft; with a maximum approved capacity of 78,000 gallons.

## D. AUTHORIZATION OF NEW DISPOSAL UNITS OR STORAGE AREAS

1. For a new disposal or storage unit not identified in B or C above, the Facility shall not commence storage or disposal in the new unit until it has received written approval from the U.S. Environmental Protection Agency (EPA) Region 6 authorizing the new unit for PCB storage or disposal.

2. For expansion in capacity or major modification of an existing unit, the Facility shall not store or dispose of PCBs in the modified unit until it has received written approval from EPA Region 6 for the expansion or modification. A major modification shall be defined as a change in the configuration or location of those authorized units listed in B or C above.

## FINDINGS

Based upon the review of Dow's application and other information, dated September 22, 2021, and subsequent emails between Dow and the EPA, the EPA has determined pursuant to 40 CFR § 761.70 that the proposed operation of the Freeport Facility for PCB incineration and storage will not pose unreasonable risk of injury to health or the environment as long as these Conditions below are followed.

The terms and abbreviations in these conditions are in accordance with those defined in 40 CFR *§* 761.3 unless otherwise noted. The term "Facility" hereinafter refers to Block 8 and Block 33 of Plant B located at the Dow Chemical Company, Freeport, Texas. The Facility

is located at Freeport, Texas on Highway 288.

## EFFECTIVE DATE

This approval to operate nationwide is effective upon signature by the Director of the Land Chemical and Redevelopment Division (LCRD), EPA Region 6 and shall expire five (5) years from the date of signature, except as otherwise specified.

If Dow intends to continue to operate beyond the expiration date of this approval, Dow shall submit a complete approval renewal application to the EPA at least 1 year prior to the expiration date of this approval.

A complete approval renewal application shall be, at a minimum, information that was submitted in previous approval applications with appropriate modifications or updates based on proposed revisions to the original approval or prior approval renewals, which includes operation changes and revised procedures. The renewal application should also include the past 3 years of operating records for these units. Dow shall not operate under revised operating conditions until the EPA issues Dow an approval renewal allowing such revised operating conditions.

## STATEMENT IN COMPLIANCE WITH 40 CFR 761.65(d)(4)(i)

The United States Environmental Protection Agency, Region 6 (EPA) is renewing and modifying a Toxic Substances Control Act (TSCA) Approval issued to Dow Chemical Company, to continue to operate a commercial storage and disposal facility for polychlorinated biphenyls (PCBs) and PCB items. Pursuant to 40 C.F.R. 761.65(d)(4)(i), EPA finds that the criteria at 40 C.F.R. § 761.65(d)(2) are satisfied:

(i) Dow Chemical Company, its principals, and its key employees responsible for the establishment or operation of the commercial storage facility are qualified to engage in the business of commercial storage of PCB waste. This finding is based on EPA's evaluation of key personnel information submitted with the Renewal Application, plus the Facility's compliance with the worker training plan (Appendix 1) as described in the Renewal Application.

(ii) Dow Chemical Company possesses the capacity to handle the quantity of PCB waste which the facility has estimated will be the maximum quantity of PCB waste that will be handled at any one time at the facility. This finding is based on the information found in the Professional Engineer Certification and Facility Standards documents, Appendix 6.

(iii) Dow Chemical Company has certified compliance with the storage facility standards in 40 C.F.R. § 761.65(b) as found in the Professional Engineer Certification and Facility Standards documents, Appendix 6.

(iv) Dow Chemical Company has developed a written closure plan for the facility that is deemed acceptable by the Land, Chemicals, and Redevelopment Director under the closure plan standards. This finding is based on EPA's evaluation of Appendix 5 of the Renewal Application, the requirements of which are incorporated into this Approval.

(v) Dow Chemical Company demonstration of financial responsibility for closure meets the financial responsibility standards in the form of a bond that is based on closure cost estimates and inflation in satisfaction of 40 C.F.R. 761.65(g)(2) and (3).

(vi) Dow Chemical Company operation of the storage areas will not pose an unreasonable risk of injury to health or the environment. This finding is based on EPA's evaluation of the complete Renewal Application and all applicable regulations at 40 C.F.R. § 761, as set forth in this Approval.

(vii) The environmental compliance history of the applicant, its principals, and its key employees does not constitute a sufficient basis for denial of the application. This finding is based on EPA's evaluation of the information contained in the complete Renewal Application and a review of available compliance data. All available information demonstrates that the Facility is in compliance with its current Approval and the TSCA PCB regulations at 40 C.F.R. Section 761, and that the Facility's compliance history evinces no unwillingness or inability to achieve and maintain compliance with the regulations.

## CONDITIONS OF APPROVAL

## I. GENERAL OPERATING CONDITIONS

1. The Facility shall, at all times during PCB storage and disposal, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed and used to achieve compliance with the conditions of this approval. Proper operation and maintenance include effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls including appropriate quality assurance procedures.

2. All transport vehicles owned by the Facility used for the transport of PCBs shall be properly maintained and inspected, as required by the applicable Department of Transportation regulations.

3. The Facility shall have a PCB Operator's Manual for employees engaged in the handling and disposal of PCBs in this unit. The manual shall be updated as procedures are changed, and a copy of the revised manual shall be submitted to the EPA Region 6 RCRA Permits and Solid Waste Section within ten (10) working days of the completion of the revised manual. Training shall be provided to all employees engaged in the handling and disposal of PCBs before employees handle or dispose of PCBs at the Facility. The training shall include a discussion of PCB regulatory requirements, including the requirements of the PCB Spill Cleanup Policy pursuant to 40 CFR § 761.120-135. The training shall include the specifics of the Safety Plan, Contingency Plan (Appendix 2), and the Emergency Procedures (Appendix 3), as well as the SPCC

plan (Appendix 4). A signature sheet shall be included as part of the training to verify personnel participation. Employees shall be re-trained every year. All new employees shall be trained before handling PCBs.

4. Personnel shall follow Facility procedures and rules regarding wearing and the proper disposition of protective clothing, gloves, booties, etc. while handling PCB Items. Personnel shall follow Facility procedures and rules regarding ingress and egress into areas where PCBs and PCB Items are being handled and disposed.

5. *Condition to modify, revoke and reissue, or terminate the approval.* EPA reserves the right to modify (including by imposing additional conditions), revoke and reissue, or terminate this Approval when any of the following circumstances exist:

   a. EPA has reason to believe the approved activities are not achieving the relevant standards or goals or otherwise are not in compliance with the Approval.
   b. EPA has reason to believe the approved activities present or may present an unreasonable risk of injury to health or the environment;
   c. EPA becomes aware of new or previously undisclosed information that may substantively impact its previous finding of no unreasonable risk and require modifications to this Approval; or
   d. EPA issues new regulations or standards that impact conditions of this Approval.

***6.*** *Condition to require additional information.* When any of the circumstances described above exist, EPA reserves the right to require the facility to provide additional information relevant to the Agency's determination whether to modify, revoke and reissue, or terminate the Approval. This may include information to inform EPA's finding that the approved activity does not present an unreasonable risk of injury to health or the environment, such as information related to the risks or impacts of the activity on surrounding communities and communities with environmental justice concerns, including those related to climate change and cumulative impacts of environmental and other burdens.

***7.*** *Condition to provide additional information.* If the facility becomes aware of new or previously undisclosed information that may substantively impact EPA's previous finding that approved activities do not present an unreasonable risk of injury to health or the environment, the facility must provide that information to the Agency as soon as possible but no later than 30 days. This may include information related to the risks or impacts of the approved activity on surrounding communities and communities with environmental justice concerns, including those related to climate change and cumulative impacts of environmental and other burdens.

## II. SPECIFIC OPERATING CONDITIONS

The operation for disposal of PCB waste in these units is currently suspended. Dow shall not incinerate PCB waste in B-824 Thermal Incinerator and B-33 Rotary Kiln Incinerator before conducting an acceptable PCB test in accordance with 40 CFR § 761.70, and a

revised application has been approved by EPA. The specific operating conditions for B-824 and B-33 will be established by using the PCB tests and the revised application and authorized by a new approval. The testing will be conducted for B-33 Rotary Kiln incinerator by no later than August 5, 2027 and for B-824 Thermal Oxidizer by no later than July 8, 2026 unless extension is granted before due date. If testing was not completed by due date than Facility will submit revision application for the removal of disposal units B-824 or B-33 from this permit.

A. PCB STORAGE AREA AND FINANCIAL CONDITIONS

1. The Facility shall store PCBs only in the areas designated in Section C under Authority. (PCB Storage Management) above.

2. Adequate aisle space shall be maintained to allow for unobstructed access to all PCB items stored on-site by personnel, fire protection equipment, and decontamination equipment.

3. The Facility shall not exceed the maximum storage inventory of PCBs and PCB Items indicated in conditions 1 through 7 in Section C under Authority (PCB Storage Management). Requests for increasing the maximum inventory shall be submitted and approved by EPA Region 6 in writing, prior to storage of additional PCB inventory.

4. The Facility shall document through its Facility Waste Characterization process the PCB content of PCB Items before accepting the material for processing. Sampling and analytical methods shall conform to EPA regulations and guidance. Results of all analyses shall be recorded and kept on file.

5. Decontamination of PCB containers or movable equipment shall comply with 40 CFR § 761.79.

6. All PCB articles, equipment and containers shall be properly marked as required by 40 CFR § 761.40 and 45.

7. All other PCB storage shall comply with 40 CFR § 761.65(b) as specified:

   (i) Adequate roof and walls to prevent rainwater from reaching the stored PCBs and PCB Items;

   (ii) An adequate floor that has continuous curbing with a minimum 6-inch-high curb. The floor and curbing must provide a containment volume equal to at least two times the internal volume of the largest PCB Article or PCB Container or 25 percent of the total internal volume of all PCB Articles or PCB Containers stored there, whichever is greater. PCB/radioactive wastes are not required to be stored in an area with a minimum 6-inch-high curbing. However, the floor and curbing must still provide a containment volume equal to at least two times the internal volume

of the largest PCB Container or 25 percent of the total internal volume of all PCB Containers stored there, whichever is greater.

(iii) No drain valves, floor drains, expansion joints, sewer lines, or other openings that would permit liquids to flow from the curbed area;

(iv) Floors and curbing constructed of Portland cement, concrete, or a continuous, smooth, non-porous surface as defined at § 761.3, which prevents or minimizes penetration of PCBs.

(v) Not located at a site that is below the 100-year flood water elevation.

8. The Facility shall comply with the closure regulations pursuant to 40 CFR § 761.65 (d)-(g) except for any requirements that are specifically waived in this approval.

9. The Closure Cost Estimate shall be updated to adjust for inflation annually, or within 30 days after EPA Region 6 approval of any modification to the Closure Plan (Appendix 5) that increases the expected costs of closure.

10. The Facility shall amend the Closure Plan and current Closure Cost Estimate whenever changes in operating plans or Facility design affect the Closure Plan, or whenever there is a change in the expected year of closure. In the event the Facility becomes aware of information that tends to show that the estimated costs associated with performing closure of the Facility may exceed the current Closure Cost Estimate approved by EPA Region 6, the Facility shall modify the Closure Plan and submit any modifications to the Closure Plan to EPA Region 6 for approval.

11. Financial assurance at least equivalent to that specified in 40 CFR § 761.65(g) and 40 CFR Part 264, Subpart H, shall be maintained by the Facility to provide funding for proper closure. The closure plan shall also provide for the decontamination and/or disposal of PCB-contaminated equipment and materials at an EPA approved PCB disposal facility.

12. Any payment required to establish or continue the financial assurance mechanism used to satisfy the financial requirements shall be made when due. Written verification of the payments shall be provided to the EPA Region 6 RCRA Permits and Solid Waste Section Supervisor (U.S. EPA Dallas) within 30 days of the payment due dates. The Facility shall also submit such documentation as EPA may require in order to determine whether the financial assurance requirements for this approval have been met.

13. The Facility shall submit documentation of continued financial assurance annually to the EPA Region 6 RCRA Permits and Solid Waste Section Supervisor (U.S. EPA Dallas).

14. The Facility shall notify the EPA Region 6 RCRA Permits and Solid Waste Section Supervisor (U.S. EPA Dallas) at least 60 days prior to the date closure is expected to begin.

15. Upon termination of PCB storage and disposal activities, the Facility shall proceed according to the provisions of the approved Closure Plan. The word "termination" means cessation of PCB storage operations required by expiration, termination, or revocation of this approval.

## STANDARD APPROVAL CONDITIONS

A. SEVERABILITY

The conditions of this authorization are severable, and if any provision of this authorization, or any application of any provision is held invalid, the remainder of this authorization shall not be affected thereby.

B. DEPARTURE FROM APPROVAL CONDITIONS

If at any time the Facility becomes aware of any violation of the conditions of this Approval, the Facility shall notify the EPA Region 6 RCRA Permits and Solid Waste Section Supervisor (U.S. EPA Dallas) by telephone within 24 hours and shall submit a written report within five (5) days.

C. FAILURE TO SUBMIT INFORMATION

When Facility officials become aware that it has failed to submit any relevant facts in the PCB storage and/or disposal application, or submitted incorrect information in any report to EPA, the Facility shall submit such facts or information to the EPA Region 6 RCRA Permits and Solid Waste Section Supervisor (U.S. EPA Dallas) within 30 days.

D. PERMITS

During PCB disposal, treatment, and storage, the Facility shall comply with all Federal, State, and local regulations and agreements, including:

1. permits for the storage of PCBs; and

2. the applicable State air and RCRA hazardous waste permits.

E. DUTY TO PROTECT THE ENVIRONMENT

The Facility shall correct any adverse impact on the environment resulting from noncompliance with this approval.

F. WORKER PROTECTION

1. The Facility shall comply with the health and safety practices described in the PCB Operator's Manual. Personnel safety requirements and procedures for PCB handling, storage, and transport shall comply with Occupational Safety and Health Administration regulations applicable to this Facility.

2. The Facility shall comply with its PCB training plan (Appendix 1). All employees who handle PCBs at the Facility shall receive the training, as specified in the Facility training plan. The training shall include a discussion of PCB regulatory requirements, including the requirements of the PCB Spill Cleanup Policy pursuant to 40 CFR §§ 761.120-135. The training shall include the specifics of the Safety Plan, Contingency Plan, and the Emergency Procedures, as well as the SPCC plan (Appendix 4). A signature sheet shall be included as part of the training to verify personnel participation. Employees shall be re-trained every year. All new employees shall be trained before handling PCBs.

G. MAINTENANCE

1. The Facility shall have in place, a routine inspection and maintenance program for all equipment and/or systems of treatment and control (and related appurtenances) which are installed or used to achieve compliance with the conditions of this approval.

2. All vehicles owned by the Facility used for the transport of PCBs shall meet DOT regulations during transport of PCBs and be properly marked in accordance with 40 CFR § 761.40. Transporters of PCB waste shall notify EPA of their PCB waste activities by filing EPA Form 7710-53, "Notification of PCB Activity", prior to engaging in PCB waste handling activities.

H. EMERGENCIES AND CONTINGENCY PLANS

1. The Facility shall follow the SPCC and RCRA Contingency Plan as specified in 40 CFR Part 264 whenever there is a release of PCBs. A copy of these plans, along with a copy of this approval, shall be kept onsite in an area easily accessible to employees who handle PCBs. The SPCC and RCRA Contingency Plan shall be amended, and a copy sent to EPA after any of the following events within 30 days of permit modification:

   a. the plan is found inadequate during an emergency;

   b. the Facility changes its design or operating methods;

   c. the list of emergency coordinators or equipment changes; and/or

d. a revision is warranted that will lessen the risk of injury to health or the environment.

2. PCB spills occurring at the Facility shall be cleaned up within 24-hours of discovery to levels required by the PCB Spill Cleanup Policy defined at 40 CFR 761 Subpart G. The Facility shall submit reports monthly of any spill(s) occurring within the previous 30-day period, and what action was taken to remediate the spill(s).

3. The release of PCBs into the environment is cause for the Facility to immediately initiate clean-up. The Facility shall also initiate an investigation into the cause and potential impact of the release and provide a detailed written report to the EPA Region 6 RCRA Permits and Solid Waste Section Supervisor (U.S. EPA Dallas) within 30 days of the discovery of the release.

4. Any PCB spills or releases occurring at the Facility, or from any Facility-owned PCB transport vehicle, shall be cleaned up according to the PCB Spill Cleanup Policy (see 40 CFR Part 761, Subpart G). EPA may order cessation of further PCB storage and/or treatment at the Facility, if spills or releases are not cleaned up to acceptable levels as defined by EPA.

## I. RECORD KEEPING AND REPORTING

1. The Facility shall comply with all applicable monitoring and record keeping requirements as specified in 40 CFR § 761.180 for commercial storers. All PCB records, documents, and reports shall be maintained at the Facility, and shall be made available for inspection by authorized EPA representatives. Any modification or correction of the records shall be initialed and dated by the supervisor in charge.

2. The Facility shall maintain an inventory of PCBs in storage. The inventory shall include a description of each PCB Item, the date the PCB Item was taken out of service, the quantity received, and the date PCB Items were shipped off-site for disposal.

3. Records relating to PCB sampling and analysis shall be retained by the Facility for five (5) years. These records shall include the following information:

   a. date of each sample collected;

   b. volume of each sample collected;

   c. the name of the person who collected the sample; and

   d. the name of the company that analyzed the sample, along with the name of analyst, the date the sample was analyzed, the method used, and the

reported result.

4. For facilities that analyze PCB samples at an onsite laboratory, sample volume records are not required if the remainder of the sample is returned to the onsite stored PCB Item from which the sample was taken.

5. Following each spill cleanup action, the Facility shall develop and maintain records of the cleanup in accordance with the PCB Spill Cleanup Policy defined at 40 CFR 761 Subpart G. These records shall include:

   a. identification of the source of the spill;

   b. estimated or actual date and time of the spill occurrence;

   c. date and time cleanup was completed;

   d. description of the spill location;

   e. pre-cleanup sampling data used to establish spill boundaries, if required, because of insufficient visible traces, and a description of the sampling methodology used;

   f. amount and type of waste cleanup material generated;

   g. description of the solid surfaces cleaned and of the double wash/rinse method used, and if soil is the contaminated media, the depth of soil excavated, and amount of soil removed for disposal;

   h. post-cleanup verification sampling information such as a description of the sampling methodology used, the number of samples analyzed, and the analytical data; and

   i. a certification by the appropriate Facility officials stating that the cleanup levels required by EPA were achieved, and that the record is true to the best of his/her knowledge.

6. The Facility shall maintain copies of certificates of disposal provided by the commercial disposal Facility for all PCBs and PCB Items which have been shipped off-site for disposal. The Facility is the generator when manifesting PCB wastes off-site for proper disposal.

7. The Facility may utilize electronic formats to maintain any required records and report.

J. INSPECTIONS AND ENTRY

The Facility shall allow the EPA Regional Administrator (RA), or an authorized representative, upon presentation of credentials and other documents as may be required by law to:

1. enter the Facility where PCBs are being handled, treated, disposed, or stored;

2. have access to and copy, at reasonable times, any records that shall be kept pursuant to the TSCA PCB regulation;

3. inspect any facilities, equipment practices, or operations required under this approval or the TSCA PCB regulations; and

4. sample or monitor for the purposes of assuring that the Facility is operating in compliance with the conditions of this approval and the TSCA PCB regulations.

K. INFORMATION REQUESTS

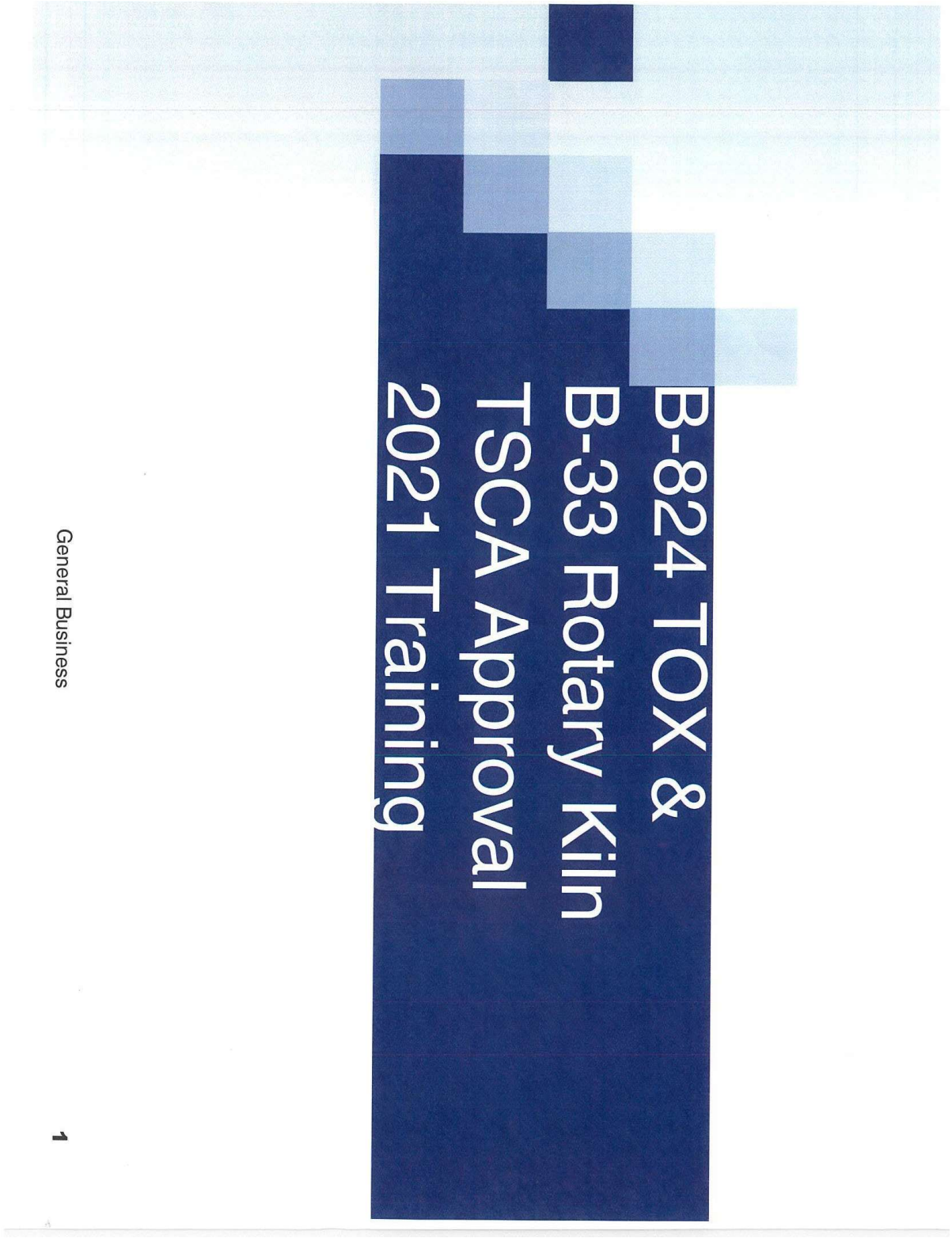
The Facility shall submit to the R6 RCRA Permits and Solid Waste Section Supervisor (U.S. EPA Dallas), within a reasonable time, any relevant information which may be requested to determine whether cause exists for modifying, revoking, reissuing, or terminating this approval, or to determine compliance with this approval. The Facility shall also submit to R6 RCRA Permits and Solid Waste Section Supervisor upon request, copies of records required to be kept pursuant to the TSCA PCB regulations.

L. TRANSFER OF OWNERSHIP

The Facility shall notify the R6 RCRA Permits and Solid Waste Section Supervisor (U.S. EPA Dallas) at least ninety (90) days before transferring ownership of the Facility. The Facility shall also submit to the RA, at least ninety (90) days before such transfer, a notarized affidavit signed by the transferee stating that the transferee shall abide by all provisions of this PCB storage approval. After receiving such notification and affidavit, and other such documents as EPA may require, EPA may issue an amended Approval substituting the transferee's name for the Facility name, or EPA may require the transferee to apply for a new PCB commercial storage approval. The transferee shall not operate under the Approval until the RA issues an Approval in the transferee's name. The transferor shall maintain financial assurance for the Facility until the transferee's application has been approved and the transferee has demonstrated that it has established financial assurance for closure pursuant to 40 CFR § 761.65(g).

**END OF APPROVAL CONDITIONS**

**Appendix 1 PCB Training Plan**



# Definitions

- TSCA – Toxic Substances Control Act, directs the EPA to regulate chemicals that pose *an unreasonable risk of injury to health or the environment*

- PCB-polychlorinated biphenyls

# Background

- The B-824 Thermal Oxidizer is authorized as follows:
  - TCEQ-Air Permit Number R-313
  - HWC MACT
  - TCEQ-RCRA
  - EPA-TSCA Approval

- The B-33 Rotary Kiln Incinerator is authorized as follows:
  - TCEQ-RCRA
  - HWC MACT
  - EPA-TSCA Approval

Training is based on current B-824 EPA TSCA approval and proposed Facility(B-824 and B-33)TSCA permit.

Upon final approval will communicate any changes.

- Final approval received on 11/6/2006,revised on 4-7-2007, renewed 2-7-12, renewed 6-17

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# B-824 and B-33 TSCA Approval Training

- **Permit Language: II.A. PCB Wastes Authorized – removed with 2017 renewal**
  - 1.a. dielectric fluid wastes from onsite transformers,
  - 1.b. onsite groundwater and recovery wells,
  - 1.c. laboratory wastes and spill materials,
  - 1.d. chlorpyridine process,
  - 1.e. EDC direct chlorination process,
  - 1.f. decontamination/maintenance equipment rinse waste,
  - 1.g. Trichloroethylene Plant B-recycle stream,
  - 1.h. A-3600 PMDI plant,
  - 1.i. Site Oxy Vinyl processes.
  - Dow is prohibited from disposing of PCB's received from Non-Dow sources.
- **What this means for Operations:**
  - PCB's shall only be disposed in B-824 TOX and B-33 Rotary Kiln Incinerator.
  - Can only incinerate PCB waste from the listed processes. NO WHERE ELSE.
  - Do not dispose of any PCB's from Non-Dow sources.
  - Any PCB waste that needs to be incinerated from a process not listed must be reviewed with EH&S prior to incineration.
- **Example:**
  - B-824 TOX: Only liquids are accepted.
  - B-33 RKI: Only liquids and packaged wastes are accepted.

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# Operational Impact of TSCA Approval

- **Permit Language: II.B. Disposal Units Authorized**
  - 1. B-824 Thermal Oxidizer (TOX) for liquid PCB waste
  - 2. B-33 Rotary Kiln Incinerator (RKI) for liquid PCB and solid PCB waste

- **What this means for Operations:**
  - PCB's shall only be disposed in B-824 TOX and B-33 Rotary Kiln Incinerator.
  - This training only covers the Thermal Oxidizer and the Rotary Kiln.

- **Example:**
  - B-824 TOX: Only liquids.
  - B-33 RKI: Only liquids and packaged waste (containers).

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# Operational Impact of TSCA Approval

- **Permit Language: II.C. Storage Area/Inventory Authorized** – removed with 2017 renewal
  - Tank V-2, max capacity 8,000 gallons
  - Tank V-6 , max capacity 6,400 gallons
  - 2. Tanker trucks/portable tanks from direct feed off-loading area, max cap 42,600 gallons
  - 3. B-3307, max capacity 85,385 gallons
  - 4. B-3302, max capacity 68,510 gallons
  - 5. B-3305, max capacity 21,200 gallons
  - 6. B-3304, max capacity 64,300 gallons
  - 7. B-3308, max capacity 78,000 gallons
  - 8. B-800 bulk yard, max capacity 300,000 gallons

- **What this means for Operations:**
  - PCB waste cannot be stored in any place other than the authorized storage area.
  - Cannot store more than the maximum allowed inventories of PCB waste.

# Operational Impact of TSCA Approval

- **Permit Language: D. New Disposal Units/Storage Areas**
  - D.1. For a new facility or new PCB waste stream, Dow shall not commence storage or disposal until it has notified the EPA Region 6 and received written approval.
  - D.2. For an expansion in capacity or modification of an existing facility, Dow shall not store or dispose of PCB's in the modified unit until it has notified the EPA Region 6 and received written approval.

- **What this means for Operations:**
  - EPA Region 6 must be notified if there is any new PCB waste stream being disposed or stored.
  - Proper approval must be obtained prior to any expansion or modifications.
  - Modification refers to a change to the unit that affects the emissions.

- **Example:**
  - Modification defined as a change in configuration/location, such as a re-design of the unit or a change in the air pollution control equipment.
  - B-824 TOX/B-33 RKI modifications cannot be made until EPA approves.
  - Contact EH&S Specialist/Technician.
  - EMOC and/or MOC triggers.

# Operational Impact of TSCA Approval

- **Permit Language: III.A.1. General Operating Conditions**
  - Dow shall properly operate and maintain all facilities and systems of treatment and control…including effective performance, adequate operator staffing and training, adequate lab and process controls, and appropriate quality assurance procedures.

- **What this means for Operations:**
  - Proper operation and maintenance shall be used.

- **Example:**
  - B-824 TOX/B-33 RKI: Compliance with regulations and permit.

22

# Operational Impact of TSCA Approval

- **Permit Language: III.A.2. General Operating Conditions**
  - All transport vehicles owned by Dow used for the transport of PCB's shall be properly maintained and inspected as required by the applicable DOT regulations.

- **What this means for Operations:**
  - Dow does own transport vehicles that transport PCB but not EOB.

- **Example:**
  - B-824 TOX/B-33 RKI: Ensure that all contractors transporting PCB's are approved by Dow.
    - Clean Harbors is currently approved by Dow.

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# Operational Impact of TSCA Approval

- **Permit Language: III.A.3. General Operating Conditions**
  - Dow shall have on hand and comply with an Operating Manual for PCB handling and incineration….Dow shall provide annual training to all employees engaged in the handling and disposal of PCBs.
- **What this means for Operations:**
  - PCB Operations Manual is found in the B-3320 Library.
  - Annual Training will be provided to all employees engaged in handling the disposal of PCBs.

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# Operational Impact of TSCA Approval-

Cont'd.

- **Example:**
- The PCB Operations Manual consists of the following elements:

- EPA TSCA Approval (Kiln & B-8) TSCA Permit Kiln and TO
- TCEQ Air Permit (B-8 Only) 313 Final Permit
- B-33 RCRA Contingency Plans Kiln Contingency Plan
- B-824 RCRA Contingency Plans B824 Contingency Plan
- Thermal Treatment SPCC Plan Thermal Treatment SPCC Plan
- Kiln SPCC Procedure Kiln SPCC Procedure
- TO SPCC Procedure TO SPCC Procedure
- PCB Spill Cleanup Documentation PCB Spill Cleanup Documentation
- Stop/Isolate/Report/Clean-Up RCL and/or Oil Spills Stop, Isolate, Report, Clean-up RCl and or Oil Spills
- Prerequisites for Burning RCIs at the Thermal Oxidizer Prerequisites for Burning RCI's
- Emergency Coordinator List Emergency Coordinator List
- Residence Time Monitoring for B-8 TTU Residence Time Monitoring for B-8 TTU
- Storage/Disposal of PCB Solids Storage, Disposal of PCB Solids
- Burn General Waste B-800 Direct Burn Area Burn General Waste B-800 Direct Burn Area
- Calculate Kiln Residence Time Calculate Kiln Residence Time
- Receiving PCB Packs in B-3300 Receiving PCB Packs in B-3300
- PCB Pack Tracking and Reconciliation PCB Pack Tracking and Reconciliation
- Campaign Burn PCB Packs Campaign Burn PCB Packs
- Repackage PCB Packs in B3300 Block Repackage PCB Packs in B3300 block

# Operational Impact of TSCA Approval

- **Permit Language: III.A.3. General Operating Conditions**
  - Dow shall have on hand and comply with an Operating Manual for PCB handling and disposal….Dow shall provide annual training to all employees engaged in the handling and disposal of PCBs.
- **What this means for Operations:**
  - PCB Operations Manual is found in the B-3320 Library.
  - Annual Training will be provided to all employees engaged in handling and disposal of PCBs.
- **Example:**
  - Annual training shall include:
    - PCB Operators Manual
    - EPA TSCA Approval
    - TCEQ Air Permit #313 (B-824 only)
    - B-33 RCRA Contingency Plans & B-824 RCRA Contingency Plans
    - B-33 Unit Emergency Plan & B-824 Unit Emergency Plan
    - Thermal Treatment SPCC Plans and Kiln & TO SPCC Procedures.
    - PCB Spill Cleanup Documentation Procedures
    - EPA PCB Spill Cleanup Guidelines-40 C.F.R. 761.120,123,125,130,&135
    - Safety Plan( Thermal Treatment UEP)

# Operational Impact of TSCA Approval

- **Permit Language: III.A.4. General Operating Conditions**
  - Personnel shall follow Dow procedures and rules regarding wear and the proper use of protective clothing, gloves, booties, etc. while handling PCB items."

- **What this means for Operations:**
  - Proper PPE is required for all personnel handling PCB items.

# COMPLIANCE RECORDS

All PCB Packs have a unique ID number which is tracked through Generation, storage, shipping and final destruction.

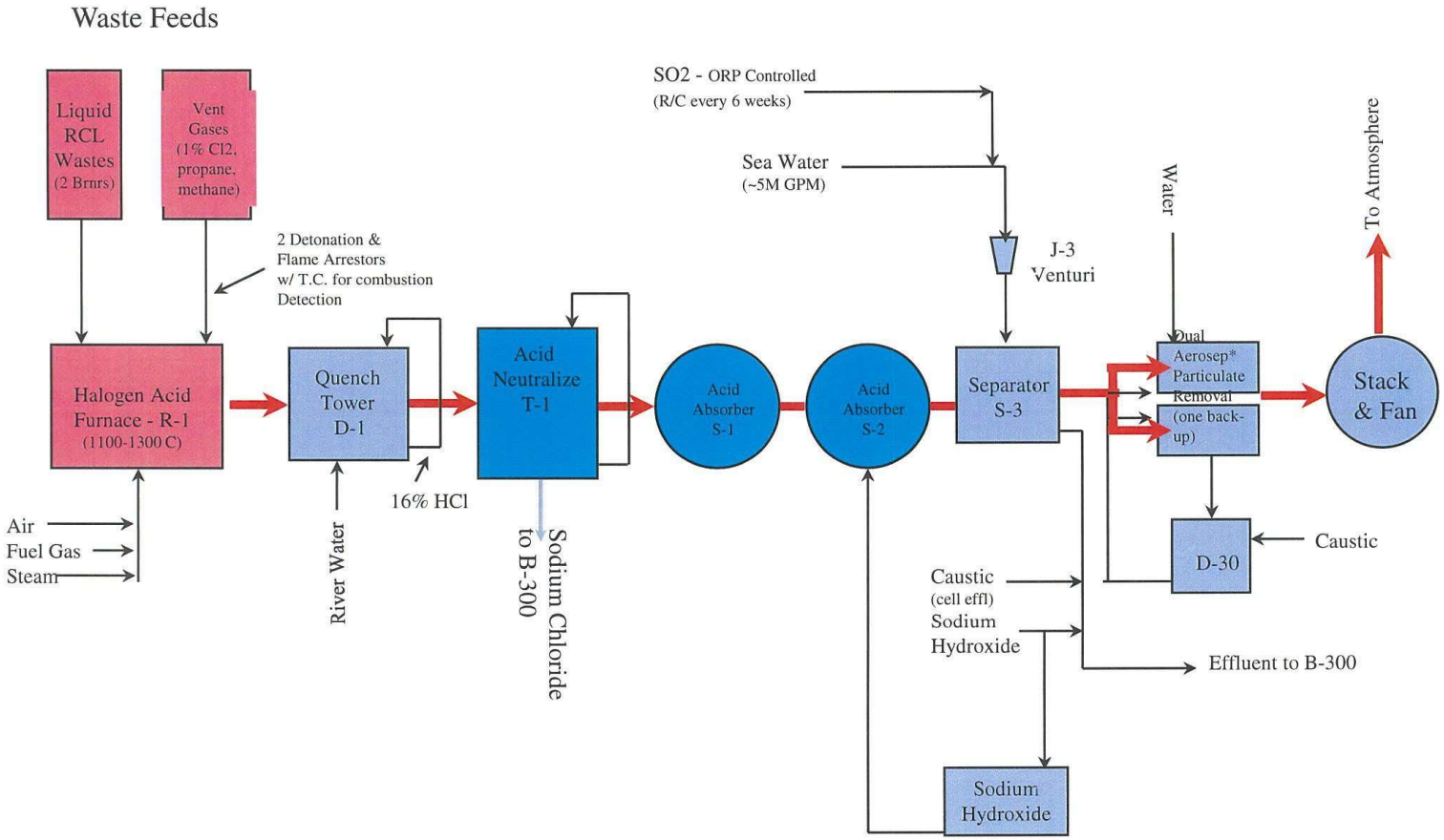
TSCA regulations require recordkeeping for each individual PCB pack /unique ID.

Consequences of forcing packs through in manual and re-labeling/re-packaging of waste will result in the inability to maintain compliance.

Each record of generation must have a corresponding record of destruction

\\txnt45\ENV_OPER\KILN\Approved\Procedures\Non-Routine\Repackage PCB Packs in B3300 Block.docx

# B-8 Thermal Oxidizer



# Operational Impact of TSCA Approval

## B-824 Incinerator Operating Conditions

- **Permit Language: III.B.1.a.**
  - Dow is granted a waiver from the requirements that the incinerator meet combustion criteria of introducing liquids for 2 seconds dwell time at 1200˚C and 3% O2. Instead, the incinerator should be operated at a temperature greater than 1100˚C, a dwell time of about 1.17 seconds, and greater than 3% O2. The Facility shall not dispose of PCBs if automatic shut-off devices are not operating properly.
- **What this means for Operations:**
  - **The PCB feed rate is monitored electronically and will alarm and automatically shut off if the temperature drops below 1100˚C.**
- **Example:**
  - B-824 TOX: AWFCO for temperature below 1100˚C while burning PCBs.
  - Do not burn PCBs if AWFCO system is operating properly.

# Operational Impact of TSCA Approval

B-824 Incinerator Operating Conditions

- **Permit Language: III.B.1.b.**
  - Dow is granted a waiver from the requirements that the combustion efficiency be at least 99.9% based on instantaneous CO readings. Instead, the PCB flow shall be immediately shutoff when the rolling hourly average of CO exceeds 100 ppm, as long as the CO2 in the stack does not fall below 10%.

- **What this means for Operations:**
  - % CO2 analyzed once per month, BIF requires automatic cutoff if CO level reaches 100 ppm.
  - CO monitor shall be calibrated at least once every 24 hours.

- **Example:**
  - Daily calibration for CO and O2 CEMS( Both systems).

# Operational Impact of TSCA Approval

## B-824 Incinerator Operating Conditions

- **Permit Language: III.B.2. - removed with 2017 renewal**
  - Dow shall analyze the following PCB contaminated waste streams for PCB's and keep results on file: Generator provides PCB analysis per below frequency.
    - a. Analyze each batch of PCB dielectric fluid from transformers
    - b. Analyze phased contaminated organics from groundwater recovery wells **each batch**
    - c. Analyze each batch of lab waste and spill materials contaminated with PCBs
    - d. Analyze the following PCB contaminated Chloro Pyridines streams monthly with "DOWM 101901-E-1A": D-106 diluent & D-229 tar process tanks
    - e. Analyze each batch of PCB contaminated waste from EDC direct chlorination process
    - f. Analyze each batch of PCB contaminated waste from decontamination and maintenance
    - g. Analyze each batch of PCB contaminated wastes A-3600 PMDI
    - h.PCB wastes in liquids/sludge feed tanks, or liquid sludge bulk containers,each batch
    - i. Packaged /drummed PCB waste-Process knowledge and/or analysis

- **What this means for Operations:**
  - All PCB analysis is stored in the "Safe Waste Handling Permits" Binder, B-3320 Library.
  - Determine PCB analysis and frequency before disposal.

- **Example:**
  - The State permit will say month for some waste streams instead of batch, however batch is more stringent, therefore each batch of these wastes is sampled.
  - Retain analysis documentation: "Safe Waste Handling Permits" binder at B-824..

# Operational Impact of TSCA Approval

B-824 Incinerator Operating Conditions

- **Permit Language: III.B.3.**
  - PCB feed rate shall not exceed 48.6 lb/hr. Concentration of waste stream shall be based on current analysis. Flow rate measured and recorded continuously and kept on file.

- **What this means for Operations:**
  - All feed and flow rates are continuously measured electronically utilizing a micro motion flow meter (contact TA) and data will be provided upon request.

- **Example:**
  - High concentrations of PCB should be communicated to [redacted]

# Operational Impact of TSCA Approval

B-824 Incinerator Operating Conditions

- **Permit Language: III.B.4.**
  - Chlorine feed rate limited to TCEQ RCRA permit limit or greater than 99% HCl removal, whichever is more stringent.

- **What this means for Operations:**
  - Initial testing described in "BIF Trial Burn Report, Environmental Operations, B-824 BIF Unit" Binder contains the performance testing report which demonstrates compliance with the specified parameters, found in B-3320 Library.

- **Example:**

  Sodium hydroxide absorb the HCl in T-1,S-1, & S-2.

  Sodium bisulfite is absorbing chlorine in T-1, S-1,& S-2

# Operational Impact of TSCA Approval

## B-824 Incinerator Operating Conditions

- **Permit Language: III.B.5.**
  - Total particulate emissions shall not exceed the limits imposed by TCEQ RCRA permit limit.
- **What this means for Operations:**
  - Total particulate emissions shall not exceed 10 lb/hr
- **Example:**
  - Stack testing demonstrates rates do not exceed 10 lb/hr.

# Operational Impact of TSCA Approval

## B-824 Incinerator Operating Conditions

- **Permit Language: III.B.6.**
  - Dow shall operate the incinerator in a manner that prevents visible fugitive emissions.

- **What this means for Operations:**
  - Fugitive emissions monitoring is performed in accordance with 40 CFR 61, Subpart V.

- **Example:**
  - Air Permit #313 limits the opacity of emissions from the incinerator stack. Opacity shall not exceed 20 % averaged over a 5-minute period, as determined by a trained observer.

# Operational Impact of TSCA Approval

## B-824 Incinerator Operating Conditions

- **Permit Language: III.B.7.**
  - Dow must manually shut off PCB flow to incinerator immediately when discovering flow measuring or recording equipment is not functioning.

- **What this means for Operations:**
  - Upon stated condition, the PCB feed is immediately shutdown according to Dow's standard shutdown procedures as outlined in the contingency plan. The RCRA contingency plan is available for review.

- **Example:**
  - Shut off PCB flows anytime flow measuring or recording equipment is not functioning.

# Operational Impact of TSCA Approval

## B-824 Incinerator Operating Conditions

- **Permit Language: III.B.8.**
  - PCB waste streams must shut off immediately if excess O2 drops below 3% for more than 10 continuous minutes or 20 minutes out of a 60-minute period. Excess O2 continuous monitor shall be calibrated at least once every 24 hours by certified zero and span gas.

- **What this means for Operations:**
  - Upon stated condition, the PCB feed is immediately shutdown according to Dow's standard shutdown procedures as outlined in the contingency plan. The Dow contingency plan is available for review.
  - **The monitor calibration data is kept at the CEMS building and is available upon request.**

- **Example:**
  - **Daily calibration of O2 and CO CEMS (Both systems).**
  - **Failed calibrations result in not burning PCBs/Hazardous Waste.**

# Operational Impact of TSCA Approval

## B-824 Incinerator Operating Conditions

- **Permit Language: III.B.9.**
  - Calculate and record the dwell time on a daily basis. Combustion gases in the incinerator should be exposed to at least 1100C. If it is determined that the dwell time is less than 1.17 seconds, Dow shall immediately notify the EPA Region 6 in writing.

- **What this means for Operations:**
  - Recorded on daily log in control room.
  - If dwell time falls below 1.17 sec, shutoff all burns, locate problem, document resolution. Track on log sheet.

- **Example:**
  - Method used to determine dwell time calculation shall be submitted to EPA for review upon request.
  - Data located in Procedure book in control room, contact Tech Center.
  - Contact EH&S Technician immediately.

# Operational Impact of TSCA Approval

## B-824 Incinerator Operating Conditions

- **Permit Language: III.B.10.**
  - Dow shall limit the feed rate of heavy metals in its PCB waste feed streams: antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, and thallium.

- **What this means for Operations:**
  - The metals feed limits shall be the same as the limits allowed for RCRA wastes.
  - This is confirmed by waste characterization and performance burns.

- **Example:**
  - Stack testing demonstrated feed rate limits comply with RCRA waste limits per TCEQ.
  - Feed rate limits per RCRA

# Operational Impact of TSCA Approval

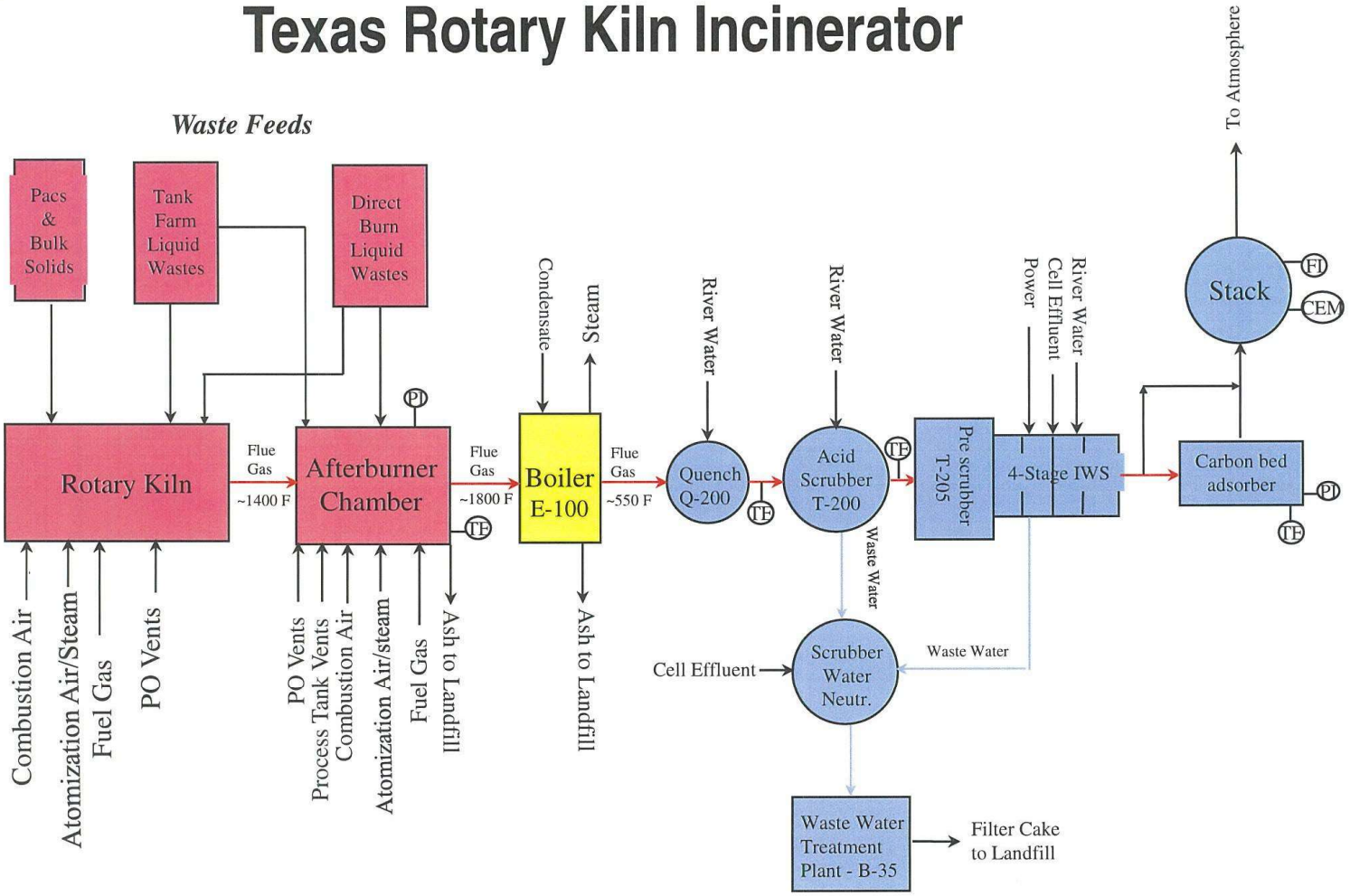
B-824 Incinerator Operating Conditions

- **Permit Language: III.B.11.**
  - Continuous emissions monitors for CO and O2 shall meet performance specs in 40 CFR 266, Appendix 9. Temperature thermocouples shall have a minimum accuracy range within 3%.

- **What this means for Operations:**
  - Block confirms performance specs are met

- **Example**
  - **CO and O2 daily calibration are maintained by Block Maintenance.**
  - **Thermocouples maintained by Block Maintenance.**

# Texas Rotary Kiln Incinerator



# Operational Impact of TSCA Approval

## B-33 Rotary Kiln Incinerator Operating Conditions

- **Permit Language: III.C.1.a.**
  - Dow is granted a waiver from the requirements that the incinerator meet combustion criteria of introducing liquids for 2 seconds dwell time at 1200˚C and 3% O2. Instead, the incinerator should be operated at a temperature greater than 892˚C, a dwell time of about 3.13 seconds, and greater than 3% O2. The Facility shall not dispose of PCBs if automatic shut-off devices are not operating properly.
- **What this means for Operations:**
  - The PCB feed rate is monitored electronically and will alarm and automatically shut off if the incinerator afterburner temperature drops below 892˚C.
  - The Kiln operates with a minimum dwell time of 3.13 seconds and minimum excess oxygen of 3%.
- **Example:**
  - **AWFCO:**
    - **Incinerator afterburner chamber temperature drops below 892˚C.**
    - **Dwell time is less than 3.13 seconds.**
    - **Excess oxygen is less than 3%.**
    - **Do not burn PCBs if AWFCO system is not operating properly.**

# Operational Impact of TSCA Approval

B-33 Rotary Kiln Incinerator Operating Conditions

- **Permit Language: III.C.1.b.**
  - Dow is granted a waiver from the requirements that the a combustion efficiency be at least 99.9% based on instantaneous CO readings. Instead, the PCB flow shall be immediately shutoff when the rolling hourly average of CO exceeds 100 ppm, as long as the CO2 in the stack does not fall below 10%.

- **What this means for Operations:**
  - % CO2 analyzed once per month, BIF requires automatic cutoff if CO level reaches 100 ppm.
  - CO monitor shall be calibrated at least once every 24 hours.

- **Example:**
  - Daily calibration of CO and O2 CEMS.
  - CO2 stack sample every other month.11/6

# Operational Impact of TSCA Approval

## B-33 Rotary Kiln Incinerator Operating Conditions

- **Permit Language: III.C.2. - removed with 2017 renewal**
  - PCB feed rate shall not exceed 20 lb/hr. Concentration of waste stream shall be based on current analysis. Flow rate measured continuously.
  - Dow shall analyze the following PCB contaminated waste streams for PCB's and keep results on file: Generator provides PCB analysis per below frequency.
    - a. Analyze each batch of PCB dielectric fluid from transformers
    - b. Analyze phased contaminated organics from groundwater recovery wells **each batch**
    - c. Analyze each batch of lab waste and spill materials contaminated with PCBs
    - d. Analyze the following PCB contaminated Chloro Pyridines streams monthly with "DOWM 101901-E-1A": D-106 diluent & D-229 tar process tanks
    - e. Analyze each batch of PCB contaminated waste from EDC direct chlorination process
    - f. Analyze each batch of PCB contaminated waste from decontamination and maintenance
    - g. Analyze each batch of PCB contaminated wastes A-3600 PMDI
    - h. Packaged /drummed PCB waste-Process knowledge and/or analysis
    - i.PCB wastes in liquids/sludge feed tanks, or liquid sludge bulk containers,each batch
- **What this means for Operations:**
  - All PCB analysis is stored in the "Safe Waste Handling Permits" Binder, B-3320 Library.
  - Determine PCB analysis and frequency before disposal.
  - All feed and flow rates are continuously measured electronically utilizing a micro motion flow meter and data will be provided upon request
- **Example:**
  - The State permit will say month for some waste streams instead of batch, however batch is more stringent, therefore each batch of these wastes is sampled.
  - Retain analysis documentation: "Safe Waste Handling Permits" binder at B-3320..

# Operational Impact of TSCA Approval

## B-33 Rotary Kiln Incinerator Operating Conditions

- **Permit Language: III.C.3.**
  - "Chlorine feed rate limited to TCEQ allowance or greater than 99% HCl removal, whichever is more stringent."

- **What this means for Operations:**
  - Testing described in "BIF Trial Burn Report, Environmental Operations, Kiln BIF Unit" Binder contains the performance testing report which demonstrates compliance with the specified parameters, found in B-3320 Library

- **Example:**

  Prescrubber(T-200),scrubber(T-205),IWS-210A-D.

# Operational Impact of TSCA Approval

B-33 Rotary Kiln Incinerator Operating Conditions

- **Permit Language: III.C.4.**
  - Total particulate emissions shall not exceed the limits imposed by TCEQ RCRA permit.

- **What this means for Operations:**
  - Total particulate emissions shall not exceed TCEQ RCRA permit limit of 34 ug/dscf corrected to 7% O2.

- **Example:**
  - Stack testing indicates rates do not exceed

# Operational Impact of TSCA Approval

B-33 Rotary Kiln Incinerator Operating Conditions

- **Permit Language: III.C.5.**
  - Dow shall operate the incinerator in a manner that prevents visible fugitive emissions.
- **What this means for Operations:**
  - Fugitive emissions monitoring is performed in accordance with 40 CFR 61, Subpart V.
- **Example:**
  - Title V permit limits the opacity of emissions from the incinerator stack. Opacity shall not exceed 20% averaged over a six-minute period for any source on which construction was begun after January 31, 1972.
  - RCRA has 5 % opacity

# Operational Impact of TSCA Approval

## B-33 Rotary Kiln Incinerator Operating Conditions

- **Permit Language: III.C.6.**
  - Dow must manually shut off PCB flow to incinerator immediately when discovering flow measuring or recording equipment is not functioning.

- **What this means for Operations:**
  - Upon stated condition, the PCB feed is immediately shutdown according to Dow's standard shutdown procedures as outlined in the contingency plan. The RCRA contingency plan is available for review.

- **Example:**
  - Shut off PCB flows anytime PCB flow measuring or recording equipment is not functioning.

# Operational Impact of TSCA Approval

## B-33 Rotary Kiln Incinerator Operating Conditions

- **Permit Language: III.C.7.**
  - PCB waste streams must shut off immediately if excess O2 drops below 3% for more than 10 continuous minutes or 20 minutes out of a 60 minute period. Excess O2 continuous monitor shall be calibrated at least once every 24 hours by certified zero and span gas.

- **What this means for Operations:**
  - Upon stated condition, the PCB feed is immediately shutdown according to Dow's standard shutdown procedures as outlined in the contingency plan. The Dow contingency plan is available for review.
  - The monitor calibration data is kept at the CEMS building and is available upon request.

- **Example:**
  - **Daily calibration of O2 and CO CEMS (both systems).**
  - **Failed calibration results in not burning PCBs/Hazardous Waste.**

# Operational Impact of TSCA Approval

## B-33 Rotary Kiln Incinerator Operating Conditions

- **Permit Language: III.C.8.**
  - Calculate and record the dwell time on a daily basis. Combustion gases in the incinerator should be exposed to at least 892C. If it is determined that the dwell time is less than 3.13 seconds, Dow shall immediately notify the EPA Region 6 in writing.

- **What this means for Operations:**
  - Recorded on daily log in control room.
  - If dwell time falls below 3.13 sec, shutoff all burns, locate problem, document resolution. Track on log sheet.

- **Example:**
  - Method used to determine dwell time calculation is less than 3.13 seconds shall be submitted to EPA for review upon request.
  - Contact EH&S Technician immediately.

# Operational Impact of TSCA Approval

## B-33 Rotary Kiln Incinerator Operating Conditions

- **Permit Language: III.C.9.**
  - Dow shall limit the feed rate of heavy metals in its PCB waste feed streams: antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, and thallium.

- **What this means for Operations:**
  - The metals feed limits shall be the same as the limits allowed for RCRA wastes.
  - This is confirmed by waste characterization and performance burns.

- **Example:**
  - **Stack testing demonstrated feed rate limits comply with TCEQ RCRA permit.**
  - **Feed rate limits for metals per RCRA**

# Operational Impact of TSCA Approval

## B-33 Rotary Kiln Incinerator Operating Conditions

- **Permit Language: III.C.10.**
  - Continuous emissions monitors for CO and O2 shall meet performance specs in 40 CFR 63, Appendix to Subpart EEE. Temperature thermocouples shall have a minimum accuracy range within 3%.

- **What this means for Operations:**
  - Block confirms performance specs are met.

- **Example:**
  - **CO and O2 daily calibration are maintained by Central Maintenance.**
  - **Thermocouple shall have minimum accuracy range within 3%, data maintained by Block Maintenance.**

# Operational Impact of TSCA Approval

## B-824 & B-33 PCB Storage Area Operating Conditions

- **Permit Language: III.D.1.**
  - Dow must store PCB's in approved designated areas

- **What this means for Operations:**
  - PCB waste cannot be stored in any place other than the authorized storage areas.

# Operational Impact of TSCA Approval

B-824 & B-33 PCB Storage Area Operating Conditions

- **Permit Language: III.D.2.**
  - Adequate aisle space shall be maintained to allow for unobstructed access to all PCB Items stored on-site by personnel, fire protection equipment, and decontamination equipment.

- **What this means for Operations:**
  - Keep aisle space between PCB container waste for inspection, fire and spill clean up.

- **Example:**
  - Aisle space in B-3302 and B-3307

# Operational Impact of TSCA Approval

## B-824 & B-33 PCB Storage Area Operating Conditions

- **Permit Language: III.D.3.**
  - Dow shall not exceed the maximum storage inventory of PCBs and PCB Items. Requests for increasing the maximum inventory shall be submitted and approved by the EPA in writing prior to storage of additional PCB inventory.

- **What this means for Operations:**
  - Cannot store more than the maximum allowed inventories of PCB waste.

# Operational Impact of TSCA Approval

B-824 & B-33 PCB Storage Area Operating Conditions

- **Permit Language: III.D.4.**
  - Dow shall document the PCB content of PCB Items before accepting the material for processing. Sampling and analytical methods shall conform to EPA regulations and guidance. Results of all analyses shall be recorded and kept on file.

- **What this means for Operations:**
  - PCB analysis for approved generators

- **Example:**
  - **B-33 and B-824: Determine PCB analysis per frequency**
  - **Retain copy of PCB analysis at B-3320 and B-824.**

# Operational Impact of TSCA Approval

B-824 & B-33 PCB Storage Area Operating Conditions

- **Permit Language: III.D.5. – removed with 2017 renewal**
  - **All PCB tank storage facilities shall comply with 40 C.F.R. § 761.65(c)(7).**

- **What this means for Operations:**
  - **Tank storage only at B-824**
  - **Design of containers should be reviewed for structural safety.**
  - **Prepare and implement a Spill Prevention Control and Countermeasure Plan.**

- **Example:**
  - **B-824: V-2 and V-6(inactive)**
  - **B-33: NO PERMITTED PCB TANK STORAGE**

# Operational Impact of TSCA Approval

## B-824 & B-33 PCB Storage Area Operating Conditions

- **Permit Language: III.D.6.**
  - **Decontamination of PCB containers or movable equipment shall comply with 40 C.F.R. §761.79.**
- **What this means for Operations:**
  - **Dow does not reuse or recycle PCB containers for any other use.**
- **Example:**

  **Decontamination by triple rinse of approved solvent.**

# Operational Impact of TSCA Approval

B-824 & B-33 PCB Storage Area Operating Conditions

- **Permit Language: III.D.7.**
  - **All PCB articles, equipment and containers shall be properly marked as required by 40 C.F.R. §761.90 and 45.**
- **What this means for Operations:**
  - **Procedures documenting proper labeling of equipment (i.e. containers) are located in the B-3320 Library**
- **Example:**
  - **Large PCB Mark**
  - **Small PCB Mark**

# Operational Impact of TSCA Approval

## B-824 & B-33 PCB Storage Area Operating Conditions

- **Permit Language: III.D.8.**
  - **All other PCB storage shall comply with 40 C.F.R. §761.65(b).**

- **What this means for Operations:**
  - **All other PCB storage shall comply with the following storage unit requirements:**
    - Adequate roof and walls to prevent rain water from reaching stored PCBs
    - Adequate floor that has continuous curbing with a minimum 6 inch high curb. The floor and curbing must provide a containment volume equal to at least two times the internal volume of the largest PCB Article or PCB Container or 25 percent of the total internal volume of all PCB Articles or PCB Containers stored there, whichever is greater.
    - No drain valves, floor drains, expansion joints, sewer lines, or other openings that would permit liquids to flow from the curbed area
    - Floors and curbing constructed of Portland cement, concrete, or a continuous, smooth, non-porous surface as defined at §761.3, which prevents or minimizes penetration of PCBs.
    - Not located at a site that is below the 100-year flood water elevation.

- **Example:**
- **B-3302 & B-3307**

# Operational Impact of TSCA Approval

## Standard Approval Conditions

- **Permit Language: IV.A. Severability**
  - **The conditions of this authorization are severable, and if any provision of this authorization, or any application of any provision is held invalid, the remainder of this authorization shall not be affected thereby.**

- **What this means for Operations:**
  - **Comply with all the provisions of the authorization.**

- **Example:**
  - **B-824 TOX/B-33RKI: Compliance with regulations and permit.**

# Operational Impact of TSCA Approval

## Standard Approval Conditions

- **Permit Language: IV.B. Departure from approval conditions/Failure to Submit Information**
  - If at any time Dow becomes aware of any violation of the conditions of this Approval, Dow shall notify the EPA Region 6 Facility Assessment Section by telephone within 24 hours, and shall submit a written report within five days.
  - When Dow officials become aware that it has failed to submit any relevant facts in the PCB storage and/or disposal application, or submitted incorrect information in any report to EPA, the Facility shall submit such facts or information to the EPA Region 6 Facility Assessment Section within 30 days

- **What this means for Operations:**
  - Immediately contact EH&S personnel if any permit condition are violated.
  - Notify EPA by telephone within 24 hours
  - Written notification by 5 days
  - Notify EPA, if Dow becomes aware it failed to submit any relevant facts in the PCB storage and/or disposal. Submit facts within 30 days.

- **Example:**
  - **No recording of PCB flows**

# Operational Impact of TSCA Approval

## Standard Approval Conditions

- **Permit Language: IV.D. Permits**
  - During PCB disposal, treatment, and storage, Dow shall comply with all Federal, State, and local regulations and agreements, including
    - Permits for the storage of PCBs, and
    - The applicable State air and hazardous waste permits.

- **What this means for Operations:**
  - Comply with all provisions in the permits

- **Example:**
  - **TCEQ RCRA Permit**
  - **TCEQ Air Permit**

# Operational Impact of TSCA Approval

## Standard Approval Conditions

- **Permit Language: IV.E. Duty to protect environment/Worker Protection**
  - Dow shall correct any adverse impact on the environment resulting from non-compliance with this approval.
  - Dow shall comply with the health and safety practices described in the application. Personnel safety requirements and procedures for PCB handling, storage, and transport shall comply with Occupational Safety and Health Administration regulations to this Facility.

- **What this means for Operations:**
  - Safety and IH protocols apply to PCB handling, storage, and transport

- **Example:**
- **Report all PCB spills to EH&S Technicians**
- **Only trained personnel for cleanups.**

# Operational Impact of TSCA Approval

## Standard Approval Conditions

- **Permit Language: IV.G.1. Maintenance**
  - Have in place a routine inspection and maintenance program for all equipment and/or systems of treatment and control which are installed or used to achieve compliance with the conditions of this approval.

- **What this means for Operations:**
  - **Routinely inspect control devices, equipment or systems of treatment installed to achieve compliance.**
  - **Routinely perform maintenance on control devices, equipment or systems of treatment installed to achieve compliance.**

# Operational Impact of TSCA Approval

## Standard Approval Conditions

- **Permit Language: IV.G.2. Maintenance**
  - All vehicles owned by Dow used for the transport of PCBs shall meet DOT regulations during transport of PCBs.

- **What this means for Operations:**
  - EO does not own any transport vehicles that transport PCB.
  - Contractor transporters

- **Example:**
  - **B-824 TOX/B-33 RKI: Ensure that all contractors transporting PCB's are approved by Dow:**
    - **Clean Harbors is currently approved by Dow.**

# Operational Impact of TSCA Approval

## Standard Approval Conditions

- **Permit Language: IV.H.1. Emergency and Contingency Plans**
  - Dow shall follow the SPCC and Contingency Plan whenever there is a release of PCBs. A copy of these plans along with a copy of this approval shall be kept onsite in an area easily accessible to employees who handle PCBs. The SPCC and Contingency Plan shall be amended and a copy sent to EPA immediately after any of the following events
    - The plan is found inadequate during an emergency
    - The list of Emergency Services and Security (ES&A) Department personnel changes, or
    - Modifications are made to the SPCC plan.

- **What this means for Operations:**
  - **In case of an emergency follow the SPCC and Contingency plan.**
  - **Send updates to EPA immediately after any of the following events:**
    - **Plan is found inadequate during an emergency**
    - **List of Emergency Services and Security Department Personnel changes**
    - **Modifications are made to the SPCC Plan**
  - **The Spill Prevention Control and Countermeasure plan is located in the "EMER 401 SPCC Plan" Binder, B-3320 library.**
- **Example:**
  - **Ensure SPCC and Contingency plan is adequate and up-to-date.**

# Operational Impact of TSCA Approval

## Standard Approval Conditions

- **Permit Language: IV.H.2. Emergency and Contingency Plans**
  - PCB spills occurring at Dow shall be cleaned up immediately to levels required by the PCB Spill Cleanup Policy 40 CFR 761.120-135. Dow shall submit reports monthly of any spill(s) occurring within the previous 30-day period, and what action was taken to remediate the spill(s).

- **What this means for Operations:**
  - Immediately clean-up per PCB Spill Clean-Up Policy.(761.120,123,125,130,135)
  - Submit reports monthly on spills occurring in the previous 30-day period.

- **Example:**
  - Spill reporting for previous 30 day period by EH&S.
  - PCB Spill Cleanup Documentation –Form 2 or Form 3.
  - RCI of spills
  - Written report within 30 days to EPA

# Operational Impact of TSCA Approval

## Standard Approval Conditions

- **Permit Language: IV.H.3. Emergency and Contingency Plans**
  - The release of PCBs into the environment is cause for Dow to immediately initiate clean-up. Dow shall also initiate an investigation into the cause and potential impact of the release and provide a detailed written report to the EPA Region 6 Facility Assessment Section within 30 days of the discovery of the release.

- **What this means for Operations:**
  - If PCBs are released into the environment:
    - Immediately initiate clean-up
    - Root cause Investigation (RCI) of the cause and potential impact.
    - Provide a detailed written report to the EPA within 30 days.

- **Example:**
  - Spill reporting for previous 30 day period by EH&S
  - PCB Spill Clean-Up Documentation –Form 2 or Form 3.
  - RCI of spills
  - Written report within 30 days to EPA

# Operational Impact of TSCA Approval

## Standard Approval Conditions

- **Permit Language: IV.H.4. Emergency and Contingency Plans**
  - Any PCB spills or releases occurring at the Facility or from any Facility owned PCB transport vehicle, shall be cleaned up according to the PCB Spill Cleanup Policy.

- **What this means for Operations:**
  - Immediately clean-up per PCB spill clean-up policy.
  - Submit reports monthly on spills occurring in the pervious 30-day period.

- **Example:**
  - Dow own PCB Transport Vehicles
    - Spill reporting for previous 30 day period by EH&S
    - PCB Spill Clean-Up Documentation–Form 2 or Form 3
    - RCI of spills
    - Written report within 30 days to EPA
  - Non-Dow own PCB transport vehicles
    - Spills reported by the contractor

# Operational Impact of TSCA Approval

## Standard Approval Conditions

- **Permit Language: IV.H.5. Emergency and Contingency Plans**
  - Dow shall follow its current Site and plant RCRA Contingency Plans during emergencies.

- **What this means for Operations:**
  - Dow will follow the RCRA Contingency plans during an emergency.
  - Initiate RCRA per Contingency Plan.

- **Example:**
- **Fire and or explosion**
- **Container or tank LOPC**

# Operational Impact of TSCA Approval

## Standard Approval Conditions

- **Permit Language: IV.I.1. Recordkeeping and Reporting**
  - Dow shall comply with all applicable monitoring and record keeping requirements as specified in 40 C.F.R. §761.180 for commercial storage. All PCB records, documents and reports shall be maintained at Dow, and shall be made available for inspection by authorized EPA representatives.

- **What this means for Operations:**
  - Maintain annual log with name, address, and EPA identification number, number of manifests for that year and supporting documentation.
  - Maintain documentation of when PCB's are incinerated, the rate of PCB feed, temperature of combustion, and stack emissions. Records shall be maintained for a period of 5 years.
  - Maintain records of all documents, correspondence, and data to/from any local, state or federal authority, pertaining to the storage or disposal of PCB's and PCB items at the facility.

- **Example:**
  - PCB analysis for shipments per frequency
  - Manifests
  - Safe Waste Handling Permits
  - Container tracking ID
  - Daily calibration of CO and O2 CEMS.

# Operational Impact of TSCA Approval

## Standard Approval Conditions

- **Permit Language: IV.I.2. Recordkeeping and Reporting**
  - Dow shall maintain an inventory of PCBs in storage. The inventory shall include a description of each PCB Item, the date the PCB Item was taken out of service, the quantity received, and the date PCB Items were shipped off-site for disposal.

- **What this means for Operations:**
  - Inventory of PCB containers to B-3302 and B-3307

- **Example:**
  - Tracking ID for PCB containers in database-Description, Date taken out of service, Quantity, date of shipment to off-site disposal
  - Destruction of PCB containers
  - Offsite shipments
  - Waste Scheduler
  - Annual PCB Reporting

# Operational Impact of TSCA Approval

## Standard Approval Conditions

- **Permit Language: IV.I.3. Recordkeeping and Reporting**
  - Records relating to PCB sampling and analysis shall be retained by the Facility for five years. These records shall include the following info:
    - Date of each sample collected
    - Volume of each sample collected
    - Name of the person who collected the sample, and
    - Name of the company that analyzed the sample along with the name of the analyst, the date the sample was analyzed, the method used, and the reported result.

- **What this means for Operations:**
  - Retain all sampling records for a period of five years.

- **Example:**
  - PCB analysis for shipments received
  - EAC performs some analysis

# Operational Impact of TSCA Approval

Standard Approval Conditions

- **Permit Language: IV.I.4. Recordkeeping and Reporting**
  - **For Facilities that analyze PCB samples at an onsite laboratory, sample volume records are not required if the remainder of the sample is returned to the onsite stored PCB Item from which the sample was taken.**

- **What this means for Operations:**
  - Generator properly disposes sample.

- **Example:**
  - **Generators to provide analysis**

# Operational Impact of TSCA Approval

## Standard Approval Conditions

- **Permit Language: IV.I.5. Recordkeeping and Reporting**
  - Following each spill cleanup action, Dow shall develop and maintain records of the cleanup in accordance with 40 CFR 761.120-135. These records shall include:
    - identification of the source of the spill
    - estimated or actual date and time of the spill occurrence
    - date and time cleanup was completed
    - description of the spill location
    - pre-cleanup sampling data used to establish spill boundaries and a description of the sampling methodology used
    - amount and type of waste cleanup material generated
    - description of the solid surfaces cleaned and of the double wash/rinse method used
    - post cleanup verification sampling information, and
    - a certification by a responsible official stating that the cleanup leavels required by EPA were achieved.

- **What this means for Operations:**
  - Spills reported immediately.
  - Spills clean-up immediately.
  - Document above information for records

- **Example:**
  - PCB Spill Cleanup Documentation (Form 2 & 3)
  - Activity Coordinator can sign off for Cleanups That clean-up levels required by EPA are achieved.

# Operational Impact of TSCA Approval

Standard Approval Conditions

- **Permit Language: IV.I.6. Recordkeeping and Reporting**
  - Dow shall maintain copies of certificates of disposal provided by the commercial disposal facility.
- **What this means for Operations:**
  - Certificates of disposal for PCB shipped off-site
- **Example:**
  - **Clean Harbors will provide certificates of disposal .**
  - **Dow to generate Certificates of Disposal for Waste incinerated at Kiln.**

# Operational Impact of TSCA Approval

Standard Approval Conditions

- **Permit Language: IV.I.7. Recordkeeping and Reporting**
  - Dow may utilize electronic formats to maintain any required records and reports.

- **What this means for Operations:**
  - Electronic formats are acceptable for record keeping and reporting purposes

- **Example:**
- **Temperatures**
- **Flows- feed rates**
- **Dwell time**

# Operational Impact of TSCA Approval

## Standard Approval Conditions

- **Permit Language: IV.J. Inspections and Entry**
  - Dow shall allow an authorized representative to
    - Enter the facility where the PCBs are being handled, stored, treated, or disposed
    - Have access to and copy, at reasonable times, required record
    - Inspect facilities or equipment
    - Sample or monitor for the purpose of assuring compliance with the conditions of the approval

- **What this means for Operations:**
  - Records must be maintained for PCB analysis

- **Example:**
  - PCB analysis record retention
  - Certificates for offsite
  - Monitoring and recordkeeping
  - Instrumentation calibration – CEM, thermocouples, dwell time.

# Operational Impact of TSCA Approval

## Standard Approval Conditions

- **Permit Language: IV.K. Information requests**
  - Dow shall furnish EPA with any relevant information requested to determine whether cause exists for modifying, revoking, reissuing, or terminating this approval, or to determine compliance with this approval.
  - Dow shall provide copies of records required to be kept under TSCA PCB regulations.

- **What this means for Operations:**
  - Dow will provide any requested information in a timely manner.

- **Example:**

  Maintain electronic recordkeeping, paperwork, PCB analysis ,PCB tracking , Certificates of Disposal, etc.

# Operational Impact of TSCA Approval

Standard Approval Conditions

- **Permit Language: IV.L. Transfer of ownership**
  - Dow shall notify the RA at least ninety days before transferring ownership of the Facility.

- **What this means for Operations:**
  - Notify EPA of any transfer of ownership

- **Example:**
  - Dow sells Kiln or B-824 to another company

# Operational Impact of TSCA Approval

Standard Approval Conditions

- **Permit Language: IV.M. Effective Date**
  - This approval becomes effective on the date of the approval letter, and shall expire at midnight, five years later. Please apply for re-authorization at least one year before the expiration date.

- **What this means for Operations:**
  - Dow must re-apply one year before expiration date.

- **Example:**
  - **Re-apply for permit in 2010. Approval renewal was submitted 10/2010.**
  - **Received renewal on 2/2012.**
  - **Received renewal on 6/6/2017**

# PCB Tracking: Cradle to Grave

- All PCB wastes disposed of Onsite and Offsite must be accounted for annual PCB report
- Tracking ID associated with waste must follow thru disposal.
- Any re-labeling of PCB wastes must be reconciled with original Tracking ID.
- Weights of waste must also follow the Tracking ID.
- Document any changes to Tracking ID and weights.
- Notify EH&S of any Tracking ID and weight changes.
- MES will track PCB wastes for Kiln.

# Questions?

# Post Test

- Written test
- Review test

## Appendix 2 Contingency Plans



# Texas Operations RCRA Contingency Plan

## 1.0 Introduction

Dow Texas Operations maintains extensive internal emergency response capabilities. Emergency response support is provided by several departments including:

- Emergency Services & Security (ES&S)
- Security
- Emergency Services including fire, hazardous materials, emergency medical services, off-site distribution emergency response and crisis management
- Fire Department
- Medical Department
- Environmental Operations and Analytical Environmental Center

In addition, Dow has plans in place with the Brazoria County Sheriff's Department, CHI St. Luke's Health Brazosport, Industrial Community Awareness Emergency Response (CAER) Mutual Aid, and various other local response agencies.

Because of the size and complexity of the Dow Texas Operations, emergency response personnel and equipment are centralized in several locations (Figure 1). Individual operating plants are not expected to maintain extensive emergency capabilities. However, operating plants are responsible for providing information on plant materials and operations during an emergency. This information is normally provided to facility-wide emergency response personnel by the operating plant emergency coordinator. A description of the Dow departments having emergency response responsibilities is given below.

# 2.0 Operating Plants

If an emergency situation, such as a spill, gas release, fire, explosion or extensive power failure occurs, the operating plant experiencing the emergency will follow these general procedures:

## 2.1 Reporting an Emergency

a. All emergencies within Dow Texas Operations are reported to ES&S, by calling X66666 or (979) 238-2112 inside the plant, or (979) 238-2112 outside the plant.

b. Emergency numbers are designated for emergency use only. These phone lines are monitored by ES&S dispatchers 24 hrs/day, 7 days/week. Emergencies may also be reported to ES&S using the facility-wide radio system.

c. The person reporting the emergency gives his or her name and the phone number from where he/she is calling. The nature and location of the emergency and the name of any chemical, if such is involved, is stated.

   The reporting person remains on the line until the message is clearly understood and confirmed. Other information, such as equipment involved and the specific location in the structure or building and whether or not assistance is needed to block roads and alert downwind locations, is reported to ES&S during the phone conversation.

   The necessary equipment and personnel are dispatched while the reporting person is still on the line.

d. A person in the plant is designated as the Immediate Response Leader (IRL). The IRL is contacted by ES&S to give significant information, such as chemical involved, to emergency response personnel. IRLs are assigned such that a IRL is present at the plant 24 hrs/day, 7 days/week. ES&S are able to summon additional IRLs any time necessary.

## 2.2 Emergency Horn Procedure

a. Any operating plant involved in an emergency is responsible for activating the appropriate emergency horn signals.

b. The following emergency horn signals are used throughout Dow Texas Operations.

   Gas Release _____ (continuous blast)
   This signal is sounded by the department where a hazardous release occurs. This signal cancels all safe work permits and stops smoking in the area. All, except those charged with the responsibility of taking care of the emergency, leave the immediate area of the emergency and go to designated upwind assembly points. Supervision is responsible for accounting for all personnel at the assembly point(s). The gas release signal is discontinued when the release is stopped, or notification is given by Incident Command established by ES&S personnel that the affected areas have been adequately blocked off. All personnel downwind of the signal are on stand-by and are prepared to use necessary protective equipment, or to leave their area.

Alert - - - - - - - - (series of short blasts)
This signal cancels safe work permits and stops all smoking in the block. All personnel in the block where this signal is given prepare themselves to use proper protective equipment and to evacuate if necessary.

Evacuate ---- ---- ---- (series of 3 short blasts)
When this signal is sounded, all personnel must leave the area and go to the proper assembly point(s). Supervision is responsible for accounting all personnel at the assembly point(s). After evacuation, employees are to remain clear of the emergency area until the "All Clear" signal is given or they are notified by Incident Command personnel that it is safe to return to their work area.

All Clear _____ _____ _____ (series of 3 long blasts)
This signal must first be sounded by the department where the initial emergency occurs. A verbal "All Clear" for certain areas no longer affected by the emergency may be issued by Incident Command.

When the "All Clear" is given, all personnel return to their work areas

c. Individuals working in a block are required to familiarize themselves with the emergency plan for that particular block.

d. ES&S is responsible for isolating the area downwind of an emergency and for preventing unknowing entry to the emergency area. Motor vehicles are not allowed to be driven into an area downwind of a gas release signal.

e. Use of the emergency horns is restricted to emergency signals and tests.

f. The host is responsible for a visitor and his safety. The visitor is escorted by a host while in the plant.

g. Routine Testing of Emergency IIorns

The emergency horns are tested Mondays at 12 noon. The "All Clear" signal is given first and last in the test cycle.

# 3.0 Emergency Services and Security

During an emergency situation, ES&S provides the primary means of communication to those outside of the immediate emergency area and to emergency response personnel at the scene of the emergency.

To alert potentially affected areas of an emergency situation, ES&S maintains a Plant Alerting System. The Plant Alerting System is used in emergencies such as major spills, gas releases, explosions, and power failures. The Plant Alerting System is activated by the ES&S headquarters radio dispatcher.

The following information is relayed to the plants when the alert is sent:

1. type of material involved
2. origin of emergency
3. wind direction and speed

ES&S is also responsible for establishing Incident Command providing emergency response personnel and assisting plant personnel during an emergency. The National Incident Management System (NIMS) is utilized. Emergency response responsibilities include: manning the Emergency Communication Center; alerting plant areas, management and other interested parties to the nature of the emergency; dispatching patrol vehicles to set up roadblocks; assisting in evacuating personnel and/or manning firefighting equipment, and calling off-duty firemen to report for the emergency.

In the event of a major release which may affect the surrounding community, ES&S will immediately notify local law enforcement agencies and the Brazoria County Sheriff's Department of the nature and extent of the emergency. Communications to local law enforcement agencies is by a Radio Alert System. Communication with Sheriff's Department is by an established "Hot Line".

# 4.0 Fire Department

Dow Texas Operations maintains a fully-equipped, professional fire department with members on duty twenty-four hours per day. Personnel and equipment are located at three stations at the facility (A-1308, B-8802, and the Fire and Security Building at the Oyster Creek Site (Figure 1). Members of the Fire Department respond to all fires, explosions and major leaks or spills. The Fire Department is also responsible for:

1. Operating the emergency ambulance service.
2. Performing any search and rescue services necessary in an area affected in an emergency.
3. Training of plant personnel in the proper use of emergency equipment (fire extinguishers, fire hoses, fire monitors, etc.),
4. Inspection and testing of equipment (fire extinguishers, sprinkler systems, etc.) and
5. Maintenance and inspection of emergency respiratory equipment (SCBA units, full-face gas masks, etc.)

Personnel are extensively trained in the proper procedures and hazards of industrial firefighting. Fire training facilities are maintained at the site and all firefighters are required to complete an industrial firefighting course.

# 5.0 Medical Department

The Medical Department is housed in Plant B Building B-1820. The facility is equipped to meet acute care needs as well as conduct on-site health surveillance exams. It includes a minor procedure room, medical records and data storage areas, and training room. There are seven clinic rooms that are utilized for health assessment, clinic visits, and health counseling.

The department has full-time physician(s) (which have additional roles and responsibilities to other sites), Physician assistant(s), Registered Nurses, laboratory technicians and other personnel.

The Medical Department does not treat emergencies. If conditions warrant emergency treatment, patients will be transferred to CHI St. Luke's Health (Lake Jackson) or to medical complexes in Houston and/or Galveston.

# 6.0 Environmental Operations and Environmental Analytical Center

Environmental Operations (EO) serves as a support group during an emergency. EO provides assistance to the ES&S in evaluating the impact of the emergency to the environment and minimizing such impact. EO manages wastes and contaminated media collected during cleanup activities.

Environmental Analytical (EA) provides needed analytical support during an emergency.

# Tables/Figures/Drawings for the Contingency Plan

## Tables



## Figures



## Drawings

None

TABLE 1. ARRANGEMENTS WITH LOCAL AUTHORITIES

| | |
|---|---|
| **Police: Brazoria County Sheriff's Department** | |
| **Address:** | **3602 County Road 45<br>Angleton, Texas 77515** |
| **Person Contacted: Dispatcher** | **Phone: 979-864-1201** |
| **Agreed Arrangements: Coordinate emergency response of all local law enforcement agencies in blocking highways and broadcasting evacuation orders.** | |
| **Fire: The Dow Chemical Company Texas Operations Fire Department** | |
| **Address:** | **The Dow Chemical Company<br>2301 N. Brazosport Blvd.<br>Freeport, Texas 77541-3257** |
| **Person Contacted: Security Dispatcher** | **Phone: X66666 (internal phone system)** |
| **Agreed Arrangements: Texas Operations has 3 stations manned 24 hours - 7 days a week by professional industrial firefighters. Assistance is available from the Texas City Operations site Union Carbide Company, a wholly owned subsidiary of The Dow Chemical Company.** | |
| **Fire: Brazosport Industrial CAER** | |
| **Address:** | **The Dow Chemical Company<br>2301 N. Brazosport Blvd.<br>Freeport, Texas 77541-3257** |
| **Person Contacted: Security Dispatcher** | **Phone: 979-238-2327** |
| **Agreed Arrangements: Provide emergency assistance according to capability.** | |
| **Hospital: CHI St. Luke's Health Brazosport** | |
| **Address:** | **100 Medical Drive<br>Lake Jackson, TX 77566** |
| **Person Contacted: Emergency Services** | **Phone: 979-297-4411** |
| **Agreed Arrangements: Provide medical support during an emergency.** | |

**TABLE 2. EMERGENCY COORDINATORS**

| *Name* | *Home Address* | *Office Phone(s) and/or Pager* | *Home Phone(s)* |
|---|---|---|---|
| **Primary:** | | | |
| Aaron Sims | On File [1] | 979-238-4405 | On File [1] |
| | | | |
| Mike Harper | On File [1] | 979-238-2112 | On File [1] |
| | | | |
| Nathan Theriot | On File [1] | 979-238-2112 | On File [1] |
| | | | |
| Chris Harvey | On File [1] | 979-238-2112 | On File [1] |
| | | | |
| Larry Davis | On File [1] | 979-238-2112 | On File [1] |
| | | | |
| Brian Lawson | On File [1] | 979-238-2112 | On File [1] |
| | | | |
| Mike Petty | On File [1] | 979-238-2112 | On File [1] |
| | | | |

[1] On File information in Texas Operations Integrated Contingency Plan.

**TABLE .3. - EMERGENCY EQUIPMENT**

| *Equipment* | *Location* | *Minimum capacity* |
|---|---|---|
| Firefighting equipment | Plant A | 4,500 gpm water<br>700 gallons of foam |
| 2 Ambulances | Plant A | Box Type with advanced life support (MICU) |
| Firefighting equipment | Plant B | 6,000 gpm water<br>700 gallons foam<br>100 ft. Tower ladder |
| 2 Ambulances | Plant B | Box Type with advanced life support (MICU) |
| Firefighting equipment | Oyster Creek | 6,000 gpm water<br>700 gallons of foam<br>100 ft Tower ladder |
| 2 Ambulances | Oyster Creek | Box Type with advanced life support (MICU) |

* Dow maintains the flexibility to move actual equipment to different locations but will locate equipment that meets or exceeds the capacity specified in this table.


PLANT B
OYSTER CREEK
PLANT A
Facility Location
LEGEND
Emergency Services Area
Dow Plant Boundary
Dow Facility Operations Area Boundary
MEGlobal Facility
0 2000 4000 8000
SCALE 1" = 4000'
JACOBS
Texas Geoscience Firm Registration No. 50264
FREEPORT
TEXAS
EMERGENCY FACILITIES
The Dow Chemical Company, Texas Operations
Permit No. 50161
2016 Renewal Rev. 1; July 2019.
FIGURE 1

# RCRA <90 DAY CONTAINER STORAGE

- General Information
  - RCRA Map
- Implementation of Plan
  - Contingency Plan Implementation Procedures
  - Amendments to Contingency Plan
  - Post Implementation Procedures
- Waste Analysis
- Personnel List/Job Description
- Training Plan
- Contingency Plan
  - Plant-Wide
  - Site
  - Emergency Coordinator List
  - Emergency Equipment List
  - Emergency Equipment Inspection
  - Containment and Control Procedures
  - Preparedness and Prevention Plan
- Inspection Plan
- Recordkeeping and Notification

**B-3300**

**Dow Chemical, Texas Operations**

# B-3300 Tank/Container Storage Area
## General Description

| | |
|---|---|
| **BLOCK:** | **B-3300 ROTARY KILN INCINERATOR TRAIN, <90 DAY/PERMITTED TANKS & <90 DAY/PERMITTED CONTAINER STORAGE AREAS** |
| **RCRA Map** | The plant drawing to the B-3300 Tank/Container Storage Area can be located at B-3300 RCRA Map<br>*Filepath: \\txnt45\ENV_OPER\KILN\Approved\Responsible Care\Pollution Prevention\Solid Waste\RCRA\B-33 Kiln Less90 RCRA.pptx* |
| **Scope** | To state the contingency plan in the event of a real or impending emergency at B-3300 less than 90 day container storage areas, permitted storage areas, or permitted tanks in tank farm.<br>This contingency provides procedures and guidelines to be implemented in the event of an emergency in the B-3300 Rotary Kiln Incinerator Train, Tank Farm, <90 Day Container & Permitted Storage Areas. The B-33unit consists of the Wastes feed systems, the Rotary Kiln, Afterburner Chamber, the collections sumps, carbon absorber, induced draft fan, and air pollution control devices. The electronic copy Kiln Contingency Plan is located here.<br>file://txnt45/ENV_OPER/KILN/Approved/Responsible Care/Pollution Prevention/Solid Waste/RCRA/Kiln Contingency Plan.doc<br>This plan, in addition to block emergency plan, will be implemented whenever there is a spill, fire, explosion or any unplanned sudden or non sudden release of hazardous waste or hazardous waste constituents to air, soil or surface water which could threaten human health or the environment.<br>Small contained spills will not require implementation of the contingency plan, but will need to be collected and disposed of properly. |
| **Definition** | A real or impending emergency: An event such as a fire, explosion, or hazardous waste spill that may threaten human health or the environment. |
| **Environmental Precautions** | The following are Environmental considerations and actions to take in the job.<br>• **Follow all Texas Operations environmental compliance guidance where applicable to this procedure.**<br>  • **Unplanned Events**<br>  • **RCRA Tanks**<br>  • **Waste Container Storage** |

**Implementation of Plan**

Implementation of Plan -

This plan is meant for use in the following situations:

- A fire or explosion in a hazardous waste storage area.
- A spill occurs in a hazardous waste storage area which is not contained.
- Any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the B3300 Rotary Kiln units.

**Contingency Plan Implementation Procedures**

Procedures – should an incident occur as defined in Implementation of Plan, follow the steps below.

**Note:** The operator is the Emergency Coordinator until plant supervision or Emergency Response personnel are on the scene. Operator must take steps to mediate the situation.

| Step | Action | Check |
|---|---|---|
| 1 | Notify ES&S immediately at **x66666** for emergencies and x2112 for non-emergencies (Notifications to Plant Supervision should occur according to your Plant/Department Incident Response Plan). | |
| 2 | Report the following information:<br>• Name of caller<br>• Phone number at which the caller can be reached<br>**Note:** This phone must be answered by a person and not voice mail (e.g. control room, etc.)<br>• Location of incident<br>• Incident level:<br>• **Level 0:** An incident within the boundaries of the B-3300 block. No impact is anticipated outside of the B-3300 block.<br>• **Level 1:** An incident within B-3300 that will affect adjacent blocks. No impact is anticipated outside of the Dow plant site.<br>• **Level 2:** An incident within B-3300 that may impact another block or unit. However, the community may be affected.<br>• **Level 3**: An incident which will affect areas outside of the plant site. A full emergency condition exists.<br>• Material spilled<br>• Estimated amount spilled<br>• Estimated amount lost to the environment<br>• If there is any possibility that the Reportable Quantity has been exceeded<br>• If assistance from Fire, Security, or Environmental is needed<br>• Brief description of the event | |

| | | |
|---|---|---|
| 3 | Stop the leak or release if it can be done safely. | |
| 4 | Contain the spilled material (if possible). | |
| 5 | Emergency Coordinator will make the decision to evacuate. See Figure 1 for evacuate routes and assembly. Sound the appropriate horn of adjacent blocks or plants could be affected. The Emergency Coordinator will decide whether to shutdown the plant down in an orderly manner, conduct an emergency shutdown, and run the plant with a small crew equipped with proper protective equipment or other response. | |
| 6 | All personnel, including contractors, maintenance, staff and operators must report to B-3320 control room. | |
| 7 | A head count will be taken at the assembly area. The designated evacuation assembly area. (primary assembly points are):<br>**Primary** – East side of B-3320<br>**Secondary** – North side of B-3329<br><br>Personnel will be accounted for using the head count. | |
| 8 | All work permits are void during an "Alert" and when emergency horns are sounded and until the "All Clear " or verbal to return to work by ES&S. | |
| 9 | Plant evacuation procedures can also be found in the Unit Emergency Plan. | |

# B-3300
# Containment and Control

**Containment and Control Procedure**

**DO NOT ATTEMPT TO CLEAN UP ANY HAZARDOUS WASTE SPILLS.** Hazardous spills must be cleaned up by properly trained personnel.

| Step | Action | Check |
|---|---|---|
| 1 | Take immediate action to stop the fire, explosion, or hazardous waste spill and contain any spilled material.<br>**NOTE: THIS MUST BE DONE SAFELY!** | |
| 2 | Normal protective equipment is not intended gross exposure. Evaluate the need for additional protective equipment when using emergency equipment. Use the appropriate items. | |
| 3 | Try to use remote means to handle the situation wherever possible (computer controlled EBV's, pumps, etc.) to shutdown appropriate furnace operation. | |
| 4 | If a fire is beyond incipient stage wait on assistance from the fire department. | |
| 5 | Isolate the area to prohibit hazardous material from getting to other areas of permit. | |
| 6 | Cover spill with water or foam (foam by Fire Department), if appropriate to prevent the spread or loss of material. | |
| 7 | Assess the need to secure the area from inadvertent entrance by unauthorized personnel and take necessary precautions as needed. Barricade if necessary. | |
| 8 | Notify the Emergency Response personnel to shutdown. If the plant has not already shutdown, together assess the need to shutdown and proceed accordingly. | |
| 9 | The Emergency Coordinator(s) will collaborate with ES&S to ensure that changing conditions of the emergency are known to all affected Plant A personnel and the community, if applicable. | |
| 10 | Avoid the possibility of the having the material enter the ditches or canals (close valves, use sandbags or adsorbent booms, etc.).Action should be taken at distance where direct contact with the liquid spill will occur or where vapor contamination requires breathing air. | |
| 11 | Catch water samples if necessary. | |

| | | |
|---|---|---|
| 12 | If material was spilled or released as a result of fire or explosion, determine the quantity.<br>**NOTE**: Do not spend too much time determining the quantity. Make an approximate estimate and continue on with the procedure. | |
| 13 | As soon as is practical, begin compiling necessary information for an investigation (charts, notes, physical evidence, Spill Report Form, etc).<br>**NOTE**: One-minute data from the PLC is averaged within 24 hours. Pertinent information may be lost if data is not collected and printed in a timely manner. | |

# B-3300
# Post Implementation Plan

**Emergency Equipment Cleanup And Disposal Procedure**

| Step | Action | Check |
|---|---|---|
| 1 | After emergency, all emergency equipment listed in the contingency plan must be disposed of properly or be cleaned and fit for its intended use before operations are resumed. | |
| 2 | The Emergency Coordinator will ensure that all of the equipment listed in this Contingency Plan is cleaned and decontaminated and fit for intended use before operations resume. | |
| 3 | All cleaning materials and spent solvents used to clean up hazardous waste will be sent to Environmental Operations or appropriate facility. | |

**Training Requirements**

**Personnel must be HAZWOPER trained for any cleanup.**

Immediately after an emergency, the Emergency coordinator must provide for treating, storing, and disposing of all contaminated soil, surface water or other materials. Contaminated materials and spent solvents, after proper characterization, will be sent to Environmental Operations for disposal.

**Recordkeeping and Notification**

After the Contingency Plan is implemented, federal, state, and local agencies will be notified when cleanup procedures are completed and all equipment is returned to service. Operation of the affected portion of the facility will not resume until notification is made.

| Step | Action | Check |
|---|---|---|
| 1 | The time, date, and details of any incident that requires implementing the Contingency Plan will be noted in operating record. | |

| | | |
|---|---|---|
| 2 | Within 15 days after the incident, a written report will be submitted to EPA that includes the following information:<br>• Name, address<br>• Date, time<br>• Name and quantity of material involved<br>• Extent of injuries, if any<br>• An assessment of actual or potential hazards to human health or the environment, where this applicable.<br>• Estimated quantity and disposition of material that resulted from incident.<br>• Forward information to Site RCRA Coordinator for notification. | |

**Amendments to Contingency Plan**

This contingency plan will be updated immediately as changes occur in the following:

- the procedures
- the facility, changes in design, construction, operation ,maintenance, or other circumstances in way that materially increases the potential for fires, explosions, or releases of hazardous waste or changes in the response necessary in any emergency.
- the Emergency Coordinator List
- the list of emergency equipment changes
- the basic characteristics of the materials changes.
- plan fails in an emergency

This plan will be assessed by the Issuer and the Emergency Coordinator at least annually to ensure it is maintained up-to-date.

Refer any inquiries by unauthorized personnel to ES&S.

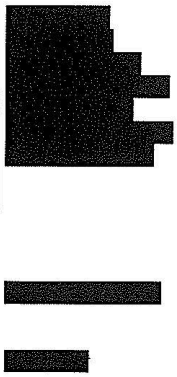
# B-3300
## Waste Analysis Plan

| BLOCK: | **B-3300 ROTARY KILN INCINERATOR TRAIN, <90 DAY/PERMITTED TANKS & <90 DAY/PERMITTED CONTAINER STORAGE AREAS** |
|---|---|
| | The Waste Analysis Plan can be located:<br>*Filepath: \\txnt56\EHS_Leveraged_Delivery\Approved\RespCare-Poll Prev-Waste\Permit\WAP\Waste Analysis Plan.doc* |
| | Each waste stream will be re-characterized whenever the composition changes or renewed at least every three years per the Texas Operations Waste Analysis Profile or annually for waste that are being sent off-site for treatment. |

# B-3300
## Personnel List/Job Description

**BLOCK:** **B-3300 ROTARY KILN INCINERATOR TRAIN, <90 DAY/PERMITTED TANKS & <90 DAY/PERMITTED CONTAINER STORAGE AREAS**

| NAME | TITLE | RESPONSIBILITIES | QUALIFICATIONS |
|---|---|---|---|
| [redacted] | **Operator/User** | Conducting and documenting required inspections, packaging and handling and shipping of wastes. | Annual RCRA hazardous waste management training as described in the Training Plan. |
| [redacted] | **EH&S Contact**<br>**Activity Coordinator**<br>**Technical Advisor**<br>**Run Plant Engineer**<br>**Production Coordinator** | Ensuring required inspections are performed and RCRA filing system is maintained.<br>*Ensuring that corrective action is completed promptly and the action is documented (action taken, date completed, and signature) on the inspection form. | Annual RCRA hazardous waste management training as described in the Training Plan,<br>→Recommend← 1 year plant experience. |
| [redacted] | **EH&S Contact** | Training plant personnel in proper handling of RCRA hazardous waste and overall maintenance of the tank system or container storage area. | Annual RCRA hazardous waste management training as described in the Training Plan,<br>→Recommend← 1 year plant experience. |

| | | | |
|---|---|---|---|
|  | **Emergency Coordinators / Facility Immediate Response Leaders**<br><br>**Alternate Coordinators**<br><br>**Operations Leader** | Must be thoroughly familiar with:<br>• The Contingency Plan,<br>• Assist Emergency Response with any emergencies,<br>• Unit operations and activities,<br>• Location of all records, and<br>• Unit layout. | Annual RCRA hazardous waste management training as described in the Training Plan,<br>→Recommend← 1 year plant experience. |

Record Retention = Until superseded

# B-3300
## Training Plans

**BLOCK:** **B-3300 ROTARY KILN INCINERATOR TRAIN, <90 DAY/PERMITTED TANKS & <90 DAY/PERMITTED CONTAINER STORAGE AREAS**

**Training Requirements**

New employees must receive the training described below prior to working with hazardous waste unsupervised.

**Personnel must be HAZWOPER trained for any cleanup.**

Immediately after an emergency, the Emergency coordinator must provide for treating, storing, and disposing of all contaminated soil, surface water or other materials. Contaminated materials and spent solvents, after proper characterization, will be sent to Environmental Operations for disposal.

| TITLE | TRAINING REQUIRED | FREQUENCY |
|---|---|---|
| • Activity Coordinators<br>• Operations Leader<br>• Operator (i.e. Outside/Board Operator, Press Operator, Lab Operator, and Safety Operator)<br>• Run Plant Engineers<br>• Technical Advisor | • State and Federal RCRA training available at Learn @ Dow<br>• Review of Compliance Manual:<br>o Contingency Plan<br>o Waste Analysis Profile<br>o Inspection Plan (presented by EH&S Specialist) | • Annual |
| • EH&S Technician<br>• EH&S Specialist | • State and Federal RCRA training available at MyLearning.jvservices.com<br>• Refresher course | • Annual<br>• Every 3 yrs |

Record Retention = Until superseded

# B-3300
## Plant-Wide Contingency Plan

| BLOCK: | B-3300 ROTARY KILN INCINERATOR TRAIN, <90 DAY/PERMITTED TANKS & <90 DAY/PERMITTED CONTAINER STORAGE AREAS |
|---|---|
| **Plant-Wide Contingency Plan** | **Dialing 66666** activates the Plant-wide Contingency Plan. Emergency Services & Security headquarters radio dispatcher, the Fire Department, and the Industrial Medicine Department, instantly monitors calls to this number. Depending on the nature of the problem reported, various emergency vehicles and personnel respond to the call. The response to all potentially serious emergencies includes fire trucks, ambulances, patrol vehicles, field support van, Fire and Security personnel, and the emergency brigade. Actions taken may include fighting fires, foaming or water fogging to minimize gas releases, blocking access roads, and warning those adjacent areas that may be affected.<br><br>Adjacent areas that may be affected are alerted by two systems:*<br><br>1) Emergency telephone alerting system, which is capable of seizure of appropriate plant telephones. The Emergency Services & Security headquarters radio dispatcher activates the seizure system.<br><br>*The Oyster Creek Site utilizes an emergency radio alerting system in place of the emergency telephone alerting system.<br><br>2) Alarm Horn System – The affected block sounds warning horns to alert adjacent areas to the emergency situation. Various patterns of horn blasts notify personnel that there has been a gas release; signal an alert, order an evacuation, or signal the *all clear* once the incident is ended.<br><br>Industrial Security personnel are responsible for placing road blocks to isolate the emergency area.<br><br>Field headquarters are established by Emergency Services & Security, when required, through use of a field support van specially equipped with radios and safety equipment for the field support brigade. Field support headquarters then assumes responsibility for radio communications and further deployment of emergency personnel and vehicles as required.<br><br>Emergency Services & Security headquarters radio dispatcher will notify the emergency response coordinator from Environmental Services Department of the emergency. |

Record Retention = Until superseded

# B-3300
## Site Contingency Plan

**BLOCK:** **B-3300 ROTARY KILN INCINERATOR TRAIN, <90 DAY/PERMITTED TANKS & <90 DAY/PERMITTED CONTAINER STORAGE AREAS**

**Site Specific < 90-Day Tank/Container Systems**

This Contingency Plan provides procedures and guidelines to be implemented in the event of an actual emergency from the < 90-day tank/container systems. The emergency coordinator (or an alternate) will implement this plan whenever there is a spill, fire, or explosion, which endangers human health or the environment.

Small-contained spills will not require implementation of the contingency plan and will be collected and disposed of appropriately.

This contingency plan will be updated immediately as changes in procedures are made. The emergency coordinator will assess this plan at least annually to ensure it is maintained up-to-date.

All employees hired into the unit who will be involved in RCRA hazardous waste management will receive training in contingency plan procedures before they are released to the job. The plan will then be reviewed annually by appropriate personnel as part of the RCRA training requirements.

Emergency Procedure

Should a fire, spill, or explosion involving the container storage area occur, the following procedure will be followed:

1) The discoverer will call 66666 and provide Emergency Services & Security with pertinent information in regard to the emergency.
2) Emergency Services & Security will contact the Environmental Operations emergency coordinator, who will be responsible for obtaining pertinent information necessary to determine if assistance will be needed and whether agency notification will be required.

   Note: Environmental Operations coordinator will usually obtain information by visiting or calling the control room.

3) Appropriate steps will be taken by site personnel to minimize risk to human health or the environment. This may include evacuation of affected personnel, isolation and/or containment of the spill, etc.
4) After the emergency, clean-up will begin with proper management of any wastes resulting from the emergency.

Record Retention = Until superseded

# Thermal Oxidizer
# Preparedness and Prevention Plan

| | |
|---|---|
| **BLOCK:** | **B-3300 ROTARY KILN INCINERATOR TRAIN, <90 DAY/PERMITTED TANKS & <90 DAY/PERMITTED CONTAINER STORAGE AREAS** |
| **Introduction** | The Preparedness and Prevention Plan is managed for Texas Operations by the Emergency Services and Security and the facility copy is maintained in Environmental Services. |
| **Required Equipment** | • Internal communications or alarm systems<br>• Devices (telephones, hand-held radios, etc.) which can summon emergency assistance from outside state and local emergency response teams<br>• Portable fire extinguishers, fire control equipment, decontamination equipment, spill control equipment, and<br>• Adequate water volume and pressure to supply water hose streams, foam, automatic sprinklers or water spray systems. |
| **Testing** | Facility must test and maintain all equipment to assure operation in any emergency (e.g., CAER, seizure phones, etc.). |
| **Access to Communication Equipment** | All affected personnel must have immediate access to internal alarms or emergency communication devices. |
| **Arrangement with Local Authorities** | • The facility must have arrangements with all possibly affected local police and fire departments and any emergency response teams designating primary authority with the others providing support<br>• State emergency response teams, emergency response contractors and emergency supply, and<br>• Familiarize local hospitals with properties of hazardous waste handled at the facility, type of injuries or illnesses which could result from fires, explosions or releases.<br>**If state or local authorities decline to enter into such arrangements, document the refusal in the division's operating record.** |
| **Notification to Local and State Authorities** | Local and State Authorities must only be contacted by Emergency Services and Security personnel. |

Record Retention = Until superseded

# Thermal Oxidizer
# Emergency Coordinator List

**PLANT:** **Thermal Oxidizer**

**BLOCK:** **B-3300 ROTARY KILN INCINERATOR TRAIN, <90 DAY/PERMITTED TANKS & <90 DAY/PERMITTED CONTAINER STORAGE AREAS**

**Emergency Coordinators**

In the case of a release of hazardous waste or constituents of hazardous waste to the air, soil, or surface water which could threaten human health or the environment, notify the emergency coordinator using the following prioritized list for each plant.

**PRIMARY**

**Name/Title:** **Crisis Response Leader**

| Name | Role | WORK PHONE |
|---|---|---|
| [redacted] | Board Operator | [redacted] |
| [redacted] | Board Operator | [redacted] |
| [redacted] | Board Operator | [redacted] |
| [redacted] | Board Operator | [redacted] |
| [redacted] | Board Operator | [redacted] |
| [redacted] | Board Operator | [redacted] |
| [redacted] | Board Operator | [redacted] |

## ALTERNATES

**Name/Title:** [redacted]

| | |
|---|---|
| Office Phone: | [redacted] |
| Home Phone: | [redacted] |
| Home Address: | [redacted] |

**Name/Title:** [redacted]

| | |
|---|---|
| Office Phone: | [redacted] |
| Home Phone: | [redacted] |
| Home Address: | [redacted] |

# B-3300
## Emergency Safety Equipment List

**BLOCK:** **B-3300 ROTARY KILN INCINERATOR TRAIN, <90 DAY/PERMITTED TANKS & <90 DAY/PERMITTED CONTAINER STORAGE AREAS**

**Emergency Equipment**

Emergency equipment is located near units and in B-3300 block.

| Item | Description |
|---|---|
| Two-way radio | Two-way radios may be used to summon assistance from the emergency coordinator to ES&S. |
| Portable Fire Extinguishers | Portable fire extinguishers are not maintained in area. Spill control equipment and decontamination equipment are stored in B-3301, B-3302 and B-3307. |
| Water | Water at adequate volume and pressure to supply fire fighting equipment is available. |

**Emergency Equipment Inspection**

1. Emergency equipment is to be inspected and maintained. An inspection will be performed each month to observe condition and quantity of equipment on hand. The inspector must document Emergency Equipment using the inspection form. Inspector must include date and time of inspection.
2. Any deficiencies must be documented on the Corrective Action portion of the form.
3. Corrective action must be noted and corrective action with completion dates.
4. Equipment inspection record or to be kept for 3 years.

*Required emergency equipment.

Record Retention = Until Superseded

# APPENDIX II
## Emergency Equipment List

| EQUIPMENT | LOCATION | CAPABILITIES |
|---|---|---|
| Radio | Control Room & Personal | Communications |
| Telephones | Control Room B-3320 | Communications |
| Emergency Horns | Control Room B-3320 | Activated from control room |
| Fire Monitors | Westside of B-3301 (Dino Boxes), Westside of B-3301 (CV-100/101), Westside of B-3300 (near D-300), South of Direct Burn, Eastside of E-201, Between S-401 and B-3308 | Fire control |
| Absorbent Sheeting | B-3307 | Spill control equipment |
| Absorbent Pads | B-3307 | Spill control equipment |
| Absorbent Pillow | B-3307 | Spill control equipment |
| Sand Bags | B-3307 | Spill control equipment |
| Sawdust | B-3307 | Spill control equipment |
| Milsorb | B-3307 | Spill control equipment |
| Plastic Sheeting | B-3307 | Spill control equipment |
| Aztron | B-3307 | Decontamination equipment |
| Aztron 10 Spray Applicator | B-3307 | Decontamination equipment |
| Long Handle Brushes | B-3307 | Decontamination equipment |
| Neese 45 | B-3301 | Personal Protective Equipment |
| Kapplan Frontline | B-3301 | Personal Protective Equipment |
| Chemical Protective Gloves | B-3301 | Personal Protective Equipment |
| Chemical Protective Footwear | B-3301 | Personal Protective Equipment |
| Respirator Protection Air Purifying | B-3301 | Personal Protective Equipment |
| 25 gallon plastic container with lid | B-3302 | Spill Containment |
| 5 gallon plastic container with lid | B-3302 | Spill Containment |
| Pallets with toe boards | B-3302 | Spill Containment |
| Labels | B-3301 | Container Identification |
| Shovels | B-3307 | Spill control equipment |
| Plastic ties wraps | B-3301 | Spill Containment |

# B-3300
## Inspection Plan

**BLOCK:** **B-3300 ROTARY KILN INCINERATOR TRAIN, <90 DAY/PERMITTED TANKS & <90 DAY/PERMITTED CONTAINER STORAGE AREAS**

The **< 90-day container storage areas and RCRA permitted container storage areas** will be inspected at least **once each calendar week** while the **RCRA Permitted and RCRA <90 Day tank systems** are required to be inspected at least **once daily** by a trained individual as specified in the plant's Inspection Plan. The inspections AND any Corrective Actions must then be documented on the inspection form. The inspector must be trained in RCRA hazardous waste management according to the Training Plan.

Safety equipment in the immediate vicinity of the storage area will be inspected.

**Instructions: Only check the type of RCRA storage below that applies to your plant.**

**□ < 90 Day and Permitted Container Storage Documentation Requirements**

Inspect each container and document the following items on the inspection form:

- Date, time and inspector's signature
- Answer pass or fail when completing the form unless otherwise specified.
- Leaks (look at each container carefully for any evidence of a leak)
- Closed
- Properly labeled ("Hazardous Waste" and complete date)
- In good condition (no corrosion, bulging, partially collapsed, etc.)
- Adequate aisle space (space to properly inspect and allow access for response to any emergency, 24" recommended)
- Accumulation time (schedule with the kiln to ensure that waste will ***not*** exceed the 90-day limit) – if the waste has exceeded 60 days, ensure that it is scheduled with the kiln.

Describe how the safety equipment (safety showers, fire extinguishers.) is inspected

**<u>On RCRA BB or CC forms document the following</u>:**

- Monitor ancillary equipment according to RCRA BB, if applicable
- Annually inspect and monitor cover and cover openings required to have air emission control equipment (RCRA CC)

**Permitted Tank Documentation Requirements**

Inspect each Permitted RCRA tank system and document the following items on the inspection form:

- Date, time and inspector's signature
- Answer pass or fail when completing the form unless otherwise specified.
- Overfill and spill control equipment (e.g., waste feed cutoff, bypass systems, and drainage systems)
- Aboveground portion of tank and ancillary equipment for corrosion or releases
- Monitoring and leak detection equipment
- Check cathodic protection system, if present.
- Check secondary containment for signs of deterioration or leaks
- Rainwater must be removed from the dike within 24 hrs.
- Tank has been emptied to its lowest level at least every 365 days OR for flow-through tanks, tank has had 1 tank capacity flow through the tank in <365 days
- Hazardous waste label on tank is legible.
- Document all problems and the corrective actions and report to the supervisor.

**On RCRA BB or CC forms document the following:**

- Monitor ancillary equipment according to RCRA BB, if applicable
- Annually inspect tank roof and closure devices for defects/leaks (RCRA CC)
- Annually, monitor the closed vent system for no detectable emissions (RCRA CC)
- Monthly inspect bypass device to a control device, if applicable (RCRA CC)
- Daily monitor the carbon adsorption system, if applicable (RCRA CC)
- Describe how the safety equipment (safety showers, fire extinguishers) is inspected.

**Corrective Actions**

All deficiencies identified during the inspection must be corrected and documented by either:

- Documenting actions taken to correct a situation for < 90-day tank system or < 90 day container area on the inspection form, and/or
- Documenting the corrective action because of a missed inspection on the corrective action form.
- Document any leak. Repair within 5 days. (RCRA CC)
- **Response to problems requiring immediate attention (i.e., clean-up or removal of spilled or leaked material and accumulated rainfall) will be initiated by the inspector and reported to the supervisor in charge of the area.**
- **The supervisor is responsible for ensuring the spilled or leaked material and accumulated rainfall is removed from the secondary containment area within 24 hours and the corrective action is documented. If it is not possible to remove the material within 24 hours, the supervisor must document the reasons and must ensure that the material is removed at the earliest practicable time.**

Record Retention = Until Superseded

# B-3300
## RCRA Equipment Monitoring/Inspection Schedule

| Unit components | Possible error, malfunction or deterioration | Frequency of inspection or monitoring |
|---|---|---|
| Equipment:<br>• Furnace<br>• Associated equip.<br>• Valves<br>• Pipes | • Leaks<br>• Spills<br>• Fugitive emissions<br>• Signs of tampering | • Daily visual/Operator |
| Open-ended valves or line | • Lines not capped blinded, flanged, plugged or second valve during hazardous waste stream flow | • Visual routine/Operator |
| Valves and flanges valves on line & flanges | • Leaks detected by monitor must be repaired as soon as practicable, but no later than 15 days. First attempt at repair no later than 5 calendar days after each leak is detected. | • Monthly & Quarterly /Contracted |

**Related Documents** *List related and supporting documents here, if applicable*:

**Document and Records Management**

The current procedure is filed in the Document Management System, Electronic component, under Procedures.

**The training records for the current and past years for classroom, plant specific training, and RCRA Federal and State training are stored electronically in the training program.**

**The inspection records for the current and past years are stored in the B-3301 Operator Permit Room or the B-3320 Library.**

**Review history**

The following information lists at least the last two reviews to this document, and all reviews that were done in the last 12 months.

| Date | Reviewed By | Comments |
|---|---|---|
| 4/27/16 | [redacted] | Reviewed for accuracy minor changes made |
| 4/28/17 | [redacted] | Reviewed for accuracy minor changes made |

**Revision history**

The following information documents at least the last 3 changes to this document, with all the changes listed for the last 6 months.

| Date | Revised By | Changes |
|---|---|---|
| 12/09/16 | [redacted] | Updated Personnel List |
| 04/28/17 | [redacted] | Updated Personnel List |
| 03/27/18 | [redacted] | Updated Personnel |
| 03/31/2018 | [redacted] | Updated Personnel |
| 03/20/2020 | [redacted] | Updated Personnel |
| 03/03/2021 | [redacted] | Updated Personnel, removed hard copy retention, removed hard copy training records retention – My Learning only. |
| 03/25/2022 | [redacted] | Updated Personnel |

# CONTINGENCY PLAN - RCRA UNIT PLANS FOR B-824

**Scope**

To state the contingency plan in the event of a real or impending emergency at B-824 less than 90 day container storage area and R-1 ,Boiler Industrial Furnace (BIF).

**Definition**

A real or impending emergency: An event such as a fire, explosion, or hazardous waste spill that may threaten human health or the environment.

**General Information**

Each employee and Immediate Response Leader(s) listed in plan is responsible for becoming familiar with the location of the facility's hazardous waste container storage area contingency plans and must know his role in an emergency.

- Immediate Response Leader(s) will have the authority to commit the resources to carry out the contingency plan.
- All new employees hired into the department who will be involved in RCRA hazardous waste management will receive training in contingency plan procedures within 6 months.
- The plan will then be reviewed annually by the appropriate personnel as part of the RCRA training requirements.
- The Immediate Response Leader(s) will be responsible for making arrangements to properly clean up any hazardous material spilled.

This contingency provides procedures and guidelines to be implemented in the event of an emergency in the R-1 BIF unit in B-800 block. The BIF unit consists of the supply piping, the combustion chamber, the product recovery and air pollution control devices.

This plan, in addition to block emergency plan, will be implemented whenever there is a spill, fire, explosion or any unplanned sudden or non sudden release of hazardous waste or hazardous waste constituents to air, soil or surface water which could threaten human health or the environment.

Small contained spills will not require implementation of the contingency plan, but will need to be collected and disposed of properly.

**This Procedure**

Included in this plan are the following:

- General Information
- Implementation of Plan
- Plant Wide Contingency Plan
- <90 Container Area Site Contingency Plan
- Immediate Response Leader Lists
- Contingency Plan Implementation Procedures
- Emergency Equipment
- Emergency Equipment Inspection
- Containment and Control
- Post Implementation Procedures
- Recordkeeping and Notification
- Amendments to Contingency Plan

**Implementation of Plan**

Implementation of Plan -

This plan is meant for use in the following situations:

- A fire or explosion in a hazardous waste storage area, B-824
- A spill occurs in a hazardous waste storage area which is not contained.
- Any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the R-1 BIF units.

# PLANT WIDE CONTINGENCY PLAN

**Plant-wide Contingency plan**

The Plant-wide Contingency Plan is activated **by dialing *66666*.** Calls to this number are instantly monitored by Emergency Services & Security(ES&S) headquarters radio dispatcher, the Fire Department, and the Industrial Medicine Department. Depending on the nature of the problem reported, various emergency vehicles and personnel respond to the call. The response to all potentially serious emergencies includes fire trucks, ambulances, patrol vehicles, field support van, Fire and Security personnel, and the emergency brigade. Actions taken may include fighting fires, foaming or water fogging to minimize gas releases, blocking access roads, and warning those adjacent areas that may be affected.

Adjacent areas that may be affected are alerted by two systems:*

1) Emergency telephone alerting system which is capable of seizure of appropriate plant telephones. The seizure system is activated by the ES&S headquarters radio dispatcher.

   *The Oyster Creek Site utilizes an emergency radio alerting system in place of the emergency telephone alerting system.

2) Alarm Horn System - The affected block sounds warning horns to alert adjacent areas to the emergency situation. Various patterns of horn blasts notify personnel that there has been a gas release, signal an alert, order an evacuation, or signal the all-clear once the incident is ended.

ES&S personnel are responsible for placing road blocks to isolate the emergency area.

Field headquarters are established by ES&S, when required, through use of a field support van specially equipped with radios and safety equipment for the field support brigade. Field support headquarters then assumes responsibility for radio communications and further deployment of emergency personnel and vehicles as required.

ES&S headquarters radio dispatcher will notify the emergency response coordinator from ES&S of the emergency.

## < 90-DAY CONTAINER SYSTEMS SITE CONTINGENCY PLAN

**Site Specific Contingency Plan for B-824, < 90-Day Container Storage**

This Contingency Plan provides procedures and guidelines to be implemented in the event of an actual emergency from the < 90-day container systems. This plan will be implemented by the Thermal Oxidizer Immediate Response Leader (or an alternate) whenever there is a spill, fire, or explosion which endangers human health or the environment.

Small contained spills will not require implementation of the contingency plan and will be collected and disposed of appropriately.

This contingency plan will be updated immediately as changes in procedures are made. This plan will be assessed by the Immediate Response Leader at least annually to ensure it is maintained up-to-date.

All employees hired into the unit who will be involved in RCRA hazardous waste management will receive training in contingency plan procedures before they are released to the job. The plan will then be reviewed annually by appropriate personnel as part of the RCRA training requirements.

Emergency Procedure

Should a fire, spill, or explosion involving the container storage area occur, the following procedure will be followed:

1) The discoverer will call 66666 and provide ES&S with pertinent information in regard to the emergency.

2) ES&S will contact the ES&S Immediate Response Leader, who will be responsible for obtaining pertinent information necessary to determine if assistance will be needed and whether agency notification will be required.

   Note: ES&S coordinator will usually obtain information by visiting or calling the control room.

3) Appropriate steps will be taken by site personnel to minimize risk to human health or the environment. This may include evacuation of affected personnel, isolation and/or containment of the spill, etc.

4) After the emergency, clean-up will begin with proper management of any wastes resulting from the emergency.

**Immediate Response Leaders**

In the case of a release of hazardous waste or constituents of hazardous waste to the air, soil, or surface water which could threaten human health or the environment, notify the Immediate Response Leader using the following prioritized list for each plant.

# IMMEDIATE RESPONSE LEADER LIST

**PLANT:** **Thermal Oxidizer**
**BLOCK:** **B-824**

| NAME | TITLE | WORK PHONE |
|---|---|---|
| [redacted] | Board Operator | [redacted] |
| [redacted] | Board Operator | [redacted] |
| [redacted] | Board Operator | [redacted] |
| [redacted] | Board Operator | [redacted] |
| [redacted] | Board Operator | [redacted] |
| [redacted] | Board Operator | [redacted] |
| [redacted] | Board Operator | [redacted] |
| [redacted] | Board Operator | [redacted] |
| [redacted] | Board Operator | [redacted] |

**ALTERNATES**

| NAME | TITLE | WORK PHONE | HOME ADDRESS | CITY | HOME PHONE |
|---|---|---|---|---|---|
| [redacted] | TECHNICAL ADVISOR | [redacted] | | [redacted] | [redacted] |
| [redacted] | ACTIVITY COORDINATOR | [redacted] | | [redacted] | |
| [redacted] | TECHNICAL ADVISOR | [redacted] | | [redacted] | |

**Contingency Plan Implementation Procedures**

Procedures - should an incident occur as defined in Implementation of Plan, follow the steps below.

**Note:** The operator is the Immediate Response Leader until plant supervision or Emergency Response personnel are on the scene. Operator must take steps to mediate the situation.

| Step | Action |
|---|---|
| 1 | Notify ES&S immediately at **x66666** for emergencies and x2112 for non-emergencies (Notifications to Plant Supervision should occur according to your Plant/Department Incident Response Plan). |
| 2 | Report the following information:<br>• Name of caller<br>• Phone number at which the caller can be reached<br>**Note:** This phone must be answered by a person and not voice mail (e.g. control room, etc.)<br>• Location of incident<br>• Incident level:<br>• **Level 0:** An incident within the boundaries of the B-800 block. No impact is anticipated outside of the B-800 block.<br>• **Level 1:** An incident within B-800 that will affect adjacent blocks No impact is anticipated outside of the Dow plant site.<br>• **Level 2:** An incident within B-800 that may impact another block or unit. However, the community may be affected.<br>• **Level 3**: An incident which will affect areas outside of the plant site. A full emergency condition exists.<br>• Material spilled<br>• Estimated amount spilled<br>• Estimated amount lost to the environment<br>• If there is any possibility that the Reportable Quantity has been exceeded<br>• If assistance from Fire, Security, or Environmental is needed<br>• Brief description of the event |
| 3 | Stop the leak or release if it can be done safely. |
| 4 | Contain the spilled material (if possible). |

| Step | Action |
|---|---|
| 5 | Immediate Response Leader will make the decision to evacuate. See Figure 1 for evacuate routes and assembly. Sound the appropriate horn of adjacent blocks or plants could be affected. The Immediate Response Leader will decide whether to shutdown the plant down in an orderly manner, conduct an emergency shutdown, run the plant with a small crew equipped with proper protective equipment or other response. |
| 5a | All personnel, including contractors, maintenance, staff and operators must report to B-824 control room. |
| 5b | A head count will be taken at the assembly area. The designated evacuation assembly area. (primary assembly points are):<br>Intersection Chlorine and Center Road<br>Intersection Electric and Canal Road<br><br>Personnel will be accounted for using the head count. |
| 5c | All work permits are void during an "Alert" and when emergency horns are sounded and until the "All Clear " or verbal to return to work by ES&S. |
| 5d | Plant evacuation procedures can also be found in the Unit Emergency Plan. |

**Emergency Equipment**

Emergency equipment is located near units and in B-824 building.

- **Internal Communication System:** Intercoms are in close proximity to furnace facilities and hazardous waste storage
- **Two-way radio:** Two-way radios may be used to summon assistance from the Immediate Response Leader to ES&S.
- **Portable Fire Extinguishers:** Portable fire extinguishers are not maintained in area. Spill control equipment and decontamination equipment are stored in B-824.
- Water at adequate volume and pressure to supply fire fighting equipment is available.

**Emergency Equipment Inspection**

Emergency equipment is to be inspected and maintained. An inspection will be performed each month to observe condition and quantity of equipment on hand. The inspector must document Emergency Equipment using the inspection form. Inspector must include date and time of inspection.

Any deficiencies must be documented on the Corrective Action portion of the form.

Corrective action must be noted and corrective action with completion dates.

Equipment inspection record or to be kept for 3 years.

APPENDIX II
EMERGENCY EQUIPMENT LIST

| EQUIPMENT | LOCATION | CAPABILITIES |
|---|---|---|
| Radio | Control Room & Personal | Communications |
| Telephones | Control Room B-3320 & B-824 | Communications |
| Emergency Horns | Control Rooms | Activated from B-3320 and B-824 control rooms |
| Intercoms | Through out plant | Communications |
| Fire Monitors | North & South | Fire control |
| Absorbent Sheeting | B-824 | Spill control equipment |
| Absorbent Pads | B-824 | Spill control equipment |
| Absorbent Pillow | B-824 | Spill control equipment |
| Sand Bags | B-824 | Spill control equipment |
| Sawdust | B-824 | Spill control equipment |
| Milsorb | B-824 | Spill control equipment |
| Plastic Sheeting | B-824 | Spill control equipment |
| Aztron | B-824 | Decontamination equipment |
| Aztron 10 Spray Applicator | B-824 | Decontamination equipment |
| Long Handle Brushes | B-824 | Decontamination equipment |
| Neese 45 | B-824 | Personal Protective Equipment |
| Kapplan Frontline | B-824 | Personal Protective Equipment |
| Chemical Protective Gloves | B-824 | Personal Protective Equipment |
| Chemical Protective Footwear | B-824 | Personal Protective Equipment |
| Respirator Protection Air Purifying | B-824 | Personal Protective Equipment |
| 25 gallon plastic container with lid | B-824 | Spill Containment |
| 5 gallon plastic container with lid | B-824 | Spill Containment |
| Pallets with toe boards | B-824 | Spill Containment |
| Labels | B-824 | Container Identification |
| Shovels | B-824 | Spill control equipment |
| Plastic ties wraps | B-824 | Spill Containment |

**Containment and Control**

Take immediate action to stop the fire, explosion, or hazardous waste spill and contain any spilled material. **Note:** THIS MUST BE DONE SAFELY!

Normal protective equipment is not intended gross exposure. Evaluate the need for additional protective equipment when using emergency equipment. Use the appropriate items.

Try to use remote means to handle the situation wherever possible (computer controlled EBV's, pumps, etc.) to shutdown appropriate furnace operation.

If a fire is beyond incipient stage wait on assistance from the fire department.

Isolate the area to prohibit hazardous material from getting to other areas of permit.

Cover spill with water or foam (foam by Fire Department), if appropriate to prevent the spread or loss of material.

DO NOT ATTEMPT TO CLEAN UP ANY HAZARDOUS WASTE SPILLS. Hazardous spills must be cleaned up by properly trained personnel.

Assess the need to secure the area from inadvertent entrance by unauthorized personnel and take necessary precautions as needed. Barricade if necessary.

Notify the Emergency Response personnel to shutdown. If the plant has not already shutdown, together assess the need to shutdown and proceed accordingly.

The Immediate Response Leader Immediate Response Leader(s) will collaborate with ES&S to ensure that changing conditions of the emergency are known to all affected Plant B personnel and the community, if applicable.

Avoid the possibility of the having the material enter the ditches or canals (close valves, use sandbags or adsorbent booms, etc.).Action should be taken at distance where direct contact with the liquid spill will occur or where vapor contamination requires breathing air.

- Catch water samples if necessary.
- If material was spilled or released as a result of fire or explosion, determine the quantity.
- NOTE: Do not spend too much time determining the quantity. Make an approximate estimate and continue on with the procedure.

As soon as is practical, begin compiling necessary information for an investigation (charts, notes, physical evidence, Spill Report Form, etc).

- NOTE: One-minute data from the PLC is averaged within 24 hours. Pertinent information may be lost if data is not collected and printed in a timely manner.

**Post Implementation Plan**

After emergency, all emergency equipment listed in the contingency plan must be disposed of properly or be cleaned and fit for its intended use before operations are resumed.

**EMERGENCY EQUIPMENT CLEANUP AND DISPOSAL**

The Immediate Response Leader will ensure that all of the equipment listed in this Contingency Plan is cleaned and decontaminated and fit for intended use before operations resume.

**Personnel must be HAZWOPER trained for any cleanup.**

Immediately after an emergency, the Immediate Response Leader must provide for treating, storing, and disposing of all contaminated soil, surface water or ocher materials. Contaminated materials and spent solvents, after proper characterization, will be sent to Environmental Operations for disposal.

All cleaning materials and spent solvents used to clean up hazardous waste will be sent to Environmental Operations or appropriate facility.

**Recordkeeping and Notification**

After the Contingency Plan is implemented, federal, state, and local agencies will be notified when cleanup procedures are completed and all equipment is returned to service. Operation of the affected portion of the facility will not resume until notification is made.

The time, date, and details of any incident that requires implementing the Contingency Plan will be noted in operating record.

Within 15 days after the incident, a written report will be submitted to EPA that includes the following information.

- Name, address
- Date, time
- Name and quantity of material involved
- Extent of injuries, if any
- An assessment of actual or potential hazards to human health or the environment, where this applicable.
- Estimated quantity and disposition of material that resulted from incident.

**Amendments to Contingency Plan**

This contingency plan will be updated immediately as changes occur in the following:

- the procedures
- the facility, changes in design, construction, operation ,maintenance, or other circumstances in way that materially increases the potential for fires, explosions, or releases of hazardous waste or changes in the response necessary in any emergency.
- the Immediate Response Leader List
- the list of emergency equipment changes
- the basic characteristics of the materials changes.
- plan fails in an emergency

This plan will be assessed by the Issuer and the Immediate Response Leader at least annually to ensure it is maintained up-to-date.

Refer any inquiries by unauthorized personnel to ES&S.

**Document Approval**

This information describes the creation of this Job Procedure:

| Author/Originator | Date |
|---|---|
| [redacted] | 07-07-2000 |
| [redacted] | 7-27-2000 |

**Review history**

The following information lists at least the last two reviews to this document, and all reviews that were done in the last 12 months. This procedure will be reviewed at least every annually.

| Date | Reviewed By | Comments |
|---|---|---|
| 07/21/16 | [redacted] | Annual review |
| 07/25/18 | [redacted] | Annual review |
| 07/22/19 | [redacted] | Annual review with no changes |

**Revision history**

The following information documents at least the last 3 changes to this document, with all the changes listed for the last 6 months.

| Date | Revised By | Changes |
|---|---|---|
| 07/31/15 | [redacted] | Annual reivew and Updated personnel |
| 07/31/17 | [redacted] | Updated IRL List. |
| 07/14/2020 | [redacted] | Updated IRL List |
| 07/21/2021 | [redacted] | Updated IRL List |

# Appendix 3 Emergency Procedures



## PCB Spill Cleanup Documentation

**Pre-Task Analysis**

**Complete the Pre-Task Analysis prior to initiating the work.**

**Check the potential hazards that apply:**

| | | |
|---|---|---|
| ☐ Thermal Burns | ☐ Lighting | ☐ Fall/Trip/Slip Hazards |
| ☐ Pinch Points | ☐ Heat Stress | ☐ Electricity/High Voltage |
| ☐ Sharp Edges | ☐ Overhead Work | ☐ Crowded Work Space |
| ☐ Weather Conditions | ☐ Ergo Issues | ☐ Other_____ |

**List how potential hazards will be addressed:**

1. …
2. …
3. …

| | | |
|---|---|---|
| **Is the procedure adequate for the job'?** | **Yes** ☐ | **No** ☐ |
| **Does the procedure need to be modified?** | **Yes** ☐ | **No** ☐ |

**Scope**

This procedure is used by Environmental Operations TO Plant operations personnel to properly document PCB spill cleanup.

**Categories and Attributes**

Categories / Attributes (Operating/Other)

☐ Critical ☑ Emergency ☐ Operating ☐ Other / ☐ Routine ☐ Non-Routine

**Hazards and Precautions**

The table below lists job hazards and the precautions that should be taken for safety, environmental, quality, ergonomics, Good Manufacturing Practices, etc… before beginning this procedure. The Procedure Implementation Analysis can be a valuable tool for hazard evaluation.

| Hazard | Precaution |
|---|---|
| Chemical Exposure | Proper PPE |
| | |

**If any physical contact or exposure occurs, report and seek medical treatment immediately!**

*Continued on next page*

# PCB Spill Cleanup Documentation, Continued

**Tools and equipment**

The tools and equipment listed below are needed to do this job.

***Other than your standard departmental PPE, include other safety equipment here.***

| Tools and/or Equipment | Use (if explanation is needed) |
|---|---|
| Personal computer | Documentation and reference |
| Form 2 and/or Fome3 | Documentation of cleanup |
| PCB Wipe Sample Request Form | Obtain analysis of PCB cleanup |

**Before you begin…**

Before beginning this procedure ...

Complete Initial Release Report

Notify Emergency Services (x66666)

Initiate the URS Sampling Request Form.

Contact EAC (Environmental Analytical Chemistry) for Wipe Sample

| Name | Office phone | Home phone | Mobile phone |
|---|---|---|---|

**Safe Operating Limits**

*List general operating limits here* ***if they apply.***

The spill must be marked with "DANGER" Red Tape to delineate and restrict area encompassing any visible traces plus 3-foot buffer and advising persons to avoid the area to minimize the spread of contamination as well as the potential for human exposure. Also, outside the "DANGER" Red Tape ,marked the spill area with "HAZ-MAT JOB SCOPE" Green Tape and follow outside with "ENTRANCE/EXIT" White Tape.

**Regulatory Requirements**

Per EPA TSCA Permit approval requirements Section III.A.3., if this procedure is updated/revised, the PCB Operators Manual must be updated in the Index of Specific Procedures and submitted to the EPA Region 6 Facility Assessment Section within 10 working days of completing the revisions. Notify Environmental Operations EH&S personnel to comply with requirements.

**Consequences of Deviation**

*List consequences of deviation from the procedure steps or general operating limits* ***if they apply.***

| Type of Deviation | Consequences and How to Avoid |
|---|---|
| Improper spill cleanup documentation | May result in violation of applicable regulations and permit. |
| | |

*Continued on next page*

# PCB Spill Cleanup Documentation, Continued

**Procedure**

**Form 2 Instructions**

These steps will be followed in order unless stated otherwise to complete Form 2. Applies to Spill of Less Than 1 –Lb. PCB from low concentration materials (<500 ppm) Cleanup must be completed in 48 hours.(Cleanup does not include verification of testing)

| Step | Action |
|---|---|
| 1 | Use attached Form 2 to complete required information for incident |
| 2 | **Source of spill (e.g. type of equipment)**- Pipe, pump, tank, etc. |
| 3 | **Date and time of spill**- Month-day-year and estimated or actual time of the spill. |
| 4 | **Date and time of cleanup terminated-** mm-dd-yyyy, hour: minute If cleanup was delayed by emergency or adverse weather, give nature and duration of delay. Note: The occurrence of a spill on a weekend, overtime costs, or unavailability of a preferred solvent are ***not acceptable reasons*** to delay a response. |
| 5 | **Brief description of spill location**- On dike area or on soil. |
| 6 | **Pre-cleanup sampling data (if needed) ATTACH DATA SHEETS TO REPORT**- Pre-cleanup sampling data used to established the spill boundaries if required because of insufficient visible traces, and brief description of the sampling methodology used to establish the spill boundaries. |
| 7 | **Brief description of solid surfaces cleaned-** Double wash with double rinse method used on coated concrete, concrete, asphalt, steel, etc |
| 8 | **Excavation depth-** Approximate depth in feet of soil excavation and amount of soil removed. |
| 9 | **Amount of soil removed-** Volume, cubic feet, dig out all visible traces of soil and buffer to one lateral foot around the visible traces of the spill |
| 10 | **Signature of Responsible Person**- First two initials and last name of person that can certify cleanup requirements |
| 11 | **Date**-mm-dd-yyyy |

*Continued on next page*

# PCB Spill Cleanup Documentation, Continued

**Procedure**

**Form 3 Instructions**

These steps will be followed in order unless stated otherwise to complete Form 3. Applies to Spills of Any Quantity PCB-Containing Materials of High Concentration (>500 ppm), and Greater Than 1-lb. PCB from Low concentration Materials (<500 ppm) Cleanup must commence within 24 hours.(No time limit set for cleanup completion ,but EPA expects prompt and good faith efforts to comply with regulations)

| Step | Action |
|---|---|
| 1 | Use attached Form 3 to complete required information for incident |
| 2 | **Source of spill (e.g. type of equipment)**- Pipe, pump, tank, etc. |
| 3 | **Date and time of spill**- Month-day-year |
| 4 | **Date and time of cleanup terminated-** mm-dd-yyyy, hour:minute<br>Note: If cleanup was delayed by emergency or adverse weather, give nature and duration of the delay. |
| 5 | Complete description of the spill documenting the area of visible contamination. |
| 6 | **Pre-cleanup sampling data (if needed) ATTACH DATA SHEETS TO REPORT** |
| 7 | Brief description of solid surfaces cleaned and double wash with double rinse procedure |
| 8 | **Excavation depth-** Approximate depth in feet |
| 9 | **Amount of soil removed-** Volume, cubic feet , for excavation extend one foot beyond contaminated area. If no soil was contaminated or removed, state none. |
| 10 | Post-cleanup sampling data including a brief description of the sampling methodology and analytical technique. ATTACH DATA SHEETS TO REPORT. Attach Wipe Test Reports |
| 11 | **Signature of Responsible Person**- First two initials and last name of person that can certify cleanup requirements. |
| 12 | **Date**-mm-dd-yyyy |

*Continued on next page*

# PCB Spill Cleanup Documentation, Continued

**Procedure**
**Wipe Test by EAC**

These steps will be followed in order unless stated otherwise:

| Step | Action |
|---|---|
| 1 | Operations contacts EAC to schedule Wipe Test. Complete PCB Wipe Sample Request Form. |
| 2 | EAC performs Wipe Test |
| 3 | Operations contacts EAC for Wipe Test results |
| 4 | Review Wipe Test results<br>**IF ...** / **THEN ...**<br>Pass / Go to Step 5<br>Fail / Go to Step 2 to re-test after re-cleaning |
| 5 | Obtain copy of Wipe Test results from EAC |
| 6 | A copy Wipe Test will be attached to Form 2 or Form 3 |

**Procedure**
**Filing**

These steps will be followed in order unless stated otherwise:

| Step | Action |
|---|---|
| 1 | Finish completing Form 2 or Form 3 |
| 2 | Attach Wipe Test results to Form 2 or Form 3 |
| 3 | Notify EH&S contact to review that documentation is complete. |
| 4 | File documents in proper location (Binder to be created when needed) |

*Continued on next page*

# PCB Spill Cleanup Documentation, Continued

**Procedure Checklist**

**Form 2**

These steps will be followed in order unless stated otherwise: for Spills of Less Than 1-lb PCB from Low Concentration Material (<500 ppm).

| Step | **Action** (and Hazard/Precaution if applicable) |
|---|---|
| 1 | Notify ES&S,x66666 |
| 2 | Start completing Form 2 |
| 3 | Notify EAC for Wipe Test and complete PCB Wipe Sample Request Form |
| 4 | Cleanup and decontamination must be complete within 48 hrs |
| 5 | Dig out all contaminated soil one lateral foot beyond contaminated area |
| 6 | Wipe Test by EAC |
| 7 | Obtain Wipe Test results |
| 8 | Restore area back for normal operations |
| 9 | Complete Form 2 |
| 10 | EH&S Delivery has reviewed documentation |
| 11 | File Form 2 and Wipe Test results |

*Continued on next page*

# PCB Spill Cleanup Documentation, Continued

**Procedure Checklist Form 3**

These steps will be followed in order unless stated otherwise for Spills of Any Quantity PCB-containing Materials of High Concentration (>500 ppm), and Greater Than 1-lb PCB from Low Concentration Material (<500 ppm).

| Step | **Action** (and Hazard/Precaution if applicable) |
|---|---|
| 1 | Notify ES&S,x66666 |
| 2 | Start completing Form 3 |
| 3 | Notify EAC for Wipe Test and complete PCB Wipe Sample Request Form |
| 4 | Cleanup and decontamination must commence within 24 hrs |
| 5 | Dig out all contaminated soil one lateral foot beyond contaminated area |
| 6 | Wipe Test by EAC |
| 7 | Obtain Wipe Test results |
| 8 | Restore area back for normal operations |
| 9 | Complete Form 3 |
| 10 | EH&S Delivery has reviewed documentation |
| 11 | File Form 3 and Wipe Test results |

**Records Control Requirements**

File the completed record of this procedure checklist. File with the completed Safe Work Permits for retention in the control room. ***Retention is 7 calendar days***

**Signature**

(Signature) Date)

*Continued on next page*

## PCB Spill Cleanup Documentation, Continued

### Spills of Less Than 1-lb. PCB From Low Concentration Materials (< 500 ppm) ECM 601 - Form 2

**Low Concentration (50-500 ppm) Spills<1 pound PCBs by weight, less than 270 gallons of untested mineral oil.**

**MUST BE COMPLETED IN 48 HOURS**

1. Source of spill (e.g., type of equipment) _____
2. Date and time of spill _____
3. Date and time cleanup terminated _____
   If cleanup was delayed by emergency or adverse weather, give the nature and duration of the delay.
4. Brief description of spill location _____
5. Pre-cleanup sampling data (if needed) ATTACH DATA SHEETS TO REPORT
6. Brief description of solid surfaces cleaned _____
7. Excavation depth _____
8. Amount of soil removed _____

I HEREBY CERTIFY THAT THE CLEANUP REQUIREMENTS HAVE BEEN MET AND THAT THE INFORMATION CONTAINED IN THE RECORD IS TRUE TO THE BEST OF MY KNOWLEDGE.

_____ _____
Signature of Responsible Person (Date)

## Spills of Any Quantity PCB -containing Materials of High Concentration (> 500 ppm), and Greater Than 1 -lb. PCB From Low Concentration Materials (< 500 ppm)
## ECM 601 - Form 3

**High Concentration (500 ppm) Spills and Low Concentration (50 - 500 ppm) Spills involving 1 pound or more of PCBs by weight, 270 gallons or more of untested mineral oil.**

MUST BE COMPLETED IN 24 HOURS

1. Source of spill (e.g., type of equipment) _____
2. Date and time of spill _____
3. Date and time cleanup terminated _____
   If cleanup was delayed by emergency or adverse weather, give the nature and duration of the delay.
4. Complete description of the spill documenting the area of visible contamination, noting the extent of the visible trace areas and the center of the visible trace area. If there are no visible traces, document this fact and contact the Regional Office of the EPA for guidance in completing statistical sampling of the spill area to establish spill boundaries.

   _____
   _____
5. Pre-cleanup sampling data (if needed) ATTACH DA TA SHEETS TO REPORT
6. Brief description of solid surfaces cleaned and the double wash with double rinse procedure used.

   _____
   _____
7. Excavation depth _____
8. Amount of soil removed _____
9. Post-cleanup sampling data including a brief description of the samplin g methodology and analytical technique used. ATTACH DATA SHEETS TO REPORT.

I HEREBY CERTIFY THAT THE CLEANUP REQUIREMENTS HAVE BEEN MET AND THAT THE INFORMATION CONTAINED IN THE RECORD IS TRUE TO THE BEST OF MY KNOWLEDGE.

_____ _____
Signature of Responsible Person (Date)

| ***PCB Wipe Sample Request Form***<br>Environmental Analytical Chemistry (EAC)<br>Bldg. B-2009; Freeport, Texas 77541-3257<br>Fax: 979-238-0906 | **EAC Job #----------**<br>(For Lab Use Only) |
|---|---|

**Customer Information:**

| | | | | | |
|---|---|---|---|---|---|
| Today's Date | | Customer | | Master No. | |
| Department | | Building | | Phone No. | |
| Plant Code | | Charge | | Fax No. | |

**When will the area be cleaned and ready for sampling: _____**

**What is the actual location of the area to be sampled: (Example: North East corner of D-500 slab in A7001block)_** _____

**What is the size of the area that was cleaned to be sampled ($m^2$)**

**Plant contact name and phone number that can show the sampler the exact location of the area to be sampled:**

**The typical turnaround time for analytical results is ~3days, if this is not soon enough please specify the turnaround time needed and reason(s) why:**

_____

**Sample Information:**

What type of surface is to be sampled? (Check all that apply)

☐ Concrete ☐ Structural Steel ☐ Process Equipment ☐ Other Specify _____

_____

Is it a tank or other portable piece of equipment to be sampled? Yes☐ N/A☐

If Yes complete the following:

☐ Sprint Tank list Tank#_____
☐ Frac Tank list Tank#_____
☐ Vacuum Truck list Truck#_____
☐ Tote Bin list Bin#_____
☐ Other Specify _____list Unit#_____

**Safety Information:**

List any special **safety** considerations, equipment or precautions to be taken by the sampler: (examples: Steel toed shoes, Nomex clothing, hydroblasting in area) _____

_____

**Additional Comments/Notes:** _____

_____

*Continued on next page*

## PCB Spill Cleanup Documentation, Continued

**Related Documents** *List related and supporting documents here, if applicable*:

**Document and Records Management**

The current procedure is filed in the Document Management System, Electronic component, under Procedures.

A hardcopy of this procedure is located in the: **B-3320 and B-824 Control Rooms "Thermal Oxidizer Emergency Procedures" binder.**

**Review history**

The following information documents at least the last 3 reviews to this document.

| Date | Reviewed By | Comments |
|---|---|---|
| | | |
| | | |
| | | |

**Revision history**

The following information documents at least the last 3 changes to this document, with all the changes listed for the last 6 months.

| Date | Revised By | Changes |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

**Appendix 4 SPCC Plan**



**Thermal Treatment**
**Freeport Environmental Operations**
**Brazoria County**
**Freeport, Texas**

# Spill Prevention Control and Countermeasures Plan

**Last Revision: 12/09/2022**

# Spill Prevention Control & Countermeasures Plan & Spill Prevention Control Plan

## Table of Contents

**Introduction**

The purpose of this Spill Prevention Control & Countermeasures (SPCC) Plan is to document and communicate the activities that prevent spills and provide guidance to control and countermeasures to take if a spill occurs. A spill is a release of a material determined to be oil under the definition provided in 40 CFR §112.2 from storage vessels, in process equipment, loading racks, and other equipment or activities subject to the requirements of §112 that results in a harmful quantity as defined by the regulation from the Freeport Thermal Treatment Facilities of Environmental Operations, located in The Dow Chemical Company's Texas Operations site, Plant B, in Blocks 3300, 3400, and a portion of 800.

This Plan has been prepared to meet the requirements of the Federal Spill Prevention Control and Countermeasure Plan requirements of the Oil Pollution Prevention Plan as stated in 40 CFR 112. The plan follows the Federal requirements format both in content and sequence. The regulatory citation being addressed is cited in the left column of the document.

# General Information

| | |
|---|---|
| **Safety Considerations** | When an incident occurs, safety should be our first concern. Never enter the area of a spill or release without first thinking through the situation thoroughly. Non-essential personnel must not enter the area of the spill or release. In dealing with a spill, fire hazards and personnel safety are the prime objectives in addition to minimizing the impact of the spill outside of the plant boundaries. |
| **Maintenance of Equipment to Prevent Spills** | A test and inspection program for lines, tanks, and associated equipment is maintained to insure against unexpected failure. All applicable vessels and equipment are routinely inspected. Piping or equipment that falls below inspection standards is to be replaced or repaired as soon as possible. All buried piping that becomes exposed is inspected and evaluated and appropriate actions are taken. All buried piping installed or replaced after August 16, 2002 complies with the National Association for Corrosion Engineers (NACE) Standard SP-01-69 (formerly RP-01-69) "Control of External Corrosion on Underground or Submerged Metallic Piping Systems". |

# Facility Information

| | |
|---|---|
| **Facility Name:** | Freeport Environmental Operations Thermal Treatment (Includes B-3300 Kiln, B-3400 FTO, and a portion of B-800 Thermal Oxidizer) |
| **Facility Street Address:** | The Dow Chemical Company<br>2301 N. Brazosport Blvd., B-3320<br>Freeport, Texas 77541 |
| **Facility Mailing Address:** | Same |
| **Facility Phone Numbers:**<br>• **During Working Hours**<br>• **After Working Hours** | <br>979-238-7688: Control Room<br>979-238-7688: Control Room |
| **Owner Name:** | The Dow Chemical Company |
| **Owner Address:** | 2301 N. Brazosport Blvd., B-3320<br>Freeport, Texas 77541-3257 |
| **Operator Company Name:** | The Dow Chemical Company |
| **NAICS Code:** | 325199 |
| **Latitude/Longitude:** | B-33 Block – Lat. 28°59'13.9" N, Long. 95°23'59.9" W<br>B-34 Block – Lat. 28°59'11.9" N, Long. 95°23'55.32" W<br>B-8 Block – Lat. 28°59'09.4" N,<br>Long. 95°23'24.0" W |
| **River Drainage Basin:** | Brazos River |
| **Nearest Water Body:** | Brazos River |
| **Distance:** | B-3300 is approximately 0.57 mile from the Brazos River<br>B-3400 is approximately 0.57 mile from the Brazos River<br>B-800 is approximately 0.38 mile from the Brazos River |

| | |
|---|---|
| **Facility Response Coordinator:**<br>• **Working Hours Phone Number:**<br>• **After Hours Phone Number:** | Immediate Response Leader<br>979-238-7688 Control Room<br>979-238-7688 Control Room |
| *Note: The Facility Response Coordinator is responsible for the Spill Prevention Program and awareness and coordination with management. The Facility Response Coordinator is also responsible for coordinating and leading spill response.* | |
| **First Alternate:**<br>• **Working Hours Phone Number:**<br>• **After Hours Phone Number:** | TXO Emergency Services & Security<br>66666 or 979-238-2112<br>(manned 24 hours a day) |

# Management Approval 40 CFR 112.7

**Introduction**

This Spill Prevention, Control, and Countermeasure Plan for the Freeport Thermal Treatment Facilities is fully supported by the management of the facility. The Production Leader will implement this Plan and amend it as needed due to expansions, modifications, and improvements at the Freeport Thermal Treatment Facilities. In addition, the management of this facility commits the manpower, equipment, and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful.

This section should be re-signed when there is a new Production Leader.

| | |
|---|---|
| **Name:** | Terrance Cravin |
| **Title:** | Senior Production Director |
| **Signature:** | *See scanned document on next page* |
| **Date:** | 12/06/2022 |

Spill Prevention Control & Countermeasures Plan
Thermal Treatment – Texas Operations - Freeport

# Management Approval 40 CFR 112.7

**Introduction**

This Spill Prevention, Control, and Countermeasure Plan for the Freeport Thermal Treatment Facilities is fully supported by the management of the facility. The Production Leader will implement this Plan and amend it as needed due to expansions, modifications, and improvements at the Freeport Thermal Treatment Facilities. In addition, the management of this facility commits the manpower, equipment, and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful.

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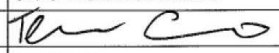
| | |
|---|---|
| **Name:** | Terrance Cravin |
| **Title:** | Senior Production Director |
| **Signature:** |  |
| **Date:** | 12/06/2022 |

# Professional Engineer Certification 40 CFR 112.3(d)

**Introduction**

Through this certification, I hereby attest that (1) I am familiar with the requirements of the SPCC rule; (2) I or my agent has visited and examined the facility; (3) the SPCC Plan has been prepared in accordance with good engineering practices, including consideration of applicable industry standards, and with the requirements of the SPCC rule; (4) procedures for required inspections and testing have been established; and (5) the Plan is adequate for the facility.

| | |
|---|---|
| **Certifying Engineer:** | Ronald H. Pitts |
| **State:** | Texas |
| **Registration Number:** | 49645 |
| **URS Corporation:** | TX3162 |
| **Signature:** | *See scanned document on next page* |
| **Certification Date:** | 12/13/2016 |

Engineering Seal

# Professional Engineer Certification 40 CFR 112.3(d)

**Introduction**

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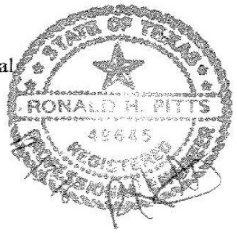
| | |
|---|---|
| **Certifying Engineer:** | Ronald H. Pitts |
| **State:** | Texas |
| **Registration Number:** | 49645 |
| **URS Corporation:** | TX3162 |
| **Signature:** | |
| **Certification Date:** | 12-13-16 |

Engineering Seal



# General Requirements for all SPCC Plans

| §112.7 | General requirements for SPCC Plans for all facilities and all oil types |
|---|---|
| | This plan meets the requirements specified in 40 CFR 112.7 and serves to identify the equipment, containment, procedures, and personnel in place to help prevent a spill to navigable waters.<br>Table 1 in the Appendix shows the spill history of the facility for the last 12 months prior to the certification. Only those spills which reached navigable waters or adjoining shorelines (as defined by 112.1(b)) are included.<br>The Annual Briefing is updated each year to reflect oil spills for the previous 12 months. |

| §112.7(a)(1) | Conformance with requirements |
|---|---|
| | This Plan has been prepared in conformance with the requirements of the 40 CFR 112. This plan follows the sequence outlined in 40 CFR 112.7. |

| 112.7(a)(2) | Compliance with all applicable requirements |
|---|---|
| | This facility meets all the requirements of 40 CFR 112, and, in particular, meets and conforms to the requirements in 40 CFR 112 (g) security, (h)(2) and (h)(3) vehicle loading and unloading procedures, and (i) brittle fracture evaluation and Subpart B. |

# Facility Description

| §112.7(a)(3) | Description of physical layout of the facility |
|---|---|
| | The Dow Chemical Company – Texas Operations is a chemical manufacturing complex located in Freeport, TX consisting of several facilities in Plant B (bordering the Brazos River), Plant A (bordering the Intracoastal Waterway and Brazos Harbor), Oyster Creek (bordering Dow's Barge Canal to/from the Gulf of Mexico), and Stratton Ridge (bordering Oyster Creek). See Figure 1 Site Vicinity Map located in the Appendix of this plan.<br><br>The Freeport Thermal Treatment Facilities is located in the southern and southwestern quadrants of The Dow Chemical Company's Texas Operations Plant B facility, located in Blocks 3300, 3400, and a portion of 800 and 300. The plot plans and physical layout photos included in this SPCC Plan are considered confidential business information. |

| §112.7(a)(3) | Facility Diagrams |
|---|---|
| | A Site Vicinity Map, Figure 1, is located in the Appendix. The drawings showing the location of the oil containing equipment identified by this plan are included as Figure 2, Figure 3 Figure 4 and Figure 5, located in the Appendix of this plan. |

| §112.7(a)(3)(i) | Type of oil in each container and its storage capacity |
|---|---|
| | At the Freeport Thermal Treatment Facilities, the following materials were defined as "oils" under the SPCC rule:<br>• Chlorinated and Non-chlorinated organics<br>• Polychlorinated biphenyls (PCBs)<br>• Transformer and lubricating oils<br>See Tables 2, 3, and 4 in the Appendix for the listing of equipment, quantity stored, and additional information.<br>Table 2 Bulk Storage Table<br>Table 3 Non-Bulk Storage (In Use or In-Process) Table<br>Table 4 Electrical Equipment Table<br>All oil storage tanks/containers are above ground; there are no buried or underground tanks in Texas Operations. |

| §112.7(a)(3)(ii) | **Discharge Prevention Measures for Handling of Products(Loading, Unloading, and Transfer Activities)** |
|---|---|

Unloading activities occur in both the 800 and 3300 Blocks. Tank truck loading can be performed in these areas. The Texas Operations H-34 Tank Truck/Portable Tank Loading and Unloading Safety Standard checklist is utilized by this facility for providing the operating discipline to meet the discharge prevention measures for handling of all products and materials at tank truck and portable tank loading/unloading stations.

Transfer hoses are visually inspected before each use; no records of these inspections are kept. Any hose that is unsuited for service is replaced prior to unloading or transfer.

Loading/unloading/transfer procedures are available in the facility WebEDMS.

See the table below for additional oil unloading and loading procedures.

| Procedure Title | Location | Brief Description |
|---|---|---|
| Unload Trucks into Tank Farm | WebEDMS | Kiln Procedure for safe unloading Chlorinated Organics |
| Unload Trucks or Trailers at Direct Burn Area | WebEDMS | Kiln Procedure for safe unloading Chlorinated Organics |
| Large Spills –Diked Area and Unloading Facilities | WebEDMS | TO Procedure for unloading |
| Unload Tank Truck to V2 | WebEDMS | TO Procedure for safe unloading of Chlorinated Organics |
| Unload to V-4 or V-5 | WebEDMS | TO Procedure for safe unloading of Chlorinated Organics |

| §112.7(a)(3)(iii) | **Discharge or drainage controls such as secondary containment and procedures.** |
|---|---|

A summary of the secondary containment measures in place for the equipment is shown in Table 5 of the Appendix.

| §112.7(a)(3)(iv) | **Countermeasures for discharge discovery, response and cleanup (Facility Drainage/Secondary Containment)** |
|---|---|

| | |
|---|---|
| | If a release of oil occurs within the facility, the facility will follow the Unit Emergency Plan and/or associated procedures to address discovery, response, and cleanup of the release. Procedures are available in the facility's WebEDMS. A hard copy of the Unit Emergency Plan is located in the control room.<br><br>Countermeasures may include isolation, deployment of booms/absorbent pads, clean-up using vacuum trucks, frac tanks (for liquids) and/or roll-off boxes (for solids), and notification of appropriate personnel. Contaminated soil will be cleaned-up. In addition to facility personnel, Site Emergency Services and Security (ES&S) personnel are available to assist with spill response. Contractors may be used to assist with spill clean-up. |

| §112.7(a)(3)(iv) | **Countermeasures for discharge discovery, response and cleanup (Cooling Water System)** |
|---|---|
| | If a release occurs within the cooling water system, the facility will follow the Unit Emergency Plan and/or associated procedures to address discovery, response, and clean-up of the release. Procedures are available in the facility's WebEDMS. A hard copy of the Unit Emergency Plan is located in the control room. |

| §112.7(a)(3)(v) | **Method of disposal of recovered materials** |
|---|---|
| | This facility utilizes the Dow Waste Characterization Tool to obtain waste profile numbers and properly dispose of recovered material in accordance with applicable local, state and federal regulations. The Dow Waste Characterization Tool can be accessed from any work station by the facility EH&S Delivery Technician and Specialist.<br><br>On-site and off-site incineration and landfill are options that may be used. |

| §112.7(a)(3)(vi) | **Contact for Response Personnel** |
|---|---|
| | This facility will utilize the Texas Operations Site Emergency Services and Security (ES&S) department to coordinate and respond to any release and/or emergency. See Table 6 in the Appendix for a listing of contacts and phone numbers. |

| §112.7(a)(4) | **Information and procedure to relate spill information to response personnel** |
|---|---|

| | |
|---|---|
| | This facility follows the Site Emergency Plan which requires immediate notification of incidents (spills, injuries, fires) to Emergency Services and Security (ES&S). The facility will provide information on the amount, type, location/source of material spilled, extent of impact (affected media) and whether there are any injuries. ES&S will respond, as appropriate, to assist with isolation, mitigation and spill clean-up. ES&S will make the required agency notifications. The facility will work with ES&S to determine if, and the extent of, any possible evacuations. |

| §112.7(a)(5) | Procedure for use when a discharge occurs |
|---|---|
| | If a spill occurs, the facility will follow this basic procedure for an oil spill include:<br>- Notify/warn others<br>- Safely stop and contain<br>- Mitigate impacts<br>- Collect and properly manage spilled material<br>- Clean-up contamination<br>- Conduct root cause investigation<br>- Implement corrective actions.<br><br>The facility WebEDMS is used to access spill response procedures. |

## General Initial Response Measures and Spill Reporting Procedure

Plant spill reporting is located at Environmental Operations Unit Emergency Plan (UEP).

If a release occurs in the Freeport Thermal Treatment Facilities, the facilities will follow the UEP and associated procedures to address the discovery, response and cleanup of the release. The UEP is located in the WebEDMS. Personnel that handle oils are trained in the location and access of the UEP.

## Area-specific Spill Response

If a release occurs in the Freeport Thermal Treatment Facilities of the specific materials–chlorinated organics, transformer oil or PCBs–the facility will follow the Unit Emergency Plan (UEP) and associated procedures to address the discovery, response and cleanup of the release. The UEP is located in WebEDMS. Personnel who handle oils are trained in the location and access of the UEP and area-specific response procedures.

| Procedure Title | Location | Brief Description |
|---|---|---|
| EnvOps Unit Emergency Plan (UEP) | WebEDMS | Unit Emergency Plan |
| Thermal Treatment Unit Emergency Plan | WebEDMS | Kiln and Thermal Oxidizer Unit Emergency Plan |
| Kiln Storm Water Management Policy | WebEDMS | Kiln Storm Water Policy |
| FTO Storm Water Management Policy | WebEDMS | FTO Storm Water Policy |
| B-824 TO Storm Water Management Policy | WebEDMS | B-824 TO Storm Water Policy |
| Texas Operation Emergency Plan | Intranet – Big Tex | Texas Operations Emergency Plan |

# Fault Analysis

**SOURCES OF POTENTIAL SPILLS**

| | |
|---|---|
| §112.7(b) | **Fault Analysis – Prediction of impact associated with equipment failures and worst case scenarios.** |
| | The worst case scenario for the oil handling equipment covered under this plan is shown in Table 7 of the Appendix. |

# Storage Capacity and Secondary Containment

| | |
|---|---|
| §112.7(c) | **Secondary Containment and/or diversionary structures or equipment used to prevent a spill from reaching navigable waters for onshore facilities** |

| §112.7(c)(1)(i) | **Dikes, berms, or retaining walls** |
|---|---|
| | The Freeport Thermal Treatment Facilities containment dikes are designed to contain the entire contents of the largest single bulk storage tank in the diked area, as well as sufficient freeboard for precipitation, if applicable (most areas covered). Calculations supporting the containment size are located in the Appendix as part of Table 5.<br><br>**Block B-800**<br><br>There are three concrete containment areas in the B-800 block. The secondary containment areas are designed to provide sufficient capacity to contain the contents of the largest tank. Truck loading and railcar unloading areas are covered so minimal precipitation will be introduced.<br><br>The electrical transformers in Block B-800 have adequate secondary containment.<br><br>**Block B-3300**<br><br>The tank farm area has a lined concrete containment area that is designed to drain to sump S-401. The containment area and sump is large enough to contain the contents of the area's largest tank. The area is covered and the introduction of precipitation is minimal. The B-3308 CSA area has a lined concrete containment area that is designed to drain to sump S-401; this area is not covered. The direct burn area has a containment area that is designed to drain to sump S-501. The direct burn area is covered and the introduction of precipitation is minimal<br><br>In addition, electrical transformers in Block 3300 have adequate secondary containment.<br><br>**Block B-3400**<br><br>Electrical transformers in Block 3400 have adequate secondary containment. |

| §112.7(c)(1)(ii) | Curbing or drip pans/concrete pads |
|---|---|
| | Curbing is used at B-824 tank truck unloading area. |

| §112.7(c)(1)(iii) | Sumps and collection systems |
|---|---|
| | The Freeport Thermal Treatment Facilities utilize three sumps to assist with the containment capacity. Details about the sumps are located in the Appendix as part of Table 5. |

| §112.7(c)(1)(iv) | Culverting, gutters, or other drainage systems |
|---|---|
| | Undiked areas are designed, graded and sloped to drain to the facility trenches/sump systems which are visually inspected prior to discharging to the waste water treatment plant or site ditches. |

| §112.7(c)(1)(v) | Weirs, booms, or other barriers |
|---|---|
| | Booms are available for deployment in the perimeter ditch or the trenches/sumps, if needed. Emergency Services and Security (ES&S) also has booms available. The Thermal Treatment UEP addresses the use of booms. |

| §112.7(c)(1)(vi) | Spill diversion ponds |
|---|---|
| | This method is not applicable to Freeport Thermal Treatment Facilities. |

| §112.7(c)(1)(vii) | Retention ponds |
|---|---|
| | This method is not applicable to Freeport Thermal Treatment Facilities. |

| §112.7(c)(1)(viii) | Sorbent materials |
|---|---|
| | The use of sorbent materials is addressed in Dow SPCC Guidance. The Thermal Treatment UEP references the spill response procedures.<br>Natural soils, in addition to man-made materials, can be used as a sorbent material for immobilization of small amounts of oil that may occur between inspections |

# Spill Response Plan

| | |
|---|---|
| §112.7(d) | **Contingency Planning for Equipment not provided with secondary containment must demonstrate the impracticality of installing the protection, be routinely inspected and have an Oil Spill Contingency Plan** (40 CFR 109)**<br>**If an approved FRP under 40 CFR 112.20 does not exist |
| | All facilities in Texas Operations meet the standards and criteria detailed in 112.7(c) and 112.7(h)(1).<br>There is no oil containing equipment that is not provided with secondary containment where impracticality of installing the protection has been demonstrated. |

| | |
|---|---|
| §112.7(d)(1) | **Oil Spill Contingency Plan** |
| | Texas Operations has submitted its Facility Response Plan (FRP) under 40 CFR 112.20 to the EPA for approval. The FRP is coordinated and owned by the Texas Operations Emergency Services and Security (ES&S).<br>This plan includes steps such as the identification of the exact location and phone number of the facility where the release occurred, the type of material discharged, estimates of the total quantity discharged, the source of the discharge, a description of all affected media, the cause of the discharge, any damages or injuries caused by the discharge, whether an evacuation may be needed and the names of individuals and/or organizations who have also been contacted. |

| | |
|---|---|
| §112.7(d)(2) | **Written commitment of emergency response manpower.** |
| | By signature of this Plan, The Dow Chemical Company is hereby committing to the necessary manpower, equipment and materials required to expeditiously control and remove any quantity of oil discharged that may be harmful. |

# Inspections, Tests, and Records

| | |
|---|---|
| §112.7(e) | **Inspections, tests, and records** |
| §112.7(e) | **Procedures and Records of Inspections** |
| | All inspections and Integrity testing in the Freeport Thermal Treatment Facilities are performed in accordance with the GMISS and associated work processes. Results and records of inspections are available in the Engineering Records Department and are maintained for the life of the equipment under usual and customary business practices. These records can be accessed in the B-3320 Library equipment files. These records can be accessed by the Thermal Treatment staff personnel.<br><br>The types of inspections and associated procedures and inspection frequency are included in Tables 2, 3 and 4 for the specific oil containing equipment. Facility-specific procedures are available via the facility's WebEDMS. GMISS/GMIM and EMETL are available via Dow's intranet. |

# Personnel Training

| §112.7(f) | Employee Training in Discharge and Spill Prevention Procedures |
|---|---|

| §112.7(f)(1) | Train all oil and chemical handling personnel in the operation of equipment and maintenance |
|---|---|

| Initial SPCC Training | Annual SPCC Briefing |
|---|---|
| 1. SPCC Overview – GHRIS US00015 | 1. Review of Plan changes; learnings from oil spills; changes in oil work processes |
| 2. Facility specific SPCC | |

All operating personnel are trained on both general facility operations, as well as the specific process area prior to being allowed to operate the facility. This training includes procedures, equipment, troubleshooting, potential hazards, and managing/ reporting emergency response to various incidents (spills, injuries, releases) to meet company, regulatory and legal requirements.

Training on the SPCC regulation is via MyLearning and/or instructor led (GHRIS code US00015).

Training on the contents on this facility's SPCC Plan is via MyLearning (GHRIS code I166 (TO) and I165 (Kiln).

| §112.7(f)(2) | Person responsible for discharge prevention at the facility |
|---|---|

The Production Leader of the Freeport Thermal Treatment Facilities is responsible for spill prevention and response at this facility and is held accountable by both site and corporate management.

| §112.7(f)(3) | Annual discharge prevention briefings |
|---|---|

All operations personnel involved in the handling of oil materials receive annual discharge prevention briefings to assure adequate understanding of the facility's plan and any plan changes, known discharges that have occurred in the last year, any equipment failures that have occurred and precautionary measures taken to prevent reoccurrence. Records of this annual training are in MyLearning.

# Security

| | |
|---|---|
| §112.7(g) | **Security (excluding oil production facilities)** |
| §112.7(g) | **Fencing** |
| | The entire Texas Operations site is fenced to control and restrict access to all areas of production, including those that involve the handling of oil materials. Access to all entrances is controlled by gates with guard control in addition to electronic access provisions. If a gate is unmanned, it is barricaded and no access can be achieved. The facility perimeter is patrolled by the Emergency Services and Security (ES&S) department. |

| | |
|---|---|
| §112.7(g) | **Master flow and drain valves** |
| | Outside access to all master flow and drain valves is controlled by the site security fence/gates and ES&S. Facilities are manned 24/7/365. Valves on secondary containment are kept closed unless being drained of rainwater. All terminal valves are capped/plugged/blinded to prevent accidental discharge. Access to master flow and drain valves inside operating areas within the fence line are controlled through specific facility access restrictions. |

| | |
|---|---|
| §112.7(g) | **Starter controls** |
| | Outside access to all motor starter controls is controlled by the site security fence/gates and ES&S. Facilities are manned 24/7/365. Access to motor starter controls inside operating areas within the fence line is controlled through specific facility access restrictions. |

| | |
|---|---|
| §112.7(g)<br>§112.8(d)(2) | **Loading/unloading and out of service connections of oil pipelines and facility piping** |
| | Outside access to all loading/unloading connections within the operating facility is controlled by the site security fence/gates and ES&S. Access to all loading/unloading connections inside operating areas within the fence line to other facility personnel are controlled through specific unit access restrictions. |

| | |
|---|---|
| §112.7(g) | **Lighting** |
| | Outside access to the facility is controlled by the site security fence/gates and ES&S lighting is provided in areas where night time reviews or critical equipment is located. Since the facility is manned 24 hrs. /day, lighting is provided to ensure safe operations and is adequate to identify discharges during darkness and prevent acts of vandalism. |

# Loading and Unloading

| §112.7(h) | Facility tank cars and tank truck loading/unloading rack |
|---|---|

| §112.7(h)(1) | Secondary containment for loading/unloading racks |
|---|---|
| | Secondary containment is provided for unloading areas at B-3304, B-3305, and B-824 with slope to sump. All plant containment is controlled by concrete trenches which drain to the plant sump system. There are also block valves which can be closed in the event of a spill. Tank truck loading can be performed. |

| §112.7(h)(2) | Prevention of vehicle from departing prior to complete disconnection |
|---|---|
| | The Texas Operations H-34 Tank Truck/Portable Tank Loading and Unloading checklist is utilized by this facility for providing the operating discipline to prevent premature vehicular departure before disconnection of the oil transfer lines. Texas Operations H-34 is available via Dow's intranet. |

| §112.7(h)(3) | Checking of drains prior to departure |
|---|---|
| | The Texas Operations H-34 Tank Truck/Portable Tank Loading and Unloading checklist is utilized by this facility for providing the operating discipline to prevent discharge while filling or upon departure. Texas Operations H-34 is available via Dow's intranet. |

# Brittle Fracture

| §112.7(i) | Evaluate brittle fracture risk after tank service change or leak |
|---|---|
| | Field-constructed above ground containers undergoing repair and/or alteration are tested to verify mechanical integrity prior to the re-introduction of chemicals. If a change of service is required, Dow follows a Management of Change work process to ensure there are no issues associated with the change. When a spill occurs, a root cause investigation is performed to determine the root cause and develop corrective and/or preventative actions. Metallurgical analyses may be performed to better understand the cause. The risk of brittle fracture in southeast Texas is low due to the lack of freezing weather for extended periods.<br><br>The procedure and periodic test and inspection results are located in the B-3320 Library equipment files. The procedures and records can be accessed by the Thermal Treatment staff personnel. |

# Applicable Local/State Requirements

| | |
|---|---|
| §112.7(j) | **State discharge prevention and containment procedures - Conformance with State requirements** |

| §112.7(j) | **Statement of Plan in conformance with state requirements** |
|---|---|
| | This facility SPCC plan conforms to all applicable discharge prevention and containment requirements and any applicable State rules, regulations, and guidelines that are more stringent. The State of Texas, TCEQ Chapter 327 rules have been reviewed against 40 CFR 112 for applicability. The site must also meet the conditions of TPDES Permit No.WQ00007000. |

# Oil Filled Operational Equipment

| §112.7(k) | Qualified Oil-filled Operational Equipment |
|---|---|

| §112.7(k)(1) | Qualification Criteria – Reportable Discharge History |
|---|---|
| | The Freeport Thermal Treatment Facilities is considered a qualified facility. The facility has had no single discharge from oil-filled operational equipment exceeding 1,000 gallons or no two discharges from oil-filled operational equipment exceeding 42 gallons each within a 12-month period in the three years prior to the SPCC Plan certification date. |

| §112.7(k)(2) | Alternate Requirements to Secondary Containment |
|---|---|
| | Transformers and other oil-filled equipment are included in Table 3 and Table 4 in the Appendix. Transformers are visually inspected weekly by operators. If a problem is detected, a work order is submitted. If a spill or leak is detected, spill response measures are implemented.<br>In addition, this facility uses an approved Facility Response Plan (FRP) under 40 CFR 112.20. It is coordinated and owned by the Texas Operations Emergency Services and Security department. |

# General and Specific Requirements for Onshore Facilities

| | |
|---|---|
| §112.8 | **Requirements for onshore facilities (excluding production facilities)** |

| | |
|---|---|
| §112.8(a) | **Statement that Plan meets general requirements of 40 CFR §112.7** |
| | Requirements of 40 CFR §112.7 were addressed in previous sections and appendices of this plan. |

# Facility Drainage

| §112.8(b) | Facility drainage |
|---|---|

| §112.8(b)(1) | Diked areas to be restrained by valves |
|---|---|
| | Diked areas are restrained by valves that normally are closed or other positive means to prevent an oil discharge or excessive leakage into the facility drainage or effluent treatment system. |

| §112.8(b)(2) | Valve must be open-and-closed design |
|---|---|
| | Valves used for drainage of diked areas are manual and open/close design for controlling discharges from containment. |

| §112.8(b)(3) | Drainage from undiked areas should flow into areas capable to detect and retain spills |
|---|---|
| | Tank farm area (D-410 through D-460) in the B-3300 Block is undiked, but designed to contain any spills or leaks. The covered concrete slab under the storage tanks is sloped to a drain through an underground pipe to a sump (S-401). The sump is a lined concrete sump and has a capacity of 26,900 gallons. Any spilled material is collected and placed in containers for disposal. The pipe from the tank farm to the process area is an open trench that collects leaks and direct flow to S-401.<br><br>The unloading area at the direct burn area in the B-3300 Block also is undiked but under cover. This area drains to a sump (S-501) in which spills are collected and pumped back into the process.<br><br>The truck unloading area of Block B-800 is a curbed containment. The area is sloped in the direction of a reinforced concrete sump and can be returned to the process via vacuum truck.<br><br>The electrical transformer containment area has adequate containment for non-bulk storage containers. On the basis of Dow's performance history, a spontaneous catastrophic (complete volume) release of oil is not a reasonably credible event for transformers equipped with fault protection and pressure relief, circuit breakers, and rectifiers. As a result, catastrophic release does not need to be considered for transformers so equipped and subject to SPCC. |

| §112.8(b)(4) | **Drainage from undiked areas which do not flow to ponds, lagoons** |
|---|---|
| | Transformers are located in areas Blocks B-800, B-3300 and B-3400 are diked. Transformer, T-3404 is not completely diked, but is located on concrete pad in a three-sided enclosure. Asphalt paving is to the east of the concrete pad. Sorbent materials can be used to retain any leaks from the transformer.<br>Prior to discharge from the final outfall all stormwater drainage is collected and inspected. |

| §112.8(b)(5) | **Pumping to Wastewater treatment** |
|---|---|
| | The facility's stormwater management policies outline the requirements and procedures in terms of pumping to the wastewater treatment system.<br>Wastewater from sumps S-401 and S-501 can be pumped for thermal treatment. Vacuum truck can be used to remove wastewater from sumps and sent to Wastewater Treatment Plant. |

# Requirements for Bulk Storage Containers

| §112.8(c)<br>§112.12(c) | Bulk Storage Container Requirements |
|---|---|

| §112.8(c)(1) | Tank/material compatibility |
|---|---|
| | All containers for storage of designated oil materials in the Freeport Thermal Treatment Facilities are constructed of materials that are compatible with the materials stored in them and meet all operating limitations and specifications such as temperature, pressure, etc. These containers are built according to Dow's Global Piping and Vessel specifications or DOT specifications, as applicable. |

| §112.8(c)(2) | Containment of bulk storage containers |
|---|---|
| | Secondary containment information for bulk oil storage containers can be found in Table 5. Containment is sized for the entire capacity of the largest single container and sufficient freeboard to contain precipitation and is sufficiently impervious to contain the discharged oil. |

| §112.8(c)(3)(i–iv) | Drainage of stormwater from diked areas which bypass the facility treatment system |
|---|---|
| | Stormwater is released to the perimeter ditch only after it meets the criteria described in the Rainwater Discharge procedure. |

| §112.8(c)(4) | Corrosion protection of completely buried storage tanks |
|---|---|
| | Texas Operations has no underground (buried) storage tanks that are in oil service. |

| §112.8(c)(5) | Partially buried storage tanks |
|---|---|
| | Texas Operations has no partially buried storage tanks that are in oil service. |

| §112.8(c)(6) | Inspection of bulk storage containers |
|---|---|
| | All field-constructed above-ground tanks, including foundation and the supports (if applicable), containing oils are routinely inspected by appropriate qualified inspectors using widely accepted standard tests or the Dow Global Mechanical Integrity Safety Standard/Global Mechanical Integrity Manual (GMISS/GMIM) guidelines , available via Dow's intranet. Testing includes both non-destructive and visual testing methods. These inspection records are located in the Engineering Department.<br><br>Non-Dow owned bulk storage containers and certain other containers such as drums, totes and small non-field constructed tanks are visually inspected; however, no other integrity testing is performed. For DOT containers, Thermal Treatment will comply with the DOT testing requirements.<br><br>Records of the periodic visual reviews are located in the Library equipment files. Procedures and records can be accessed by the Thermal Treatment staff personnel. |

| §112.8(c)(7) | Leaks of defective internal heating coils |
|---|---|
| | This section not applicable for the facility. |

| §112.8(c)(8)(i-v) | Fail-safe engineering devices |
|---|---|
| | Storage tanks in the Freeport Thermal Treatment Facilities utilize various forms of level detection as fail-safe engineering devices. Table 2 in the Appendix lists bulk storage tanks present in the Freeport Thermal Treatment Facilities. The table also outlines each fail-safe control utilized for each particular piece of equipment.<br><br>Testing of liquid level-sensing devices and alarms on oil tanks is performed once per year and records are maintained and available upon request. |

| §112.8(c)(9) | Observation of effluent treatment facilities |
|---|---|
| | The Texas Operations Environmental Operations department that operates and maintains the Wastewater Treatment Plant (WWTP) performs frequent monitoring of the WWTP to ensure proper operations. This is also performed as a condition of the Texas Operations TPDES permit. All water discharge through the TPDES-permitted outfalls is sampled and analyzed in accordance with the permit. |

| §112.8(c)(10) | Correction of visible discharges |
|---|---|
| | See section 112.7(a)(3)(iv). |

| §112.8(c)(11) | Mobile and portable storage tanks |
|---|---|
| | Mobile and portable oil storage containers are positioned to ensure potential spills are contained either in a dike or in the facility's trench/rainwater sump system. Buckets may be used under hose connections to collect drips. |

# Facility Transfer Operations, Pumping, and In-Plant Processes

| | |
|---|---|
| §112.8(d)<br>§112.12(d) | **List facility transfer operations, pumping, and in-plant process (excluding production facilities)** |

| | |
|---|---|
| | **Protection of buried piping** |
| | There are no buried pipelines containing oil at this facility or leaving this facility. |

| | |
|---|---|
| §112.8(d)(2) | **Capping terminal connections** |
| | This facility plugs, caps, or blinds all terminal connections on vessels, piping, and equipment that contain specified oil materials, as defined by the SPCC. Operations personnel routinely inspect the facilities for these conditions at least once per day and document their inspections via the Master Task List (MTL). The documented results of these periodic inspections are located in the MTL and can be accessed by the EH&S delivery technician, work activity coordinator, or the safety/ training specialist. |

| | |
|---|---|
| §112.8(d)(3) | **Design of pipe supports** |
| | All piping and pipe supports in this facility are designed and maintained in accordance with Dow Engineering Standards (EMETL – available on Dow's intranet) to minimize abrasion and corrosion and allow for expansion and contraction. |

| | |
|---|---|
| §112.8(d)(4) | **Inspection of aboveground valves, piping and appurtenances** |
| | This facility inspects all vessels, piping, and equipment that contain specified oil materials, as defined by the SPCC. Operations personnel routinely inspect all the facilities for any possible leaks or drips at least once per day and document their inspections via the Master Task List. The documented results of these periodic inspections are located in the MTL and can be accessed by the EH&S delivery technician, work activity coordinator, and safety/training specialist. |

| | |
|---|---|
| §112.8(d)(5) | **Warning of vehicle clearance** |
| | Vehicle entry into the facility is restricted by gates and a vehicle entry permit is required before entering. Exposed piping at grade level is protected via barriers. Overhead piping was constructed with sufficient clearance to accommodate any vehicle that will be entering the facilities. |

| | |
|---|---|
| **§112.20** | **Facility Response Plan - Certification of Applicability of the Substantial Harm Criteria, 40 CFR 112 Appendix C 3.0 & Attachment C-II** |
| | Certification of Applicability of the Substantial Harm Criteria is required for this facility and is located as Attachment C-II to this plan. |

# Five Year SPCC Plan Technology Review / Evaluation Documentation

| | |
|---|---|
| **Plant/Department**<br><br>**SPCC Plan Review**<br><br>**40 CFR 112.5(b)** | This facility has performed internal reviews utilizing personnel who are familiar with applicable Dow requirements for spill prevention and control. The Dow standards are based on most effective technology (MET) and industry-proven practices.<br><br>This facility also performs annual discharge prevention briefings as prescribed in the SPCC plan 40 CFR 112.7(f)(3). These reviews typically result in the application of improvements in spill prevention technology and operating procedures if necessary.<br><br>This plan has also been assessed against the most recent Dow Spill Control Technology Review contained in the Most Effective Technology document G2D-7100-00 found in Dow's Intranet EMETL library using the keyword EMETL.<br><br>I have completed review and evaluation of the SPCC Plan for the Thermal Treatment Facilities and **will not** amend the Plan as a result.<br><br>Derek Rester — signature scanned on next page — 07/28/2022<br>Printed Name — Signature — Date<br><br>Senior Production Director<br>Title |

Spill Prevention Control & Countermeasures Plan
Thermal Treatment – Texas Operations - Freeport

# Five Year SPCC Plan Technology Review / Evaluation Documentation

| | |
|---|---|
| **Plant/Department**<br><br>**SPCC Plan Review**<br><br>**40 CFR 112.5(b)** | This facility has performed internal reviews utilizing personnel who are familiar with applicable Dow requirements for spill prevention and control. The Dow standards are based on most effective technology (MET) and industry-proven practices.<br><br>This facility also performs annual discharge prevention briefings as prescribed in the SPCC plan 40 CFR 112.7(f)(3). These reviews typically result in the application of improvements in spill prevention technology and operating procedures if necessary.<br><br>This plan has also been assessed against the most recent Dow Spill Control Technology Review contained in the Most Effective Technology document G2D-7100-00 found in Dow's Intranet EMETL library using the keyword EMETL.<br><br>I have completed review and evaluation of the SPCC Plan for the Thermal Treatment Facilities and **will not** amend the Plan as a result.<br><br>Derek Rester — Signature — 07/21/2022<br>Printed Name — Signature — Date<br><br>Senior Production Director<br>Title |

# Revision History

This SPCC Plan will be amended whenever there is a change in facility design, construction, operation, or maintenance procedure that materially affects the potential for an oil spill. Examples of changes will require amendment of this Plan include commissioning or decommissioning containers; replacement, reconstruction, or installation of piping systems; construction or demolition that might alter secondary containment structures; changes of product or service; or revision of standard operating or maintenance procedures. This SPCC Plan is to be amended within 6 months of any change, and implemented within 6 months following preparation of the amendment. Revisions in content, such as name or managerial changes are also noted in the revision log.

**Revision History** The following information documents at least the last 3 changes to this document, with all the changes listed for the last 6 months.

| Date | Revised By | Changes |
|---|---|---|
| 1/31/06 | | Merged changes from TXO Template |
| 12/14/06 | | Integration/Implementation of 2002 Amendment in the Plan by October 31, 2007. |
| 7/28/08 | | Reviewed and updated. |
| 10/31/09 | | Revised for Texas template, deleted B-600 transformers |
| 9/23/13 | | Removed references to TI-2 and TI-3, as well as the use of MTL for inspection records. Modified wording to reflect that not all bulk oil storage is registered/inspected per GMISS, such as drums, totes and small shop-built containers. Added environmental equivalence language throughout document. |
| 10/10/13 | | Amended citations where needed. Added language to clarify the regulatory language. |
| 11/07/13 | | Added "for Equipment and Level Sensing Devices" to "Inspection or Testing Procedure" section of Tables 2 and 3 to document how both equipment and level sensing devices are tested, plus a few other minor clarifications. |
| 06/03/14 | | Updated according to site MOC and new Dow SPCC Template. Added "Oil Filled Operational Equipment" section. |
| 12/9/16 | | Updated to include additional storage details and revise plan. |
| 06/19/18 | | Removed SOHO tanks, Updated B3400 transformer list. Added attachment C-II and updated section 112.20(a) per site MOC |
| 09/03/19 | | Replaced Management Approval page with new PL name and signature and plan cover page with last revision date. |

| | | |
|---|---|---|
| 12/09/22 | | Replaced Management Approval page with new PL name and signature and plan cover page with last revision date. |

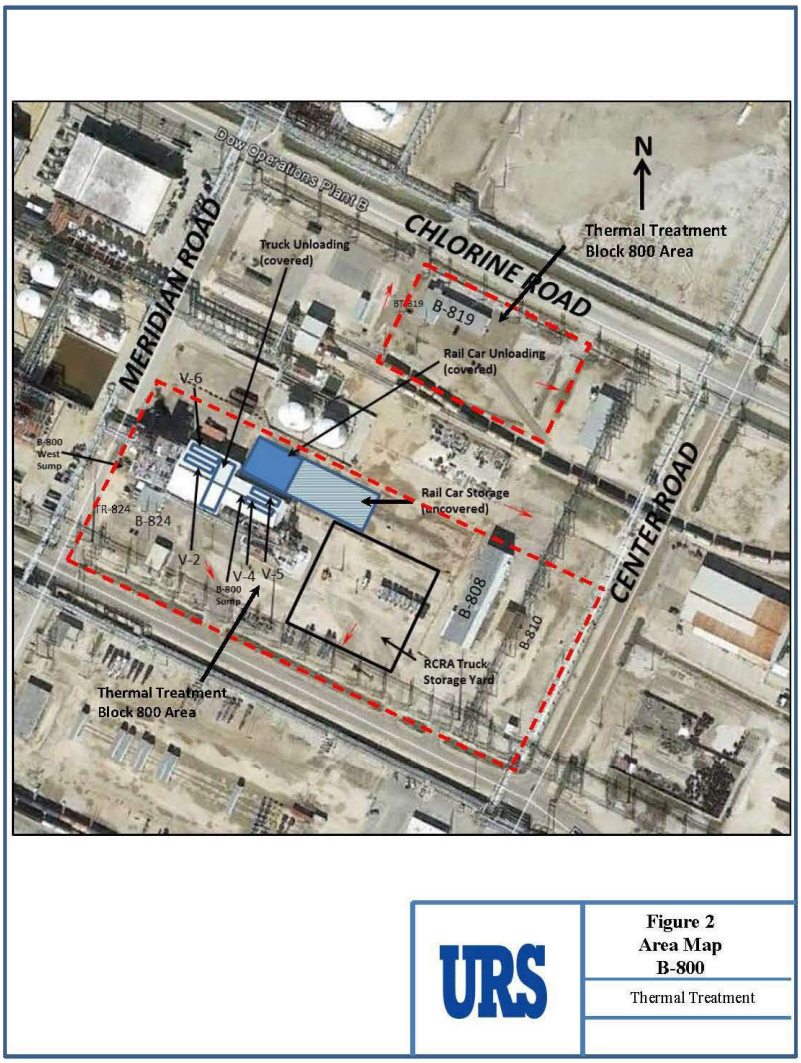
**Review History** Document Review History

| Date | Reviewed By | Changes |
|---|---|---|
| 03/26/2021 | | None |
| 07/28/2022 | | Table 7 – removed reference to PCB storage in V2 and removed chlorpyridines from the source list.<br>Table 2 – removed PCB's from V-2 contents<br>Updated with current 5 year technology review. |

# Appendices

# Figure 1 – Site Vicinity Map

# Figure 2 – B-800 Block



# Figure 3 – B-3300 Block

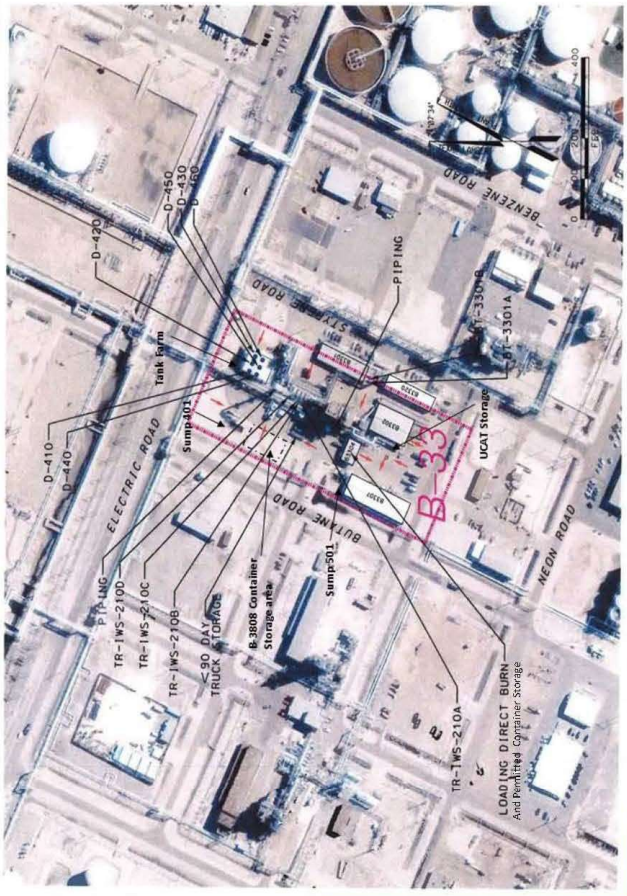



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**Figure 3**
**Area Map**
**B-3300**
Thermal Treatment

# Figure 4 – B-3400 Block

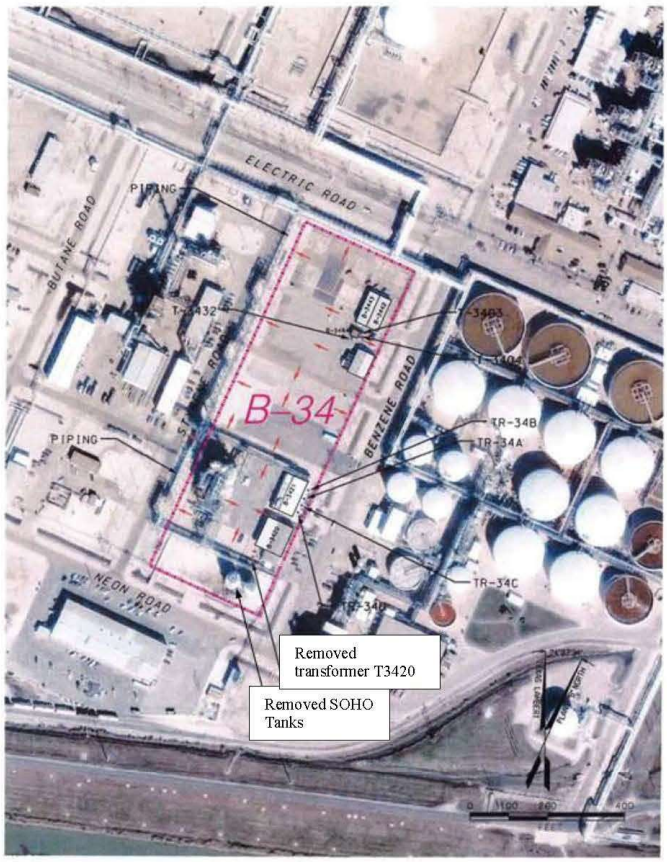


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**Figure 4**
**Area Map**
**B-3400**
Thermal Treatment

# Table 1 – Facility Spill History

| Date of Spill | Amount | Disposition |
|---|---|---|
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# Table 2- Bulk Storage Table

| Equipment | Contents | Capacity (Gal) | Container Type | Fail-Safe Device Utilized §112.8(c)(8)(i-v) | Inspection or Testing Procedure for Equipment and Level Sensing Devices §112.7(e) |
|---|---|---|---|---|---|
| D-410 (B-3300 block) | Chlorinated Organics & Oil | 20,000 | Fixed Roof | Redundant Level Detection | Annual Integrity Testing & Liquid Level Sensing Devices Alarm Monthly Visual Inspection |
| D-420 (B-3300 block) | Chlorinated Organics & Oil | 20,000 | Fixed Roof | Redundant Level Detection | Annual Integrity Testing & Liquid Level Sensing Devices Alarm Monthly Visual Inspection |
| D-430 (B-3300 block) | Chlorinated Organics & Oil | 20,000 | Fixed Roof | Redundant Level Detection | Annual Integrity Testing & Liquid Level Sensing Devices Alarm Monthly Visual Inspection |
| D-440 (B-3300 block) | Chlorinated Organics & Oil | 20,000 | Tank/Vessel | Redundant Level Detection | Annual Integrity Testing & Liquid Level Sensing Devices Alarm Monthly Visual Inspection |
| D-450 (B-3300 block) | Chlorinated Organics & Oil | 20,000 | Tank/Vessel | Redundant Level Detection | Annual Integrity Testing & Liquid Level Sensing Devices Alarm Monthly Visual Inspection |
| D-460 (B-3300 block) | Chlorinated Organics & Oil | 20,000 | Tank/Vessel | Redundant Level Detection | Annual Integrity Testing & Liquid Level Sensing Devices Alarm Monthly Visual Inspection |
| V-2 (B-800 block) | Chlorinated Organics, | 8,000 | Tank/Vessel | Ohmart Nuclear Level Sensing Device | Annual Integrity Testing & Liquid Level Sensing Devices Alarm Monthly Visual Inspection |
| V-4 (B-800 block) | Chlorinated Organics | 59,000 | Tank/Vessel | Radar Transmitter LSH-LSHH incoming EBV closes on Hi-HI Level | Annual Integrity Testing & Liquid Level Sensing Devices Alarm Monthly Visual Inspection |
| V-5 (B-800 block) | Chlorinated Organics | 59,000 | Tank/Vessel | Radar Transmitter LSH-LSHH incoming EBV closes on Hi-HI Level | Annual Integrity Testing & Liquid Level Sensing Devices Alarm Monthly Visual Inspection |
| V-6 (B-800 block) | Inactive | 6,400 | Tank/Vessel | Tank Out of Service | Annual Integrity Testing & Liquid Level Sensing Devices Alarm Monthly Visual Inspection |

# Table 2- Bulk Storage Table (cont.)

| Equipment | Contents | Capacity (Gal) | Container Type | Fail-Safe Device Utilized §112.8(c)(8)(i-v) | Inspection or Testing Procedure for Equipment and Level Sensing Devices §112.7(e) |
|---|---|---|---|---|---|
| Diesel Tank (B-3308 block) | Diesel Fuel | 750 | Portable Tank | N/A | B-33 area walk through (MTL) |
| Diesel Tank (B-800 block) | Diesel Fuel | 750 | Portable Tank | N/A | B-8 area walk through (MTL) |
| UCAT Cylinders (Qty 30 max) | Mineral Oil | 120 | Cylinder | N/A | Weekly RCRA Audit |
| B-3300 (Direct Burn) Permitted Container Storage area (Qty 6 max) | Oil | 6,500 | Tank Truck | N/A | Per DOT, if required. Weekly permitted CSA inspections. |
| Permitted storage containers (B-3308 Qty 12 max) | Oil | 6,500 | Tank Truck | N/A | Per DOT, if required. H-34 checklist |
| B-800 Container Storage Area | Chlorinated Organics & Inorganics | 6,500 | Tank Truck | N/A | Weekly RCRA Audit |
| B-800 Rail Car Storage Area | Chlorinated Organics & Inorganics | 25,500 | Rail car | N/A | Weekly RCRA Audit |

# Table 3 - Non-Bulk Storage Table

| Source | Contents | Capacity (Gal) | Equipment Type | Fail-Safe Device Utilized §112.8(c)(8)(i-v) | Inspection or Testing Procedure for Equipment and Level Sensing Devices §112.7(e) |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
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| | | | | | |
| | | | | | |

# Table 4 – Electrical Equipment Table

| Electrical Equipment | Contents | Capacity (Gal) | Equipment Type | Inspection or Testing Procedure §112.7(e) |
|---|---|---|---|---|
| BT-3301A | Oil | 675 | Transformer | Weekly Visual Inspection |
| BT-3301B | Oil | 675 | Transformer | Weekly Visual Inspection |
| TR-210A | Oil | 85 | Transformer | Weekly Visual Inspection |
| TR-210B | Oil | 85 | Transformer | Weekly Visual Inspection |
| TR-210C | Oil | 85 | Transformer | Weekly Visual Inspection |
| TR-IWS-210D | Oil | 85 | Transformer | Weekly Visual Inspection |
| T-3403 | Oil | 200 | Transformer | Weekly Visual Inspection |
| T-3404 | Oil | 85 | Transformer | Weekly Visual Inspection |
| T-3442 | Oil | 450 | Transformer | Weekly Visual Inspection |
| TR-34A | Oil | 1108 | Transformer | Weekly Visual Inspection |
| TR-34B | Oil | 1108 | Transformer | Weekly Visual Inspection |
| TR-34C | Oil | 638 | Transformer | Weekly Visual Inspection |
| TR-34D | Oil | 638 | Transformer | Weekly Visual Inspection |
| TR-824 | Oil | 1120 | Transformer | Weekly Visual Inspection |
| T-819 | Oil | 145 | Transformer | Weekly Visual Inspection |

# Table 5 - Secondary Containment Information

| Containment Area | Largest Tank | Volume of Largest Tank (gallons) | Containment Design | Material of Construction | Capacity of Containment Area (Gallons) |
|---|---|---|---|---|---|
| S401 - Tank Farm in B-3300 (D410 through D460) this also includes unloading and loading | D410 | 20,000 | Covered diversionary structure draining into below grade sump to S-401 | Lined Concrete | 26,900 gallons |
| S501 – Direct Burn Unloading Area (RCRA Permitted CSA) | Direct Burn Container | 6,500 | Covered diversionary structure draining into below grade sump to S-501 | Lined Concrete | 7,630 gallons |
| V4/V5 (B-800) | V4 | 59,000 | Covered Dike & Sump | Lined Concrete | 74,187 gallons |
| V2/V6 (B-800) | V2 | 8,000 | Covered Dike & Sump | Concrete | 38,944 gallons |
| UCAT Cylinder Containment in B-3300 | UCAT | 120 | Covered Dike | Lined Concrete | 829 gallons |
| B-800 Container Storage Area | Tank Truck | 6,500 | Dike & Sump | Concrete | 422,578 gallons |
| Rail Loading Area (covered) in B-800 | Rail Car | 25,500 | Below Ground Sump | Concrete | 33,128 gallons |
| Rail Car Storage Area (uncoverd) in B-800 | Rail Car | 25,500 | Below Ground Sump | Concrete | 70,671 gallons |
| Sumps | | | | | |
| S-401 | -- | -- | Sump | Concrete | 26,900 |
| S-501 | -- | -- | Sump | Concrete | 7,630 |
| B-800 West Sump | -- | -- | Sump | Concrete | 3,888 |
| B-800 Sump | | | Sump | Concrete | 12,000 |
| Other Containment | | | | | |

**Covered diked containment areas will have minimal precipitation introduction.

## Thermal Treatment Containment Calculations

| | | | | | Secondary Containment | | | | Secondary Containment Obstructions | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Equipment | Secondary Containment Capacity (gal) | Volume of Largest Container (gal) | Bulk Containment Freeboard (gal) | Secondary Containment Volume (ft³) | Length (ft) | Width (ft) | Height (ft) | Volume (ft³) | Length (ft) | Width or radius (ft) | Height (ft) | Volume (ft³) |
| **B3300 Area** | | | | | | | | | | | | |
| S401 -Tank Farm | 49,602.6 | 20,000 | 29,602.6 | 6,630.9 | 86 | 63.5 | 0.5 | 2,730.5 | | | | |
| D410 - D460 | | | | | 30 | 1 | 1 | 30.0 | | | | |
| Area covered | | | | | 1.5 | 2.25 | 1.67 | 5.6 | | | | |
| | | | | | | | | 107.7 | | | | |
| | | | | | | | | 157.1 | | | | |
| | | | | | 40 | 15 | 6 | 3,600.0 | | | | |
| UCAT Area | 829.7 | 120 | 709.7 | 110.9 | 17 | 8.75 | 1 | 148.8 | 13 | 4.5 | 1 | 58.5 |
| Area Covered | | | | | 17 | 8.75 | 0.229 | 34.1 | 13 | 4.5 | 0.229 | 13.4 |
| **B800 Area** | | | | | | | | | | | | |
| V4 / V5 | 74,187.9 | 59,000 | 15,187.9 | 9,917.5 | 100 | 36 | 2.75 | 9,900.0 | | Group A | | 50.0 |
| Area Covered | | | | | 90 | 1 | 0.75 | 67.5 | | | | |
| V2 / V6 | 39,344.3 | 8,000 | 31,344.3 | 5,259.6 | | | | 5,823.0 | | Group A | | 563.4 |
| Area Covered | | | | | | | | | | | | |
| RCRA Truck Yard | 422,578.4 | 5000 | 417,578.4 | 56,490.7 | | | | 56,490.7 | | | | 0.0 |
| Rail Car unloading | 33,128.9 | 25,500 | 7,628.9 | 4,429.0 | 51 | 54 | 2 | 5,508.0 | | Group A | | 338.0 |
| Area Covered | | | | | | | | | | Group B | | 220.0 |
| | | | | | | | | | | Group C | | 338.0 |
| | | | | | | | | | | Group D | | 183.0 |
| Rail Car Area not Covered | 70,671.0 | 25,500 | 45,171.0 | 9,448.0 | 51 | 108 | 2 | 11,016.0 | | Group A | | 1,352.0 |
| | | | | | | | | | | Group B | | 216.0 |

**Notes:**

| | |
|---|---|
| Sump S-401 | Volume = (6') x (15') x (40') = 3600 ft3 = 26,900 gallons |
| Sump S-501 | Volume = (12') x (20') x (4.25') = 1,020 ft3 = 7,630 gallons |
| B-800 West Sump | Volume = (3.6') x (17.5') x (8.25') = 519.75 ft3 = 3,888 gallons |
| B-800 Sump | Volume = 12,000 gallons |

B33 - D410 and D460 also fo unloading
B33 - Direct Burn Loading area

| | | ft.³ |
|---|---|---|
| ~~B 3400 Area~~ | ~~Group A reduction: (3,697.2 ft2) x (3.25 ft)~~ | ~~12,015.90~~ |
| | ~~Group B Reduction:~~ | ~~2,980~~ |

| | | ft.³ |
|---|---|---|
| V4 / V5 Area | Group A reduction: (10.24 ft3) x (4) | 50.00 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | Group A | | |
| V2 / V6 Area | Available Total Volume | | | ft.³ | Items Reducing Volume | | ft.³ |
| Area Covered | Overall Containmnet | 42.08' x 85.08' x 1.5 | = | 5370.25 | Tank Foundation A | 1 x 220 x 1.33 = | 292.6 |
| | Sump | 5' x 12' x 6' deep | = | 360 | Tank Foundation B | 1 x 3.14 x 5.165 x 5.165 x 0. = | 76.73 |
| | Trench A | 68.08' x 1.67' x 0.7 | = | 85.27 | Column Pedastal Foudations | 16 x 1.5 x 1.5 x 1.33 = | 36 |
| | Trench B | 19' x 1' x 0.42' | = | 7.98 | Pump Pads Foundations | 7 x 2 x 5 x 0.83 = | 58.1 |
| | | | Total | 5823.5 | Crane Foundations | 3 x 4 x 4 x 1 = | 48 |
| | | | | | Horizontal Tank Pedastals V-2 | 2 x 1 x 6.83 x 1.5 = | 20.49 |
| | | | | | Horizontal Tank Pedastals V-6 | 2 x 1.5 x 7 x 1.5 = | 31.5 |
| | | | | | | Total | 563.42 |

| | |
|---|---|
| Rail Car Unloading area | Group A displacement volume: [((1'x3.5')x2)+(1.5'x54'x2)]=169sqft x 2' = 338 ft3 |
| Area Covered | Group B displacement volume: ((8'x8')+(46'x1'))=110sqftx2' = 220 ft3 |
| | Group C displacement volume: [((1'x3.5')x2)+(1.5'x54'x2)]=169sqft x 2' = 338 ft3 |
| | Group D displacement volume: ((3.5'x5'x3)+(54' x 1')) = 91.5 sqft x 2' = 183 ft3 |
| | **Total displacement volume: 1,079 ft 3** |
| Rail Care Area Not Covered | Group A displacement volume: [((1'x3.5')x2)+(1.5'x54'x2)]=169sqft x 2' = 338 ft3 x 4 = 1352 ft3 |
| | Group B displacement volume: (54' x 1') x 2 x 2 = 216 ft3 |
| | **Total displacement volume: 1,568 ft 3** |
| Truck yard area | Atotal = (198'x192')+[(61'x61')-(3.14x62^2)/4]+(30'x60')+(86x26.75')+[(3.14x59^2)*(31.25'*43.827')/2) = 43,886.11 ft3 |
| | Volumes below high point in pavement: Area 1 = [[(13.125'-12.48')*(126.75')]/2]*198' = 8,077.66 ft3 |
| | Area 2 = [(13.125'-12.48')*65.25'*198']+[(12.48'-12.125')/6]x65.25'x198' = 9,097.47 ft3 |
| | Area 3 = (58.75-32) x [(85'+'30') x (13.075'-12.48')]/2 = 915.2 ft3 |
| | **Total volumes below high point of pavement = 8,077.66+9,097.47+915.2 = 18,090.31 ft3** |
| | Volume Above High Point of Pavement: Atotal x (Hwall - H PP) = 43,886.11 ft2 x (14.0' - 13.125') = 38,400.35 ft 3 |
| | **Gross volume of Truck yard containment = 18,090.31 ft3 + 38,400.35ft3 = 56,490.66 ft3** |

# Table 6 – Site and Facility Contact List

## Site or Facility Contacts

| | |
|---|---|
| Dow TXO Site Coordinator | (979) 238-2112 |
| Immediate Response Leader | (979) 238-7688 |

## Federal, State and Local Agencies*

*All calls to Federal, State and Local Agencies will be made by the Dow TXO Site Coordinator.

## Clean-Up Contractor(s)*

*Dow TXO Site Coordinator will provide contractor names as needed.

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# Table 7 – Equipment Fault Analysis

**Potential Spills – Prediction and Control (Worst Case Scenario)**

| Source | Major Type of Failure | Total Quantity | Rate | Direction of Flow | Preventive Equipment, Containment or Controls |
|---|---|---|---|---|---|
| B-824 (Direct Burn) Permitted Container Storage Area* | Tank truck /hose/pipe failure | 6,500 Gal. | 20 gpm | Into Containment | Curbing |
| B-824 V-4 and V-5 Storage tanks | Tank failure | 59,000 Gal. | 100 gpm | Into Containment | Dike/level detector closes on Hi-Hi Level |
| B-824 V2 Storage Tank | Tank Failure | 8,000 Gal. | 20 gpm | Into Containment | Dike/Ohmart nuclear level sensing device |
| B-800 Container Storage Area | Tank Truck Failure | 6,500 Gal | 100 gpm | Into Containment | Dike and sloped into sump |
| B-3302 & B-3307 Container Storage * | Container Failure | 300 Gal. | 1 gpm | Into Containment | Dike |
| B-3304 Container Storage Area Tank truck * | Hose Failure | 6,500 Gal. | 52 gpm | Into Containment | S-501 |
| B-3300 D410 through D460 Storage tanks | Line Rupture | 20,000 Gal. | 50 gpm | Into Containment | S-401/ LS-HH and LS-H alarms |
| B-3305 Container Storage Area* | Tank Truck Failure | 6,500 Gal | 50 gpm | Into Containment | S-401 |
| B-800 Rail Car Storage Area | Rail Car Failure | 25,500 Gal. | 100 gpm | Into Containment | Rail Car Storage Area Below Ground Sump |
| B-800 Rail Car Unloading Area | Hose Failure | 25,500 Gal. | 52 gpm | Into Containment | Rail Car Unloading Area Below Group Sump |
| UCAT Permitted CSA | Container Failure | 120 Gal. | 120 gpm | Into Containment | Dike |

# Table 7 – Equipment Fault Analysis

**Potential Spills – Prediction and Control (Worst Case Scenario)**

| Source | Major Type of Failure | Total Quantity | Rate | Direction of Flow | Preventive Equipment, Containment or Controls |
|---|---|---|---|---|---|
| B-3308 Container Storage Area * | Tank Truck Failure | 6500 gal | 50 gpm | Into Containment | S-401 |

Source List: * Contains PCBs

- PCB dielectric fluid from onsite transformers
- PCB contaminated organics wastes from onsite groundwater and recovery wells
- Laboratory wastes and spill materials contaminated with PCBs
- PCB contaminated waste from equipment rinse from decontaminated and maintenance activities
- PCB contaminated wastes from the A-3600 PMDI Plant

## ATTACHMENT C-II-CERTIFICATION OF THE APPLICABILITY OF THE SUBSTANTIAL HARM CRITERIA

1. Does the facility transfer oil over water to or from vessels and does the facility have a total oil storage capacity greater than or equal to 42,000 gallons?

Yes ☐ No [x]

2. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons **and** does the facility lack secondary containment that is sufficiently large to contain the capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation within any aboveground oil storage tank area?

Yes ☐ No [x]

3. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons **and** is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to this appendix or a comparable formula [1]) such that a discharge from the facility could cause injury to fish and wildlife and sensitive environments? For further description of fish and wildlife and sensitive environments, see Appendices I, II, and III to DOC/NOAA's "Guidance for Facility and Vessel Response Plans: Fish and Wildlife and Sensitive Environments" (see Appendix E to this part, section 13, for availability) and the applicable Area Contingency Plan.

Yes ☐ No [x]

4. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons **and** is the facility located at a distance (as calculated using the appropriate formula in Attachment C-III to this appendix or a comparable formula [1]) such that a discharge from the facility would shut down a public drinking water intake [2]?

Yes ☐ No [x]

5. Does the facility have a total oil storage capacity greater than or equal to 1 million gallons and has the facility experienced a reportable oil discharge in an amount greater than or equal to 10,000 gallons within the last 5 years?

Yes ☐ No [x]

### Certification

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals responsible for obtaining this information, I believe that the submitted information is true, accurate, and complete.

| | |
|---|---|
| Name: | Mark Kuettel |
| Signature: | Mark Kuettel |
| Title: | Production Leader |
| Certification Date: | 10-23-17 |

*[1]If a comparable formula is used, documentation of the reliability and analytical soundness of the comparable formula must be attached to this form.*
*[2]For the purposes of 40 CFR part 112, public drinking water intakes are analogous to public water systems as described at 40 CFR 143.2(c).*

## SPCC Plan Amendment Summary Page

| Section I | Name of Facility: **Freeport Environmental Operations Thermal Treatment**<br>Location of Facility: The Dow Chemical Company, 2301 N. Brazosport Blvd., B-3320, Freeport, Texas 77541 | |
|---|---|---|
| **SPCC Plan Amendment Summary** | **Brief Description of SPCC Plan Changes** | **SPCC Plan Reference (Part No./Question No.)** |
| | Added attachment C-II | Table of contents added new Attachment at end of document |
| | Removed SOHO | Facility Information |
| | Removed SOHO Stormwater Management Policy from procedure table | Area-specific Spill Response |
| | Removed B3400 Dike references and information. | §112.7(c)(1)(i) |
| | Removed references to buried piping and added There are no buried pipelines containing oil at this facility or leaving this facility. | §112.8(d)(1) |
| | Replaced response with Certification of Applicability of the Substantial Harm Criteria is required for this facility and is located as Attachment C-II to this plan. | §112.20 |
| | Removed SOHO Tanks and T3420 | Figure 4 |
| | Removed V8000 and V8010 SOHO Tanks | Table 2 |
| | Removed SOHO transfer piping | Table 3 |
| | Removed V8000 and V8010 SOHO Tanks secondary containment info | Table 5 |
| | Removed SOHO transfer piping secondary containment info | Table 5 |
| | Removed SOHO secondary containment calculations | Secondary containment calculations |
| | Removed SOHO transfer piping and V8000, V8010 tanks. Removed sources of PCB waste that are no longer owned by Dow | Table 7 |
| | | |
| | | |

(SPCC Plan Amendment Cover Page) Page 1 of 2

[Grab your reader's attention with a great quote from the document or use this space to emphasize a key point. To place this text box anywhere on the page, just drag it.]

| | |
|---|---|
| **Section II**<br><br>**Management Approval** | This Amended SPCC Plan will be implemented as here in described. All resources necessary to implement and maintain the SPCC plan, as amended, will be approved and committed<br>Signature: Mark Kuettel Date: 6-27-18<br>Name: Mark Kuettel<br>Title: Production Leader |

**Section III Certification**

Through this certification, I hereby attest that (1) I am familiar with the requirements of the SPCC rule; (2) I or my agent has visited and examined the facility; (3) the SPCC Plan has been prepared in accordance with good engineering practices, including consideration of applicable industry standards, and with the requirements of the SPCC rule; (4) procedures for required inspections and testing have been established; and (5) the Plan is adequate for the facility.

| | |
|---|---|
| Certifying Engineer: | RENE DAMIAN |
| State: | TEXAS |
| Registration Number: | 85014 |
| Signature: | Rene Damian |
| Certification Date: | 7.3.18 |


(SPCC Plan Amendment Cover Page) Page 2 of 2

## Appendix 5 Closure Plans



# *Attachment A - Container Storage Area Closure Plan*

## *1.0 General Information*

This closure plan has been prepared to outline steps that Dow will take to close RCRA container storage areas and the secondary containment system associated with the unit. The closure plan has been prepared in accordance with 40 CFR Part 264 Subpart G, and 40 CFR §264.178 as adopted by the TCEQ in 30 TAC §335.152(a)(5) and 335.152(a)(7), respectively. A copy of this closure plan will be maintained at the facility and be available for review.

Dow owns and operates a chemical production facility in Brazoria County. The mailing address for the facility is 2301 N. Brazosport Blvd., Freeport, Texas. Dow has been assigned a hazardous waste generator number by the EPA, TXD008092793, and a TCEQ Solid Waste Registration Number, 30106.

At closure, Dow is proposing to remove waste remaining in containers in the area and decontaminate, as necessary, the secondary containment system. The maximum possible volume of waste contained in a container storage area will be equal to the permitted capacity of the unit. To verify that removal of waste and clean closure of the secondary containment system is achieved, Dow will conduct closure activities and sampling and analysis as specified in Section 2.0 of this plan.

This closure plan sets forth the procedures that Dow will use to close hazardous waste storage container storage areas. When closure of an individual hazardous waste container storage area or group of container storage areas occurs, Dow will provide, with the notification of closure letter, a copy of this closure plan to TCEQ. The notification of closure letter will contain information specific to the container storage area(s) being closed including the following:

- Name of container storage area(s) being closed;
- Waste code(s) associated with container storage area(s) being closed; and
- Optional cleaning methods that may be necessary for closure.

In the event that Dow proposes amendments to this closure plan, based on changes in the operating plans or facility design that may affect implementation of the plan for a permitted RCRA container storage area, a permit modification will be submitted to the Executive Director of the TCEQ for review and approval. Amendments to the plan may also be proposed as a result of unexpected events that occur during closure which affect the ability of the closure plan to be utilized.

# 2.0 Closure Activities

The methodology for closure of a RCRA hazardous waste container storage area will consist of several steps designed to remove waste from and subsequently decontaminate, as necessary, the secondary containment system. The steps used to close a container storage area are as follows:

- Removal of waste containers from the area and treatment/disposal of waste at an authorized facility
- Rinsing of secondary containment system, as necessary, pumping of rinsate into a tank or container for storage, and treatment/disposal of waste at an authorized facility

Certain situations may warrant optional cleaning methods which may include: hydroblasting, detergent wash, abrasive cleaning, and steam cleaning. Optional cleaning methods will be outlined, as necessary, in the letter of notification for closure. In accordance with 40 CFR 264.178, all hazardous waste and residues will be removed from the container storage area and secondary containment system. Additionally, run-off and run-on will be controlled during closure of the container storage areas in accordance with 40 CFR 264.112(b)(5) by maintaining the roofs, curbing and sumps associated with secondary containment until the closure activities, including decontamination, are completed. Therefore, these closure activities will minimize the need for further maintenance and will minimize the protection needed toward human health and the environment in accordance with 40 CFR 264.111.

The container storage areas have sumps designed to prevent the flow of spills/leaks to surrounding soils. The registered, independent, professional engineer who will certify closure of the container storage areas will review RCRA inspection information, talk with operating personnel, and inspect the secondary containment to determine if there is visual evidence that spills/leaks had occurred or to determine if the secondary containment has cracks or other integrity problems that would necessitate additional investigation or sampling. The certifying engineer will either document a finding that no such spills/leaks had occurred or that the spills/leaks that had occurred did not result in a release to the environment.

# 3.0 Sampling and Analysis

If spills/leaks had occurred, the certifying engineer will direct appropriate decontamination procedures for the sumps and document the decontamination activities as part of the closure report. Additionally, soil sampling will be performed adjacent to the container storage area sump if there is evidence that spills/leaks have migrated outside the secondary containment, in accordance with 40 CFR 264.112(b)(4). Sampling will be used to confirm the presence or absence of soil contamination. Analyses will be performed by a testing laboratory that is familiar with analytical methods for hazardous and solid waste.

Indicator constituents proposed will be based on those constituents that are representative of the wastes, which have been managed in the container storage area.

If the professional engineer determines that waste spills/leaks have been released to the underlying or surrounding soils, such a release will be responded to outside the scope of this closure plan in accordance with the Texas Risk Reduction Program (TRRP) in 30 TAC Chapter 350 since it does not interfere with the components of the unit being decontaminated, demolished and/or removed.

Sampling of the water-only rinsate generated from rinsing activities will be performed to demonstrate decontamination. Analyses of the collected samples will be performed by a testing laboratory that is familiar with analytical methods for hazardous and solid waste.

To determine if decontamination has been achieved, Dow will analyze for indicator constituents. Indicator constituents proposed to demonstrate decontamination of the secondary containment system will be based on those constituents (i.e., volatile and semi-volatile organics) which are representative of the wastes which have been managed in the container storage area. Specific EPA codes associated with each container storage area will be identified in the TCEQ closure notification letter.

If the applicable critical Protective Concentration Level (PCL) for Remedy Standard A according to the TRRP is exceeded for an indicator constituent, additional rinsing activities as described in Section 2.0 will be performed to achieve closure. If closure is not attained, additional closure activities will be conducted as outlined in the previous sections above.

# 4.0 Decontamination

Following completion of closure and receipt of analytical results demonstrating decontamination, equipment that became contaminated during closure will be decontaminated. Decontamination will generally consist of rinsing with water; however, any of the methods used for decontamination of the secondary containment system may also be used.

# 5.0 Safety, Health and Emergency Response

Appropriate protocols for health and safety procedures will be followed during closure activities. These will address health, safety and emergency response aspects for personnel associated with the closure of the container storage areas and secondary containment system. The protocols cover the following topics:

- Selection of appropriate personal protection equipment;
- Establishment of work zones;
- Decontamination procedures; and
- Emergency response procedures.

# 6.0 Schedule

Following receipt of the final volume of hazardous waste in a container storage area, Dow will initiate closure of that unit. In accordance with the notification requirements of 40 CFR §264.112(d), adopted by reference in 30 TAC §335.152(a)(5), Dow will provide written notice to the Executive Director of the TCEQ at least 45 days prior to initiation of closure activities. Although the schedule for closure of a specific container storage area is a function of the conditions relating to that unit (e.g., design of the unit, wastes managed in the unit, weather conditions, etc.), the typical time for closure of a container storage area is estimated to be approximately 180 days and is based on the following activities:

- Removal of waste containers from the unit and rinsing, as necessary, of the secondary containment system; and
- Verification of decontamination and completion closure activities.

The proposed schedule is:

| Activity | Timing |
|---|---|
| Final volume of hazardous waste to unit. | Day 0 |
| Removal and rinsing of waste from unit. | By Day 90 |
| Rinsing of secondary containment system. | |
| Verification of decontamination. | By Day 180 |
| Completion of closure activities. | |

When the closure activities have been completed and a successful demonstration of decontamination through analytical results has been accomplished, a closure certification report will be prepared and submitted to TCEQ. Certification of closure will be submitted within 60 days after completion of closure. The certification will be signed by Dow and by an independent, qualified, registered professional engineer and will certify that the unit has been closed in accordance with the approved closure plan. This certification will be sent via certified mail to the Executive Director of the TCEQ.

# Attachment B - Closure Plan

## 1.0 General Information

This closure plan has been prepared to outline steps that Dow will take to close thermal treatment units (TTUs) as well as associated equipment. The TTUs included in this closure plan are the Rotary Kiln Incinerator and B-824. The closure plan has been prepared in accordance with 40 CFR Part 264, Subpart G, 40 CFR §264.351 and 266.102(e)(11), as adopted by the Texas Commission on Environmental Quality (TCEQ) in 30 TAC §335.152(a)(5), 335.152(a)(13) and 335.221(a)(6). A copy of this closure plan will be maintained at the facility and be available for review.

Dow owns and operates a chemical production facility in Freeport, Texas. The mailing address for the facility is 2301 North Brazosport Blvd., Freeport, Texas 77541. Dow has been assigned a hazardous waste generator number by the Environmental Protection Agency of TXD008092793, and a TCEQ Solid Waste Registration Number of 30106.

At closure, Dow is proposing to treat waste remaining in the TTU and decontaminate the unit and associated equipment. The maximum possible volume of waste contained in a unit will be equal to the capacity of the equipment associated with that unit. To verify that removal of waste and clean closure of the unit and associated equipment is achieved, Dow will conduct closure activities and sampling and analysis as specified in Section 2.0, 3.0 and 4.0 of this plan.

In the event that Dow proposes amendments to this closure plan, based on changes in the operating plans or facility design that may affect implementation of the plan, a permit modification will be submitted to TCEQ for review and approval. Amendments to the plan may also be proposed as a result of unexpected events that occur during closure which affect the ability of the closure plan to be utilized.

## 2.0 Closure Activities

The methodology for closure of a TTU will consist of several steps designed first to remove waste from associated equipment (e.g., piping, air pollution control and ancillary equipment) and then decontaminate the unit and associated equipment. The steps used to close the unit are as follows:

1. Purge/flush waste feed piping with suitable solvent and dispose waste liquid volumes to the combustion chamber followed by another round of purging. Waste feed piping that was in PCB contaminated waste service will then be drained of all remaining free-flow liquids in accordance with 40 CFR with liquids disposed in compliance with 40 CFR 761.60(a). Kiln bulk and container conveyors will be cleaned to the extent that they can be scrapped or managed similar to other BIF equipment.

2. The maximum possible amount of metal in the BIF unit and ancillary equipment will be scrapped including the feed piping discussed in this step. Metals that was in hazardous waste only service, will be reclaimed as scrap metal following requirements 40 CFR 261.6(a)(3)(ii) and 30 TAC 335.24(c)(2). Feed piping that was in PCB contaminated waste service will be sent to a scrap metal recovery oven or smelter operating in compliance with 40 CFR 761.72, 40 CFR 261.6(a)(3)(ii) and 30 TAC 335.24(c)(2). Disposal of remaining BIF equipment will be handled based upon the results in Steps 6a and 6b.

   Note 1: An alternate approach in determining disposal of BIF equipment is to clean the equipment using 40 CFR 268.45, Table 1 extraction technology, to examine that the cleaning creates clean surfaces as presented in 40 CFR 268.45, Table 1, note 3, and to determine that the equipment meets the Conditional Exemption for Treated Debris per 40 CFR 268.45(c). Such equipment may be disposed in a non-hazardous landfill.

   Note 2: All equipment that did not come into contact with waste or combustion gases (ex., combustion unit outer shell) will not require any decontamination or disposal.

3. Fire the unit with only fuel for a minimum of 3 hours at normal operating temperatures to decontaminate the refractory brick of organics per 40 CFR 268.45, Table 1, B3 – Thermal Destruction.

4. Notify TCEQ offices (Austin & Region 12) of pending sampling and analytical work for refractory brick, 10 days in advance.

5. Collect and analyze a representative sample of the surface of the refractory brick that was exposed during hazardous waste combustion for metals of concern.

   5a. If results determine that the brick is non-hazardous, then the brick will be eligible for disposal in a non-hazardous landfill.

   5b. If results determine that the brick is hazardous, then the innermost layer of brick will be sent for disposal to a hazardous waste landfill. Alternate LDR treatment standards for hazardous debris will be complied with for hazardous brick using microencapsulation/stabilization for the inner-most layer of brick prior to disposal. The other layers of brick will be disposed of as debris in either a non-hazardous or hazardous landfill.

6 Clean the unit internals exposed to combustion gases using high pressure steam or water spraying and collect/analyze a representative sample of wash water to determine the following. Also refer to Note #1 in Step 2.

   6a. If Chemicals of Concern (COCs) are not detected above their respective 30 TAC Chapter 335 Subchapter R standards for a non-hazardous waste then the unit equipment is eligible for disposal in a non-hazardous landfill.

6b. If COCs are detected above the allowable limits, then the unit/equipment will be disposed in a hazardous waste landfill after meeting the alternate LDR requirements for hazardous waste debris in 40 CFR 268.45.

7. Clean, incinerate, or dispose of (in compliance with LDR requirements) any packing in the Air Pollution Control Equipment (APCE). If the packing is cleaned/decontaminated using high pressure steam or water spraying, a representative sample of the rinsate will be collected and disposal will be handled by the approach in Steps 6a and 6b. Also refer to Note #1 in Step 2.

8. Clean the remaining APCE equipment to achieve decontamination by using high pressure stream or water spraying and collect a representative sample of the rinsate for analysis. Disposal will be handled by the approach in Steps 6a and 6b. Also refer to Note #1 in Step 2.

9. The registered, independent, professional engineer who will certify closure will determine the status of the secondary containment and perform necessary decontamination activities (see Section 4.0 for details).

10. The professional engineer will prepare the closure report for submittal to the TCEQ for approval.

Other extraction technologies in 40 CFR 284.45, Table 1 may be used to render the various debris non-hazardous if the technologies in this closure plan are determined insufficient to achieve that objective.

# 3.0 Alternate Closure

Should Dow elect to convert a RCRA-permitted BIF, other than B-824, to a "non-RCRA" mode (e.g., use the unit to treat only nonhazardous waste and/or vent gases), this section describes the alternate closure provisions that will be used to facilitate that conversion. Under this alternate closure procedure, Dow must demonstrate that the BIF, and ancillary equipment including secondary containment, no longer contain hazardous wastes and have been decontaminated, using the following procedure:

*Converting BIF from hazardous to non-hazardous waste service:*

1. Purge/flush waste feed piping with suitable solvent or high-pressure steam and dispose waste liquid volumes to the combustion chamber followed by another round of purging. Flush the piping with water and test the source water and rinsate for appropriate Chemicals of Concern (COCs). The piping will be considered clean when the COCs are not detected above their respective TRRP PCLs or rinsate water-backgrounds, as applicable. Additional piping cleaning will be conducted to meet these criteria or the piping will be replaced. Replaced piping will be reclaimed as scrap metal following requirements 40 CFR 261.6(a)(3)(ii) and 30 TAC 335.24(c)(2).

2. Fire the unit with only fuel for a minimum of 3 hours at normal operating temperatures to decontaminate the refractory brick of organics per 40 CFR 268.45, Table 1, B3 – Thermal Destruction.

3. Notify TCEQ offices (Austin & Region 12) of pending sampling and analytical work for refractory brick, 10 days in advance.

4. Collect and analyze a representative sample of the surface of the refractory brick that was exposed during hazardous waste combustion for metals of concern.

   4a. If results determine that the brick is non-hazardous, then the brick will be eligible for disposal in a non-hazardous landfill.

   4b. If results determine that the brick is hazardous, then the innermost layer of brick will be sent for disposal to a hazardous waste landfill. Alternate LDR treatment standards for hazardous debris will be complied with for hazardous brick using microencapsulation/stabilization for the inner-most layer of brick prior to disposal. The other layers of brick will remain in place.

5. Clean the unit internals exposed to combustion gases using high pressure steam or water spraying and collect/analyze a representative sample of rinsate water to determine that the equipment is clean. Refer to Step #1 for clean criteria.

6. Clean, incinerate, or dispose of any packing in the Air Pollution Control Equipment (APCE). If the packing is to be cleaned, it will be cleaned using high pressure steam or water spraying followed collection/analysis of a representative sample of the rinsate water to determine if the equipment is clean using the Step #1 clean criteria. Otherwise, the packing will be incinerated of disposed in compliance with LDRs.

7. Clean the remaining APCE equipment to achieve decontamination by using high pressure stream or water spraying and collect a representative sample of the rinsate for analysis to determine if the equipment is clean per Step #1 clean criteria.

8. The registered, independent, professional engineer who will certify closure will determine the status of the secondary containment and perform necessary decontamination activities (see Section 4.0 for details).

9. The professional engineer will prepare the closure report for submittal to the TCEQ for approval.

*Converting the BIF from hazardous waste to vent service:*

1. Purge/flush waste feed piping with suitable solvent or high pressure steam and dispose waste liquid volumes to the combustion chamber followed by another round of purging. The feed piping will then either be: (a) reclaimed as scrap metal following requirements of 40 CFR 261.6(a)(3)(ii) and 30 TAC

335.24(c)(2), or (b) sent to an authorized hazardous or non-hazardous waste landfill. The determination as to which class of landfill the piping will be disposed will be based on either of the following two procedures.

1a. The piping, other equipment, will be examined to determine if the piping meets the clean surface requirement specified in 40 CFR 268.45, Table 1, note 3. The piping that meets these clean surface requirements and also meets the criteria presented in 40 CFR 268.45(c) [Conditional Exemption for Treated Debris] for debris treated by extraction technologies will be eligible for disposal in a non-hazardous landfill.

1b. The piping, or other equipment, will be rinsed with water and the source water and rinsate will be sampled and tested for appropriate Chemicals of Concerns (COCs). If COCs are not detected above their respective TRRP PCLs or ~~MQLs or~~ rinsate water background levels, as applicable, cleaning will be considered complete The equipment will be eligible for disposal in a non-hazardous landfill if the COC criteria are achieved.

Piping, or equipment, that does not meet either of the above options (observation or analysis) will be disposed in a hazardous waste landfill once immobilization by concrete filling in accordance with the debris requirements in 40 CFR 268.45, Table 1 or in compliance with waste LDR requirements.

2. The unit will be fired solely with natural gas for a minimum of three hours at normal operating temperature to ensure decontamination of the refractory brick. This will destroy organics on the refractory brick as specified by the Alternate Land Disposal Restrictions Treatment Standards for debris in 40 CFR 268.45 Table 1 - B.3 – Thermal Destruction.

3. The TCEQ offices (Austin and Region 12) will be notified in writing at least ten (10) working days prior to commencement of sampling.

4. A representative sample of the combustion chamber refractory brick will be analyzed to determine if the brick is hazardous due to COC metal. If the brick is determined to be non-hazardous due to chromium, the brick will remain in place as is. If the brick is determined to be hazardous, Dow will replace the inner-most layer of brick with new brick and stabilize the removed brick in compliance with the Alternative LDR Treatment Standards for debris in 40 CFR 268.45 Table 1-C.2 – Microencapsulation and send to an authorized hazardous waste landfill.

5. Clean the unit internals exposed to combustion gases using high pressure steam or water spraying and collect/analyze a representative sample of rinsate water to determine that the equipment is clean using the Step 1b clean criteria.

6. Clean, incinerate, or dispose of any packing in the Air Pollution Control Equipment (APCE). If the packing is to be cleaned, it will be cleaned using high pressure steam or water spraying followed collection/analysis of a representative sample of the rinsate water to determine if the equipment is clean using the Step

1b clean criteria. Otherwise, the packing will be incinerated of disposed in compliance with LDRs.

7. Clean the remaining APCE equipment to achieve decontamination by using high pressure stream or water spraying and collect a representative sample of the rinsate for analysis to determine if the equipment is clean using the Step 1b clean criteria.

8. The registered, independent, professional engineer who will certify closure will determine the status of the secondary containment and perform necessary decontamination activities (see Section 4.0 for details).

9. The professional engineer will prepare the closure report for submittal to the TCEQ for approval.

The procedures described in Sections 4-7 would then be followed to complete the alternate closure. If Dow elects to implement alternate closure, this closure standard will be specified in the notification letter to TCEQ.

# 4.0 Sampling and Analysis

Sampling of the water-only rinsate generated from rinsing activities will be performed to demonstrate decontamination. Analyses of the collected samples will be performed by a testing laboratory that is familiar with analytical methods for hazardous waste.

To determine if decontamination has been achieved, Dow will analyze for indicator constituents. Indicator constituents proposed to demonstrate decontamination of the unit and associated equipment will be based on those constituents (i.e., volatile and semi-volatile organics) that are representative of the wastes which have been managed in the unit.

If the decontamination for disposal criteria are not met as described above, additional closure activities as described in Section 2.0 will be performed to achieve closure.

After determining the status of the secondary containment (Section 2.0) via inspection of RCRA inspection records, discussion with operating personnel, and visually inspecting the secondary containment, the certifying engineer will document that one of the following occurred:

- no spill/leaks occurred;
- a spill/leak that occurred did not result in a release to the environment; or
- a spill/leak has resulted in a release to the environment (e.g., underlying or surrounding soils).

If a release was documented within the secondary containment only, then additional decontamination activities will be conducted for the secondary containment system under the direction of the certifying engineer. All activities will be included in the

closure report. Decontamination of secondary containment only will be deemed complete when rinsate water is shown to be below the applicable critical Protective Concentration Level (PCL) for Remedy Standard A according to the Texas Risk Reduction Program (TRRP) in 30 TAC Chapter 350, or its source water background concentration, as applicable.

If the engineer determines that spills/leaks have resulted in a release to the underlying or surrounding soils, such a release will be responded to outside the scope of this closure, in accordance with the TRRP.

# 5.0 Decontamination

Following completion of closure and receipt of analytical results demonstrating decontamination, equipment that became contaminated during closure will be decontaminated. Decontamination will generally consist of rinsing with water; however, any of the methods used for decontamination of the unit and/or the associated equipment may also be used.

# 6.0 Safety, Health, and Emergency Response

Appropriate protocols for health and safety procedures will be followed during closure activities. These will address safety, health, and emergency response aspects for personnel associated with the closure of the unit and associated equipment. The protocols cover the following topics:

- Selection of appropriate personal protection equipment;
- Establishment of work zones;
- Decontamination procedures; and
- Emergency response procedures.

# 7.0 Schedule

Following receipt of the final volume of hazardous waste for a TTU, Dow will initiate closure of the unit and its associated equipment. In accordance with the notification requirements of 40 CFR §264.112(d), adopted by reference in 30 TAC §335.152(a)(5), Dow will provide written notice to TCEQ at least 45 days prior to initiation of closure activities. Although the schedule for closure is a function of the conditions relating to the unit (e.g., design considerations, weather conditions, etc.), the typical time for closure is estimated to be approximately 180 days and is based on the following activities:

- Treat waste remaining in the unit and associated equipment. Flush with suitable solvent, remove waste/solvent mixture, and subsequently treat/dispose;

- Perform final rinse of associated equipment and collect samples for demonstration of decontamination; and

- Verify decontamination and complete closure activities.

The proposed schedule is:

| Activity | Timing |
|---|---|
| Final volume of hazardous waste to unit. | Day 0 |
| Removal of waste from tank and ancillary equipment. | By Day 90 |
| Flushing of tank with suitable solvent, and removal and treatment/disposal of water/solvent mixture. | |
| Final rinse of tank/ancillary equipment and collection of samples for demonstration of decontamination. | |
| Verification of decontamination. | By Day 180 |
| Completion of closure activities. | |

When the closure activities have been completed and a successful demonstration of decontamination through analytical results has been accomplished, a closure certification report will be prepared and submitted to TCEQ. Certification of closure will be submitted within 60 days after completion of closure. The certification will be signed by Dow as well as an independent, qualified, registered professional engineer and will certify that the unit has been closed in accordance with the approved closure plan. This certification will be sent via certified mail to TCEQ. In addition, the certification will request release of financial assurance associated with the unit(s) that were closed.

# Appendix 6 Professional Engineer Certification and Facility Standards

# Professional Engineer Certification

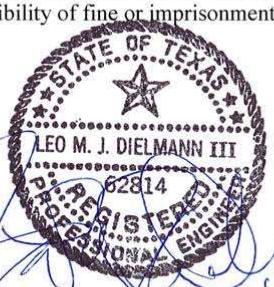
The B-3302 Container Storage Area is a steel frame structure, 70 ft by 100 ft in plan, and 14 ft of free height. Containers are stored on pallets, with adequate aisle space provided between rows of pallets for inspection and emergency equipment access. The total storage capacity is 68,510 gallons. The B-3302 Container Storage Area is surfaced with reinforced concrete and slopes towards a central point.

Sections of the B-3302 Engineering Report pertaining to the design are listed in the following table. The listed sections accurately reflect and support the design presented in the sealed engineering drawings and calculations listed above. The engineering seal affixed below provides assurance that the sections have been reviewed by me, that the information presented is consistent with the sealed engineering drawings, and that the work is consistent with accepted engineering principles and practice.

| Document Section | Title | Revision No. and Date |
|---|---|---|
| 2.4 | Secondary Containment System | 2016 Renewal Rev. 0, July, 2016; Revised August 2018 |

CERTIFICATION

I certify under penalty of law that the documents listed above and all subsequent attachments were reviewed in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons who performed investigation, evaluation, analysis, calculations, and planning during design, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment for knowing violations.

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# Professional Engineer Certification

The B-3304 Container Storage Area (direct burn area) is a steel frame structure, 30 ft by 58 ft in plan, and 15.5 ft of free height. Containers are stored in the direct burn area with adequate aisle space provided inspection and emergency equipment access. The total storage capacity is 64,300 gallons. The B-3304 Container Storage Area is surfaced with reinforced concrete and slopes towards a central point.

Sections of the B-3304 Engineering Report pertaining to the design are listed in the following table. The listed sections accurately reflect and support the design presented in the sealed engineering drawings and calculations listed above. The engineering seal affixed below provides assurance that the sections have been reviewed by me, that the information presented is consistent with the sealed engineering drawings, and that the work is consistent with accepted engineering principles and practice.

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# Professional Engineer Certification

The B-3307 Container Storage Area is a steel frame structure, 53.75 ft by 179.75 ft in plan, with 18 ft doors. The containers used to store wastes can be of a wide variety of types, with adequate aisle space provided between containers for inspection and emergency equipment access. The total storage capacity is 85,385 gallons. The B-3307 Container Storage Area is surfaced with reinforced concrete and slopes towards two central points.

Sections of the B-3307 Engineering Report pertaining to the design are listed in the following table. The listed sections accurately reflect and support the design presented in the sealed engineering drawings and calculations listed above. The engineering seal affixed below provides assurance that the sections have been reviewed by me, that the information presented is consistent with the sealed engineering drawings, and that the work is consistent with accepted engineering principles and practice.

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# Professional Engineer Certification

The B-3305 Container Storage Area is within the B-3305 building that has a roof and eaves which cover a total of 5,461 $ft^2$ in area. The container storage area consists of the tank docking and transfer stations under the eaves, each having dimensions of 18 ft by 63.5 ft, totaling 2,286 $ft^2$ in area. It is designed to receive and store tanker trucks or containers until contents may be transferred to B-33 tanks or to the B-3304 Container Storage Area. The total capacity is 21,200 gallons.

Sections of the B-3305 Engineering Report pertaining to the design are listed in the following table. The listed sections accurately reflect and support the design presented in the sealed engineering drawings and calculations listed above. The engineering seal affixed below provides assurance that the sections have been reviewed by me, that the information presented is consistent with the sealed engineering drawings, and that the work is consistent with accepted engineering principles and practice.

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# Professional Engineer Certification

The B-3308 Container Storage Area is a 5,166 ft$^2$ concrete pad (not including the S-401 collection sump or surrounding curb and entrance ramp. Tanker truck containers are stored with adequate aisle space provided for inspection and emergency equipment access. The total storage capacity is 78,000 gallons. The B-3308 Container Storage Area is surfaced with reinforced concrete and curbed to control run-on/run-off and is coated with an epoxy throughout and slopes towards a central point.

Sections of the B-3308 Engineering Report pertaining to the design are listed in the following table. The listed sections accurately reflect and support the design presented in the sealed engineering drawings and calculations listed above. The engineering seal affixed below provides assurance that the sections have been reviewed by me, that the information presented is consistent with the sealed engineering drawings, and that the work is consistent with accepted engineering principles and practice.

| Document Section | Title | Revision No. and Date |
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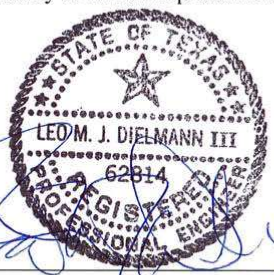


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# B-3308 Container Storage Area

## 1.0 General Information

The Dow Chemical Company, Texas Operations (Dow) at Freeport, Texas, operates a container receiving and storage facility in the B-33 Block of Plant B. This unit operates as a container receiving and storage facility (B-3308 Container Storage Area) in the Rotary Kiln Incinerator area (B-33 Block). The unit has a total capacity of 78,000 gallons. Wastes are received in tanker trucks or containers and stored in the B-3308 Container Storage Area until the contents are transferred to an authorized treatment and/or disposal facility.

The B-3308 Container Storage Area represents one portion of the Rotary Kiln Incinerator waste storage, handling, and feed system, along with other container storage areas, tanks and the direct burn building.

The B-3308 Container Storage Area was initially permitted via a Class 2 modification on September 22, 2006 (Rev 33/R. Rev. 1). Revisions to B-3308 CSA dated May 31, 2007, October 23, 2007, and February 11, 2008 have been submitted to address minor design modifications and the submittal of "as built" drawings.

Dow is not requesting any major modifications to this Container Storage Area within the 2016 Renewal

The wastes managed in the B-3308 Container Storage Area are reflected in Table 1. The closure costs for the B-3308 Container Storage Area are included as Attachment A.

# 2.0 Storage Area Plans and Specifications

## 2.1 General Description and Dimensions

The B-3308 Container Storage Area is a 5,166 $ft^2$ concrete pad (not including the S-401 collection sump or surrounding curb and entrance ramp) designed for staging tanker truck containers in support of the Rotary Kiln Incinerator facilities. The B-3308 Container Storage Area is surfaced with reinforced concrete and curbed to control run-on/run-off and is coated with an epoxy throughout. As with the rest of the B-33 Block, the container storage area is outside of the 100-year floodplain and is located more than 50 ft. from Dow's property line as required by 40 CFR §264.176. Rain is diverted to the trench and flow into the S-401 sump. All joints have waterstops to prevent leakage. The B-3308 Container Storage Area parking and drainage layout sections are shown on Drawing 1.

## 2.2 Types and Number of Containers

As shown in Table 1, the tanker trucks stored in the B-3308 Container Storage Area contain a wide variety of organics, as well as PCB-contaminated material. The organics include but are not limited to:

< Nonhalogenated solids;
< Halogenated solids; and
< Isocyanate wastes.

Tanker trucks used to store wastes are always compatible with the waste contained. The total storage capacity of Building B-3308 is based on thirteen 6,000-gal. tanker trucks, or 78,000 gal.

Frequent inspections (see Section 3.3) are made to verify integrity of containers. The generator utilizes containers that are made out of or lined with materials which do not react with the contained waste. The wastes stored may be ignitable. Incompatible wastes are not stored together in a container, in accordance with 40 CFR §264.177. If containers of incompatible wastes having free liquids are stored, they are separated from other nearby wastes. Incompatibility is determined according to the criteria in 40 CFR Part 264, Appendix V and the Waste Analysis Plan in Volume 2.

## 2.3 Process Flow

Containerized wastes will be received, segregated, and stored in the B-3308 Container Storage Area until ready for treatment or disposal. Waste to be hauled to the Rotary Kiln Incinerator will be removed from the B-3308 Container Storage Area as needed to meet the operating capacities of the other facilities.

## 2.4 Secondary Containment System

The secondary containment consists of a rectangular area of 56.33 ft by 74.67 ft plus a triangular area of 34.08 ft by 56.33 ft (dimensions inside curbing) which translates to a storage area of 5,166 $ft^2$. The elevation of the tops of the curbing and ramp is 0.916 feet higher than the slab. The slab is sloped at 2% to create two separate drains within CSA.

Each area has a connected 121.6 ft long, 1 ft diameter pipe, as well as two 3 ft deep trench catch sumps (2.25 ft long by 2.25 ft wide) to drain liquids from the containment slab which overflow to the sump S-401 basin (capacity 26,930 gal.) (see Drawing 2). The drainage line will flow into the existing sump and appropriate measures will be incorporated to prevent any leakage at the joints. Secondary containment dimensions for the parking area can be found on Drawing 2 B-3308 Container Storage Area Parking Area Plan (Dow B2-1-68289) and the dimensions for sump-401 basin can be found in the B-3305 Container Storage Area Engineering Report on Drawing 4 S-401 Secondary Containment Sump (Dow B2-641-33177).

Therefore, containment capacity is calculated by summing the components of the containment system:

A. Slab Volume: (5,166 $ft^2$ x .916 ft) + 642 $ft^3$ (volume of pyramid created under 2% slope) – 598 $ft^3$ (volume displaced by ramp) = 4,777 $ft^3$ or 35,731 gal.

B. Pipe Volume: 121.6 ft x $\pi$ x [½(11 inches/12 inches per ft)]$^2$ = 80.2 $ft^3$ or 600 gal.

C. Catch Sumps Volume: (3.0 ft x 2.25 ft x 2.25 ft) x 2 = 30.4 $ft^3$ or 227 gal.

D. S-401 Sump and 2 covered catchment basins, each 800 gal: S-401 (40 ft x 15 ft x 6 ft deep from wall) which is 3600 $ft^3$ or 26,930 gal.+ (800*2) gal = 28,530 gal

Total Volume: A + B + C + D = 35,731 + 600 + 227 + 28,530 = 65,090 gal.

The required secondary containment is -

A. The spill from the largest tank in the Rotary Kiln Tank Farm which is 20,000 gal., the spill from the largest container in the B-3308 area which is 6,000 gal., or a spill equivalent to 10% of the maximum volume of containers with free liquids in the B-3308 area which is 7,800 gal. (13 tank trucks x 6,000 gal. per tank truck x 10%) whichever is the largest amount. In this case, the largest amount is 20,000 gal.; plus,

B. The run-on into the B-3308 area which results from a 25-year, 24-hour storm (10.2 inches) which is 5,166 $ft^2$ x (10.2/12) = 4,391 $ft^3$ or 32,848 gal.; plus,

C. The rainfall into the uncovered S-401 Sump from a 25-year, 24-hour storm (10.2 inches) which is 40 ft x 15 ft x (10.2/12) = 510 $ft^3$ = 3,815 gal.

Thus, the required secondary containment volume is A + B + C = 20,000 + 32,848 + 3,815 = 56,663 gal. Thus, there is sufficient available secondary containment since the required containment capacity of 56,663 gal. is less than the available capacity of 65,090 gal.

# *Professional Engineer Certification*

Sections of the B-824 Engineering Report pertaining to the design are listed in the following table. The listed sections accurately reflect and support the design presented in the sealed engineering drawings and calculations listed above. The engineering seal affixed below provides assurance that the sections have been reviewed by me, that the information presented is consistent with the sealed engineering drawings, and that the work is consistent with accepted engineering principles and practice.

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| 2.4 | Secondary Containment System | 2016 Renewal Rev. 0, July, 2016; Revised August 2018 |

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Signature _____ Date 8/20/2018

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# B-824 Container Storage Area Engineering Report

## 1.0 General Information

The Dow Chemical Company, Texas Operations (Dow) at Freeport, Texas, operates a container receiving and storage facility in the B-8 Block of Plant B. This unit operates as a container receiving and storage facility (B-824 Container Storage Area) in the B-824 Thermal Oxidizer area (B-8 Block) (see Drawing 1). The unit has a total capacity of 42,600 gallons (six, 7,000 gallon tank trucks and 24, 25 gallon drums). Wastes are received in tanker trucks or other containers and stored in the B-824 Container Storage Area until the contents may be transferred to an authorized treatment and/or disposal facility.

The B-824 Container Storage Area represents one portion of the B-824 Thermal Oxidizer waste storage, handling, and feed system, along with the B-824 Feed Tanks (Tanks V-2, V-4, and V-5).

The wastes managed in the B-824 Container Storage Area are reflected in Table 1. The closure costs for the B-824 Container Storage Area are included as Attachment A.

# 2.0 Storage Area Plans and Specifications

## 2.1 General Description and Dimensions

The B-824 Container Storage Area consists of two concrete pads, one with a sump and curbing that is used to stage tanker trucks and a separate curbed pad to store other containers in support of the B-824 Thermal Oxidizer facilities. The B-824 Container Storage Area has been surfaced with reinforced concrete and curbed to control run-on/run-off and is coated with an epoxy throughout. Drawing 1 shows the location of the waste storage area within the B-800 block. As with the rest of the B-8 Block, the container storage area will be outside of the 100-year floodplain and is located more than 50 ft. from Dow's property line as required by 40 CFR §264.176. The area is equipped with overhead cover and curbing to prevent run-on or accumulation of rainfall within the containment area. The B-824 Container Storage Area is shown on Drawing 2. It consists of two areas separated by the curb, one that will be used to store the trucks and one that will be used for smaller containers stored on pallets.

## 2.2 Types and Number of Containers

As shown in Table 1, the tanker trucks and other containers stored in the B-824 Container Storage Area may contain a wide variety of organics, including PCB-contaminated material. Dow has received a TSCA permit from the EPA that allows PCBs to be disposed of in the B-824 Thermal Oxidizer. The organics stored in the CSA include but are not limited to:

< Halogenated hydrocarbons;
< Chlorinated tars; and
< PCB wastes.

Tanker trucks used to store wastes are always compatible with the waste contained. The total storage capacity of Building B-824 is based on six 7,000-gal tanker trucks and a maximum of 24, 25-gallon containers, or 42,600 gal.

Frequent inspections (see Section 3.3) are made to verify integrity of containers. The generator utilizes containers that are made out of or lined with materials that do not react with the contained waste. The wastes stored may be ignitable. Incompatible wastes are not stored together in a container, in accordance with 40 CFR §264.177. If containers of incompatible wastes having free liquids are stored, they are separated from other nearby wastes. Incompatibility is determined according to the criteria in 40 CFR Part 264, Appendix V and the Waste Analysis Plan in Volume 2.

## 2.3 Process Flow

Drawings 1 and 2 present the waste storage layout for the B-824 Container Storage Area. Containerized wastes are received, segregated, and stored in the B-824 Container Storage Area until ready for treatment or disposal; these wastes come from both on-site and off-site sources. Wastes in the CSA may be direct-burned in the B-824 Thermal Oxidizer, unloaded into tanks, or loaded from tanks and shipped for off-site disposal.

## 2.4 Secondary Containment System

The secondary containment for the large tank truck area and the adjacent drum storage area comprise a rectangle, with the drum storage area in the southeast corner. See Drawing 2. This rectangular area is approximately 43 feet in the east-west direction and 73 feet in the north-south direction measured inside the surrounding curbs and ramps. The average depth of this area is 5.25 inches. Within this area, the drum storage area is 20 feet by 21 feet and is separated from the larger area on two sides by a curb two feet wide and six inches tall. The average depth of the drum storage area is 5.75 inches. The slab is sloped at 0.2% toward the center of the area. The tank truck area drains to one of two sumps located on the east and west sides within the containment. The two sumps are connected by an underground pipe that is 36 feet long and four inches in diameter. The east sump is 2 ft wide by 2 ft long and 18 inches deep; the west sump is 5 ft wide by 5.5 ft long and 24 inches deep, with an interior dividing wall one foot thick. Secondary containment dimensions can be found on Drawing 2 B-824 Container CSA Drainage and Details (Dow B2-2-41567849).

The total containment capacity for the tank truck storage area is calculated by summing the components of the containment system. The area is determined by subtracting the drum storage area and curbing from the total area of the rectangle:

A. Slab Volume: [(72.75 ft x 43.33-ft) – (18.25 ft x 20 ft)] x 5.5 in. = 1219 $ft^3$ = 9,121 gal.

B. East Sump Volume: (2 ft x 2 ft x 18 in.) = 6 $ft^3$ = 45 gal.

C. West Sump Volume: (5 ft x 4.5 ft x 2 ft) = 45 $ft^3$ = 337 gal.

D. Pipe Volume: (3.14 x $(2\ in)^2$ x 36 ft) = 3 $ft^3$ = 23 gal.

Total Available Volume: A + B + C + D = 9,526 gal.

As per §264.175(b), the required containment is either 10% of the total volume of containers with free liquid or the volume of the largest container whichever is greater. In this case, 10% of the stored volume is less than the volume of the largest container; that is, 4,200 gallons is less than a 7,000-gal tanker truck. Neither run-on nor direct rainfall accumulation should occur in this storage area; thus, operation of the B-824 Container Storage Area requires 7,000 gal of secondary containment volume and has adequate containment volume.

For the smaller drum storage area, the pad measures 20 ft by 16 ft inside the surrounding curb (area = 320 $ft^2$). The average depth of the small area is 5.75 inches (see Drawing 2). The total containment capacity for the drum storage area is calculated as follows:

A. Slab Volume. 20-ft x 16-ft x 5.75-in. = 153.3 $ft^3$ = 1,147 gal.

As per §264.175(b), the required containment is either 10% of the total volume of containers with free liquid, or the volume of the largest container, whichever is greater.

In this case, the drum storage area will hold a maximum of 24, 25-gal drums, or 600 gal total.

10% of the stored volume is 60 gal which is greater than the volume of one of the drums. Thus, operation of this drum storage area requires 60 gal of secondary containment volume, and as shown above, has more than sufficient available volume.

# *Professional Engineer Certification*

The B-800 Container Storage Area (CSA) consists of a concrete container storage station, 200 ft by 196 ft. The total permitted storage capacity is 185,000 gallons. The B-800 Container Storage Area is surfaced with reinforced concrete and slopes towards a central point.

Sections of the B-800 CSA Engineering Report pertaining to the design are listed in the following table. The listed sections accurately reflect and support the design presented in the sealed engineering drawings and calculations. The engineering seal affixed below provides assurance that the sections have been reviewed by me or someone under my direct supervision that the information presented is consistent with the sealed engineering drawings and calculations, and that the work is consistent with accepted engineering principles and practice.

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| 2.4 | Secondary Containment System | 2016 Renewal Rev. 0, July, 2016; Revised August 2018 |

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